



Lummi Island Heritage Trust

Baker Preserve Management Plan

*Updated by Land Protection Committee February 09, 2022
Approved by the LIHT Board of Directors February 28, 2022*

LUMMI ISLAND HERITAGE TRUST MISSION

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.

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. Since its inception in 1998, the Heritage Trust has partnered with island landowners and the island community to conserve 1,095 acres of Lummi Island's disappearing open spaces and natural areas, and created three beautiful nature preserves. The Otto Preserve, the Curry Preserve, and the Baker Preserve provide large contiguous protected habitats for birds and other wildlife, as well as places for people to experience nature. In June 2016, the Heritage Trust completed the purchase of the former rock quarry on Lummi Island now renamed the Aiston Preserve. Restoration of the nearshore area and reclamation of the mine over the coming years will lead to opening a fourth public accessible Preserve.

In addition to its preserves, the Heritage Trust has partnered with 16 private landowners to establish conservation easements on 707 acres of private land on Lummi Island.

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I. Introduction

The Lummi Island Heritage Trust's Baker Preserve consists of 129 acres of mixed forests, grassy balds, steep cliffs, seasonal streams, and wetlands. Lummi Island Heritage Trust (LIHT) purchased the northern 49 acres of the Preserve in 1999 as the organization's first land acquisition project. In 2007, the Heritage Trust purchased an additional 80 acres to the south as part of the Baker Mountain Ranch conservation project. Simultaneously, the Washington Department of Fish and Wildlife (WDFW) placed a Conservation Easement on the 80-acre portion of the Preserve to ensure protection in perpetuity. The easement requires LIHT to preserve, protect, and restore the Conservation Values of the Property that is "part of a habitat for threatened wildlife species and rare plant communities which WDFW is actively seeking to preserve and protect." The Baker Preserve is included in the Washington Department of Natural Resources (DNR) Register of Natural Areas.

To the south and east, the Baker Preserve is bordered by approximately 580 acres owned by WDFW and managed as a Natural Area Preserve (NAP). Nearby to the east and south, the DNR owns 661 acres designated as a Natural Resources Conservation Area (NRCA). Together these three properties (the WDFW NAP, the Baker Preserve Natural Area, and the DNR NRCA) are considered part of the Statewide System of Natural Areas. Appendix D.

Access to the Baker Preserve is provided by a trail that leads from Seacrest Drive to an overlook on the WDFW land at the Preserve's southern boundary. The trail begins at approximately 50 feet above sea level and climbs to 1,050 feet over a distance of about 1.64 miles with an average slope of about 14 degrees. (Fig. 1, Estes, 2009).

The high profile nature of the Baker Mountain Ranch project and the participation of so many donors guided the Heritage Trust board of directors' decision to open the Baker Preserve in September 2008 under an Interim Management Plan.

In March 2009, the Heritage Trust appointed an Advisory Committee to study all aspects of the Interim Plan, solicit public input, and make recommendations to the board for consideration in the final Baker Preserve Management Plan. This plan reflects the recommendations presented by the Advisory Committee to the Heritage Trust board in August 2009.

This Baker Preserve Management Plan is an adaptive document and it is anticipated that there will be need for ongoing revision as environmental and social conditions change.

The Baker Preserve Management Plan was adopted on March 16, 2010 and revised and approved on August 30, 2016. The Plan was updated and approved for revision on July 23, 2018.

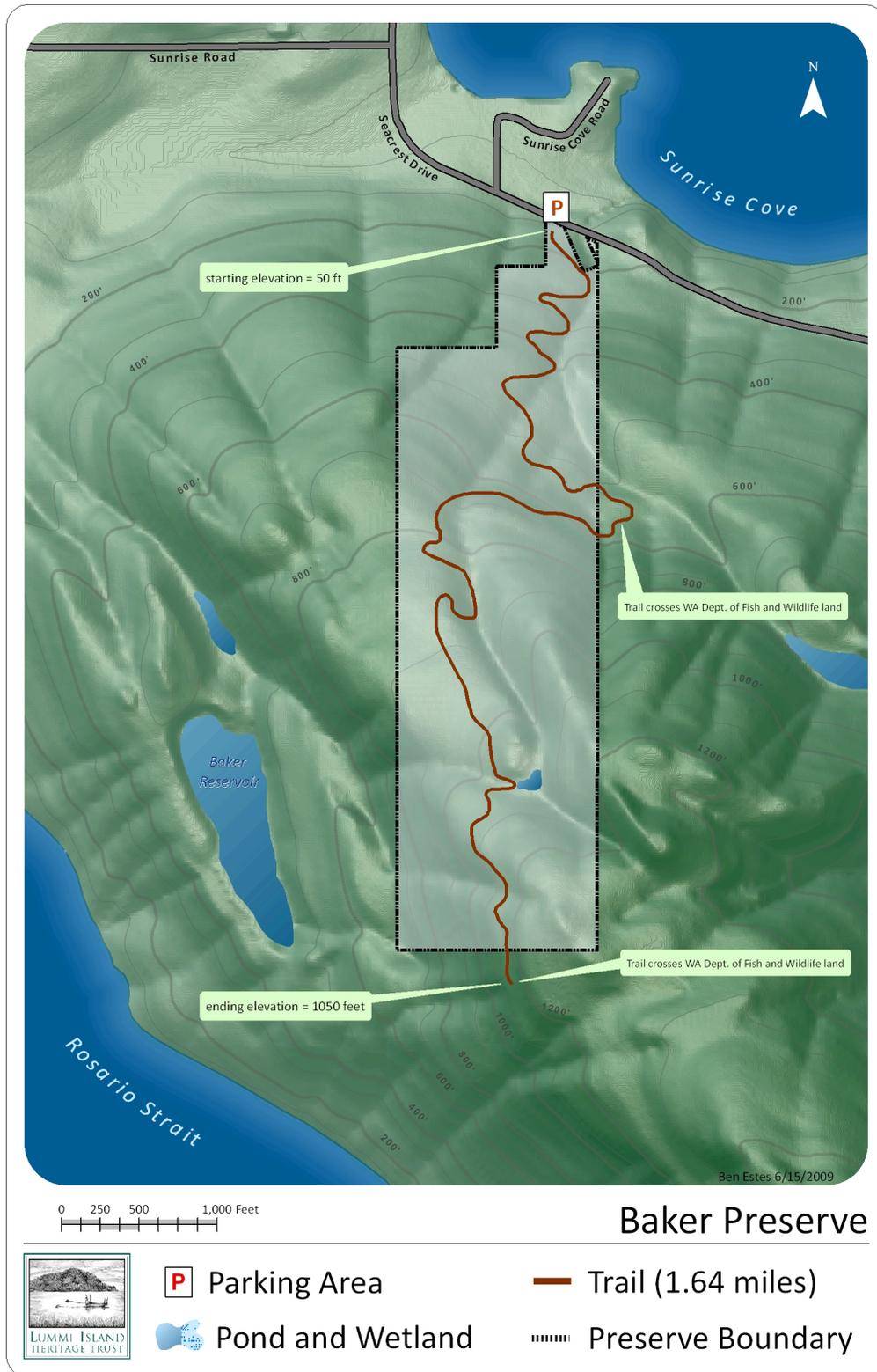


Figure 1. Map of the Baker Preserve (Ben Estes, 2009)

II. Management Goals

Lummi Island Heritage Trust has developed five goals for the Baker Preserve taking into consideration the overarching strategies set forth in 1) the Trust's mission and goals statement to manage "lands owned by the Heritage Trust primarily for the benefit of native plants and wildlife, allowing low-impact public use where appropriate and 2) the Conservation Easement held by WDFW that describes the Baker property as "part of a habitat for threatened wildlife species and rare plant communities which WDFW is actively seeking to preserve and protect." (WDFW & Lummi Island Heritage Trust Conservation Easement, 2007);

Goal 1: Follow the purpose of the Conservation Easement held by WDFW, which states: "the property will be retained forever in its natural and open space condition, to protect habitat, and to prevent any use of the Property that will significantly impair or interfere with the Conservation Values of the Property." (WDFW & Lummi Island Heritage Trust, 2007).

Goal 2: Manage the Preserve in cooperation with WDFW and in a manner that will 1) protect habitat for native plants and wildlife, 2) Encourage forest fire prevention, 3) Encourage native flora and fauna restoration toward an old-growth native forest ecosystem, and 4) consider the effects of climate change.

Goal 3: Encourage scientific studies that provide current and historic data, develop inventories, and provide accurate baselines for the Baker Preserve's plants, wildlife, streams, wetlands, and geological features.

Goal 4: Encourage environmental education programs and events on the Preserve that inspire stewardship and protection of the conservation values of the Preserve.

Goal 5: Provide for low impact public use that encourages visitor education and protects the conservation values of the Preserve.

III. Natural Resources

Geological Features

The underlying rocks in the Baker Preserve are characteristic of those found throughout the southern portion of Lummi Island. They consist of a thick sequence of sandstone and mudstone, the Lummi Formation, which appears to overlay basalt and chert, thought to be a portion of an old sea floor (Blake and Engebretson, 2003). All of these rocks have been intensely deformed in a subduction zone environment similar to the plate boundary currently found along the coast of Washington and Oregon. The associated high pressures and moderate temperatures have metamorphosed these rocks, producing the hard sandstone and highly cleaved slate and mudstone seen today. Subsequent to these events, faults and fractures have developed.

Glaciers advanced and covered most of the Puget Lowlands between 20,000 and 10,000 years ago, including Lummi Mountain. Glacial groves and striations can be seen on some massive portions of the Lummi Formation. Except for local pockets of glacial debris, the old rocks were thinly covered and consequently the soil cover is generally thin in the Baker Preserve.

Since the glaciers retreated, the entire area has undergone uplift. Many of the existing faults and fractures have been reactivated to produce distinct topographic features, such as narrow, linear valleys. It is believed that fracture zones control the three drainage basins and associated wetlands within the preserve. The dramatic cliff along the west side of the preserve is associated with a prominent northwest trending fault that has dropped the entire sequence down to the west. While erosion has reduced the steepness of the fault scarp, leaving the series of exposed outcrops, the slope forms create highly erodible areas. Similarly, some of the steeper portions of the trail and some of the wetter areas along the trail owe their presence to these fracture zones.

Flora and Fauna

The Baker Preserve contains several WDFW priority habitats and DNR Natural Heritage Program terrestrial ecosystems including:

- mature Douglas fir forest with snag-rich areas
- near-vertical cliffs
- talus slopes
- isolated wetlands
- nesting habitat for several species of concern, and
- Douglas-fir/baldhip rose-oceanspray native plant community

The Baker Preserve's plant communities are relatively species rich for a Puget Lowland forest type. The Preserve supports a vibrant forest community of diverse species and a fragile succession of flora along the grassy cliffs and rock outcrops defined as "balds" by the Department of Natural Resources. The uncommon and sensitive plant species on these fragile balds can easily be destroyed by foot traffic and therefore management should include monitoring and protective actions when needed.

The forests on the Preserve were logged as part of the early use of natural resources on Lummi Island. Timber was harvested, logging roads were developed and there were significant fires in the slash. The land has been recovering naturally with minimal disturbance for the past 70-80 years.

The Baker Preserve contains important wildlife habitat. A partial wildlife list includes diverse amphibian, reptile, bird, and mammal species including State and Federal species of concern. Ground birds can be particularly vulnerable to disruption by humans and dogs during and after nesting.

Flora and fauna inventory lists for the Baker Preserve are available at the Heritage Trust Resource Center and are included in Appendix B of this Management Plan. Existing ecological inventories will be expanded and updated as new information becomes available.

Wetlands and Riparian Habitat

Three seasonal streams create three drainage basins and support a small wetland within the Baker Preserve. The linear courses of these streams are likely related to fractures in the underlying bedrock. Access to fresh water is critical for the preserve's terrestrial wildlife and plant communities.

The unique conditions of an island environment create significant limitations for terrestrial and fresh water populations. Disruption of specific habitats can eliminate an entire species from Lummi Island, therefore careful stewardship is especially important to safeguard the flora and fauna of the Baker Preserve. We are currently using fencing and signage to discourage visitors from impacting the vegetation within these sensitive areas.

A. Objectives for Natural Resources

1. Maintain forests, wetlands, streams, balds, and native species in good ecological health; support long-term return to an "old-growth" native forest ecosystem.
2. Encourage native species diversity.
3. Enhance ecological functions of human-altered habitats.
4. Encourage a greater understanding of the Preserve's natural habitats and biological systems through education and research.

B. Stewardship Tasks for Natural Resources

Preservation, conservation and restoration of the Preserve's outstanding ecological resources are the primary goals of our stewardship program. Short-term tasks are targeted for completion in 1-3 years. On-going tasks require longer-term action.

1. Protection of priority habitats and species.

The Preserve's priority habitats and species of concern are cited in Appendix C. Extra management attention will be given to the priority habitat areas and species of concern.

Protective actions may include:

Short-term:

- 1) Restrict public use in areas such as nest sites and specific balds and cliff areas that show signs from human impacts.

On-going:

- 2) Seasonal or permanent closure for restoration or protection.
- 3) Ecological restoration of damaged habitats.

2. Protect balds and other areas with sensitive/rare vegetation.

The thin, rocky soils and steep cliffs and balds present ecological and safety challenges. Plant communities along these areas grow on thin, dry soils vulnerable to trampling and compaction. Visible damage had already occurred from human foot traffic in 2010 and continues today.

Protection and restoration tasks may include:

Short-term:

- 1) Installing fencing and signage where needed to improve visitor safety and protect native plants (in partnership with WDFW).
- 2) Interpretive signage to educate and enhance safety for visitors.

On-going:

- 3) Monitoring and controlling for invasive species.
- 4) Planting of native species to renew damaged areas.
- 5) Closure of selected sensitive areas or over-used areas.

3. Wetlands and Streams.

More scientific research is needed to investigate the wetland and riparian habitats and species on the Baker Preserve. Maintaining clean water supplies is critical for healthy growth of flora and fauna.

Management tasks may include:

On-going:

- 1) Studying and creating inventories of wetland species and amphibian populations.
- 2) Monitoring and controlling for invasive wetland species.
- 3) Maintaining trails and roads to control erosion.

4. Forest Management.

The Baker Preserve contains dry coniferous forest, open transitional forest, moist mixed woodlands of Douglas Fir, Red Alder, Western Red Cedar, Bigleaf Maple, and a rich understory of native shrubs, flowers and ferns.

Forest management activities may include:

Short-term:

- 2) Removal of diseased or hazardous trees.
- 3) Monitoring and adapting to climate change.

On-going:

- 2) Documentation of historical logging activities.

3) Selective planting and tree removal to increase biodiversity, reduce disease, enhance “old growth” characteristics, and reduce fire danger.

5. Control of Invasive Species (plants and animals).

Non-native species and noxious weeds can invade natural areas and out compete native plants and animals. Noxious weeds can also be toxic to humans and animals. Invasive plants often form dense monocultures, thus reducing an area’s rich biodiversity. Control efforts on the Baker Preserve will be focused in areas of greatest ecological priority and vulnerability.

Specific tasks may include:

Short-term:

1) Consultation with Whatcom County Noxious Weed Board to identify and inventory invasive species and noxious weeds.

On-going:

2) Removal and control activities carried out by stewards, staff, volunteers and contractors.

6. Scientific Research.

Scientific research and citizen science activities will be encouraged on the Baker Preserve. Scientific data will be used to increase knowledge and to inform Baker Preserve management practices, stewardship and environmental education programs. Prior permission from Lummi Island Heritage Trust is required for all research activities that are conducted on the Preserve.

7. Education.

LIHT will actively promote knowledge, stewardship and enjoyment of the Baker Preserve’s ecological resources through cooperation with schools, youth clubs, environmental educators, nature organizations, and community groups. Educational events and programs on the property will be encouraged. They will be conducted on a permission-only basis and may be limited in size and duration.

Specific actions may include:

Short-term:

1) Encourage conservation education field trips by local organizations.

2) Encourage community hikes, walks, and programs for LIHT members and guests.

3) Encourage steward “naturalists” for on-site education.

On-going:

4) Interpretive signage at kiosks and along trails.

5) Disseminate public information via the LIHT website, newsletter, e-mail, and printed materials.

- 6) Encourage first time users to visit the Heritage Trust Resource Center for an orientation and other educational opportunities.

8. Restriction on use (repeated on IV, B.8).

Restrictions are intended to protect the ecology of the Preserve and minimize management costs. This information will be posted on-site and in LIHT materials, as appropriate. LIHT generally uses signage and periodic contact with staff and volunteers to educate visitors about use restrictions. Consistent with the management goals of preserving flora and fauna, the following activities are prohibited on the Preserve:

- Fires, fireworks, firearms or smoking.
- Hiking with dogs or other domestic animals.
- Bicycles, wheeled or motorized vehicles.
- Camping, hunting, overnight stays.
- Use of alcohol or illegal drugs.
- Commercial activities.
- Collection of botanical, zoological, geologic, or other specimens except by permission for scientific or educational purposes.
- Drones or any Unmanned Aerial Vehicle (UAV) without explicit permission of LIHT.

Trailhead sign-in is required and hiking parties greater than six persons must have prior approval. Vehicle access is limited to emergency and service vehicles. Baker Preserve is open for daytime use only and hiking is allowed only on designated trails.

8. Enforcement of Preserve Restrictions.

Communication and education are essential tools in the enforcement of Preserve restrictions. LIHT Board members, staff and volunteers will document and respond to violations of Baker Preserve policies through personal contact and written communication. Criminal violations will be referred directly to the Whatcom County Sheriff's Department for enforcement.

C. Monitoring Protocols for Natural Resources

High priority ecological features on the Preserve will be monitored to help evaluate stewardship policies and maintain resource health. Additional research will be encouraged and other monitoring methods will be developed as needs emerge.

1. Inventory: Existing ecological inventories provide a baseline against which to measure suspected changes or impacts to the land. Inventories will be updated on a regular basis or as new information becomes available.
2. Photomonitoring: Photographs will be taken from specified photo points on the property to provide a visual record of trends and changes over time.

IV. Public Access

The Heritage Trust's stewardship strategy to manage "lands owned by the Heritage Trust primarily for the benefit of native plants and wildlife, allowing low-impact public use where appropriate" is the foundation for public access management decisions (Lummi Island Heritage Trust, 2005).

Keeping human presence and intervention to a minimum can help maintain the Baker Preserve's plants, wildlife and other natural features. Public access and other activities will be designed to minimize impacts, with the understanding that public access may have to be restricted or discontinued if the Preserve's conservation values are compromised and impacts cannot be controlled.

The no dog policy on the Preserve is supported by the following considerations:

(a) the LIHT paramount mission to protect and preserve plant and wildlife habitat in perpetuity;

(b) the Conservation Easement granted to WDFW which describes the Property as "part of a habitat for threatened wildlife species and rare plant communities which WDFW is actively seeking to preserve and protect" and the purpose stated in the Easement that "the Property will be retained forever in its natural and open space conditions to protect habitat, and to prevent any use...that will significantly impair or interfere with the Conservation Values of the Property";

(c) the nearly three-fold increase in public use of the steep and narrow Baker Trail;

(d) the older literature review conducted by the 2009 ad hoc Advisory Committee and the more recent literature review conducted by Multnomah County concerning dogs and their impact on wildlife (these reports and reviews are listed in the References section of this Plan); and

(e) the DNR certification that the Baker Preserve is considered part of the Statewide System of Natural Areas in that the Baker Preserve "is an area supporting natural features that are critical to the preservation of Washington's natural heritage".

Service dogs are permitted in accordance with Americans With Disabilities Act (ADA) guidelines.

A. Objectives for Public Access

1. Maintain safe, low impact public access that provides for scientific and educational understanding of the Preserve's conservation values.

2. Maintain an appropriate level of use, thus protecting the Preserve's conservation values, and providing visitors with a sense of wildness.

3. Encourage volunteers to educate visitors and monitor activities on the preserve.

B. Stewardship Tasks for Public Access

1. Controlling level of use.

Over time the Baker Preserve is expected to face pressures from the region's rising human population and increasing demand for public access to natural areas. Maintaining an appropriate level of use is essential to protecting the Preserve's conservation values. The following approaches may be used to manage levels of use:

- 1) Limit signage to avoid overexposure and to limit visual impact to the natural environment; use signage that incorporates universal symbols.
- 2) Limit facilities to discourage unwanted activities. No toilets, trash receptacles, or picnic tables will be provided. "Leave no trace."
- 3) Monitor the number of visitors through use of a trailhead sign-in system. A permit system and/or electronic monitors to control visitor use may be implemented as needed.
- 4) No promotion of the Preserve for recreation, such as in hiking guides or trail books. Prior permission is required for groups of six or more.
- 5) Close the Preserve to public access at any time for reasons such as unsafe weather or trail conditions, damage to ecological resources, or violations of Preserve policies.
- 6) LIHT staff will document and respond to violations of public use policies. (see III, B. 9.)

2. Parking area and signage.

A parking area with spaces for approximately five cars is available at the trailhead on Seacrest Drive. A bicycle rack was installed in 2014. No overnight parking or camping will be allowed.

A trailhead kiosk will contain a map of the Baker Preserve, public use guidelines, a trailhead sign-in system and other information.

3. Volunteer Stewardship.

LIHT will recruit interested neighbors, members, and citizens as volunteers to serve as guides, educators and monitors for the preserve. Volunteers will help the LIHT meet its management goals by making regular visits to the property to observe and record its condition and level of use. Volunteers may also be involved in visitor education, maintenance, noxious species control and safety activities.

4. Safety and Fire Planning

All fire, health and safety emergencies will be directed to 911. Staff and volunteers will assist first responders as needed. LIHT will work with the Lummi Island Fire Department and the Department of Natural Resources to address fire prevention, fire suppression, emergency response and rescue. The Baker Preserve's road will be maintained for fire trucks and emergency vehicles. LIHT staff and volunteers will be encouraged to educate visitors about fire prevention and hiking safety.

5. Trails and Road Maintenance.

Currently a 1.64 mile-long Baker Trail leads hikers through dense forests and along old logging roads to a grassy bald, steep cliffs and an overlook (Fig. 1, Estes, 2009) featuring sweeping views of the San Juan archipelago. The Preserve will maintain trails by incorporating the following principles:

- 1) Primitive trail design with a natural, native surface and sustainable location and construction.
- 2) Direct trails away from property boundaries, sensitive, or hazardous areas.
- 3) Joint trail and road maintenance by Lummi Island Heritage Trust and WDFW will serve to clear debris and maintain access for emergency vehicles.

6. Installing signage.

Signage will be kept to the minimum necessary to educate visitors, respect neighbor's privacy and protect the preserve's natural resources. Current signage consists of a rustic trailhead kiosk, simple wooden trail signs at junctions and boundaries and temporary signs at the balds that restrict access to all but the overlook owned by WDFW. Lummi Island Heritage Trust and Washington Department of Fish and Wildlife have developed interpretive and safety signage designed to keep the public safe and to protect balds and other priority biologically sensitive locations.

7. Maintenance.

Routine preserve maintenance will generally include maintaining the parking area, trails, and signs, litter patrol, and other tasks as needed. Volunteers and staff will perform most routine maintenance work.

8. Restriction of uses (see section III, B. 8).

C. Monitoring Protocols for Public Access

LIHT will carefully monitor the level and impacts of public use on the Baker Preserve's ecological resources. The following monitoring protocols may also be used:

- 1) Reports from volunteers, staff, neighbors, members, and visitors will be collected and reviewed.
- 2) Trailhead sign-in: all visitors to the Baker Trail will be requested to sign-in at the trailhead kiosk, information will be collected and reviewed on a regular basis.
- 3) Monitoring: volunteers will be encouraged to document observations of visitors, flora and fauna, and safety concerns on the Preserve.
- 4) Photo monitoring: Photographs will be taken periodically from specified photo points to assess public use impacts at key locations.

V. Financial Analysis

Baker Preserve expenses for routine maintenance of trails and parking areas, property taxes, insurance, signage, employees, and volunteers are reconsidered annually as part of the Heritage Trust's regular budgeting process. Estimated annual expenses are based on the LIHT Fee Stewardship Cost Template and expected capital improvement costs, and include an emergency contingency estimate.

The Baker Preserve Stewardship Fund was intentionally established as part of the original capital campaign that acquired the property. LIHT's goal for this dedicated Stewardship Fund is to support current and future stewardship and management activities at the Baker Preserve, grow the fund to keep pace with inflation, generate capital for future stewardship and maintenance program expenses at the Preserve, and provide emergency funds for legal enforcement if needed.

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