State of Washington Department of Natural Resources

Management Plan for
Pinecroft Natural Area Preserve

DRAFT -- April 2025

Pat Ryan, Region Manager
Northeast Region **Date**

Kristen Ohlson-Kiehn, Division Manager
Recreation, Conservation and Transactions Division **Date**

Heida Diefenderfer, Chair
Washington State Natural Heritage Advisory Council **Date**

2025 Management Plan for Pinecroft Natural Area Preserve

Photo Credit: Washington Natural Areas Program

Why Create a Management Plan for Pinecroft NAP?

The Pinecroft Natural Area Preserve (NAP) Management Plan provides functional guidelines for the site manager and other Washington State Department of Natural Resources (DNR) staff, as well as conservation information for conservation partners, neighbors, interested parties and the public. This plan helps to identify priorities for management of natural features and access at the site. The plan demonstrates how DNR is applying statutory and policy requirements to specific management activities for the DNR-managed area within the preserve. The management objectives, actions and provisions outlined in this plan apply only to the DNR-owned lands within the preserve.

How Might the Management Plan Change Over Time?

Once approved by DNR, the plan guides future conservation land management actions for Pinecroft, in combination with any related implementation prescriptions or more detailed site inventory or analysis later adopted as appendices to this plan. Appendices 2 and 3 are "living" work plans that will be updated by DNR from time to time as changes arise with the routine management of the site and as projects are implemented or economic factors (such as inflation) cause changes. Future updates to Appendices 2 and 3 will be in conformance with the policy guidance and land management goals of the plan, including any future adopted appendices.

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Glossary of Acronyms

DNR	Department of Natural Resources
NAP	Natural Area Preserve
NRCA	Natural Resources Conservation Area
RCW	Revised Code of Washington
WAC	Washington Administrative Code
HCP	Habitat Conservation Plan
SEPA	State Environmental Protection Act
GMA	Growth Management Act
GEO	Governors Executive Order
CPL	Commissioner of Public Lands
WRIA	Watershed Resource Inventory Area
WDFW	Washington Department of Fish and Wildlife
WWRP	Washington Wildlife and Recreation Program
YEOP	Youth Education and Outreach Program (DNR)
EIA	Ecological Integrity Assessment
EO	Element Occurrence
DAHP	Department of Archaeological and Historic Preservation

General Natural Area Information

Pinecroft Natural Area Preserve Location

Pinecroft Natural Area Preserve (NAP) encompasses 100.19 acres within the Spokane River valley in the City of Spokane Valley, 10 miles west of the City of Spokane, and 10 miles east of the Washington/Idaho state line (Figure 1a, 1b).

T: R: S:	Portion of Sections 10 in T25N, R44E, Willamette Meridian, Spokane County.
Quad:	Greenacres, Washington, 7.5-minute Quadrangle Map (USGS 2023)
Ecoregion:	Okanogan

Figure 1a. Pinecroft Natural Area Preserve Approved Boundary and Ownership

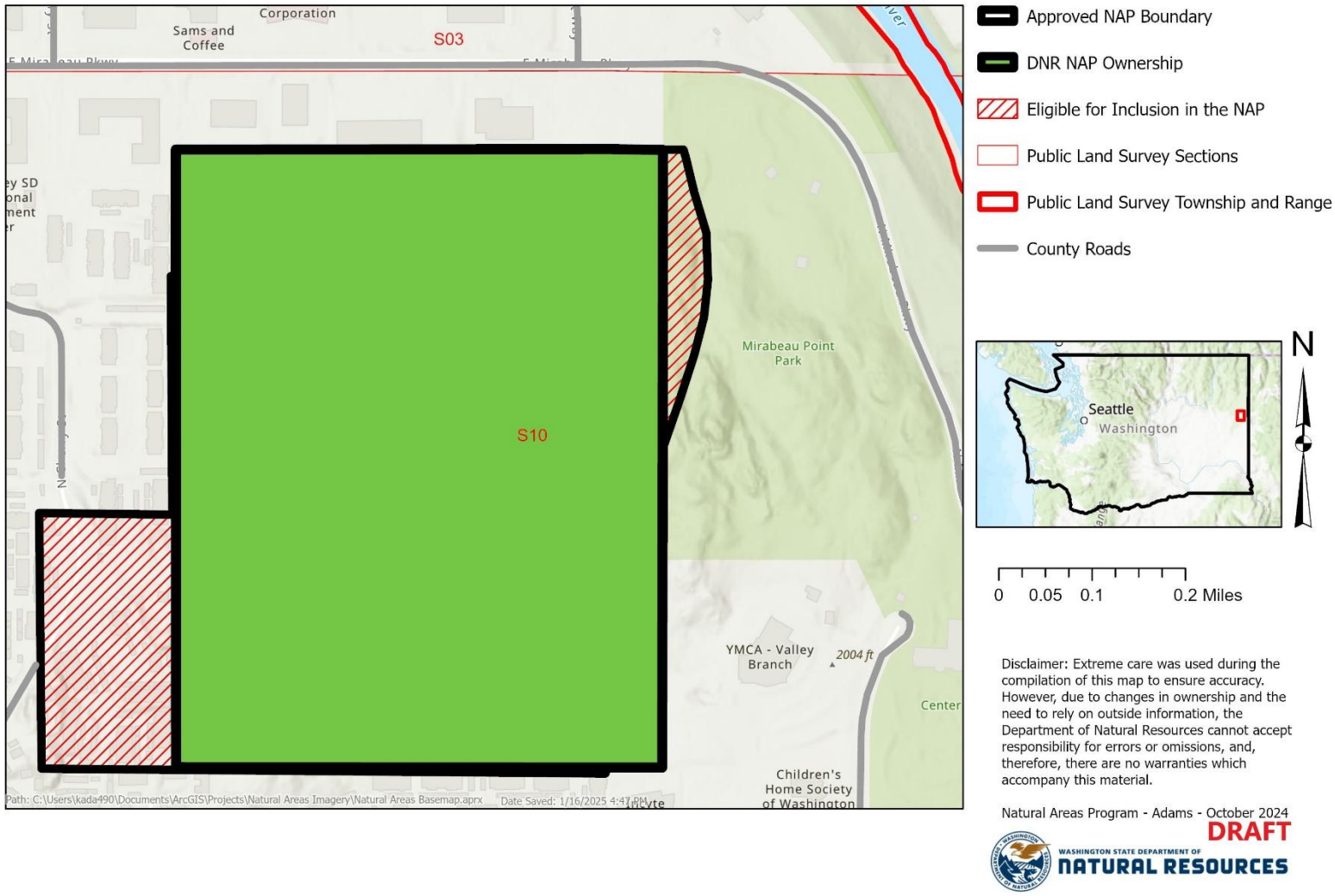
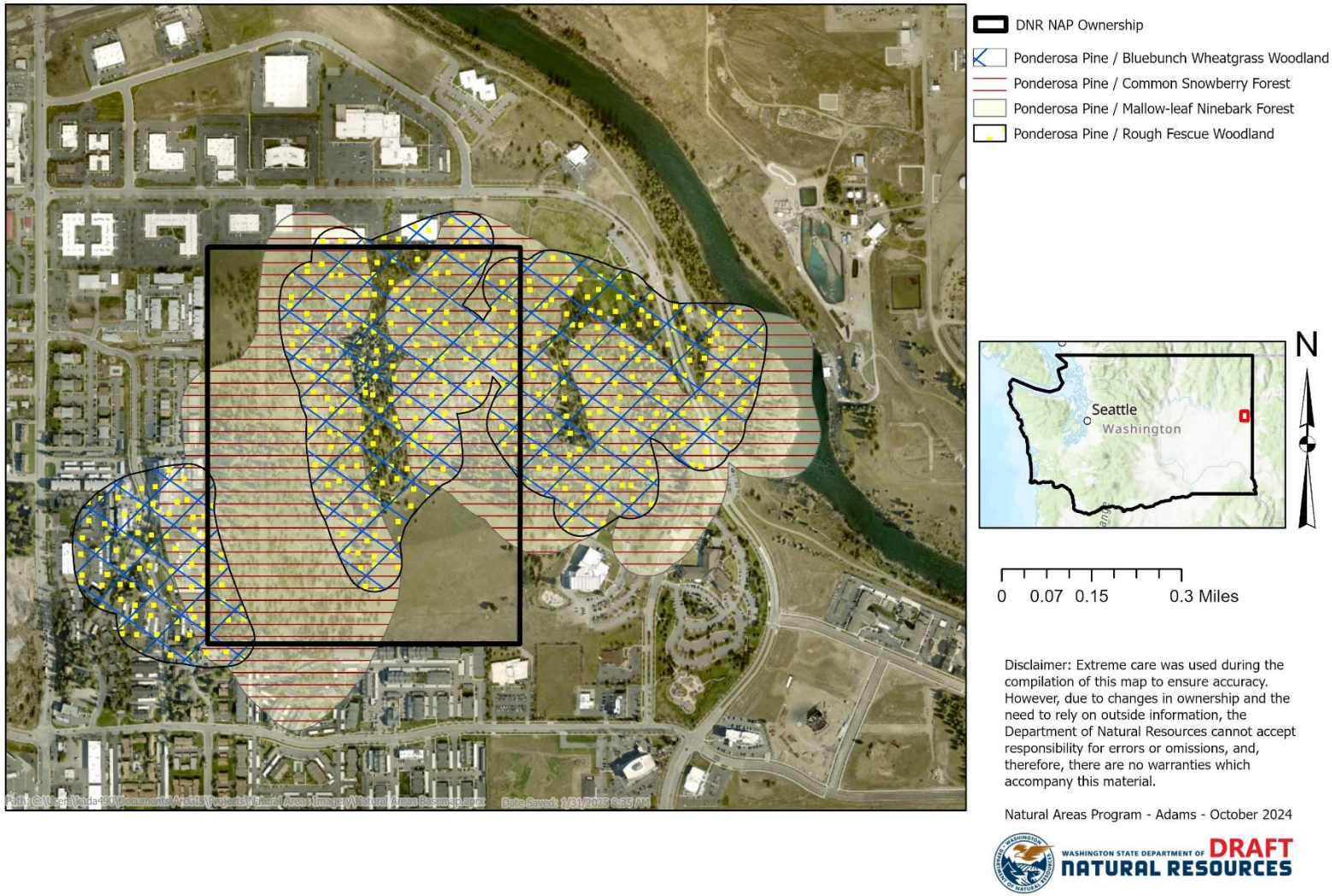


Figure 1b. Landscape context and extent of rare ecosystems contiguous with those protected in the approved boundary of Pinecroft Natural Area Preserve



Natural Area Designation

Pinecroft Natural Area Preserve (NAP) was designated under Revised Code of Washington (RCW) Chapter 79.70, the Washington Natural Area Preserves Act, in 1993. The preserve is owned and managed by the Washington State Department of Natural Resources.

Natural area preserves are established to protect the highest quality remaining examples of natural Washington's biodiversity. The collection of natural areas across the state (referred to as the statewide register of natural areas) provide protection for the best remaining examples of each of Washington's native ecosystems and rare species populations, as a way of preserving our natural heritage. Designated natural areas are intended to provide adequate representation of targeted species and ecosystems, provide opportunities for research and education, and contribute to the overall conservation of those species and ecosystems. Sites supporting priority species ecosystems identified in the State of Washington Natural Heritage Plan are considered for natural area designation if they are in excellent ecological condition and have long-term conservation viability, in comparison with other known examples of the same species or ecosystem.

The preserve boundary represents the area within which DNR can purchase private lands from willing sellers. The boundary contains approximately 104 acres, with 100.19 acres currently owned by DNR and managed as a natural area preserve. Since the boundary was established in 1993, the remaining 3.81 acres have been converted to other uses, including City of Spokane Valley parklands along the northeast corner of the DNR ownership.

Overview of Preserve Features

Pinecroft NAP protects the best remaining examples of four ponderosa pine dominated plant communities: (1) Ponderosa Pine / Bluebunch Wheatgrass Woodland; (2) Ponderosa Pine / Rough Fescue Woodland; (3) Ponderosa Pine / Mallow-leaf Ninebark Forest; and Ponderosa Pine / Common Snowberry Forest. (Figure 1b, Table 1). Although not a primary feature for which the site was designated, there is also a disjunct population of Rocky Mountain juniper (*Juniperus scopulorum*) that occurs sporadically throughout the site.

Pinecroft NAP Management Planning Process

The Pinecroft NAP Management Plan provides functional guidelines for the site manager and other DNR staff, as well as conservation information for partners, neighbors, interested parties and site visitors. The plan helps to identify priorities for management of natural features and access to the site. The plan demonstrates how the Natural Areas Program is applying policy and statutory requirements to specific management activities.

Limits of the Pinecroft NAP Management Plan

The management objectives, actions and provisions outlined in this plan apply only to the DNR-owned lands. DNR will implement the management actions as resources become available. The basis of future budget requests for maintenance, monitoring and operations

will reflect the objectives and actions of this plan. To develop the management plan for the NAP, DNR staff conducted ecological integrity assessments and inventories, and collected comments and input from area residents, agencies and Tribes.

Agency Overview
The Washington State Department of Natural Resources (DNR) manages 5.7 million acres of forest, range, agricultural, commercial, conservation, and aquatic lands in trust for the people of Washington. State-owned upland trust lands are managed to produce revenue for various trust beneficiaries, including schools, state facilities and, in some cases, local government services.

As of 2024, DNR manages 169,465 acres at 97 natural areas throughout the state with the primary objectives of conservation, research and environmental education, as well as low-impact access where appropriate. DNR manages two types of conservation lands, natural area preserves (NAPs, under RCW Chapter 79.70) and natural resources conservation areas (NRCAs, under RCW Chapter 79.71).

DNR Natural Areas Program
After a site has been designated and acquired as a natural area it is managed by the DNR Natural Areas Program, which works to fulfill DNR policies and legislative provisions under RCW 79.70 and RCW 79.71. Management objectives seek to protect the primary natural features of each natural area and provide opportunities for research, environmental education, and other access that is compatible with conservation. Active management is necessary in many natural areas to ensure the long-term viability of the priority species and ecosystems protected within them.

State of Washington Natural Heritage Program
The Washington State Legislature recognized the need for a systematic and objective approach to guide inventory and protection efforts in order to protect natural features most at risk, and to efficiently focus scarce conservation resources. As a result, the Washington Natural Heritage Program was established in 1987 to provide a scientific approach to the process of identifying candidate sites for the natural areas system and to gather and share data about the state's imperiled species and ecosystems for environmental assessment, conservation planning, and land management purposes.

The program creates a biennial *State of Washington Natural Heritage Plan* (Washington State Department of Natural Resources, 2022) that establishes the framework for a statewide register of natural areas and identifies conservation priority species and ecosystems for broader decision making.

Natural Heritage Advisory Council
The Natural Heritage Advisory Council, established by the Natural Area Preserves Act (RCW 79.70), advises DNR and other state agencies on the establishment and management of NAPs.

The Council reviews and approves or rejects natural area nominations, recommends sites to the Commissioner of Public Lands or the agency directors for Washington State Parks and Recreation Commission and the Washington Department of Fish and Wildlife, and works with DNR or other state agency staff to develop management plans for established natural area preserves. The Council advises DNR on management practices for the preservation and maintenance of high-quality natural areas.

Applicable Local, State, and Federal Regulations

The following plans and regulatory processes may shape and limit activities or projects that are proposed within the Pinecroft NAP Management Plan.

The Washington Natural Area Preserves Act: (RCW 79.70) In passing the Natural Area Preserves Act, the Legislature recognized the need for, and benefits of, permanently designating areas explicitly for conservation of biodiversity and geological features, research, and education. The Natural Area Preserves Act authorizes DNR to establish and manage a statewide system of natural areas (the Natural Areas Register) through cooperation with federal, state and local agencies, private organizations and individuals. These designated natural areas are intended to provide critical habitat for rare and vanishing species, conserve representative examples of the state's ecosystems, and ensure the availability of places for scientific research and education. Today, this system consists of lands managed by numerous federal and state agencies as well as private conservation organizations. Because they retain much of their natural character, these natural areas serve as reference sites to learn how ecosystems function and to document ecological change in relation to natural ecological processes thereby providing a baseline from which changes resulting from human-induced stressors or management activities (such as resource production or extraction, or outdoor recreation) can be compared.

The State Environmental Policy Act (SEPA): (RCW 43.21) SEPA requires governmental agencies to consider the environmental impact of proposals before making project decisions. Future management activities, which have the potential to impact the environment, such as development of educational and access facilities, may require SEPA review.

The Washington Growth Management Act (GMA): Passed by the Washington State Legislature in 1990, the GMA requires all urban counties and cities to develop and adopt comprehensive plans and regulations to implement these plans. The plan includes county-wide planning policies, land use designations (including zoning), urban growth boundaries, etc. The plans are used to guide growth and development for residents living in Spokane Valley. The areas of the Comprehensive Plan that are of primary relevance to Pinecroft Natural Area Preserve are the Critical Areas/Resource Ordinance, the Parks, Recreation and Open Space Plan, and zoning (City of Spokane Valley, 2016).

City of Spokane Valley Critical Areas/Resource Ordinances: Spokane County's Critical Areas Ordinance regulates land use within ecologically sensitive areas, including wildlife habitats. The GMA requires the development of regulations, based on best available science,

to protect critical environmental resources and avoid natural hazards. These "Critical Areas" include, but are not limited to, aquifer recharge areas (where water infiltrates to aquifers), geologic hazard areas (such as steep slopes prone to landslides), important wildlife habitat conservation areas and priority species, frequently flooded areas (such as floodplains and surfacing groundwater), and wetlands.

City of Spokane Valley Comprehensive Parks, Recreation, and Open Space Plan: RCW 36.70A.160 requires that cities identify open space around corridors for recreation, wildlife habitat, trails and critical areas. The Parks and Recreation Master Plan identifies the Spokane River and Centennial Trail as well as city parks like Mirabeau Park among their recreation assets. These features are located adjacent to Pinecroft NAP.

City of Spokane Valley Zoning: The City of Spokane Valley is a fully planning city with a comprehensive update slated for 2027. The land use designated by the county for the NAP is "Parks and Open Space" and has been zoned as the same to protect the natural physical assets for the community. The zoning surrounding Pinecroft NAP includes Multi-Family Residential properties wrapping around the southwest corner and up the west side, Mixed Use zoning around the southeast corner and along the north boundary, which allows for two or more different land uses within the same development and Parks and Open Space on the eastern boundary.

Washington Governor's Executive Order (GEO) 21-02: GEO 21-02 requires agencies to consult with the Washington Department of Archaeology and Historic Preservation and affected Tribes on the potential impacts of a project on cultural resources. The order covers state-funded construction, restoration, or acquisition projects that will not undergo Section 106 review under the National Historic Preservation Act of 1966 (Section 106). It also includes grant and pass-through funding that will culminate in construction or land acquisitions.

National Historic Preservation Act (NHPA) Section 106: Any project at Pinecroft NAP with a federal nexus (such as funding through federal funds) will be required to undergo a Section 106 consultation. In a Section 106 consultation, the federal agency serves as the lead agency for the purposes of the consultation process. Section 106 of the NHPA requires that each federal agency identify and assess the effects that their actions or projects may have on historic buildings, structures, districts, objects, and archeological sites. The Section 106 consultation process begins when the lead agency consults with the State Historic Preservation Officer and the affected Tribes. During the consultation, key determinations include 1) identification of historic and cultural resources that may be affected by the project, 2) determination of any adverse effects to these resources that may occur as a result of the project, and 3) how to resolve those adverse effects by avoiding negative adverse effects and mitigating for any adverse effects that will or do occur as a result of the project.

Commissioner of Public Lands Order on Tribal Relations #201029: The Commissioner's Order recognizes that Native American culture is characterized by an intimate relationship with natural resources and that DNR shares a commitment with Tribes in protecting natural resources. The order seeks to build inter-governmental relationships

based on trust and mutual respect as guided by six principles: Respect for Sovereignty, Interdependence, Sustainable Use, Sound Science, Transparency, and Respect for Traditional Knowledge and Cultural Values.

The Watershed Management Act: The Watershed Management Act of 1998, (ESHB 2514, and RCW 90.82) required local governments to address water quantity, quality, and habitat issues for individual surface water basins in the state. Water Resource Inventory Areas (WRIAs) delineate the management units, following ecological and political boundaries within a watershed. Pinecroft NAP is within the Middle Spokane River Water Resource Inventory Area (WRIA 57) and is addressed in the Watershed Management Plan that covers both WRIAs 55 and 57 (Spokane County, 2006). The objectives of watershed planning were to address water resource issues, provide for local management of water resources, and coordinate and consolidate water management practices within WRIAs 55 and 57.

Preserve Description

Preserve Purpose

Pinecroft NAP occupies part of a knoll adjacent (and west of) the Spokane River. The knoll is a gneiss outcrop (Newman Lake gneiss) that is completely surrounded by a flat, broad valley bottom. At its highest points, the knoll is over 100 feet above the 2000-foot elevation Spokane Valley floor. During the Pleistocene, outwash from the Cordilleran ice sheet and outburst floods from glacial lake Missoula deposited sand and gravel at the site, partly burying the gneissic knoll and resulting in rocky soils (Carrara et. al, 1996; Derkey et. al, 2004). These glacial floods deposited coarse soils on the site, which, along with fire, is the primary factor for the presence of the four ponderosa pine plant communities: Ponderosa Pine / Rough Fescue (*Pinus ponderosa / Festuca campestris*) Woodland (Priority 2, Threatened), Ponderosa Pine / Mallow-leaf Ninebark (*Pinus ponderosa / Physocarpus malvaceus*) plant community (Priority 1, Endangered), Ponderosa Pine / Bluebunch Wheatgrass (*Pinus ponderosa / Pseudoroegneria spicata*) plant community (Priority NA, Sensitive), and Ponderosa Pine / Common Snowberry (*Pinus ponderosa / Symphoricarpos albus*) plant community (Priority NA, Sensitive).

Under historical fire regimes, these plant communities generally had an open understory, with bunchgrasses dominating in the driest areas while shrubs tended to dominate in localized pockets of more moist soils or may have experienced slightly less frequent fire due to occurring in landscape positions that protected them from fire (e.g., north-facing slopes). This NAP is surrounded by urban development on three sides, while Mirabeau Point Park occurs to the east, which supports an additional 25 acres of similar but lower quality, degraded ponderosa pine ecosystem. Pinecroft NAP is isolated with the closest nearby forests being at Dishman Hills NRCA (3 miles away to the southwest), Antoine Peak Conservation Area (3 miles to the northeast), and Beacon Hill Conservation Area/Camp

Sekani Park (3 miles to the northwest). However, the NAP still supports nesting hawks and owls, and a variety of songbirds and small mammals.

Natural Area Design
The preserve boundary is designed to incorporate, and protect from threats, all the viable portions of the Ponderosa pine/grassland ecosystem and the vulnerable species occurrences. The boundary of Pinecroft NAP was approved by the Natural Heritage Advisory Council in 1990. Within the boundary of the preserve, DNR owns 100.19 acres managed as natural area preserve. Within the preserve there is an electrical transmission easement corridor held by Avista Power located running north to south across the entirety of the site about 200 feet from the west boundary of the property.

A natural area boundary is a designation of lands eligible for inclusion within a state-owned natural area. Lands located within the boundary only become part of the natural area if they are acquired by DNR. The boundary is simply an administrative tool to indicate where DNR will work with willing-seller property owners, and it imposes no change in land use zoning or any other restrictions on landowners. Acquisition from potentially willing sellers within a boundary is based on market value as determined by independent, third-party appraisals.

Adjacent Land/In-holdings: Pinecroft NAP is an urban preserve and includes within the approved boundary private development on the southwest side of the NAP and a public park managed by the City of Spokane Valley on the eastern edge of the NAP. In the past, the land adjacent to and including portions of the NAP were used for grazing or agriculture.

Preserve Acquisition
Following a recommendation to create the Pinecroft NAP in 1990, DNR acquired the land in 1993 through a donation from The Nature Conservancy of 100.19 acres. In the following two years, DNR appraised three additional parcels totaling approximately 33 acres. Owners of the three properties chose not to sell at the time. The properties were eventually sold to developers and have been developed into apartments, commercial enterprises and city park land. As of November 1995, DNR considers the current Pinecroft NAP boundary complete. No further acquisition is anticipated.

Natural Features Description

Pinecroft NAP Primary Natural Features
At the time of site establishment, the 1991 Natural Heritage plan identified one Priority 1, three priority 2, and one Priority 3 species and plant communities for protection in natural areas (Appendix 4). Table 1 lists the plant associations and species considered to be the "primary features" of the site (Figure 1b):

Table 1. Primary features priorities with associated NatureServe Element Codes found at Pinecroft NAP (NatureServe Explorer).

Plant Association	Scientific Name (Element Code)	Current Conservation Status
Ponderosa Pine / Rough Fescue Woodland	*Pinus ponderosa / Festuca campestris* Woodland (CEGL000185)	Threatened
Ponderosa Pine / Mallow-leaf Ninebark Forest	*Pinus ponderosa / Physocarpus malvaceus* Forest (CEGL000189)	Endangered
Ponderosa Pine / Bluebunch Wheatgrass Woodland	*Pinus ponderosa / Pseudoroegneria spicata* Woodland (CEGL000865)	Sensitive
Ponderosa Pine / Common Snowberry Forest	*Pinus ponderosa / Symphoricarpos albus* Forest (CEGL000203)	Sensitive

Natural Geologic Features:
Pinecroft NAP contains distinctive geologic features that expose the site's dynamic geologic history. Pinecroft contains a small rocky knoll (west of) the Spokane River. The rocky knoll is made of Newman Lake gneiss, which began forming as a granitic intrusion during the middle Cretaceous around 100 to 90 million years ago. This granitic feature was likely later metamorphosed into gneiss during the late Cretaceous to early Eocene, between 70 and 50 million years ago (Armstrong et. al, 1987). There are places where this ancient rock is exposed at the surface or covered only by shallow soil. During the middle Miocene (17–15 million years ago), the Spokane Valley was buried by the Columbia River Flood Basalts. Since that time, over millions of years, the landscape we see today at and around Pinecroft NAP has been shaped by weathering and deposition and erosion patterns resulting from the Missoula floods, a series of glacial lake outburst floods that occurred between 20,000 and 14,000 years ago (O'Connor et al., 2020). Mirabeau Point Park provides a self-guided

walking tour through the adjacent city park featuring the geologic history of the area (Mirabeau-Point-Park-Walking-Trails-Map-and-Geology-Brochure-and-Map-PDF (spokanevalleywa.gov)).

Appendix 4 (available via the Internet at www.dnr.wa.gov/pinecroft-natural-area-preserve) contains the Natural Heritage Program report that includes information on site topography, geology, soils, hydrology, and additional conservation features. The State of Washington Natural Heritage Plan, which describes the conservation methodology for natural area preserves, is available online at www.dnr.wa.gov/natural-heritage-program.

A list of plant species known to occur on the site is included in Appendix 5 and for animals/birds in Appendix 6. All appendices are available online at www.dnr.wa.gov/pinecroft-natural-area-preserve.

Primary Plant Communities

Ponderosa pine is the principal overstory dominant throughout the NAP. Rocky Mountain juniper (*Juniperus scopulorum*) and Douglas-fir (*Pseudotsuga menziesii*) are very minor components of the forest subcanopy represented by sparsely scattered individuals. The understory is dominated by native bunchgrasses, predominantly rough fescue, Idaho fescue, and bluebunch wheatgrass. The fescues are typically found where there are deeper soils, while the wheatgrass is found on shallow soil and rocky outcrops. Common forbs include arrowleaf balsamroot (*Balsamorhiza sagittata*), large-leaved avens (*Geum macrophyllum*), white-flowered hawkweed (*Hieracium albiflorum*), western yarrow (*Achillea millefolium*), and lupine (*Lupinus spp*.). Mallow-leaf ninebark and other shrubs like common chokecherry (*Prunus virginiana*) and serviceberry (*Amelanchier alnifolia*) appear sporadically on the fescue sites, with denser thickets in the more mesic habitats on the eastern end of the site. Forbs found in the mesic habitats include slender cinquefoil (*Potentilla gracilis*), red besseya (*Besseya rubra)*, and pinegrass (*Calamagrostis rubescens*). The distribution of the Primary Features at Pinecroft is shown in Figure 1b. Find a more detailed description of these plant communities in Appendix 4. Global summaries of these communities can be found by searching the NatureServe Element Code found in Table 1 at https://explorer.natureserve.org/Search#q. Contact the Natural Heritage Program manager for Washington-specific descriptions.

Key Bird Species

Based on species lists obtained through a 1995 Natural Heritage Program survey and eBird (Checklist for Mirabeau Point Park (ebird.org)) there are at least 50 species documented from the adjacent habitat at Mirabeau Point Park, including three species (Peregrine Falcon (*Falco peregrinus*), Bald Eagle (*Haliaeetus leucocephalus*), and the Pygmy Nuthatch (*Sitta pygmaea*)) that are listed as "Species of Greatest Conservation Need" (SGCN) in the Washington State Wildlife Action Plan (WDFW 2015). Twenty-three species have been documented that are likely breeding in the habitat on or around the property, including the Pygmy Nuthatch, Bald Eagle, Red-tailed Hawk (*Buteo jamaicensis*), and Great Horned Owl (*Bubo virginianus*). More surveys are needed, particularly for nocturnal species detection. See Appendix 6 for a list of species seen at Pinecroft NAP to date.

Mammals
No formal surveys have been completed on the preserve to document the mammalian species assemblage. Information about mammal use of the site is limited. Visual observations have shown that several species live within the preserve, and the State Wildlife Action Plan (WDFW 2015) has identified a number of species as being closely or generally associated with this habitat, including several mammals, like American Badger (*Taxidea taxus*), Nuttall's Cottontail Rabbit (*Sylvilagus nuttallii)*, Yellow-bellied Marmot (*Marmota flaviventris)*, and Coyote (*Canus latrans*), and 3 species of bats including Hoary Bat, (*Lasiurus cinereus*), Silver-haired bat, (*Lasionycteris noctivagans*), and Townsends Big-eared Bat.(*Corynorhinus townsendii*). See Appendix 6 for a list of species seen at Pinecroft NAP to date.

Amphibians and Reptiles
No formal herpetological surveys have been completed on the preserve, however common snakes and lizards are likely to be present. The habitat type supported by Pinecroft NAP has been documented as being closely and generally associated with the Pygmy Short-horned Lizard (*Phrynosoma douglasii*), a reptile identified as a "Species of Greatest Conservation Need" in the Washington State Wildlife Action Plan (WDFW 2015) where snags, logs or old growth or mature forest conditions are present. Appendix 6 will be updated with a list of species in the event that surveys are conducted at Pinecroft NAP.

Ecoregional Context
Pinecroft Natural Area Preserve is located within the extreme southeastern portion of the Okanogan Ecoregion, a region characterized by low- to high-elevation conifer forests and whose climate varies greatly with elevation and longitude. The west side of the ecoregion lies within the rain shadow of the Cascades, while the east side lies at the foot of the Rockies and receives relatively more precipitation. Precipitation varies from 14-30 inches across the region. The ponderosa pine woodlands occur on warm, dry, exposed sites on all slopes and aspects. They are generally found on glacial outwash soils, with characteristic features of good aeration and drainage, coarse textures, neutral to slightly acidic pH, an abundance of mineral material and periods of drought during the growing season.

While only about 10 percent of the region has been converted to agriculture or urban use, the majority of this is located in major valleys such as the Spokane Valley where Pinecroft NAP is located. As a result, many of the native ecosystems found in these low-lying areas have been heavily fragmented, reduced in size, or are in a degraded condition. Pinecroft NAP contains one of the few intact remnants of the ponderosa pine woodland and forest communities that once covered much of the Spokane Valley lowlands.

In particular, the ponderosa pine communities with rough fescue in the understory are very limited in extent in Washington, with the Spokane Valley representing one of the major locations. The woodland habitats found on site were historically maintained by fire. Combined with summer drought conditions, low severity fires maintain low tree densities and an open canopy, supporting the persistence of bunchgrasses. Fire suppression in recent decades has created ecosystems throughout the region that are now more vulnerable to insect and disease outbreaks. Most of these plant communities have been lost or degraded,

resulting in very few intact examples remaining in the state. Pinecroft NAP contains the only protected example of this community in the state and one of only a few protected examples of the other forest and woodland community types for which it was established.

Climate

The Okanogan Ecoregion is large with varying climatic conditions depending on elevation, which drives the temperature of a site, and the longitude, which drives the precipitation patterns of a site. The Okanogan Ecoregion covers approximately 14 percent of the state, spanning between the Cascades and the Rockies along the northern border. The climate reflects the rain shadow effect on the leeward side of the cascades, with dry conditions persisting across the state until precipitation increases again on the windward side of the Northern Rockies.

Pinecroft NAP is in the far southeast corner of the Okanogan Ecoregion, in the zone of increasing precipitation where weather systems move east and encounter the west slopes of the Northern Rockies. The climate is influenced by the extremes of hot, dry air from the adjacent Columbia Basin in the summer and cold, dense arctic air in the winter. Annual precipitation is variable, but averages 15.5" per year, falling between October and May. The wettest month is in December with average precipitation falling as snow of about 4.8 inches. Mild winter temperatures range from average lows of 27 degrees to an average high of 43 degrees with snow falling primarily between November and March. In summer, it has been traditionally warm and dry, with an average high temperature of 83 degrees and low summer temperatures averaging around 54 degrees. While there is some elevational variation at Pinecroft, it is not enough to create climatic differences across the site.

Climate Change

Climate change has the potential to alter important ecological variables in the Pinecroft NAP environment, key among them being temperature and water regime which effect plant and animal community composition and species distribution (Chang et al., 2023). Over the last 100 years, the average annual temperature in the Pacific Northwest has increased by 1.3 degrees, and temperatures are expected to increase by between 3 and 10 degrees by 2100, with the largest increases anticipated in summer temperatures (Snover et al., 2013).

Specifically, in eastern Washington, climate change is bringing warmer temperatures year-round and warming trends are strongest in the winter (Mote 2003). Precipitation is more variable but is expected to increase in winter and decrease in the summer (Mote et al. 2005). Warmer winter temperatures are driving a shift in the location, accumulation and persistence of the snowpack across the ecoregion, as a higher proportion of precipitation is expected to fall as rain (University of Washington Climate Impacts Group, 2012). Snowpack is an important storage mechanism for water resources (Henning et al 2020; Yano et al 2019). Robust snowpack contributes to groundwater as it melts and seeps into the soil, maintaining higher soil moisture into the dry season. With less snowpack, the soil moisture is likely to decrease earlier in the season. Combined with drier, hotter summers, the frequency and intensity of wildfire is anticipated to increase. Fire suppression has resulted in forest

conditions susceptible to much hotter and intense fires than occurred historically. While significant restoration has taken place at Pinecroft to address these conditions, continued actions focused on maintaining or reducing canopy density, understory woody regeneration, litter buildup, and accumulation of fine and coarse woody debris will be needed to protect these ecosystems from climate-change induced fire risk.

At Pinecroft NAP, changes in climate are consistent with the rest of the ecoregion (MacMullan et al, 2020; Breems and Booth 2020). Warmer winter temperatures, result in decreased in precipitation that falls as snow. Recent precipitation trends in the Spokane region have been slightly increasing annual precipitation, with seasonal decreases in summer, and slight increases in winter months (Breems and Booth, 2020). Combined with the warmer winter temperatures, water storage in the form of snowpack is decreasing (Henning et al 2020). This phenomenon leads to decreased soil moisture earlier in the growing season without the slow contribution of water through melting snow (Yano et al, 2019). These warmer and drier conditions are likely to make the ponderosa pine ecosystems across the region more vulnerable to disease and insects and may result in shifts in location and community composition in the long run (Filip, 2005). While these types of damage were mitigated in the past by low intensity fires often managed by Tribal people, the threat of wildfire, and the impacts to air quality in such a populated location, make prescription burns in the NAP unlikely as a management tool.

Managing natural areas like Pinecroft NAP to protect biodiversity and support rare species and habitats in a time of changing climate will help provide refuge, and connectivity and corridors to numerous species. Natural areas can provide shelter, and a place for species to relocate or adapt with climatic changes. Additionally, these minimally disturbed sites serve as baselines where natural processes dominate and from which we can observe and compare how a natural ecosystem responds to the impacts of climate change and other human influences on the landscape (Noss et al., 2024).

The ecological changes driven by climate change are having profoundly negative impacts on Tribal cultures and traditional and spiritual practices by reducing or eliminating traditional foods and medicines and weakening connections with the ecosystem through reduction or absence of plant and animal populations and reduced environmental quality. Conserving natural areas will protect natural resources and ecosystems that are at the core of Tribal cultures. Protected from direct disturbance, these ecosystems may persist longer in natural areas, even in the face of climate change, than in the surrounding landscape. DNR acknowledges not just the intrinsic ecological value of the sites, but also the deeper values held for these ecosystems by Tribal partners.

Historical and Current Uses of the Preserve

The Washington Natural Area Preserves Act (RCW 79.70) designates preserves for conservation of lands, resources and ecosystem functions, use as outdoor classrooms, as

sites for scientific research and, as appropriate to each site, and for other low-impact uses so long as the conservation features of the site are maintained.

Historical and Current Native American Tribal Use

Pinecroft NAP sits along the boundary of the traditional territories of the Spokane Tribe and Coeur d'Alene Tribe, and is within the usual hunting, fishing, and trading territories of the Kalispel, Palus, Lakes, Kootenai, Nez Perce, Cayuse, Umatilla, and Walla Walla Tribes. Tribal people have strong ties to the land and water that inform the management and harvest techniques of the natural resources under their stewardship. The many plant and animal species in their traditional territory provided everything needed to thrive, from clothing and shelter to common and ceremonial tools. Of the plants that are present within the vegetation communities represented at the Pinecroft NAP, service berry, choke cherry, arrowleaf balsamroot, and Ponderosa pine are among the foods of the Spokane and Coeur d'Alene people. Indigenous people of the Upper Columbia have also historically used Ponderosa pine, Douglas-fir, choke cherry, service berry, western yarrow, large leaved avens, ninebark, and northwest cinquefoil medicinally; and Ponderosa pine, Douglas-fir, service berry, and pinegrass for building materials, tools, and fuel (Moerman 1998). The Tribes maintain an interest in, and practice stewardship of, the land within their traditional territories, which includes Pinecroft NAP.

DNR recognizes sovereign Tribal rights and authorities and maintains government-to-government relations with all twenty-nine federally recognized Indian Tribes residing in the state of Washington, as well as other Tribes with rights in the state. DNR also recognizes the vital knowledge Tribal peoples have of our shared natural resources and operates under an order from the Commissioner of Public Lands to ensure management of state-owned lands is accomplished in collaboration with the twenty-nine federally recognized Tribes of Washington state.

European-American Settlement

One of the first settlers in Spokane Valley was a French Canadian and a former Hudson's Bay trapper, Antoine Plante (Kershner, 2012). He settled on the banks of the Spokane River at an ancient fording site in 1852. He traded horses and cattle, grew a small farm, and eventually built a ferry to help travelers across the river.

Spokane was economically, politically, and socially transformed by the construction of the transcontinental railroad, and the 1880s were a time of national prosperity. The Northern Pacific Railroad (NP) arrived in 1881, and Spokane was nationally linked when the line was completed in 1883 (Arksey 2005). By 1886, there were a dozen or so farms in the valley, including dairies and wheat farms, but due to the well-draining glacial soils and low precipitation, most of the area upstream of Spokane Falls remained sparsely populated until irrigation was established in 1895. Initial irrigation efforts tried to draw directly from the rivers, but in 1900, a 50-foot-deep ground water well intercepted the Spokane Aquifer and, with the development of a water company, Spokane became a major producer of apples with orchards planted across the valley. In the late 1920s, disease, insects, weather and competition from orchards in Wenatchee and Yakima led to the economic conversion to

truck farming and manufacturing. Matches, paper, cement and gravel all became prominent industries anchoring the many communities in the area.

The Natural Heritage Program site recommendation report indicates that past land uses also included logging and livestock grazing, however both appear to have been relatively minor. The abundance of two bunchgrass species, rough fescue and Idaho fescue, indicate that any livestock grazing was light. In addition, the small size and number of stumps at Pinecroft indicate that the site was not subject to any significant logging.

Recent History and Use

During WWII, the population of Spokane and Spokane Valley bloomed in support of the Trentwood Aluminum Mill and the U.S. Navy's Velox Naval Supply Depot (Kershner, 2012). After ups and downs through the decades, the manufacture of aluminum and aluminum products continues to be a significant employer in the local economy. The mills and manufacturing plants brought people to Spokane, and many settled in the suburbs of Spokane Valley. In 2003, after several attempts over the years, the City of Spokane Valley became incorporated and became the 9th largest city in Washington state with a population of 80,700. The 2020 census indicated that more than 100,000 people now live in the City of Spokane Valley. The city economy continues to be centered around industry and features large retail shopping complexes as well. The city has developed an extensive park system, including Mirabeau Point Park, which sits partially on the former Walk in the Wild Zoo and is the adjacent property to Pinecroft Natural Area Preserve. The surrounding area has nearly all been developed into housing, small businesses and community spaces.

Current Uses

Pinecroft NAP currently offers access in the form of scientific research and guided environmental education opportunities (Appendix 8). Allowable activities occurring within the NAP are in support of site management and restoration or contribute to research and environmental education. To help conserve the ecology of this preserve during reseach and educational uses, bicycles and pets (except for leashed service animals on designated trails) are not allowed. Please see the State Trust Lands Map, or the DNR GO! Map, found on the DNR Website, for a list of alternative access sites for recreational opportunities.

Since designation as a NAP in 1993, the site has been subjected to continual unauthorized access, with varying degrees of impact to the ecological integrity of the preserve. In recent decades several encampments and makeshift shelters have been erected, with corresponding accumulations of refuse and litter. Social trails to shelters and encampments have caused soil compaction and erosion. A number of wildfires on the site associated with encampments have also impacted the plant communities by killing some of the large, old pine trees and degrading the understory vegetation. Existing fencing around the preserve perimeter has been vandalized and cut to gain unauthorized access into the site. Individuals residing in nearby housing units have been documented accessing the preserve to walk along undesignated social trails, occasionally with dogs both on and off leash. DNR staff have systematically removed encampments throughout the preserve, with continual site monitoring and contacts with unauthorized individuals accessing the preserve. To mitigate

future impacts, DNR has proposed and developed a plan to create 1.5 miles of designated educational walking trail through a portion of the preserve. This will provide approved day-use access to the site through the adjacent Mirabeau Point Park entrance gate. Pedestrian use will be allowed only along the designated interpretive walking trail, the flatter portion of which will be ADA compliant. In accordance with WAC 332-52-140(1), dogs will be prohibited from entering the preserve, aside from leashed service animals on the official trail. The preserve is expected to host a modest amount of use, including:

- Hiking along the interpretive trail
- Bird and wildlife watching from the trail
- Environmental education use by area schools and other organizations, and by researchers; self-guided on the trail or hosted in limited cases (as DNR staff are available) for educational purposes in other areas of the preserve

Science, Research, and Monitoring

Public and private universities, other research institutions and individual researchers may contact DNR to propose a research project or site visit at Pinecroft Natural Area Preserve. If you are interested in pursuing research at Pinecroft, please contact the Natural Areas Program statewide ecologist (Appendix 12). Educational visit requests will be evaluated for approval by the region natural areas manager on a case-by-case basis. DNR reserves the right to limit use to protect the value of the NAP. Educational site visit requests can be approved by phone, letter, or in person. DNR may, at its sole discretion, require that DNR staff accompany groups or individuals during site visit(s).

Research proposals must follow Natural Areas Program research guidelines, which are available from the DNR Northeast Region office or the statewide natural areas program ecologist. Official letters of project approval or denial including any specific conditions will be issued by the Natural Areas Program within approximately two weeks of receipt of a proposal. Multi-year projects will be re-evaluated and notified of approval or denial to continue on a yearly basis.

Pinecroft NAP has served as an active research site for decades, including studies of the Ponderosa Pine Forest ecosystems on site (Appendix 9).

Environmental Education and Access

Pinecroft NAP offers an excellent outdoor classroom opportunity and is convenient to local school districts in the Spokane area.

The Northeast Region natural areas manager may consult with DNR's Youth Education and Outreach Program (YEOP) to identify suitable opportunities to provide environmental education in partnership with local education entities (schools, skills centers, non-profit partners, extra-curricular programs, etc.). Additionally, YEOP staff may coordinate with the natural areas manager to host access to Pinecroft NAP for environmental education programming through activities such as field trips, site stewardship, data collection, and monitoring projects in collaboration with local education partners. YEOP staff specialize in working with formal and non-formal educators to develop curriculum appropriate to the

students and the site, and to providing consultation and training for DNR staff outside the YEOP Program to lead these kinds of events themselves. For more information about educational visits to Pinecroft NAP, contact the DNR Northeast Region natural areas manager (Appendix 12). For more information about environmental education opportunities on DNR lands, contact the DNR YEOP program manager (Appendix 12).

Volunteer and Stewardship Opportunities
Volunteers help with a variety of activities on natural areas, including invasive species control, ecological restoration projects, and ecological monitoring. Volunteer and stewardship opportunities like these are often well suited for youth groups, engaged through DNR's Youth Education and Outreach Program. If you are interested in volunteer and stewardship opportunities in the Pinecroft NAP, please contact the DNR Northeast Region natural areas manager (Appendix 12). For more information about volunteer or stewardship opportunities on DNR Lands, contact the DNR YEOP program manager (Appendix 12).

Management Policies, Goals and Actions

General Management Guidance

The Washington Natural Heritage Program identifies natural area preserves (NAPs), as defined in RCW 79.70, through a scientific inventory process. The purposes of NAPs are:

- To protect outstanding examples of rare or vanishing terrestrial or aquatic ecosystems, rare plant and animal species and unique geologic features;
- To serve as baselines against which the influences of human activities in similar, but differently managed ecosystems can be compared; and
- To provide areas that are important to preserving natural features of scientific or educational value.

Limited Intervention in Natural Processes: The Ponderosa pine and grassland communities of the preserve are susceptible to a variety of insects and other pathogenic organisms. Native insects and other pathogenic organisms are part of the preserve's natural ecological conditions and processes. As such, no management intervention will occur when infestations and diseases are the result of native organisms and natural process, unless they pose a threat to human life or adjacent landowner property and require treatment by law. Non-native, introduced insects or other pathogens that threaten key natural features of the preserve will be controlled to the extent possible.

Public Access Policy: Access and allowable uses in natural areas are defined by the Natural Ares Public Access policy (Policy 013-002, DNR), consistent with Washington Administrative Code (WAC) 332-52 for Public Access and Recreation on DNR-managed lands and consistent with Revised Code of Washington (RCW) Chapter 79.70 for the establishment of natural area preserves. Uses within NAPs are limited to low impact non-consumptive uses, focused on scientific study or environmental educational purposes

(including use of designated trails and facilities developed to encourage learning about preserve's features), or traditional established aboriginal rights. As part of the ongoing site management, the DNR region natural areas manager will work with the natural areas statewide program ecologist when considering opportunities to provide low impact access as funding and staffing allow. Where appropriate in terms of location, intensity, timing and type of access, certain non-consumptive and non-damaging recreational uses can be accommodated, predominantly in buffer areas or in previously impacted locations of preserves. The development of access within a NAP will include engagement to identify and review alternatives and address concerns.

Access for research or education projects must be consistent with the site management goals and require written authorization signed by the natural areas manager and the natural areas program ecologist. Individuals granted permission to access the site beyond adjacent public rights of way are required to have one copy of the written authorization signed by the natural areas manager or the Natural areas ecologist displayed on the dash in their parked vehicle and another copy with them while on site conducting those activities. Contact the DNR Northeast Region natural areas manager to request consideration of a research or education project at Pinecroft NAP.

Access to the site is not available until funds are available to develop and properly implement required infrastructure. DNR will seek funding to develop facilities necessary for access to the site for scientific and educational purposes, and for low impact hiking use when suitable locations are identified.

Activities and use within the NAP should not compromise a site's integrity, ecological, geological, scenic, historic or archaeological values. Activities should be constrained in a manner to leave vegetation, animal behavior, soil and water relatively unaffected. Pinecroft NAP will be monitored, and the allowable uses at the site revised if the protected values of the site are negatively impacted by use in a way that affects the site's integrity as measured by direct observation or an Ecological Integrity Assessment (See Management Goal 1, and Appendix 10). The Natural Areas Program *NAP Public Access Policy* is found in Appendix 7 (or available online at the Pinecroft NAP webpage). For a map of NAPs that currently have environmental education access facilities, as well as natural resource conservation areas (NRCAs) that have developed low-impact recreation opportunities in the area, use DNR's statewide interactive recreation map or the DNR GO! Map online to find other sites to recreate on state lands.

Goal 1: Protect Primary Features

As a natural area preserve, the founding purpose of land management at Pinecroft NAP is to protect the primary features of conservation significance from human-induced stressors (Table 1 in the Natural Features Description; Figure 1b). Any activity or management action taken at the site should first consider whether it would risk the viability or ecological integrity of these primary features.

Objective: Address Research Needs in Support of Primary Features
Research provides key insights into the ecological drivers of site conditions and relationships between species and their environment. There are often specific needs for data collection and research to inform adaptive management of the site. These needs are site specific and may evolve over time as we identify shifts and impacts driven by climate change or other cumulative stressors. Research should be conducted in collaboration with the natural areas manager and staff, under permit approved by the natural areas program ecologist's to successfully support and protect the priority features at Pinecroft NAP. See Appendix 9 for the current and upcoming research needs for Pinecroft NAP. DNR's Natural Heritage Program scientists should also be engaged when research is focused on the primary features identified in the Washington State Natural Heritage Plan.

Objective: Follow Management Guidance for Primary Features
The guiding principle for managing the Pinecroft NAP is to permit natural ecological and physical processes to predominate, while controlling activities and unnatural events and processes that directly or indirectly modify them. Exceptions may occur when a primary feature would be jeopardized without active intervention.

Management activities will maintain the site in the best ecological condition possible. Removal or alteration of vegetation, soil, or rock is not allowed except where specifically authorized by DNR under the framework of this plan. Goals for preserve management include:

- Protecting the site's primary natural features, including ecosystem processes
- Monitoring threats to the natural features and the health of natural systems
- Managing non-native and invasive plant or animal species
- Protecting cultural and archeological sites
- Facilitating environmental education and research on the preserve
- Providing access when it is compatible with the preserve's conservation goals, including Tribal access for cultural and spiritual practices

The overarching management goal is to maintain the ecological integrity of natural areas such that they do not deteriorate below the ecological condition at the time of establishment, or that they reflect a restored Ecological Integrity Assessment (EIA) rank of at least B or better in cases where their initial ranking is below a B. An EIA should be conducted on a 5-year rotation to provide relevant data for decision making and respond in a timely manner to changes in ecological integrity of the site. Additionally, EIAs should be conducted after any event that could drive change in an ecosystem. Examples of such events are extreme weather events, natural disturbances (fire, flood, invasive species establishment, or others), development of adjacent parcels, significant restoration work, or impacts to the preserve's features from upstream or off-site events. Monitoring for specific components or processes of ecosystem features (such as water levels, water quality, tree growth rates), or for other features may be necessary and will be added to Appendix 10 as needed. Key background and goals for the management of primary features is established in this plan, with additional detail provided in Appendix 10.

Various information sources describing reference conditions (i.e. the natural range of variability of composition, structure, and ecological processes) for the ecosystems has been consulted and should continue to be used to help guide management (see details in Appendix 10).

Ponderosa Pine Communities (including Ponderosa Pine / Rough Fescue Woodland, Ponderosa Pine / Mallow-leaf Ninebark Forest, Ponderosa Pine / Bluebunch Wheatgrass Woodland, and Ponderosa Pine / Common Snowberry Forest (Table 1, Figure 1b)).

The ponderosa pine communities on the site are mostly in good condition, which is remarkable considering the surrounding land-use history, site accessibility prior to management as an NAP, and its proximity to an urban center.

Invasive plant species are present in varied amounts throughout the site but are of low enough frequency that the overall quality of the primary elements on the site remains good. Invasive plants are a significant management issue, however, as their continued spread does present a threat to the quality of the communities.

Fire suppression and forest insects have affected these communities on the site. Prior to active fire suppression efforts in the late 19th to early 20th century, these woodland and forest communities were subject to frequent, low-intensity fires. Fire history studies in similar forest types, and most notably at the nearby Dishman Hills NRCA which supports the same communities, indicate a historic fire return interval of 5-15 years. Decades of fire suppression led to a dramatic increase in tree density on the preserve, altering the structure of forest and woodland communities, although most of this has been addressed through recent restoration efforts. Outbreaks of forest insects, primarily western bark beetle, have killed patches of trees, as well as scattered old trees. Continued maintenance of forest structure conditions through the use of prescribed fire and/or restoration thinning to mimic fire effects will be needed.

Various information sources describing reference conditions (i.e., the natural range of variability of composition, structure, and ecological processes) for the ecosystems have been consulted and and should continue to be used to help guide management (see Appendix 10).

An EIA for the forest and woodland communities was conducted in 2024, with a condition rank of B- although portions of the site were ranked lower, primarily due to high cover of invasive species and altered structural conditions resulting from long-term fire suppression.

Management Goal:

- Maintain or improve these communities to Ecological Integrity condition rank of B or better, with a focus on maintaining or improving understory composition and structure, maintaining appropriate low-density, Ponderosa pine dominated overstory, and reducing invasive species in the understory.

Goal 2: Provide and Manage Access

Current use of the preserve includes scientific research, environmental education, and ecological restoration of the forest and grassland communities of the preserve. The Natural Areas Program, under the DNR *NAP Public Access Policy* in Appendix 7 (available online at www.dnr.wa.gov/pinecroft-natural-area-preserve), maximizes the educational value of NAPs through conservation management to preserve natural features for scientific research and environmental education. Where appropriate in terms of location, intensity, timing and type of access, certain non-consumptive and non-damaging access can be accommodated, predominantly in less sensitive areas of the preserve or in previously impacted locations. Access and use in the NAP should not compromise a site's integrity, ecological, geological, scenic, historic or archaeological values. Activities should be constrained in a manner to leave vegetation, animal behavior, soil and water relatively unaffected. Pinecroft NAP will be monitored in accordance with WAC 332-52-100, the allowable uses at the site revised, if the protected values of the site are negatively impacted by use in a way that affects the site's integrity as measured by direct observation of site condition or through an Ecological Integrity Assessment (See Management Goal 1, and Appendix 10).

Objective: Offer Access for Education and Teaching

DNR staff will continue to offer guided educational access, as available, throughout the site where it can be safely provided. The DNR region natural areas manager may coordinate with DNR's Youth Education and Outreach Program to facilitate access and engagement opportunities to local youth. Key opportunities for classroom and community educational projects and activities include:

- Guided school outings
- Native plant and bird groups
- Volunteer activities

Objective: Offer Access for Research and Monitoring

Research projects approved by DNR following review and with site protection stipulations. Additionally, DNR conducts monitoring at natural areas. Natural Areas Program staff conducting research or monitoring within natural areas may draw upon the resources available within DNR's Youth Education and Outreach Program and similar community-based educational or scientific organizations. Advanced educational research or student internships may be available for hands-on learning opportunities in the fields of conservation land management and ecological restoration. Research and monitoring projects reports can be found in Appendix 8.

Objective: Collaborate to Ensure that Tribal Practices are Consistent with Conservation Goals

Together with interested Tribal partners, an assessment will be conducted to determine whether and how specific traditional practices can be accommodated at the site while staying consistent with the site's conservation goals.

Objective: Clearly Outline Limitations on Uses

DNR will limit or prohibit access to Pinecroft NAP to conduct maintenance projects or for the implementation of restoration projects. Signs will be posted at the entry kiosk, and the gate may remain closed until project completion. More generally, prohibited uses at Pinecroft NAP, as well as activities determined by DNR under this management plan to conflict with conservation land management goals, as outlined in RCW 79.70, include the following:

Creation of Unauthorized Social Trails – In accordance with WAC 332-52-405(1), the creation of unauthorized trails within the natural area preserve is not an appropriate use. Unauthorized trails are not known to site managers and therefore are not patrolled, maintained or monitored. A lack of monitoring and maintenance results in significant negative impacts to the vegetation on and adjacent to the trail as it becomes worn down and widened, including damage to or loss of sensitive plants. Social trails open up bare ground to invasive plants, create paths for water to travel and erode localized areas, and can lead to habitat fragmentation which can inhibit wildlife movement across the landscape.

Camping – In accordance with WAC 332-52-300(10a,b; 14e), camping is not allowed within Pinecroft NAP. The establishment of camp sites results in the clearing and trampling of vegetation at the site and surrounding the site. In addition, there is no infrastructure to support camping, and there is substantial risk of a campfire-initiated wildfire spreading to surrounding residents and businesses. Additionally, there is no refuse management or bathroom facilities to support campers. The refuse generated by unauthorized campers has negatively impacted the vegetation community on site and poses a hazard to DNR employees and visitors to the site. Camping is not an allowable use of the site.

Hunting and Trapping – Hunting and trapping are not approved uses for Washington's natural area preserves. DNR does not allow hunting or trapping on NAPs unless it is necessary for management purposes. The guiding principle for managing the NAP is to permit natural ecological and physical processes to predominate. Opening this small natural area to hunting can put at risk those features the site was designated to protect. Also hunting can negatively impact ecological research by violating assumptions about the influence of natural process on study results, introduce variation to the analyses, and potentially wipe out monitored populations or plots from the sample.

Exceptions may occur when a primary feature would be jeopardized without active intervention. Should the need to manage wildlife impacts arise, the DNR natural areas manager will consult with the Washington Department of Fish and Wildlife to define the parameters under which animal control methods would be allowed.

Removal (Harvest and Removal) of Plant or Mineral Material – In accordance with WAC 332-52-115(1a,b), the harvest and removal of any amount of plant or mineral material is not an allowable use, other than by DNR land managers for conservation purposes or with written permission from the natural areas manager or the natural areas program ecologists.

Removal or Damage to Historical and Archaeological Objects, Features and Sites – Significant archaeological and cultural resources are protected by state law concerning Archaeological Sites and Resources (RCW 27.53), the National Historic Preservation Act (P.L. 89-665 as amended) and the Archaeological and Historic Preservation Act of 1974 (P.L. 93-291). The removal or alteration of archaeological materials including artifacts, features, sites, and structures from DNR managed lands is not allowed, other than when carried out by DNR cultural resources staff or authorized individuals to project the resource from loss or harm and/or conduct scientific analysis.

Pets – Due to the sensitive nature of the plants and soils, and the potential for negative impacts and disturbances upon wildlife species, pets are not permitted within the preserve boundary, except for service animals (WAC 332-52-140(1), which must be leashed at all times on any future designated trails or developed interpretive areas.

Dumping – In accordance with WAC 332-52-120 dumping is not allowed within Pinecroft NAP. Dumping has resulted trampled vegetation at the site and creates a sanitation risk.

Vehicles – Use of vehicles, including motorized and non-motorized vehicles, including bicycles, in the NAP is prohibited. Exceptions are limited to use for emergency response, management activities and stewardship activities.

Drones – Use of drones creates disturbance that can affect animal behavior. Drones also create the potential for disturbance to activities at the site. As such, they are incompatible with conservation objectives, and the quietude users come to the NAP to experience.

Radio controlled toys – Radio controlled toys have the potential to harm sensitive plants and animals, create or exacerbate erosion, and create the potential for disturbance to activities at the site. As such, they are incompatible with conservation objectives for the NAP.

Livestock – Horses and other livestock have the potential for significant impacts in the form of trampling native vegetation, soil compaction, and introduction of non-native and/or invasive species. As such, livestock use at the site is incompatible with conservation objectives for the NAP.

Other Uses Not Outlined Above – Uses and activities within Pinecroft NAP determined by DNR to be inconsistent with the conservation purpose of the natural area preserves Act as outlined in RCW 79.70 are considered incompatible with conservation management and are not approved uses. DNR's existing law enforcement policies will apply. DNR will comply with applicable regulations in the management of Pinecroft NAP and will cooperate with local and state enforcement agencies when necessary to curb unauthorized use.

Goal 3: Manage the Site in Response to a Changing Climate

Natural areas are considered a key component in mitigating climate impacts and play a strategic role in protecting the biodiversity and natural heritage of Washington state. While

management of the site does not directly affect the trajectory of climate change, natural areas play a strategic role in ecosystem resilience to climate change by minimizing or reducing the impacts and stressors at the site. They provide environmental services, such as sequestration and storage of carbon, provision of habitat refugia for rare species, maintenance or improvement of water quality and watershed processes, and protection of rare plant communities and ecosystems.

Objective: Review and Adapt Management Practices as Needed to Address Impacts of Climate Change

In recognition of the importance of consideration of climate change in conservation planning, land management approaches may need to adjust to continue to preserve protected elements in state natural areas. At Pinecroft NAP, natural areas managers and ecologists regularly review and consider existing approaches to the following:

- Collaborate with interested Tribal specialists and Washington Natural Heritage Program staff to inventory culturally significant plants in the NAP and determine their vulnerability and response to climate change
- Review the adequacy of the NAP boundary to protect primary features against climate change
- Monitor and mitigate the edge effects to the NAP from adjacent land uses
- Consult available climate change vulnerability assessments applicable to the primary features of the site to identify primary concerns and potential management actions. The Natural Heritage Program's Climate Change Vulnerability Index assessments for rare plants and Habitat Climate Change Vulnerability Index assessments for ecosystems (https://www.dnr.wa.gov/NHPclimate) are primary resources
- Review invasive species management practices (includingNatural Heritage Program's invasive species ecological impact reports)
- Continue reviewing alternatives to prescribed burns, such as forest thinning, chipping, and mastication, as a tool to achieve similar ends
- Review the balance between inherent ecological and scientific value and access and update policies as needed
- Review restoration targets informed by shifting climatic conditions. (see above, climate change vulnerability assessments)
- In consultation with Natural Areas Program and Natural Heritage Program scientists, review the use of certain species in restoration projects in light of ongoing climate changes to plants and insect pests (i.e. reduction in use of trees that are not doing well with climate change and loss of species to invasive insects).
- In consultation with Natural Areas Program and Natural Heritage Program scientists as well as the Natural Heritage Advisory Council, review the potential need for assisted migration of near-by native plant and animal species.

Goal 4: Minimize Impacts of Wildfire Management

Wildfire suppression in Pinecroft NAP focuses on protecting life, resources, and property, and will be conducted to the degree possible with Minimum Impact Suppression Tactics to

minimize impacts to conservation features. Wildfire suppression in the Pinecroft NAP focuses on protecting life, resources, and property, and will be conducted to the degree possible with Minimum Impact Suppression Tactics (MIST) to minimize impacts to conservation features. See Appendix 1 for the "Wildfire Management Strategy for Pinecroft NAP", attached.

The risk of wildfire and the impacts of smoke on air quality make prescribed burns an unsuitable tool to use in restoration or management of this urban natural area. Alternative approaches, such as frequent thinning of the understory including immature trees, mowing, or chemical treatment will be applied to maintain the appropriate disturbance regime to support the natural character of this site and reduce the likelihood of damaging wildfire.

Objective: Follow the Wildfire Management Strategy Emphasizing Minimum Impact Suppression Tactics

Fire is a natural part of the ponderosa pine ecosystems on site and benefits the plant communities and ecosystem processes. Sensitive areas identified on maps should be avoided whenever possible, particularly for use of retardants or heavy equipment. After fires have been suppressed, site restoration will be supervised by the region natural areas manager in consultation with the natural areas program ecologist.

Goal 5: Control Invasive Species

For the purposes of this management plan, an invasive species is a species that poses a threat to site management goals. Invasive species can repress or exclude native species and are widely viewed as one of the greatest threats to ecosystem health and biodiversity worldwide. Inventory, assessment and control of invasive weed species are top priorities in the management of the preserve. Useful sources of information on invasive species ecology, control, and ecological impacts include state and county weed control board information, Invasive Species Profiles (https://www.invasivespeciesinfo.gov/species-profiles-list), Center for Invasive Species and Ecosystem Health (https://www.invasive.org/), and the *Washington Invasive Ranking System* (Ramm-Granberg et al., 2024). This information can be used to identify species that may be potential threats to the site as well as to help prioritize species for control.

Upland weed species of concern include:

- Mahleb cherry (*Prunus mahaleb*)
- Dalmation toadflax (*Linaria genistifolia* ssp. *dalmatica*)
- Diffuse knapweed (*Centaurea diffusa*)
- Bulbous bluegrass (*Poa bulbosa)*
- Quackgrass (*Elymus repens*)
- Rush skeletonweed *(Chondrilla juncea)*
- Woolly mullein and moth mullein (*Verbascum thapsus* and V. *blattaria*)
- Cotoneaster *(Cotoneaster* spp.)
- Bull thistle (*Cirsium vulgare)*

- Houndstongue (*Cynoglossum officinale)*
- Eurasian bush honeysuckle (*Lonicera tatarica, Lonicera x Bella*, *Lonicera* spp.)
- Bittersweet nightshade (*Solanum dulcamara)*
- Dog rose (*Rosa canina)*
- Tall oatgrass (*Arrhenatherum elatius)*
- Bugloss (*Anchusa officinalis)*

Objective: Follow the Site Weed Management Plan and Coordinate with Partners to Reduce Overall Cover of Invasive Weeds.
Weed management techniques will vary seasonally for the best effect based on the physiology of the target species and avoidance of unintended impacts to non-target species. Some combination of mechanical and chemical approaches will be the primary tools. Species specific approaches can be found in Appendix 11.

The other species of concern should be addressed through documentation and treatment of nascent populations and the containment and control of established populations. In addition to ongoing vegetation surveys, monitoring for invasive species should focus on roadside buffers including the access path, as well as areas affected by future management activities, especially those that will create light gaps in the overstory and soil disturbance in the understory.

Goal 6: Ensure the Persistence of Habitat Structure for Wildlife

The habitat within Pinecroft NAP supports a rich diversity of wildlife, including Washington Department of Fish and Wildlife (WDFW) priority species and habitats. More information about species location and abundance is needed to guide management actions under this plan, potentially including collaboration with WDFW biologists, volunteer site stewards or researchers. Invasive, non-native species that may require control include Merriam's turkey and European starlings, which may have adverse impacts on native species through nest depredation, preemption of nesting cavities, competing for food sources, and destruction of vegetation. Per the adopted *NAP Public Access Policy* in Appendix 7 removal of wildlife only occurs as a DNR-approved management action, if necessary, and no access is allowed for hunting.

Objective: Ensure the Goals for Protecting Primary Features are Met.
The wildlife protected in the NAP are native to these natural ecosystems. Species presence may vary with diurnal, seasonal, or annual cycles. Whether or not a species is documented on site at a discrete point in time, the ability for the habitat to support that species when it is present is the goal. Protecting the primary ecosystem features of the site maintains the habitat that supports a diversity of wildlife including those identified by the Washington State Natural Heritage Plan as conservation priorities.

Goal 7: Protect Archaeological and Cultural Sites

The lands in and surrounding the preserve are known to have been inhabited or used by past peoples and may include important cultural resources. In compliance with Governor's

Executive Order 21-02 (GEO 21-02) and in cases where natural area projects have a Federal nexus under Section 106 of the National Historic Preservation Act (NHPA), State Department of Archaeology and Historic Preservation records shall be reviewed prior to the implementation of any research, education or management activity. Any alteration to an archaeological site would require a permit from the Department of Archaeology and Historic Preservation (RCW 27.44 and RCW 27.53). Confidential cultural data is protected and exempt from disclosure under RCW 42.56.300 to prevent looting and depredation of the artifacts. All employees working at Pinecroft NAP should become familiar with DNR's Inadvertent Discovery Plan (Appendix 14) to understand how to proceed if an artifact is found during the course of work.

Process for Historical and Archaeological Preservation

Natural areas managers will initiate informal Tribal consultation with affiliated Tribes and work with professional archaeologists to ensure cultural resource compliance with GEO 21-02. GEO-21-02 mandates that:

- DNR shall consult with DAHP and affected Tribes on the potential effects of projects on cultural resources proposed in state-funded construction or acquisition projects. Consultation should occur early in the project planning process and must be completed prior to the expiration of state funds for construction, demolition or acquisition.
- DNR shall take all reasonable action to avoid or mitigate adverse effects to archeological sites, historic buildings or structures, traditional cultural places, sacred sites, or other cultural resources.
- DNR shall retain the responsibility to ensure an adequate consultation process and will be responsible for holding all records related to the Tribal consultation process. DNR will provide the records to DAHP to demonstrate completion of the Tribal consultation process.
- A cultural resources study may be needed before a project may proceed and DNR must consult with DAHP and the affected Tribes for the purpose of seeking agreement on studies.
- If an archaeological site, historic building or structure, or cultural or sacred place is identified during a study, work in the immediate area will cease and DNR shall consult with DAHP and the affected Tribes on avoidance strategies or methods to minimize harm if the project poses a direct or indirect effect on cultural resources.
- In the case of historic buildings or structures, DNR shall develop mitigation strategies in consultation with DAHP and if requested, affected Tribes. For all other cultural resources including archaeological and historic archaeological sites or traditional and sacred places DNR may only develop mitigation strategies upon notifying DAHP and the affected Tribes that avoidance cannot be attained.

- Mitigation strategies for archaeological, cultural and sacred sites shall be identified through consultation with DAHP and the affected Tribes.

In instances where DNR works in conjunction with a federal agency or under a federal nexus, natural area managers and professional archaeologists will work with the appropriate federal agency on Section 106 requirements and compliance. Confidential cultural data is protected and exempt from disclosure under RCW 42.56.300 to prevent looting and depredation of the artifacts. Contact the DNR Northeast Region natural areas manager for more information.

Goal 8: Maintain Easement Corridors and Utility Right-of-Way

One utility line running north and south on the western half of the NAP exists within the preserve design and DNR ownership. Management needs include routine brushing and danger-tree management. Additionally, there is a chain link fence around the perimeter of the site that often is vandalized by people cutting through it to create unauthorized access points. These unauthorized access points and utility easement can be a source for hazardous and solid waste dumping as well as the spread of noxious weeds. DNR will regularly monitor formal and unauthorized access points, the perimeter fence, and easement corridors.

Objective: Natural Areas Staff will Routinely Monitor Roads and Easement Corridors for Impacts that may Affect the Natural Area if Left Unaddressed

Natural Areas Program staff will regularly monitor the perimeter fence, access points and easement corridors for encroachment of invasive weeds, impacts of weed treatment that drift beyond the right-of-way, the presence of trash, unauthorized access points, evidence of recreational fire, and other signs of activity that could threaten the integrity of the natural area.

Objective: Natural Areas Managers Will Take Action to Investigate, Identify, and Rectify Issues when Observations Indicate that Impacts on Rights-of-Way may Affect the Natural Area.

When routine monitoring of rights-of-way identifies an issue that could potentially present a risk to the ecological integrity of the site or to safety, the natural areas manager will take appropriate action to rectify it. The natural areas manager will communicate with the utility easement holders if issues with the utility infrastructure.

Management Goals, Actions and Activity Details

Table 2. Management Guidance for Pinecroft NAP

Goal	Management Action	Activity Detail

Protect Primary Features	• Implement a strategy to protect the site's primary features based on reference conditions defined by EIA metrics, the global and state element descriptions, and other relevant information	• Monitor and control priority invasive species
		• Maintain or improve forest and woodland structure relative to reference conditions through periodic thinning of tree regeneration and/or prescribed burning
		• Coordinate with other land managers in the area on fire ecology and prescribed fire education efforts
		• Restore appropriate understory vegetation in areas most affected by previously high tree densities (as determined by reference conditions)
		• Restore appropriate vegetation in areas impacted by use (as determined by reference conditions)
		• Fence northern and eastern boundaries to eliminate encroachment
		• Regularly monitor roads and utility corridors for incursions into the preserve, and for invasive weeds
		• Pursue funding and facilitate partnerships to meet site management and needs
		• Encourage research on priority topics to assist with site management
		<u>Priority Research Topics</u>
		  • Feasibility of using prescribed fire
		  • Alternative management techniques to prescribed fire

	• Gather and maintain information necessary for site management	<u>Highest Priority Monitoring Needs</u> • Ecological monitoring of primary features including EIA, existing long-term plots, and assessment of tree regeneration approximately every 5 years • Social trail use and associated impacts • Invasive species distribution, abundance and control efforts <u>Additional Monitoring Needs</u> • Native bird presence and use of the site, particularly pygmy nuthatch • Merriam's turkey population and impacts on primary features • Prairie restoration site revisitation at 5-year intervals
Provide and Manage Access	• Monitor primary features and species • Monitor invasive species • Monitor potential impacts to natural features from site uses • Maintain ecological integrity to allow use of the site by researchers • Encourage research on priority topics to assist with site management • Promote educational use of the preserve • Clearly communicate allowable low impact uses and limitations on use	• Write an interpretive plan / sign plan • Prepare grant application for parking, trail, and interpretive signs • Sponsor spring and summer field trips for local residents • Coordinate with DNR Youth Education and Outreach Program to connect with interested education groups for interpretive site visits, service projects, research and monitoring

Manage the Site for Changing Climate	• Address key non-climate stressors • Encourage research on priority topics to assist with site management	<u>Highest Priority Monitoring Needs</u> • Ecological monitoring of species populations and primary ecosystem functions • Invasive species distribution <u>Additional Monitoring Needs</u> • Restoration site revisitation at 5-year intervals <u>Priority Research Topics</u> • Climate change impacts
Minimize impacts of Wildfire Management	• Follow the Wildfire Management Strategy emphasizing Minimum Impact Suppression Tactics	• Coordinate with Incident Management team in event of wildfire threats to NAP • Conduct regular updates to the Northeast Region Fire Mobilization Guide
Control Invasive Species	• Follow the site weed management plan to reduce and minimize the persistence of invasive weeds • Create site-specific weed management plan	• Document and treat nascent populations of invasive weeds • Plant native species in treatment areas to restore native plant community • Contain and control established invasive weed populations • Conduct vegetation surveys and monitor for invasive species • Manage invasive species, understory vegetation, and forest structure & composition per "Protect Primary Features" above
Ensure the Persistence of Habitat Structures of Primary Wildlife Features	• Protect the primary features to maintain them at a high EIA Rank of B or better	• Maintain the general structure of healthy Ponderosa Pine woodland and forest habitats to support the wildlife that depends on the resources of that site
Protect Archeological Sites and	• Coordinate with Tribes and DAHP to ensure that	• Establish primary contacts for outreach about DNR projects and management activities

Cultural Resources	cultural sites are not disturbed and to gather their input and exchange information about the preserve	• Learn about Tribal interests and concerns • Consult with Tribes and Archaeologists on cultural resources reviews for projects • Follow mandated state and federal processes for Tribal consultation
Maintain Access Easements and Utility Right-of-Way	• Coordinate with Avista to ensure roads and rights-of-way are clear and accessible	• Establish primary contact for outreach about access to powerlines and work conducted within the NAP

Routine Management Actions in Appendix 2
Routine management actions, the work required to steward the site on a daily basis, exclusive of significant project-related work that requires special fiscal appropriation, is described in Appendix 2. The cost for such work is typically associated with staff time and goods and services required to conduct the work (Appendix 2, Table 2-1).

Costs associated with managing Pinecroft NAP are expected to change over time due to general economic factors (such as inflation), identification of new land and resource management challenges, or to meet newly identified opportunities for research, environmental education or access. DNR pursues a variety of state and federal grant funding to assist with land and resource management, restoration, research, and development of access and educational facilities, including development of educational curricula and materials by DNR's Youth Education and Outreach Program for use at this site.

Near-Term Project List in Appendix 3
The one-time projects noted in Appendix 3 should be pursued to complete necessary planning and make investments for implementation of land management or access projects. An estimate for the level of investment in these projects is presented in the description of the work and an estimate of DNR staff time that will be assigned to the work in (Appendix 3, Table 3-1). The one-time projects noted in the appendix should be pursued to complete necessary planning and make investments in other-than-routine land management activities or capital budget projects.

Costs estimates are expected to change over time due to general economic factors (such as inflation) or to rise to challenges during implementation. The Department of Natural Resources pursues a variety of state and federal grant funding to assist with project implementation.

Duration of this Management Plan
This management plan, the routine management actions, and the near-term projects will be reviewed as necessary and updated by the DNR Natural Areas Program. Significant changes in management direction or policy guidance will include consultation with the Natural Heritage Advisory Council, and perhaps revisions to the management plan and appendices, which is expected to happen infrequently. The list of near-term actions will be updated as needed for the cost factors noted above. Continuation of the management direction for Pinecroft NAP as stated in this adopted management plan may be incorporated into revised Appendices 2 and 3 without requiring additional review by the Natural Heritage Advisory Council.

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APPENDICES

The appendices for this document are in various stages of development and may include a placeholder for material that is in development. Note that Appendices 2 and 3 may be updated with each state budget cycle. When finalized, Appendices 4 – 14 will be available on the Pinecroft Natural Area Preserve website at: www.dnr.wa.gov/pinecroft-natural-area-preserve.

APPENDIX 1 WILDFIRE MANAGEMENT STRATEGY for Pinecroft NAP

Management Jurisdiction
Fire suppression on the NAP is the responsibility of the DNR Northeast Region's Arcadia Fire Control Program. DNR's Fire Control Program is responsible for fires on the non-federal, unimproved portions of Spokane County where the NAP is located.
For questions regarding the Wildfire Management Strategy please contact the DNR Northeast Assistant Region Manager (Appendix 12)

Ignition Sources
Potential ignition sources include cigarettes thrown from vehicles or by site visitors, parked vehicles, fireworks, illegal cooking and campfires, and lightning.

Preferred Suppression Tactics
Minimum Impact Suppression Tactics (MIST) should be employed whenever possible, with specific guidelines listed below. The following are preferred fire suppression tactics:

When safe and reasonable, use natural fuel breaks or control lines outside the NAP boundary for fire suppression. MIST tactics should be used to stop the spread of wildfire. Crews should use a fog stream (instead of straight stream) type of water application where possible.
Helicopter landing areas and fire camps shall not be established within the NAP
It is preferable not to use foam or retardants because of fertilizing effects to the plant community; however, foam or retardants are preferable to bulldozers under extreme conditions or when action must be taken to protect an improved structure.
Fire vehicles will be confined to roads and, when applicable, bulldozed fire trails.
Trees and snags will not be felled unless they pose a threat to firefighters.

Location and extent of mop-up, and type of mop up activity will be determined by the Incident Commander in consultation with Natural Areas Program staff and will follow recognized MIST standards. Mop-up activities should be minimized in the sensitive areas identified on maps and soil disturbance minimized by using water as much as possible.

After fires have been suppressed, site restoration will be supervised by the region natural areas manager in consultation with the Natural Areas Program statewide ecologist.

Site Representatives
If wildfire involves or threatens the NAP, one of the following DNR personnel shall be contacted and placed as a Resource Advisor (READ) or Resource Advisor Fireline (REAF) to the Fire Incident Commander, using the closest available person first:

Natural Areas Manager, Northeast Region
509-675-5264; work center 509-684-7474

Natural Areas Program Statewide Ecologist, *Recreation, Conservation & Transactions Division*
(360) 902-1600

Updated Natural Areas Program staff lists are available in Appendix 12 or on DNR's website at:
(To be developed)

In the event that coordination with the local fire district is required, staff can coordinate with:

Spokane Valley Fire District, (509) 928-1700
For emergencies dial 911.

If the incident occurs after normal working hours, contact emergency services #911. Emergency services will contact the DNR Northeast Region standby staff, who will then contact a natural areas representative from the above list at home.
The representative will inform the Incident Commander of:

1. The purpose of the NAP;
2. The management objectives for the primary features of the NAP; and
3. The need to employ MIST fire suppression techniques when possible. The Incident Commander should contact the Region representative or the Division before beginning mop-up activities within the NAP.

Post-Fire Rehabilitation: Following wildfires, the preserve should be allowed to regenerate naturally without human intervention. Post-fire revegetation will not be undertaken unless natural revegetation is impeded or slowed to such an extent that ecological features or processes in the area will be negatively affected. Areas with significant soil disturbance due to fire suppression efforts, *e.g.* berms and fire lines, may be restored by returning soil to its original location. Soil rehabilitation and revegetation efforts will only be undertaken after consultation with the Natural Areas Program statewide ecologist. If revegetation is necessary following wildfire, only native plants or seed of native plant species will be used for seeding or propagation of plants; exceptions may occur for the use of short-term, transient non-native plants if determined by the Natural Areas Program statewide ecologist to be warranted.

Implementation: Ensure that Northeast Region personnel are informed of the natural revegetation policy of the preserve. In the event of a wildfire, the natural areas ecologist will determine whether revegetation is required to protect ecological features of the preserve. Natural recolonization by native vegetation is the preferred restoration strategy when damage to vegetation has occurred. Revegetation (planting or reseeding with native vegetation) will only occur if natural recolonization is impeded by factors such as lack of seed source and proliferation of exotic weed species, or if extreme soil erosion presents a threat to natural features or processes. If revegetation is deemed necessary, a plan will be developed by the natural areas' ecologist, and any restoration costs above and beyond

erosion control measures typically implemented by Fire Control will be the responsibility of the Natural Areas Program.

The Role of Fire in the Development and Maintenance of this Native Ecosystem: Ponderosa Pine forests and Shrub Steppe habitat are fire-dependent ecosystems that rely on this disturbance to maintain the structure and diversity of complex plant and animal communities. Ponderosa Pine trees and ecosystems are adapted to low intensity, high frequency fire regime. Across the range of these systems, Landfire suggests that surface fires occurred on average every 8 years. More intense fires happened every 35-50 years with stand-replacing fires occurring at an interval of more than 100 years (USDA Forest Service, 2007), although at Pinecroft these more intense fires would likely have been extremely rare due to the sparse cover of trees and woody fuels. A fire history study at the nearby Dishman Hills NRCA which supports the same communities and provides the best proxy for Pinecroft, found a historic fire return interval of 13 years. Frequent fire reduces the likelihood of high intensity fires by removing fuels and dense growth of understory vegetation. In historical and natural forest cycles, frequent low-intensity fires created self-maintaining Ponderosa Pine and Shrub Steppe ecosystems. In addition to frequent lightning-caused fires, low intensity fires were likely a part of Indigenous land management practices used in this area to improve the quantity, quality, and distribution of resources (Long et al., 2021). These fires were generally low intensity burns, confined to the ground layer and burned grasses and tree seedlings that would encroach upon the canopy if allowed to grow in (Gedalof et al. 2006). Similarly, fire helps maintain species diversity in the understory by reducing cover of competing vegetation and allowing sunlight and open space on the forest floor for a diversity of seeds to germinate and establish. A diverse understory is an important component of healthy forested ecosystems, providing habitat and food resources for a diversity of insects and animals.

APPENDIX 2 Routine Management Actions for Pinecroft NAP

A reasonable base budget for routine management of the NAP will support Northeast Region Natural Areas Program staff including all costs related to the site such as travel and materials. Funding typically comes in the form of the Natural Areas Program biennial state budget.

Costs associated with managing Pinecroft NAP are expected to change over time due to general economic factors (such as inflation), identification of new land and resource management challenges, or to meet newly identified opportunities for research, environmental education or access. DNR pursues a variety of state and federal grant funding to assist with land and resource management, restoration, research, and development of access and educational facilities, including development of educational curricula and materials by DNR's Youth Education and Outreach Program for use at this site.

Table 2-1. Routine Management Activities List Created January 2025

Activity	Description	**Estimated Staffing and Resources Required** with Potential Fund Source
Weed Control	• Follow the site weed management plan to reduce and minimize the persistence of invasive weeds • *See Goal 5: Control Non-native Invasive Weed Species*	0.10 FTE per biennium for natural areas manager 0.05 FTE per biennium for stewardship staff 1 – 5 gallons of Herbicide 1-2 gallons of Surfactant Funding: Natural Areas Program budget; Washington Department of Ecology grants; Washington Conservation Corps crew allocation
Ecological and Adverse Impacts Monitoring	• Invasive species distribution mapping and treatment monitoring • Forest/Woodland plant community monitoring (Level 2/3 EIA, overstory measurements)	Conduct EIA and long-term plot data collection (0.05 FTE every 5 years; Currently Unfunded) Monitor ecological impacts of social trail use (0.05 FTE per biennium) Map and monitor invasive species (0.05 FTE per biennium) ~$10,000 per biennium

Activity	Description	**Estimated Staffing and Resources Required** with Potential Fund Source
	• Impacts of uses in developed access areas • Impacts from unauthorized uses, such as dumping, off-roading, or theft	
Restoration	• Repair/replace boundary fence, gates, signs • Tree regeneration thinning • Plant/seed native plant species	~$10,000 per biennium $5,000 one-time cost for materials

APPENDIX 3 Near-Term Project List for Pinecroft NAP

The one-time costs noted in Table 3-1 below, should be pursued to complete necessary planning and make initial investments for site management, restoration, and enhancement.

This initial project list will be updated by the Natural Areas Program as projects are implement and new activities or new costs are identified.

Table 3-1. Priority Project Needs for Pinecroft NAP as of Winter 2025.

Activity	**Description**	**Estimated Staffing and Resources Required** with Potential Fund Source
Property Line Survey	Survey/re-survey existing property line regarding potential encroachment/trespass by neighbor	0.1 FTE for DNR land surveyor 0.1 FTE for natural areas steward 3 days travel for two DNR staff members Potential Funding: Natural Areas Program budget; Capital appropriation?
Establish a Formal Access Point and Educational Trail on the Path of an Existing Social Trail	Build a public entrance to the preserve adjacent to the city park; improve and designate a formal trail within the preserve	TBD

APPENDICES 4 through 14 are under development

Location: www.dnr.wa.gov/pinecroft-natural-area-preserve as of (Month Year)

Appendix 4: Natural Heritage Program report including info on topography, geology, soils, hydrology, and additional conservation features
Appendix 5: Plant list
Appendix 6: Animal list
Appendix 7: Public Access Policy.
Appendix 8: Science, Research and Monitoring History
Appendix 9: Research Needs in Support of Site Management
Appendix 10: Management Goals and Actions for Priority Features
Appendix 11: Invasive Species Treatment Plan
Appendix 12: Natural Areas Staff Contact Information
Appendix 13: Restoration History
Appendix 14: Inadvertent Discovery Plan