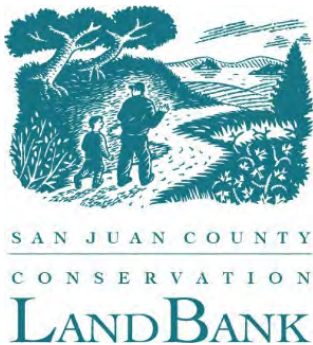


North Shore Preserve Stewardship and Management Plan



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**San Juan County Conservation Land Bank
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North Shore Preserve, Orcas Island Stewardship and Management Plan

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Executive Summary

North Shore Preserve came into public ownership in May 2022. The joint purchase by the Conservation Land Bank (Land Bank) and the San Juan Preservation Trust (SJPT) was made possible by funds generated by the local Real Estate Excise Tax, a state grant, and gifts from generous private donors. The property protects sensitive habitat and wildlife and provides access to over 1,800 feet of shoreline for the public benefit for generations to come.

The new preserve is owned and managed by the Land Bank. The establishment of the Preserve, on the former site of Glenwood Inn, presented a significant restoration opportunity. Abandoned for years, the property had extensive dilapidated infrastructure and large accumulations of trash and debris. Expert evaluations of the site's conservation values and desired public uses helped to inform the overall site design, and to identify both interim and long-term priorities and their associated costs.¹ Management actions were also guided by input from several public meetings and over 25 site tours.

An [Interim Stewardship and Management Plan](#) (SMP) established initial objectives for site cleanup, ecological restoration, and safe, sustainable access.² Most projects identified in the Interim SMP are now complete. Over the past two years, and following extensive regulatory permitting, Land Bank staff and contractors have successfully removed 12 derelict structures and other infrastructure, stabilized an erosive road segment, developed two pedestrian trails and several parking areas, restored two wetlands, reforested previously cleared areas, and hauled away many tons of debris.

The Preserve is expected to become a popular destination for residents and visitors. Public shoreline on Orcas Island is scarce (<2%). It is near Eastsound Village, and access to nature is a widely shared community value. Long-term objectives, proposed in this SMP, seek to balance ecological protection and restoration with opportunities for public access in ways that are feasible, cost-effective, and in alignment with the Land Bank's "low-intensity" mandate. Proposals in this SMP also aim to ensure that interim projects, such as plantings, are maintained through establishment.

This SMP shares information gleaned from various assessments. It describes access infrastructure and refines preserve rules. It also upholds the Land Bank's commitment to transparency and provides the community with another opportunity to provide input on their public lands.

¹ Studies included: a cultural resource assessment, an evaluation of the buildings, a geotechnical evaluation, a wetland delineation, a shoreline baseline survey, and a broad review of the site ecology.

² The Interim Stewardship and Management Plan was approved by the Land Bank Commission in April 2023.

A. Introduction

North Shore Preserve is a new public natural area on Orcas Island. The Preserve features mature forests, freshwater wetlands, extensive shoreline, and tidelands. It offers sweeping vistas of outer islands and a diversity of wildlife. Conservation of this property protects critical habitats for salmon and sustains important nutrient cycling and other nearshore ecological processes. It also increases opportunities for islanders to access saltwater shorelines, which has been identified as a priority need in numerous county-wide plans.³

The protection of natural areas is a central tenet of the Land Bank's mandate.⁴ Establishing interconnected natural areas is one approach to mitigating the global crises of biodiversity loss and climate change, and the Land Bank often seeks to protect lands that extend existing conservation areas. In this case, the Land Bank restored a previously developed area, and helped to maintain important ecological linkages, particularly within the tidelands and nearshore zone, where eelgrass meadows extend for approximately two contiguous miles.⁵

After acquiring a property, the Land Bank creates a Stewardship and Management Plan (SMP) to guide decision-making and work planning, and to promote transparency. These plans identify future management priorities and summarize planned site activities. They are adopted by the Land Bank Commission following a public hearing and then ratified by the San Juan County Council, typically as part of the County's budgetary process.

The Interim SMP temporarily satisfied the above requirements. It identified priorities for the first two years of ownership and provided a summary of management activities and their estimated costs. This SMP builds on those interim accomplishments to ensure their successful completion. It also proposes longer term objectives such as monitoring slope stability, extending restoration efforts, and maintaining sustainable use levels.

In a broad sense, the Land Bank's stewardship goals for North Shore Preserve are:

- To protect and enhance the property's ecological values;
- To promote habitat resiliency in the face of climate change;
- To provide opportunities for low-intensity access and education; and
- To engage with Tribes, community members and other partners in long-term stewardship.

³ SJC Recreation, Open Space and Stewardship Plan, Comprehensive Plan, and Marine Stewardship Area Plan

⁴ The Land Bank's mandate is to "preserve in perpetuity areas in the county that have environmental, agricultural, aesthetic, cultural, scientific, historic, scenic or low-intensity recreational value and to protect existing and future sources of potable water."

⁵ Friends of the San Juans, [SJC Eelgrass Survey](#). 2004

The Preserve’s various ecological resources and the Land Bank’s habitat conservation objectives are described in Section C. A summary of cultural and historic resources and their various objectives are provided in Section D. This plan also outlines opportunities for public access (Section E) and summarizes the public process (Section G). Stewardship activities for the next ten years based upon short-, medium-, and long-term goals are summarized in Table 3, and a ten-year management cost projection is provided in Section F. Management planning is an iterative and adaptive process, and the activities outlined are subject to final approval and available funding.

B. Preserve Overview

North Shore Preserve encompasses 58.4 acres in the northwestern corner of Orcas Island (Fig 1).⁶ It is located approximately 10 miles from the Orcas ferry terminal and two miles from Eastsound Village. It is in the vicinity of Point Doughty Natural Area Preserve owned by the Department of Natural Resources (DNR) and to open space owned by the YMCA of Greater Seattle, known as Camp Orkila. The Preserve shares immediate boundaries with six residential properties.



Figure 1. Preserve Context, NW Orcas

The Preserve’s northern boundary spans over 1,800 feet of shoreline, encompasses a half-acre of tidelands, and supports a variety of marine vegetation. Excluding tidelands, topography ranges in elevation from sea-level to a height of 260 feet. A majority of the acreage is moderately sloped, and characterized by high-bank, forested uplands. However, the terrain changes dramatically as it approaches the shoreline and some portions of the coastal bluffs drop, at a steep gradient, 70-feet down to the beach.

Underlying geology differs from much of San Juan County, and it also varies widely within property boundaries. Former shorelines and wave-cut terraces are evident. Coastal formations range in composition and function: there are both stable sea cliffs comprised of sedimentary bedrock as well as erosive feeder bluffs containing glacial outwash.⁷ The

⁶ TPN 271031001000

⁷ Friends of the San Juans - Coastal Geologic Services, 2022.

erosive nature of the latter helps to maintain beaches and other important shoreline and intertidal habitats, and deposition of material can be observed at the eastern boundary of the Preserve, where an accretion zone has extended the coastline seaward and created a flat backshore area with driftwood, dune grass, and Sitka spruce.

The Preserve is within the North Shore Orcas watershed.⁸ Freshwater flows through heavily altered remanent seeps and wetlands to the shoreline. Although the Preserve's mature Douglas fir and Western red cedar forests help to slow and filter surface water, previous clearing and development on the property contributed to slope instability near the shoreline. In an effort to mitigate excessive runoff, prevent groundwater contamination, and reduce slide activity, the Land Bank removed infrastructure, cut drain tiles, converted the shoreline road into a trail, and is actively reforesting nearshore areas. These activities also help to maintain water quality in this high priority area for salmon recovery in the County.⁹

The San Juan Islands have been home to Coast Salish people for millennia. Ethnographic accounts, historic record and oral histories all indicate a significant Coast Salish presence on or around the North Shore property.¹⁰ Euro-American use of the Preserve began approximately in the 1890s. In more recent history, from the 1930's to the early 2000's, development expanded, and the property operated as a private inn. At the time of acquisition, the property was in a state of severe disrepair.

Acquisition History

The Conservation Land Bank acquired the 58.4-acre property in 2022, after nearly a year of negotiations. The total purchase price was \$6.35 million dollars. The Land Bank contributed \$3.17 million to the purchase price from funds generated by the Real Estate Excise Tax (REET), which is paid by those purchasing property in San Juan County. The San Juan Preservation Trust (SJPT) provided the remaining funds by securing \$3 million from the Washington State Office of Recreation and Conservation Office.¹¹ This grant award is dedicated to purchase of a conservation easement. SJPT has also contributed over \$700,000 in match, which was made possible through gifts from private donors.

⁸ SJC GIS maps [North Shore Orcas watershed](#) as 1,233 acres.

⁹ The Waldron-President's Channel High Priority Fish Use Region, [PIAT II 2017](#).

¹⁰ Wessen, 2007.

¹¹ [PRISM Project #22-1439](#) (in progress).

Conservation Easement

The San Juan Preservation Trust intends to purchase a Conservation Easement (CE) from the Land Bank by 2025. The CE will prevent subdivision and restrict development of the property and ensure that the Preserve's conservation values are protected in perpetuity.

Infrastructure

At the time of purchase, North Shore Preserve included 12 dilapidated structures, five septic tanks, and an assortment of associated underground utilities. The removal of this infrastructure was implemented and overseen by Land Bank staff and, in large part, was paid for by the State grant awarded to SJPT for salmon recovery. Site restoration has subsequently improved public safety and enhanced the Preserve's ecological integrity and function by stabilizing slopes, removing hazards, restoring wetland hydrology and reducing the potential for stormwater runoff and groundwater contamination.

Structures: The Land Bank has retained one building on the property. This 4,800 square foot, two-story shop was built in 2005 and is in sound condition. Staff have made minor repairs and installed new electrical and water lines. One goal of this long-term SMP is to further develop a sustainable and appropriate use of this structure, such as re-purposing the building into a public venue for local environmental stewardship efforts. Potential future use of this facility could include public meeting rooms, flexible workspaces and short-term accommodations, as well as storage space for materials, equipment, and tools. The proposed bunkrooms are envisioned to support visiting conservation crews, researchers, and Coast Salish Tribal gatherings. Such a project would require successful partnership development, fundraising, permitting and other approvals, and be addressed in a separate plan.

Barn Swallow Roost: An open-air structure with rafters and covered ledges is located downslope from the main parking area. This structure was erected to replace nesting habitat, formerly provided by the main house, and built with materials re-purposed from the site.

Parking Areas: The Preserve features four parking areas. The main lot has 12 spaces, including one accessible space. This lot also features racks for up to 14 bicycles. Two smaller lots along the entry road offer space for six vehicles. The fourth parking area serves the shop and will be closed to regular use until the future use of the building is determined but may serve as overflow parking if the need arises. If necessary, seasonal overflow parking could be accommodated, at designated pull-outs, along a portion of the entry road.

Public Restroom: A wheelchair-accessible, portable restroom is located near the trailhead at the main parking area.

Roads: Glenwood Inn Road, a county-maintained gravel road, provides entrance to the Preserve. At the property boundary, a single lane gravel driveway leads northward to the parking areas. Two secondary driveways fork off the main entrance road. One provides access to a private, adjacent residence and the other provides access to the shop. The Land Bank installed an automated dawn-to-dusk gate at the property boundary to prevent overnight use, and bollards with a chain at the entrance to the shop to limit access until the building is prepared for public use. Again, if seasonal overflow parking is needed, the chain could be opened to accommodate additional preserve users.

In early 2024, the Land Bank sought support from San Juan County to create a no-parking zone along Glenwood Inn Road. Justification for this effort included: maintaining access for emergency vehicles, protecting wetlands and large trees bordering the road shoulder, supporting sustainable use levels within the Preserve, and preserving quality of life in the surrounding neighborhood. Although this effort lacked the necessary support from the County, staff will continue to work creatively with preserve users and neighbors to minimize shoulder parking.

Access and Utility Easements: The adjacent neighbors to the west are afforded entrance to their property via a pre-existing access easement. An underground OPALCO powerline enters from the eastern boundary and runs in a northwesterly direction towards the shop.

Well: A 25-foot deep well serves the property.¹² The well currently lacks the necessary permit for public use. In anticipation of future use, the Land Bank installed new water and electrical lines leading to the shop and is pursuing permits needed to activate the system.

C. Ecological Overview and Conservation Objectives

Habitat and resource protection is a guiding principle of the Land Bank's stewardship program. Maintaining or restoring a preserve's ecological health protects native species, contributes to scenic character, and can provide diverse ways for humans to connect with nature. For example, wildlife activity on a preserve affords memorable outdoor experiences, while healthy wetlands improve water quality and offer flood protection.

Regulating and restricting land use and development along shorelines is a goal of federal, state, and local governments across the nation. The purchase of North Shore Preserve eliminated the threat of further residential development to this sensitive area -- with its

¹² Well report ID 64802

erosive headland and heavy seasonal flows -- and thereby supported the Land Bank's environmental mandate as well as key components of its broader conservation strategy.

Historic uses have reduced the Preserve's ecological values. Wetlands and forests were altered by activities such as road building, ditching, and development. In particular, the road down to the beach and the numerous structures built within the nearshore zone altered surface and subsurface hydrology and contributed to slope instability.

Despite these alterations, the Preserve sustains a high degree of habitat diversity and ecological function. It is located in a significant area in the San Juan Islands that provides critical habitat for out-migrating juvenile salmon. Eelgrass meadows within the marine nearshore provide critical rearing habitat for juvenile Chinook and other salmonids, as well as for forage fish such as Pacific herring, Pacific sand lance and surf smelt. The upland forests also contribute vital food resources to marine food webs; terrestrial insects are estimated to comprise 30 percent of the diet of juvenile Chinook in the San Juans.¹³

Initial goals focused on infrastructure removal and site stabilization. Long-term management will aim to further initial ecological enhancements, while also improving forest health and seeking to establish and maintain sustainable, ecological and recreational, use levels. The Land Bank's proposed management actions are designed to support broad conservation objectives such as: maintaining or restoring biodiversity, protecting and enhancing water quality and hydrologic functions, retaining or promoting older forests, and reducing the risk of catastrophic fire. Potential tribal partnerships are desired and discussed further in Section D.

Classification of the Preserve into habitat types offers a useful way to inventory resources and to organize and prioritize management activities. For general management purposes, North Shore Preserve is divided into major habitat areas based on current land cover (Table 1). A map of the Preserve of these major habitat areas is provided in Figure 2.

Table 1. Land cover and approximate area¹⁴

Habitat Type/Area	Acres	% of Total
Tidelands	.54	0%
Coastal/Tidal/Shoreline	2.20	3.8%
Freshwater Emergent Wetland	0.76	1.3%
Mixed Hardwood-Conifer Swamp	2.85	4.9%
Mesic Mixed Conifer Forest	23.49	40.2%

¹³ Duffy, et al. 2010

¹⁴ Tidelands are delineated as a distinct habitat area but are not included in the Preserve's total acreage.

Mixed Upland (Shoreline) Forest	12.91	22.1%
Mesic Douglas Fir-Western Hemlock Forest	14.86	25.4%
Mowed Field	1.33	2.3%

Total 58.42

Wildlife

The Preserve’s variety of habitats support a wide array of species. The marine nearshore is recognized for its high presence rates of juvenile Chinook, several other salmonids, and three species of forage fish. A 2023 survey of the Preserve’s shoreline provided extensive documentation of organisms in the intertidal zone. These include: prickleback eels, limpets, periwinkles, sponges, green urchin, sea cucumber, hermit and kelp crabs, and five species of sea stars.¹⁵ The assessment noted that mollusks and crustaceans were especially diverse; clams were sparse; and that the cloning anemone dominates bedrock areas within the lower-to-mid intertidal zone.

Large ochre stars, which are still uncommon in San Juan County because of their decline from wasting disease, were the only sensitive species observed.¹⁶ Collection is prohibited under standard Land Bank rules; however, as a precaution interpretative signage may be considered to educate visitors that seastar populations are still recovering from a widespread population crash.

Other species observed along the beach include sea lions, harbor seals, loons, cormorants and gulls. Bald Eagles frequent the shoreline zone and maintain a nest in a mature Douglas fir tree on the bluff. Preliminary bird surveys largely focused on the uplands and identified a total of 46 bird species. Western Tanager, Cedar Waxwing, Brown Creeper, and Red Crossbill are among those observed. The Preserve also supports six species of warblers, four species of swallows, and at least three species of woodpeckers.¹⁷ Upon acquisition, Barn Swallows were nesting in an unfinished addition to the main house. Prior to its

¹⁵ North Shore Shoreline Baseline Biological Survey, Dethier 2023. Identified sea stars include: *Pisaster ochraceus*, *Leptasterias hexactis*, *Evasterias troschelii*, *Hernricia spp.*, *Dermasterias imbricata*.

¹⁶ Latin name is *Pisaster ochraceus*.

¹⁷ Black-throated Gray, Orange-crowned, Yellow, Yellow-rumped, Townsend’s and Wilson’s warblers; Barn, Cliff, Violet-green and Tree swallows; and Northern flicker, Pileated and Hairy woodpeckers.

demolition an alternative nesting structure was erected with re-purposed and new materials. The structure contains roughly 20 wooden nest cups, equivalent to the number within the main house, and Barn Swallows were seen nesting in this structure in 2024.

The Preserve's uplands support a variety of other vertebrates such as garter snakes, rough-skinned newts, Pacific chorus frogs, and Long-toed salamanders. Red-legged frogs are in the immediate area but have not been detected within the Preserve. Other wildlife species include river otters, raccoons, Douglas squirrels, a minimum of four species of bats, and Columbian black-tailed deer.¹⁸

Excessive herbivory by deer reduces resources available -- forage, breeding and sheltering habitat -- for other fauna including state listed Species of Greatest Conservation Need such as pollinators and songbirds.¹⁹ Selective browsing also favors the recruitment of invasive plant species.²⁰ To reduce the impacts of excessive herbivory, the Land Bank proposes to implement managed deer hunting in appropriate areas. Additional details are provided in Section E.

Invasive species

Staff employ an Integrated Pest Management (IPM) approach, with the preferred methods being manual and mechanical control, and with cut stem and spot herbicide treatment considered on a case-by-case basis for species that are especially difficult to control.²¹

The Land Bank worked to reduce noxious weeds prior to opening the Preserve. This extensive effort removed several hundred large English hawthorn and English holly trees and many seedlings from the upland forest. Other species controlled, with partnership support from the County's Noxious Weed Board, include Italian arum, yellow flag iris, periwinkle, tansy ragwort, Canada and bull thistle, Scotch broom, evergreen and Himalayan blackberry, non-native roses, and clematis. Control of smaller amounts of Canada thistle, reed canary grass, hawthorn, holly, and tansy ragwort are ongoing, and a significant patch of English ivy remains on a portion of the steep shoreline bluff. The nearly vertical slope presents a significant safety issue, and ivy control will be implemented gradually as conditions allow.

Stewardship and restoration work will be supported by grants and by Land Bank REET funds. Priorities for specific habitat areas may be revised in response to available funding and changing site conditions. Even with careful management, the Preserve's conservation

¹⁸ Bat species detected in audio recordings by Kwiaht include Yuma Myotis, California Myotis, Big Brown, and Townsend's Big-eared.

¹⁹ [Washington's State Wildlife Action Plan, 2015.](#)

²⁰ [Long ES, Tham EJ, Ferrer RP, 2024.](#) And, [DiTommaso A, Morris SH, et al, 2014.](#)

²¹ For further details see the Land Bank's *Guidance for Integrated Pest Management Plan*

values face threats from stressors such as climate change, invasive species, overabundance of deer, and recreational uses.

Annual monitoring of Land Bank preserves is critical to tracking changes over time and protecting conservation values. The Land Bank will conduct annual monitoring visits with the specific task of inspecting key features such as noxious weed presence and distribution, hazard analysis, and public use trends and impacts.



Figure 2. Generalized Land Cover of North Shore Preserve

Major Habitat Areas

In addition to the Preserve’s tidelands and shoreline areas, its terrestrial habitats include three broad forest types, two heavily altered wetland types, and a field maintained for recreational uses. To link broad objectives to site-specific goals, the Preserve’s habitat areas with notable and distinct ecological values were mapped (Fig. 2). Staff then assigned ratings (e.g., Poor, Fair, Good) to represent their current condition.

Future stewardship activities to enhance the Preserve’s ecology were then identified by determining a reasonable, desired future condition for each area. A summary of current and desired future conditions is provided in Table 2. A summary of proposed future stewardship activities is provided in Table 3. The ratings used by staff reflect multiple ecological criteria with an emphasis on aspects of biology, ecology, or ecological processes that, if missing or altered, could lead to future declines or losses to either species or habitats. A similar process is used by other conservation organizations to help prioritize stewardship goals, actions, and monitoring. The ecological attributes and ratings in use by the Land Bank represent an iterative, adaptive process informed by research, field observations and peer review.

Table 2. Generalized current and desired future condition²²

HABITAT AREA	CURRENT CONDITION	DESIRED FUTURE
Tidelands	EXCELLENT – Baseline assessment notes that the tidelands exhibit high biodiversity.	EXCELLENT – Maintain current conditions.
Coastal-Tidal-Shoreline	GOOD – English ivy and other weeds on steep bluff. Canopy gaps due to previous development and slides. History of off-leash dog walking.	VERY GOOD – Priority weeds removed. Forest gaps planted and understory vegetation enhanced. Few or no off-leash dogs.
Wetlands	POOR – Hydrology and vegetation altered extensively through past land uses. Extensive non-native vegetation.	GOOD – Restored wetland function. Established native woody and herbaceous plant communities. Trace levels of priority weeds.

²² Future condition timeframe is the duration of this plan or roughly ten years. Key Ecological Attributes and indicator rating definitions are available upon request.

Forests	GOOD to VERY GOOD – Conditions variable in response to canopy density particularly in terms of understory development. Excessive invasive plant cover remains in some areas.	VERY GOOD – Appropriate stand density to develop old growth characteristics. Adequate snags and downed wood with diverse native understory and ground layer. Priority weeds removed.
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Coastal-Tidal-Shoreline

The Preserve’s shoreline area extends for 1,857 feet and encompasses a half-acre of tidelands. Other tidelands in the surrounding area are owned by the State. Along this extent, a 2023 survey delineated six distinct geomorphic segments with a mix of sand, cobble, gravel, bedrock, and boulders that provides a diversity of habitats that supports an intertidal flora and fauna characterized as dense, healthy, and species rich.²³

The shoreline is characterized by moderate wave exposure and features sea cliffs, feeder bluffs, and an accretion zone. The north aspect creates relatively low desiccation rates and allows many invertebrates, fishes, seaweeds, and seagrasses to thrive during low tides. At least 75 marine species in 13 phyla were noted during the baseline biological survey. Two non-native species were also detected. These include a scattering of Pacific oysters, and the invasive brown seaweed known as wireweed.²⁴ Although this species of seaweed is fast growing and can out-compete others, no specific control is recommended.

Foliose red algae are noted as abundant, and the marine nearshore zone contains eelgrass, surfgrass, and kelps. Eelgrass, in particular, is also an ecologically important species which provides habitat to a range of wildlife such as herring and surf smelt. In general, seagrasses and macroalgae provide critical habitat, such as cover and food resources, that increases biodiversity and reduces wave action and shoreline erosion. Recently, they have also gained recognition for their ‘blue carbon’ storage capabilities.

The eastern end of the Preserve is composed of coarse cobble, gravel, and sand. A flat backshore zone extends seaward and is characterized by drift logs and dune grass. As it nears the coastal bluff, and is influenced by freshwater inputs from the uplands, the vegetation transitions into species such as Sitka spruce, Douglas maple, Western red cedar, and red elderberry. The coastal bluff also features many mature Douglas-fir trees.

²³ Dethier, 2023

²⁴ Latin names include *Crassostrea gigas* and *Sargassum muticum*.

Moving westward, shoreline substrates shift from a high gravel berm to sandstone outcrops and boulders. The coastal bluffs become increasingly close to the high-water line, and sedimentary bedrock extends down into the intertidal zone. Further west, the bluffs transition into unstable, finer-grained mudstone. Here, the mid and upper shore is relatively flat and features creviced bedrock.

While the baseline study indicates that the shoreline is biologically rich and geologically unique, it also determined that the proposed level of public access is unlikely to have negative impacts. To support responsible recreation, eventual signage that emphasizes rolling rocks back into their original position, no collecting, and overall 'leaving no trace' will be considered.

Cumulative impacts from climatic stressors such as atmospheric rivers threaten both marine and terrestrial resources, namely slope stability. The Land Bank will continue to plant and establish slope stabilizing vegetation and to monitor bluff erosion.

Summary of proposed shoreline and intertidal management activities:

- Install and maintain native plantings
- Monitor and prevent off-leash dog use and collection of biological materials
- Control priority weeds, including English ivy infestation on bluff
- Participate in discussions and research activities to support broad marine goals
- Establish locations for monitoring site-specific erosion rates

Wetlands

Wetlands take many forms -- bogs, wet prairies, forested wetlands -- and many wetland areas combine these various types. Wetlands filter sediment and bacteria from surface water, and recharge groundwater by regulating flow and allowing infiltration. These areas are also among the most imperiled habitats in the region because much of their historic extent has been altered for, if not lost to, agriculture and settlement.

The Preserve features a mosaic of wetland types that previous owners modified through roadbuilding, drainage, excavation and fill, and species introductions. Aerial imagery indicates that a large pond was excavated in the late 1970's and likely replaced natural wetlands. The main house was also built on a former wetland. Previous owners installed subsurface drainpipes across the northern portion of the Preserve to divert water away from buildings and/or to improve field conditions. These actions reduced biodiversity and ecological function, and some had limited success: prior to its removal, the foundation of the main house held standing water throughout the year, and, in late 2023 stormwater runoff directed by a field drain towards the top of the bluff contributed to a severe slide.

To reverse some of these changes, the Land Bank initiated wetland rehabilitation and slope stabilization projects during the interim period. The first phase of work directly targeted slope instability. Following the removal of the bluff and beach cabins and their septic systems, the road surface was reduced and converted into a pedestrian trail. Several field drains were then located and disrupted to reduce the concentration of stormwater runoff near the steep slopes, and to address the negative effects of artificial drainage on wetland hydrology. Staff also replanted over two acres of upland forest and shrub habitats. Once established, this vegetation can be expected to increase slope stability and to reduce runoff through increased evapotranspiration and infiltration.

In August 2024, following an extensive permitting process, the Land Bank began a second project phase focused on wetland enhancement. This involved re-grading the extensive earthen berm along the northern edge of the pond and the former footprint of the main house to form shallow depressions. These areas are being replanted with native wetland species including, seed, 10,000 herbaceous plants, and roughly 3,000 trees and shrubs.

In time, these restored wetlands and their forested buffers should help to slow erosion of the shoreline, support water quality, and provide diverse habitats for both aquatic and terrestrial wildlife including, insects, amphibians, reptiles, birds, and mammals.

Summary of proposed wetland management activities:

- Install and maintain native plants to ensure establishment
- Monitor and report on wetland hydrology
- Monitor amphibian populations
- Manage priority weeds

Forests

Forests sequester and store carbon, filter water, help control floods and erosion, and sustain biodiversity. Much of North Shore Preserve is forested with common conifers such as Douglas fir, Western red cedar, grand fir, and Western hemlock. Common hardwoods include bigleaf maple, red alder, and Douglas maple. Pacific madrone, Scouler's willow and bitter cherry are also present in small quantities. Native shrubs such as salal, snowberry, baldhip and Nootka rose, oceanspray, trailing blackberry and low Oregon-grape occupy the understory along with herbaceous species such as sword fern, stinging nettle, upland sedges, and grasses.

The Preserve's upland forests are delineated into three stand types. Previous clearing occurred to facilitate development and agriculture, but the remaining forested areas still create a relatively continuous canopy that provides a habitat corridor across an elevational gradient from the southwest corner of the property down to the shoreline. The Land Bank's overarching objectives for the Preserve's forests are to enhance habitat, reduce the risk of

catastrophic fire, and promote resilience to climate change. Descriptions and proposed management activities for each stand type are provided below.

Mesic Mixed Conifer: This forest type covers roughly 24 acres. It extends south of and east to the entry road, and dominant species include Western red cedar, Douglas fir, and Western hemlock. Patches of red alder are interspersed. Due to low light conditions beneath the dense canopy, much of this habitat type has limited understory development and extensive areas of bare ground. In areas where light reaches the forest floor, the shrub layer is comprised of salmonberry, oceanspray, red elderberry, and salal. Herbaceous species such as stinging nettle, trailing blackberry and sword fern are also present.

Modest removal of small diameter trees is proposed within this habitat type to help increase the vigor and resiliency of the remaining trees, and to reduce the attenuation of sunlight to the ground. This increase of light will also support understory development. Out-planting of select understory species, creating snags, and retaining large wood is proposed in this area to enhance biodiversity and wildlife habitat.

Considerations for thinning will include minimizing soil impacts and implementing activities outside of primarily nesting season to reduce disturbance to wildlife. Staff will promote public safety and education through signage and temporary area closures. These recommendations and their general cost estimates are reflected in the Table 3, and additional information will be made available in a site tour(s) and upon request.

Mesic Douglas Fir-Western Hemlock: The forest type encompasses 15 acres, exhibits high ecological integrity, and is part of a designated habitat Reserve Zone. It extends west of the entry road and south of the shop and features rocky outcrops. Douglas fir dominates the overstory. Hemlock and cedar are present in the canopy on north-facing slopes, and otherwise primarily occupy the understory. Scattered madrone and shore pine are also present, especially in the southwest corner. Shrubs such as salal, oceanspray, tall Oregon grape, low Oregon grape, baldhip rose and snowberry are well represented in the understory. Sword fern, native grasses, and trailing blackberry, and to a lesser degree, serviceberry exist in the understory.

Mixed Upland: This forest type is poorly defined. It covers roughly 13 acres and is highly modified due to its proximity around the former developed area. Tree species include Douglas-fir, Western red cedar, grand fir, bigleaf maple, red alder, Scouler's willow, and shore pine. Sitka spruce and Douglas maple occur closer to the waterfront. The shrub layer is well-developed in certain areas and nearly bare in others. Vegetated areas have many of the natives already mentioned, with red elderberry and oceanspray more common along the steep slopes. Stinging nettle and sword fern occupy the understory.

Over two acres of this habitat area was reforested in early 2024 to enhance the wetland and shoreline buffers, and to eliminate the need for mowing. A portion of this acreage is surrounded by temporary deer fencing and planted with species such as thimbleberry, bitter cherry, and Oregon grape. Areas outside of the fence were planted with deer-tolerant shrubs such as snowberry, tall Oregon grape, Nootka rose and gooseberry. In early 2025, over 4,000 additional trees and shrubs will be installed in areas where earthwork was recently completed. The intended result is establishment of a closed canopy forest in the fenced area and early seral shrub habitat in unfenced areas. This will help maintain scenic vistas, while providing wildlife habitat and reducing maintenance requirements (i.e., routine mowing).

Most of these forested areas had invasive species throughout. As mentioned previously, staff implemented a comprehensive management effort to reduce invasive plant cover during the interim management period. English ivy remains along the steep slopes of the coastal bluff, and an ongoing goal of this long-term SMP will be to reduce its cover.

Summary of proposed forest management activities:

- Maintain plantings until established
- Complete selective thinning to enhance resilience to climate change, and reduce wildfire risk
- Out-plant understory species in thinned areas
- Promote standing and downed dead wood for habitat
- Manage priority weeds

Mowed Field and Orchard

Over an acre of the Preserve will remain as a mowed field and an orchard and be available for recreational use. While dominated by non-native vegetation, the heritage orchard trees and the native plantings found along the perimeter provide some habitat value, including floral resources for birds and pollinators. Retaining and maintaining the apple orchard also helps to preserve historic values.

Summary of proposed field management activities:

- Manage priority weeds
- Maintain heritage apple orchard
- Enhance native vegetation

HABITAT AREAS	KEY ECOLOGICAL ATTRIBUTES	STRESSORS	MANAGEMENT ACTIONS	PRIORITY²⁵	TIMING²⁶
Coastal-Tidal-Shoreline	Large woody debris Tidal influences Gravels, sand and mixed-fine Sediments Eelgrass	Overuse, marine trash, sea level rise	Leverage local expertise to monitor and support species of interest. Monitor and reduce off-leash dog use.	Medium	Near term/ Long Term
Wetlands (Incl. Forested Swamp and Emergent Wetlands)	Forest structure, Standing and downed dead trees; Native tree and shrub richness, Vegetative structure (Forested); Native wetland plant cover, Edge condition (Herbaceous); Hydrology (all)	Climate change, alterations to wetland hydrology, species introductions	Outplant and maintain wetland species. Control priority invasive species (e.g., English hawthorn, reed canary grass, periwinkle).	High	Near term/ Long Term
Upland Forests (Mesic Mixed Conifer, Mesic Douglas Fir-Western Hemlock, Mixed Upland)	Stand density and structure, Standing and downed dead trees, Native tree and shrub richness	Climate change, previous logging and land alterations, fire suppression, species introductions	Contracted selective thinning and fuels reduction in priority areas. Increase snags and downed wood. Continue control of priority invasive species (e.g., English holly, English hawthorn). Understory planting.	High	Near term/ Medium term

²⁵ In the context of this ~10-year plan

²⁶ Near term = 1-2 years, medium term = 3-10 years, long term = 11+ years

D. Cultural and Historical Resources Overview and Objectives

The Land Bank's mandate includes the protection of cultural and historical resources. North Shore Preserve is within the traditional territory of Coast Salish peoples. As the original caretakers of these lands and waters, the continued presence and input of Tribes is desired and considered fundamental to the Preserve's future protection and stewardship.

Prior to public acquisition of the Preserve, the Lummi Nation's Tribal Council visited the site and considered it for purchase. Following purchase, the Land Bank initiated correspondence with Lummi Nation to provide notification of the acquisition, acknowledge the importance of this area, and extend an open invitation to participate in future management. Also in 2022, the Land Bank commissioned an archaeological survey.²⁷ Before providing public access, staff sought to identify and protect any significant cultural resources on the property.

The assessment did not identify any precontact cultural resources. However, evidence within the much broader area indicates that the northern shores of Orcas Island supported activities such as fishing, shellfish harvesting, and hunting. As an example, the Point Doughty Natural Area Preserve is identified by the Samish Indian Nation as being in the approximate location of a historic village, known as T'qwá:leqs.²⁸

More recently, the Land Bank met with staff from the Washington Department of Fish and Wildlife (WDFW) and several tribal representatives to discuss potential access opportunities, such as allowances for deer hunting, on preserves. Representatives from Lummi Nation, Swinomish Tribe of Indians, and the Tulalip Tribes expressed interest in improved access for this traditional cultural practice.

The Land Bank proposes this as a future access opportunity in Section E. SJPT has included specific provisions in their conservation easement to acknowledge and support requests for cultural use by indigenous peoples. Developing opportunities for co-stewardship of important plants, species, and sites, collaboratively engaging around protection of resources, and providing interpretative materials about Coast Salish history and culture is a long-term objective for this and other Land Bank preserves.

San Juan County is also developing a framework for improving tribal engagement and has recently designated a cultural coordinator to lead the effort. This framework will help identify and establish best practices for consultation and engagement, and the Land Bank anticipates that it will include provisions for regular updates to Tribes regarding proposed projects that may identify areas of interest and concern. In the interim, the Land Bank will continue to: Notify Tribes of acquisitions; share draft site concepts and management plans; attempt to minimize the impacts of recreation on tribal interests; and extend open invitations to visit, consult on management and stewardship practices, and reincorporate Traditional Ecological Knowledge on preserves.

Post-colonial history of the property was also documented in the comprehensive study commissioned by the Land Bank. The property operated as a small farm starting in 1891, transitioned into an agritourism business by the 1930s and continued in use through at least the 1960s; this is considered the period of significance for the property (1891-1970). The final report identified the former Glenwood Inn as a potential historic district due to its contribution to the history of agritourism on Orcas Island. Of the nine structures in place

²⁷ Equinox Research and Consulting International Inc. (ERCI)

²⁸ Samish Indian Nation maintains the website: [Coast Salish Place Names of the San Juan Islands](#)

for over 50 years, eight retained sufficient integrity to tell the story of the early and mid-twentieth century agritourism and were therefore considered eligible as contributing resources in a historic district.

The large house, which had served as the main home prior to becoming an inn, played a central role in the history of the property but had lost too much exterior integrity to convey its significance. The early history of this house is largely unknown, but San Juan County Assessor records note that it was built in 1892. However, no building is noted in this location on the 1894 map. The building could be the one noted in 1894 on the west half of the property, but it would have been moved, and no records could be found to confirm this.

Due to the very poor condition of the buildings and to the conservation and public access objectives for the property, the Land Bank sought to remove them. As part of the State's Department of Archaeology and Historic Preservation (DHAP) mitigation requirements for building removal, staff contacted several building salvage businesses and non-profit organizations and made both the buildings and building materials available to willing recipients. Although the Land Bank received no proposals to move buildings, staff worked with the Orcas Island Exchange and others to salvage a significant amount of building materials for re-use. Members of the Orcas Historical Society also visited the property prior to photograph the buildings prior to their removal.

Another mitigation requirement was to install interpretive signage documenting the property's agritourism history. The Land Bank elected to pair that sign with one focused on Coast Salish history and culture. These signs are under development and are scheduled for installation in 2025.

Summary of proposed cultural and historical resources activities:

- Develop and install interpretation signage that promotes cultural awareness, describes Coast Salish use of the area, and promotes respectful use of the Preserve
- Develop and install interpretation signage that describes the recent history of the property as a private inn
- Invite associated Tribes to participate in long-term planning and management

E. Public Access Overview and Objectives

North Shore Preserve is likely to become a popular destination for outdoor enthusiasts. Its sweeping vistas of the outer islands, such as Sucia, Matia, Patos, Waldron, and Saturna, contribute to the islands' open space character. Opportunities for beach access are also relatively scarce; More than 90% of the waterfront tax parcels in San Juan County are privately owned.²⁹ Orcas Island is especially limited, and increasing the community's access to saltwater was a key motivator for this acquisition.

An important component of the Land Bank's conservation mandate is to provide access to the natural beauty and diversity of the San Juan Islands by preserving areas with "low intensity" recreational value. This stipulation for low-intensity reduces the likelihood that human use will degrade a preserve's ecology and disturb neighboring communities. It also helps to assure quietude for visitors and protects the organization from increased management costs that tend to result from high-intensity uses.

²⁹ GIS analysis for PIAT, 2012. Note: this percentage relates to number of tax parcels, not length of shoreline.

Initial recreational and site development activities were vetted through a public process associated with the Interim SMP and have been evaluated by SJPT for concurrence with their conservation easement. These and future access proposals are described below.

Neighbors of the Preserve have expressed concerns about the increase in traffic on Glenwood Inn Road. Impacts from recreation are also expected to increase throughout the region as population growth continues and more people seek access to natural areas.³⁰ Maintaining a moderate level of use will be essential to preserving the Preserve's special qualities, the neighborhood's rural character, and the desired visitor experience.

The Land Bank will employ multiple strategies to keep use levels within an acceptable range. All standard Land Bank rules will apply (Appendix A). This includes day-use only, no camping, and no campfires. The Land Bank also proposes these approaches to manage use levels: no promotion, private events, or commercial use of the Preserve. Facilities will be limited, and Land Bank permission will be required for groups of 15 or more. Dogs are proposed to be allowed on-leash. The Land Bank always reserves the option of restricting or discontinuing any aspect of public use if it proves unmanageable or detrimental to the Preserve's conservation values.

Signs are installed on preserves to inform visitors of rules and restrictions, and to protect neighbor privacy and natural resources. In general, the Land Bank aims to minimize signage. Signs for rules and regulations are already posted. Additional educational and interpretive panels that describe the ecological, cultural, and historical importance of the site will be installed later.

Current Use

Three parking areas, two bicycle racks, and one trailhead provide public access to North Shore Preserve. The main pedestrian trail descends from the central, largest parking area to the shoreline along the path of the former beach road. Publicly accessible shoreline extends for roughly 1,800 feet and provides opportunities for wildlife viewing, beachcombing, and landing of non-motorized watercrafts. Launching of non-motorized watercraft is also permitted though the steep descent down and subsequent ascent from the shoreline may be limiting for some recreationalists. Beaches to the east and west of the Preserve are privately owned, appropriately signed, and no overland access to Point Doughty exists.

The trail down to the shoreline courses a steep and erosive slope. The slope is likely to require periodic maintenance, as future slides are anticipated.³¹ This may be exacerbated by the increasing intensity and frequency of atmospheric rivers under climate change.

A quasi-natural meadow above the bluff, maintained through periodic mowing, provides an expansive sea view. There is an additional, relatively level pedestrian trail that extends for 0.2-miles and provides an easy walk and wildlife viewing opportunities. A map of current access is provided in Figure 3.

³⁰ For more information see The Tulalip Tribes report, [The "Recreation Boom" on Public Lands in Western Washington: Impacts to Wildlife and Implications for Treaty Tribes](#), 2021

³¹ As noted in assessment by ZipperGeo, Inc. 2022.

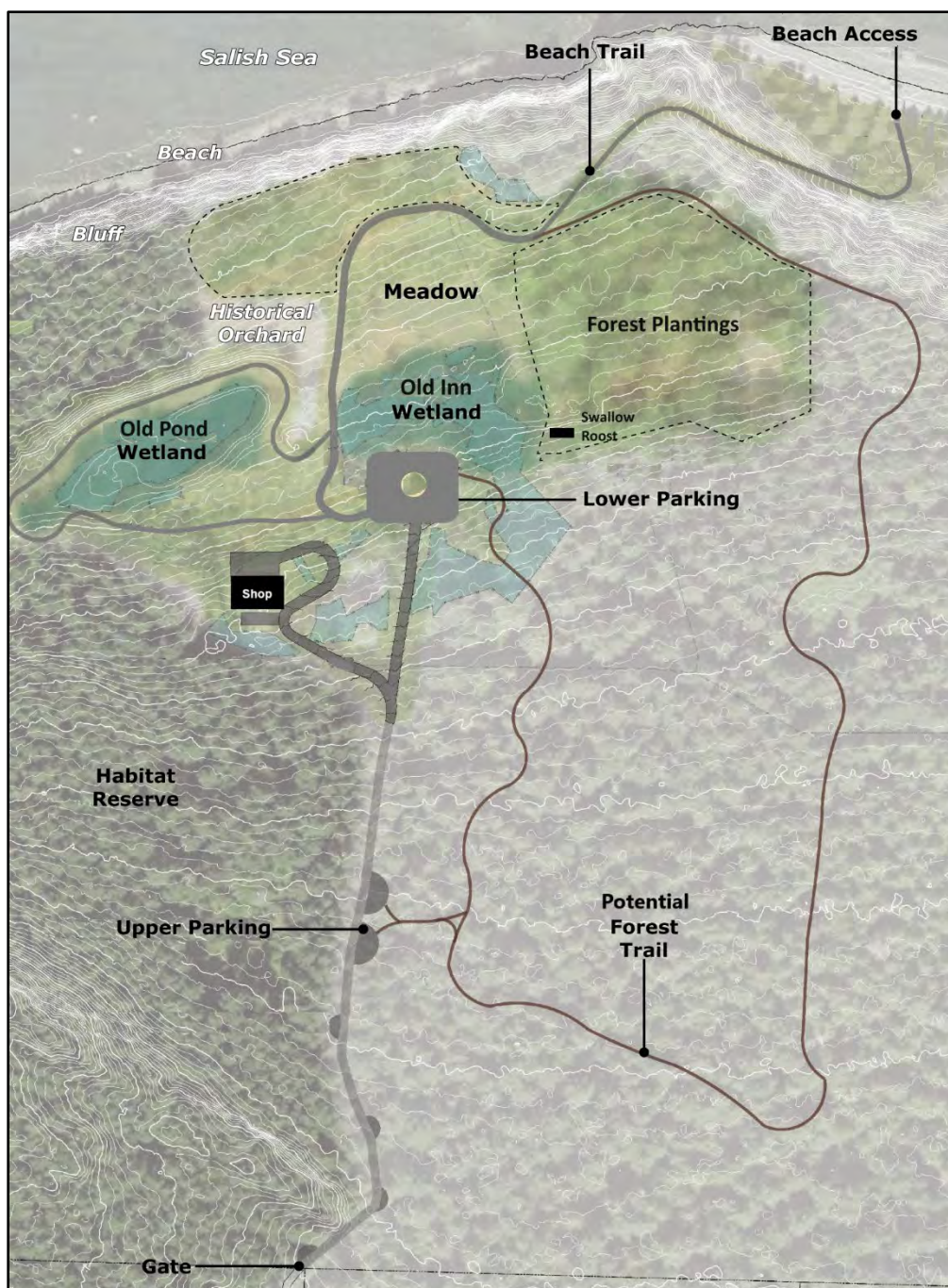


Figure 3. Public Access at North Shore Preserve

Outreach, Education and Research

To date, Land Bank staff have provided dozens of guided tours of the property since July 2022. The Land Bank has also held work parties and will continue to work with community volunteers and host work parties to meet some of its stewardship objectives. Staff may also host interpretive programs in collaboration with outside groups or experts. Where appropriate, the Land Bank may collaborate with local organizations, schools, universities, and scientists to increase or disseminate knowledge of the Preserve's ecological resources. Activities related to education and research will be subject to review, conducted on a permission-only basis, and limited in size or duration.

Volunteers contribute countless hours of service and perform meaningful stewardship activities across Land Bank preserves. Some serve for a single day to help maintain trails, plant native wildflowers and trees, or pick up marine trash. Others engage in recurring activities like monitoring. The Land Bank will continue to work with community volunteers and host work parties to meet some of its stewardship objectives.

Summary of proposed public access management activities:

- Maintain pedestrian-only trails to shoreline and around wetland
- Enforce leash and other rules related to responsible use of the Preserve
- Monitor use levels
- Continue to provide periodic, guided tours and volunteer events

Proposed Future Access

There is potential to develop an additional trail at North Shore Preserve. This longer, loop trail is proposed to also begin at the main trailhead and to extend through the forest in the southeast corner of the Preserve. Prior to implementation of an additional trail, public access use levels and demand will be assessed (for one year). If parking congestion occurs due to high demand, the Land Bank may open limited overflow parking in the vicinity of the shop. Based on site conditions, developing additional parking would likely require wetland mitigation and/or significant tree removal. Instead, the Land Bank will seek to manage use levels and to encourage cycling, walking and car-pooling.

Hunting

Unnaturally high populations of Black-tailed deer exist in the San Juan Islands and researchers and wildlife biologists recommend control of deer populations both for conservation purposes and for the health of the animals themselves.³² The overpopulation of deer exemplifies a native species out of balance due to development and the absence of natural predators.

Even after the recent impacts of adenovirus hemorrhagic disease (AHD), which culled numerous deer in the islands, state biologists still estimate the population to be excessively high. Biologists have documented the Orcas Island deer population's swift rebound with the short-term increase in forage and in the absence of predators. Hunting as a management tool could assist in slowing population growth, which leads to healthier individuals and likely less dramatic losses from disease.

Currently, the Land Bank allows hunting on Lopez Hill and Mount Grant Preserve. The San Juan Preservation Trust (SJPT) also allows deer hunting some of their preserves. These programs were developed in close collaboration with the Washington Department of Fish and Wildlife (WDFW), researchers, and local hunters to ensure that hunting is both safe for the public and a sound ecological practice. The Land Bank will seek public input on opening a select portion of North Shore Preserve (e.g., within Reserve Zone) to deer hunting. This will continue a local recreational and cultural tradition and provide ecological benefits. Any future hunting will be in accordance with state and county rules³³ and closely model the program at Mount Grant Preserve, which limits seasonal access, and requires hunters to register, wear high-visibility clothing, and receive signed permission. More public process and scientific review will occur before any hunting opportunities are implemented.

The hunting rules in effect at Mount Grant include:

- Mapped "Hunting Zones"
- Hunters must register
- Limited dates and party size
- Parking space is limited to a single vehicle
- Construction of blinds, tree stands, or other infrastructure is prohibited
- Hunting is managed through [WDFW Hunting Access Program](#)
- As required by San Juan County code, all hunters must carry written permission

³² Arcese, 2012. Milner, 2018

³³ WDFW limits hunting methods to short-range weapons such as shotguns and archery equipment. Current regulations also specify license requirements, the number and gender of animals hunted, and the use of the meat. [WAC 220-413-180](#) outlines firearm restrictions in areas of SJC and elsewhere.

Table 4. North Shore Preserve prioritized access infrastructure improvements

TASK	JUSTIFICATION	MANAGEMENT ACTIONS	PRIORITY	TIMING³⁴
General trail maintenance	Ensure safe access for pedestrians and cyclists	Staff and/or contracted surface maintenance and vegetation management	High	Near term/ Long term
General parking lot maintenance	Ensure safe vehicle access	Staff and/or contracted surface maintenance. Routine trash removal.	High	Near term/ Long term

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³⁴ Near term = 1-2 years, medium term = 3-10 years, long term =11+ years

F. Cost Projection

This cost projection is intended as a financial planning tool and is not a commitment of resources. It includes separate cost estimates for general operations and for one-time capital expenditures. All figures are approximate. Land Bank staff and Commissioners will review and revise actual planned expenditures during the Land Bank’s budgeting process. Capital cost estimates exclude the proposed conversion of the shop building. As envisioned, this would likely be funded largely or entirely by grants.

Table 5. 10-year cost projection (for planning purposes, only)

Year	General Operations ³⁵		Capital Projects ³⁶		Subtotal
2025	\$30,000	Ongoing weed management. Interplanting of planted areas. Routine trail and parking lot maintenance, general stewardship and monitoring	\$50,000	Water system and shop improvements and repairs.	\$80,000
2026	\$20,000	Complete minor forest thinning as funding allows. ³⁷ Implement understory planting. Ongoing weed management. Routine trail and parking lot maintenance, general stewardship and monitoring.	\$0		\$20,000
2027	\$20,000		\$0		\$20,000
2028	\$10,000		\$0		\$10,000
2029	\$10,000		\$0		\$10,000
2030	\$10,000		\$0		\$10,000
2031	\$10,000		\$0		\$10,000
2032	\$10,000		\$0		\$10,000
2033	\$10,000		\$0		\$10,000
2034	\$10,000		\$0		\$10,000

Total \$190,000

³⁵ Recurring, non-capital improvement operating expenses such as monitoring and maintenance

³⁶ One-time capital expenses

³⁷ This work is likely to be covered to a large degree by grant funding

G. Public Process Overview

To gather and incorporate input from the public regarding the use and management of North Shore Preserve, the Land Bank provided and sought information in a variety of ways. These are summarized as follows:

Action	Completed (Planned)
Conceptual design public presentation	April 2023
Commission and SJPT review of Interim SMP	April 2023
25 public tours of the property	2023-2024
Final design public presentation	June 2024
Stewardship and Management Plan Press Release	September 2024
Public review of Draft Stewardship and Management Plan	October 2024
LB Commission adoption of Final Stewardship and Management Plan	(November)2024

Additional information about the North Shore Preserve will be made available upon request. Supporting digital documents are hyperlinked when possible.

H. References

Arcese, P., Schuster, R., Campbell, L., Barber, A. and Martin, T. G. 2014. *Deer density and plant palatability predict shrub cover, richness, diversity and aboriginal food value in a North American archipelago*. Diversity Distrib., 20: 1368–1378. doi:10.1111/ddi.12241.

Beamer, E and K Fresh. 2021. Juvenile salmon and forage fish presence and abundance in shoreline habitats of the San Juan Islands, 2008-2009: Map applications for selected fish species. Skagit River System Cooperative, La Conner, WA.

http://skagitcoop.org/wp-content/uploads/Beamer_Fresh_2012_Final1.pdf

Dethier, Megan N, PhD. Final Report North Shore Shoreline Biological Baseline Survey
Oct. 2023

DiTommaso A, Morris SH, Parker JD, Cone CL, Agrawal AA. 2014. [Deer Browsing Delays Succession by Altering Aboveground Vegetation and Belowground Seed Banks](#). PLOS ONE 9(3): e91155.

ERCI (Equinox). 2023. Archaeological Survey Report: Orcas Island North Shore Project, San Juan County, Washington.

Friends of the San Juans - Coastal Geologic Services. 2022. North Shore Site Assessment Memo. San Juan County Land Bank Site Visit Report, November 11, 2022.

Floberg, J., M. Goering, G. Wilhere, C. MacDonald, C. Chappell, C. Rumsey, Z. Ferdana, A. Holt, P. Skidmore, T. Horsman, E. Alverson, C. Tanner, M. Bryer, P. Iachetti, A. Harcombe, B. McDonald, T. Cook, M. Summers, D. Rolph. 2004. *Willamette Valley-Puget Trough-Georgia Basin Ecoregional Assessment, Volume One: Report*. Prepared by The Nature Conservancy with support from the Nature Conservancy of Canada, Washington Department of Fish and Wildlife, Washington Department of Natural Resources Natural Heritage and Nearshore Habitat programs, Oregon State Natural Heritage Information Center and the British Columbia Conservation Data Centre.

Long ES, Tham EJ, Ferrer RP (2024) Succession and climatic stochasticity induce long-term decline of a forest browser. PLOS ONE 19(2): e0298231. <https://doi.org/10.1371/journal.pone.0298231>

Orr, L. A., Bauer, H., and Wayenberg, J. 2002. Estimates of Ground-Water Recharge from Precipitation to Glacial-Deposit and Bedrock Aquifers on Lopez, San Juan, Orcas, and Shaw Islands, San Juan County, Washington. Prepared in cooperation with the SAN JUAN COUNTY HEALTH AND COMMUNITY SERVICES, Tacoma, WA.

San Juan County Conservation Land Bank, April 2023. North Shore Preserve Interim Stewardship and Management Plan.

San Juan County Water Resource Management Plan WRIA 2. 2004. Final as Revised & Adopted by San Juan County Board of County Commissioners October 2004.

San Juan Preservation Trust. Baseline Data for North Shore Preserve. Present Conditions Report, 2024 (*in progress*).

Stein, J. 2000. *Exploring Coast Salish Prehistory: The Archaeology of San Juan Island*. University of Washington Press.

The Nature Conservancy 2007. Conservation Action Planning Handbook. https://www.conservationgateway.org/Documents/Cap%20Handbook_June2007.pdf

Washington Department of Fish and Wildlife. 2008, Updated June 2019. *Priority Habitat and Species List*. Olympia, WA, <https://wdfw.wa.gov/publications/00165>

Washington Department of Fish and Wildlife, 2015. *Washington's State Wildlife Action Plan*. Olympia, WA, <https://wdfw.wa.gov/sites/default/files/publications/01742/wdfw01742.pdf>

Washington Department of Natural Resources, 2018. *State of Washington Natural Heritage Plan*. Olympia, WA, https://www.dnr.wa.gov/publications/amp_nh_plan_2018.pdf?hkhyxx

Whitman, T., A. MacLennan, B. Rot, and P. Schlenger. 2017. Strategic Salmon Recovery Planning in the San Juan Islands: Nearshore Marine Habitat Restoration and Protection Project Prioritization. [The Pulling It All Together II Project](#).

Whitman, T, MacLennan, A. Schlenger, P., Small, J. Hawkins, S. and J. Slocumb. Strategic salmon recovery planning for San Juan County Washington: the pulling it all together (PIAT) project. Prepared by Friends of the San Juans, Coastal Geologic Services, Confluence Environmental and Anchor QEA for the SJC Lead Entity for Salmon Recovery and the Washington State Salmon Recovery Funding Board. Final report RCO #10-1789.

ZipperGeo, Inc. 2022. Summary of Reconnaissance-level Geotechnical Engineering Services. Proposed Orcas North Shore Property Beach Access Road Restoration.

I. Appendix A. Rules and Use Restrictions

The following use restrictions will be in effect. Restrictions are intended to protect the ecology of the Preserve, the safety and peace of neighbors, and to minimize management costs. They will be posted on site and mentioned in literature as appropriate.

The Land Bank relies on signage and periodic contact from staff or volunteers to educate visitors about use restrictions. An enforcement ordinance that governs activities on Land Bank Preserves was adopted by the San Juan County Council on August 25, 2009. When necessary, enforcement actions may be carried out through the SJC Sheriff's office.

- Daytime use only
- Pedestrian access only, except where posted for other uses
- No camping
- No fires
- No vehicles
- Launching or landing of UAV (drones and similar devices) is allowed only for research purposes and requires written permission of Land Bank Director
- No commercial use
- No collection of botanical, zoological, geological or other specimens except on a permission-only basis for scientific or educational purposes
- Non-motorized boat landing and launching permitted