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U.S. DEPARTMENT OF AGRICULTURE

Pacific Northwest Region

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# Pacific Northwest National Scenic Trail Comprehensive Plan

## Environmental Assessment





Cover photo: Clockwise from upper left: Pacific Ocean, Olympic National Park, Washington; Ten Lakes Scenic Area, Kootenai National Forest, Montana; Bowman Lake, Glacier National Park, Montana; Ross Lake National Recreation Area, North Cascades National Park Complex, Washington; Salmo-Priest Wilderness, Colville National Forest, Washington. Photo Credit: Daniel Tankersley

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## Project Information

**Project Name:** Pacific Northwest National Scenic Trail Comprehensive Plan

**Project Initiation Date:** 9/29/2022

**Responsible Official:** Elizabeth Berger, Acting Regional Forester

**Unit:** Pacific Northwest Region

**Counties:** Glacier, Flathead, and Lincoln counties in Montana; Bonner and Boundary counties in Idaho; and Pend Oreille, Stevens, Ferry, Okanogan, Whatcom, Skagit, Island, Jefferson, and Clallam counties in Washington

**General Location:** Approximately 1,200 miles from Glacier National Park in Montana, through Idaho and Washington to Olympic National Park on the Pacific Coast

**Anticipated Implementation:** January 2024

**Public Project Webpage:** https://www.fs.usda.gov/project/?project=52259

**Project Contact:** Rick Pringle, Acting Pacific Northwest National Scenic Trail Administrator, richard.pringle@usda.gov

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Supporting documents referenced in this environmental assessment are available on the public project webpage listed above, by request from the project contact, or at the regional forester's office location listed above.

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# Purpose and Need, Proposed Action and Alternatives

## Introduction

The Forest Service is the administering agency for the PNT and cooperates with a variety of partners, including other federal agencies, tribes, state and local governments, local communities, private landowners, and others. The National Trails System Act (P.L. 90-543, as amended) (NTSA) requires a comprehensive plan to provide for the acquisition, management, development, and use of the PNT. The comprehensive plan is being developed and would be implemented cooperatively with PNT land managing agencies and partners.

The proposed comprehensive plan, which is incorporated by reference in the proposed action, is available for review on the project website (https://www.fs.usda.gov/project/?project=52259). It would be finalized following this analysis and a decision under the National Environmental Policy Act. The proposed comprehensive plan for the PNT fulfills the legislative requirements for a national scenic trail under the NTSA (https://uscode.house.gov/view.xhtml?path=/prelim@title16/chapter27&edition=prelim). The proposed comprehensive plan has been developed with consideration for the concerns, expectations and values of the public and landowners along the PNT. The proposed comprehensive plan provides an umbrella of guidance, recommendations, and tools for analyzing future site-specific trail projects under the National Environmental Policy Act. The proposed comprehensive plan also defines the roles of managers and partners to facilitate a cohesive approach to trail planning, operations and management across federal, tribal, state, and local entities and other ownerships.

The proposed comprehensive plan does not designate, restrict, or prohibit land uses, or make land management decisions. It does not extend federal authority to lands outside of federal boundaries, except where federal agency management of those lands exists through acquisitions or easements. When trail maintenance or other on-the-ground activities are proposed by local land managers, they will follow the applicable laws, regulations, and policies for the local land manager.

## Where is the Project Located?

The PNT is a pathway of approximately 1,200 miles that travels through some of the most spectacular and scenic terrain in the United States, connecting the diverse landscapes and communities of the Northwest (inclusive of portions of the West, Inland Northwest, and Pacific Northwest regions). Beginning near the Continental Divide in Glacier National Park, the PNT travels through Montana, Idaho, and Washington before reaching its western terminus at the Pacific Ocean near Cape Alava in Olympic National Park. Congress designated the trail through the Omnibus Public Land Management Act of 2009 (P.L 111- 11), which added the PNT to the nationwide system of scenic, historic and recreation trails established by the NTSA. Congress established the National Trails System to provide outdoor recreation opportunities and "to promote the preservation of public access to, travel within, and enjoyment and appreciation of the open air, outdoor areas and historic resources of the Nation" (USC Vol. 16, Sections 1241-1251).

# Pacific Northwest National Scenic Trail

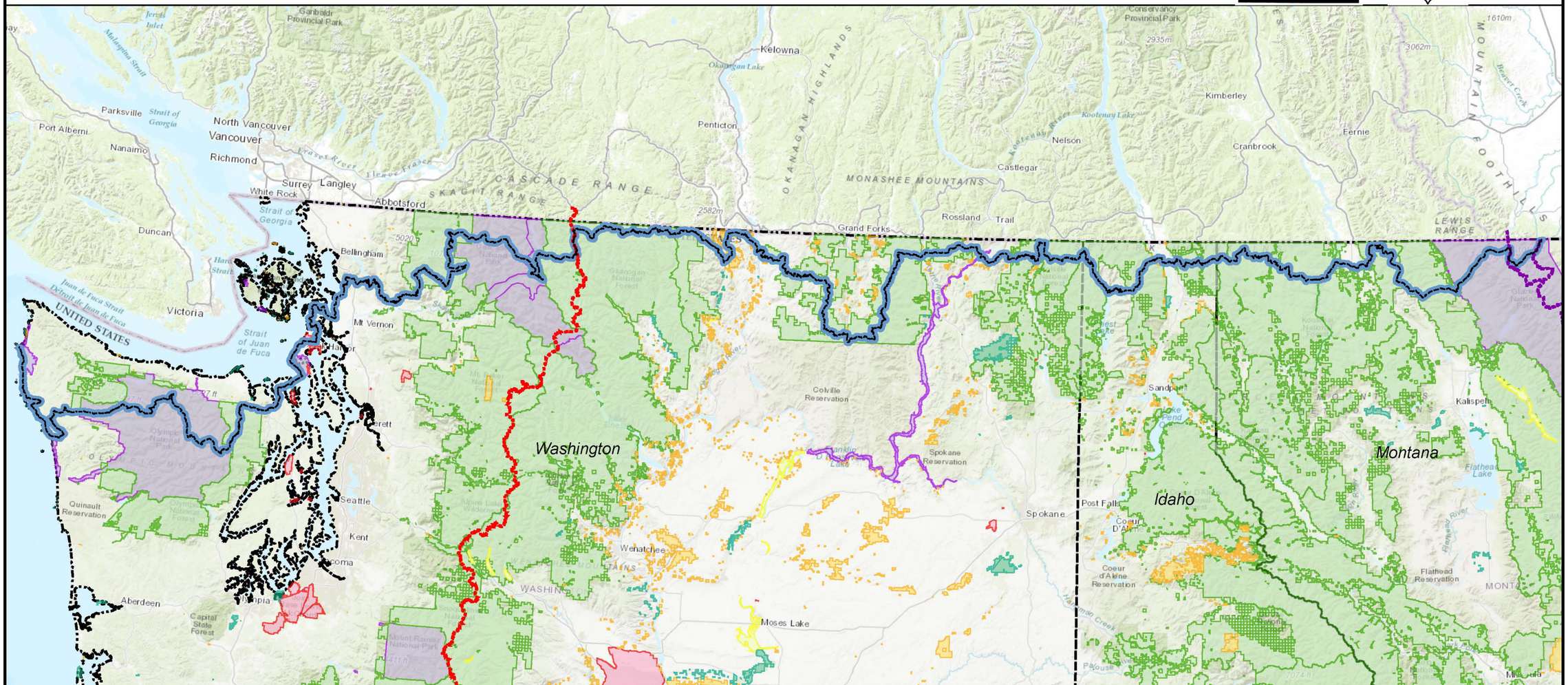


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**Figure 1 Vicinity Map displays the pathway of the Pacific Northwest National Scenic Trail**

# Need for the Proposal

The purpose of this project is to prepare a comprehensive plan for the Pacific Northwest National Scenic Trail (Pacific Northwest Trail or PNT), a congressionally designated area, that (1) meets the legislative requirements for national scenic trails under the National Trails System Act (NTSA) (Pub. L. 90-543, as amended) and (2) provides a shared vision for long-term administration of the trail and coordinated management across federal and non-federal lands in order to protect the nature and purposes of the trail; the significant natural, historical and cultural resources and values[1] that support the trail's nature and purposes; and the nationally significant recreation settings and opportunities for which the trail was designated.

The NTSA requires the Forest Service (as the lead federal agency assigned to administer the trail, referred to as *the administering agency*) to develop a comprehensive plan for the acquisition, management, development, and use of the Pacific Northwest Trail, including but not limited to the following items:

- Specific objectives and practices to be observed in the management of the trail, including the identification of significant natural, historical, and cultural resources to be preserved (16 U.S.C. 1244 (e)(1))
- Details of any anticipated cooperative agreements to be consummated with other entities (16 U.S.C. 1244 (e)(1))
- An identified carrying capacity and plan for its implementation (16 U.S.C. 1244 (e)(1))
- An acquisition or protection plan, by fiscal year for all lands to be acquired by fee title or lesser interest, along with detailed explanation of anticipated necessary cooperative agreements for any lands not to be acquired (16 U.S.C. 1244 (e)(2))
- General and site-specific development plans including anticipated costs (16 U.S.C. 1244 (e)(3))

Additionally, recent litigation resulted in a court order (19-143-M-DWM (D.MT.), requiring the Forest Service complete this comprehensive plan by 12/31/23.

# Proposed Action

The National Environmental Policy Act and the implementing regulations for each of the federal agencies with responsibilities for the Pacific Northwest Trail require assessment of the potential environmental impacts of management actions on federal lands. Our proposal addressing the need to take action, our evaluation of the relevant environmental effects, and the components of the proposed comprehensive plan that require National Environmental Policy Act analysis, apply to those portions of the trail traversing federal lands. The proposed action would guide the coordinated, long-term administration and management of the Pacific Northwest Trail on federal lands and on non-federal lands where the Pacific Northwest Trail exists within federally managed acquisitions or easements.

## Alternative 1 – Proposed Action

Elements of the Proposed Action Include (elements required by the NTSA noted with reference):

[1] Preserving not only resources but "resources and values" is part of the mission of the National Park Service, and this approach is reflected in its guidance for implementing its responsibilities under the National Trails System Act (Director's Order #45 and Reference Manual #45). Bureau of Land Management policy for national scenic trail management addresses resources and values, as well as a trail's qualities, associated settings and primary use or uses (Manual 6280).

- Nature and purposes unique to the Pacific Northwest Trail, including the desired key characteristics of the trail settings and opportunities and the primary trail use or uses [NTSA Sec. 7(c)]
- Identifying the modes of travel that serve as the primary use or uses of the trail.
- Objectives and practices for managing the trail to provide for the nature and purposes and ensure the values for which the trail was established remain intact [NTSA Sec. 5(e), EO 13195], including:
    - ♦ Identifying significant natural, historical, and cultural resources and values to be preserved in order to provide for the nature and purposes of the trail [NTSA Sec. 5(e)]
    - ♦ Identifying carrying capacity of the trail and a plan for its implementation [NTSA Sec. 5(e)]
- Guiding practices for general developments along the trail, such as location, construction, and maintenance of the trail travelway, facilities, and signage [NTSA Sec. 5(e)] as well as potential future designation of NTSA Section 6 connecting or side trails to provide additional public access or recreational opportunities [NTSA Sec. 6]
- A strategy for land acquisition and protection that provides for public access and protects the trail settings [NTSA Sec. 5(e)]
- Providing a preliminary administrative recommendation for the route and width of the national trail planning corridor for the Pacific Northwest Trail sufficient to provide for the trail's nature and purposes [NTSA Sec. 7(a)(2), EO 13195] and practices to be followed when considering potential relocations of the trail outside of the national trail planning corridor [NTSA Sec. 7(b).

So that you can better understand how each of these elements fits into the proposed comprehensive plan, each is described in more detail, below.

## Nature and Purposes

The nature and purposes of a national scenic trail describe the character, characteristics, and congressional intent for the trail. For example, it may specify the ideal trail setting, primary trail use or uses, breadth of recreation opportunities, and the context for what types of other uses and activities may be appropriate along the trail. The nature and purposes are therefore critical to the proper protection and management of national scenic trails. Section 7(c) of the NTSA introduces the concepts of nature and purposes for national trails (bolded text added):

> National scenic or national historic trails may contain campsites, shelters, and related-public use facilities. Other uses along the trail, which will not substantially interfere with the **nature and purposes** of the trail, may be permitted by the Secretary charged with the administration of the trail. Reasonable efforts shall be made to provide sufficient access opportunities to such trails and, to the extent practicable, efforts be made to avoid activities incompatible with the purposes for which such trails were established.

The proposed action includes the following statements of nature and purposes statement of the Pacific Northwest Trail. The nature and purpose statements were developed by drawing from the basic intent of the National Trails System Act, subsequent executive orders, and elements of legislative history. They are informed by the vision for the Pacific Northwest Trail described in historic documents from Ron Strickland and the Pacific Northwest Trail Association and in the feasibility study. They are also informed by the results of public sensing that occurred prior to the development of this plan, through sensing meetings with stakeholders and the managing agencies in communities across the trail in 2012-14, comments received through scoping and public comment periods in 2022-23, and with the Pacific Northwest National Scenic Trail Advisory Council (Advisory Council) in 2015-16 and 2023.

### *Nature*

The Pacific Northwest National Scenic Trail is an east-west-oriented long-distance trail that traverses the extreme northern reaches of Montana, Idaho, and Washington from the Rocky Mountains, through the Cascade and Olympic Mountain ranges, to the Pacific Coast.

The trail invites travelers into the backcountry and wilderness areas, to seek the grandeur of glaciated peaks, tranquil lakes, boundless horizons of majestic mountains, deep canyons, broad river valleys, storm-carved coastlines, and the splendor of wild places. The lands along the trail are the homelands of many distinct indigenous nations. Since time immemorial, natural processes and tribal traditional uses, including tribal treaty rights and reserved rights, have shaped these places and continue to shape them, through exercising their tribal treaty and reserved rights. Communities along the trail share with travelers their histories and connections to the land, evident in the legacy of working forests, farms, ranches, and maritime areas, as well as in beloved local parks and pathways.

Whether they experience one mile or 1,200 miles, the travelers and stewards of the Pacific Northwest National Scenic Trail find opportunities for inspiration and lifelong memories, challenge and personal transformation, the solitude of quiet places and kinship in being part of a larger legacy.

### *Purposes*

National scenic trails are extended trails through iconic landscapes that provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas they go through. These premiere trails provide visitors with profound experiences that not only create lasting memories but instill a stewardship ethic for generations to come.

Specifically, the purposes of the PNT are to provide for:

- conservation and enjoyment of scenic, historic, natural, and cultural resources and values along the trail that exemplify the qualities of the Northwest (inclusive of the West, Inland Northwest, and Pacific Northwest regions).
- maximum outdoor recreation potential as a premier, nationally significant opportunity for (1) hiking, with an emphasis on long-distance backpacking including end-to-end thru-hiking, as a primary use; (2) pack and saddle stock use as a primary use; and (3) other complementary non-motorized recreation, including bicycling, where appropriate to the setting and allowed by local management.
- opportunities for self-discovery, self-reliance, and the satisfaction of making your own way.
- opportunities for community and for service to the trail, its surrounding landscapes, and others through environmental education, interpretation, partnerships, volunteerism, and stewardship that encourage inclusion of all people, cultures, and abilities.

## Primary Uses

The primary use or uses of a national scenic trail are the authorized mode or modes of travel identified in the National Trails System Act, enabling legislation, or legislative history, or through the comprehensive plan or other relevant plan(s). While there may be other potentially compatible modes of travel that may be allowed by local management and therefore could co-occur on the trail, the primary use or uses of the trail are the trail uses foundational to its administration and management as a national scenic trail. Based on a review of the PNT's feasibility study and legislative history, consultation with the PNT Advisory Council in 2015-16 and 2023, and comments received, the proposed comprehensive plan identifies that

the primary uses of the PNT are (1) hiking with an emphasis on long-distance backpacking and (2) pack and saddle stock use.

## Objectives and Practices

The NTSA requires a comprehensive plan include specific objectives and practices to be observed in the management of the trail, including the identification of significant natural, historical, and cultural resources to be preserved … details of any anticipated cooperative agreements to be consummated with other entities, and an identified carrying capacity of the trail and a plan for its implementation (16 U.S.C. 1244 (e)(1)).

The proposed action includes objectives and practices ( proposed comprehensive plan, chapter 5). The NTSA calls out the need to identify significant natural, historical, and cultural resources, as well as the carrying capacity of the trail; these are addressed below. Details of cooperative agreements with various entities such as landowners and land managers are also addressed (comprehensive plan, chapter 6 and appendix D).

### *Significant Natural, Historical, and Cultural Resources*

The comprehensive plan identifies the types of significant natural, historical, and cultural resources and values that support the nature and purposes of the Pacific Northwest Trail, based on its legislative history and unique niche in the National Trails System. The proposed action identifies eight resource themes significant to the Pacific Northwest Trail that would be elaborated on in the plan:

1. the trail itself,
2. exceptional scenic beauty and variety,
3. wilderness and backcountry settings,
4. diverse ecological communities and valued plant species,
5. iconic wildlife and fish species,
6. places of importance to Tribes,
7. traces of the past, and
8. rivers and shorelines.

## Carrying Capacity and Visitor Use Management

Among the required management practices in a comprehensive plan is the identification of the carrying capacity of the trail and a plan for its implementation (16 U.S.C. 1244(e)). Carrying capacity is one aspect of visitor use management, which is the proactive and adaptive process of planning for and managing characteristics of visitor use and its physical and social setting, using a variety of strategies and tools, to achieve desired resource conditions and visitor experiences. Visitor use characteristics include the amount, type, timing, and distribution of visitor use, including visitor activities and behaviors. The primary goal of visitor use management is to ensure opportunities for high-quality visitor experiences while protecting natural and cultural resources. Visitor capacity strategies are encompassed in the broader principles of visitor use management. Chapter 5 of the proposed comprehensive plan details the desired conditions and management options for the various trail resources.

The term “capacity” in the recreation context has been confusing due to the tendency to use this term to represent the entire concept of visitor use management. Thus, a few key points must be noted.

- Visitor capacity is not the same as use limits. Limiting use is a specific management tool, whereas visitor capacity is an overall estimate of how much use an area can sustain while achieving desired conditions. Limiting use is only one of many tools available to managers to ensure visitor use does not adversely impact desired conditions. Other tools available to managers include providing visitor education, offering information about alternative opportunities, changing where or when use occurs, re-designing sites, re-distributing use, limiting the type(s) of use, limiting group size, and many others.
- Visitor capacity is an estimate of the maximum amount of use that can be sustained, not how much use is desired or a "target" to be reached.
- The visitor capacity for the Pacific Northwest Trail that is identified in the proposed comprehensive plan is just one factor that a local managing agency would consider when managing visitor use for a site, segment, or area along the trail. Other resources considerations may be more limiting and could result in managing for a lower visitor capacity for that site, segment, or area.

### *Identifying Carrying Capacity*

Guidelines in the Interagency Visitor Use Management Council (IVUMC) Visitor Capacity Guidebook: Managing the Amounts and Types of Visitor Use to Achieve Desired Conditions (2019), and recommendations for addressing carrying capacity for national scenic trails and national historic trails in accordance with the requirements found in the National Trails System Act in the IVUMC position paper, Visitor Capacity On Federally Managed Lands And Waters: A Position Paper To Guide Policy (2016b) were used to estimate the carrying capacity of the Pacific Northwest Trail. The capacity analysis is based on the following steps:

1. Determine the analysis area(s).
2. Review existing direction and knowledge.
3. Identify the limiting factors.
4. Identify capacity.

Interviews conducted with managing agency staff across the trail document existing direction and land managers' knowledge of trail and resource conditions and constraints or limiting factors related to carrying capacity. The proposed comprehensive plan includes a summary of this information.

Limiting factors are those that most constrain the trail's ability to accommodate visitor use. Through the interview process, the agency identified limiting factors and conditions related to visitor use that will be important to monitor and will help prioritize locations where site-specific visitor use management planning may be needed in the future:

1. Wilderness and backcountry campsite permits in national parks.
2. Management in Grizzly Bear Recovery Zones.
3. Preserving wilderness character, particularly opportunities for solitude, where the Pacific Northwest Trail is in wilderness areas.
4. Overlap of Pacific Northwest Trail with other national scenic trails.
5. Segments of the Pacific Northwest Trail in temporary interim locations on open motorized roads.
6. Segments of the Pacific Northwest Trail on or adjacent to private lands.

7. Potential future conditions that could present limiting factors[2] such as the availability of campsites in areas where terrain is limiting, conflict between different types of uses, human waste impacts, future wilderness designation, future management decisions or land use allocations made by the managing agencies, and wildfire impacts on trail use.

In alignment with the IVUMC, the proposed comprehensive plan identifies the estimated carrying capacity of the trail expressed as the overall trail-wide visitor capacity, addressing the amounts and types of use the Pacific Northwest Trail as a whole can accommodate. The trail-wide capacity is expressed as:

1. an estimated range of thru-hikers per high-use season (June 15th to Sept 15th) and
2. the general amounts and types of use the trail can accommodate.

### *Trail-wide Capacity*

#### Thru-hiker Capacity

The opportunity the Pacific Northwest Trail provides for end-to-end travel on foot (thru-hiking) from the Continental Divide to the Pacific Ocean is the reason the Pacific Northwest Trail concept was originated and developed, and it was one of the values for which the Pacific Northwest Trail was designated as a national scenic trail in 2009. The thru-hiking opportunity is central to the nature and purposes of the Pacific Northwest Trail. Thru-hiking is the trail use with the most limitations related to seasonality, the greatest dependence on the trail resources (trail conditions, access and closures, availability of campsites and water, resupply opportunities, and so forth), and therefore the trail activity with the most constraints. Determining the supply of specific sustainable recreation opportunities along the Pacific Northwest Trail that provide the long-distance thru-hiking experience will frame management approaches to best meet the nature and purposes of the Pacific Northwest Trail.

The proposed action includes an estimated carrying capacity for thru-hiking for the Pacific Northwest Trail of 552 to 1,748 thru-hikers per high use season (June 15th to September 15th). This is based on the most limiting passages of the trail, which are in the Cabinet-Yaak and Selkirk Mountains Grizzly Bear Recovery Zones and Olympic National Park's Wilderness Coast. A numeric range is provided because of variables such as the size of hiking or camping groups (party size) where limitations (e.g., campsite reservations, existing management direction in Grizzly Bear Recovery Zones) is based on number of parties as well as thru-hikers' ability to make advanced campsite reservations or get walk-up campsite opportunities in the national parks.

Thru-hiking use constitutes only a small fraction of overall use of the Pacific Northwest Trail relative to day-use and short multi-day trips. Currently, the Forest Service estimates that about 80 people attempt to thru-hike the Pacific Northwest Trail each year. Actual thru-hiking use of the trail at this time is therefore much lower than the estimated thru-hiking capacity. Use is likely to increase as the attractiveness of this relatively little-used, long-distance trail becomes better known and as the trail is developed to improve the connectivity of nonmotorized trail segments and reduce mileage on roads.

[2] The limiting factors carried forward in the proposed comprehensive plan were identified through the carrying capacity worksheet interviews with managing agencies. The capacity decision criteria addressed resource, social, and administrative considerations as described under the heading Worksheets in appendix E of the proposed comprehensive plan. Monitoring will be in place to identify constraints or limitations that may arise in the future.

### General Amounts and Types of Use the Trail Can Accommodate

The Pacific Northwest Trail provides opportunities for long-distance hiking, including thru-hiking and section hiking, and for shorter trips on foot, ranging from day hiking to multi-day backpacking trips on sections of the Pacific Northwest Trail. Along with hiking, pack and saddle stock use, and bicycling (particularly mountain biking) are popular uses in certain sections of the trail. Because they involve one or several sections rather than the entire trail, day hiking, overnight backpacking, pack and saddle stock use, bicycling, and other nonmotorized trail uses have fewer constraints on timing and season of use than for thru-hiking. Use types and levels vary widely across the 1,200-mile trail depending on land designation type[3], adjacent communities, access, terrain, and so forth.

Trail zones were developed to describe the desired conditions (focusing on the recreation settings and social experiences) for the Pacific Northwest Trail as it crosses a variety of landscapes and jurisdictions. The zone descriptions identify the appropriate types and levels of use that will not adversely affect the nature and purposes of the trail. A qualitative description of the acceptable ranges of visitor use in different zones along the trail is included.

### Site-, Segment-, and Area-specific Capacities

If necessary, specific visitor capacities and use limits for a site, trail segment, or area would be identified and implemented by the managing agency. The proposed comprehensive plan lists sites, segments, and areas that may be prioritized for additional visitor use management planning, which could include identifying site-, segment-, or area-specific capacities.

### Implementing and Monitoring the Carrying Capacity for the Pacific Northwest Trail

Local managing agencies retain authority for visitor use management and related decisions on the lands and segments of the trail they manage. Implementation and monitoring of the carrying capacity for the Pacific Northwest Trail will therefore be carried out through coordination between the Forest Service (as the administering agency for the trail) and the local managing agencies. The proposed comprehensive plan includes a plan for implementing the carrying capacity of the trail by prioritizing limiting factors and addressing carrying capacity by trail stage. The monitoring plan outlines potential indicators and thresholds to guide monitoring efforts. An adaptive management toolbox is also included. The identified carrying capacity numbers and desired experience zones will inform the local managing agency implementation of site-, segment-, or area-specific monitoring and management actions to manage visitor use along the trail.[4]

## Land Acquisition and Protection Strategy

The proposed comprehensive plan includes a strategy for land acquisition and protection along the Pacific Northwest Trail to provide for the nature and purposes of the trail, secure public access to the trail, address gaps to complete the route as a continuous non-motorized trail, and to provide recreation and conservation benefits. The strategy discusses the various tools and mechanisms available through the NTSA and other authorities for acquiring land or easements, such as purchase (with appropriated or

[3] Land designation type refers to the types of purposes that guide land management for a given area. Some examples of land designation types include national parks, national forests, wilderness areas, national recreation areas, natural resource conservation areas, and state parks.

[4] Desired experience zones describe the desired conditions (focusing on the trail settings and social experiences) for the trail as it crosses a variety of landscapes and jurisdictions. The zone descriptions identify the appropriate types and levels of use that can be accommodated by the trail, without adversely affecting its nature and purposes.

donated funds), donation, or exchange; and for protecting lands that would not be acquired, such as cooperative agreements.

The land acquisition and protection strategy provides criteria to prioritize opportunities to acquire and protect lands along the trail. The NTSA specifies that "the United States shall not acquire for the Pacific Northwest National Scenic Trail lands outside the exterior boundary of any federally managed area without the consent of the owner of the land or interest in land" (16 U.S.C. 1244(a)(30)).

## Recommended National Trail Planning Corridor

Section 7(a)(2) of the National Trails System Act requires selecting a national trail right-of-way for the trail. It also requires publishing a notice of availability in the Federal Register for appropriate maps or descriptions (16 U.S.C. 1246 (a)(2))[5]. It is important to note that in context to the NTSA, the national trail right-of-way functions as a planning corridor for the trail route and for land acquisition and protection, and it does not provide rights of access or use across non-federal lands. For that reason, the proposed action refers to the national trail right-of-way as the national trail planning corridor.

The proposed action includes a preliminary administrative recommendation for the location and width of the recommended national trail planning corridor for the Pacific Northwest Trail. In the proposed action, the location of the recommended national trail planning corridor follows the congressionally designated route of the Pacific Northwest Trail[6]. The width of the recommended national trail planning corridor is generally a minimum of one mile (0.5 miles on either side of the trail). This recommended width is based on:

1. the foreground distance zone for viewing scenery as identified in the Forest Service's Scenery Management System;
2. a distance wide enough to contain many (though not all) instances of natural, historical, and cultural resources and values that are associated with the Pacific Northwest Trail and its nature and purposes; and
3. a distance wide enough to contain campsites, shelters, and other public use facilities (for example, trailheads and other trail amenities), as appropriate, along the trail but at a reasonable distance from the travelway.

The national trail planning corridor may be wider than one mile. The Advisory Council has recommended that it should be wide enough to allow for identifying an optimal location for the trail while considering other resource concerns.

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[5] In the context of the National Trails System Act, "right-of-way" does not carry the same legal rights and privileges typically associated with the term "right-of-way" outside of the National Trails System Act context. To avoid any implication of a right to use or access non-federally managed lands, the proposed action would instead adopt the term national trail planning corridor. Throughout this document, the national trail planning corridor indicates the area referred to as the "right-of-way" in Section 7 of the NTSA (16 U.S.C. 1246). Use of the term "corridor" for this purpose is consistent with its use in EO 13195.

[6] The national trail planning corridor in this document is the initial legal selected route location and width, as required by Section 7(a)(2) of the NTSA (16 U.S.C. 1246(a)(2)). This is separate from the national trail management corridor, which is the land area identified in land management agencies' land and resource management plans to provide direction for the trail and surrounding lands consistent with the National Trails System Act and comprehensive plan. After it is selected, the national trail planning corridor is anticipated to be revised through subsequent administration and management of the trail, such as through relocation of segments of the trail and following land management agencies' selection of the national trail management corridor, as appropriate.

For the national scenic trails and national historic trails administered by the Forest Service, selecting a national trail planning corridor is an administrative action taken by the Chief of the Forest Service (FSM 2353.04b). Where the national trail planning corridor is located on lands managed by other federal agencies, the selection must be agreed upon by the heads of those agencies. The Forest Service must also be informed by the advice and assistance of private organizations, landowners, and land users concerned, in order to minimize adverse effects on adjacent landowners or land users and their operations (16 U.S.C. 1246(a)(2)). The national trail planning corridor recommendation will be reviewed and possibly modified by the Chief of the Forest Service before the national trail planning corridor is selected and published.

## Practices for Relocating the Trail

Relocation occurs when a segment of a national scenic trail needs to be moved outside of the national trail planning corridor. Through relocation the segment of the national scenic trail and its corresponding national trail planning corridor are moved to a new permanent location. The NTSA establishes the conditions under which relocation may occur (16 U.S.C. 1246(b)).

The NTSA differentiates between non-substantial and substantial relocations.

**Substantial relocations** of segments of a national trail planning corridor can only occur by an Act of Congress (16 U.S.C. 1246(b)). The proposed action does not establish criteria or thresholds that would determine what constitutes a substantial relocation. The lead regional forester would need to consult with the relevant managing agency or agencies and USDA Office of the General Counsel to determine if a proposed relocation would be substantial.

**Non-substantial relocations** of segments of the national trail planning corridor may be made by the Forest Service in concert with the relevant managing agency or agencies. The NTSA says that non-substantial relocations may only occur if all the following conditions are met:

- the Forest Service (as administrating agency for the trail) has determined that the relocation is necessary to either (1) preserve the purposes for which the trail was established or (2) promote a sound land management program in accordance with multiple-use principles[7];
- the heads of the federal land management agencies that manage the lands involved (or their designees, as determined by managing agency policy and practice) have concurred[8]; and,
- notice is published in the Federal Register of the availability of appropriate maps or descriptions. (16 U.S.C. 1246(b)).

The proposed comprehensive plan says that the goal of any relocation for the Pacific Northwest Trail would be to select a location that is equal to or superior to the former location in terms of its ability to provide for the nature and purposes of the trail. The proposed action requires that non-substantial relocations undertake an Optimal Location Review, to identify the optimal location for the Pacific Northwest Trail, guided by the following principles:

1. Relocations are opportunities to improve the PNT and better provide for its nature and purposes and other trail values.
2. Relocations promote the seamless connectivity of the PNT and reduce the miles of the PNT on roads and motorized trails.

[7] For the Pacific Northwest Trail, this responsibility has been delegated by the Secretary of Agriculture to the Forest Service.
[8] Or their designees, as delegated by the managing agency policy and practices.

3. Relocations favor public lands and legal easements over areas where public access cannot be permanently secured.
4. Relocations highlight the outstanding scenery and physiographic features of the Northwest and realize opportunities to improve the overall visual quality and scenic attractiveness of the PNT.
5. Relocations provide high-quality settings and opportunities for the primary uses: hiking with an emphasis on long-distance backpacking and, where feasible to accommodate, pack and saddle stock use. In general, relocations should seek to improve the quality of the settings and opportunities for the primary uses.
6. Relocations generally favor natural-appearing wilderness and nonmotorized backcountry settings (including lands with wilderness characteristics) or other places with less development and a more primitive level of access.
7. Relocations allow for a trail alignment on the ground that can sustain the types and amounts of expected use and can be maintained to avoid unacceptable environmental or financial costs.
8. Relocations would allow the trail to be developed and managed in a way that would harmonize with established multiple-use land management plans for that area.
9. Relocations minimize adverse effects to adjacent landowners or land users and their operations.
10. Relocations do not adversely impact or impede access to treaty resources; usual and accustomed fishing, hunting, and gathering areas; or areas of critical tribal concern for affected Tribes[9].

## Changes to the Proposed Action Since Scoping

As a result of consideration of the public comments received in scoping, we edited many of the sections of the proposed action that were included in the scoping document provided for public review. These edits included changes to the Nature and Purposes, Significant Natural, Historical, and Cultural Resources to Be Preserved, National Trail Planning Corridor (including descriptions of consideration of non-substantial relocations and optimal location review), as well as the text of many of the desired conditions and management practices included in Chapter 5 of the proposed comprehensive plan.

## Alternatives Considered but Not Analyzed in Detail

No alternatives to the proposed action are considered in detail in this environmental assessment. The existing proposed action directly responds to the purpose and need's NTSA requirements for components of a comprehensive plan. The Potentially Affected Environment section considers current and ongoing activities and trends in the analysis area and generally discusses continued trends if the proposed action is not taken (Consideration of No Action).

Alternatives to the proposed action were considered by the interdisciplinary team and public commenters during the public scoping period. Some commenters proposed alternative alignments of the trail from the one identified in the scoping document (and identified in the legislation designating the trail). While these alternative alignments of the congressionally-designated alignment of the Pacific Northwest Trail were well framed and provided with supporting rationale of the potential resource benefits in the public comments provided, the interdisciplinary team's consideration of the purpose and need identified that these alignments were outside of the scope of analysis because the alternate routes proposed were well

[9] Principle 10 will be addressed through government-to-government consultation and coordination with tribes regarding the relocation proposal. The Optimal Location Review must not disclose sensitive information about the nature or location of cultural resources or areas of critical tribal concern.

outside of the congressionally-designated location of the PNT and would likely be considered substantial re-alignments and require congressional action. Other alternatives proposed tailoring comprehensive plan direction to a more conservation focus or other carrying capacity limits, but these alternatives were not brought forward either, as they would not have provided a meaningful differentiation in resource effects among alternatives in the resource analysis and in some cases, did not address the full purpose and need for action.

# Agencies and Persons Consulted

## Tribal Consultation

*Based on the nature of the project, the line officer or responsible official made the following determination regarding Tribal Consultation.*

Consultation with American Indian Tribes has been initiated and is ongoing.

Federally recognized tribes maintain government-to-government consultation relationships with the USDA Forest Service (Forest Service) regarding the administration and management of the PNT. In alphabetical order, these tribes include: the Blackfeet Tribe of the Blackfeet Indian Reservation of Montana, Coeur d'Alene Tribe, Confederated Tribes of the Colville Reservation, Confederated Salish and Kootenai Tribes of the Flathead Reservation, Hoh Indian Tribe, Jamestown S'Klallam Tribe, Kalispel Tribe of Indians, Kootenai Tribe of Idaho, Lower Elwha Klallam Tribe, Lummi Tribe of the Lummi Reservation, Makah Indian Tribe of the Makah Indian Reservation, Nooksack Indian Tribe, Port Gamble S'Klallam Tribe, Quileute Tribe of the Quileute Reservation, Quinault Indian Nation, Samish Indian Nation, Sauk-Suiattle Tribe, Spokane Tribe of the Spokane Reservation, Stillaguamish Tribe of Indians of Washington, Swinomish Indian Tribal Community, Tulalip Tribes of Washington, and Upper Skagit Indian Tribe. There are a number of groups and bands that are subsumed within these federally recognized tribes, and some groups retain ties with or belong to the same nation as First Nations in Canada. These tribes retain active cultures and ties to the areas surrounding the PNT.

The Forest Service invited these tribes to consult with the agency regarding the proposed action in letters sent from the regional foresters in August of 2014 and 2022, and individual forests in 2017. The Forest Service held a webinar in October 2022 with interested tribes.

**Table 1. Tribal consultation which has been initiated and is ongoing for this project.**

| Date | Correspondence |
|---|---|
| 8/19/2014 | Letters sent from regional foresters of the Pacific Northwest Region and Northern Region to 23 Tribes (identified as potentially affected by project) to invite consultation on PNT issues |
| 9/6/2017 | Letter sent from Flathead National Forest to two affected Tribes inviting consultation |
| 9/26/2017 | Letters sent from Colville National Forest to two affected Tribes inviting consultation |
| 10/4/2017 | Letters sent from Mt. Baker-Snoqualmie National Forest to 8 affected Tribes inviting consultation |
| 10/6/2017 | Letters sent from Olympic National Forest to 7 affected Tribes inviting consultation |
| 6/24/2019 | MOU signed between Forest Service and Kootenai Tribe of Idaho for ongoing coordination, collaboration, and consultation on PNT issues |
| 8/25/2022 | Letters sent from regional foresters of the Pacific Northwest Region and Northern Region to 23 affected Tribes to invite consultation on development of the PNT proposed comprehensive plan and new service mark design |
| 10/4/2022 | Intertribal informational webinar |
| 2/8/2023 | Letters from Pacific Northwest Region and Northern Region regional foresters to 23 affected Tribes to invite consultation on development of draft EA, proposed comprehensive plan, and new service mark design |
| 7/12/2023 | Letter from Pacific Northwest Region to 23 affected Tribes to invite consultation on the proposed comprehensive plan and provide schedule of next steps in decision-making process. |

# Public and Agency Involvement

The project was first posted to the Pacific Northwest Region Schedule of Proposed Actions in November 2017, and on September 29th, 2022, a scoping document was posted on the project website and sent via GovDelivery to approximately 600 people, agencies, and organizations on the project mailing list and to those who had subscribed for electronic updates on Forest Service projects. Social media announcements were posted, and a press release was shared with news organizations and two legal notices announcing the public scoping period were published on September 29th, 2022. The scoping document and carrying capacity report were also posted to the project website. Following consideration of public comments received, corresponding edits were made to the proposed action and comprehensive plan, and aided development of the EA. The draft comprehensive plan, EA, and supporting documents were posted to the project website to commence a public comment period from March 17th, 2023, to April 17th, 2023.

In compliance with provisions with the NTSA, the Forest Service sent a letter to the governors of the states of Washington, Idaho, and Montana on March 14th, 2023, to invite consultation on the development of the comprehensive plan. Also, given the nature of the project, the Responsible Official also informed the following agencies, organizations, and persons of the proposed action during development of the proposed comprehensive plan (including through the public scoping and EA public comment periods) and analysis process.

**Organizations and Businesses**

Pacific Forestlands, LLC

Pacific Northwest Trail Association

Pacific Crest Trail Association

Continental Divide Trail Coalition

Back Country Horsemen of America

Back Country Horsemen of Washington

Washington Trails Association

Idaho Cattle Association

Yaak Valley Forest Council

Swan View Coalition, Inc.

Friends for the Wild Swan

Idaho Conservation League

Alliance for the Wild Rockies

Friends of the Clearwater

Wilderness Watch

Sierra Club

The Oroville Initiative

Conservation Northwest

Okanogan Highlands Alliance

Boundary Hikers

National Parks Conservation Association

Center For Biological Diversity

BlueRibbon Coalition

Seattle City Light

**State and Local Governments**

Washington State Historic Preservation Office

Idaho State Historic Preservation Office

Montana State Historic Preservation Office

Idaho Department of Lands

Washington Department of Natural Resources

Washington State Parks

Jefferson County

Boundary County

**Agencies**

US Fish and Wildlife Service

National Park Service

Bureau of Land Management

NOAA Fisheries

Advisory Council for Historic Preservation

U.S. Customs and Border Protection

We received approximately 600 individual comments and concerns within 243 letters during the public scoping period. These comments were coded into approximately 90 distinct concerns and of these, approximately 20 were determined to be beyond the scope of analysis (already addressed by law, regulation, policy, or beyond the purpose and need or authority of the Forest Service to address, such as alternative alignments of the trail) or non-substantive in nature (blanket support or against planning effort without rationale or specific concerns). While most of the remaining concerns identified proposed edits to language in the proposed action (comprehensive plan direction), most of these proposed edits were helpful in clarifying the intent of the guidance included and have been incorporated within the updated proposed comprehensive plan. Most of these edits not incorporated in the proposed action (proposed comprehensive plan) would not fit in the purpose and need for action (by not complying with existing law/regulation/policy or the directing legislation requiring components to be included in the proposed comprehensive plan) and may therefore be considered beyond the scope of the planning effort, as well. Approximately 25 of these concerns identified issues (cause-effect relationships between proposed

actions within the proposed comprehensive plan) that are directing the analysis of the environmental assessment (captured in the 14 Issues.) Most of these are directed at recreation issues (including recreational user management, carrying capacity), but there were also questions regarding the effects of the proposed comprehensive plan on threatened, endangered, and sensitive (TES) species (notably grizzly bears), soils and watershed impacts, cultural resources, tribal interests, range resources, visual resources, fire and fuels, and other wildlife species.

In response to the draft comprehensive plan and EA public comment period, we received approximately 600 individual comments and concerns within 115 letters. These comments were coded into approximately 100 distinct concerns and, of these, 13 were determined to be beyond the scope of analysis. Many of the remaining comments (approximately 85 concerns) provided detailed recommendations for edits and components to be included in the comprehensive plan and EA, leading to inclusion of many of them in the current documents prepared for the objection period.

### Supporting Project Documentation

- Scoping Comment Consideration Document
- Draft Comprehensive Plan and EA Public Comment Period Consideration Document

# Environmental Impacts Review

This environmental analysis is conducted according to the Council on Environmental Quality's regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), effective September 14, 2020 (40 CFR §§1500-1508, 85 FR 137, p. 43357, July 16, 2020). These regulations apply to any NEPA process that begins after September 14, 2020.

The Potentially Affected Environment section describes the affected area, setting, and its resources, including ongoing and reasonably foreseeable activities that do or may affect project area resources. It also includes the consideration of the no action alternative. The following sections describe how the project complies with the relevant laws, regulations, and policies. This includes the National Environmental Policy Act section, which describes the degree of effects and other findings the Responsible Official would use to make a Finding of No Significant Impact.

Consistent with the current implementing regulations for NEPA[10], the effects (or impacts) discussions focus on changes to the human environment from the proposed action that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action. This includes those effects that occur at the same time and place as the proposed action and may include effects that are later in time or farther removed in distance from the proposed action or alternatives. Effects do not include those that the agency has no ability to prevent due to limited statutory authority or would occur regardless of the proposed action. Effects may vary in duration as well.

## Potentially Affected Environment

The proposal considers adoption of the proposed Pacific Northwest National Scenic Trail Comprehensive Plan to provide guidance across the approximately 1,200 miles of the Pacific Northwest National Scenic Trail. Past, ongoing and reasonably foreseeable management activities occurring across the congressionally identified alignment of the Pacific Northwest Trail and directly adjacent lands include vegetation management; timber harvest, road maintenance, grazing management; ecosystem and habitat

[10] https://www.federalregister.gov/documents/2020/11/19/2020-25465/national-environmental-policy-act-nepa-compliance

restoration (including non-native species removal, native species reintroduction, and aquatic organism passages); wildfire; post-wildfire management and restoration, invasive plant management; mineral exploration or development; recreational use and management; and special uses such as utilities or rights of way and outfitter and guides. The effects of past or ongoing activities are reflected in the current conditions described in the purpose and need and the potentially affected environment below.

The PNT is a pathway of approximately 1,200 miles that travels through some of the most spectacular and scenic terrain in the United States, connecting the diverse landscapes and communities of the Northwest (inclusive of portions of the West, Inland Northwest, and Pacific Northwest regions). Beginning near the Continental Divide in Glacier National Park, the PNT travels through Montana, Idaho, and Washington before reaching its western terminus at the Pacific Ocean near Cape Alava in Olympic National Park.

# Botany

## Botanical Resources

Extending from Glacier National Park to the Olympic Peninsula, the analysis area has diverse ecological communities, habitat types, and habitat conditions. There is one federally listed plant species known to occur within the PNT project area, whitebark pine (*Pinus albicaulis*), which is listed as threatened. There is no critical habitat identified for this species, and no other known occurrences or critical habitat for any additional federally listed species. There are 55 Forest Service sensitive species and no BLM sensitive species within ½ mile of the trail, see table 15.

The majority of the trail route exists on federal land with at least some degree of resource protection in place in each trail segment location. Federally listed whitebark pine has federal protections on all lands where it occurs (USFWS). There are respective land management plans for Forest Service, Bureau of Land Management, and the National Park Service. Each Federal managing agency is responsible for developing and managing the segments of the PNT on the lands it manages in a way that harmonizes with other authorized land uses, while ensuring the PNT and its nature and purposes and other trail values are provided for. The full extent of the land management direction is described in the proposed comprehensive plan.

### *Culturally Significant Plants*

A wide variety of culturally significant plants occur along the recommended national trail planning corridor. The list of valued species varies by tribe, use, location, and ecological conditions. These species could occur in a wide range of habitats: from exposed ridgelines for species such as bitterroot (*Lewisia rediviva*) in Montana, to Camas (*Camasia quamash*) in valley bottoms, to western red cedar (*Thuja plicata*) and beargrass (*Xerophyllum tenax*) on the Olympic peninsula.

### *Invasive Plants*

Much of the length of the trail is on land that is managed by Federal agencies (primarily the Forest Service and Park Service), with some segments bisecting lands managed by State or local governments, or that are privately owned. In Washington State, where a majority of the non-Federal trail segments exist, county noxious weed control boards, Tribes, cooperative weed management areas, and numerous non-profit organizations are actively managing weeds within their jurisdictions, and partner extensively with various Federal agencies to manage weeds across boundaries at a landscape-level scale. Common prevention measures, educational materials and various invasive plant management programs are in place to varying degrees throughout the affected area and are predicted to continue into the future.

Invasive plants on the State lists that occur within the one-mile recommended national trail planning corridor are listed in table 17 in appendix A. Individual units may have more extensive lists of weeds of concern specific to their area, which may be addressed through local planning efforts, as needed. Approval of the proposed comprehensive plan does not authorize any additional ground disturbance, and therefore does not in itself increase the risk of introduction and spread of invasive plants within the recommended national trail planning corridor. If any ground disturbing projects are proposed in the future related to the trail, effects and mitigation measures related to invasive plants would be addressed at the local level through the NEPA process.

## Climate Variability and Projected Change

The following information synthesizes scientific information on past and projected trends in regional climate.

### Observed Climate Trends

Over the last century, average annual temperatures in northern Idaho, Washington, and northwestern Montana have increased about 2 degrees Fahrenheit (0.2 degrees per decade, NOAA Climate.gov, 2022 Winter temperatures have increased more than other seasons, and daily minimum (nighttime) temperatures have increased more than daily maximums. Annual precipitation in northern Idaho and northwestern Montana has increased about 12 percent over the last 100 years, with greater increases in the spring and summer than autumn and winter. In Washington there may be increased fires, and increased extreme precipitation, flooding, or landslides (Washington Division of Fish and Wildlife, 2022)

### Projected Climate Trends

Climate models are unanimous in projecting increasing average annual temperatures over the coming decades in the Pacific Northwest. The average of 20 different climate models using multiple climate simulations projects that annual temperatures will increase 2.2 degrees Fahrenheit by the 2020s, and 3.5 degrees Fahrenheit by the mid-21st century, compared to the average for 1970 to 1999. Temperature increases are projected to occur during all seasons, with the greatest increases projected in summer.

Projected changes in Pacific Northwest precipitation are more variable among models, but generally suggest no substantial change in the average annual amount of precipitation from the variability experienced during the 20th century. Most of the model's project decreases in summer precipitation, increases in winter, and little change in the annual mean.

### Key Impacts

These projected changes in climate would result in chronic and acute impacts to natural resources in the PNT recommended national trail planning corridor. In many cases, changes in the frequency and magnitude of extreme events (such as droughts and severe fires) would have the most significant and long-lasting consequences for land and resource management and success of restoration.

- Watersheds: Warmer temperatures will lead to decreases in snowpack especially in lower elevation areas and earlier snowmelt. Summer base stream flows will decrease due to earlier snowmelt. A shift from snow to rain in some areas and more intense precipitation events will lead to higher peak stream flows and increase risks from flooding in the winter, which could damage trails, roads, and other infrastructure. In addition, more intense precipitation events will make steep areas more susceptible to landslides (Halofsky et al. 2011; Raymond et al. 2014; Halofsky et al. 2018).
- Glaciers: As the trail starting point suggests, the PNT recommended national trail planning corridor passes through several mountain ranges, including the North Cascades and Olympics,

that include numerous glaciers. Warming is already causing glaciers to recede and is projected to continue (Halofsky et al. 2011; Raymond et al. 2014; Halofsky et al. 2018). For example, a study focused on the Olympic Mountains found that the area lost around half of the area covered by glaciers since 1900, and climate projections suggest that glaciers will largely disappear from the area by 2070 (Fountain et al. 2022). Glacier decline will affect the scenery along the recommended national trail planning corridor. Rocks and debris exposed by glacier recession can damage roads and trails located downslope particularly when intense rainstorms affect these areas (Halofsky et al. 2011; Raymond et al. 2014; Halofsky et al. 2018).

- Sea-level rise: Sea-level rise and associated increased risks from storm surge may affect certain areas of the PNT recommended national trail planning corridor along the Salish Sea and the Pacific Ocean on the Olympic Peninsula (Halofsky et al. 2011).
- Ecological disturbances: Warmer temperatures and increasing drought conditions will increase ecological disturbance activity particularly in the interior areas east of the Cascades. Increasing wildfire activity may increase risks to trail users and will lead to direct impacts to trails, roads, and other trail infrastructure. Post-fire erosion risks will also increase, further stressing infrastructure. Hotter and drier conditions will contribute to increases in insect activity, leading to increased mortality around the area (Halofsky et al. 2011; Raymond et al. 2014; Halofsky et al. 2018).
- Effects on recreation demand and experiences: Warmer temperatures are generally expected to increase usage of trails and other recreational infrastructure. This is especially true for shoulder seasons of the spring and fall. Trail systems like the PNT offer access to higher elevation areas that are generally cooler, and also water features, and thus provide an important resource for people living in communities increasingly being affected by heat waves (Halofsky et al. 2018).

## Fire and Fuels

Fire is a natural process and has shaped ecosystem composition, structure, and function along the PNT. Wildfire emerged as a dominant process in North America after the end of the last glacial period, about 16,500 to 13,000 years B.P., commensurate with rapid climate changes and increased tree cover (Marlon et al. 2009, in Loehman et al 2018). Current and past land use, including timber harvest, forest clearing, fire suppression, and fire exclusion through grazing have affected the amount and structure of fuels in the United States (Allen et al. 2002; Falk et al. 2011; Pausas and Keeley 2014, in Loehman 2018). Fule' (2008) noted, prior to recent human-caused fire exclusion, fire-adapted pine forests of western North America were among the most frequently burned in the world. Approximately 8 million lightning strikes occur globally each day, and lightning starts more than 6,000 fires in the United States each year (Pyne 1982). Climate and fuels are the two most important factors controlling patterns of fire in forest ecosystems. Climate controls the frequency of weather conditions that promote fire, whereas the amount and arrangement of fuels influence fire intensity and spread. Climate influences fuels on longer time scales by shaping species composition and productivity (Dale et al. 2001; Marlon et al. 2008; Power et al. 2008, in Loehman 2018). The effects of climate change on forest vegetation would also depend on the degree to which fire exclusion has affected forest density and fuels (Hessburg et al. 2005, in Raymond et al 2014), particularly in forests that had low- to moderate-severity fires regimes before Euro-American settlement. In these forests where tree density and ladder fuels have increased because of fire exclusion, this forest structure will exacerbate climate driven increases in area burned and severity of burns (Raymond et al 2014).

## Fisheries

Extending from Glacier National Park to the Olympic Peninsula, the analysis area has diverse fish communities, habitat types, and habitat conditions. These conditions are described in detail within a separate Affected Environment fisheries report and summarized here. The fish communities are generally dominated by cold water species. East of the Cascade Mountains, the native game species generally include Westslope Cutthroat Trout and Redband, while west of the Cascades generally include Coastal Cutthroat Trout, steelhead, lamprey, and several salmon species. There are eight federally listed fish species within the recommended national trail planning corridor. They are the Puget Sound Chinook Salmon (T), Upper Columbia River Spring Run Chinook Salmon (E), Upper Columbia Spring Run Chinook Salmon in the Okanogan River Subbasin (X), Hood Canal Summer Run Chum Salmon (T), Puget Sound Steelhead (T), Upper Columbia River Steelhead (T), Bull Trout (T), and White Sturgeon (E). In the list above, E means endangered status, T means threatened, and X means nonessential experimental population.

The Pacific Northwest and Northern regions of the USDA Forest Service and the Bureau of Land Management maintain lists of sensitive fish species they are responsible to protect against a trend towards federal ESA listing. In the Pacific Northwest Region and the Bureau of Land Management Spokane District Office, the trail project area includes streams with sensitive populations of Mountain Sucker, Margined Sculpin, Pacific Lamprey, Olympic Mudminnow, Westslope Cutthroat Trout, Redband, Pygmy Whitefish, and Umatilla Dace. In the Northern Region of the USDA Forest Service, the trail project area includes streams with sensitive populations of White Sturgeon.

The majority of the trail route exists on federal land with at least some degree of resource protection in place in each trail segment location. For example, trail segments within federal land are generally placed a safe distance from water bodies to protect against sedimentation, managed according to particular standards, and receive some level of maintenance (with National Park maintenance likely more frequent than National Forest maintenance due to a more dedicated budget and attention). Generally, National Park Service land is more pristine than National Forest land due to its focus upon preservation. The exception is wilderness areas managed by USDA Forest Service, where the approach is also more aligned with preservation. National Forest System land is managed under a multiple use approach. Generally, a patchwork of management direction protects aquatic and riparian habitat and species on federal lands, including the management plans for the National Park Service and Bureau of Land Management, Wild and Scenic River designations, ESA Critical Habitat designations, and forest plan standards and guidelines. Some trail segments currently exist off of federal land, with less associated management direction to protect aquatic resources.

## Hydrology

The planning area encompasses a large, diverse geographic area and includes the Columbia River Basin and several sizable coastal drainages. The trail crosses six watershed units: Upper South Saskatchewan basin, Pend Oreille and Clark Fork basin(s), Kootenai basin, Upper Columbia basin, Puget Sound streams and Washington Coastal streams.

The PNT crosses the upper tier of the contiguous United States, through lands that are mostly undeveloped and in relatively good hydrologic condition. Along the way the PNT crosses a variety of moisture gradients, as it passes through alpine landscapes, high deserts, temperate rain forests, and coastal areas. The trail also crosses many municipal watersheds along its course.

The PNT travels through lands that serve vital functions in protecting water as a critical ecosystem service. Healthy streams, wetlands, and coastal areas provide habitat for myriad species, including iconic

anadromous salmon and steelhead. The health of aquatic and wetland areas is dependent upon the health of the surrounding watersheds. Improvement of watershed conditions through sustainable land management practices contributes to the quantity and quality of water available.

Given the length and diversity of the trail, there is a wide range of associated riparian conditions. Almost 80 percent of the trail is located in remote locations with very little human disturbance (State and Federally managed lands). Generally speaking, the areas closer to urban concentrations tend to be impacted by urban development, agriculture and other pressures associated with conversion of the landscape.

Watershed disturbances along the trail includes floods, wildfire related disturbances including increased erosion, debris flows and landslides. Larger floods along river systems scour channels and re-distribute sediments from channel migration and channel incision that affect the recommended national trail planning corridor. Precipitation can vary in magnitude, duration, and intensity which can increase erosion risks. Floods can and will occur that affect the trail and trail facilities. Rain on snow events can occur at high to mid elevations that can threaten the trail with increased erosion risks. With climate change, warmer temperatures will shift some precipitation from snow to rain and climate change is expected to lead to more intense precipitation events. This will increase risks from flooding (Halofsky et al. 2011; Raymond et al. 2014; Halofsky et al. 2018). Trail and road designs need to be able to withstand larger flood events in order to be sustainable over time in these dynamic landscapes.

The Columbia River drains about 260,000 square miles of North America and includes portions of both Canada and the United States. In the Columbia River Basin, there are about two hundred and twenty 4th code Hydrologic Units (HUCS). The HUCS delineate watersheds by approximate watershed boundaries. Throughout the Columbia Basin, there are at least 60 dams producing hydroelectric energy. In several locations, the PNT crosses streams and lakes that are moderated by some of these dams. The trail crosses (or closely approaches) the following reservoirs or dams: Lake Koocanusa, Boundary Dam (Pend Oreille River), Enloe Dam (Similkameen River), Ross Dam (Ross Lake and Skagit River) and finally the recently removed Elwha and Glines Canyon Dams (Elwha River, Olympic Peninsula) -- home of the nation's largest dam removal project and second largest ecosystem restoration projects to date.

Numerous natural lakes lie along the PNT. These include glacier-formed lakes such as Bowman Lake, Montana; chain lakes such as Glenns Lake and Cosley Lake, Montana and Priest Lake, Idaho—one of the largest and purest lakes in the United States.

Northwest wetland ecosystems are dynamic habitats emanating from streams, seeps, springs, ponds, lakes, meadows, fens, and bogs. They occur within all terrestrial vegetation communities and are the interface between the terrestrial uplands and open water. The historic extent and flow of springs and seeps are generally unknown but are presumed to be approximately equal to the current extent and flow. Springs and seeps extent and flow have been observed to fluctuate largely as a factor of precipitation. Human impacts (i.e., livestock grazing, water diversions, and recreation) have adversely affected some springs.

Riparian and wetland ecosystems provide water, forage, shelter, and habitat for nesting, roosting, and bedding for many species, some of which can live nowhere else. Riparian areas may include any designated areas that have special considerations for hydrologic effects of land management, including riparian reserves, riparian protection areas, streamside exclusion zones, meadows, wetlands such as fens, and areas included in special management areas. Riparian forests and woodlands differ sharply from surrounding uplands by having a canopy cover dominated often by a variety of deciduous broad-leaved trees often with multi-layered canopies. Riparian habitats and wetlands are highly productive and vital for

wildlife as they provide food, cover, shade, ameliorated microclimate, water, and wildlife nesting and foraging habitats. Many upland wildlife species use riparian habitats during some part of their life cycle.

Stream hydrology, channel geomorphology, and proximity to groundwater are a few of the factors controlling the extent of riparian, wetland, and aquatic habitats. Seasonality, volume, duration, and year-to-year variability of streamflow influence the structure and composition of plant communities along channels and in floodplains. Groundwater fluctuations also affect riparian communities by creating springs, seeps, and ephemeral water bodies.

The PNT passes along multiple biodiverse brackish and saltwater wetland and aquatic environments along the Salish Sea and Olympic Coast, including estuaries, bays, intertidal areas including tidepools and beaches, and the Pacific Ocean. The rocky intertidal areas within Olympic National Park are considered to be one of the most complex and diverse shoreline communities in the United States.

## Hydrologic Review

For most of the streams within the analysis area, the typical peak runoff events generally occur from April through June and are part of the annual snowmelt. Typically, these annual spring snowmelt run-off events tend to be relatively gradual, with low-flow velocities maintained over prolonged time intervals. Some of the planning area is located in the rain-on-snow zone and is susceptible to winter rain-on-snow events that result in rapid snowmelt. Rain on snow events occur in naturally in streams and rivers. The challenge with these events is often associated with infrastructure that is not sized large enough to accommodate these infrequent though significant runoff events. Though a natural process, rain-on-snow flood events can markedly alter stream channels.

Both un-designated and designated municipal watersheds are present in the recommended national trail planning corridor. Currently there are no effects from the trail on municipal watershed water quality or quantity. These watersheds could use surface water, groundwater, or both for water supplies. Many other watersheds controlled partially or wholly by other government or private interests along the PNT could reasonably qualify as providing water for municipal supply.

### Surface Water Quality

Improvements to the Nation’s waters over the past three decades are largely due to the control of traditional point sources of water pollution. However, a large number of waterbodies remain impaired and the goal of eliminating pollutant discharge and attaining fishable and swimmable waters is still unrealized. Non-point sources of pollution such as runoff from forest roads, agricultural fields, construction areas, forestry, and mining are responsible for much of the nation’s remaining water quality impairment. The desired condition is that water quality meets or exceeds each States’ standards or Environmental Protection Agency water quality standards for designated uses, and water quality meets critical needs of aquatic species where they occur.

Watershed conditions, or watershed condition class, along the PNT varies depending on amount of disturbance that has occurred within each watershed and the effect of the disturbance on the natural integrity of the watershed as a whole. Disturbances within the watersheds that can lead to water quality changes can result from impacts such as roads, logging, mining, recreation, grazing, and special uses activities that can adversely affect a watershed's condition. The severity of effects is influenced in part by the local terrain, fire regime, precipitation, and potential geological hazards.

Currently along the PNT recommended national trail planning corridor, an important non-point source of pollution is from sediment generated from roads and development in close proximity to drainages, from

residual effects of past, and in some cases, current livestock grazing and from short term impacts of ground disturbing activities such as timber harvest and high severity fire. Before widespread implementation of best management practices in the1980s, timber harvesting was widespread and was also a non-point source of pollution in the form of sediment delivery off-site and into adjacent stream courses. Currently on federal lands efforts are made to implement and monitor site-specific best management practices for all activities with the potential to pollute waters (USDA 2012).

Generally, water quality impacts along the trail from the trail including sediment erosion and delivery to stream channels are not significant over the recommended national trail planning corridor watersheds and landscapes.

Trail stability is mainly tied to managing runoff and trail erosion. Studies of trail use have found in general that rainfall and slope gradient are very important factors to consider in designing stable, sustainable trails. Soil properties that influence erodibility such as structure, texture, and moisture content also influence the stability of trails.

**Figure 2. Intermittent stream crossing best management practice in place along a section of the PNT in the North Cascades.**

The use of best management practices and design features along the trail help control the risk of sedimentation and sediment delivery to streams and has helped ensure the trail is not adversely impacting aquatic resources. Best management practices help to disperse and infiltrate surface flows on the trail. A

more comprehensive inventory of erosion problems on the trail under current conditions would likely indicate there are areas where there are impacts that have led to sedimentation from the trail and associated roads. There would also be stream banks or places where lake shorelines along waterbodies have been trampled or disturbed by users. However, because the trail is currently constructed in many areas along the route these disturbed areas are likely minor contributors to overall non-point source pollution along the trail since best management practices and design features are currently used along much the length of the trail to reduce risk of water quality effects of the trail. Most of the PNT route utilizes trails that pre-date it; that is, the trail prism was constructed prior to and independent of the PNT. There are also short sections along the PNT route where there is no trail tread in place ("cross country" or "bushwhack" sections) as well as "interim route" sections where the route utilizes roads.

A broad scale summary of existing water quality problems along the trail recommended national trail planning corridor are listed in table 2. These pollutants are not widespread along the recommended national trail planning corridor. Most of the water quality impacts are related to channel and streamside alterations due to dams and human caused channel changes that affect stream temperature, fertilizer or farm and municipal runoff, ecological changes in stream biota due to a combination of human influences on water bodies, or mining wastes reaching streams.

Mining has affected water quality in some areas along the PNT with effluent derived from leaching of mine tailings contaminating surface and ground waters. Mining related water quality impairment is an on-going problem in some streams along the recommended national trail planning corridor.

Water quality problems where water bodies are listed on the State 303(d) list often occur on larger rivers streams, and lakes that cross the recommended national trail planning corridor (table 2). Other effects include large fires, drought or extreme flood events that can have an effect on water quality along the PNT. Typically, flood and fire events only affect water quality for a short period of time (1 to 5 years) before natural stabilization and recovery occur. In mountainous areas sometimes floods and fire effects can last decades or hundreds of years. Fire histories in many areas show that wildfires are common along the PNT recommended national trail planning corridor, so in fire areas water quality, debris flows or flooding effects from fires should be expected by trail users.

Lakes along the PNT recommended national trail planning corridor such as Lake Koocanusa and Lake Roosevelt can also have water quality problems, and these problems are not caused by the trail or related to it. Using these lakes as a water source may be possible with filtration or other treatment methods.

The most common type of broad scale water quality impairment was stream temperature. Farm runoff, fecal coliform and mining or industrial pollutants occur less frequently. Much of the recommended national trail planning corridor is minimally affected by water quality impairment, as seen in figure 2.

**Table 2. River and lake water quality impairment along the PNT recommended national trail planning corridor**

| STATE | Water Quality Impairments along Recommended National Trail Planning Corridor | Source |
|---|---|---|
| Idaho | benthic macroinvertebrates bioassessments | Ecological change in water |
| Idaho | combined biota and habitat bioassessments | Ecological change in water |
| Idaho | temperature | Channel or riparian water discharge |
| Montana | nitrate/nitrite (nitrite + nitrate as n) | Farm and municipal water discharge |
| Washington | dissolved oxygen | Organic enrichment of $H_20$ |
| Washington | fecal coliform | Farm or municipal runoff |
| Washington | mercury and selenium | Mining waste discharge or erosion |
| Washington | pH | pH, acidity, and caustic conditions |
| Washington | temperature | Channel or riparian water discharge |
| Washington | total PCBs | Industrial chemical discharge |

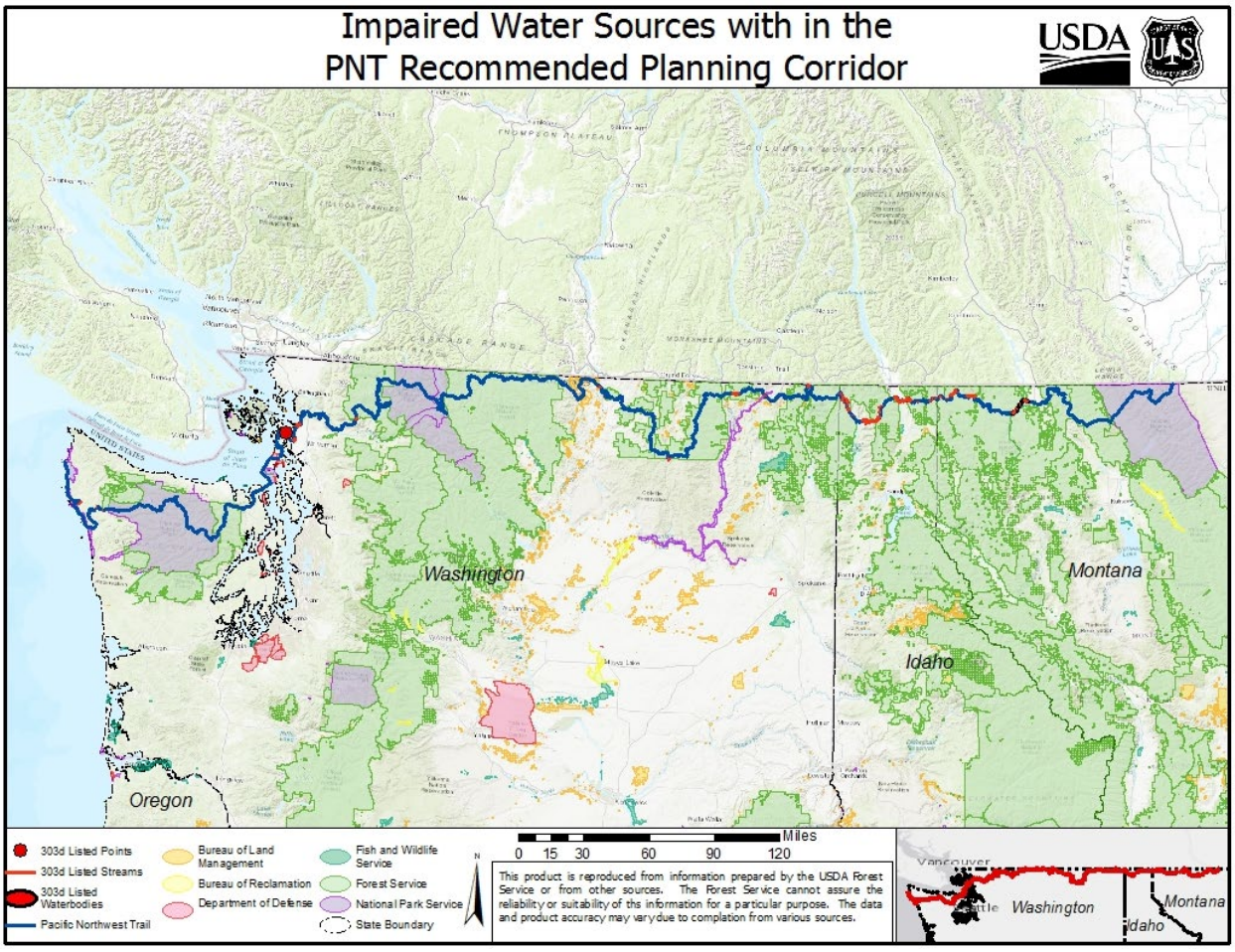


**Figure 3. Broad-scale map showing 303(d) listed water bodies in the trail corridor. A large part of the corridor is not affected by impaired waters.**

Trail users should be careful when choosing water sources along the trail as natural sources such as springs and smaller streams may be contaminated with bacterial or other impairments. All water should be effectively treated for micro-organisms before drinking. Consult the appropriate trail management agency for the latest information on water sources.

## Range and Grazing Operations

On National Forest System lands, there are thirty-two active livestock grazing allotments that intersect the PNT recommended national trail planning corridor. Table 3 shows the total acres (108,866) of active and vacant grazing allotments on the respective National Forest's ranger districts.

**Table 3. Grazing allotments on National Forests**

| National Forest | Ranger District | Active (acres) | Vacant (acres) |
|---|---|---|---|
| Colville National Forest | Republic Ranger District | 30,819 | 0 |
| Colville National Forest | Tonasket RD | 28,530 | 4,434 |
| Coville National Forest | Sullivan Lake RD | 4,857 | 0 |
| Kootenai National Forest | Three Rivers RD | 20,993 | 3,743 |
| Kootenai National Forest | Rexford Ranger District | 5,555 | 0 |
| Kootenai National Forest | Fortine Ranger District | 0 | 9,931 |

## Recreation

The PNT offers diverse and superlative nonmotorized recreation opportunities on one trail, including hiking and trail running, horseback riding and mountain biking, and in winter, cross-country skiing, and snowshoeing. It connects communities to the outdoors and invites recreationists to explore some of most remote and rugged landscapes in the Northwest. Near gateway communities, the PNT serves as a "backyard" asset for residents' everyday activities such as getting exercise, spending time with family and friends, walking dogs (where allowed), relaxing, and connecting with nature.

Recreation opportunities across a variety of settings the trail provides are central to the nature and purposes of the trail. The importance of the recreation opportunity is emphasized in the NTSA that states national scenic trails will be located to provide for maximum outdoor recreation potential as well as the conservation and enjoyment of the scenic, historic, natural, and cultural resources in the areas through which these trails pass (16 U.S.C. 1242(a)(2)).

**Table 4. Recreation Opportunity Spectrum on National Forest System lands**

| ROS Class | Miles | Acres within the minimum recommended national trail planning corridor |
|---|---|---|
| Primitive | 113.8 | 65,281.9 |
| Semi-Primitive Non-Motorized | 154.1 | 86,018.6 |
| Semi-Primitive Motorized | 64.4 | 26,487.3 |
| Roaded Natural | 161.2 | 71,993.1 |
| Roaded Modified | 74.1 | 44,148.4 |
| Rural | 3 | 661.1 |
| Water* | .05 | 3,862.5 |

*Water is identified as the ROS class along Baker Lake on the Mt. Baker Snoqualmie National Forest

## Wilderness Areas

Adding to the diversity of the trail setting, the trail travels through six federally designated wilderness areas (the Salmo-Priest Wilderness in Washington; and the Pasayten, Stephen Mather, Mount Baker, Buckhorn, and Daniel J. Evans wilderness areas in Washington), the Chopaka Mountain Wilderness Study Area in Washington, and also lands managed for wilderness characteristics, and other rugged backcountry areas. The proposed comprehensive plan includes a list of all wilderness areas that the trail passes through (see the proposed comprehensive plan, chapter 4, under the "Wilderness" heading). A total of 287 miles, or approximately 24 percent of its length is within designated wilderness areas that are managed to preserve wilderness character, including outstanding opportunities for solitude or primitive and unconfined recreation, among other qualities (Wilderness Act of 1964, Section 2 (c)). The interagency wilderness character monitoring strategy, Keep it Wild 2, defines wilderness character as a holistic concept based on the interaction of (1) biophysical environments primarily free from modern human manipulation and impact, (2) personal experiences in natural environments relatively free from the encumbrances and signs of modern society, and (3) symbolic meanings of humility, restraint, and interdependence that inspire human connection with nature. Taken together, these tangible and intangible values define wilderness character and distinguish wilderness from all other lands (Landres et al 2015).

Wilderness and backcountry settings are identified as important trail values in chapter 3 of the proposed comprehensive plan. The Federal managing agencies are responsible for managing wilderness resources in compliance with the Wilderness Act of 1964.

## Gateway Communities

On the opposite end of the spectrum, the trail passes through several small gateway communities such as Polebridge, Montana and Oroville, Washington, and larger urban areas such as Anacortes, Oak Harbor and Port Townsend, Washington. Gateway communities provide re-supply opportunities for long-distance hikers, and the trail provides important recreational opportunities for the health and well-being of residents.

## Other Special Designated Areas

The trail passes through numerous congressionally designated areas and other special areas including national scenic and historic trails, national recreation trails, wilderness areas, wild and scenic rivers, national estuarine research reserves, national heritage areas, national marine sanctuaries, international biosphere reserves, international peace parks, and world heritage sites. These are discussed in detail in chapter 4 of the proposed comprehensive plan.

The recreation settings and opportunities also vary across different jurisdictions along the trail. Approximately 70 percent of the trail crosses federal land (Forest Service, Bureau of Land Management, and National Park Service), and approximately 30 percent crosses lands managed by tribal, state, county, or municipal governments, or private landowners.

## Developed and Dispersed Recreation

The primary recreation facilities associated with the trail are trailheads and campgrounds. Trailheads serve as the primary access points to the trail and provide locations where information about trail conditions, safety concerns, or interpretive messages can be posted on informational signs. Many of the trailheads are signed, are located on maps, and trailhead location information can be accessed online by trail users.

The trail passes through five National Park Service units. From east to west, these are Glacier National Park, North Cascades National Park Service Complex, Ross Lake National Recreation Area, Ebey's Landing National Historical Reserve, and Olympic National Park. Each has a unique set of visitor facilities and opportunities.

Most national forest recreation sites along the trail are campgrounds but there are also lakes, historic cabins, and fire lookout towers near the trail. Dispersed camping along the trail is generally allowed on public lands managed by the Forest Service and Bureau of Land Management. Camping is allowed only in designated campgrounds or campsites with backcountry permits in the National Park Units.

The PNT overlaps portions of two popular, long-distance trails, the Continental Divide National Scenic Trail and the Pacific Crest National Scenic Trail.

## Visitor Use and the National Scenic Trail Visitor Experience

The proposed comprehensive plan includes a description of the primary trail uses (see chapter 3, Trail Values). The primary use of the PNT that guides its administration and management is hiking, with an emphasis on long-distance backpacking. The PNT is administered and managed to ensure it provides a nationally significant opportunity for continuous end-to-end travel to complete the entire PNT on foot (thru-hiking). It also provides opportunities for shorter trips on foot, ranging from day hiking to multi-day backpacking trips on sections of the PNT. Some hikers complete the entire PNT by hiking different sections over the course of multiple trips and years (section hiking).

Currently, the Forest Service estimates that about 80 people attempt to thru-hike the PNT each year. The typical thru-hiking season is mid-June through mid-September. It is important to note that this is an estimate based on triangulating various data sources. The number of thru-hiking attempts (versus completed thru-hikes) may be higher. One of the data sources used to estimate the number of attempted thru-hikes each year is the trail "journal" at Canuck Peak on the Three Rivers District, Kootenai National Forest. Another data source is the level of interest and PNT map set requests reported by the Pacific Northwest Trail Association, which in past years has roughly tracked with trends managers saw from this trail journal (or register).

Levels of visitor use vary widely across the long-distance trail; visitor use is concentrated in several popular areas with light to moderate use in other areas. Visitor use data is collected by local managers in different ways across the trail. Examples of available visitor use data include National Park System backcountry campsite permits, self-issued wilderness permits, and trailhead visitor registers. Faculty and student researchers from the University of Montana have partnered with the Forest Service to monitor visitation at locations along the PNT in Montana since 2017, and in Idaho since 2021. They have conducted studies of PNT visitors' attitudes and actual travel routes and produced maps and geospatial analyses to inform visitor use management (Thompson et al, 2022). Separately, the Forest Service's National Visitor Use Monitoring (NVUM) program is conducted on National Forest System lands every five years. Some sites along the PNT are included in the NVUM monitoring reports.

Visitor use of the Pacific Northwest Trail is expected to continue to increase as the population of adjacent communities increases and as the trail becomes more well-known to the thru-hiking community. The influence of social media, books, and movies has driven an increased interest in long-distance trails over the past several years. For example, the PNT is featured in several guidebooks, and a recent documentary film series. Technology such as smart-phone apps has made trip planning and trail navigation resources much more accessible. Climate change may also drive increases in recreational usage since the recommended national trail planning corridor includes considerable amounts of higher elevation cooler

areas (Halofsky et al. 2018). However, increases in wildfire activity associated with climate change may increase the likelihood of closures and infrastructure damage that may interrupt thru-hikers' ability to complete the trail in a given season (Halofsky et al. 2022).

### Information and Interpretation

The proposed comprehensive plan includes an overview of existing information, interpretation, and other visitor services in chapter 5.

### Partnerships and Volunteers

The NTSA recognizes the valuable contributions that volunteers, private, and nonprofit trail groups have made to the development and maintenance of the nation's trails and encourages "volunteer citizen engagement in the planning, development, maintenance, and management, where appropriate, of trails" (16 U.S.C. 1246 Sec. 2 (a)).

The PNT has a long history of partnership and volunteer efforts including the original trail route identification, trail designation, and ongoing trial stewardship. The Pacific Northwest Trail Association serves as the primary partner organization with the Forest Service for the PNT, providing key services including visitor information, trail maintenance, and volunteer programs (see chapter 2 and chapter 6).

In 2021, the Pacific Northwest Trail Association had 160 active volunteers who contributed more than 5,800 hours of service to the PNT, a value of more than $165,000 (Partnership for the National Trails System 2022).

## Socioeconomics and Environmental Justice

### Socioeconomics

#### *Communities*

The trail passes near or through small and large communities as it travels through Montana, Idaho, and Washington. Smaller gateway communities along or near the trail provide supplies and amenities for trail users. Larger communities farther from the recommended national trail planning corridor provide transport hubs, specialized amenities, and public services. The trail and associated sites serve as a destination attraction, recreation for nearby communities, for visitors passing through or visiting the region. Users can also experience solitude or a deep connection to history and scenic beauty along the trail in many sections.

Table 5 displays total population and population change between 2010 and 2020 in selected communities adjacent to the trail. The majority of communities are small towns or unincorporated places.

**Table 5. Total population of selected communities, 2010 and 2020**

| Town | Population 2010 | Population 2020 | Percent of population change 2010-2020 |
|---|---|---|---|
| East Glacier Park Village, MT | 550 | 315 | Decreased 42.7 percent |
| Eureka, MT | 1,196 | 1,517 | Increased 26.8 percent |
| Yaak, MT | 161 | 299 | Increased 85.7 percent |
| Bonners Ferry, ID | 2,613 | 2,639 | Increased 1.0 percent |
| Metaline Falls, WA | 322 | 256 | Decreased 20.5 percent |
| Northport, WA | 325 | 306 | Decreased 5.8 percent |
| Republic, WA | 1,345 | 1,144 | Decreased 14.9 percent |
| Oroville, WA | 1,977 | 1,842 | Decreased 6.8 percent |
| Concrete, WA | 977 | 915 | Decreased 6.3 percent |
| Sedro-Woolley, WA | 10,320 | 11,919 | Increased 15.5 percent |
| Anacortes, WA | 15,668 | 17,231 | Increased 10.0 percent |
| Oak Harbor, WA | 22,017 | 23,358 | Increased 6.1 percent |
| Coupeville, WA | 1,777 | 1,850 | Increased 4.1 percent |
| Port Townsend, WA | 9,074 | 9,710 | Increased 7.0 percent |
| Port Angeles, WA | 19,073 | 20,071 | Increased 5.2 percent |
| Forks, WA | 3,509 | 3,864 | Increased 10.1 percent |

Note: Due to small sample sizes, community-level data typically have large errors, particularly in rural areas. Therefore, the estimates for any one town, outside of the major cities, should be interpreted with caution. Source: U.S. Department of Commerce. 2022.

The Pacific Northwest Trail Association's website, https://www.pnt.org/, is the primary resource for visitor information about the PNT, particularly for information about planning thru-hikes or other long-distance journeys on the PNT. The Pacific Northwest Trail Association's website contains detailed trail information organized by geographic regions. The Pacific Northwest Trail Association has also partnered with some gateway communities to host kiosks with information about the PNT. See proposed comprehensive plan for additional discussion (p.97).

A 2016 report commissioned by a Tri County Economic Development District located in Northeastern Washington describes the relationship of three gateway communities with the PNT trail and users (Pal 2016). Every community is unique, however some of the concerns and opportunities cited in this report likely provide an understanding of the impact that the trail and users can have on other communities along the trail. Opportunities included new or expanded business opportunities such as sporting and outfitting stores and shuttle services, developing day-trip experiences to draw casual hikers and families, and develop local history and community pride and increase local use of trail to support healthier lifestyles. Threats and concerns of the trail included thru-hiker traffic highly concentrated during short summer period, lack of community funding to promote trail and residents resistant to change or dislike of tourists.

### *Economic Contribution of Recreation Use*

Due to the availability of visitor use and expenditure data on Forest Service lands, Forest Service recreational visitor data will form the basis of this qualitative assessment of the economic contribution of trail use to gateway communities. The seven National Forests the trail crosses, and the relative percentage of the trail acres on each Forest, are displayed in table 6.

**Table 6. Percent of total trail miles by national forest**

| National Forest | Trail Miles | Percent of Trail Miles |
|---|---|---|
| Flathead | 29 | 2 |
| Kootenai | 117 | 10 |
| Idaho Panhandle | 70 | 6 |
| Colville | 228 | 19 |
| Okanogan-Wenatchee | 85 | 7 |
| Mt. Baker-Snoqualmie | 77 | 6 |
| Olympic | 33 | 3 |
| Not on National Forest Lands | 582 | 48 |

Source: USFS GIS calculations

The trail is open to non-motorized recreation (except where specifically recognized). Foot travel includes day-hikers, backpackers, thru-hikers, and runners. The trail is also used by cross-county skiers, equestrians, mountain bikers and other trail users, where permitted.

Visitor use data specific to the trail is not available. However, the seven national forests that intersect the trail conduct quinquennial forest-wide visitor use and expenditure surveys through the National Visitor Use Monitoring program (USFS, 2022). While most of these recreation visits are likely not to the PNT, the forest-level data provide insight into regional recreation visitor characteristics, including distance traveled to recreate and typical activities when visiting the National Forests.

Table 7 displays the number of annual recreation visits, by National Forest, the share of visitors who engaged in activities common on the trail, and the share of visitors who traveled more than 50 miles to recreate on the forest (that is, "non-local" visitors). These data indicate that hiking and walking is a very common activity among visitors to all seven national forests. Backpacking is a less common recreational use.

**Table 7. Forest visitor recreation and activities**

| National Forest | Total Site Visits (1000s) | Percent of Forest Visitors traveling greater than 50 Miles | Percent of Visitors Participating in Hiking or Walking | Percent of Visitors Participating in Backpacking |
|---|---|---|---|---|
| Flathead | 1335 | 21.4 | 31.5 | 1.3 |
| Kootenai | 533 | 45.3 | 36.1 | 1.6 |
| Idaho Panhandle | 1694 | 34.8 | 36.7 | 1.0 |
| Colville | 302 | 49.2 | 38.4 | 0.3 |
| Okanogan-Wenatchee | 3564 | 71.9 | 28.3 | 2.9 |
| Mt. Baker-Snoqualmie | 1961 | 55 | 61.1 | 2.8 |
| Olympic | 722 | 49.1 | 76.3 | 4.8 |

Source: USFS 2022

Trail users spend money on goods and services, such as food, lodging, and local transportation in communities near the trail. Many trail users are also likely to spend money to support their trip outside the

gateway communities. For instance, gear and long-distance travel contribute to economic activity, but those purchases are unlikely to occur in communities adjacent to the trail.

Non-local visitors (those who travel more than 50 miles to reach the recreation site) introduce "new money" – that is, money that would not otherwise be spent in the area – to gateway communities. Therefore, distinguishing between local and non-local visitors is essential to identify the economic contributions of recreation users.

A subset of the National Visitor Use Monitoring survey respondents is asked to complete an economic survey (USFS, 2022). This survey requests that visitors report their local trip expenditures. These include spending on lodging, food, fuel, souvenirs, and other goods and services within 50 miles of the recreation site. Based on the aggregation of these survey results, national forests are classified as "above-average," "below-average," or "average" in terms of visitor expenditures (White et al., 2017). Table 4 displays the visitor expenditure classification for each of the seven national forests. These indicate that visitors to the National Forests across the PNT tend to spend less on average than other National Forests. Higher visitor expenditures are expected to increase the economic contribution of recreation in gateway communities.

Activity specific estimates suggest backpackers and primitive camping activities generate the lowest per trip visitor spending—nationally between $102 and $177, per party, for below-average and average spending forests, respectively (2014 dollars updated to 2022 dollars using CPI-U; White, 2017). Visitors spend on a variety of goods and services, however for primitive camping and backpacking recreationalist the highest spending categories are restaurants, groceries, and gas, on average, followed by motels and sporting goods (White 2017).

The PNT's distance or ease of access to town centers and hiker amenities will affect the actual impact on local economies. Towns and amenities which are harder to access will realize less impact from trail use. Shuttle services both as business opportunities and volunteer run are one way to connect local communities and the trail.

**Table 8. Visitor spending classification**

| National Forest | Visitor Spending Classification |
|---|---|
| Flathead | Average |
| Kootenai | Average |
| Idaho Panhandle | Average |
| Colville | Below-average |
| Okanogan-Wenatchee | Average to Below-average* |
| Mt. Baker-Snoqualmie | Below-average |
| Olympic | Below-average |

*In previous rounds of the NVUM survey these national forest units were surveyed separately. Source: White 2017

## Environmental Justice

Executive Order 12898 directs Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations. Table 9 and table 10 display county level demographics. Following guidance laid out in Grinspoon et al. (2014) counties with a "meaningfully greater" portion of minority populations or poverty populations have light shading and are found along the entirety of the recommended national trail planning corridor. These include Glacier and Lincoln counties in Montana, Boundary County, Idaho and Ferry, Skagit, and Okanogan counties in Washington. County-level demographic averages may obscure Environmental

Justice populations that could be present at a smaller scale. Disproportionate impacts to low income and minority populations will be considered in the effects analysis.

**Table 9. Percentage of people below poverty threshold, 2020**

| County | Percent of people below poverty |
|---|---|
| Glacier County, Montana | 30 |
| Flathead County, Montana | 10 |
| Lincoln County, Montana | 17 |
| Boundary County, Idaho | 20 |
| Bonner County, Idaho | 13 |
| Pend Oreille County, Washington | 10 |
| Stevens County, Washington | 13 |
| Ferry County, Washington | 17 |
| Okanogan County, Washington | 21 |
| Whatcom County, Washington | 14 |
| Skagit County, Washington | 11 |
| Island County, Washington | 8 |
| Jefferson County, Washington | 14 |
| Clallam County, Washington | 13 |
| Idaho | 11 |
| Washington | 10 |
| Montana | 12 |
| United States | 13 |

Source: U.S. Department of Commerce, 2022

**Table 10. Race and ethnicity, percentage of population, 2020**

| County | Black or African American alone | American Indian alone | Asian alone | Native Hawaii and Other Pacific Is. alone | Some other race alone | Two or more races | Hispanic or Latino (of any race) |
|---|---|---|---|---|---|---|---|
| Glacier County, MT | 0 | 64 | 0 | 0 | 1 | 3 | 3 |
| Flathead County, MT | 0 | | 1 | 0 | 1 | 3 | 3 |
| Lincoln County, MT | 0 | 1 | 0 | 0 | 1 | 4 | 3 |
| Boundary County, ID | 0 | 1 | 1 | 1 | 1 | 2 | 5 |
| Bonner County, ID | 0 | 1 | 1 | 0 | 1 | 3 | 3 |
| Pend Oreille County, WA | 0 | 3 | 1 | 0 | 3 | 5 | 4 |
| Stevens County, WA | 0 | 5 | 1 | 0 | 0 | 4 | 4 |
| Ferry County, WA | 0 | 14 | 0 | 0 | 0 | 8 | 5 |
| Okanogan County, WA | 0 | 10 | 1 | 0 | 11 | 6 | 20 |
| Whatcom County, WA | 1 | 3 | 4 | 0 | 4 | 6 | 10 |
| Skagit County, WA | 1 | 2 | 2 | 0 | 9 | 5 | 19 |
| Island County, WA | 3 | 1 | 5 | 0 | 2 | 6 | 8 |
| Jefferson County, WA | 1 | 2 | 2 | 0 | 2 | 4 | 4 |
| Clallam County, WA | 1 | 5 | 1 | 0 | 1 | 5 | 7 |
| Idaho | 1 | 1 | 1 | 0 | 4 | 6 | 13 |

| County | Black or African American alone | American Indian alone | Asian alone | Native Hawaii and Other Pacific Is. alone | Some other race alone | Two or more races | Hispanic or Latino (of any race) |
|---|---|---|---|---|---|---|---|
| Washington | 4 | 1 | 9 | 1 | 5 | 9 | 13 |
| Montana | 1 | 6 | 1 | 0 | 1 | 4 | 4 |
| United States | 13 | 1 | 6 | 0 | 6 | 7 | 18 |

Source: U.S. Department of Commerce, 2022

## Soils

Soil existing conditions will focus on how the PNT is currently and will not discuss historical or future construction. Existing conditions will evaluate the PNT within a half mile of the center line on both sides across the length of the trail. The majority of the trail clearing in this one-mile recommended national trail planning corridor would be done by hand crews, and where mechanized equipment is used soil best management practices should be incorporated into the project design by the agency with authority. There are sections of the PNT that use roads as an "interim route" and those sections will not be considered soil. Paved and natural surface roads are not part of the productive land base and are not considered functioning soil. There are also short sections along the PNT where there is no trail tread in place and hikers traverse over natural vegetation, soil, and rocks. Foot traffic has a very minor impact to native soils and further discussion of "interim routes" would be limited to areas of concern within each geographic region.

### Rocky Mountains

The PNT crosses soils that can have limited development along ridgeline and mid-slope elevations in this region. These soil types generally have a high rock content with fine grain soil interspersed throughout the soil matrix. Several sections of the trail use a switchback design that reduces the amount of linear overland water flow that creates soil erosion (rill or gully).

As the trail descends into river and creek valley bottoms soil types generally change to more fine textured soil with less rock content and higher soil productivity. The trail in many of these lower valleys follow pre-existing roads such as Bowman Lake Road, Sinclair Creek Road, Lake Koocanusa Scenic Byway, and the Moyie River Road just to name a few. It is assumed that there is some amount of road-stream interaction that is delivering sediment to waterways, but that is site specific, and the scale of this analysis does not cover that. More discussion on sediment delivery can be found in the Hydrology Report (McNamara 2023).

Contacts with local soil scientists in the Rocky Mountain region did not raise any concerns that detrimental compaction and erosion conditions currently exist in this region. There may be small sections of trail that have erosion issues that are identified and fixed by local trail crews or professionals. These areas are noted within Glacier National Park, specifically where there are sensitive soils near passes where alpine soils are thin and easily eroded. Approximately 9,641 acres (14 percent) are mapped with severe or very severe erosion hazard rating within the project boundary on the Flathead National Forest. Based on local knowledge, no areas of instability exist along the trail itself, although landslides are evident within Glacier National Park.

### Columbian Rockies (Columbia Plateau)

The Columbian Rockies region is very similar to the Rocky Mountain region in that the ridgeline and mid-slope soils are generally rocky with fine textured soil interspersed throughout the soil matrix. There is a noted increase in volcanic ash cap soils (Andisols) found in the Columbian Rockies that increases soil

water holding capacity, nutrient stores, and overall increased soil productivity. Ash cap soils can be highly erodible due to the silt size particles of ash that are diagnostic of this soil type. As the trail follows valley bottoms, organic rich grassland soils (Mollisols) are a common occurrence. These areas can be mixed use due to the high value soil used for agriculture purposes.

As is common in all regions, most valley bottom trail locations follow existing paved or natural surface roads such as Boundary Road, State Route 31, Highway 97, and the Loomis-Oroville Road unless the trail is in a wilderness setting such as the Salmo-Priest Wilderness. Road-stream interactions are likely occurring and are very site specific.

Erosion hazard and instability ratings exist on the Forest Service lands within this region. Approximately 44,224 acres of land on the Colville, Idaho Panhandle and the Kootenai National Forests are mapped with low erosion hazard rating, 41,147 acres with moderate erosion hazard ratings and 28,651(11 percent) acres with high or very high erosion hazard ratings within the recommended national trail planning corridor. There was no major detrimental erosion or compaction detailed by local soil scientists within this region. No known instability issues exist along the trail in this region either, but approximately 13,066 (5 percent) acres of mapped unstable soils exist within the project boundary in this region.

**North Cascades**

The North Cascades region generally has thin, rocky ridgeline and mid-slope soils that have minimal soil formation on slopes that can range from 15 percent to greater than 45 percent. Where benches and swales occur there is generally a thick deposit of volcanic ash that is fine textured, silt size material. A large section of trail in this region crosses the Pasayten Wilderness, and trail construction and repair is generally done by hand crews. The local soil scientist does not know of any existing detrimental soil conditions occurring as a result of the PNT in the Pasayten Wilderness.

The Wilderness section of trail ends at Ross Lake where it follows an existing road. Again, there is a high probability of road-stream interactions along this section of road and would be identified at the local level. The trail then crosses the North Cascades National Park and Mt. Baker Wilderness. The trail in these areas crosses similar soil types found in the Pasayten Wilderness and would have similar existing soil conditions. No current detrimental soil condition issues were raised by local professionals.

Landslides and unstable soil areas are natural processes and many soil types across the North Cascades do have high inherent hazards of erosion, mass wasting and landslides. These are natural processes, which have occurred over long time periods and are fundamental factors in creating the current landscape. Approximately 12,117 acres (seven percent) of unstable soils are mapped (where these soils types are actually mapped) in the North Cascades region within the one mile recommended national trail planning corridor. Within the National Forests in this section of the trail there are 39,513 acres of severe or very severe erosion hazard ratings within the Okanogan-Wenatchee National Forest and 21,611 acres on the Mt. Baker Snoqualmie National Forests making up about 37 percent of the Forest Service lands in this region.

**Puget Sound**

The PNT follows more existing roads in the Puget Sound region than any other. The roads can be mixed use and have a natural or paved surface. Where the trail follows existing roads along streams and rivers there may be erosion from the road-stream interactions and those areas are identified by specialists at the local level. The natural surface trails, such as Oyster Dome Trail and Padilla Bay Share Trail, have a combination of glacial till dominated soils and volcanic ash cap soils. Both of these soil types are highly erodible. However, there was no existing detrimental erosion or compaction identified from local

professionals and a GIS review identified several sections of trail that have switchback designs that minimize rill and gully erosion from the trail prism.

Landslides and unstable soil areas are natural processes and many soil types across the Puget Sound region do have high inherent hazards of erosion, mass wasting and landslides. These are natural processes, which have occurred over long time periods and are fundamental factors in creating the current landscape. This section of the trail has steep bluffs that are eroding and fragile, which would require monitoring and specific trail maintenance in order to protect the area.

**Olympic Peninsula**

The Olympic Peninsula region has a mix of existing trail, such as the Larry Scott Trail that transitions into existing paved and natural surface roads. Generally, soils within the Olympic Peninsula region are derived from glacial till, marine deposits and glaciolacustrine deposits with sandy loam textures and higher coarse fragments. There are areas of high soil saturation and hydric soil indicators may be found along the trail path. The hydric conditions are due in part to the high amount of rainfall certain areas of the Olympic Peninsula receives (45 to 200 inches per year). The existing trail found in the Daniel J. Evans Wilderness and Buckhorn Wilderness has sections that have a switchback design that will help prevent rill and gully erosion and detrimental soil conditions are identified at the local level. Contact with local soil scientist did not indicate any current detrimental soil conditions.

Landslides and unstable soil areas are natural processes and many soil types across the Olympic Peninsula do have high inherent hazards of erosion, mass wasting and landslides. These are natural processes, which have occurred over long time periods and are fundamental factors in creating the current landscape. Most of the area along the trail is fairly stable with approximately 109 acres of mapped unstable soils within the Olympic National Forest.

## Wildlife

### Special Status Species

Federally listed species, Regional Forester Sensitive Species, and Bureau of Land Management State Director Sensitive Species with potential to occur in the analysis area, as well as acres of critical and general habitats, and grizzly bear (*Ursus arctos horribilis*) recovery zones are listed in the Wildlife Biological Evaluation.

The PNT crosses the Northern Pacific Rainforest, Great Basin, and Northern Rockies Bird Conservation Regions. In addition, several international bird and biodiversity areas are located along the PNT. Important bird and biodiversity areas are areas that are identified by the National Audubon Society, in partnership with BirdLife International, representing places of international conservation significance for birds and other biodiversity. Audubon ranks each important bird and biodiversity area as having either global, continental, or state levels of priority. The PNT passes through three important bird and biodiversity areas of global-level priority (Glacier National Park in Montana and Padilla Bay and Olympic Coastal Shelf in Washington) and three important bird and biodiversity areas of state-level priority (Upper Priest Lake in Idaho and Deception Pass and Crockett Lake in Washington). Potential habitat for migratory birds is present in all habitats within the analysis area.

### Elk and Deer

Elk found throughout Washington, are an important cultural and subsistence resource to Washington Treaty Tribes (Nelson and Bailey 2021). Two separate subspecies primarily occupy opposite sides of the Cascade Crest. Roosevelt elk (*Cervus elaphus roosevelti*) are found in the coastal ranges of the Olympic

Peninsula, southwest Washington, and the western slopes of the Cascade Range including Western Washington river valleys. Olympic National Park and surrounding forests host the largest number of Roosevelt elk living anywhere, about 5,000. Rocky Mountain elk (*Cervus canadensis nelsoni*) are found primarily in the mountain ranges and shrubsteppe of eastern Washington, with small herds being established or reestablished throughout the Pacific Northwest. They now overlap with Roosevelt elk in the southern Cascade Mountains and adjacent areas.

The one-mile recommended national trail planning corridor overlaps the North Cascade, Olympic, and Selkirk elk herds. It also overlaps several deer management zones. The Washington Department of Fish and Wildlife Game Status and Trends report (WDFW 2022) provides the most current information regarding the status of the herds. Elk herds within the one-mile national trail planning corridor are generally stable to increasing. Most deer populations are stable to increasing except those Olympic Peninsula Black Deer Management Zone and in the Selkirk White Deer Management Zone, which remain within management objectives.

## Consideration of No Action – All Resources

The no-action alternative reflects the existing management direction along the length of the trail. “No action” means that current public land management allocations, activities, and management direction found in the various management plans for areas through which the trail passes would continue, without the additional management guidance provided in the proposed comprehensive plan. Current management direction for the PNT is incomplete and does not necessarily provide for nature and purposes of the trail and safeguard the related trail values.

“No action” does not mean the Pacific Northwest Trail would not exist. The Pacific Northwest Trail was authorized and designated by Congress in the Omnibus Public Lands Management Act of 2009 (Pub. L. 111-11), and as such it has been established as a national scenic trail and component of the National Trails System. The no-action alternative would not meet the legislative requirements for the Pacific Northwest Trail under the NTSA, and it would not comply with the court order (19-143-M-DWM (D.MT.)).

The no-action alternative includes analysis of ongoing management and activities on federal lands, which will serve as the baseline for the analysis of all alternatives. Current trends described in the Potentially Affected Environment sections would be anticipated to continue.

# National Forest Management Act (NFMA) – Land Management Plan Consistency

The pertinent specialists have reviewed the project and made the following determinations regarding consistency with applicable Forest Service Land Management Plan direction, standards, and guidelines.

**Botany:** Consistent

**Cultural and Heritage:** Consistent

**Engineering:** Consistent

**Fisheries:** Consistent

**Fuels:** Consistent

**Hydrologys:** Consistent

**Lands and Special Uses:** Consistent

**Minerals:** Consistent

**Range:** Consistent

**Recreation:** Consistent

**Scenic Resources:** Consistent

**Soils:** Consistent

**Silviculture:** Consistent

**Special Management Areas:** Consistent

**Wildlife:** Consistent

Federal land and resource management plans contain ongoing management direction and can be found at the following websites:

Glacier National Park: https://www.nps.gov/glac/learn/management/index.htm

Flathead National Forest: https://www.fs.usda.gov/main/flathead/landmanagement/planning

Kootenai National Forest: https://www.fs.usda.gov/detail/kootenai/landmanagement/planning?cid=stelprdb5200882

Idaho Panhandle National Forests: https://www.fs.usda.gov/main/ipnf/landmanagement/planning

Colville National Forest: https://www.fs.usda.gov/main/colville/landmanagement/planning

Bureau of Land Management, Oregon-Washington (see Spokane District): https://www.blm.gov/programs/planning-and-nepa/plans-in-development/oregon-washington

Okanogan-Wenatchee National Forest (see Okanogan National Forest): https://www.fs.usda.gov/detail/okawen/landmanagement/planning/?cid=stelprdb5335612

North Cascades National Park Complex (see North Cascades National Park and Ross Lake National Recreation Area plans): https://www.nps.gov/noca/learn/management/index.htm

Mt. Baker-Snoqualmie National Forest: https://www.fs.usda.gov/main/mbs/landmanagement/planning

Ebey's Landing National Historical Reserve: https://www.nps.gov/ebla/learn/management/index.htm#Documents

Olympic National Forest: https://www.fs.usda.gov/main/olympic/landmanagement/planning

Olympic National Park: https://www.nps.gov/olym/learn/management/index.htm, https://www.nps.gov/olym/getinvolved/planning.htm#:~:text=Olympic%20National%20Park%20General%20Management,resources%20while%20improving%20visitor%20experiences

**Supporting Project Documentation**

- Botany Effects Analysis
- Fire and Fuels Effects Analysis
- Fisheries Effects Analysis
- Hydrology Effects Analysis
- Range Effects Analysis
- Recreation Effects Analysis
- Scenery Effects Analysis
- Socioeconomics/Environmental Justice Effects Analysis
- Soils Effects Analysis
- Wildlife Biological Evaluation

A number of plan standards and guidelines from local land management plans are applicable to the proposed action; compliance with these forest plan standards and guidelines is achieved through careful consideration of resource-specific consideration and design of the proposed comprehensive plan direction by the interdisciplinary team. Compliance with these standards and guidelines, along with supporting rationale, is clearly documented in the specialist reports included in the project record.

# Endangered Species Act

## Threatened, Endangered, Proposed, and Candidate Species and their Critical Habitat

The pertinent specialists reviewed the project and made determinations of no effect for all threatened, endangered, proposed, and candidate species and their critical habitat. Biological evaluations were prepared for threatened, endangered, and proposed terrestrial, aquatic, and botanical sensitive species, and critical habitats, as required by Forest Service Manual 2670. The biological evaluations meet the standards and procedures, including documentation, for biological evaluations as outlined in Forest Service Manual 2672.4.

The Endangered Species Act of 1973 requires federal agencies to conserve federally-listed species. It also requires any action authorized by a federal agency to not be likely to jeopardize the continued existence of a threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Section 7 of the Endangered Species Act, as amended, requires the responsible federal agency to consult with the USDI Fish and Wildlife Service for any action that may affect a threatened or endangered species or critical habitat under their jurisdiction.

The proposed action is consistent with the Endangered Species Act. It is not expected to impact habitat of or result in disturbance of biological functions, injury, or mortality of individuals of any federally-listed species, and therefore would not affect or jeopardize any federally-listed species. It is also not expected to result in alteration, degradation, or elimination of any critical habitat, and therefore would not affect or result in destruction or adverse modification of critical habitats of any federally-listed species.

Table 11 lists the determinations for threatened, endangered, proposed, and candidate species and their critical habitat.

**Table 11. Threatened, endangered, proposed, and candidate species effect determinations for Endangered Species Act**

| Common Name (Scientific Name) | Status | Known to Occur in Project Area? | Habitat Present? (acres) | Determination of Effect No Action | Determination of Effect Proposed Action |
|---|---|---|---|---|---|
| Canada lynx (*Lynx canadensis*) | Threatened | Yes | Yes, potential habitat | No Effect | No Effect |
| Canada lynx critical habitat | Designated | Yes | Yes (135,741 acres) | No Effect | No Effect |
| Gray wolf (*Canis lupus*) | Endangered | Yes | Yes, potential habitat | No Effect | No Effect |
| Gary wolf critical habitat | Designated | No | No | No Effect | No Effect |
| Grizzly bear (*Ursus arctos horribilis*) | Threatened | Yes | Yes, by Recovery Zone (Ecosystem)<br><br>North Cascades Ecosystem (137,832 acres)<br><br>Cabinet-Yaak Ecosystem (33,833 acres)<br><br>Northern Continental Divide Ecosystem (69,143 acres)<br><br>Selkirk Ecosystem (43,963 acres) | No Effect | No Effect |
| Grizzly bear critical habitat | Proposed | No | No | No Effect | No Effect |
| North American wolverine (*Gulo gulo luscus*) | Proposed Threatened | Yes | Yes, potential habitat | No Effect | No Effect |
| Southern mountain caribou Dps (*Rangifer tarandus ssp. caribou*) | Endangered | Yes | Yes (based on presence of critical habitat) | No Effect | No Effect |

| **Common Name**<br><br>**(Scientific Name)** | **Status** | **Known to Occur in Project Area?** | **Habitat Present? (acres)** | **Determination of Effect**<br><br>**No Action** | **Determination of Effect**<br><br>**Proposed Action** |
|---|---|---|---|---|---|
| South mountain caribou Dps critical habitat | Designated | Yes | Yes<br>(5,422 acres) | No Effect | No Effect |
| Hawaiian petrel (*Pterodroma sandwichensis*) | Endangered | No | No | No Effect | No Effect |
| Marbled murrelet (*Brachyramphus marmoratus*) | Threatened | Yes | Yes, potential habitat | No Effect | No Effect |
| Marbled murrelet critical habitat | Designated | Yes | Yes<br>(39,920 acres) | No Effect | No Effect |
| Northern spotted owl (*Strix occidentalis caurina*) | Threatened | Yes | Yes, potential habitat | No Effect | No Effect |
| Northern spotted owl critical habitat | Designated | Yes | Yes<br>(30,703 acres) | No Effect | No Effect |
| Short-tailed albatross [*Phoebastria (=Diomedea) albatrus* | Endangered | No and Unlikely | No | No Effect | No Effect |
| Yellow-billed cuckoo (*Coccyzus americanus*) | Threatened | No | Yes, potential habitat | No Effect | No Effect |
| Yellow-billed cuckoo critical habitat | Designated | No | No | No Effect | No Effect |
| Oregon spotted frog (*Rana pretiosa*) | Threatened | Yes | Yes, potential habitat | No Effect | No Effect |
| Oregon spotted frog critical habitat | Designated | Yes | Yes<br>(329 acres) | No Effect | No Effect |
| Meltwater Lednian stonefly (*Lednia tumana*) | Threatened | No | Unknown | No Effect | No Effect |
| Taylor's (=whulge) checkerspot (*Euphydryas Editha taylori*) | Endangered | Yes | Yes, potential habitat | No Effect | No Effect |
| Taylor's (=whulge) checkerspot critical habitat | Designated | Yes | Yes<br>(238 acres) | No Effect | No Effect |
| Puget Sound Chinook Salmon (*Oncorhynchus tshawytscha*) | Threatened | Yes | Yes | No Effect | No Effect |

| Common Name<br><br>(Scientific Name) | Status | Known to Occur in Project Area? | Habitat Present? (acres) | Determination of Effect<br><br>No Action | Determination of Effect<br><br>Proposed Action |
|---|---|---|---|---|---|
| Upper Columbia River Spring Run Chinook Salmon (*Oncorhynchus tshawytscha*) | Endangered | Yes | Yes | No Effect | No Effect |
| Upper Columbia Spring Run Chinook Salmon in the Okanogan River Subbasin | | | | | |
| (*Oncorhynchus tshawytscha*) | Nonessential experimental population | Yes | Yes | No Effect | No Effect |
| Hood Canal Summer Run Chum Salmon (*Oncorhynchus keta*) | Threatened | Yes | Yes | No Effect | No Effect |
| Puget Sound Steelhead (*Oncorhynchus mykiss*) | Threatened | Yes | Yes | No Effect | No Effect |
| Upper Columbia River Steelhead (*Oncorhynchus mykiss*) | Threatened | Yes | Yes | No Effect | No Effect |
| Whitebark pine | Threatened | Yes | Yes | No Effect | No Effect |

**Supporting Project Documentation**

Documentation to support compliance with the Endangered Species Act can be found in the project file in the following documents:

- Wildlife Biological Evaluation
- Fisheries Effects Analysis
- Botany Effects Analysis

# Sensitive Species

Biological evaluations were prepared for terrestrial, aquatic, and botanical sensitive species, as required by Forest Service Manual 2670. Table 12 lists the sensitive species that may be affected by the proposed action, a determination of effect to those species, and summary of the effects. More detailed information and analysis for each affected species is provided in the effects analysis reports. The proposed action would not contribute to a trend towards federal listing or cause a loss of viability to the population or species for any Regional Forester Sensitive Species.

The pertinent specialists reviewed the project and made the determinations for sensitive species in the tables that follow.

**Table 12. Sensitive species impact determinations* "S" means "Suspected" and "D" means "Documented"**

| Scientific Name | Common Name | Preferred Habitat | KNF | IPNF | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes/No)[c] | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Accipiter gentilis* | Northern goshawk | All Forest Communities, Medium-Large Trees | | | D | D | D | D | D | Yes | No Impact | No Impact |
| *Aechmophorus clarkii* | Clark's grebe | Riparian, Pond, Small Lake, Backwater, Wetland | | | | | | | D | No | No Impact | No Impact |
| ***Open Water, Wet Meadow*** | | | | | | | | | | | | |
| *Amphispiza bilineata* | Black-throated sparrow | Desert, Shrubland, chaparral | | | | | | | D | No | No Impact | No Impact |
| *Artemisiospiza nevadensis* | Sagebrush sparrow | Shrubland: Sagebrush Shrubsteppe | | | | | | | D | No | No Impact | No Impact |
| *Asio flammeus* | Short-eared owl | Grassland: Mixed grass prairie; Herbaceous wetland | | | | | | | D | No | No Impact | No Impact |
| *Athene cunicularia* | Burrowing owl | Grassland: Mixed grass prairie | | | | | | | D | No | No Impact | No Impact |
| *Buteo regalis* | Ferruginous hawk | Grassland: Mixed grass prairie | | | | | | | D | No | No Impact | No Impact |
| *Carduelis psaltria* | Lesser goldfinch | Open areas around human habitation (Woodland - Hardwood, Savanna, Suburban, orchard, Shrubland, chaparral, Cropland, hedgerow, Riparian) | | | | | | | S | No | No Impact | No Impact |
| *Centrocercus urophasianus* | Greater sage-grouse | Shrubland: Sagebrush Shrub steppe | | | | | | | D | No | No Impact | No Impact |
| *Cypseloides niger* | Black swift | Various (mountain waterfalls, caves or coastal cliffs for breeding) | | D | | | | | | No | No Impact | No Impact |

| Scientific Name | Common Name | Preferred Habitat | KNF | IPNF | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes/No)[c] | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Dolichonyx oryzivorus* | Bobolink | Grassland: Mixed grass prairie | | | D | | | | D | No | No Impact | No Impact |
| *Empidonax wrightii* | Gray flycatcher | Open stands of small to medium ponderosa pines | | | | | D | | D | No | No Impact | No Impact |
| *Falco peregrinus anatum* | American peregrine falcon | Habitat Generalist, Cliff | D | D | | | | | | Yes | No Impact | No Impact |
| *Falco rusticolus* | Gyrfalcon | Primarily open country in the Arctic (Woodland - Conifer, Cliff, Alpine, Tundra, Herbaceous Woodland, Tidal flat, shore, Herbaceous Wetland) | | | | | | | D | No | No Impact | No Impact |
| *Gavia immer* | Common loon | Riparian, Pond, Small Lake, Backwater, Wetland | D | D | D | D | D | D | D | Yes | No Impact | No Impact |
| ***Open Water, Wet Meadow*** | | | | | | | | | | | | |
| *Grus canadensis* | Sandhill crane | Riparian, Pond, Small Lake, Backwater, Wetland | | | D | | D | | D | Yes | No Impact | No Impact |
| ***Open Water, Wet Meadow*** | | | | | | | | | | | | |
| *Haliaeetus leucocephalus* | Bald eagle | Riparian, Large Tree; roost, nest habitat and forage areas near lakes, reservoirs, rivers with readily available food source (fish and carrion) | D | D | D | D | D | D | D | Yes | No Impact | No Impact |
| *Histrionicus histrionicus* | Harlequin duck | Riparian, Large Tree | D | D | D | D | D | D | D | Yes | No Impact | No Impact |

| Scientific Name | Common Name | Preferred Habitat | KNF | IPNF | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes/No)[c] | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Melanerpes formicivorus* | Acorn woodpecker | Columbia River Gorge is the northern extent of the known rang of the species | | | | | | | D | No | No Impact | No Impact |
| *Melanerpes lewis* | Lewis's woodpecker | (Dry) Open Forest, Post-fire (open ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest) | | | S | | D | | D | Yes | No Impact | No Impact |
| *Myiarchus cinerascens* | Ash-throated flycatcher | Desert, Woodland - Mixed, Woodland - Hardwood, Woodland - Conifer, Shrubland, chaparral | | | | | | | D | No | No Impact | No Impact |
| *Numenius americanus* | Long-billed curlew | Grassland: Mixed Grass Prairie | | | | | D | | D | No | No Impact | No Impact |
| *Oreortyx pictus* | Mountain quail | Several (Woodland - Conifer, Woodland - Mixed, Forest - Conifer, Forest - Mixed, Shrubland, chaparral, Riparian) | | | | | | D | S | Yes | No Impact | No Impact |
| *Oreoscoptes montanus* | Sage thrasher | Sagebrush plains, primarily in arid or semi-arid situations | | | | | | | D | No | No Impact | No Impact |
| *Otus flammeolus* | Flammulated owl | Dry Forest | D | D | | | | | | No | No Impact | No Impact |
| *Pelecanus erythrorhynchos* | American white pelican | Wetlands: Irrigation Reservoirs >640 acres | | | | | | | D | No | No Impact | No Impact |
| *Pelecanus occidentalis californicus* | California brown pelican | Estuaries and coastal marine habitats | | | | | | | D | No | No Impact | No Impact |

| Scientific Name | Common Name | Preferred Habitat | KNF | IPNF | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes/No)[c] | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Picoides albolarvatus* | White-headed woodpecker | Dry Forest, Medium-Large Pine Trees | | | D | | D | | D | Yes | No Impact | No Impact |
| *Picoides arcticus* | Black-backed woodpecker | Open Forest, Post-fire | D | D | | | | | | Yes | No Impact | No Impact |
| *Sitta pygmaea* | Pygmy nuthatch | late seral montane forests | | | | | | | | No | No Impact | No Impact |
| *Spizella breweri* | Brewer's sparrow | Shrubland: Sagebrush Shrubsteppe | | | | | | | D | No | No Impact | No Impact |
| *Strix nebulosa* | Great gray owl | All Forest Communities, Medium-Large Trees | | | D | | D | | D | Yes | No Impact | No Impact |
| *Tympanuchus phasianellus* | Sharp-tailed grouse | Grassland: Intermountain Grasslands | | | | | | | D | No | No Impact | No Impact |
| ***Amphibians*** | | | | | | | | | | | | |
| *Ascaphus montanus* | Rocky mountain tailed frog | Clear, cold swift-moving mountain streams with coarse substrate; probably in older forests | | | | | | | S | Yes | No Impact | No Impact |
| *Bufo boreas* | Western toad | Low-elevation beaver ponds, reservoirs, streams, marshes, lake shores, potholes, wet meadows, and marshes to high-elevation ponds, fens, and tarns at or near tree line | D | D | | | | | | Yes | No Impact | No Impact |
| *Plethodon idahoensis* | Coeur d'Alene salamander | Several types of freshwater habitats; normally in or near permanent water with rooted aquatic vegetation | D | D | | | | | | Yes | No Impact | No Impact |

| Scientific Name | Common Name | Preferred Habitat | KNF | IPNF | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes/No)[c] | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Plethodon larselli* | Larch mountain salamander | Snoqualmie Pass (S. of PNT) is northernmost extent of known species range | | | | D | D | | S | No | No Impact | No Impact |
| *Plethodon vandykei* | Van Dyke's salamander | Primarily streams and seeps but also upland forest, talus, lake shores, and cave entrances | | | | S | | D | S | No | No Impact | No Impact |
| *Rana pipiens* | Northern leopard frog | Several types of freshwater habitats; normally in or near permanent water with rooted aquatic vegetation | D | | | | | | | No | No Impact | No Impact |
| *Rhyacotriton olympicus* | Olympic torrent salamander | Small, cold mountain streams and spring seepages of coastal coniferous forests | | | | | | D | S | No | No Impact | No Impact |
| ***Reptiles*** | | | | | | | | | | | | |
| *Actinemys marmorata* | Western pond turtle | Permanent and intermittent waters of rivers, creeks, small lakes. | | | | | S | | S | No | No Impact | No Impact |
| ***Mammals*** | | | | | | | | | | | | |
| *Canis lupus* | Gray wolf | Habitat Generalist | D | D | D | D | D | | D | Yes | No Impact | No Impact |
| *Gulo gulo* | Wolverine | Subalpine and alpine forests for foraging and steep, snowy habitat above the timberline for dens | D | D | D | D | D | | S | Yes | No Impact | No Impact |
| *Lepus californicus* | Black-tailed jackrabbit | Open plains, fields, and deserts with scattered thickets or patches of shrubs | | | | | | | D | No | No Impact | No Impact |

| Scientific Name | Common Name | Preferred Habitat | KNF | IPNF | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes/No)[c] | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Lepus townsendii* | White-tailed jackrabbit | Alpine, Grassland, herbaceous, Cropland, hedgerow, Shrubland, chaparral (at higher elevations, found in open areas next to pine forests and alpine tundra) | | | | | | | D | No | No Impact | No Impact |
| *Marmota olympus* | Olympic marmot | Subalpine and alpine meadows and talus slopes near timberline | | | | | | D | | Yes | No Impact | No Impact |
| *Martes caurina* | Pacific marten Coastal population (WA only) | Cool-Moist Forest, Medium-Large Trees | | | | | | D | | No | No Impact | No Impact |
| *Myotis evotis* | Long-eared myotis | Caves, mines, tree hollows and under bark in several vegetation types | D | D | | | | | | Yes | No Impact | No Impact |
| *Myotis keenii* | Keen's myotis | Caves, rock crevices, large trees, snags in old, dense, coastal forests | | | | | | D | | No | No Impact | No Impact |
| *Myotis lucifugus* | Little Brown myotis | Open Forest, Woodland, Grass, Shrub, Cave | | | D | D | D | D | D | Yes | No Impact | No Impact |
| *Myotis thysanodes* | Fringed myotis | Open Forest, Woodland, *Grass, Shrub, Cave* | D | D | | | | | | Yes | No Impact | No Impact |
| *Myotis volans* | Long-legged myotis | Trees and rock crevices in mountainous areas wooded with coniferous trees (also riparian) | D | D | | | | | | Yes | No Impact | No Impact |
| *Neotamias ruficaudus* | Red-tailed chipmunk | All Forest Communities, Medium-Large Trees | | | D | | | | S | No | No Impact | No Impact |

| Scientific Name | Common Name | Preferred Habitat | KNF | IPNF | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes/No)[c] | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Oreamnos americanus* | Mountain goat | Alpine and subalpine habitats; steep grassy talus slopes, grassy ledges of cliffs, or alpine meadows | | | | D | D | | D | Yes | No Impact | No Impact |
| *Ovis canadensis* | Bighorn sheep | Woodland, Grass, Shrub | D | | | | D | | D | No | No Impact | No Impact |
| *Pekania [Martes] pennanti* | Fisher | Mature to late-successional forests with high canopy closure and large tree (both live and dead) structure | D | D | | D | D | D | S | Yes | No Impact | No Impact |
| *Sciurus griseus* | Western gray squirrel | Fairly open oak and pine-oak forests; riparian woodland | | | | | D | | D | No | No Impact | No Impact |
| *Sorex hoyi* | Pygmy shrew | Boreal Forest | | | D | | | | S | No | No Impact | No Impact |
| *Synaptomys borealis* | Northern bog lemming | Boreal Forest | D | D | | | | | | No | No Impact | No Impact |

Definitions: B- beneficial effect, NI – no impact; MIIH- may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or loss of viability to the population or species

# Regional Forester Sensitive Species

**Table 13. Pacific Northwest Region Regional Forester Sensitive Invertebrate Species (by Unit). "S" means "Suspected" and "D" means Documented.**

| Scientific Name (Alphabetical order by taxon) | Common Name | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes or No) | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|
| ***Clams, Oysters, Mussels*** | | | | | | | | | |
| *Gonidea angulata* | Western ridged mussel | | | | | D | No | NI | NI |
| ***Crustaceans*** | | | | | | | | | |

| Scientific Name (Alphabetical order by taxon) | Common Name | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes or No) | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|
| *Branchinecta campestris* | Pocked Pouch Fairy Shrimp | S | | S | | D | No | NI | NI |
| ***Snails and Slugs*** | | | | | | | | NI | NI |
| *Cryptomastix devia* | Puget oregonian | | S | D | D | S | No | NI | NI |
| *Fluminicola fuscus* | Columbia pebblesnail | | | S | | S | No | NI | NI |
| *Fluminicola virens* | Olympia pebblesnail | | | | D | | No | NI | NI |
| *Helicodiscus salmonaceus* | Salmon coil | | | | | S | No | NI | NI |
| *Hemphillia burringtoni* | Keeled jumping-slug | | | | D | | Yes | NI | NI |
| *Hemphillia malonei* | Malone jumping-slug | | | | S | | No | NI | NI |
| *Magnipelta mycophaga* | Magnum mantleslug | D | | | | | Yes | NI | NI |
| *Oreohelix junii* | Grand coulee mountainsnail | | | D | | S | No | NI | NI |
| *Pristiloma idahoense* | Thinlip tightcoil | D | | | | S | Yes | NI | NI |
| *Pristiloma johnsoni* | Broadwhorl tightcoil | | D | | S | D | Yes | NI | NI |
| *Pristiloma wascoense* | Shiny tightcoil | S | S | D | | | No | NI | NI |
| *Prophysaon coeruleum* | Blue-gray tail-dropper (slug) | | | S | | | No | NI | NI |
| *Radiodiscus abietum* | Fir pinwheel | D | | | | S | No | NI | NI |
| ***Beetles and Weevils*** | | | | | | | | | |
| *Agonum belleri* | Beller's ground beetle | | S | | D | | No | NI | NI |
| ***Ants, Bees, and Wasps*** | | | | | | | | | |
| *Bombus frigidus* | Frigid bumble bee | | S | D | S | S | No | NI | NI |
| *Bombus kirbiellus* | High country bumble bee | | D | D | | S | No | NI | NI |
| *Bombus occidentalis* | Western bumble bee | D | D | D | D | S | Yes | NI | NI |
| *Bombus suckleyi* | Suckley cuckoo bumble bee | S | D | S | S | S | No | NI | NI |
| *Bombus vagans* | Half-black bumble bee | D | | D | | S | No | NI | NI |
| ***Butterflies and Moths*** | | | | | | | | | |
| *Boloria astarte* | Astarte fritillary | | | D | | S | No | NI | NI |
| *Boloria bellona* | Meadow fritillary | D | | D | | D | Yes | NI | NI |
| *Boloria freija* | Freija fritillary | | | D | | | No | NI | NI |

| Scientific Name (Alphabetical order by taxon) | Common Name | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes or No) | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|
| *Callophrys gryneus chalcosiva* | Barry's hairstreak | | | | | D | No | NI | NI |
| *Callophrys gryneus rosneri* | Rosner's hairstreak | D | | | | S | No | NI | NI |
| *Callophrys johnsoni* | Johnson's hairstreak | | D | | D | S | Yes | NI | NI |
| *Colias nastes* | Labrador sulphur | | | D | | | No | NI | NI |
| *Cupido comyntas* | Eastern tailed blue | D | | S | | S | No | NI | NI |
| *Habrodais grunus* | Golden hairstreak | | | | S | | No | NI | NI |
| *Lycaena cupreus* | Lustrous copper | | | D | | | No | NI | NI |
| *Oeneis chryxus valerata* | Olympic arctic | | | | D | | No | NI | NI |
| *Oeneis melissa* | Melissa arctic | | D | D | | | No | NI | NI |
| *Plebejus [Icaricia] icarioides blackmorei* | Puget blue | | | | D | | No | NI | NI |
| *Plebejus lupini spangelatus* | Lupine blue butterfly | | | | D | | No | NI | NI |
| *Polites mardon* | Mardon skipper | | | D | | S | No | NI | NI |
| *Polites peckius* | Peck's skipper | D | | D | | | Yes | NI | NI |
| *Polites themistocles* | Tawny-edged skipper | D | | D | | S | Yes | NI | NI |
| *Speyeria egleis* | Great basin fritillary | | | S | | S | No | NI | NI |
| *Speyeria [Argynnis] zerene bremnerii* | Valley silverspot | | S | | D | | Yes | NI | NI |
| ***Dragonflies and Damselflies*** | | | | | | | | | |
| *Aeshna sitchensis* | Zigzag darner | D | | D | | | Yes | NI | NI |
| *Aeshna subarctica* | Subarctic darner | D | | D | | S | Yes | NI | NI |
| *Coenagrion interrogatum* | Subarctic bluet | D | | S | | S | No | NI | NI |
| *Somatochlora franklini* | Delicate emerald | D | | | | | Yes | NI | NI |
| *Somatochlora whitehousei* | Whitehouse emerald | D | | | | S | No | NI | NI |

| Scientific Name (Alphabetical order by taxon) | Common Name | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes or No) | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|
| ***Earthworms*** | | | | | | | | | |
| *Driloleirus americanus* | Giant palouse earthworm | | S | D | | D | No | NI | NI |

**Table 14. Pacific Northwest Region (Region 6) Regional Forester Sensitive Aquatic Species by Unit**

| Scientific Name (Alphabetical order by taxon) | Common Name | COL | MBS | OKW | OLY | SPOKANE | Documented in Project Area (Yes or No)[c] | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|
| *Catostomus platyrhynchus* | Mountain Sucker | | | | | | Yes | NI | NI |
| *Cottus Marginatus* | Margined Sculpin | | | | | | Yes | NI | NI |
| *Entosphyenus tridentatus* | Pacific Lamprey | | D | D | D | | Yes | NI | NI |
| *Novumbra hubbsi* | Olympic Mudminnow | | | | D | | Yes | NI | NI |
| *Oncorhynchus clarkii lewisi* | Westslope Cutthroat Trout | D | | D | | D | Yes | NI | NI |
| *Ocorhynchus mykiss* | Redband | D | | D | | D | Yes | NI | NI |
| *Prosopium coulterii* | Pygmy Whitefish | | | | | | Yes | NI | NI |
| *Rhinichthys umatilla* | Umatilla Dace | | | | | | Yes | NI | NI |
| *Acipenser transmontanus* | White Sturgeon | D | | D | | D | Yes | NI | NI |

**Table 15. Pacific northwest and mountain regions (region 6 and 1) Regional Forester Sensitive Plant Species by Unit**

| Scientific Name (Alphabetical order by taxon) | Common Name | COL | MBS | OKW | OLY | SPOKANE | FNF | KNF | IPNF | Documented in Project Area (Yes or No) | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Achnatherum richardsonii* | Richardson's needlegrass | D | | | | | | | | Yes | NI | NI |
| *Agrostis mertensii* | Northern bentgrass | | | D | | | | | | Yes | NI | NI |
| *Astragalus microcystis* | Dwarf milkvetch | D | | | D | | | | | Yes | NI | NI |

| Scientific Name (Alphabetical order by taxon) | Common Name | COL | MBS | OKW | OLY | SPOKANE | FNF | KNF | IPNF | Documented in Project Area (Yes or No) | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Botrychium ascendens* | Trianglelobe moonwort | | D | D | | | | | | Yes | NI | NI |
| *Botrychium crenulatum* | Scalloped moonwort | | | | | | | D | | Yes | NI | NI |
| *Botrychium hesperium* | Western moonwort | D | | | | | D | | | Yes | | |
| *Botrychium paradoxum* | Peculiar moonwort | D | | | | | | | | Yes | NI | NI |
| *Botrychium pedunculosum* | Stalked moonwort | D | | | | | | | D | Yes | NI | NI |
| *Carex heteroneura var. epapillosa* | Different-nerve sedge | | | D | | | | | | Yes | NI | NI |
| *Carex obtusata* | Obtuse sedge | | | | D | | | | | Yes | NI | NI |
| *Carex pauciflora* | Few-flowered sedge | | D | | | | | | | Yes | NI | NI |
| *Carex proposita* | Great Smokey Mountain sedge | D | | | | | | | | Yes | NI | NI |
| *Carex rostrata* | Beaked sedge | D | | | | | | | | Yes | NI | NI |
| *Carex stylosa* | Variegated sedge | | | | D | | | | | Yes | NI | NI |
| *Carex tenera* | Quill sedge | D | | | | | | | | Yes | NI | NI |
| *Chrysosplenium tetrandrum* | Northern golden saxifrage | D | | | | | | | | Yes | NI | NI |
| *Cicuta bulbifera* | Bulblet-bearing water hemlock | D | | | | | | | | Yes | NI | NI |
| *Cryptogramma stelleri* | Fragile rockbrake | D | | | | | | | | Yes | NI | NI |
| *Cypripedium parviflorum* | Lesser yellow lady's slipper | | | | | | | D | | Yes | NI | NI |
| *Draba aurea* | Golden draba | | | D | | | | | | Yes | NI | NI |
| *Dryas drummondii* | Drummond's mountain-avens | D | | | | | | | | Yes | NI | NI |
| *Dryopteris cristata* | Crested woodfern | D | | | | | | | | Yes | NI | NI |

| Scientific Name (Alphabetical order by taxon) | Common Name | COL | MBS | OKW | OLY | SPOKANE | FNF | KNF | IPNF | Documented in Project Area (Yes or No) | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Eleocharis rostellata* | Beaked spikerush | D | | | | | | | | Yes | NI | NI |
| *Eriophorum viridicarinatum* | Thinleaf cottonsedge | D | | | | | | D | | Yes | NI | NI |
| *Gentiana glauca* | Pale gentian | | | D | | | | | | Yes | NI | NI |
| *Geum rivale* | Purple avens | D | | | | | | | | Yes | NI | NI |
| *Kalmia procumbens* | Alpine azalea | | D | D | | | | | | Yes | NI | NI |
| *Lathyrus bijugatus* | Drypark pea | | | | | | | D | | Yes | NI | NI |
| *Luzula arcuata ssp. unalaschkensis* | Alaska curved woodrush | | | D | | | | | | Yes | NI | NI |
| *Lycopodium dendroideum* | Tree-like clubmoss | D | D | | | | | | D | Yes | NI | NI |
| *Montia diffusa* | Spreading miner's lettuce | | | | D | | | | | Yes | NI | NI |
| *Muhlenbergia glomerata* | Spiked muhly | D | | | | | | | | Yes | NI | NI |
| *Ophioglossum pusillum* | Northern adderstongue | D | | | | | | | | Yes | NI | NI |
| *Parnassia palustris* | Marsh grass-of-Parnassus | D | | | | | | | | Yes | NI | NI |
| *Petasites frigidus var. frigidus* | Arctic sweet coltsfoot | | | | | | D | | D | Yes | NI | NI |
| *Phegopteris connectilis* | Long beechfern | | | | | | | | D | Yes | NI | NI |
| *Platismatia lacunose* | Ragged lichen | | | | D | | | | D | Yes | NI | NI |
| *Plectritis brachystemon* | Shortspur seablush | | | | D | | | | | Yes | NI | NI |
| *Polemonium viscosum* | Sticky polemonium | | | D | | | | | | Yes | NI | NI |
| *Potentilla nivea* | Snow cinquefoil | | | D | | | | | | Yes | NI | NI |

| Scientific Name (Alphabetical order by taxon) | Common Name | COL | MBS | OKW | OLY | SPOKANE | FNF | KNF | IPNF | Documented in Project Area (Yes or No) | Effects Determination No Action | Effects Determination Proposed Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Ribes oxyacanthoides var. irriguum* | Idaho gooseberry | D | | | | | | | | Yes | NI | NI |
| *Salix candida* | Sageleaf willow | D | | | | | | | | Yes | NI | NI |
| *Salix maccalliana* | McCalla's willow | D | | | | | | | | Yes | NI | NI |
| *Salix pseudomonticola* | False mountain willow | D | | | | | | | | Yes | NI | NI |
| *Ribes oxyacanthoides var. irriguum* | Nodding saxifrage | | | D | | | | | | Yes | NI | NI |
| *Schoenoplectus subterminalis* | Swaying bulrush | | | | | | | D | | Yes | NI | NI |
| *Solorina saccata* | Chocolate chip lichen | D | | | | | | | | Yes | NI | NI |
| *Symphyotrichum boreale* | Northern bog aster | | | | | | | | D | Yes | NI | NI |
| *Tholurna dissimilis* | Urn lichen | | D | D | | | | | | Yes | NI | NI |
| *Triglochin palustris* | Marsh arrowgrass | D | | | | | | | | Yes | NI | NI |
| *Vaccinium myrtilloides* | Velvetleaf huckleberry | | | D | | | | | | Yes | NI | NI |

# Supporting Project Documentation

Documentation to support compliance with agency sensitive species can be found in the project file in the following documents:

- Wildlife Biological Evaluation
- Fisheries Effects Analysis
- Botany Effects Analysis

## National Historic Preservation Act - Section 106 Review

**The pertinent specialist reviewed the project and made the following determination regarding Section 106 compliance:**

The proposed comprehensive plan does not set forth any activities that could be defined as an undertaking under the National Historic Preservation Act (NHPA). As such, activities proposed at the local level that meet the definition of an undertaking will be subject to the Act, at that time. Federal agencies will be required to fulfill their obligations under section 106 in the National Historic Preservation Act with appropriate State Historic Preservation Offices (SHPOs), Tribal Historic Preservation Officers (THPOs) and tribes. It will also require additional government to government consultation with the Tribes as directed by E.O. 13175 and other future memoranda on tribal consultation and representation.

## Clean Air Act

**The pertinent specialist reviewed the project and determined that:**

The purpose of the Federal Clean Air Act (as amended) is to protect and enhance air quality while ensuring the protection of public health and welfare. National Ambient Air Quality Standards must be met by most state and Federal agencies, including the Forest Service to protect human health and the environment and acceptable maximum air quality concentrations. In addition, the Regional Haze Rule (40 CFR Part 5) calls for states to establish goals for improving visibility in mandatory class 1 areas (selected national parks and wilderness areas) and to develop long-term strategies for reducing the emissions of air pollutants that cause visibility impairment, including emissions from fire activities.

States are given the primary responsibility for air quality management. Section 110 of the Clean Air Act requires states to develop state implementation plans that identify how the State will attain and maintain National Ambient Air Quality Standards. The Clean Air Act also allows states, and some counties, to adopt unique permitting procedures and to apply more stringent standards.

## Clean Water Act

**The pertinent specialist has reviewed the project and determined that the project would comply with the Clean Air Act, as no actions would be taken to affect air quality.**

This project is consistent with the requirements of the Federal Water Pollution Control Act as amended by the Clean Water Act, (33 USC §1251 et seq.). Sections 401 and 404 of the Clean Water Act regulate discharge of pollutants. The U.S. Forest Service, under Section 313 of the federal Clean Water Act (33 USC §1323) is subject to and shall comply with all State requirements respecting the control and abatement of water pollution in the same manner and to the same extent as any non-governmental entity. The Safe Drinking Water Act (SDWA) was established to protect the quality of drinking water in the U.S. and focuses on all waters actually or potentially designed for drinking use, whether from surface or ground water sources. The States of Montana, Idaho, and Washington are responsible under the Clean Water Act for protecting water quality, and the States of Montana, Idaho, and Washington are responsible for administering the State water quality programs through their water quality agencies. Agencies are the Montana Department of Environmental Quality, the Idaho Department of Environmental Quality, and the Washington Department of Ecology.

This project is consistent with the Clean Water Act, the Safe Drinking Water Act, and various State water quality regulations because measures are included to protect surface and ground water features and their

contributing source areas through implementation of project design features, Forest Service Best management practices, and Forest Plan Standards and Guidelines. Project design features include protective requirements for Drinking Water Source Areas identified by the States for both surface and ground water sources of public drinking water supplies. The project is consistent with States water quality requirements to control non-point sources of pollution, because implementation of best management practices and design features is required by agreement between the Forest Service and the States to protect the Waters of the State and maintain water quality associated with assigned beneficial uses.

The proposed comprehensive plan is not anticipated to lead to new listings or exacerbate existing water quality impairments for waterbodies listed as Category 4a or Category 5 on State 2022 integrated 303(d)/305(b) water quality report. Proposed project activities have very low potential to affect listings for sediment, temperature, dissolved oxygen, and other water chemistry related parameters. Required implementation of project design features (proposed comprehensive plan, appendix A) and Forest Service best management practices would minimize disturbance within and near riparian and wetland areas and maintain vegetative buffer zones to continue to provide shading for cooler water temperatures and filtration of hillslope runoff. Refer to the Hydrology report for more information regarding impaired waters associated with the project area.

Applicable project file documentation to support Clean Water Act compliance can be found in the Hydrology Effects Analysis in the project record.

# Pertinent Executive Orders

The line officer or applicable specialist(s) have determined the project is in compliance with the following Executive Orders (EO), which were deemed pertinent based on the nature of the project.

## EO 13195 Trails for America in the 21st Century

The proposed action is part of federal agency duties under EO 13195 to "protect, connect, promote, and assist trails of all types throughout the United States," specifically the duty of "protecting the trail corridors associated with national scenic trails … to the degrees necessary to ensure that the values for which each trail was established remain intact." The proposed action includes a statement of the nature and purposes of the PNT and articulates other values for which it was established (e.g., primary and key uses, as well as significant natural, historical, and cultural resources to be preserved). The proposed action includes management objectives and practices as well as an adaptive management toolbox that will guide management of the trail to ensure the trail is administered and managed to provide for and safeguard the nature and purposes and other trail values. The proposed action also includes a preliminary administrative recommendation for the national trail planning corridor for the PNT, which is proposed to be a minimum of 1 mile wide (0.5 miles on either side of the trail's travelway), a width that is recommended as the minimum sufficient to protect the values for which the PNT was established.

## EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

The proposed action would not result in direct effects to minority or low-income communities. There are no identified indirect effects that would adversely impact environmental justice communities. Rather, the implementation of the proposed comprehensive plan may help mitigate project level risks providing a framework for communication and coordination to address opportunities and risks that may affect environmental justice communities from a future project.

## EO 14008, Tackling the Climate Crisis at Home and Abroad and 14057 Catalyzing Clean Energy Industries and Jobs through Federal Sustainability

In compliance with these Executive Orders signed by President Biden in 2021, this analysis considers the effects of climate change on the proposed action, by utilizing relevant research, agency guidance, climate model scenarios and other information applicable to climate change. In addition to including a section on climate change, this analysis incorporates by reference these information sources, which include climate change vulnerability assessments for the Olympic, North Cascades, Colville and Okanogan-Wenatchee and all of the Northern Region Forests (Halofsky et al. 2018) (Raymond et al. 2014) (Halofsky et al. 2011) (Gaines et al. 2012) (Hand and Lawson, 2018). These assessments provide a synthesis of information regarding the impacts of climate change on recreational activities, including discussion of the potential for direct impacts from increased recreational use and access with increasing temperatures and precipitation, as well as indirect impacts, such as impacts from increased wildfire activity and seasonality of recreational use through changing "shoulder seasons". The USFS Northern Research Station's publication, "Forest Adaptation Resources: Climate Change Tools and Approaches for Land Managers, 2nd edition" (Swanston et al. 2016) also provides discussion of adaptation strategies for the anticipated effects of climate change, including some that address trails and access. The NPS Climate Change Response Program may also be useful to informing the plan's response to climate change. These include Planning for a Changing Climate: Climate-Smart Planning and Management in the National Park Service (National Park Service, 2021) and the Resist-Accept-Direct Framework. Some of these strategies are directly integrated in the proposed comprehensive plan direction and others may be utilized within the Adaptive Management Toolbox approach identified in appendix F of the proposed comprehensive plan. In addition to complying with these Executive Orders, this analysis' consideration of climate change complies with expectations in the 2023 Council on Environmental Quality NEPA Guidance on Consideration of Greenhouse Gas (GHG) Emissions and Climate Change.

## EO 11988, Floodplain Management

Executive Order 11988, Floodplain Management, requires that federal activities generally avoid occupancy and modification of floodplains that would alter flood passage, stage, or velocities. The proposed project complies with EO 11988 because it will not change floodplain functions or alter flood passage. Project activities avoid 100-year floodplains or do not involve alteration or development of the 100-year floodplain and thus will not affect conveyance of flood flows.

Forest Service Best Management Practices (USDA Forest Service, 2012) and project design features are included so that no equipment or supplies will be stored within the 100-foot buffer surrounding springs, wetlands, and perennial and intermittent streams, which generally corresponds to the floodplain for smaller streams. These same restrictions also apply to the regulatory 100-year floodplains thus allowing any flood waters to flow as they would naturally, in the unlikely event that extreme flooding was to occur in the area. The implementation of project design features and best management practices is fully expected to protect any floodplain areas that may be adjacent or downstream of the proposed project activities. Any required floodplain permits or variances that are unforeseen at this time will be obtained prior to implementation through coordination with the appropriate state or county floodplain managers.

Refer to the Hydrology effects analysis for additional discussion of regulatory floodplains present in the project area.

## EO 11990, Protection of Wetlands

Executive Order 11990, Protection of Wetlands, requires that federal activities generally avoid modification or destruction of wetlands. The proposed project is consistent with Executive Order 11990 because proposed activities are not anticipated to result in a loss or conversion of wetlands, including rare peat-forming fens and bogs.

Measures are included to either avoid wetland features entirely or protect them through implementation of Forest Service Best Management Practices (USDA Forest Service, 2012), Forest Plan Standards and Guidelines, and project specific design features. No ground-disturbing activities would occur within wetlands. Best management practices and project design features restrict activities within the Aquatic Management Zone (AMZ) buffers associated with all water features, including wetlands.

Section 404 of the Clean Water Act authorizes the Secretary of the Army, Army Corps of Engineers (USACE) to issue permits for the discharge of dredged or fill material into wetlands or other Waters of the U.S. No 404 permitting is anticipated to be needed for the project, because proposed activities would not involve any dredge or fill activities. Silvicultural activities are exempt from the 404-permit process, as are associated road construction and maintenance that adhere to Best Management Practices described in 33 CFR §323.4.

Refer to the Hydrology effects analysis for additional discussion of wetlands in the project area.

## EO 11593, Protection and Enhancement of the Cultural Environment

The Executive Order 11593, May 13, 1971, directs federal agencies to identify, evaluate, and nominate all eligible historic properties to the National Register of Historic Places (NRHP). The interim procedures during this process guide federal agency treatment of their historic resources while comprehensive survey is undertaken. All resources evaluated and those listed on, or eligible for inclusion, in the National Register are managed by the federal agencies and protected as such even if they are not ultimately nominated to the NRHP. The proposed comprehensive plan does not set forth any activities that could be defined as an undertaking under the National Historic Preservation Act (NHPA). As such, activities proposed at the local level that meet the definition of an undertaking will be subject to, at that time, the NHPA. Federal agencies will be required to fulfill their obligations under NHPA Section 106 with appropriate State Historic Preservation Officers (SHPOs), Tribal Historic Preservation Officers (THPOs) and tribes. It will also require additional government to government consultation with the Tribes as directed by E.O. 13175 and other future memoranda on tribal consultation and representation.

## EO 13007, Indian Sacred Sites

The Executive Order 13007, May 24, 1996, is intended to protect and preserve Indian religious practices and the locations of these practices. Sacred sites on federal lands are to be accessible to Indian religious practitioners and the physical condition of the sites should not be adversely affected.

There are no historic properties officially recorded as sacred sites or Traditional Cultural Properties (TCP) were identified during consultation with affected tribes. It is expected that an archeological review will occur during project implementation. a federal agency archaeologist will determine if the area of concern is subject to specific protection measures. In addition, tribal consultation would be ongoing during implementation of the project, as described in the implementation checklist, and any additional sites identified through consultation would be protected.

## EO 13112 and EO 13751, Invasive Species

Invasive plants on the State lists that occur within the one-mile recommended national trail planning corridor are listed in table 17 in appendix A. Individual units may have more extensive lists of weeds of concern specific to their area, which may be addressed through local planning efforts, as needed. Approval of the proposed comprehensive plan does not authorize any additional ground disturbance, and therefore does not in itself increase the risk of introduction and spread of invasive plants within the recommended national trail planning corridor. If any ground disturbing projects are proposed in the future related to the trail, effects and mitigation measures related to invasive plants will be addressed at the local level through the NEPA process.

## EO 13186, Migratory Birds and The Migratory Bird Treaty Act

The Migratory Bird Treaty Act established an international framework for the protection and conservation of migratory birds. This Act makes it illegal, unless permitted by regulations, to "pursue, hunt, take, capture, purchase, deliver for shipment, ship, cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird."

Executive Order 13186 directed federal agencies taking actions likely to have a measurable negative effect on migratory bird populations to develop and implement a memorandum of understanding (MOU) with the U.S. Fish and Wildlife Service to promote the conservation of migratory bird populations.

A memorandum of understanding between the U.S. Forest Service and the Fish and Wildlife Service was signed in 2008. Within the National Forests, conservation of migratory birds focuses on providing a diversity of habitat conditions at multiple spatial scales and ensuring that bird conservation is addressed when planning for land management activities.

The proposed action is consistent with the Migratory Bird Treaty Act and Executive Order 13186; it is not expected to result in disturbance of biological functions, injury, or mortality to individual migratory birds and therefore would not result in take of migratory birds.

**Supporting Project Documentation**

Applicable project file documentation to support executive order compliance can be found in the following specialist reports in the project record:

- Botany Effects Analysis
- Hydrology Effects Analysis
- Socioeconomics/Environmental Justice Effects Analysis
- Wildlife Biological Evaluation

# National Environmental Policy Act (NEPA)

The effects discussion here takes into consideration all information included in the Environmental Impact Review section, as well as documentation included in the project record. Pertinent specialists have reviewed the proposed activities and provided the following input regarding the degree of potential effects for the factors considered by the responsible official to determine a Finding of No Significant Impact (FONSI).

# Factors Considered for Degree of Effects

The following effects (or impacts) discussions focus on changes to the human environment from the proposed action (or alternatives) that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives, including those effects that occur at the same time and place as the proposed action (or alternatives) and may include effects that are later in time or farther removed in distance from the proposed action or alternatives.

Based on the consideration of the potentially affected environment and the degree of effects, the effects of the proposed action, including implementation of the design elements and implementation checklist, would not be significant.

## Both short- and long-term effects

I considered both short- and long-term as well as beneficial and adverse effects on the resources that would be impacted by the selected activities in this decision. I have determined that none of these effects, or any other effects evaluated in the EA, will have significant impacts. A summary of effects that support this determination is in the following paragraphs.

Long-term and beneficial may be felt at a regional scale as the proposed comprehensive plan direction is incorporated within local land management plans.

The interdisciplinary team participated in development of the proposed action, including development of the direction included in the proposed comprehensive plan, to ensure that the project complies with law, regulation, policy, and the applicable land management plans along the trail. The project effects would be within standards set forth by the applicable land management plans, and consistent with applicable environmental laws.

Resource specialists reviewed and evaluated effects to threatened, endangered, and sensitive species, big game species, migratory birds, cultural resources, air quality, environmental justice, socioeconomics, fire, fuels, soils, water quality, scenery, recreation, special management areas, invasive species and range resources during project development and analysis (See Environmental Impacts Review section above). As described in the sections that follow, the interdisciplinary team did not identify any potentially significant short-term or long-term adverse effects associated with implementing the proposed action and determined that the overall effect of implementing the project is expected to be beneficial or neutral in the long-term for many project area resources.

Due to the nature of the proposed action, no environmental analysis was conducted related to engineering, lands, minerals, or special uses. The proposed action includes direction relative to coordination with special uses or permitted uses of national forest system lands. There would be no effects to roads, landownership, or minerals.

The release of the proposed comprehensive plan could draw additional attention to the Pacific Northwest Trail, potentially attracting more use. However, any potential effects from an increase in recreational use are expected to be offset by application of the components included in the proposed comprehensive plan (such as direction in chapter 5, and the adaptive management and monitoring appendix), which will facilitate coordination between the Forest Service and managing agencies across the trail to monitor use and take appropriate management actions to protect resources and values.

### Botany

Indirect effects are associated with trail use. The trail itself is already established, and any relocations, realignments, or additions that would result in changes on the ground or other current conditions would be considered within the respective managing agency’s planning process to consider the effects to at-risk

species and determine ways to mitigate the risk of introduction and spread of invasive plants. Potential indirect effects of the proposed comprehensive plan to at-risk plants and weeds could result from increases in disturbance along the recommended national trail planning corridor as it currently exists through increased use. The proposed comprehensive plan (USFS 2023) includes desired conditions and management practices for trail management that focuses on protecting biotic resources, including protecting at risk species, and invasive plant prevention and management.

The Objectives and Practices for Trail Management chapter on pages 87-135 of the proposed comprehensive plan includes desired conditions to sustain biotic resources and biodiversity along the trail, ensure all construction, maintenance, and use of the trail system is compatible with at-risk species management and recovery, and mitigate the introduction and spread of invasive weeds. These desired conditions support the continued persistence of at-risk species and sensitive ecosystems along the trail route and decrease the risk of weed spread. These desired conditions are consistent with federal land management plans. The management practices identified as a part of the proposed comprehensive plan include the protection of at-risk plants and native ecosystems during contraction and maintenance, compliance with agency directions regarding at-risk species and invasive weed spread, and public education on preventing weed spread. These comprehensive plan protections in addition to land management direction would ensure the persistence of at-risk species and the reduction of weed spread.

Additionally, the desired condition that Tribal treaty resources are maintained at healthy levels to support tribal hunting, fishing, and gathering of food, medicine, and ceremonial materials would support cultural plants persistence and availability on the landscape. The management practices dictate that tribal treaty resources, such as cultural plants, would be monitored along the PNT in consultation and coordination with affected tribe to minimize impacts to these resources. The engagement with affected tribes would ensure any priority cultural plants would be considered for availability and no traditionally important collecting sites would be affected through future trail management.

### Fire and Fuels

There would likely be no adverse direct, indirect, or cumulative impacts, relevant to fire and fuels management, with the adoption of the proposed comprehensive plan (including the fire and fuels-specific desired conditions and management practices). Fire and fuels management activities would continue within the project planning area. The continued management of fuels, with the coordination provided in the management practices of the proposed comprehensive plan, is likely to provide beneficial impacts to fire, fuels and overall trail management.

### Fisheries

Given the trail is already established, potential impacts from implementing the proposed comprehensive plan upon the fisheries resources could include increases in sedimentation through any potential increase in use due to direction included in the proposed comprehensive plan management components. However, any potential increase in recreational use is expected to be offset by an increase in maintenance and scrutiny by the managing agencies as well as benefits from the potential relocation of trail segments currently releasing sediment to water due to poor initial placement. The proposed comprehensive plan (USFS 2023) includes objectives and desired conditions and management practices for trail management that sets a standard to focuses on protecting aquatic resources. There are several desired conditions to protect water, including one that states, “Management and use of the Pacific Northwest Trail is hydrologically sustainable with adequate water drainage and minimal soil erosion, resulting in no adverse impacts to soil, water quality, or riparian conditions due to the use and management of the trail and corridor”. Proposed comprehensive plan management practices are specifically prescribed to protect

water. While the proposed comprehensive plan may increase use of the trail system, it also defines an estimated carrying capacity to limit use to a degree desired conditions can be obtained. There may be negligible improvements because of the proposed comprehensive plan desired conditions, management practices, and estimated carrying capacity limitations, but they are expected to be localized and would occur in currently eroding trail segments as they are eventually improved to standard. Therefore, implementation of the proposed comprehensive plan is not expected to measurably affect fish and their habitat and will have no effect upon Threatened, Endangered, or Sensitive fish species.

## Hydrology

### Visitor Capacity

User capacities prescribed in this alternative should help reduce significant impacts from trail overuse on watershed resources because trail capacity setting would allow for management of trail impacts and effects. These effects could be erosion and displacement of the trail tread. Best management practices and design features would be used on the Pacific Northwest Trail that would alleviate most adverse impacts from visitor uses along the Pacific Northwest Trail.

### PNT Recommended National Trail Planning Corridor Direction

The Proposed Action recommends a national trail planning corridor that would be a minimum of one-mile wide. This minimum one-mile-wide recommended national trail planning corridor would allow for minor alterations of the trail alignment (defined with direction in chapter 5 of the proposed comprehensive plan) within the recommended national trail planning corridor that may be necessary to move the Pacific Northwest Trail off roads, to a more hydrologically sustainable trail location, or to avoid sensitive areas, highly erodible areas or hillslopes, as may be determined by the managing agency, framed by the direction provided within the proposed comprehensive plan and adaptive management toolbox identified in Appendix F of the proposed comprehensive plan. Thus, the minimum one-mile-wide recommended national trail planning corridor width would likely be of sufficient width to protect trail resources and avoid conditions that could contribute to increased sedimentation, especially on public lands. On federal lands, projects or activities would be determined through the managing agency's planning processes in accordance with their respective agency policy guidance, laws, and authorities. It would give sufficient options for trail areas to disperse and infiltrate surface flows. Best managements practices would be used on the Pacific Northwest Trail that would alleviate adverse impacts from visitor uses. Watershed resources would be protected under this alternative by the implementation of Pacific Northwest Trail best management practices that would alleviate adverse impacts from visitor uses.

### Trail Management for Hydrologic Sustainability

Projects designed to increase human uses of natural resources or project components that provide recreational access to aquatic and riparian habitats could result in human-related degradation to trail conditions at these sites. These impacts could consist of displaced and eroded sections of trail. As described previously, effects to aquatic habitat such as sedimentation would be localized, and best management practices and design features would reduce the likelihood or extent of these effects.

Other projects and activities would occur along the trail under the proposed action. Timber management or harvest, cattle grazing, mining, or other recreation may occur near the trail. For potential cumulative effects, along the more developed portions of the trail, the impacts of the trail, trail facilities and visitor use would represent only a small fraction of the projects or activities taking place. In less developed areas along the trail adjacent project activity would be limited possibly to wildland fire suppression and post-fire effects including fallen trees, trail erosion, and debris flows. In other more remote areas, the trail, trail facilities and visitors use would likely be the only human activity taking place, with the exception of

natural disturbances such as mass wasting, fire, and floods. As a result, any indirect effects to the trail that may occur are not expected to contribute to adverse cumulative effects.

## Range

It is anticipated there would be no significant impact to rangeland resources from implementing the proposed comprehensive plan. Range resource management would continue to follow the direction set forth in agency land and resource management plans. Potential issues that could arise from visitor use include modification of livestock distribution within allotment pastures, due to gates being left open or closed, which could lead to livestock roaming into unintended areas or being closed out of water sources. Also, increased human traffic into remote areas where range improvements are located, could lead to damage to infrastructure resulting from vandalism or unintentional use. Recommended management practices would help protect rangeland resources. Implementation of the proposed comprehensive plan is not expected to measurably affect rangeland resources.

## Recreation

Adopting the proposed comprehensive plan would result in short-term negligible impact as management of the trail would continue under existing land and resource management plans, long-term moderate improvement as the proposed comprehensive plan is implemented and proposals for project or management activities associated with the trail are considered or mitigated based on the criteria established in the proposed comprehensive plan.

### Recreation Settings, Opportunities and Access

There would be no direct effects to recreation settings, opportunities, and access from the action of adopting a comprehensive plan for the Pacific Northwest Trail in compliance with the NTSA. Adoption of the proposed comprehensive plan would define desired conditions and management practices related to many aspects of recreation management including trail uses, trail setting, alignment and design, facilities and signs, visitor information and interpretation, visitor use management, special use authorizations, and NTSA Section 6 connecting or side trails. Indirect benefits to recreation resources would occur as the proposed comprehensive plan guides future management direction in various land and resource management plans across the trail and provides consistency as new trail managers move into key trail related positions.

The trail wide objectives, desired conditions, and management practices in the plan incorporate the principles of sustainable recreation and sustainable trail design. Implementing the proposed comprehensive plan would have short term negligible impact as management would continue under existing land and resource management plans. Implementing the proposed comprehensive plan would have long-term beneficial impacts on recreation settings, opportunities, and access. Long-term moderate improvements would be anticipated as the proposed comprehensive plan is implemented and proposals for project or management activities within the recommended national trail planning corridor are considered or mitigated based on the criteria established in the proposed comprehensive plan.

### Quality of Visitor Experience

National scenic trails are to be “located as to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass” (16 U.S.C. 1242(a)(2)). This creates a management challenge to provide for maximum outdoor recreation potential while also conserving nationally significant resources and values.

Visitor use management is defined as the proactive and adaptive process of planning for and managing characteristics of visitor use and related physical and social setting, using a variety of strategies and tools, to sustain desired resource conditions and visitor experiences (Interagency Visitor Use Management Council 2013). Visitor use characteristics include the amount, type, timing, and distribution of visitor use, including visitor activities and behaviors. The primary goal of visitor use management is to maintain opportunities for high-quality visitor experiences.

Adopting the proposed comprehensive plan would not directly impact the quality of visitor experiences, however the proposed comprehensive plan would define the nature and purposes of the trail and the desired visitor experience and the associated settings and opportunities that support the high-quality visitor experience. An adaptive management and monitoring approach would be used ensure that desired conditions for the trail are achieved, including quality of visitor experiences (proposed comprehensive plan, appendix F). Having the desired conditions documented would help ensure that the various land managing agencies are working toward a shared vision as they implement the proposed comprehensive plan direction in their respective land and resource management plans.

The Trail Nature and Purposes, Trail wide Objectives and desired conditions would serve as a basis to consider whether emerging recreation uses or requests for activities or events are appropriate within the context of the National Scenic Trail. Implementing the proposed comprehensive plan would have long-term moderate beneficial effects related to maintaining and improving the quality of visitor experiences along the trail.

Wilderness and Backcountry settings are identified as important Trail Values and contribute to the quality of the overall trail experience (chapter 3 of proposed comprehensive plan). This is emphasized by desired conditions for Trail setting stating that the PNT is predominantly located in settings consistent with the primitive or semiprimitive nonmotorized recreation opportunity spectrum classes. Furthermore, management practices for Trail Setting ensure that changes to recreational settings and opportunities on the Pacific Northwest Trail should generally move the trail toward the more primitive, less developed end of the recreation opportunity spectrum. Designated wilderness and other special areas would be managed according to relevant special area plans. Where special area plans apply, the Pacific Northwest Trail proposed comprehensive plan and the administration and management of the trail should comport with the relevant special area plans. As special area plans are revised and when new special area plans are developed, they should be compatible with the Pacific Northwest Trail proposed comprehensive plan. With recognition of the presence of Wilderness resources and the value of wilderness characteristics associated with the PNT, adopting the proposed comprehensive plan is expected to support or enhance management of wilderness resources in designated wilderness areas and other areas with wilderness characteristics that the PNT passes through.

A monitoring plan and adaptive management process would be in place to ensure quality experiences are maintained over time.

### Visitor Capacity

The NTSA requires that comprehensive plans for national scenic trails include an identified carrying capacity of the trail and a plan for its implementation (16 U.S.C. 1244 (f)(1)). The contemporary term for carrying capacity is visitor capacity, defined as:

> …the maximum amounts and types of visitor use that a public use area can accommodate while achieving and maintaining the desired resource conditions and visitor experiences that are consistent with the purposes for which the area was established (Interagency Visitor Use Management Council 2019).

In addition to meeting the NTSA requirements, identifying visitor capacity and its subsequent monitoring and implementation helps in managing and protecting the resources and social values associated with the trail. Identifying visitor capacity is one of many tools available to managers for achieving and maintaining desired conditions.

Current visitor use levels in many of the trail stages are relatively low and are not likely to impact the nature and purposes of the trail or the desired conditions for recreation opportunities along the trail. Pacific Northwest Trail stages summary information for the estimated carrying capacity in Appendix E of the proposed comprehensive plan includes the overall need to address carrying capacity for each of the 50 trail stages. The low, moderate, and high ranking was informed by local trail managers familiar with on-the-ground conditions and visitor use patterns in each of the trail stages. The ranking includes:

- Low: the urgency to address carrying capacity is low, action may need to be considered in 10-20 years, or 20+ years out.
- Moderate: the urgency to address carrying capacity is moderate, action should be considered in 5-10 years.
- High: the urgency to address carrying capacity is high and should be addressed as soon as possible.

Visitor use management and carrying capacity are covered in detail in the proposed comprehensive plan in chapter 5, and appendix E - Carrying Capacity Report for the Pacific Northwest National Scenic Trail.

Appendix F. Adaptive Management and Monitoring of Visitor Use and Trail conditions on the Pacific Northwest National Scenic Trail outlines monitoring of the trail experience (such as types of use, crowding, noise, adjacent uses), resource conditions (such as scenery, water, wildlife), and potential impacts associated with trail use (such as water quality, soils, invasive species).

The visitor capacity analysis establishes a framework for monitoring and triggering potential management actions if use approaches the identified capacities (see indicators, thresholds and potential management actions outlined in appendix F of the proposed comprehensive plan). Specific indicators and thresholds are included related to carrying capacity and others would be identified by the local managing agency. For example, for the Cabinet-Yaak and Selkirk Mountains grizzly bear recovery zones, specific trigger points are also identified to ensure that visitor use is monitored, and management actions taken if necessary. If visitor use levels were determined to be an issue needing to be addressed based on local monitoring, visitor use levels could potentially be limited, which may result in moderate negative impact if visitors are no longer able to recreate on the trail as they currently are, or if the limitations are perceived as a reduction of opportunity. Managing visitor use to ensure high quality visitor experiences are maintained, however would have major long-term benefits to trail visitors.

Limiting visitor use numbers is only one tool for managers to address resource and social impacts related to visitors use. Site-specific trail conditions must be considered by local managers. The ability of the trail and adjacent resources to accommodate use will differ across different sections of the trail (ie, soil types, trail maintenance level, and trail design features), and the use-impact relationship is not linear. Generally, impacts increase as use increases, but only up to a point at which additional use causes very little impact (Marion 2016). Similarly, social impacts associated with the amounts of use (crowding) and types of use (conflict) are often based on visitor expectations or goals that will vary by trail section and the recreation setting. If resource and social impacts are not identified as a concern, there is no need for detailed site-specific visitor capacity studies. As outlined in the visitor capacity appendix and monitoring plan appendix in the proposed comprehensive plan, efforts will be focused where management action may be needed in the foreseeable future.

In the proposed action, carrying capacity is being addressed in several ways to meet the requirements of the NTSA while also maintaining the flexibility needed for local on-the-ground management of specific sites, segments or areas that may warrant a more detailed approach. Thus, the trail wide estimated thru hiker capacity serves as an indicator of trail wide use that can be monitored for trends over time. Identification of the limiting factors across the trail will guide the monitoring needs and help to prioritize areas where additional site-specific approaches may be needed to address visitor use. Other uses including day use and segment use are addressed by the development of desired condition zones that identify the appropriate types and levels of use that will not adversely affect the nature and purposes of the trail. Although desired condition zones across the trail are identified in the plan, they may need to be further refined to meet local needs or conditions. The plan recognizes visitor use management as an adaptive process of planning for and managing characteristics of visitor use and its physical and social setting, using a variety of strategies and tools, to sustain desired resource conditions and visitor experiences (Interagency Visitor Use Management Council 2016a). Identification of carrying capacity and any associated visitor use limitations are one of several tools available to manage visitor use.

**PNT Recommended National Trail Planning Corridor**

The proposed action includes a preliminary administrative recommendation for the location and width of the recommended national trail planning corridor, which will be selected by the Chief of the Forest Service through a separate administrative decision and published in the Federal Register. (16 U.S.C. 1246(a)(2)) Identification of the recommended national trail planning corridor (in fulfillment of NTSA, Section 7(a)(2) (16 U.S.C. 1246(a)(2)) would inform the establishment of national trail management corridors by the Federal land management agencies in land and resource management plans, as existing plans are amended or revised.

The minimum width is primarily based on a landscape or viewshed approach utilizing the distance of the foreground landscape (1/2 mile as seen from either side of the trail's travelway) described by the Forest Service’s Scenery Management System (USDA Forest Service 1995) would help maintain the key setting characteristics directly associated with the trail and important for maintaining high-quality recreation opportunities.

A minimum one-mile-wide recommended minimum national trail planning corridor would allow the relevant managing agency or agencies for the trail segment involved the discretion to approve and implement minor alterations of the trail alignment within the recommended national trail planning corridor such as those that may be necessary to move the trail off of roads, to a more ecologically sustainable trail location, or to avoid sensitive resources. These actions would be guided by the managing agency’s policies and relevant land management plans. Such realignments within the recommended national trail planning corridor would not require additional review and approval by the lead regional forester (as would be needed for relocations of segments of the trail outside the recommended national trail planning corridor) or Act of Congress (as would be needed for substantial relocations of segments of the trail outside the recommended national trail planning corridor (16 U.S.C. 1246(b)). The ability for land management agencies to more easily undertake minor alterations of the trail alignment would benefit recreation by allowing the trail to be moved away from roaded or motorized settings or areas of potential conflict with motorized use, toward non-motorized settings, consistent with the desired non-motorized trail opportunities. It would also provide land management agencies the ability to establish campsites and other trail amenities within the recommended national trail planning corridor at a reasonable distance away from the trail’s travelway to preserve the natural setting and allow trail users to experience the natural landscapes and significant resources the trail was established to protect and showcase.

**Information and Interpretation**

The proposed comprehensive plan encourages coordination to ensure that information is accurate, timely, consistent and widely available. Interpretive themes would be developed. Information and interpretation would be used to increase visitors' compliance with the rules and regulations for the Pacific Northwest Trail and the areas it goes through (for example, food storage orders), and visitors' use of responsible behaviors and practices.

The proposed comprehensive plan includes goals, objectives and practices that would guide information and interpretation and would facilitate more consistent and coordinated information and interpretation for the trail.

**Partnerships and Volunteers**

Existing partnership and volunteer efforts are strong and would continue. The proposed comprehensive plan would enhance coordination across the various management entities and partners. There would be potential for minor improvements with coordinated efforts driven by the proposed comprehensive plan.

## Socioeconomics

The implementation of the proposed comprehensive plan would provide for a shared understanding of the nature and purposes the Pacific Northwest Trail. The proposed comprehensive plan would allow for enhanced coordination across the various management entities and partners, and a more cohesive approach to delivery of services and information. Existing partnership with the Pacific Northwest Trail Association is strong and would continue. The PNT trail administrators will provide information used in visitor information. Partners, nonprofits, and communities use information provided by the trail administrators to promote the trail and bring economic stimulus to their communities. The proposed comprehensive plan may represent an opportunity to increase PNT related visitation and tourism should partners and local communities use information and coordination to market recreation opportunities associated with the PNT.

Communities may experience change related to recreation use and patterns differently. Communities with smaller populations may be more sensitive to changes in trail use and visitation. Existing employment in tourism and recreation-related small businesses also influences how changes in visitation use associated with PNT may be experienced by communities.

Economic contributions of trail visitors that support jobs and labor income in local communities are expected to be maintained or increase with increasing visitation. Opportunities included new or expanded business opportunities such as sporting and outfitting stores and shuttle services, developing day-trip experiences to draw casual hikers and families. Threats and concerns of the trail included thru-hiker traffic highly concentrated during short summer period. Strengthening partnerships, coordination and trail information can be used to help communities expand opportunities for all towns to target a more diverse group of visitors by bringing day and section hikers and winter recreationalists into town increasing tourism revenue year-round (Pal 2016).

Not all residents may appreciate increased visitation-driven economic growth. Some individuals may dislike change or changes (real or perceived) in character brought by increased tourism in their community.

## Soils

### Soil Condition and Erosion and Instability

Localized areas outside of the trail itself with detrimental soil compaction, displacement and other physical disturbances would reduce the ability of soils to exchange oxygen and carbon dioxide thus affecting the ability of soil organisms to survive. Outside of the trail itself, large areas of detrimental soil disturbance are not expected because of the implementation of best management practices. Expected impacts of trail maintenance and use would be greater on areas where slopes are steeper and there is more potential for erosion. Localized areas of compaction from trampling, tree falling (due to exposure of roots and loss of stability) or trail maintenance outside of the trail surface itself could lead to decreased water infiltration rates, leading to increased overland flow and indirectly leading to decreased gas exchange, which in turn degrades sub surface biological activity and above-ground forest vitality. These effects are unlikely outside of the one-mile minimum width for the recommended national trail planning corridor and would likely be localized to areas where trail access or trail maintenance activities occur. The greatest impact to the soils will likely occur where soils are wet (meadow areas) or highly erodible areas such as the bluff areas in the Puget Sound region of the trail. Trail carrying capacities are important to consider so that trails can accommodate increased use.

No new trail building or relocation is part of the proposed action, so no effects to unstable soils or landslide prone areas are expected from the proposed activities. Where the trail intersects with unstable soil areas, best management practices implementation, trail maintenance and monitoring will be important in order to understand how the trail may affect these soil types and how these areas may impact the trail itself.

The Pacific Northwest Trail passes through many different regions with different rock types, slope gradients, aspects, ecological zones, changing precipitation patterns and soil types. Managing the Pacific Northwest Trail requires both site-specific and broad scape knowledge of trail conditions and construction design and techniques that enhance the sustainability and can help determine how use affects trails. Monitoring and adaptative management strategies will ensure the soil resource is protected throughout the length of the trail (Appendix F of the Comprehensive Management Plan 2023).

## Wildlife

Potential effects of existing trail use on wildlife were summarized under the affected environment. Adoption of proposed comprehensive plan elements, including a recommended national trail planning corridor, would provide a framework for management, protection, and responsible use of the trail, and for implementation of future NEPA decisions for site-specific actions within the recommended national trail planning corridor. The Plan would not authorize site-specific prohibitions or actions and therefore would result in no effect to any special-status species.

Trail-wide desired conditions for managing the Pacific Northwest Trail relevant to wildlife include, “safeguard the PNT’s nature and purposes and other trail values;” “support and contribute to the conservation of the scenic, historic, natural, and cultural qualities of the lands along the PNT, and improve conditions on the ground;” and “promote responsible public enjoyment of scenic, historic, natural, and cultural qualities of the lands along the PNT”.

*Iconic wildlife species* (Olympic marmot, grizzly bear, Canada lynx, Southern Mountain caribou, northern spotted owl, marbled murrelet, southern resident killer whales, wolf, cougar, bobcat, fisher, wolverine, mountain goat, bighorn sheep, moose, elk, pika, bald eagle) are identified by the proposed comprehensive plan as one of the significant natural resources to be preserved, as a specific objective and practice to be

observed in the management of the trail. Desired conditions and management practices relevant to wildlife are listed in Appendix D of the proposed comprehensive plan.

Grizzly bear was identified as a limiting factor or constraint related to carrying capacity. Management direction applicable to each of the 4 grizzly bear recovery zones overlapping the recommended national trail planning corridor was used as a limiting factor in identifying an estimated range for trail carrying capacity and the plan for its implementation. Monitoring of this constraint will allow informed management decisions regarding sustainable use of the trail.

An adaptive management and monitoring approach would be used ensure that desired conditions and desired conditions for the trail are achieved (proposed comprehensive plan, Appendix F). For example, *wildlife behavior: potential disturbance due to use levels* could be used as one indicator to determine whether or not the objective for conservation of natural resources is being met. Thresholds and monitoring responsibility would be determined by the management agency unit, dependent on wildlife species and site-specific knowledge.

In the event the threshold is reached, any of the following recommended actions (toolbox tools) could occur:

- Encourage trail users to carry bear spray and be prepared with knowledge to use it if needed.
- Promote compliance with food storage orders. Increase enforcement of food storage orders, as necessary.
- Discourage off-trail use or camping, as necessary.
- Apply seasonal closures, as necessary.
- Realign or relocate the trail, as necessary.
- See specific recommendations in the visitor capacity implementation plan for trail stages within grizzly bear recovery zones.

Promotion of responsible use of the trail is not expected to lead to an indirect effect of additional use that would measurably affect grizzly bears. However, in the event that it does, increased use would be counter-balanced by the proposed action visitor capacity and associated toolbox.

Management of the Pacific Northwest Trail based on the nature and purposes primary uses, and desired conditions and management practices identified in the proposed comprehensive lan is not expected to result in disturbance of biological functions, injury, or mortality of individuals of any special status species, and therefore would not jeopardize any federally-listed species, result in take of bald or golden eagles, or migratory birds) or result in a trend towards federal listing for any Regional Forester Sensitive Species. In some cases, the proposed comprehensive plan may prevent or reduce the potential for effect of ongoing trail use on wildlife, thereby benefiting species.

ESA Section 7 consultation with USFWS or NMFS is required for federal actions that may affect a federally-listed species or designated critical habitat. This proposed action (adoption of a comprehensive plan with identification of a trail carrying capacity and a plan for its implementation, as required by the National Trails System Act) was determined to have no effect on federally-listed species and their critical habitats (wildlife biological evaluation, pp. 5-7); as such, consultation with the regulatory agencies was not required. The potential effects of ongoing use of the 2009-Congressionally Designated PNT on wildlife were disclosed in the project wildlife biological evaluation (pp. 4-5) as part of the existing condition. The proposed comprehensive plan includes a monitoring plan (appendix F) and identified that carrying capacity could be affected in areas where the trail crosses grizzly bear management units. Table 41 of the comprehensive plan includes examples of adaptive management tools that could be used if a

local unit, through monitoring, determines wildlife behavior, including grizzly bear behavior, is being impacted by disturbance from trail use. Please refer to Endangered Species Act and Sensitive Species (FSM 2600) Sections above for species-specific determinations.

Similar to wildlife, elements of the proposed comprehensive plan specific to biota (as well as those specific to water resources and soil protection) would provide a management framework for protection, and responsible use of the trail, and for implementation of future NEPA decisions for site-specific actions within the recommended national trail planning corridor. Sample indicators, thresholds, and possible actions (tools) for protection of water quality, vegetation, and soils are described in appendix F of the proposed comprehensive plan.

Management of the Pacific Northwest Trail based on the nature and purposes primary uses, and desired conditions and management practices identified in the proposed comprehensive plan is not expected to result in direct (alteration, degradation, or elimination of habitats) or indirect effects to habitats, and therefore would not result in destruction or adverse modification of critical habitats of any federally-listed species or prevent potential habitats from maintaining at least viable populations of any non-federally-listed species. In some cases, the proposed comprehensive plan may prevent or reduce the potential for effect of ongoing use on habitats, thereby benefiting species. Please refer to table 11 for species-specific determinations.

**Elk and Deer**

Elk herds within the recommended national trail planning corridor are generally stable to increasing, and deer populations, at minimum, remain within zones management objectives (WDFW 2022).

Management of the Pacific Northwest Trail based on the recommended nature and purposes primary uses, and desired conditions and management practices identified in the proposed comprehensive plan is not expected to result in disturbance of biological functions, injury, or mortality of individuals of any ungulate species. Furthermore, promotion of responsible use of the trail is not expected to lead to additional use. However, in the event that it does, increased use would be counter-balanced by the proposed action visitor capacity and associated toolbox. Therefore, the proposed action would not contribute to a loss of viability for any ungulate species.

## Both beneficial and adverse effects

The interdisciplinary team did not identify any significant adverse effects associated with implementing the proposed action. While the overall effect of implementing the project is expected to be beneficial or neutral, the specific direct, indirect, and cumulative effects would be within standards set forth by the relevant land management plans, and consistent with applicable environmental laws. See the Environmental Impacts Review section above for effects determinations not identified below.

## Effects on public health and safety

The project has been designed to minimize the potential impacts on public health and safety during and after implementation. Visitor information and interpretation would provide messages to promote visitor safety related to the following topics: proper food storage and other practices to avoid encounters with grizzly bears or black bears, as well as the importance of carrying bear deterrent spray; awareness of the remote and undeveloped character of many areas of the trail where there may be few facilities or telecommunications opportunities; the importance of being alert to dynamic conditions along the trail, such as wildfires; the importance of carrying sufficient water and treating water to avoid illness; and the need to be alert to the potential for motor vehicle encounters on roads and motorized trails open to public access. The project provides direction, tools, and processes that will facilitate future local actions by the relevant management agency or agencies to minimize interactions between trail visitors and motor vehicle

traffic, such as moving the trail away from roads and motorized trails, or to deploy traffic control measures per the Manual on Uniform Traffic Control Devices (MUTCD) standards. The project provides direction and processes that will facilitate future local actions by the management agency or agencies to notify visitors in the case of temporary closures to the trail due to wildfires or other emergencies, and to implement temporary detours to allow visitors to avoid closed areas.

### Effects that would violate Federal, State, Tribal or Local Laws Protecting the Environment

The proposed action has been considered for compliance with applicable federal, state, tribal and local laws. As documented in the Environmental Impacts Review section of this document, no laws would be violated. No effects are anticipated that would violate federal, state, tribal, or local laws protecting the environment.

## Administrative Review

The proposed project is subject to pre-decisional objection process at 36 CFR 218 Subparts A and B. Only those who submit timely and specific written comments 36 CFR §218.2 regarding the proposed project or activity during a public comment period established by the responsible official are eligible to file an objection §218.24(b)(6). The publication date of the legal notice in the newspapers of record, *The Seattle Times*, is the exclusive means for calculating the time to submit objections on a proposed project or activity. See the project website for a copy of the legal notice, information on how to submit an objection, and associated comment requirements, https://www.fs.usda.gov/project/?project=60970

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# Appendix A – Vegetation Species

## Vegetation Species

Table 16 lists the at-risk species for respective Forest Service Units including the Colville (COL), Okanogan-Wenatchee (OKW), Olympic (OLY), Mount Baker-Snoqualmie (MBS), Kootenai, (KNF), Flathead (FNF), and Idaho-Panhandle National Forests.

**Table 16. At risk species for respective Forest Service units**

| Species | Status | Unit |
|---|---|---|
| Whitebark pine (*Pinus albicaulis*) | Federally Threatened | Everywhere found (COL, OLY, OKW) |
| Richardson's needlegrass (*Achnatherum richardsonii*) | Regional Forester Sensitive Species, R6 | COL |
| Northern bentgrass (*Agrostis mertensii*) | Regional Forester Sensitive Species, R6 | OKW |
| Dwarf milkvetch (*Astragalus microcystis*) | Regional Forester Sensitive Species, R6 | COL, OLY |
| Trianglelobe moonwort (*Botrychium ascendens*) | Regional Forester Sensitive Species, R6 | OKW, MBS |
| Scalloped moonwort (*Botrychium crenulatum*) | Regional Forester Sensitive Species, R6 | KNF |
| Western moonwort (*Botrychium hesperium*) | Regional Forester Sensitive Species, R1 and R6 | COL, FNF |
| Peculiar moonwort (*Botrychium paradoxum*) | Regional Forester Sensitive Species, R6 | COL |
| Stalked moonwort (*Botrychium pedunculosum*) | Regional Forester Sensitive Species, R1 and R6 | COL, IPNF |
| Different-nerve sedge (*Carex heteroneura* var. *epapillosa*) | Regional Forester Sensitive Species, R6 | OKW |
| Obtuse sedge (*Carex obtusata*) | Regional Forester Sensitive Species, R6 | OLY |
| Few-flowered sedge (*Carex pauciflora*) | Regional Forester Sensitive Species, R6 | MBS |
| Great Smokey Mountain sedge (*Carex proposita*) | Regional Forester Sensitive Species, R6 | COL |
| Beaked sedge (*Carex rostrata*) | Regional Forester Sensitive Species, R6 | COL |
| Variegated sedge (*Carex stylosa*) | Regional Forester Sensitive Species, R6 | OLY |
| Quill sedge (*Carex tenera*) | Regional Forester Sensitive Species, R6 | COL |
| Northern golden saxifrage (*Chrysosplenium tetrandrum*) | Regional Forester Sensitive Species, R6 | COL |
| Bulblet-bearing water hemlock (*Cicuta bulbifera*) | Regional Forester Sensitive Species, R6 | COL |
| Fragile rockbrake (*Cryptogramma stelleri*) | Regional Forester Sensitive Species, R6 | COL |
| Lesser yellow lady's slipper (*Cypripedium parviflorum*) | Regional Forester Sensitive Species, R1 | KNF |
| Golden draba (Draba aurea) | Regional Forester Sensitive Species, R6 | OKW |
| Drummond's mountain-avens (*Dryas drummondii*) | Regional Forester Sensitive Species, R6 | COL |
| Crested woodfern (*Dryopteris cristata*) | Regional Forester Sensitive Species, R6 | COL |
| Beaked spikerush (*Eleocharis rostellata*) | Regional Forester Sensitive Species, R6 | COL |
| Thinleaf cottonsedge (*Eriophorum viridicarinatum*) | Regional Forester Sensitive Species, R1 and R6 | COL, KNF |

| Species | Status | Unit |
|---|---|---|
| Pale gentian (*Gentiana glauca*) | Regional Forester Sensitive Species, R6 | OKW |
| Purple avens (*Geum rivale*) | Regional Forester Sensitive Species, R6 | COL |
| Alpine azalea (*Kalmia procumbens*) | Regional Forester Sensitive Species, R6 | MBS, OKW |
| Drypark pea (*Lathyrus bijugatus*) | Regional Forester Sensitive Species, R1 | KNF |
| Alaska curved woodrush (*Luzula arcuata* ssp. *unalaschkensis*) | Regional Forester Sensitive Species, R6 | OKW |
| Tree-like clubmoss (*Lycopodium dendroideum*) | Regional Forester Sensitive Species, R1 and R6 | COL, IPNF, MBS |
| Spreading miner's lettuce (*Montia diffusa*) | Regional Forester Sensitive Species, R6 | OLY |
| Spiked muhly (*Muhlenbergia glomerata*) | Regional Forester Sensitive Species, R6 | COL |
| Northern adderstongue (Ophioglossum pusillum) | Regional Forester Sensitive Species, R6 | COL |
| Marsh grass-of-Parnassus (*Parnassia palustris*) | Regional Forester Sensitive Species, R6 | COL |
| Arctic sweet coltsfoot (*Petasites frigidus* var. *frigidus*) | Regional Forester Sensitive Species, R1 | IPNF, FNF |
| Long beechfern (*Phegopteris connectilis*) | Regional Forester Sensitive Species, R1 | IPNF |
| Ragged lichen (*Platismatia lacunose*) | Regional Forester Sensitive Species, R6 | MBS, OLY |
| Shortspur seablush (*Plectritis brachystemon*) | Regional Forester Sensitive Species, R6 | OLY |
| Sticky polemonium (*Polemonium viscosum*) | Regional Forester Sensitive Species, R6 | OKW |
| Snow cinquefoil (*Potentilla nivea*) | Regional Forester Sensitive Species, R6 | OKW |
| Idaho gooseberry (*Ribes oxyacanthoides* var. *irriguum*) | Regional Forester Sensitive Species, R6 | COL |
| Sageleaf willow (Salix candida) | Regional Forester Sensitive Species, R6 | COL |
| McCalla's willow (*Salix maccalliana*) | Regional Forester Sensitive Species, R6 | COL |
| False mountain willow (*Salix pseudomonticola*) | Regional Forester Sensitive Species, R6 | COL |
| Nodding saxifrage (*Saxifraga cernua*) | Regional Forester Sensitive Species, R6 | OKW |
| Swaying bulrush (*Schoenoplectus subterminalis*) | Regional Forester Sensitive Species, R1 | KNF |
| Chocolate chip lichen (*Solorina saccata*) | Regional Forester Sensitive Species, R6 | COL |
| Northern bog aster (*Symphyotrichum boreale*) | Regional Forester Sensitive Species, R1 | IPNF |
| Urn lichen (*Tholurna dissimilis*) | Regional Forester Sensitive Species, R6 | MBS, OKW |
| Marsh arrowgrass (*Triglochin palustris*) | Regional Forester Sensitive Species, R6 | COL |
| Velvetleaf huckleberry (*Vaccinium myrtilloides*) | Regional Forester Sensitive Species, R6 | OKW |

# Invasive Plant Species

The table below lists State-listed invasive plants found within the minimum one-mile recommended national trail planning corridor surrounding the PNT national trail planning corridor. Weed lists and definitions of weed status differ between Idaho, Montana, and Washington. Counties within each State also have their own lists and designated status of each species tailored to reflect levels of infestations documented in each County, as well as potential ecological and economic threats, and feasibility of control or eradication within each jurisdiction.

**Table 17. State-listed invasive plants found within the one-mile recommended national trail planning corridor surrounding the PNT (ID=Idaho, MT=Montana, WA=Washington)**

| Scientific Name | Common Name | State | Counties | State Weed Status |
|---|---|---|---|---|
| *Centaurea stoebe* ssp. *micranthos* | spotted knapweed | ID | Bonner, Boundary | Statewide Containment List |
| *Hieracium caespitosum* | meadow hawkweed | ID | Bonner, Boundary | Statewide Control List |
| *Leucanthemum vulgare* | oxeye daisy | ID | Bonner, Boundary | Statewide Containment List |
| *Bromus tectorum* | cheatgrass | MT | Flathead | Priority 3 |
| *Centaurea stoebe* ssp. *micranthos* | spotted knapweed | MT | Flathead, Lincoln | Priority 2B |
| *Chondrilla juncea* | rush skeletonweed | MT | Lincoln | Priority 1B |
| *Chrysanthemum leucanthemum* | oxeye daisy | MT | Lincoln | Priority 2B |
| *Cirsium arvense* | Canada thistle | MT | Flathead, Lincoln | Priority 2B |
| *Cynoglossum officinale* | gypsyflower | MT | Flathead, Lincoln | Priority 2B |
| *Euphorbia esula* | leafy spurge | MT | Lincoln | Priority 2B |
| *Hieracium aurantiacum* | orange hawkweed | MT | Flathead, Lincoln | Priority 2A |
| *Hieracium x floribundum* | hawkweed | MT | Flathead | Priority 2A |
| *Hieracium pratense* | meadow hawkweed | MT | Lincoln | Priority 2A |
| *Hypericum perforatum* | common St. Johnswort | MT | Flathead, Lincoln | Priority 2B |
| *Leucanthemum vulgare* | oxeye daisy | MT | Flathead, Lincoln | Priority 2B |
| *Linaria dalmatica* | Dalmatian toadflax | MT | Lincoln | Priority 2B |
| *Linaria vulgaris* | butter and eggs | MT | Flathead | Priority 2B |
| *Potentilla recta* | sulphur cinquefoil | MT | Flathead, Lincoln | Priority 2B |
| *Ranunculus acris* | tall buttercup | MT | Flathead | Priority 2A |
| *Tanacetum vulgare* | common tansy | MT | Flathead, Lincoln | Priority 2B |
| *Artemisia absinthium* | absinthium | WA | Ferry | Class C |
| *Berteroa incana* | hoary alyssum | WA | Ferry, Stevens, Okanogan | Class B |
| *Buddleja davidii* | orange eye butterflybush | WA | Whatcom | Class B |
| *Carduus acanthoides* | spiny plumeless thistle | WA | Ferry, Stevens | Class B |
| *Carduus nutans* | nodding plumeless thistle | WA | Ferry, Okanogan | Class B |
| *Centaurea stoebe* | spotted knapweed | WA | Ferry, Okanogan, Clallam, Whatcom | Class B |
| *Centaurea debeauxii* | meadow knapweed | WA | Clallam | Class B |
| *Centaurea diffusa* | diffuse knapweed | WA | Ferry, Pend Oreille, Stevens, Okanogan, Clallam | Class B |
| *Centaurea jacea* | brownray knapweed | WA | Clallam, Jefferson | Class B |
| *Centromadia pungens* | common tarweed | WA | Whatcom County | Class C |
| *Chrysanthemum leucanthemum* | oxeye daisy | WA | Pend Oreille, Stevens | Class C |

| Scientific Name | Common Name | State | Counties | State Weed Status |
|---|---|---|---|---|
| *Cirsium arvense* | Canada thistle | WA | Ferry, Stevens, Whatcom, Okanogan, Clallam, Jefferson | Class C |
| *Cirsium vulgare* | bull thistle | WA | Whatcom, Clallam, Jefferson | Class C |
| *Clinopodium vulgare* | wild basil | WA | Clallam | Class B |
| *Conium maculatum* | poison hemlock | WA | Whatcom County | Class B |
| *Convolvulus arvensis* | field bindweed | WA | Whatcom | Class C |
| *Cynoglossum officinale* | gypsyflower | WA | Okanogan | Class B |
| *Cytisus scoparius* | Scotch broom | WA | Whatcom, Clallam, Jefferson | Class B |
| *Daucus carota* | Queen Anne's lace | WA | Whatcom, Clallam | Class C |
| *Geranium robertianum* | Robert geranium | WA | Whatcom, Clallam, Jefferson | Class B |
| *Hedera helix* | English ivy | WA | Whatcom, Clallam | Class C |
| *Hieracium aurantiacum* | orange hawkweed | WA | Ferry, Whatcom, Okanogan | Class B |
| *Hieracium caespitosum* | meadow hawkweed | WA | Ferry, Pend Oreille, Whatcom, Okanogan, Stevens, Clallam | Class B |
| *Hieracium sabaudum* | New England hawkweed | WA | Whatcom | Class B |
| *Hypericum perforatum* | common St. Johnswort | WA | Ferry, Okanogan, Stevens, Clallam, Jefferson | Class C |
| *Hypochaeris radicata* | hairy cat's ear | WA | Clallam | Class C |
| *Impatiens capensis* | jewelweed | WA | Whatcom, Clallam | Class C |
| *Impatiens glandulifera* | ornamental jewelweed | WA | Whatcom | Class B |
| *Lamiastrum galeobdolon* | yellow archangel | WA | Whatcom, Clallam | Class B |
| *Leucanthemum vulgare* | oxeye daisy | WA | Okanogan | Class C |
| *Linaria dalmatica* | Dalmatian toadflax | WA | Stevens | Class B |
| *Phalaris arundinacea* | reed canarygrass | WA | Whatcom, Clallam | Class C |
| *Polygonum bohemicum* | Bohemian knotweed | WA | Whatcom | Class B |
| *Polygonum cuspidatum* | Japanese knotweed | WA | Ferry, Clallam | Class B |
| *Polygonum sachalinense* | giant knotweed | WA | Whatcom | Class B |
| *Potentilla recta* | sulphur cinquefoil | WA | Whatcom, Okanogan, Clallam | Class B |
| *Rubus armeniacus* | Himalayan blackberry | WA | Whatcom, Clallam | Class C |
| *Rubus laciniatus* | cutleaf blackberry | WA | Whatcom, Clallam, Jefferson | Class C |
| *Senecio jacobaea* | stinking willie | WA | Whatcom, Okanogan, Clallam, Jefferson | Class B |
| *Tanacetum vulgare* | common tansy | WA | Whatcom, Okanogan, Clallam | Class B |