



Lummi Island Heritage Trust

**Otto Preserve Management Plan**

*Revised and Approved, November 27, 2023*

## ***Lummi Island Heritage Trust Mission and Land Acknowledgment***

*The mission of Lummi Island Heritage Trust is to create a legacy of abundant open space, native habitat, and natural resources on Lummi Island by inspiring people to protect and care for the island's farms, forests, wetlands and shorelines forever.*

*Since its inception in 1998, the Heritage Trust has purchased or had donated 768 acres of Lummi Island's disappearing open spaces and natural areas, and has established four nature preserves. The Otto Preserve, the Curry Preserve, the Baker Preserve, and the Aiston Preserve provide large contiguous protected habitats for birds and other wildlife, as well as places for people to experience nature.*

*In addition to its preserves, the Heritage Trust has partnered with 16 island landowners to establish conservation easements on approximately 293 acres of private land on Lummi Island.*

*Lummi Island Heritage Trust is a non-profit 501(c)3 organization and belongs to the Washington Association of Land Trusts and the national Land Trust Alliance.*

*The LIHT, acknowledges that we are residing on the traditional, ancestral and unceded territory of the Lummi People. The Lummi People are the original inhabitants of Washington's northernmost coast and southern British Columbia. They lived in villages throughout this territory and continue to have an ongoing relationship with these areas. Since Time Immemorial they have celebrated life on their land, water ways and on the traditional, ancestral and unceded lands of their People to perpetuate their way of life.*

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# **I. Introduction**

## **A. Description of the Otto Preserve**

The Otto Preserve, owned and managed by the Lummi Island Heritage Trust (LIHT), is comprised of 104 acres of forest, meadow, and wetland located in the central portion of Lummi Island in Whatcom County, Washington, Sections 10 and 15, Township 37 N, Range 1 East, West Meridian.

The Otto Preserve property contains distinct habitat types: pasture/meadow, coniferous forest, mixed conifer/deciduous forest, forested wetlands, and a reverting quarry. The pasture/meadow area covers approximately two acres along the southern boundary of the Preserve. It has even terrain, sloping slightly to the southeast, and is dominated by a mixture of native and European grasses and forbs (non-grasses) that provide excellent forage and cover for birds such as sparrows and finches. Hedgerows buffering Sunrise Road create a shrub edge south of the meadow, further extending the diverse features of this habitat type.

An old gravel quarry approximately an acre in size, is located in the southeast corner of the Preserve. Operations in this quarry ceased in the 1970's. Natural reclamation is taking place with grasses and shrubs binding the steep slopes and a young forest of firs and alders within the quarry and along the old access road. In the spring of 2020, a small restoration project was organized to plant a mixture of tree species on a section of the quarry face.

An upland and lowland stand of mature conifers over 60 acres in area dominates the preserve and is in good condition with high species diversity. Another 28 acre stand is comprised of a mix of conifer and deciduous species.

A healthy understory of salal, Oregon grape, ocean spray, and snowberry are present in these stands. Mature trees, young successional stage trees, snags, and forested wetland areas all contribute to the habitat values of the Preserve. Douglas firs that are over 70 years old predominate the forest along with Western red cedar, grand fir, and big-leaf maple dominating particularly in the south-central portion. There are numerous fire-scarred remnant stumps of 200+ year old Douglas fir scattered throughout. Mossy rock balds and ledges follow the central ridge section, harboring species such as fawn lily and licorice fern. Vigorous multi-species regeneration is evident in many areas.

One of the most significant plant communities on the Preserve is a high quality Douglas fir/salal/snowberry mixed stand. The presence of nesting Pileated Woodpeckers, foraging Peregrine Falcons, and visiting Vaux's Swifts, are indications of the quality and diversity of the Preserve property.

An emergent wetland is located along the western portion of the Preserve which, combined with the adjacent scrub-shrub wetland, comprises over ten acres; an additional four acre palustrine forested wetland is located in the northwestern portion of the Preserve. These wetlands are at least partially fed from groundwater and runoff flow from the surrounding hillsides. Water quality appears high. There has been minimal historical disturbance in the wetlands, and at present few activities threaten their viability. Although Reed canary grass is established on the western perimeter of the ten acre wetland, a viable population of diverse and well-established native wetland plant species is also well represented. Both resident and migratory waterfowl such as mallard, Wood Duck, and Ring-necked Duck utilize the areas, as do many other wetland-associated species such as Marsh Wrens, herons, rails, and amphibians. The location of the wetlands adjacent to undeveloped forest increases their capacity for supporting diverse wildlife populations on the Preserve.

Unique outcrops related to but different from other outcrops at Lovers Bluff, Migley Point, Inati Bay, and at Sunrise Cove indicate an ancient and complex geologic history for the Otto Preserve. These ancient rock outcrops form a north-trending ridge on the Preserve that consists of fine and medium grained dark colored sea floor basalts interspersed with younger (approximately 160 million year old) coarser grained granitic rock called tonalite. A sample of sedimentary rock was found on the ridge, which could have been incorporated into the basalt while on the seafloor and then, through the process of plate tectonics, altered under high pressure and temperature to its present state. The sample can be viewed at the Resource Center.

The Otto Preserve lies just north of the Sunrise Cove fault zone that effectively divides the island into two sections. To the north, bedrock is primarily of the Chuckanut Formation, a sandstone and conglomerate that is approximately 50 million years old. To the south, the bedrock is the Lummi Formation consisting primarily of sandstone, shale, and mudstone, commonly called graywacke, with an age of approximately 140 – 150 million years.

The Otto Preserve and the entire island was covered in glaciers about a mile thick up to about 12,000 years ago. As the glaciers retreated, sediments were left behind and are readily apparent on the Otto Preserve including at the old quarry and on the main trail.

## **B. History of the Otto Preserve**

In the years prior to European settlement, Lummi Island was home to the Coast Salish People. Middens can be found in several locations on the island and into historical times, a Lummi Nation village existed at Village Point. It is likely that the area of the Otto Preserve was foraged for plants and hunted for wildlife by [the Coast Salish](#).

Like much of the island before European settlement, the Otto Preserve was home to an old growth forest of Douglas fir, Western red cedar, hemlock, Sitka spruce, and grand fir.

In 1934 Frank Wright owned the property and during the 1950s and 1960s, Carl and Ilse Otto [owned and](#) lived on this land. Carl was an inventor with diverse interests. Ilse was a talented artist and a gold and silversmith. Sometime after Ilse passed away, Carl contracted Lou Gerhig's disease and was cared for by Lummi Islander, Phyllis Lockwood. Upon Carl's passing, Phyllis inherited the Otto's farm; she and her family were stewards of the land until the Heritage Trust purchased it in June of 2000. Portions of the land were used historically for farming, and selective cutting took place throughout the acreage from the 1970's until it was purchased by the Trust. Mining activity took place for a brief period during the 1960s. The small gravel mine located on the easterly portion of the Preserve is abandoned and serves as an example of natural regeneration of a Douglas fir forest. This abandoned quarry is being reclaimed naturally, but the headwall, access road, and work area can still be identified. An abandoned homestead was located on the southerly portion of the Preserve near Sunrise Road. The entire property was uninhabited for more than 40 years.

## **C. Creation of the Otto Preserve**

The Lockwood family made the decision to sell the 70 acre Otto Farm in November 1999. As a result of concerns about the impact of residential development (a potential for up to 23 lots) and logging on wildlife habitat, open space, and the scenic value of the property, Lummi Island Heritage Trust negotiated an agreement with the Lockwood family in June 1999 giving the Trust eleven months to raise the necessary funds to purchase and protect the old Otto Farm as a nature preserve.

It took the generous financial support of individuals, families, businesses, organizations, and the generosity of neighboring landowners who protected their land with conservation easements to make the purchase of the Otto Farm possible. In total, over 400 individuals and businesses, along with several Island organizations, including Beach School PTO, Lummi Island Civic Club, Lummi Island Community Association, Lummi Island Grange, Lummi Island Mermaids, and Lummi Island Scenic Estates made financial or in-kind contributions to the campaign. An anonymous donor provided a generous matching grant, and grants were received from off-island

organizations including the North American Wetlands Conservation Council (NAWCA) through the U.S. Fish and Wildlife Service, the Martin Miller Fund of The Seattle Audubon Society, and Visio Corporation.

As a contingency for grants from the NAWCA and the Martin Miller Fund, a conservation easement for the property was required. The Audubon Society was involved in negotiating the terms of the conservation easement. San Juan Preservation Trust holds the conservation easement and is responsible for insuring that the terms of the agreement are followed. The Otto Preserve was dedicated on July 22, 2000.

In 2006, the generous donation of a 7.85 acre parcel adjacent to the Preserve allowed the Heritage Trust to leverage the financial support necessary to purchase and protect an additional 17 acres, thus expanding the Otto Preserve to 94 acres. The 7.85 parcel was named “Walden Walk” and the 17 acres “Baumgart Woods.” The Loop Trail on the Preserve was extended to include walking trails through these new parcels.

In 2012, the Heritage Trust conducted a “Campaign to Protect the Otto Preserve Wetland” designed to raise funds to purchase the Robinson and Eliot properties, two five-acre parcels adjacent to the Otto Preserve. With generous funding from individuals, families, Heritage Trust board members, and Lummi Island Realty, as well as grants from Seattle Audubon’s Martin Miller Fund, Seattle Foundation’s Island Fund, and the North American Wetlands Conservation Act (NAWCA), the Trust purchased the two properties. The Otto Preserve now protects the entire northern edge of one of Lummi Island’s largest wetlands, a vital groundwater resource and native habitat for Wood Ducks, warblers, frogs, salamanders, wildflowers and mature trees. A new trail, “Betty’s Shortcut” was created on the Robinson property to connect the new parcels to the existing Otto Preserve trails. A conservation easement held by San Juan Preservation Trust was amended in April, 2012 to protect the entire 103.21 acres.

## **II. Stewardship Vision Statement**

The Otto Preserve, protected in perpetuity by Lummi Island Heritage Trust, is a place where high quality habitat for native plants and animals is maintained, is a natural environment where people can enjoy spending time, a place of pride for the Lummi Island community, and a place where people can learn about natural habitats and their environments for generations to come.

In keeping with the mission of the Lummi Island Heritage Trust, the natural, open space protected by the Otto Preserve contributes to the overall beauty and rural quality of Lummi Island and serves to help maintain the small community atmosphere of the island. The property can be viewed from Sunrise Road, which follows the southerly boundary. The Preserve also encompasses a forested prominence that is visible from many vantage points on the island, from the waters of Hale Passage, and the mainland of Whatcom County.

The forest, fields, and wetlands of the Otto Preserve provide a secure and diverse refuge for native flora and fauna that are being displaced by habitat disturbance both on the island and on the nearby mainland. The Preserve also provides a place for people to learn about, experience, and develop an appreciation of the natural world. Including nearby private conservation

easement lands and other Heritage Trust lands, the Otto Preserve is part of a 698 acre corridor of protected land in this vicinity on Lummi Island.

Finally, the Otto Preserve protects a significant portion of one of the island's watersheds, helping ensure healthy water quality that supports wetland functions into the future.

### III. Climate Change

The LIHT recognizes that a changing climate due to anthropogenic causes could have significant impacts on Lummi Island and the Trust preserves in the 21<sup>st</sup> century and beyond.

Between 1895 and 2014, the lowland air temperature of the Pacific Northwest has warmed on average by about 1.3 degrees F. and climate modeling suggests that Western Washington will continue to warm throughout the 21<sup>st</sup> Century as greenhouse gas levels continue to rise. Of equal or greater importance is the temperature rise of the upper layers of the Eastern North Pacific ocean, which drives weather and climate.

Because rising temperatures result in greater water vapor content, which, in turn, causes greater energy release during phase transitions, more severe rainfall events such as the November, 2021 storm, can be expected in the future. This can lead to flooding and landslides particularly along shorelines. Rainfall records over the past 40 years for Lummi Island show wide variability with some years wetter and some dryer and is in keeping with regional rainfall patterns. There is some indication that winter months may become wetter and summer months drier.

Sea level has risen in some areas of Puget Sound but rates of rise are affected by tectonic events such as earthquakes and by the continuing effect of continental glacial rebound. However, regional sea levels are expected to rise over this century because of thermal expansion from a warming ocean and because of continental glacial and polar land ice melting.

Effects of a warming climate on the Otto Preserve could include more stress on trees better suited for cooler temperatures. Stressed trees are more susceptible to insect and fungal invasions.

Careful monitoring and stewardship of LIHT preserves will be necessary to identify and respond to problems associated with a changing climate.

### IV. Management topics

Six management topics, listed below, provide the basis for the Otto Preserve Management Plan:

- A. Forest Stewardship
- B. Wildlife and plants
- C. Groundwater
- D. Public access
- E. Education



## F. Other uses

The Otto Preserve Management Plan devotes a section to each of these topics and sub-headings detail the goals, objectives, and *implementation monitoring*. The *goals* in each section describe the long-term vision for the resources and uses of the Preserve. The *objectives* define actions that lead toward achieving the goals. The *implementation monitoring* provides the methods to measure progress toward reaching and maintaining the objectives.

The Otto Preserve Management Plan attempts to be as descriptive and specific as possible, however, stewardship is an adaptive process that must respond to changing environmental and social conditions. A growing population and increasing tourism both on Lummi Island and the nearby mainland may put new pressures on the Otto Preserve. Through vigilant monitoring and on-going periodic review, the Heritage Trust will evaluate its effectiveness and update or revise the Otto Preserve Management Plan every five years or when significant changes occur on the property.

### A. Forest Stewardship

#### 1. Goals

a. Informed by good science, actively encourage increasingly healthy and diverse forests that are resilient to climate change and other stresses.

#### 2. Objectives

- a. Conduct periodic forest inventories.
- b. Monitor tree and shrub pests and diseases.
- c. Maintain public safety.
- d. Monitor and manage invasive species.
- e. Reduce risk of wildfire.
- f. Anticipate climate change and other damaging events.

Otto Preserve forests, like all forests globally, are experiencing both natural and anthropogenic change with increased risks due to climate change and the introduction of invasive and damaging non-native species. While the Preserve's forests will continue to naturally change in structure and species composition increasingly resembling old growth forest, these changes will be affected by a changing climate. Forest stewardship requires managing these forests for the long term, with the goal being to keep them healthy and resilient far into the future. Environmental and climatic conditions in 100 or 200 years (well within the age span of existing trees on the Preserve) will likely be considerably different than those in place today. To be effective stewards of this resource, LIHT will need to meet this challenge by continuously and rigorously evaluating the condition of its forests, anticipating changes, and actively taking steps to improve resiliency. Recognizing these trends, the Trust will consult with professional foresters and ecologists as needed to assess and respond to forest health and issues relating to flora and fauna diversity.

- a. Conduct periodic forest inventories.

An initial forest inventory completed in 2020 found that the Otto Preserve forest to be relatively healthy and with good biological diversity.

The inventory identified six stands that included three smaller areas that had been clearcut and replanted in the 1990s. Those areas have grown into fairly dense stands but are still relatively healthy and diverse. Except for a stand of mixed conifer and deciduous trees the forest stands are mainly even-aged, with Douglas fir the predominate species. Over 690 trees and 2000 shrubs were counted in 65 variable and fixed plots and statistical methods used to estimate stand and forest metrics. These metrics included canopy and understory species and age diversity, health, biomass, carbon storage, and sequestration amounts and rates. The study found that the total forest biomass in the standing trees was over 22,000 tons and that the total carbon stored was over 11,000 tons with an additional 318 tons stored each year.

Management suggestions were outlined for each stand that included increasing species diversity by planting underrepresented species such as Western red cedar in areas where deer browsing has prevented seedlings from surviving. In 2022, Lummi Island Beach School students planted several dozen cedar seedlings in two stands, caging them to protect them from deer damage.

Another management proposal included increasing the number of snags by girdling trees in areas (away from trails) where tree species density is high. This would enhance woodpecker, owl, and cavity nesting songbird habitat.

Periodically updating the initial inventory will help the LIHT with future management decisions.

Photo monitoring using set points in the forest and taking pictures is done periodically to monitor ecological change. This provides valuable ecological data in a visual format and can be an effective educational tool for conveying how forest ecosystems change over time.

b. Monitor tree and shrub pests and diseases .

Given the continuing catastrophic introduction of non-native pests and diseases to North American forests, it is crucially important to continuously monitor Otto Preserve forests for incipient infestations of insects or other pests and diseases. For example, the Hemlock Woolly Adelgid, an introduced insect that is devastating Northern hemlock trees in Eastern North America, has been identified in Western hemlock trees at Otto Preserve. While it seems to be less damaging here in the West, it serves as an example of how non-native species can quickly spread, even to island forests. Occurrence of native and non-native tree diseases should also be closely monitored.

c. Maintain public safety.

With an increasing number of people using the Otto Preserve trails and facilities daily, it is essential to maintain a healthy and safe environment. Occasionally trees near trails, fields, and around existing buildings will become diseased or suffer storm damage, creating a hazard to the public. Such high-risk trees will need to be promptly identified and felled. Removal of blow-

down and dead trees will be undertaken when the fallen trees present a danger to existing buildings or pose a safety problem along walking trails. To enhance overall ecological function, it is preferred to fell the trees and leave the large woody material on the ground. Limbs and smaller material may need to be chipped and blown back into the forest to reduce the buildup of flammable forest fuels.

Regular users of the Preserve and volunteers report to stewardship staff when downed trees and brush impact the Otto trails. Many of these volunteers also do ongoing trail maintenance. In the event of a catastrophic blow-down, the Trust will consult with specialists regarding proper management of the damaged forest.

d. Monitor invasive species.

There are a number of invasive species occurring on the Preserve's forested areas. To preserve forest health, function and resilience, it is important that these plants be permanently removed while populations are small, reducing costs and effort.

e. Determine and ameliorate risk of wildfire.

Wildland fires on the west side of the Cascades are infrequent and primarily caused by human activity. The LIHT has developed a Fire Closure Policy to be implemented during periods of extreme fire danger. During exceptionally dry periods LIHT may choose to close the Otto Preserve to the public in order to minimize fire danger.

Higher temperatures, a longer period of dry conditions, and higher evapotranspiration may combine to reduce forest fuel moisture during dry seasons, increasing the potential intensity of wildfires. Actions that might mitigate the incidence and risk of catastrophic crown fires, and damage caused by wildfires in general would be to reduce fuel loads along trails (removing or chipping branches instead of piling them), and to remove some mid-canopy trees and prune tree limbs to eliminate "ladder fuels" that would convey a ground fire into the crowns of overstory trees.

Lummi Island Fire District 11 and the Heritage Trust maintain a standpipe on Sunrise Road at the edge of the Otto Preserve for emergencies. When burn bans are declared on Lummi Island, signs are posted at the entrances of all the Preserves.

f. Anticipate climate change and other damaging events.

Climate modeling for Western Washington indicates that while precipitation may increase during the wet months, storm intensity (rainfall intensity) may also increase, temperatures will be higher in both winter and summer, and dry season duration and the intensity may increase. These changes will combine to stress individual trees and overall forest ecosystems. Stressed trees are less vigorous and are more susceptible to insect and disease attacks. Higher precipitation events combined with storm winds may increase windthrow and tree breakage. Post-event insect population increases, such as native bark beetles in downed trees can injure or kill remaining

live trees. Higher temperatures and longer dry periods may negatively impact tree seedling survival, subtly or substantially changing the long-term species composition of preserve forests. Invasive species may find future conditions more favorable to their growth at the expense of native species. Management actions and responses may be necessary given the many changes that may occur.

Earthquakes, strong windstorms, fires, and other natural events could negatively affect LIHT property. Using the best available science, LIHT will respond to these events using its resources and will seek the aid of experts as needed.

### 3. Implementation Monitoring.

#### a. Periodically revisit goals and objectives.

The LIHT will revisit goals and objectives under Forest Stewardship as often as needed in order to respond to unanticipated changes, both natural and human caused.

## **B. Wildlife and Plants**

### 1. Goals

a. To maintain, enhance, and restore as needed, native wildlife habitats and native plants.

### 2. Objectives

a. Identify plants and wildlife.

While the Otto Preserve has a relative high level of diversity some plants and animals could be considered indicator or keystone species, which are useful in evaluating the health of a forest. For instance, Piliated Woodpeckers can indicate whether sufficient snags are available for nesting habitat and can be seen as a keystone species in some environments as their cavities are used by a wide range of other species. Bats and swallows are insect eaters, seed spreaders and pollinators, which all contribute to a healthy and diverse ecosystem. Browsing pressure from a large population of deer affects how certain tree species such as cedar can survive from seedling to sapling.

Higher temperatures due to climate change could restrict the range of the native paper birch, which is found on the Otto Preserve and prefers a cooler climate, affecting tree diversity.

The Heritage Trust has worked and will continue to work with volunteers and scientists to create and update detailed inventories of the plants, animals and birds that inhabit the Otto Preserve. Inventories of flora and fauna, including native plants, lichens, moss, mushrooms, birds bats, and amphibians are continually being updated and are available by contacting the Heritage Trust office.

b. Manage noxious weeds.

The spread of invasive species has been ranked second only to habitat loss as a threat to global biodiversity. LIHT is dedicated to managing noxious weeds to control invasive populations while maintaining plant communities and avoiding adverse impacts to adjacent properties. Known invasive plant species on the Otto Preserve include Himalayan blackberry, English holly, American vetch, reed canary grass, English ivy, Herb Robert, Scotch broom, and yellow iris. Continuous staff and volunteer monitoring will help track the occurrence of these and other noxious species. Specific action to monitor and control invasive species will include cooperation with the Whatcom County Noxious Weed Control Board and other agencies, as well as organizing volunteer work parties for the removal of invasive plants. LIHT will consider the use of herbicides on a case-by-case basis with pre-approval by the Land Protection Committee when other methods have been determined to be unsuccessful. Management of invasive species works best when done on a landscape scale. Working with adjacent property owners to reduce populations of invasive species is the best long-term strategy for effective invasive management.

c. Maintain and improve wildlife habitat.

Located along the Pacific Flyway, the Otto Preserve provides large intact blocks of high quality habitat for foraging and incidental perching of migrating bird species.

Several priority non-game bird species are known to utilize the Otto Preserve including Black and Vaux's Swifts, Northern Harrier, Pileated Woodpeckers, and Black-Headed Grosbeaks. Black-Headed Grosbeaks and Pileated Woodpeckers are known to breed in the area. Peregrine Falcon and Bald Eagle nest in the vicinity and are often seen foraging on and around the Preserve. Particular attention will be paid to managing the forest in light of its importance for wildlife breeding, foraging and perching.

The location of the wetland adjacent to the forest area increases the capacity for supporting diverse wildlife populations on the Otto Preserve. The wetlands currently are productive and critically important areas for wildlife and water quality. Resident and migratory waterfowl and wetland associated species such as Mallards, Wood Ducks, Ring-Necked Ducks, Marsh Wrens, Herons, and Rails utilize the Otto Preserve wetland areas. Mallards and Wood Ducks have been known to breed in the Preserve area. Amphibian species that use the Otto Preserve wetlands include the Red-legged Frog, Pacific Chorus Frog, and the Roughskin Newt.

As human development in Washington State continues to degrade habitat for these and other species, particular attention will be paid to managing the Preserve as an increasingly important resource and refuge for maintaining healthy waterfowl and amphibian populations.

The meadow areas on the Otto Preserve (approximately 3 acres) are currently managed as open fields and are in good condition. These open areas provide foraging opportunities for numerous insect, bat and bird species. Hedgerows buffering Sunrise Road create a shrub edge for the meadow extending the diverse features of this habitat. The meadows border the building envelope area, which includes the Heritage Trust Resource Center (formerly the Otto's shop), a parking area and the trailhead. The meadow and area adjacent to the office and parking lot will

be maintained by annual weed cutting and field mowing. Volunteers and staff will manage the adjacent meadows to help preserve these valuable open areas.

d. Prohibit incompatible recreational uses.

In an effort to limit impacts of human use on wildlife populations, access to the interior of the Preserve (north of the parking area) is by foot -or wheelchair on the Main Loop, Walden Walk, Baumgart Woods and Betty's Shortcut trails except for maintenance and fire vehicles. Public camping, motorized vehicles, bicycles, drones, and horseback riding are prohibited. Outdoor gatherings and special events, which have been approved by LIHT, are limited to the meadows and building areas. Hunting, firearms, and personal foraging are not allowed.

e. Require dogs to be on leash and under control.

In an effort to prevent wildlife harassment, protect fragile habitat, and preserve enjoyment for all visitors, dogs must be on a leash and under control at all times. LIHT will provide dog waste bags and a garbage container at the trailhead. It is the responsibility of dog owners to clean up after their dogs and properly dispose of their waste. No other domestic animals or pets are allowed on the Preserve. Per the Americans With Disability Act (ADA), service animals are allowed to accompany people with disabilities in all areas where members of the public are allowed.

f. Maintain the Preserve as a corridor and link to other habitats on the island.

Interlinked buffers and corridors created by private conservation easements on adjacent properties extend and enhance wildlife habitat on the Otto Preserve. LIHT limits fencing that creates barriers to wildlife movement and strives to continually involve neighbors in the monitoring and protection of the Otto Preserve and the surrounding area.

### 3. Implementation Monitoring.

a. Plant and wildlife surveys.

Existing plant and wildlife inventories will be updated and reviewed over time in an effort to monitor changes in plant and wildlife communities on the property and in the surrounding area. Volunteers who regularly walk the Otto Preserve are encouraged to record their plant and wildlife observations and provide this information to the staff.

b. Photographic monitoring.

Photographs from set points are used to monitor changes in the forest, wetland and meadow habitat areas. Initial photo points have been taken and mapped and are available at the Resource Center. Changes over time will be determined by visual examination of the photographs. Heritage Trust stewardship staff and/or volunteers annually tour the property and document their observations in monitoring reports.

c. Conservation Easement stewardship.

The San Juan Preservation Trust (SJPT) holds a Conservation Easement for the Otto Preserve property. Annual conservation easement stewardship visits conducted by SJPT staff will ensure that the resources of two conservation organizations are committed to the maintenance and enhancement of native wildlife habitat and plants on the Otto Preserve. Copies of these conservation easement documents are available at the Heritage Trust office.

**C. Ground and Surface Water**

1. Goals

- a. Preserve and protect the underlying aquifer.
- b. Preserve and protect the aquifer recharge characteristics of the wetland.

2. Objectives

- a. Minimize impervious surfaces

There are two important wetland areas, a 4.5 acre wetland in the Baumgart Woods and an approximately 20 acre wetland located along the western portions of the Preserve. These wetlands are at least partially fed from groundwater and runoff flow from adjacent hillsides. Historically, there has been minimal disturbance to the wetlands, and at present their viability is not threatened. LIHT will minimize use of impervious surfaces, which are only allowed within the building envelope area. Any water runoff will be directed to areas of natural groundwater infiltration in an effort to preserve and enhance aquifer recharge.

- b. Use of non-chemical weed control is preferred and pre approval by the LP C is necessary for the use of any chemical.

Non-chemical methods to manage invasive species are preferred and will be used whenever practical. Environmentally safe chemicals may be used when mechanical methods have failed or are not recommended. This will be done in a manner that does not adversely affect groundwater quality.

- c. Minimize water usage.

In October 2001, a well was drilled to serve the Resource Center. There is no residential use of water at the Otto Preserve. In 2005, the Heritage Trust Board of Directors approved the installation of an underground water reservoir tank on the Otto Preserve for the use of fighting fire on the Preserve and the surrounding neighborhood. A maintenance agreement between Whatcom County Fire District 11 and the Heritage Trust defines use of the water tank, standpipe, and hydrant. The agreement is reviewed bi-annually by the Fire District and the Heritage Trust.

3. Implementation Monitoring.

a. Water testing.

The Heritage Trust may measure and test the quality of the water in the wetlands if degradation of the water, plant or animal life is observed or suspected. These data can be made available for professional evaluation of any problems.

The well at the Otto Preserve currently serves the Resource Center's water needs. The well water is monitored in accordance with the Federal and State guidelines for a Group B water system. Water samples are collected by a certified water quality technician and tested at a certified lab.

**D. Public access**

1. Goals

- a. Provide opportunities for safe, low-impact public access for recreation, nature appreciation, natural history study, and environmental education.
- b. Maintain a proper level of use so that visitors have a quality outdoor experience while ensuring that plant and wildlife habitat is preserved.

2. Objectives

a. Maintain appropriate level of use

Maintaining an appropriate level of use ensures that each visitor to the Otto Preserve has a quality experience and is essential for protecting the Preserve's outstanding natural character. LIHT will use a variety of tools to monitor and control use levels when necessary.

b. Safety

Hiking and other passive recreational activities includes some risk and LIHT makes every effort to reduce injury to visitors at the Otto Preserve. Directional signs and maps encourage visitors to stay on established trails and to avoid potential hazards. Regular maintenance aids in keeping walking trails open and safe.

c. Provide parking

Limited parking is provided in the designated area near the office building and includes one ADA accessible parking space. A bicycle rack is provided. No overnight parking is allowed. On special occasions and on a limited basis, the meadow west of the Resource Center may be used for overflow parking during an event.

d. Access to wetlands area

A trail, Betty's Shortcut, was created in 2012 to safely allow access near the wetland area in the western portion of the Preserve for wildlife viewing without disturbing critical habitat.



#### e. Use restrictions

The Otto Preserve will be open for public use during daytime hours. Trails are to be used for pedestrian access only and dogs must be leashed and under control at all times. No bicycles, horses, or recreational vehicles are allowed on the trails. No camping, fires, hunting, or firearms are allowed on the property. Drones may be used only under the LIHT drone use policy. The property may not be used for any for-profit commercial venture. Outdoor gatherings and special events, which have been approved by LIHT, will be limited to the meadow and building areas. Use restrictions will be posted on site where appropriate and listed in literature describing the Preserve.

#### f. Privacy of adjacent landowners

LIHT acts as a good neighbor and strives to protect the privacy of adjacent landowners by timely responding to their issues and concerns. Property boundary signs are posted where trails are in close proximity to property lines in order to identify the edge of the Preserve and to discourage trespassing.

#### g. Maintenance

Maintenance may include removal of downed trees, trail work, field mowing, the removal of invasive species, the installation and maintenance of signs and benches, cleaning and repairing the Resource Center, planting native species, and other Board-approved activities. Many dedicated volunteers join LIHT staff to accomplish annual maintenance activities.

#### h. Provide memorial bench sites

In 2018, in response to inquiries regarding memorial benches, the LIHT approved a Commemorative Bench Donation Policy. This policy provides for the placement of commemorative benches at each of the LIHT Preserves. Two sites at the Otto Preserve have been identified. One is located near the old gravel pit and the other on Betty's Shortcut at the rope swing. In 2022, the policy was updated and renamed to the Bench Policy and Donor Recognition document.

#### i. Other facilities

At this time, the Heritage Trust has no plans to develop other permanent visitor facilities at the Otto Preserve.

### 3. Implementation Monitoring

#### a. Level of use

Over the past 23 years since its inception, the Otto Preserve has become a greatly treasured and much used natural area on Lummi Island. Level of use has increased, but at this time, remains at

an acceptable level. LIHT will rely on feedback from staff, volunteer monitors, members, and neighbors to determine appropriate use levels. If use levels at the Otto Preserve become problematic or jeopardize the natural environment, stewardship responses may include restrictions on hours of use, restrictions on the size of parties visiting the Preserve, or temporary closure of specific trails or sensitive areas.

## **E. Education**

### 1. Goals

- a. Educate visitors about the natural and cultural history of the Preserve.
- b. Increase visitor appreciation for land conservation efforts on the island.

### 2. Objectives

- a. Interpretive signs

LIHT encourages an understanding of the history and the natural habitats of the Otto Preserve. A sign is attached to an outside wall of the Otto Resource Center and a rustic kiosk containing maps and Heritage Trust materials is installed at the Loop Trail entrance. Interpretive information is also included in printed materials and on the LIHT website.

- b. Educational tours and activities

The Heritage Trust encourages understanding of the Otto Preserve's ecological resources by sponsoring environmental education programs. Specific activities may include guided natural history walks, bird watching tours, mushroom forays, and conservation education field trips.

- c. Field trips on the Preserve

LIHT encourages local schools and community organizations to take walks and field trips on the Otto Preserve in an effort to increase appreciation for land conservation efforts on the island. LIHT cooperates with ecological and wildlife research activities. Educational and research activities on the Otto Preserve are conducted on a permission-only basis and may be limited in size and duration. The Heritage Trust partners with educators and scientists to conduct appropriate research. Collection of botanical, zoological, geological, or other specimens is prohibited except on a permission-only basis for scientific and or educational purposes.

### 3. Management Actions.

- a. Educational activities by permission only.
- b. Record keeping of educational tours. LIHT keeps records of educational tours, activities, and field trips conducted on the Preserve. Any negative impacts due directly to these activities will be reported in management plan updates.

## **F. Other Uses**

### 1. Goals

To keep the Otto Preserve well maintained and accessible to the public.

### 2. Objectives

#### a. Maintain the Heritage Trust Resource Center.

With the help of dozens of volunteers, LIHT renovated the old shop building located at the entrance to the Preserve and developed the Heritage Trust Resource Center, a building suitable for use as an office and meeting area. A septic system was installed to accommodate the addition of a small restroom and kitchen. A detailed map of the Otto Resource Center, including parking areas is available at the Center.

The Heritage Trust office was moved to the Resource Center in 2005. LIHT typically holds Board of Directors and Committee meetings at the Resource Center. The Center is used for staff offices and for programs hosted, sponsored, or directed by the Heritage Trust. The Resource Center will be maintained for use as an office and meeting space. Routine maintenance includes interior and exterior cleaning and repairs to the building. An annual “spring clean-up” is held to maintain the Otto Preserve’s trails, remove invasive plants, weed, and maintain planting beds and to thoroughly clean the Resource Center.

#### b. Maintain the area surrounding the Resource Center

The immediate area surrounding the Resource Center, parking lot, and trailhead are kept in a natural state as much as practical. Landscaping around the office building is accomplished using native plants.

#### c. Maintain the A-frame barn

The A-frame barn is maintained for use as a storage building. A new metal roof was installed in October 2001. Curtain drains were installed along the north and south sides of the building to direct water runoff from the roof away from the building and to allow for natural groundwater infiltration. A secure, dry storage area was completed within the barn in 2010.

#### d. Deconstruction of the Hay Barn structure

The Hay Barn is located in the wooded area west of the A-frame. Designed and built by Carl Otto, the barn had interesting architectural features. However, the building was neglected for many years and had structural problems due to rot and extensive insect damage. To document its features, the barn was photographed prior to the removal of damaged planks and timbers. Some structural support was added to stabilize the building and improve visitor safety. In 2020, the Hay Barn was collapsed onto itself and fencing was installed at key places for safety purposes. An informational kiosk was constructed describing the history of the Barn.

#### e. LIHT events

LIHT will hold periodic events at the Otto Preserve. The area adjacent to the office and parking lot is maintained by field mowing to keep it open and for outdoor events.

### 3. Implementation Monitoring

#### a. Photographic monitoring

Periodic photographic documentation of the office building, the A-frame and the Hay Barn are used to monitor changes to the structures and to the adjacent natural areas.

## V. Otto Preserve Stewardship Fund

The Otto Preserve Stewardship Fund contains funds that are calculated using the LIHT Fee Stewardship Costs Template. Restricted funds donated at the time of the purchase of the Otto property in 2000 are deposited in the Stewardship Fund. Earnings generated by the Stewardship Fund are available for a variety of stewardship expenses. The LIHT annual operating budget includes costs for maintaining and managing the Otto Preserve. The budget is reviewed and approved annually by the LIHT Board. The LIHT Finance Committee regularly reviews the Fee Stewardship Costs Template and the performance of all LIHT stewardship funds.

## VI. Summary of Use Restrictions

The following use restrictions are in effect for the Otto Preserve. They will be posted on site and mentioned in literature describing the Preserve as appropriate.

- No camping.
- No fires.
- No hunting or firearms.
- Daytime use only.
- Dogs must be on leash and under control.
- Dog owners must clean up after their dogs.
- Pedestrian access only.
- Visitors must stay on trails except with permission from LIHT.
- No overnight parking.
- No vehicles (except fire and maintenance).
- No bicycles beyond the parking area.
- No horses.

No for-profit commercial use.

No collection of botanical, zoological, geological or other specimens except on a permission-only basis for scientific or educational purposes.

Drone use is by permission only.

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## VIII. Appendix

### Site map of the Otto Preserve

The site map shows the location of the Otto Preserve in the central area of Lummi Island. The map detail shows the location of the Preserve in relation to Sunrise Road, as well as the habitat areas, existing buildings and the trail system.

