Beaverton Marsh Preserve
Stewardship and Management Plan

March 2026

San Juan County Conservation Land Bank
350 Court Street No. 6
Friday Harbor, WA 98250

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Contents

A. **Executive Summary**

Beaverton Marsh Preserve is the result of more than 25 years of focused conservation effort by the San Juan County Conservation Land Bank (Land Bank), in partnership with the San Juan Preservation Trust (Preservation Trust), with strong support from Island Rec, San Juan Island School District, San Juan Island Trails Committee, and many other community partners. The Preserve now encompasses 473-acres, protecting the largest wetland complex in the county, providing exceptional public access opportunities within walking distance of Friday Harbor, and facilitating regenerative agriculture supporting community food systems.

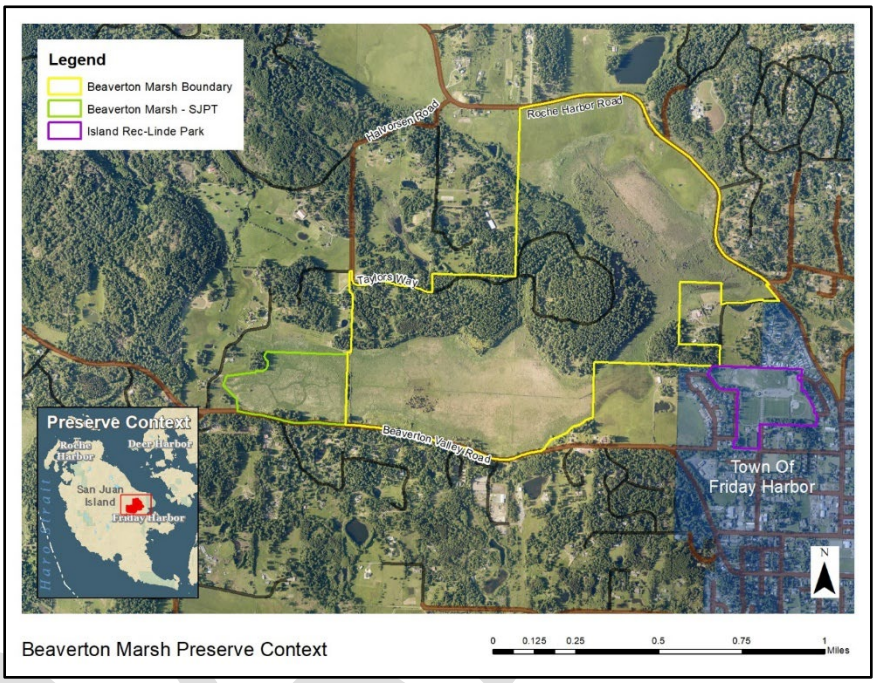

Figure 1 - Preserve Context

This Stewardship and Management Plan (SMP) provides a foundation for the long-term care of the Preserve and any potential future additions. It has been arranged in sections. **Section B, Preserve Overview** provides background on acquisition history, legal obligations, existing infrastructure, and related themes.

The long-term relationship between people and the landscape is explored in **Section C, Cultural Resources**. This section provides a brief background on known and inferred cultural resources contained within the Preserve. The concept of the eco-cultural resources is introduced with supporting rationale for informing a co-stewardship approach to management. Opportunities for co-stewardship collaboration with Native Nations are described, including integration of Traditional Ecological Knowledge (TEK) which includes access for harvest and stewardship, as well as for cultural and spiritual purposes.

The Preserve's ecological resources and habitat conservation objectives are described in **Section D, Ecological Resources.** Activities for the next ten years, based upon short-, medium-, and long-term goals are summarized in Table 4. The proposed stewardship actions focus on improving wetland function and diversity, forest health, noxious weed control, and protection and enhancement of

rocky bald and savanna habitats. These efforts are anticipated to improve water quality, enhance wildlife habitat, and bolster resilience to impacts of climate change.

Facilitating public access is a major goal for this Preserve. **Section E, Public Access** summarizes plans for public access, including associated opportunities for environmental education and non-motorized transportation. A brief description of a large, federally-funded project outlines plans to construct a boardwalk crossing of the marsh along with upgrades to existing trails to meet federal guidelines.

Within **Section F, Historical Resources,** research and documentation of the Preserve's settler-colonial history is given consideration, with a focus on the community's relationship with the land, and how it has contributed to the current landscape and a collective sense of place.

The Preserve has a long and ongoing history of agricultural use. For over two decades, the Land Bank has ensured continued agricultural use through short-term rental and long-term lease agreements with local farmers. The Land Bank's approach to leasing, a brief description of the current lease with the San Juan Island Grange's Overmarsh Commons project, and the vision for regenerative agricultural operations are presented in **Section G, Agricultural Resources.**

The SMP concludes with **Section H. Cost Projections,** which provide a high-level assessment of anticipated maintenance and project costs for the next ten years.

B. Introduction

Nestled along the northwest boundary of Friday Harbor, Beaverton Marsh Preserve embodies the Land Bank's purpose: to protect, enhance, and maintain visual and physical access to ecological, agricultural, cultural, and historical landscapes.[1] For thousands of years, the Preserve's diverse and rich wetland and upland environs have provided unique habitat for wildlife, as well as for a wide range of resources for Indigenous peoples. Beginning in the 1850s, Euro-Americans began to homestead and introduce agriculture, creating the mosaic of pastoral and natural landscapes cherished by the community today.

The 473-acre Preserve encompasses the bulk of the largest wetland complex in San Juan County as well as a mix of upland habitats, including regionally rare, endangered, and threatened habitats and species[2,3]. Pastoral lands fronting Roche Harbor Road have been under uninterrupted agricultural use for more than 150 years. The Preserve encompasses portions of six separate homestead sites. Access to outstanding conservation resources, coupled with the Preserve's convenient setting adjacent to John O. Linde Community Park in Friday Harbor, creates a unique opportunity for low-intensity recreational access and a non-motorized transportation route for the Halvorsen Road neighborhood.

[1] San Juan County Conservation Land Bank Mandate SJCC2.120

[2] WA-DNR NHP Vascular Plant Species of Conservation Concern, 2024

[3] WDFW, Priority Habitats and Species, 2023.

The Land Bank uses Stewardship and Management Plans (SMP) to guide decision-making and work planning, and to promote transparency. SMPs identify future management priorities, and summarize annual, five-year, and ten-year activities focused on protecting and enhancing conservation values. These plans establish natural resource protection and ecological enhancement objectives, define public access objectives, and guide the development of trails and other infrastructure in ways that meet the Land Bank's mandate. SMPs are adopted by the Land Bank Commission after a public hearing and then ratified by County Council, typically as part of the County's budgetary process. While SMPs are revised approximately every ten years, their intent is to set a course for the long-term sustainability of the Preserves.

Public access, agricultural use, and the protection and restoration of ecological resources were first addressed in the 2007 Beaverton Marsh SMP. This document provides substantial updates to the original plan, including the addition of 345 acres between 2019-2021 and subsequent ecological, historical, and cultural assessments. This plan expands the scope of protection and enhancement of conservation resources and attempts to strike a balance between these elements with a focus on maintaining and improving ecological attributes. In a broad sense, the Land Bank's stewardship goals for Beaverton Marsh Preserve are:

- To protect and enhance the property's ecological values;
- To seek opportunities to partner with Coast Salish peoples to reincorporate Traditional Ecological Knowledge (TEK), cultural access, & management practices into stewardship of the Preserve;
- To promote resilience in the face of climate change;
- To provide the local community with opportunities for low-intensity recreation and non-motorized transportation.
- To partner with local and regional organizations including schools, Tribes, historical museums, and non-profits to create opportunities for education and interpretation;
- To continue sustainable use of designated agricultural areas.

C. Preserve Overview

Beaverton Marsh Preserve is situated in the Friday Harbor watershed, located immediately the northwest of Friday Harbor and is framed by Roche Harbor Road to the north and Beaverton Valley Road to the south. The 473-acre Preserve is currently the largest Land Bank Preserve on San Juan Island. The broad wetland plain sits at an elevation of roughly 83 feet above sea level. Gentle slopes punctuated by bluff and rock outcrops rise through forested uplands to a peak elevation of 195 feet. The primary public access point to the Preserve is through John O. Linde Community Park, which is 1.2 miles from the Friday Harbor ferry terminal. A smaller, secondary trailhead is located at the southern terminus of Halvorsen Road. Soils found within the Preserve include Semiahmoo muck, Coveland - Mitchell Bay Complex, Cady Mountain Rock Outcrop, Doe Bay- Cady Rock Outcrop, Sucia Sandy Loam, and Limestone Point – Sholander complex. Significant features include rare bog habitat, which is part of an extensive wetland complex, remnant grassland-balds, and mature forest. The wetlands provide critical habitat for migratory waterfowl. Two separate active bald eagle nests and a redtail hawk nest are located immediately adjacent or within the Preserve. The remnant

rocky bald habitats support two state-listed plants: pink plectritis (*Plectritis congesta var brachystemon*) and true babystars (*Leptosiphon minimus*).

Legal Access and Related Easements

Legal access to the Preserve is provided from the two county roads noted above as well as Halverson Road to the west and Bonnie Drive, a private road, to the East (Figure1). An additional, undeveloped access easement runs north and west of Bonnie Lane.

The Land Bank also retains an easement on Taylor Way (private road), which has restrictions on public recreational use for the first 0.2 mile. The Land Bank intends to use this section of the road for routine maintenance, habitat restoration, and other management activities, and will collaborate on maintenance and repairs with adjoining easement holder(s). Except for maintenance vehicles, the remaining 1.2 miles of this road have been converted to trail use.

In 2019, the Land Bank acquired a short trail easement on Beaverton Valley Road[4]. There are no plans at this time to develop the easement.

A condition of the purchase of 345-acres in 2020 was a short-term use agreement for seasonal waterfowl hunting. The agreement expired in 2024 and was not renewed. Potential for future consideration of public and Tribal hunting are explored in Section E, Public Access.

Acquisition History

The Preserve has been assembled through six separate acquisitions, spanning 20 years (Table 1). The intent of the 2001 acquisition was to resell the property with a conservation easement (CE) in place as part of the Land Bank's Conservation Buyer Program. However, the Land Bank Commission later determined that retaining the property would best serve the County's conservation interests. In 2010, a $700,000 United States Department of Fish and Wildlife grant secured by Ducks Unlimited assisted with wetland restoration and acquisitions of adjacent private lands. A $750,000 private donation in 2019 became the catalyst for a fundraising effort by the Preservation Trust to acquire an additional 345 acres in partnership with the Land Bank. Their Beaverton Valley campaign successfully raised $1.6 million for acquisition as well as additional funds for their long-term stewardship costs. Two additional private donations rounded out the acquisitions, including five-acre parcel which has provided the critical trail link between Island Rec's Linde Community Park and the Preserve.

Beaverton Marsh Preserve Fee Acquisitions		
Seller	*Year*	*Acres*
Sundstrom	2001	132.42
Sundstrom	2002	1.97
Revella	2006	5.33
Taylor Family	2019	324.81
M. Taylor	2019	3.47
Barker	2021	5.01
		473.01

Table 1 - Summary of acquisitions

[4] Auditors File 2019-0410014

Conservation Easements
Concurrent with the 2019 acquisition of the Taylor property, the existing conservation easement was transferred to the Preservation Trust. The CE prohibits subdivision and development, protects its important ecological attributes, and provides for public access. In a reciprocal fashion, the Land Bank holds a conservation easement that is similar, except for a public access provision, over an adjacent 30 acres owned by the Preservation Trust.

Silver Fox Homeowners Association
The Silver Fox Homeowners is a subdivision located at the east end of the Preserve. This subdivision consists of five residential parcels and one community parcel. The Land Bank owns two of these parcels. Goals for the Preserve are compatible with the plat restrictions of the association. No public access will be permitted through the private roads within the subdivision.

Utility Easements
A utility easement exists at the southern margin of the Preserve with a short section of utility poles located within the wetlands. OPALCO has moved all power related utilities to the roadside, but CenturyLink continues to utilize the poles for telecommunications. Removal of these poles, extinguishment of the easement and restoring the natural character of this area remains a goal.

Island Rec & San Juan Island School District Cooperative Agreement
Creating a connection between Friday Harbor and the Preserve was part of the intent of acquisitions. To facilitate this access, the Land Bank entered into a cooperative agreement with Island Rec and San Juan Island School District (SJISD) for the use of Linde Community Park as the primary trailhead. SJISD is the underlying property owner, with Island Rec being the beneficiary of a long-term lease for development and management of the property as a public park. Through the cooperative agreement, the Land Bank is responsible for permitting and construction of trails within Linde Park according to specifications provided by Island Rec.

Island Rec will be responsible for maintenance of trail infrastructure within Linde Park. The Land Bank will contribute $5,000 annually to support maintenance of parking, facilities, and trail infrastructure. Further, the Land Bank pledges to maintain communication with Island Rec and to assist with maintenance, management, and related stewardship issues that arise. The term of the agreement is through 2040 with renewal of the agreement linked to the presumptive renewal of Island Rec's lease.

Existing Infrastructure
Most existing infrastructure associated with the Preserve is related to agricultural and recreational uses. Fencing is extensive with approximately three miles of fence bordering active agricultural areas within the Preserve and on adjacent private lands. An additional 2.8 miles of abandoned fencing remains in place, primarily along the margins of the south side of the Preserve. Two drilled wells are located in the northern fields with the installation of a solar-powered pump in the westernmost well recently completed. Two other wells exist on the Silver Fox subdivision parcels, along with electrical transformer, a septic tank and drain field. An additional drilled well is located approximately 20 yards south of the trail in the cleared field just east of the Halvorsen Road trailhead. All wells will be retained.

Two gated driveways provide access to northern agricultural fields. A gated access on Beaverton Valley Road provides access for maintenance and monitoring activities. A driveway provides access into the Silver Fox parcel.

The property contains three constructed ponds two of which are in poor condition. The southernmost pond poorly retains water, and the shallow western pond appears to be transitioning into a wetland.

In 2022, Land Bank installed a small parking area at the western edge of the Preserve and constructed 0.65 miles of gravel-surfaced trail and an additional 0.5 mile of pedestrian-only, single-track trail. In 2024, an additional 0.75 gravel trail with a short puncheon was installed on the eastern portion of the Preserve.

D. Cultural Resource Overview and Objectives

Protection of cultural resources is integral to the Land Bank's mandate. Over time, interpretation of this element has evolved from a narrow focus on archaeological artifacts and static sites to a broader perspective encompassing cultural landscapes and consideration of contemporary, ongoing Indigenous cultural practices.

Since time immemorial, the lives of Coast Salish peoples have been intertwined with the lands and waters of the San Juan Archipelago. The imprints of these relationships persist in many forms. These include more traditional archaeological resources such as artifacts, but other more subtle resources may persist such as culturally modified trees (CMTs), cultural trails, and "forest gardens"[5]. The long-term interactions that helped shape terrestrial and aquatic habitats can be referred to as an "eco-cultural" process.[6] These areas were historically maintained by Coast Salish peoples through stewardship activities rooted in an ethos of reciprocity and kinship with the natural world. Inherent in this stewardship ethos are deep cultural and spiritual connections where people are inseparable from place. "Traditional Ecological Knowledge" is the term used to describe this holistic, place-based approach to stewardship.[7] Appendix D provides a high-level examination of some of the types of traditional management activities practiced by Coast Salish people associated with the generalized types of habitats found within Beaverton Marsh Preserve.

Understanding the processes and forces that gave rise to our contemporary definitions of habitats is critical to resource management decision making. If restoration is to be successful, weight must be applied not just to composition and structure, but also the processes that helped these systems develop. Until recently, the consideration of the scale and intensity of management by Indigenous peoples as part of this system has been largely overlooked. A growing body of science supports

[5] Armstrong, C., J. Miller, A. C. McAlvay, P. M. Ritchie, and D. Lepofsky. 2021.

[6] United States Forest Service, 2019.

[7] National Park Service TEK Guidance

cultural restoration as directly related with habitat restoration.[8,9] The significance of these eco-cultural processes is well summarized by Pellat and Gedalof (2014):

"*Just as importantly we seek to stress the need to accept and incorporate traditional land-use practices into ecosystem management activities because our study area was not terra nullius; it was the result of an eco-cultural interaction. Understanding ecological processes (past and possible futures) is critical in determining the feasibility of long-term recovery or future ecological trajectories. If we fail to understand, and in many cases emulate, these processes then we will become gardeners, maintaining fragments of a past ecosystem that represents a depauperate assemblage of its former richness.*"

Tribal Engagement & Consultation

San Juan County, including but not limited to the Conservation Land Bank department, is taking many steps to facilitate meaningful engagement. A framework for engagement with Tribal governments was adopted in 2024. Cultural resource assessments have become standard for new Preserves and are being strategically implemented for existing holdings. Increasingly, communication with Tribal governments is being sought to help inform acquisitions, management plans, and restoration activities. Tribal hunting on public lands in the islands is currently being explored. Land Bank staff helped initiate, lead, and participate in the Stewardship Network of the San Juan Islands Tribal Relations and Engagement Group's Co-Stewardship subcommittee. Co-stewardship activities and outreach efforts with the Samish Indian Nation's Department of Natural Resources and several Indigenous non-profits are other examples which are creating opportunities for cultural access, communication, and partnerships.

The Land Bank has invited participation in future management in several ways. Consultation letters seeking input on public access projects and inviting early input into development of this SMP were sent to Samish, Swinomish, Lummi, and Tulalip Native Nations. Letters were followed with voicemails and emails to appropriate Tribal Historic Preservation Officers (THPO) of each Tribe or Nation. Input was received from Samish Indian Nation's THPO in support of proposed cultural resource assessment processes.

While there has been acknowledgement of rights retained by regional Native Nations through the Treaty of Point Elliot[10], a great deal of work remains to build trust, improve communications, and understand the contemporary application of these rights. In the near term, there are opportunities to build relationships, facilitate engagement and implement co-stewardship actions and agreements.

Cultural Resources Assessments

Two cultural resource assessments were conducted for Beaverton Marsh Preserve and a third, associated with a Federal Highway Administration funded project, is currently underway[11]. Assessments have focused on areas with ground disturbing activity associated with recreational

[8] Deur, Douglas and N. Turner. 2005.

[9] Cuerrier, A. et al. 2015.

[10] Treaty of Point Elliot, 1855

[11] Jacobs Engineering, 2021, Falcon Cultural Resources, 2022, and Legacy Anthropology (ongoing)

trail construction and maintenance. The first assessment was located within lands heavily modified by agricultural use and no cultural resources were identified. The second covered a larger and less-disturbed portion of the Preserve and included a broader examination of upland habitats in the vicinity of the trail corridor. This inventory identified a historical cultural trail on adjacent private land and one cultural site within the Preserve. The assessment placed emphasis on eco-cultural features such as culturally modified trees and plant communities.

Although few specific cultural sites were identified, the context of the Preserve's setting, coupled with historical documents and the presence and arrangement of culturally significant plant resources contributed to the consultant's recommendation that the Land Bank pursue Traditional Cultural Place (TCP) designation[12]. San Juan County does not currently have a program or process for designating TCPs. Additionally, this process is usually driven by affected Tribe(s), most often during State or Federal transportation projects that might cause harm to significant cultural resources. As such, pursuing a TCP designation may not be an appropriate action for this Preserve. Nonetheless, the identification of the Preserve as a significant cultural landscape merits consideration of the underlying features. An alternative to formal TCP may be the recognition of the Preserve as a "Cultural Keystone Place"[9]. Ultimately, any designation will require direction by affected Native Nations.

Co-Stewardship

Recognizing Indigenous roles in shaping regional landscapes prompts a stewardship model rooted in co-stewardship, which encompasses collaborative, non-regulatory partnerships among Native Nations, government agencies, and/or non-governmental organizations (NGOs). Unlike co-management, co-stewardship emphasizes shared vision and actions rather than legal authority. Regional momentum supports such models to address parallel threats to ecological and cultural diversity. Over the last decade, momentum has grown to support co-stewardship activities on a regional, national, and international scale[13].

At the heart of co-stewardship is the need to integrate TEK into stewardship and management planning. In practice, cultural access is critical to restore connections which will help guide decision making. Access may include spiritual and ceremonial engagement, foraging, collaborative habitat restoration projects or other activities.

While the understanding and inclusion of TEK is critical, so too is the acknowledgement that attempting a comprehensive return to past conditions is neither practical, achievable, nor desirable. Physical barriers include the challenge of fragmented landscapes, altered hydrology, and ongoing threats and disruptions of changing climate. Socio-political barriers include overlays of different social, political, economic, and philosophical systems as well as financial constraints. Nonetheless, integrating TEK into management offers a path toward ecological resilience and cultural integrity.

Summary of proposed actions to ensure protection of cultural resources and advance co-stewardship of natural resources:

[12] Washington Administrative Code 365-196-450

[13] Annual Co-Stewardship Report, U.S. Department of Interior, 2023.

- Survey & Monitor: Continue to hire professionals to survey cultural resources and monitor ground-disturbing projects.
- Integrate TEK: Open pathways for the reincorporation of Traditional Ecological Knowledge into stewardship planning and implementation
- County and Departmental Policy: Encourage adoption of policies supporting treaty-reserved rights
- Collaboration: Seek opportunities for collaborative co-stewardship projects including Indigenous-led restoration, interpretation, and education
- Research Platform: Offer the Preserve as a platform for archaeological and ethno-ecological research that may inform management

E. Ecological Overview and Objectives

Habitat and resource protection is a guiding principle of the Land Bank's stewardship program. Maintaining or restoring an area's ecological health also typically preserves, and even enhances, its scenic and open-space attributes and may directly benefit people in a variety of ways. For example, wildlife activity on a preserve affords memorable outdoor experiences, while healthy wetlands improve water quality and offer flood protection. The Land Bank's proposed management actions are designed to support broad conservation objectives such as: maintaining or restoring biodiversity, retaining or promoting older forests, reducing the risk of catastrophic fire, and protecting water quality. Tribal partnerships and the application of TEK is desired and discussed further in Section D.

The landscape of Beaverton Marsh Preserve has experienced extensive alterations over the last 250 years. The elimination of Coast Salish management practices, clearing and logging of upland and wetland forests, wetland draining, species introductions and agricultural tillage, cropping, and grazing have changed the character of the land. Despite these wide-ranging impacts to native habitats, the Preserve retains considerable ecological significance. Assessments have identified several noteworthy features including an extensive wetland complex, rare bog habitat, aggregations of waterfowl, a stand of quaking aspen, and a mosaic of woodlands and balds. The Land Bank's proposed management actions detailed in this section focus broadly on maintaining or restoring biodiversity, inviting tribal partnerships and the application of TEK, water resource protection, promoting old-growth characteristics in forests, increasing carbon storage potential, and reducing the risk of catastrophic fire.

This section provides an overview of the diversity of wildlife that utilizes the Preserve and classifies the Preserve into habitat types. Habitat types offer a useful way to inventory resources and to organize and prioritize management activities. Beaverton Marsh Preserve's habitats are briefly described, mapped (Figure 2), and summarized with respect to their current and desired future condition (Table 3). In closing, a list of proposed future stewardship activities (Table 4) is offered. These activities are intended to enhance the Preserve's ecology and support desired future conditions. Stewardship and restoration work will be supported by grants and by Land Bank stewardship 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

values face threats from stressors such as climate change, invasive species, overabundance of deer, and land use activities on nearby properties within the watershed.

Wildlife

Beaverton Marsh Preserve's varied habitats, despite extensive alterations, support a diverse array of wildlife.

More than 110 species of resident and migratory bird species have been identified within the preserve. Among these are seven species identified by the state of Washington as Priority Species: great blue heron, wood duck, Barrow's goldeneye, common goldeneye, bufflehead, hooded merganser, and trumpeter swan. Other notable species include red-tail hawks which have at least one active nest site on the Preserve, two bald eagle nests located on immediately adjacent private lands, and reports of sandhill cranes.

In the spring, the cacophonous sounds of Pacific chorus frogs announce the presence of thousands of amphibians who occupy the wetlands. A red-legged frog and a single rough-skinned newt have been observed but breeding activity has not been confirmed for either of these species. Several western painted turtles have been documented on wetland margins. This species is native to western Washington, although opinions differ as to whether it was introduced to the San Juan Islands within the last century. American bull frogs have not been documented but given the abundance of this invasive species, it is presumed they are present.

No formal surveys have been conducted for invertebrates, but the combination of upland and wetland habitats likely supports dense and diverse assemblages of arthropods and mollusks.

A number of mammals utilize the Preserve. Columbian black-tailed deer, lowland red fox, racoon, vole, mink, and river otter have been noted. While Northern flying squirrels have not been detected on the Preserve, its woodlands have suitable habitat characteristics to support this secretive species. Bats can be found foraging for insects over wetlands and open grasslands.

The topic of wildlife at Beaverton Marsh Preserve would be incomplete without mention of beaver. Although formerly hunted nearly to extinction throughout western North America these industrious rodents have garnered widespread interest in recent years for their role as "ecosystem engineers" and potential agents of wetland restoration. Historical texts document the presence of beaver downstream of the Preserve, and occasional sightings of beaver in recent years bolster the possibility that they could return to the watershed as permanent residents. While this could have potential ecological benefits, any proposal to reintroduce beaver will need to carefully weigh anticipated changes to hydrology, potential impacts to rare bog habitats, availability of food and lodge construction materials, and potential conflicts with neighboring land uses.

Habitat Areas

Habitats at Beaverton Marsh Preserve are in transition. Substantial maintenance of the drainage ditches ended by the 1950's, followed by the cessation of agricultural use of the main wetland areas by 2005. As drainage ditches have filled in, water retention has increased, and native wetland shrubs and trees including willow, hardhack and crabapple have been establishing and spreading. Native conifers and other native and non-native forest-associated plants are colonizing

abandoned upland agricultural areas. Tree density is increasing within balds, savanna, woodland, and formerly logged forests. A changing climate is also expected to influence the structure of habitats, now and in years to come.

The Land Bank will employ a range of monitoring techniques to assess changes to habitats over time, particularly in relation to restoration activities. Monitoring methods will include the following: qualitative assessments, photomonitoring, installation of groundwater monitoring wells, vegetation analysis using aerial photography, and species diversity surveys.

Noxious weeds are present in all the Preserve's habitat areas, and in many zones, abundant. Spurge laurel can be found scattered throughout the entirety of the Preserve's uplands. Pockets of Scot's broom have occupied disturbed areas and some rocky balds. Tangles of Himalayan and evergreen blackberry find opportunity in disturbed sites while English hawthorn has established along fence rows; all of these have been distributed by birds into forested areas. Holly is found in the upland forest and an extensive patch has a foothold on the northeast side of the central lobe. Thistles and tansy ragwort are abundant along roads and in patches of agricultural fields. Uncommon invasives such as Franchet's cotoneaster, silver birch, and European mountain ash dot the upland forests. Non-native grasses and forbs like dovefoot geranium can be problematic in bald habitats where they displace native plants. Uncommon in San Juan County, spotted knapweed has been manually removed periodically by Land Bank and Noxious Weed Board staff along the margin of Roche Harbor Road.

Habitat Type	Acres	Percent
Shrub Swamp	208.5	44.07%
Dry Douglas Fir Forest	101.5	21.45%
Herbaceous Agricultural	59.8	12.64%
Mixed Hardwood Conifer Swamp	21.8	4.61%
Early Seral Alder Forest	21.6	4.57%
Mesic Mixed Conifer Forest	14.5	3.06%
Lowland Riparian Forest	12.2	2.58%
Inland Herbaceous Bald	12.4	2.62%
Bog & Fen	10.1	2.13%
Herbaceous & Woody Developed Vegetation	8.1	1.71%
Douglas Fir & Other Woodland	1.5	0.32%
Freshwater Ponds and Lakes	1.1	0.23%
	473.1	100.00%

Table 2 - Approximate acreage of Beaverton Marsh Habitats

The spread of invasive species is a significant threat to global biodiversity; consequently, the Land Bank puts a high priority on invasive weed control. In general, the Land Bank's weed management efforts are focused in areas of greatest priority and vulnerability, and where actions have the greatest chance of success. Staff follow Integrated Pest Management approaches, with the preferred methods being manual and mechanical control, and with cut stem and spot herbicide treatment used on a case-by-case basis for species that are especially difficult to control.[14] Also, to reduce the impacts of excessive herbivory on native flora the Land Bank may propose implementation managed Tribal and/or public deer hunting in appropriate areas. Additional details are provided in Section E.

[14] Integrated Pest Management Guidelines, internal San Juan County Land Bank policy document

A map of the Preserve's major habitat areas is shown in Figure 2. The major habitat types are described below, with existing and desired future conditions summarized in Table 4.

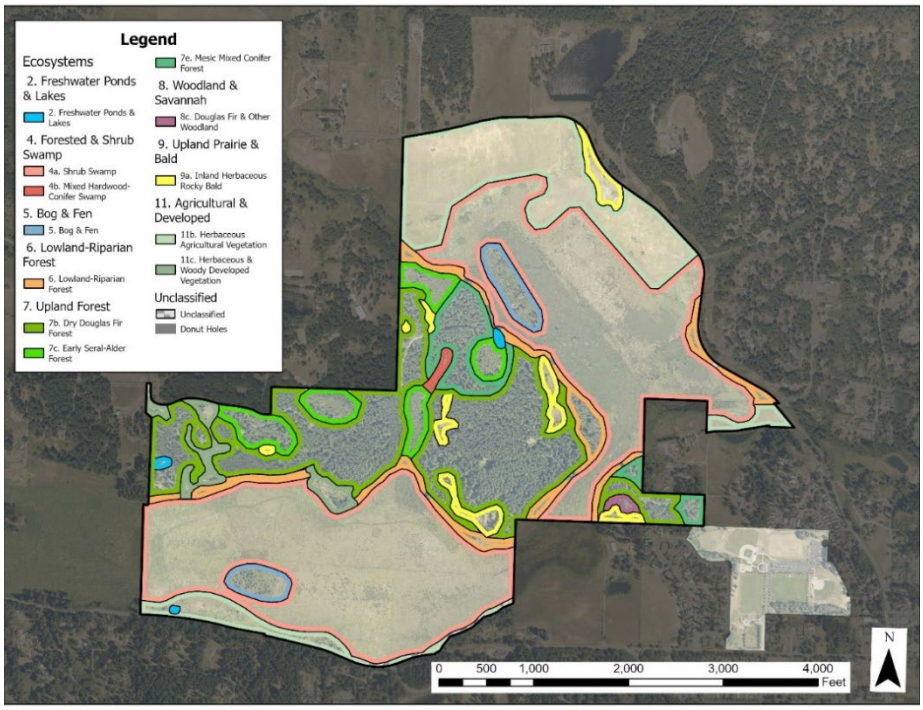

Figure 2 - Beaverton Marsh Preserve Habitat Map

Wetlands & Streams

Wetlands take many forms, all of which provide valuable ecosystem services including filtering sediment and bacteria from surface water, recharging groundwater by slowing flow and allowing infiltration, and storing significant quantities of carbon. Wetlands found on Beaverton Marsh Preserve are categorized as five separate types: Shrub Swamp, Mixed Hardwood-Conifer Swamp, Bog, Seasonal Stream, and Pond.

Shrub Swamp/Mixed Hardwood - Conifer Swamp Mosaic. These habitats form the largest type found within the Preserve, covering more than 236 acres. Formerly drained, tilled, and farmed for its deep rich soils, the non-native plant reed canarygrass now dominates much of the area. Neighbors report reed canarygrass was less prolific in the 1980s and prior to spread it was not uncommon for people to paddle small boats across the wetlands in the winter months.[15] In some zones, native shrubs are actively establishing within the reed canarygrass matrix, while still other locations are characterized by dense shrub thickets of Pacific crabapple, hardhack, willow, and occasionally shore pine. The same woody species frame a transitional zone between much of the wetland and upland areas. A small stand of quaking aspen can be found in the bog-fen-marsh matrix on the north side of the Preserve. Quaking aspen stands are uncommon in San Juan County and merit special consideration.

Most of this unit was historically a fen, a type of peatland typically characterized by a sedge dominated understory with a mix of herbaceous and woody vegetation. Peatlands are a type of wetland that produces organic matter faster than it decomposes, resulting in deep deposits of partially decomposed organic matter known as peat. In addition to their other ecological attributes, recent studies have suggested that peatlands play a critical role in the global carbon cycle. Although they account for just 3% of total landcover, peatlands are estimated to contain more than 40% of

[15] Dan Paulson and Joel Clark, personal communications, July 2025

total soil carbon[16]. Peatlands which maintain their function sequester carbon, while drained and converted peatlands can become a source of greenhouse gas emissions. Land Bank management of this habitat type will focus on actions favoring native plant diversity and hydrological restoration with a goal to reestablish processes that will support development of peat. These actions will be informed by hydrological and water quality assessments currently underway.

Bogs & Fens. Bogs, also a type of peatland, are characterized by high acidity (pH < 4.5) and the presence of sphagnum moss and other plants specially adapted to these harsh conditions. Bogs are in decline world-wide as well as within the Pacific Northwest. Threats include changes to hydrology, poor water quality, climate change, and the cessation of Indigenous management for culturally significant plants such as wild cranberry and Labrador tea.

A series of inventories of one of the bog areas documents a loss of plant diversity over the last 25 years, corresponding with an increase in cover of shore pine and shrub cover.[17] Land Bank management of this rare habitat will attempt to reverse this trend with a focus on understanding hydrology of the bog, inviting expert and Indigenous study, and experimenting with shrub and tree mowing, harvest, or removal.

Mixed Hardwood-Conifer Swamp. Several small, forested wetlands are nestled within the Preserve's upland forest. None of these have been formally delineated and only the largest is mapped (Figure 2) but are estimated to cover <2 acres in total. While all have been impacted by past land-use, the current conditions are good with native vegetation dominating most areas. In more recently disturbed sites, there is opportunity to enhance structural and species diversity throughout planting of native forbs, shrubs, and trees. In some areas, the addition of large woody debris and creation of snags would also enhance habitat value for wildlife.

Seasonal Streams. San Juan County's stream data suggests that ten separate ephemeral drainages feed the Preserve's wetland complex which are fed from more than fifty man-made ponds. Storm flows with increased volume and concentrated surface flows are presumed to have increased due to overtopping of ponds. These flows have been further enhanced by ditching and draining infrastructure inclusive of hardened surfaces such as roads and buildings. The timing, intensity, fluctuation and water quality inputs of stormwater have the capacity to negatively impact wetland habitats, especially bogs.

Water that collects within Beaverton Marsh exits at a single small stream, colloquially known as "Salmon Creek". The stream derives its name from efforts by local commercial fisherman to stock the creek with chum fry, hoping the returning fish would create closer and improved fishing conditions. The small stream passes through several private properties before entering the University of Washington's Friday Harbor Labs property and emptying into Friday Harbor. A waterfall at the interface with salt water has been identified as a natural barrier to fish passage[18]. Invertebrates, flushed downstream from wetlands, have been identified as important resource for

[16] Rocchio, Joseph and Ramm-Granberg, T. 2023.

[17] Summary of assessments beginning in mid-1990s is available on request.

[18] Tate, Elizabeth,WDFW biologist, personal communication, 2025

juvenile salmon in the nearshore habitat of San Juan Islands.[19] Stewardship and restoration activities upstream are anticipated to have positive implications for salmonid habitat.

Stewardship activities related to seasonal streams will focus on working with partners to better understand historical and current hydrology, assessing potential impacts of stormwater, and seek opportunities to improve water quality. This may include actions to restore and/or improve hydrology and water quality through outplanting, terraforming to slow storm water and increase infiltration.

Freshwater Ponds & Lakes. The Preserve contains three man-made ponds in addition to the so-called "sunken road" pond on the Preserve's western boundary which functions as an imbedded waterbody within the larger wetland complex. The pond located along Beaverton Valley Road is shallow and does not retain water. A shallow pond at the western property line appears to be in early successional transition to a wetland. The pond at the north side of the forested uplands is the most recent construction. Woody vegetation has established on the pond's earthen dam and is anticipated to compromise the dam structure. All of these ponds will be permitted to naturally transition into wetland habitats with minimal to no intervention. The pond at the north end may be enhanced with large woody debris and placing of soil material to support painted turtle habitat.

Upland Forest

Forests sequester and store carbon, filter water, help control floods and erosion and sustain biodiversity. All the upland forests at Beaverton Marsh Preserve have been subject to at least two cycles of timber harvest, with a handful of old growth specimens found along the margins of cleared areas and former grassland/bald communities. The last major harvest occurred as a salvage operation following major windstorms of 1990-1991[20]. The Preserve's forests are generally dominated by Douglas-fir, with a few old-growth specimens and old stumps attesting to the dominance of this species also prior to the logging era. Other trees include grand fir, lodgepole pine, western hemlock, western red-cedar, and red alder. Common native shrubs such as salal, snowberry, salmonberry, baldhip rose, oceanspray, trailing blackberry and low Oregon-grape occupy the understory along with herbaceous species such as sword fern, stinging nettle, and hairy honeysuckle. Other culturally significant species such as red elderberry, thimbleberry, and crab apple exist in patches across the preserve. Coast Salish people traditionally managed forests for resources including berries, trees, and shrubs. In all forest types, tribal input on management is desired.

Four main stand types are represented on the Preserve: dry Douglas-fir, Douglas-fir/shore pine, mesic conifer forest, and early seral red alder forest.

Dry Douglas-fir forest. This is a very common forest type in the islands, typically occupying thin, rocky, and well-drained soils. Drought-resistant Douglas-fir is the primary tree species present, with salal, oceanspray, baldhip rose, and other dry site shrubs common in the understory. The Beaverton stands have relatively even-aged trees, few snags and little in the way of large woody debris. Thinning would advance the development of older forest characteristics, and adding dead

[19] Chamberlin, Joshua et al, 2017.

[20] Mike Taylor, personal communication 2020

wood would enhance habitat value and biodiversity. Priority weeds to control include spurge laurel, Himalayan blackberry, Franchet's cotoneaster, English hawthorn and European mountain ash. A former building site located in this stand type will be replanted with native species.

A co-dominant shore pine subtype of Dry Douglas-fir forest is found in former agricultural areas on the western end of the Preserve. Agricultural activities ceased in this area in the 1970s and the land was let to naturalize. It is characterized by hyperabundant stands of trees with a mix of native and non-native shrubs along their margins along with stands of mature trees mostly along the outer edges. Within the last decade, some areas in this zone were cleared to initiate residential development. Cleared areas are dominated by non-native grasses and have problematic occurrences of weeds including English hawthorn, Scot's broom, spurge laurel, tansy ragwort, and Canada thistle.

Douglas-fir is more dominant throughout though shore pine is co-dominant in some areas, occasionally with nearly pure stands. Other trees present in small number include Pacific madrone, Scouler's willow, and red alder. These dense stands lack developed understory and generally have poor architecture. A site visit review of these areas by Washington Department of Natural Resources foresters suggested the density and structure of these stands will be difficult to manage and aggressive thinning was recommended[21].

Activities in this area will focus on increasing the structural and compositional diversity of forests and control of noxious weeds. Dense stands will be thinned with emphasis on protecting shore pines. While short-lived, this adaptable species is well suited to improve resilience in warming climate. Within cleared areas, existing, natural recruited shrubs and trees will be protected from deer browse and outplanting will attempt to increase overall diversity of site including establishment of broadleaf trees.

Mesic Conifer Forest. Douglas-fir also dominates this stand type, with grand fir and western hemlock as secondary species. Notably, western red cedar is uncommon including relic stumps. Its absence is likely due to past Indigenous management including burning and other techniques to promote alternate vegetation communities such as berries. Deeper, more moisture-retentive soils present opportunity for a more diverse assemblage of trees and shrubs, including hardwood species such as bigleaf maple, Douglas maple, bitter cherry. As with the dry Douglas-fir forest, management priorities include noxious weed control, select thinning, and the creation of more snags and large woody debris.

Early Seral Alder Forest. The Preserve's stands of red alder and Douglas fir occupy former logged areas from salvage operation following an exceptional strong "Fraser River Outflow" wind event in the winter of 1990-91. Red alder is a relatively short-lived, fast-growing, "pioneer" species, typically one of the first to establish in open, disturbed sites, but not necessarily persistent over time as other species take hold. Trees in these stands are even aged and relatively dense. Proposed management actions in this area include control of noxious weeds and favoring the establishment of a more diverse assemblage of native trees, shrubs, and herbaceous plants.

[21] Gene Phillips, personal communication during 2023 WA DNR forest assessment.

Woodland & Savannah

Douglas Fir and Other Woodland. These two closely related habitats intergrade with one another. They share some similar understory vegetation, with an increase in shade-tolerant shrubs corresponding to increased canopy cover in woodlands. They are differentiated from the Preserve's forests by a more limited canopy cover, fewer shrubs and small trees, and greater diversity of herbaceous plants and grasses. Concentrations of cultural use plants including camas and chocolate lily are found in this habitat type. Regionally, these habitats were managed by Indigenous people using fire, weeding, harvesting, and other practices to maintain their open character.

Upland Prairie & Bald

Inland Herbaceous Rock Bald. Balds and native grasslands are considered priority habitats for management in Washington state due to their high biodiversity and imperiled status. At Beaverton Marsh, these habitats are limited in extent, and ongoing colonization by conifers and other woody vegetation is a threat. Management will attempt to maintain the existing extent of habitat through control of noxious weeds, especially Scot's broom; thinning and pile burning; and incorporation of Indigenous management practices.

Agricultural and Developed

Herbaceous Agricultural Vegetation and Herbaceous and Woody Developed Vegetation.
These broad terms are used to describe existing agricultural operations, former agricultural areas, and areas that were cleared to support development. They are characterized by dominance of agricultural grasses with a mix of native and non-native shrub and tree communities, primarily along margins. Nearly all feature remnants of agricultural fencing and an abundance of invasive plant species.

Current agricultural use areas (see Section F. Agricultural Resources) will continue to be managed primarily for food production with a desire to increase structural and compositional diversity to support and enhance wildlife and pollinator habitat. Complimentary to this, new fencing will be arranged to allow for the expansion of hedge rows.

Former agricultural lands will be managed to increase native plant cover compatible with soils and site. Where feasible and appropriate, broadleaf trees such as Garry oak,
maples, crabapples, cascara, hazelnut, and cottonwood, will be utilized to increase habitat diversity. A former grassland-bald complex with a wetland margin (approximately five acres in size) is envisioned for restoration in an eco-cultural native plant garden in partnership with interested Tribal partners.

Areas cleared for development will have infrastructure (foundation, septic, utilities, etc.) removed and the site restored. Areas containing historical resources including building remnants, orchard trees, and some ornamental plants will be protected.

AREA	CURRENT CONDITION	DESIRED FUTURE CONDITION
Wetlands & Streams	POOR to FAIR Wetland hydrology altered by drainage ditches and stormwater inputs. Large expanses of non-native reed canarygrass present. Bog and fen species richness is decreasing	FAIR Hydrology improved: priority storm water inputs mitigated, drainage ditches mitigated with BDAs or similar approach to slow drainage, raise water table. Address hydrology and water quality issues (if possible) and increase diversity of bog plant communities. Reduced dominance of reed canarygrass with increased areas of forested/shrub wetland and pockets of more highly managed emergent wetland.
Upland Forests	POOR to GOOD Forest stand types vary considerably. Abandoned agricultural lands and clear-cut areas have high stand density and low vigor trees. Older second growth areas are in better condition but lack structural diversity of older forest. Mesic forest areas lack compositional diversity. High invasive species cover in some areas.	FAIR to VERY GOOD Improve diversity and structure of former agricultural and logged areas. Appropriate stand density to develop old growth characteristics. Adequate snags and downed wood, diverse native shrubs in understory and ground layer. Greater diversity of coniferous and broad leaf species. Priority invasive species controlled.
Woodland-Savanna – Balds	FAIR to GOOD Moderate to high conifer and shrub encroachment. Low native plant species richness and high cover of non-native and invasive plants.	FAIR to GOOD Diverse, mixed-age trees within woodland and savanna. Conifers removed from balds. Reduced cover of high-priority invasive plants, increased cover and richness of native plants. Increased snags and downed wood.
Agricultural & Developed	FAIR TO GOOD Increasing abundance of native shrub communities. With exception of reed canarygrass patches, noxious weeds abundant but not dominant.	FAIR TO GOOD Outplanting and natural recruitment of native plants in all areas to improve habitat. Continue noxious weed control with goal of reducing abundance and limiting introduction of new species to extent practicable

Table 3: Key Ecological Attribute Ratings

AREA	KEY ECOLOGICAL ATTRIBUTES	STRESSORS	PROPOSED ACTIONS	TIMING[22]	EST. COST[23]
Bog and Fen	Vegetative structure: native plant composition; Hydrological & water quality conditions;	Species introductions, climate change, alterations to wetland hydrology – internal and external.	Bog assessment and research, including interest from academic institutions. Control invasive species. Thinning, mowing, outplanting native plants. Integration of TEK.	Near to long term	$40,000[24]
Wetlands & Streams	Buffer condition, native wetland plant cover, vegetative structure, hydrology, and edge condition	Reed canary grass, ditching, diversions, damming, road and agricultural edge abutment	Establish or increase native habitat buffers. Assess current hydrology and water quality conditions. Increase native plant cover.	Short to long term	$1,250,000[23]
Upland forest	Stand density and structure; Standing and downed dead trees; Vegetative structure: native shrub and ground layer	Climate change, previous logging, fire suppression, grazing and deer browse, species introductions	Complete selective thinning. Increase snags and downed wood. Control priority invasive species. Limited understory planting. Restore cleared homesite at east side.	Near to long term	$225,000[24]
Grassland/ Bald/ Woodland	Area/extent; Native herbaceous plant cover	Climate change, conifer encroachment, species introductions	Remove encroaching conifers. Control priority weeds. Establish native forbs.	Near to long term	$125,000
Agricultural & Developed	N/A	Monoculture, soil resource extraction, hydrologic alterations	Establish native shrub and tree buffers. Support agricultural practices that build soil, support pollinators, and minimize landscape alterations	Medium to long term	$16,000

Table 4 - Summary of Proposed Ecological Management Activities

[22] Near term = 1-2 years, medium term = 3-10 years, long term =11+ years

[23] Costs shown are coarse estimates and include a mix of internal and external funds

[24] Funded in part by Federal Highway Administration Grant. Total amounts reflect presumption of outside grant funding awards.

F. Public Access Overview and Objectives

In addition to protecting and enhancing other conservation values, creating low-intensity public access to Beaverton Marsh Preserve is a priority. Protection of natural areas and trail access continually ranks as high priority for San Juan County residents[25]. Convenient access from Linde Park in Friday Harbor coupled with the Preserve's unique opportunities to experience wetlands, diverse forest, and ongoing agricultural use strongly contributed to the Preservation Trust's interest in participating in the protection of the property and was a key to the success of their fundraising effort. A vision for the Preserve is that it serves as an "learning landscape" for conservation organizations in the islands: maintaining and enhancing the community's sense of place, wildlife and natural habitats, historical and cultural resources, and ongoing production of local food.

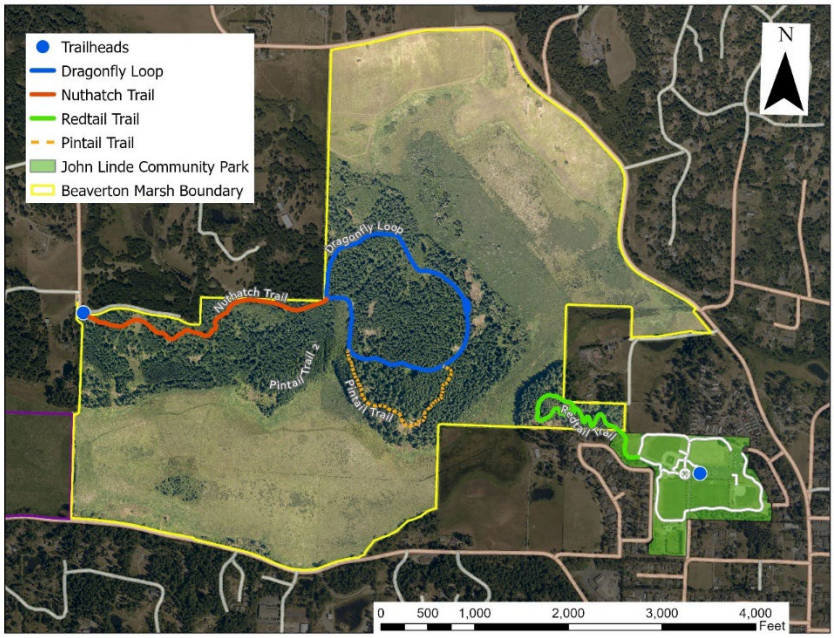

Figure 3 – Existing Recreational Trails

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 rules. The Land Bank also proposes these approaches to manage use levels: no tourism 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. Additional educational and interpretive panels that describe the ecological, cultural, and historical importance of the site are desired.

[25] 2016 San Juan County Parks, Trails, and Natural Areas Plan

Recreational Use Analysis

Core elements of recreational planning are understanding the site's setting, identification of intended recreational use types and assessing user profiles. Beaverton Marsh's setting adjacent to John O. Linde Community Park and the Town of Friday Harbor strongly influences recreational design, as the trails will see a more diverse use types and users than typical Land Bank Preserves, as well as higher overall use levels. Providing access to natural areas for underserved populations vitally supports community health and well-being, and cultivates an equitable, enduring sense of place.

While trail design will place emphasis on protection of natural resources and highlighting the site's natural history, it is anticipated that exercise, accessibility, social engagement, transportation, and outdoor education will be other key types of use. If successful in connecting trails across the marsh (Figure 5), trails within the Preserve will also be used as a transportation corridor between Halvorson Road neighborhoods (and beyond) and Friday Harbor, as well as opening possibility of further expansion if opportunities arise with interested private landowners.

The Land Bank approaches trail design using widely accepted sustainable trail concepts. These commonly feature four primary trail design elements:

- Relatively easy to construct;
- Require relatively little maintenance;
- Meet the needs of existing and projected users and types of use; and
- Do the least environmental harm[26].

The public access plan for Beaverton Marsh has been designed to meet the anticipated and somewhat disparate needs of the project uses and users. To differentiate the Preserve from the adjacent Park, trails will be surfaced with gravel rather than paved with asphalt. Trails in proximity to trailheads and/or those that facilitate transportation routes have been aligned to meet trail accessibility guidelines. These trails will have been designed to maximize accessibility to the extent practicable, have regular resting intervals, and benches placed in key locations. Routes to be used for transportation will strike a balance between efficiency of travel, sustainable alignment of trail, and maximizing accessibility. Accommodations have been designed to meet the needs of quieter, natural history focused recreational use such as side trails to viewpoints and singletrack natural surface trails aligned to provide opportunities to experience a wide range of habitats. Viewpoints for small to moderate groups will be incorporated into the overall design.

Equal with providing recreational access is the Land Bank's responsibility to protect conservation resources. Fundamental to this is starting with clear goals for design as described above. A list of additional design considerations that were employed during this process is found in Appendix C.

Existing Recreational Infrastructure

Currently, the Preserve has two trailheads which provide access to 2.5 miles of trails (Figure 3). The Halvorsen Road trailhead consists of a gravel parking lot with space for five vehicles and an

[26] Professional Trail Builders Association's Sustainability Resource Guide.

information kiosk. John O. Linde Park, managed by Island Rec, serves as a trailhead for access from the eastern side. Three types of trails are currently found within the Preserve: rustic single-track nature trail, constructed six-foot wide gravel surface trail, and greater-than 10-foot wide forest resource roads converted to trail use. A short puncheon provides access across a seasonally wet area at the border of Linde Park and the Preserve. Existing signage within the Preserve is confined to directional signs.

Proposed Recreational Enhancements

In 2020, San Juan County received a federal appropriation to fund the development of a shared-use trail between Friday Harbor and Zylstra Lake. In April 2025, the project was transferred to the Land Bank for trail development at Beaverton Marsh Preserve. Trail development will occur exclusively within the boundaries of John Linde Community Park and Beaverton Marsh Preserve but could someday be part of a longer route reaching all the way to Zylstra Lake. Total project funding, including a 13.5% match requirement, is $6,104,046.

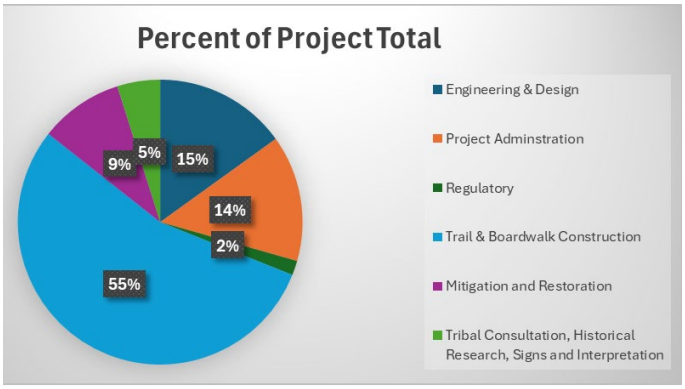

Figure 4 - Preliminary estimate of project fund distribution

The primary goal of the funding is to design and construct a boardwalk crossing of the marsh which will connect the existing trails on the eastern and western sides of the Preserve. The funding for the project originates with the Federal Highway Administration and is funneled through Washington Department of Transportation for implementation through their Local Programs division. These agencies have requirements that govern width, slope, and surface of shared use paths, which will likely require widening, adjusting grades, and applying accessible surfacing over the primary east to west trail route within the Preserve. In areas where existing grades cannot not be adjusted, separate "bypass" accessible trails are being considered, though preference will be given for modification of existing facilities over new construction. Additional goals for the funding include habitat enhancement and interpretation of the Preserve's cultural, historical, and environmental resources.

While the Land Bank aims to fully actualize the federal grant, uncertainties remain. The grant timeline will require that design, regulatory permits, and contracting be complete in less than 12 months to meet the deadline. While an extension may be possible, the exact process is uncertain. At a minimum, we expect to complete the planning and design process, with the positive outcome of construction-ready plans for the boardwalk crossing, which will facilitate locating outside funding for construction if necessary.

Potential Future Trails

As noted in Section B, Preserve Overview, the Land Bank holds an easement on a private property on Beaverton Valley Road. This easement helps create the potential of a future non-motorized trail

connection along Beaverton Valley Road. At present, the Land Bank has no intent of developing this easement. On the north side of the Preserve, a 15 to 20-foot wide corridor between Roche Harbor Road and new agricultural fencing was intentionally created to facilitate the potential of a non-motorized trail corridor. The Land Bank has created these options to facilitate the potential of non-motorized trail connections with the intention that these be developed and managed by an outside agency or other County Department.

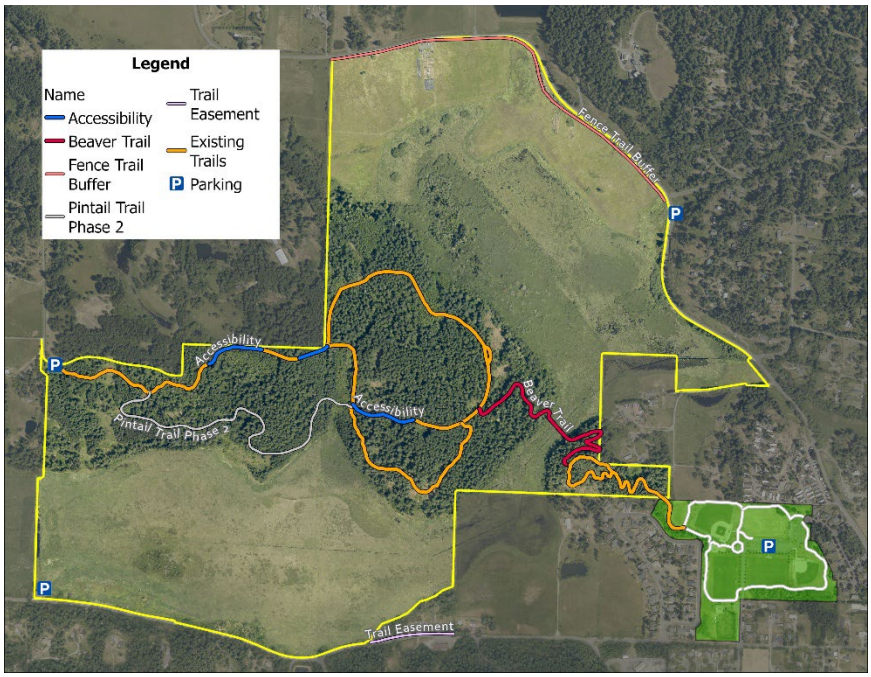

Figure 5 – Proposed and Potential Future Trails

Hunting

This plan introduces the potential for hunting but does not include it at Beaverton Marsh at this time. Hunting will be considered in a separate effort following the development and adoption of a comprehensive organizational policy for both treaty-governed access for Native Nations and the public.

Hunting is a complex and controversial subject for natural areas management in the San Juan Islands. For some, hunting is way of life, a valued form of outdoor recreation, or a means of procuring food. For others, hunting raises concerns about noise, safety, and whether it's appropriate activity on a Preserve. In recent decades, the change in population and demographics has brought forward questions surrounding hunting ethics and safety while development has simultaneously altered habitat and incrementally restricted access to traditional hunting areas.

Hunting can also be used as a tool for habitat and species management. Overabundance of Columbian black-tail deer and Canada geese have been attributed to significant habitat degradation in the islands. Studies have concluded these species are greatly altering the structure and composition natural habitats, reducing songbird populations, and decreasing the abundance and diversity of pollinators.[27,28,29] Hunting, in particular restoration of Indigenous managed hunting,

[27] Janus, D., W.S. Boyd, & T.G. Martin. 2022.

[28] Martin, Tara, Arcese, P. & Scheerder, N. 2011.

[29] Isaac-Renton, Miriam and J. Bennett, R. Best, and P. Arcese, 2010

has been suggested as the most effective, cost-efficient, and ethical solution to help with protection of these species and habitats.[30]

Interest in hunting at Beaverton Marsh is centered on waterfowl and deer. Currently, no waterfowl hunting takes place on public lands on San Juan Island. While waterfowl hunting can be managed to be relatively low risk, it does have other management considerations including noise impacts, managing equitable access, and ensuring conservation of species. Columbia black-tailed deer in the islands are arguably over abundant. Survey data on adjacent Canadian Gulf Islands suggest populations are more than ten times the historic and sustainable population levels.[31]

Hunting seasons are managed by Washington State Department of Fish and Wildlife. Management concerns regarding hunting at Beaverton Marsh Preserve include how to create access that is equitable and safe for hunters, neighboring landowners, and the public.

G. Agricultural Resources Overview and Objectives

Agriculture is fundamental to the community fabric of the San Juan Islands and protection of agricultural land is a core part of the Land Bank's charter. Since its peak in 1925, 68% percent of the land in agricultural use has gone fallow or been converted.[32] The rapid increase in property values and economic challenges of farming on an island are ongoing threats to existing farms. These exacerbate systemic issues faced by small farmers across the nation who are struggling due to larger market forces. Community surveys consistently list conservation of farmland as a priority.

In 2022, the Land Bank produced an organizational policy to guide decision making for leasing agricultural lands and resource conservation, which provides the foundation for this section.[33] The Land Bank's goals for agriculture at Beaverton Marsh Preserve are to facilitate continued use of the Preserve's northern pastures, support practices that enhance soil resources, protect water quality, bolster the local food system and the agricultural economy.

Background

The agricultural lease portion of the Preserve has been in continuous agricultural use for more than 150 years. Farming here followed a pattern common to the islands. Early, diversified subsistence-based farms eventually shifted to commercial operations which included grains, orchards, vegetables, sheep, and dairy cattle. Socio-economic forces caused a shift to hay production and grazing by the middle of the 20th century[34].

For over two decades, the Land Bank has ensured continued agricultural use at Beaverton Marsh through short-term rental and long-term lease agreements with local farmers.

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[30] McComb, Sophie, et al., 2025

[31] Beckett, Kephra, et al, 2022.

[32] San Juan County Agricultural Resources Committee. 2009.

[33] San Juan County Conservation Land Bank, 2022. Agriculture: Overview, Objectives, and Policy

[34] Pratt, Boyd. 2019.

In 2024, the San Juan Island Grange was awarded a long-term lease following an open and competitive lease process. Known as the Overmarsh Farm project, the 20-year lease agreement aims to promote regenerative agriculture through various farming activities, with land available for small-scale community plots up to larger commercial-sized areas. The project is managed by the Grange, which hired a Farm Manager to oversee operations, with the long-term goal of creating a sustainable food system on San Juan Island.

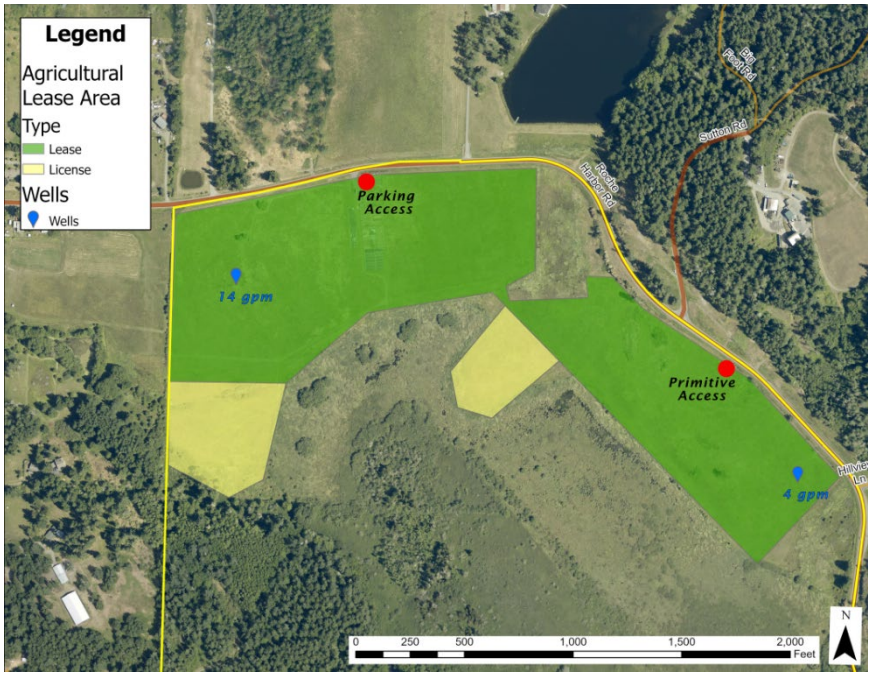

Figure 6 - Map of agricultural lease area

Agricultural Lease Objectives

Regenerative agriculture is loosely defined as a holistic approach which protects and enhances natural resources. The Natural Resource Defense Council (NRDC) describes it further as "dynamic system meant to restore soil and ecosystem health, address inequity, and leave our land, waters, and climate in better shape for future generations."[35] The Land Bank ascribes to these values and seeks to facilitate practices which accomplish these goals through an open, competitive lease process. However, the Land Bank does not actively farm properties. The organization's role is limited to selecting the best qualified lessee and incentivizing conservation actions to the extent practicable.

Within the broad framework of potential agriculture uses and practices, the Land Bank will work with lessees to ensure protection and enhancement of resources. The lessee will participate in the San Juan County Voluntary Stewardship Program (VSP), which is an incentive-based program to protect critical areas while facilitating agricultural use. Lessees will be required to work with the County's VSP technical lead, the San Juan Islands Conservation District, to develop and implement a VSP Individual Stewardship Plan (farm plan) using Best Management Practices tailored to their individual agricultural activities.

While many elements will depend on the lessee's intended operation, the Land Bank requires several generalized practices. To protect freshwater resources, any livestock activity will be timed appropriately, fenced, and ideally will utilize rotational grazing management. Any grazing within seasonally wet areas will be prescriptive in nature, limiting the number and timing of animals.

[35] Natural Resource Defense Council, 2022

Grass buffer filtration strips will be maintained between wetland areas and adjacent activities, scaled to the type, timing, and duration of activities.

Another goal for the agricultural lease area is to enhance overall biodiversity. This will be accomplished by expanding and improving hedgerow buffers with a focus on forbs, shrubs, and trees that benefit pollinators, provide habitat for birds, and food and shelter for wild and farm animals. As mentioned earlier, the Land Bank recognizes its role as facilitating agriculture performed by island farmers and has a strong interest in seeing application of agroforestry practices. These practices might include collaborations to expanding buffers to include harvestable crops, silva-pasture, or alley cropping. Practices may include trials of foods with cultural significance to Coast Salish peoples, such as elderberry, crabapple, and hazelnut canopies with understory of food plants like camas, chocolate lily, and other plants.

Soil Resources and Infrastructure

The following section provides information on current conditions of soil resources and infrastructure associated with the Preserve. The lease provides capacity for the lessee to add additional infrastructure based on review and approval by the Land Bank. Development and maintenance of agricultural resources are subject to funding availability, which may include internal and external sources. Internal funding is dependent on revenue including but not limited to reauthorization of the Real Estate Excise Tax which is the Land Bank's primary funding source.

Soils. Two primary soils are found within the agricultural lease area: Coveland-Mitchellbay Complex in the upper slopes and Coveland Loam in the bottom lands. Both are considered prime farmland if drained. Ditching in the bottom lands on the south side ceased being maintained in the 1950s while maintenance continued periodically on the north side for a few decades. Ditching in the uplands is less pronounced and it is not known if any tile drains were employed and possibly still effective.

Similar to most hayfields and pastures in the County, the pastures at Beaverton have moderately depleted soils due to deferred application of amendments as well as inherent soil qualities. Some insights into soil health were gleaned from assessments and trials conducted in partnership with WSU Extension and Conservation District between 2016-2022.

As part of a strategy to improve soil fertility, the Land Bank will partner with future lessees, SJICD, WSU Extension, and others to implement practices such as prescriptive grazing and adding amendments. Crushed basalt is being considered for potential use as an amendment and, more critically, as a climate change mitigation measure. This novel treatment shows promise in providing moisture capture and slow release of beneficial minerals, but the structure and chemistry of the rock dust also captures and sequesters carbon. Soils will be tested regularly to track response and condition.

Existing ditches will be evaluated as part of an effort to better understand current hydrology and water quality issues which may be impacting the marsh. If deemed necessary to meet environmental goals, ditches may be blocked or filled which could impact types and timing of agricultural operations.

Fencing. Nearly the whole of the agricultural lease area is bound by perimeter fencing and contains additional interior fencing in some locations (Figure 6). Portions of the fence bounding the peatlands at the bottom of the lease area were removed to facilitate wetland restoration efforts and additional defunct portions along Roche Harbor Road were recently removed. New fencing, including some deer-resistant fence, has been installed within the last year.

New fencing has been placed approximately fifteen feet inward from the existing road to create space for planting a buffer and for the potential of a future non-motorized trail (see Section E, Recreational Resources). A portion of the new fencing may include fencing to exclude deer, dependent on the types of agricultural proposed by the future lessee. The Land Bank will collaborate with the lessee on maintenance of perimeter fencing and any new interior fencing, seeking cost share funds when available.

Water. There are three wells located within the agricultural portions of the Preserve: one each in the larger contiguous zones to the northwest and a third on the smaller two-acre portion located north of Teddy Drive. The wells on the larger parcels are moderately productive at 14gpm and 4gpm respectively (Figure 6).

Washington code allows up to 5,000 gallons water/day to be pumped from ground water wells for industrial uses including agricultural irrigation and processing purposes and unlimited use for stock water. To provide water for stock and modest irrigation, the well at the western side of the property is being developed with a solar-electric pump and cistern. Additional development of the water system will be considered based on future lessee needs. Water use will be metered, and any enhancements will require approval of the Land Bank and will be scrutinized for efficiency, sustainability, and compliance with state law.

Access. There are three gated access points to agricultural areas (Figure 6). The most developed is at the northwest side, located at the site of a former corral. This area was fenced to provide seasonal public access with space for truck with livestock trailer to park and turn around as well as to serve as a modified corral. This zone has been maintained and improved to bring the driveway into compliance with County Public Works standards. Access improvements to the Eastern pastures may be needed depending on future activities.

Improvement	Justification	Timing	Cost
Perimeter fencing	Ag viability	2026-2027	$14,000
Solar Well	Ag viability	2026-2027	$6,000
East Pasture Access	Access	2026	$5,000
Soil Health	Ag viability	Ongoing	$3,000/yr
Buffer enhancements	Ecological	2027	$2,000
Noxious Weed Control	Ecological	Ongoing	TBD

Table 5 - Proposed Agricultural Resource Enhancements

H. Historical Resources

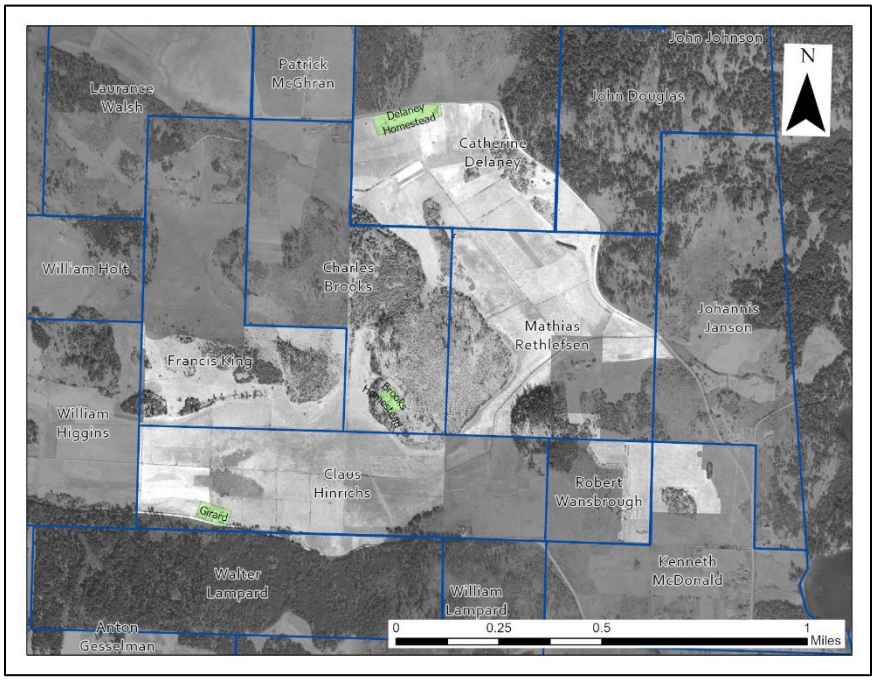

Figure 7- Beaverton area homesteads overlay of 1932 aerial photo

Protection of historical resources is part of the Land Bank's mandate. Seeking to understand the history of a Preserve provides context for current conditions, seamlessly linking them with the broader sweep of natural history. Beyond ecological insights, historical resources are often central to a community's identity and sense of place, fostering a shared experience and strengthening communal bonds. Connections with the Preserve remain strong for descendants of several of the original homesteaders from Beaverton, and several are active members of the island community to this day.
The conservation of historical resources offers multifaceted benefits. By researching and documenting the stories and experiences of past inhabitants, or gathering information on specific natural or manmade features, important information is preserved for current and future generations. This documentation provides understanding of the actions and processes that shaped present conditions, providing a long-term perspective for adaptive management. Irrespective of contemporary judgments, learning from past successes and failures can help prevent the repetition of errors and may inform future planning. In essence, historical resources provide a deep baseline for understanding change over time.

Existing Research
A historical and cultural assessment was conducted for the Preservation Trust by Boyd C. Pratt to support the fundraising campaign. This report, supported by other local historic resources, provides the foundation for this section of the plan and should be consulted for more specific detail. Additional historical resources can be found in Appendix D, Bibliography. A brief overview of major historical resource themes related to Beaverton Marsh is presented below.

Coast Salish Prehistory. As noted in Section A, Coast Salish peoples have been stewarding and living amongst the islands since time immemorial, with several groups tracing their origin to the islands themselves. Cultural resource assessments of the Preserve yielded limited documented traditional archaeological evidence. The surveys were limited to areas of ground disturbing activity, and as such, much of the Preserve has not been surveyed. Nevertheless, the imprint of First Peoples is evident in the structure and composition of habitats and features, and notable archaeological sites

are in proximity of the Preserve. In particular, the cultivation of camas and other lilaceous bulbs, bog cranberry, and crabapple trees has likely left the remains of culture resource on the property. The potential use and stewardship of peatlands should also be studied.

Colonial Period. Little is known about earliest colonial-settler history in relation to this Preserve. In 1853 the Hudson's Bay Company (HBC) Belle Vue Sheep Farm established an outpost on the south end of the island focused on sheep grazing. Initially, the operation took advantage of existing open prairie lands across the island. Most of the HBC shepherds were Native Hawaiians, including Pierre (Peter) Friday, for whom Friday Harbor was named. Friday tended his flock on a grassland-savanna complex that extended from the western shore of Friday Harbor up and over what is currently the University of Washington's Friday Harbor Labs property and the Hillview Terrace neighborhood. HBC diaries refer to this area as "Chandler's Prairie" while other early maps name it "Sheep Hill". Given the open range nature of grazing in the early days, it is likely this activity extended onto Beaverton Marsh Preserve. Surveyor notes, diaries, and other historical documents indicate that settlement and land clearing did not occur until the 1860s.

Settlement Period. At nearly 500 acres in size, the Preserve encompasses portions of six separate homestead claims (Figure 7). Typical developments included a small "starter" cabin (usually log construction) with a frame house constructed later along with infrastructure to support subsistence farming such as barns, roothouses, granaries, and fencing. Agricultural developments included ditches, gardens, fencing, and clearing of land to support crops and pasture. Beaverton Valley's rich bottom land was used to grow barley and oats.

Purported to have been settled by 1863, the Rethlefsen homestead, located somewhere along the eastern side of the Preserve, was the earliest documented settlement within the bounds of Beaverton Marsh Preserve. Just off Roche Harbor Road, daffodils and a box elder tree mark the location of the Delaney homestead. In 1947 Al and Winnie Sundstrom purchased a portion of this land from the Delaney heirs and occupied the historic home for many years. The remnants of structures that are most likely part of the Brooks homestead have been identified in the forested uplands of the Preserve, and include decomposing barn wood, a dug well and ornamental plants. The remnants of structures and an old orchard are visible along Beaverton Valley Road, known as the Girard Farm[36]. Tall, matted reed canary grass has largely obscured this site, impeding assessment of remains.

After homestead claims were awarded, land on the north side of the Preserve remained relatively stable with just one intervening owner prior to the Land Bank's acquisition. Conversely, the south side underwent numerous land divisions and changes in ownership, perhaps indicative of the challenging but rich potential of managing the peatlands for agriculture. In the 1890s residents of Beaverton Valley successfully petitioned the County to form a ditch district. The district was unsuccessful at maintaining the ditches and subsequently neighbors banded together in 1911 to form a cooperative ditch maintenance association. This, too, fell short of expectations and by the 1950s the ditch maintenance had ceased. Throughout the site, other remnants of past agricultural use can be found including old farm implements, fruit trees, and piles of field stones. Other remaining physical alterations to the land include roadbeds, fences, and ditches.

[36] Rigg, George. 1958.

Sunken Road. In addition to the development of County and Private roads, an attempt to build a road across the marsh to connect Beaverton Valley Road and Halvorsen Road occurred sometime in the late 1960s[15]. Local accounts suggest that a seasonal mowed or dirt road may have been in place prior to efforts to construct an official County Road. The project reportedly came to an end after a bulldozer, left idling, sank into the marsh. Today, the "sunken road" location is marked by a narrow, rectangular pond visible along the western property line.

Specific stewardship activities to support protection of historical resources include:

- Collaborate with San Juan Island Historical Museum, local historians, and other professionals to research and document historical resources associated with property including homestead families, agricultural activities including the creation and maintenance of ditches, and the details surrounding the "sunken road."
- Maintain to the extent practicable, historical vegetation within homestead areas. Specific examples include remnant orchard trees and the daffodils and box elder located off Roche Harbor Road.
- Identify and prioritize historical resources that hold the greatest potential for public interpretation, developing engaging ways to share their stories and significance with visitors.

I. Cost Projections

These cost projections are intended as a financial planning tool and are not a commitment of resources. The projections are broken into two sections. The first section provides cost estimates for projects which are anticipated to be one-time, project-based expenses. The second section provides overview of expenses and revenue related to general operations.

All figures are approximate. Land Bank staff and Commissioners will review and revise actual planned expenditures during the Land Bank's annual budgeting process.

Project-Based Expenses

Project	Internal Funds	External Funds (Grants)	Estimated Project Total
Beaverton Trail Project			
Planning, Engineering, and Regulatory	$198,450	$1,271,550	$1,470,000
Project Implementation	$625,596	$4,008,450	$4,634,046
Beaverton Trail Subtotal	*$824,046*	*$5,280,000*	*$6,104,046*
Agricultural Lease Infrastructure	$20,000		$20,000
Eco-Cultural Garden Restoration Project	$15,000		$15,000
Agriculture and Eco-Cultural Garden Subtotal	*$35,000*		*$35,000*
Upland Forest Restoration	$15,000	$45,000	$60,000
Bog Restoration	$20,000	$40,000	$60,000
Wetland Restoration	$250,000	$500,000	$750,000
Grassland – Bald Restoration	$15,000		$15,000
Habitat Restoration Subtotal	*$300,000*	*$585,000*	*$885,000*
Total Estimated Project Costs	**$1,159,046**	**$5,865,000**	**$7,024,046**
Total Estimated Projects as Percentage of Total	*19%*	*94%*	*100%*

Annual Stewardship Cost Estimates

Annual stewardship costs contain a mix of fixed and variable costs. The analysis below uses projected 2026 stewardship and maintenance expenses, inclusive of staff time, to create a baseline for 10-year estimates. The 10-year projection is further broken out in the table that follows. Actual costs are anticipated to fluctuate year-to-year.

2026 Estimated Annual Expenses	Annual Cost
Island Rec Cooperative Maintenance Agreement	$5,000
Monitoring & light maintenance	$8,000
Annual monitoring	$1,500
Trail maintenance	$6,500
Maintenance of signs, benches, and other infrastructure maintenance	$2,250
Noxious weed control (two days of conservation corps crew time + staff time)	$12,600
Agricultural lease management	$2,000
Agricultural infrastructure maintenance	$2,500
TOTAL:	**$40,850**

10-Year Stewardship Expenses and Revenue Projection

The table below provides a 10-year projection of stewardship and maintenance expenses and agricultural lease revenue. Costs are adjusted 2% for annual inflation and inclusive of staff time.

Year	Stewardship Expenses	Agricultural Lease Revenue
2026	$40,850	$1,200
2027	$41,667	$1,200
2028[1]	$42,917	$1,200
2029	$55,026	$1,200
2030	$56,676	$1,300[2]
2031	$58,377	$1,300
2032	$60,128	$1,300
2033	$61,932	$1,300
2034	$63,790	$1,300
2035	$65,704	$1,435
Total 10-Yr Expenses:	**$547,066**	**Total 10-Yr. Revenue: $12,735**

[1]2028 increase reflects increased maintenance for Beaverton infrastructure

[2]Per lease agreement, rate will be adjusted every five years commiserate with the Consumer Price Index (CPI). The twenty-year lease was originated in 2025, and rates will be reassessed in 2030, 2035, and 2040.

J. Public Process Overview

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

Action	Completed
2008 SMP Development (*Inclusive of public meetings and comment*)	2008
Guided walks	2010 - Ongoing
Land Bank Commission Public Site Visit	January 2011
Public access stakeholder meeting	January 2014
Halverson Road neighborhood public access meeting	April 2021
Island Rec Board meetings	2021 - Ongoing
Town of Friday Harbor Council presentations	2022 - 2024
Land Bank Community Conversations	2020-2025
Linde Park – Beaverton Marsh trail opening celebration	July 2024
San Juan County Council Beaverton Marsh trail project approval	April 2025
Public Review of SMP Scoping Meeting	July 2025
Draft Stewardship and Management Plan	(December 2025)
Land Bank Commission adoption of final SMP	(January 2026)

Appendix A. 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. These restrictions to general public use do not have bearing on reserved Tribal treaty rights.

The Land Bank generally 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 San Juan County Sheriff's office.

- Daytime use only
- Pedestrian access only (except where posted for other uses)
- No camping
- No fires
- No vehicles
- No hunting[37]
- 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, geologic or other specimens except on a permission-only basis for scientific or educational purposes[38].

Appendix B. Wildfire Management

It is widely recognized that the removal of fire as a natural process has led to habitat degradation and increased the risk of catastrophic wildfire, both of which can negatively impact ecological resources and threaten human safety. Climate change is anticipated to increase risk of wildfires. Most fires in the San Juan Islands are caused by people. The growing population, especially those within the quasi-rural Wildland-Urban-Interface (WUI) of the islands, increases the likelihood of ignition sources that might spread onto natural area preserves. While always a possibility, ignition caused by day-use recreation has been a minor issue within the County and is primarily confined to fire spreading from fire rings into driftwood at South Beach on San Juan Island.

With this in mind, the Land Bank approaches wildfire risk and response with adaptive management. Preserve management will seek to reduce the risk of catastrophic fires and improve the ability for strategic control. When wildfires occur, we will work with local and state authorities to assess potential risks and benefits of fire control options, including capacity for low-intensity fires to be permitted to burn under supervision within the Preserve.

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[37] The Land Bank's hunting policy is slated for review in 2026-27. Hunting at Beaverton Marsh Preserves will be addressed in separate effort following the adoption of this broader policy.

[38] This organizational policy is currently under review for consideration of de minimus personal harvest of fruits, berries, mushrooms, etc. Should adoption of a new organizational policy on foraging be approved by the Land Bank Commission, it will supersede this use restriction. Neither policy supersedes rights secured by Treaty.

Response to and management of wildfires is the responsibility of the Washington State Department of Natural Resources (DNR). Due to the remote nature of the islands and associated difficulty in enacting emergency response, local fire districts can be expected to be the first responders, acting under direction of DNR. Communication regarding wildfire occurrence and response can be hampered by the necessity of emergency response and it can be expected that it will be uncommon for Land Bank personnel to have ability to provide input during initial response.

The Land Bank and other regional managers have collaborated on a Community Wildfire Protection Plan which is a community-driven framework for wildfire prevention, mitigation, and response within San Juan County.[39] The plan outlies strategies to reduce wildfire risk by addressing factors like human-caused ignitions and forest health initiatives.

Appendix C. Summary of Sustainable Trail Planning, Design, and Construction

In addition to reviewing the project with San Juan Community Development for concurrence with land use and other regulatory requirements, the following list provides additional considerations for protection of conservation resources during Beaverton Marsh Preserve recreational project design and implementation:

- Assessment of biological features including soils, hydrology, plants, and wildlife habitat.
- Cultural resource assessment by professional archaeologist
- Site plan review with Washington Department of Fish and Wildlife regional biologist.
- Designating zones free of public access which contain representative habitats present within the Preserve, in as large and contiguous blocks as feasible.
- Establishing trail alignments and monitoring them for at least a year prior to construction, adjusting based on careful monitoring of hydrology, plant communities, and wildlife patterns.
- Avoidance of identified cultural and historical resources.
- Avoidance of key raptor nesting and perching areas.
- Avoiding, to extent practicable, vegetation disturbing activities during primary nesting and bloom periods.
- Protection of sensitive and rare plant communities through avoidance, barriers, signage, or combination to extent practicable.
- Utilizing existing roads for access to the extent practicable in lieu of introducing impact of new trails and roads.
- Avoiding use of chainsaws, mowers, and similar power tools during periods of high fire risk.
- Scattering rather than piling organic material to reduce accumulation of flammable material in proximity to trails and help maintain composition and structure native plant communities, with exception for creation of wildlife piles.
- Use of pruning cuts on shrubs and trees to minimize impacts to plants.
- Avoid soil disturbing activities in excessively dry or wet conditions.
- Design and implementation of trail water management features.

[39] San Juan Islands Conservation District, 2025. San Juan County, Washington Community Wildfire Protection Plan. Prepared by Northwest Management, Inc.

- Avoidance of wet areas and use of best practices for crossing where unavoidable.
- Maintaining natural screening vegetation at viewpoints to degree possible.
- Avoiding alignment of trails to avoid paralleling edges of streams, wetlands, and fields for long distances to minimize disturbance and enhance the novelty of periodic vistas.
- Training staff and volunteers protocols for Inadvertent Discovery of cultural and historical artifacts
- Consideration for future trails within agricultural areas to be placed at the margin to minimize impacts to agricultural resources
- Fencing and signage as required to establish clear bounds between recreational areas are protection zones

Appendix D. – Summary of regional research into traditional eco-cultural land use practices corresponding to the generalized Beaverton Marsh habitat types

Habitat	Eco-Cultural Stewardship Activities	Historic Impacts	Culturally Significant Plants
Bogs, Fens	Burning, weeding, select harvest, replanting, transplanting, hunting, ownership	Conversion for grazing & agriculture (ditching, tilling, planting, weeding); stormwater inputs; loss of species diversity; afforestation, reduced habitat for wildlife, deer browse affects	Labrador tea, cranberry, sphagnum moss, Pacific silver weed, crabapples, sedges, willow(spp), shore pine,
Forest & Woodlands	Burning, selective harvest; pruning; hunting, ownership	Logging, clearing for agriculture, afforestation, loss of structural diversity, decrease in abundance of food and medicinal plants, decrease in wildlife habitat, deer browse affects	Cedar, Douglas-fir, grand fir, willows, Pacific yew, salmon berry, blackcap raspberry, maple (spp) ferns (spp), ocean spray, oregon grape, gooseberry, red elderberry, strawberries, sword fern
Grassland & Savanna	Burning, tilling, select harvest, replanting, weeding fertilizing, seeding, ownership.	Conversion for grazing & agriculture, removal of native plants, afforestation, noxious weeds; deer browse affects	Camas, chocolate lily, Douglas-fir, seaside juniper, bracken fern, ocean spray, Oregon grape, thimbleberry, Hooker's onion, yerba buena, wild celery

Wetlands	Clearing, select harvest, pruning/coppicing, transplanting, weeding, seeding.	Clearing, draining, altered hydrology, conversion, noxious weeds and invasive plants	Willow, sedges, rushes, tule, cattails, black hawthorn, crabapple, quaking aspen, hardhack, skunk cabbage

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