



Mount Ben Preserve



DRAFT Stewardship and Management Plan June 2017

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

Stewardship Goal

The Land Bank's stewardship goal for its Mount Ben Preserve is to protect and maintain the property's ecological and scenic qualities while providing opportunities for low-impact public, educational, and scientific access.

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Mount Ben Preserve Stewardship and Management Plan

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I. Introduction

The San Juan County Land Bank's Mount Ben Preserve was acquired in January 2005 to protect its scenic and ecological qualities and potential for low-intensity use. This Stewardship and Management Plan is intended to guide oversight of the Preserve in furthering these purposes.

The Preserve is located just below the summit on the south side of Mount Ben, a distinct summit on the southern terminus of Mount Dallas. The 21.91 acre Preserve is enhanced by an adjacent 12.65 acre Preserve owned by the San Juan Preservation Trust, which also holds a conservation easement on the Land Bank's Mount Ben Preserve. The steep, rocky preserve rises from 560 feet to a maximum of 920 feet in elevation. It includes a mix of young and mature Douglas fir conifer forest with remarkable old growth specimens, grasslands and rocky balds, moist swales, and impressive big leaf maple trees. The upper portion of the Preserve has unobstructed views across island valleys and coastlines. Views extend across the straits of Rosario, Juan de Fuca, and Haro to Vancouver and Whidbey Islands, the Olympic Peninsula, and the Cascade and Olympic Mountains including Mount Baker, Glacier Peak, and Mount Rainier.

Preserve management will focus on protecting the land's natural attributes, while enabling compatible low impact public use. This Stewardship and Management Plan provides guidelines for the Land Bank's oversight of existing holdings, as well as any potential future land acquisitions nearby. While this plan is intended to serve for years to come, it is anticipated that there will be a need for periodic revision as environmental and social conditions change over time, and the organization acquires new knowledge. Plans will be reviewed, and if appropriate revised, every ten years.

For organization and clarity, stewardship themes have been classified into three major categories: Acquisition History & General Management, Ecological Resources and Public Access. Under each major category, sub-headings detail objectives, stewardship tasks, and monitoring protocols. **Objectives** describe the long-term vision for the resources and uses in each section, while **stewardship tasks** outline specific actions aimed at achieving objectives. Methods for measuring the success of these activities are outlined under **monitoring protocols**. Appendices to this plan include maps, a list of priority species and habitats, a summary of public use rules, summary of restrictions and easements, and a financial analysis.

II. Acquisition History and General Management

The Walkinshaw family created the Mt. Ben Short Plat in 1982. In 2004, desiring to permanently protect and enable public enjoyment of the Property's outstanding natural attributes and views, the Walkinshaw family sold a conservation easement on three parcels (two within the Plat and one small adjacent parcel) to the San Juan Preservation Trust and Land Bank in 2003.

A year later the Walkinshaw family donated their remaining interest in the three parcels (Lots 2 and 3 and the adjacent parcel) to the Land Bank with the specific wish that the public be able to access and enjoy its natural beauty in perpetuity. In 2015, the Land Bank merged all three parcels into one. An adjacent parcel (Lot 1) in the Mt. Ben Plat was purchased from the Wheeler family by the Preservation Trust in 2005. The fourth lot in the plat is owned by a private party. (Figure 2)

The Preservation Trust may transfer ownership of their Preserve to the Land Bank at some time in the future, but the timing and mechanism for this remain unclear. In the interim, the Land Bank and Preservation Trust will continue to cooperatively manage both properties as a Preserve. The Preservation Trust maintains the "forever wild" conservation easement on the Land Bank's portion of the Preserve which includes a requirement for monitoring at least one time per year.

Legal Access

Legal access to Mount Ben Preserve is by way of Hannah Road located off of Westside Road, and then on two private roads: Bullfrog Lane and Goat Pen Road (Figure 1). These roads serve as the only access route for approximately two dozen parcels, many of which are occupied by permanent residents. Despite efforts by some neighbors, no formal road association exists at this time and maintenance is carried out by individually and sometimes cooperatively among property owners. Road maintenance has been an ongoing challenge for neighborhood residents. The Land Bank has contributed to road maintenance and improvements through purchase and delivery of gravel as well as contributing labor. The Land Bank remains committed to helping with road maintenance with the level of support contingent on the type and level of use by the organization. Road development, maintenance, and use is further discussed in *Section III. Public Access*.

Within the plat, there are two legal access easements which benefit the Land Bank's Mount Ben Preserve. The first consists of a shared forty foot wide road access easement which begins at the southeast corner of the Preserve and follows the sinuous eastern property line to the upper portion of the Property. A portion of this easement was developed to provide access to a private parcel in the plat. The second access easement consists of a sixty-foot wide easement which runs along the eastern, northern, and portion of the southern part of the Mount Ben short plat.

Negative View Easement

The property located to the west of the Mount Ben Preserve holds a negative easement for the purpose of maintaining scenic views (Figure 3). The easement was granted as the result of a boundary line conflict. The intent of the easement was to maintain views and habitat the adjacent land owners had appreciated for decades but were being lost by the encroachment of Douglas fir forest into the prairie.

The primary action required of the Land Bank by the easement is the management and removal of vegetation. No tree or shrub is permitted to exceed 25 feet in height with the exception of existing trees greater than 24" in diameter at the time the easement was put in place. In addition to restricting vegetation, the easement contains prohibitions on structures and roads within the zone.

Deed Restrictions

The Land Bank and the owners of the adjacent property to the east are parties to a road construction agreement. This agreement provides for sharing in the cost of construction and maintenance of a road leading all along the east boundary of the Mount Ben Preserve up to the Preservation Trust Property. With the possibility of residential development on Land Bank and Preservation Trust properties now extinguished, the agreement should be revisited and revised.

Restrictive covenants applicable to the Preserve limit the cutting of trees. Cutting is prohibited for commercial purposes and restricts the cutting of trees greater than 15" in diameter at three feet above ground level, with the exception of trees judiciously pruned or removed for aesthetic reasons of view enhancement. This restriction may run counter to its original intent as it does not consider existing and anticipated ecological conditions described in the Ecological Resources section of this document. It also may be in conflict with the negative view easement described above as well as affecting the long term scenic conservation values of the Preserve.

Conservation Easement

The Preservation Trust and the Land Bank jointly acquired a conservation easement on the Mount Ben parcel prior to the Land Bank's ownership. The conservation values identified by the easement, in order of priority, are the same identified in this plan: ecological and wildlife habitat, open space and scenic, and public access. It eliminates all development rights associated with the Preserve and encourages the Preserve to be managed as a forever wild nature preserve including but not limited to educational and scientific purposes. Notable sections within the easement which require permission from the Preservation Trust include the removal of vegetation, collection of biological specimens, and notification of intent to sell property. The easement also permits the Preservation Trust to provide for public pedestrian access to the Preserve should the Land Bank fail to do so.

II. A. Objectives for General Management

1. *Maintain and enhance the conservation resources identified in the conservation easement and acquisition proposal.*
2. *Participate in the maintenance, upkeep, and enhancement of roads in conjunction with other owners along Bullfrog and Goat Pen Roads.*
3. *Comply with legal easement and covenant obligations.*
4. *Maintain view easement held by adjacent land owner.*

II. B. Stewardship Tasks for General Preserve Management

1. *Review Management plan once every ten years and update as necessary.*
2. *Communicate and work with neighbors on road maintenance plans.*
3. *Track road usage by Preserve visitors and stewardship staff.*
4. *Develop an annual Preserve work plan in collaboration with the Preservation Trust.*
5. *Work with neighbors to resolve easement and deed restrictions which are in conflict with one another.*
6. *Uphold terms of the view easement.*
Specific tasks might include:
 - a. Periodically meeting with easement holder to evaluate if terms are being met.
 - b. Manual removal of trees, shrubs, and woody growth through cutting, girdling, and/or limbing.
 - c. Manual removal of biomass through the use of burn piles¹
7. *Maintain views consistent with the restrictive covenants on the Property to preserve aesthetic enjoyment of the Property.*
Specific tasks should include:
 - a. Identifying critical locations for the preservation of views.
 - b. Manual removal of trees currently and/or with capacity to impede views in the future.

II. C. Monitoring Protocols for General Preserve Management

¹ Burns piles will be placed on rocky outcrops and left to dry for one season. Burns will be conducted during spring or fall while fire risk is low and 24-hour winds are not forecast to exceed 10mph.

1. *Regular Monitoring*
The Preserve will be regularly visited by Land Bank staff and volunteers to observe and track natural processes, public use patterns, and provide education and outreach to Preserve visitors.
2. *Annual Monitoring*
Annual monitoring of Land Bank Preserves is critical to understanding its natural resources, tracking changes, and protecting its conservation values. Staff will conduct an annual monitoring visit with the specific tasks of inspecting key features including monitoring Preserve boundaries.
3. *Photo Monitoring*
The use of repeatable photographs from designated locations within the Preserve will be used to track changes to land-cover overtime. Photopoints have been established around the Preserve and will be rephotographed and analyzed every ten years as part of the management plan review and updating process. (Appendix B)
4. *Road Use Monitoring*
Vehicle and/or pedestrian counters can be useful means to assess the level of public use on preserves. The Land Bank may employ infrared or pressure based counters to assist in this effort.
5. *Ecological Assessment*
An ecological assessment for the Preserve was produced by Land Bank staff in 2006 which provides a foundation for management decisions including this plan. Additional assessments will be considered as new information is sought, especially as necessary for management plan updates.

III. Ecological Resources

The grasslands and forests of Mount Ben are typical of dry, rocky, south-facing San Juan Island sites (Figure 3). Much of the former extent of grasslands on this Preserve and surrounding lands have seen dramatic colonization by Douglas-fir over the last several decades, a process that continues. A physical map (Figure 4) approximates major plant communities, but differentiation between historic and current land cover is difficult and much variation, particularly the occurrence of herbaceous balds, exists within the zones.

Wildflowers decorate the slopes briefly in the spring, but the thin rocky soils dry early in the season. Impressive specimens of big-leaf maple are found scattered throughout the Preserve including the dry upper slopes and along drainages. Drainages support remnant old-growth Douglas fir specimens, large grand fir, and smaller trees and shrubs including Pacific crabapple, red elderberry, and salmonberry. A solitary mature Garry oak specimen is located near the southwest corner of the Property and several oak seedlings have been identified in this general area of the Preserve as well as both seedlings and mature oak trees on adjacent privately owned land. Native grasslands and savannah are an increasingly rare habitat type within our region and deserve special care and consideration.

The impacts from climate change present significant challenges in planning and caring for the ecological resources of Land Bank Preserves. While there is broad consensus among the scientific community regarding our warming climate, there is a considerable uncertainty regarding many of the specific long term impacts, in particular changes in precipitation.¹ In our region, average temperatures are expected to rise 4.2° – 5.5°F by 2050. Increases in average warmth may change composition of plant and animal species, increase the risk and severity of wildfires, provide vectors for invasive plants, animals, and pathogens, and effect hydrologic cycles. While it is not possible to prevent or forecast these impacts with certainty, protecting and maintaining the biodiversity of the Preserve can strengthen resilience to impacts from climate change.

The Land Bank holds protection of conservation values, including ecological resources, as the overarching goal of its stewardship program. Maintaining an area's ecological health can also contribute to the preservation of scenic and open space characteristics. Public access and other activities are designed to minimize impacts, with the knowledge that they may have to be restricted or discontinued if impacts cannot be controlled.

¹Source: Mauger, G.S., J.H. Casola, H.A. Morgan, R.L. Strauch, B. Jones, B. Curry, T.M. Busch Isaksen, L. Whitely-Binder, M.B. Krosby, and A.K. Snover, 2015. *State of Knowledge: Climate Change in Puget Sound*. Report prepared for the Puget Sound Partnership and the National Oceanic and Atmospheric Administration. Climate Impacts Group, University of Washington, Seattle. doi:10.7915/CIG93777D

III. A. Objectives for Ecological Resources

1. *Maintain the health of the Preserve's ecological communities.*
2. *Encourage a greater understanding of the Property's natural systems.*

III. B. Stewardship Tasks for Ecological Resources

1. *Protection of priority habitats and species*

A list of the Preserve's known priority habitats and species, as defined by the Washington Department of Fish and Wildlife (WDFW), is found in Appendix A. Additional noteworthy communities, and species, such as uncommon plants, may also be afforded these special protections:

- Signage denoting use restrictions or areas closed for habitat protection and restoration.
- Direction of public use away from sensitive areas.
- Use of plant protectors, cages, and/or fencing to provide protection from trampling and herbivory.

2. *Maintenance and enhancement of herbaceous balds, prairie, and savannah*

Balds, prairie, and savannah are similar habitats collectively regarded as some of the most imperiled in our region. Much of the historic extent of prairie on Mount Ben is undergoing conversion to coniferous forest, while the relative small size, disconnection with other prairie sites, and generally degraded condition of the remaining grassland make it a relatively low priority for extensive restoration effort. Stewardship tasks will focus on maintenance of the existing extent of prairie and protection and enhancement of habitat surrounding individual specimens of big-leaf maple and Garry oak.

Specific tasks may include:

- Assessment and prioritization of existing prairie and savannah areas.
- Annual monitoring and/or survey of native prairie plant communities.
- Control and manual removal of Douglas fir and other woody plants threatening conversion of prairie areas (see control of invasive species below) and/or crowding out individual oak or maple specimens.
- Investigating the use of prescribed fire to maintain and enhance prairie and savannah.
- Use of exclosures (fencing or cages) to prevent herbivory by deer and other mammals

3. *Control of invasive species*

Invasive species pose a serious threat to native species and habitats. Baseline inventory and mapping of invasive species on the Property has already been conducted. Noxious weeds that may colonize Garry oak and grassland habitats are of

particular concern. Control efforts will be focused in areas of greatest ecological priority and vulnerability, and where methods have the greatest chance of success. Manual and mechanical control will be the preferred mode of attack, with biological controls and herbicide use carefully considered on a case by case basis.

Specific actions will include:

- Collaboration with the San Juan County Noxious Weed Board and other agencies monitor for noxious weeds and develop prioritized approach for control.
- Manual removal of invasive plants including tansy ragwort, Himalayan and evergreen blackberry, hairy cat's ear, herb Robert, mole plant, bull thistle, and Canada thistle.
- Control of English Hawthorne by cutting, removal, and painted application of herbicide to cut stem.
- Annual surveys for new infestations.

4. *Maintain forest health*

Mount Ben supports diverse forest. Much of the current forested areas are characterized by dense, young stands of Douglas fir with little or no understory plants. Soil structure, plant communities, veteran Douglas fir structure, and slope aspect indicate much of the forested area once had a more open, savannah-like character. It is unlikely and perhaps undesirable that the entirety be restored to these conditions but the overall health, diversity, and resilience of forested areas can be improved through limbing, thinning, and removal of trees, possibly in conjunction with burning. Lower portions of the Preserve support old growth and mature Douglas fir, grand fir, and big leaf maple. Some of these areas are also arguably overstocked and may benefit with some mechanical thinning and use of prescribed fire.

Activities may include:

- Contracting with a professional ecologist for assessment.
- Limbing and thinning dense stands of trees.
- Seed collection of native plants.
- Outplanting native plants to encourage diversity.
- Use of prescribed fire to help maintain the health, diversity, and structure of the Preserve and reduce wildfire danger.
- Use of exclosures (fencing or cages) to prevent herbivory by deer and other mammals

5. *Education and research*

The Land Bank will encourage a better understanding of Mount Ben's ecological resources through cooperation with the Preservation Trust, local schools, universities, scientists, and interest groups. Educational and research activities on the Preserve will be conducted on a permission-only basis, and may be limited in size or duration.

Specific actions may include:

- Sponsoring, leading, or permitting small group guided natural history walks.

- Conservation and science-based education field trips.
- Collaborating with researchers from private, local, state and federal agencies, local schools, universities, volunteers, and other researchers.
- Interpretive signage on the Preserve's natural history and any habitat restoration activities.

6. *Restriction of uses*

See Appendix B, Preserve Rules and Restrictions of Use.

II. B. Monitoring Protocols for Ecological Resources

High priority ecological features on the Preserve may be monitored to help evaluate stewardship policies and resource health. Notable features on Mt Ben include mature and old growth Douglas fir, mature stands of grand fir, bigleaf maples, Garry oak tree and seedlings, and rocky balds/prairie.

1. *Assessment*

An ecological assessment was compiled for the Mount Ben Preserve in 2006. This report will serve as a baseline against which to measure suspected changes or impacts to the natural features of the land.

2. *Photomonitoring*

Photomonitoring (landscape photographs shot from permanent, relocatable locations) have been established to provide a visual record of trends and changes over time. See Appendix D, Photomonitoring for details. Additional photomonitoring will document any restoration activities.

Additional research will be encouraged and other monitoring developed as needs emerge.

IV. Public Access

The Land Bank aims to make the Preserve's outstanding views and tranquil setting available for the public's enjoyment. Neighbors also value their peace and independence, and thus reasonable protection of their privacy will be a priority in providing public access. As with many of the Land Bank Preserves, neighbors living within walking distance are anticipated to be a regular and significant user group. Low-intensity public use is expected to be compatible with neighborhood character and with protection of the Preserve's natural values.

III. A. Objectives for Public Access

1. *Maintain the capacity for safe, low-intensity access at the Mount Ben Preserve that does not detract from its outstanding aesthetic and natural characteristics.*
2. *Maintain an appropriate level of use, protecting natural resources and neighborhood character, and ensuring that each visitor has a quality outdoor experience.*
3. *Explore alternatives for pedestrian access and connectivity with other Land Bank Preserves and other private and public lands.*

III. B. Stewardship Tasks for Public Access

1. Controlling level of use

Maintaining an appropriate level of use will be essential to preserving Mount Ben's special qualities. Over time, however, the Preserve may face pressures from the rising population of San Juan Island and increasing demand for public access to natural areas. The Preservation Trust's conservation easement will contribute to the long term vision of this Preserve as it restricts use to pedestrian only primitive trails and prohibits the construction of most other facilities.

The follow approaches will be used to manage levels of use:

- Limited signage to avoid overexposure.
- Limited parking to restrict number of visitors.
- Limited facilities and level of development to discourage unwanted activities.

2. Providing public road access

The legal access to the Preserve is by way of two private roads: Goat Pen Road and Bull Frog Lane (Figure 1). The Land Bank will use this access route in the near term for public driving access, while simultaneously investigating alternative access possibilities.

Website and other Preserve literature will advise visitors of road conditions and limited parking. Road directional signs to the Preserve will be placed at the intersection of Hannah and Bullfrog roads and at the intersection of Bullfrog Lane

and Goat Pen Road. An additional sign will be placed to direct visitors into the parking area and away from driveways accessing adjacent private property. Car and trail counters can be useful in tracking the number of visitors and level of use over time.

The Land Bank will contribute to the ongoing maintenance and repair of Bull Frog Lane and Goat Pen Road. The Land Bank will also pay for an initial engineering assessment of the road to examine recommended improvements with an emphasis on safety and long term sustainability. This assessment will be used to more efficiently target long-term improvements to the road to avoid continual cycle of short term repairs. These improvements will likely consist of build-up and crowning of the road surface, installation of ditches and culverts, and other similar activities.

3. Preserve Parking

The existing roadside pullout on the Preserve can currently accommodate one vehicle. A parking area will be developed to safely park up to four vehicles. It will be defined by log barriers placed on stone or concrete piers and may be further separated from adjacent private property by the use of screening vegetation, split rail fencing, boulders, and/or signage.

Specific tasks include

- Working with San Juan County Community Development to identify permitting requirements for access and parking.
- Hiring professional consultants, such as a landscape architect or civil engineer, to assist with site planning, design, and permitting (as necessary), and construction.

4. Constructing Trails

There are currently no developed trails on the Preserve aside from deer trails and a rough access route used by staff. The creation of a modest trail system will provide access to dramatic views, diverse habitats, and wildlife viewing. Trails will be rustic in nature but designed with long term sustainability in mind. Average tread width will be 16-24” utilizing native soil, stone, and other materials from on site.

Specific tasks include:

- Engaging with the San Juan Island Trails Committee and other volunteers for trail design and construction.
- Directing trails away from sensitive or hazardous areas and, to the extent possible, neighboring property boundaries.
- Aligning trails to take advantage of a variety of habitats and view-sheds.
- Aligning and constructing trails according to sustainable trail construction standards.

5. Installing signage

Specific actions may include:

- Signing property boundaries, road junctions, or other key locations to direct users to appropriate areas and discourage trespass onto neighboring private lands.
- Designing and installation of directional signs showing the location of trails, parking, boundaries, public use guidelines, and other features.
- Designing and installation of interpretive signs.
- Installing roadside signage warning visitors of road conditions and parking.

6. *Maintenance*

Maintenance of the Preserve and infrastructure will be undertaken by Land Bank staff, volunteers, and contractors. These activities might include:

- Trail maintenance including trimming vegetation, installation of drainage features, rehabilitation of tread, and clearing downed trees.
- Upkeep and replacement of signage.
- Removal of litter.
- Noxious weed removal.
- Maintenance woody vegetation within the view easement area.
- Other tasks as needed.

7. *Volunteer Preserve Stewards*

Volunteer stewards are an important component of the Land Bank's stewardship. Stewards help the Land Bank meet its stewardship goals through regular visits to the Preserve to observe its condition and level of use, and may also be involved in maintenance, visitor education, invasive species control, monitoring, and other stewardship activities.

8. *Restriction of uses*

See Appendix B, Preserve Rules and Restrictions of Use.

III. C. Monitoring Protocols for Public Access

The most important issues to monitor are the level of public use and any resultant impacts on Preserve infrastructure, access road and the conservation values of the Preserve. It is anticipated that in the first weeks and months following the opening of the Preserve that use levels will likely be higher as locals explore a new Preserve. During the first year regular volunteer steward presence will be a priority in order to help set the tone for use by the public and generally monitor use. To help determine appropriate use levels, the Land Bank will rely on feedback from volunteer stewards, interested citizens and neighbors, and information from ecological monitoring protocols. The following protocols will also be used:

1. *Car counters and trail monitors.*

These tools may be used to track the number of people accessing the Preserve over time. Car counters can assist in determining road use and the Land Bank's contribution to community road maintenance and construction efforts.

2. *Use surveys.*

Volunteers or students may be solicited to conduct survey studies of use during specific and/or random periods to help determine level of use, user experience and expectations, and compliance with use guidelines.

3. *Photomonitoring.*

Photographs taken periodically from established locations will be used to assess public use impacts. (Appendix C)

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V. Financial Analysis

This analysis is intended as a financial planning tool. All numbers are approximate and expenses will be reconsidered annually as part of the Land Bank’s regular budgeting process.

The Land Bank has allocated an Endowment Fund within the Investment Fund Balance of the San Juan County Land Bank Stewardship & Management Fund. The interest earned from this fund is intended to cover annual Preserve management costs in perpetuity. Whenever necessary, additional allocations to the Stewardship Fund may be made from the Conservation Area Fund at the direction of the Land Bank Commission. Separate allocations from the Conservation Area Fund will cover specific site management planning, and enhancement projects.

This financial analysis considers two components of Mount Ben management: **Site Enhancement** or “start-up” costs, and **Annual Preserve Management**. Annual costs are adjusted for average inflation of 2.5% in order to project five and ten year amounts. All estimates include staff time.

Site Enhancement (2017-2022)

Planning and permitting		
Site plan		8,000
Permitting, as necessary		1,000
	<i>Subtotal:</i>	<i>\$9,000</i>
Parking and access road improvements		
Engineering assessment of road		2,500
Road improvements		5,500
Parking area construction		15,000
Vehicle counters		2,500
	<i>Subtotal:</i>	<i>\$25,500</i>
Directional, interpretive, and boundary signs		
Design and fabrication		3,000
Installation		850
	<i>Subtotal:</i>	<i>\$3,850</i>
Trail design and construction		
Layout and alignment		1,250
Construction (assuming volunteer contributions)		5,000
Materials		250
	<i>Subtotal:</i>	<i>\$6,500</i>
Habitat enhancement		
Grant and project administration		2,500
Oak savannah enhancement		10,000
Forest assessment		1,600
Forest enhancement		10,000
	<i>Subtotal:</i>	<i>\$24,100</i>
	TOTAL	\$68,950

Projected Annual Property Management (2017– 2022):

Annual costs estimates shown below are averages and do not necessarily reflect costs born every year. Five and ten year totals show projections based on 3% annual inflation. Staff time is apportioned to specific staff members and is based on total hourly cost born by the County.

Annual Stewardship Expenses

Monitoring

Routine monitoring		
October-March, monthly		1,438
April – September, twice per month		2,875
Annual boundary and Preserve monitoring		399
	<i>Subtotal:</i>	4,712

Maintenance

Signage		
Materials		100
Staff		204
Trail		
Materials		100
Staff		207
Parking		
Materials		250
Staff		228
Road		
Materials		1,000
Staff		455
Noxious weed control		
Materials		150
Staff		1,278
View Easement		
Materials		100
Staff		240
	<i>Subtotal:</i>	2,694
	TOTAL:	\$7,406

Annual Totals:

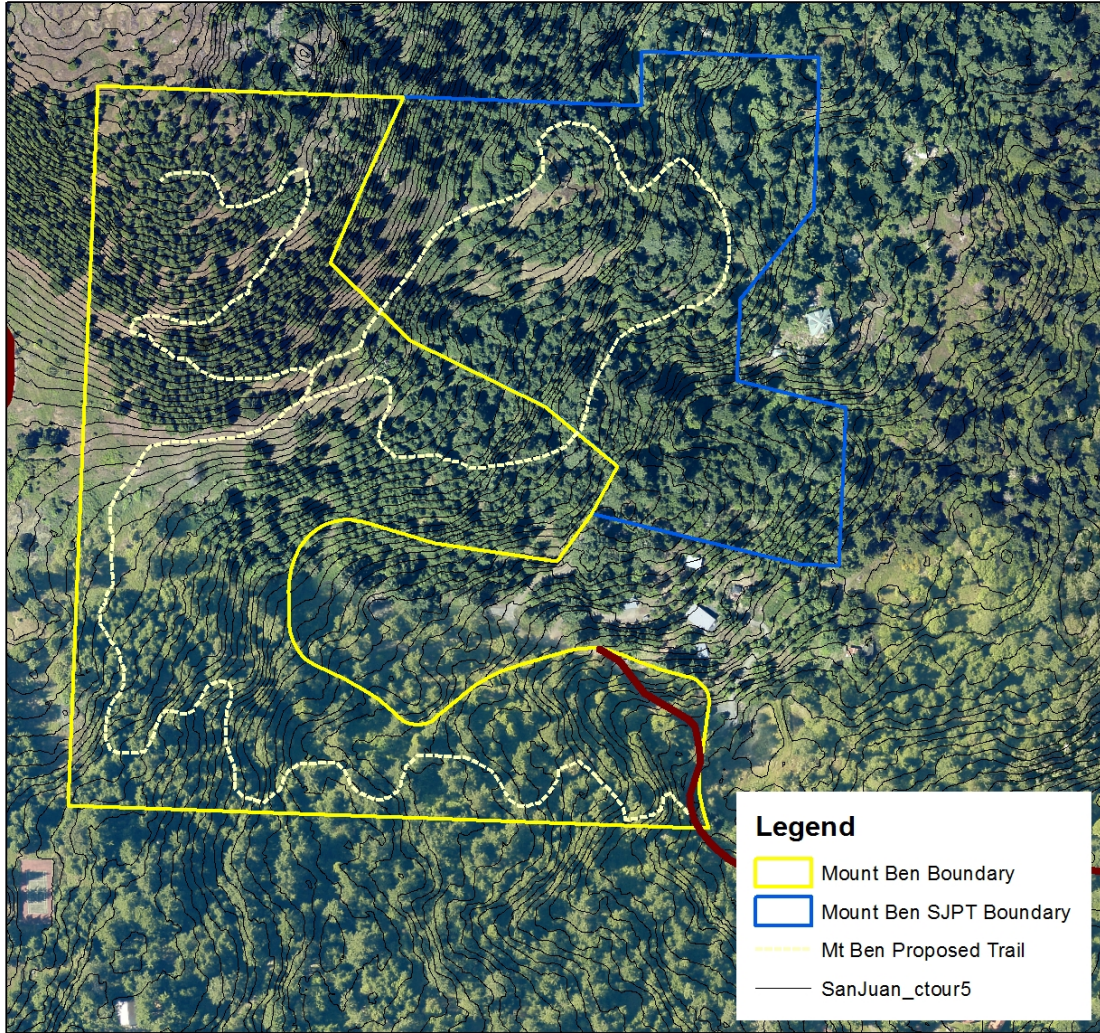
Year	Amount
2017	7,406
2018	7,628
2019	7,857
2020	8,093
2021	8,335
2022	8,585
2023	8,843
2024	9,108
2025	9,382
2026	9,663

Figure 1. Mount Ben Preserve Context Map



Figure 2. Mount Ben Preserve Topographic Map

2013 San Juan County aerial photo (boundaries shown are approximate). 10' Contours derived from 2008 San Juan County Digital Elevation Model (DEM) derived from LiDAR imagery.



Mount Ben Topographic Map

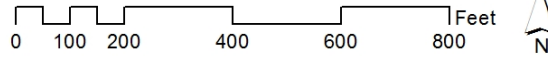


Figure 3. Mount Ben Preserve Physical Map

This map shows relevant management features associated with the Mount Ben Preserve. Ecological community mapping is approximate with areas of overlap between forestlands and prairie/savannah occurring. It is shown here to provide baseline information for areas of potential ecological management activities.

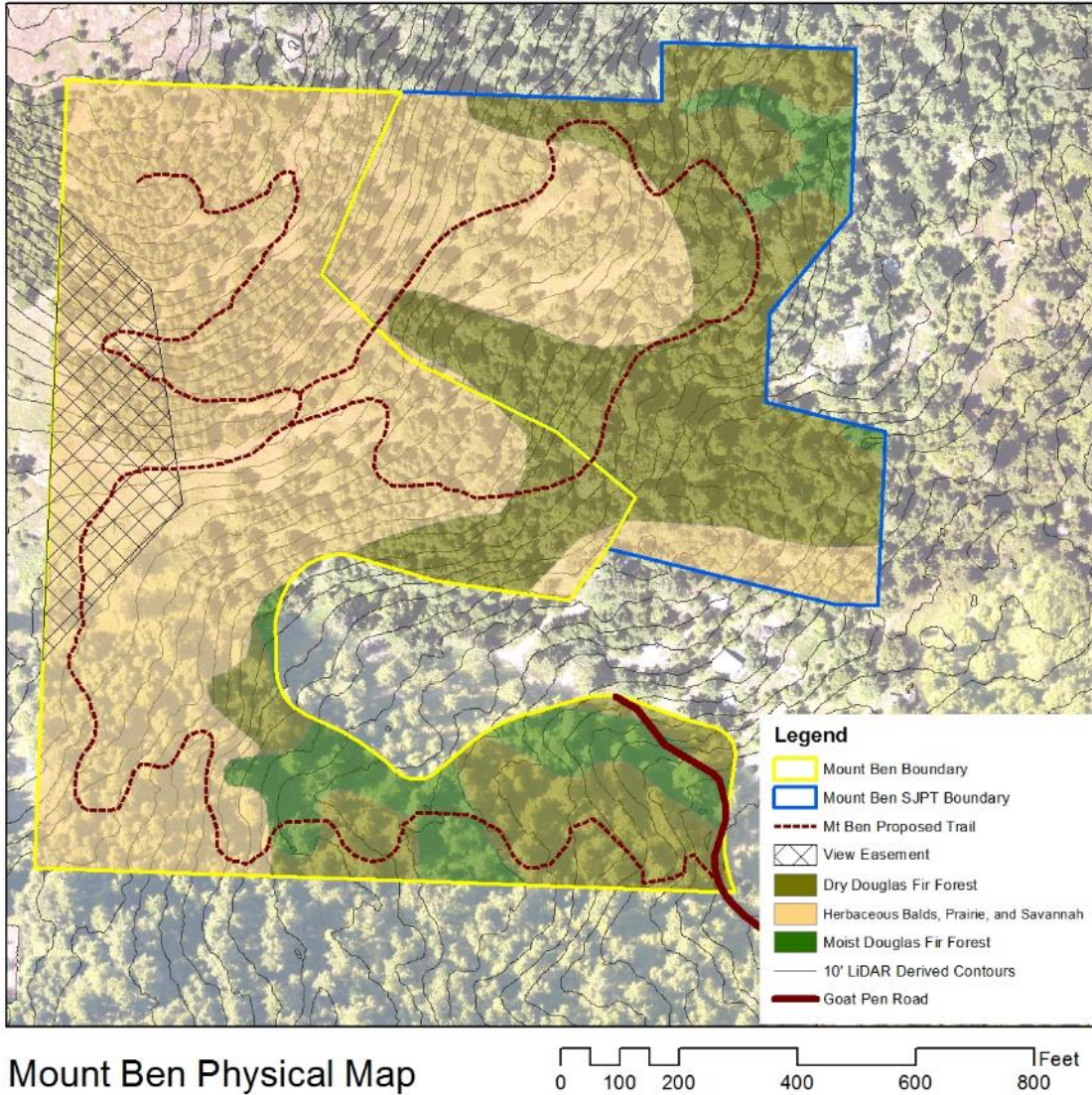
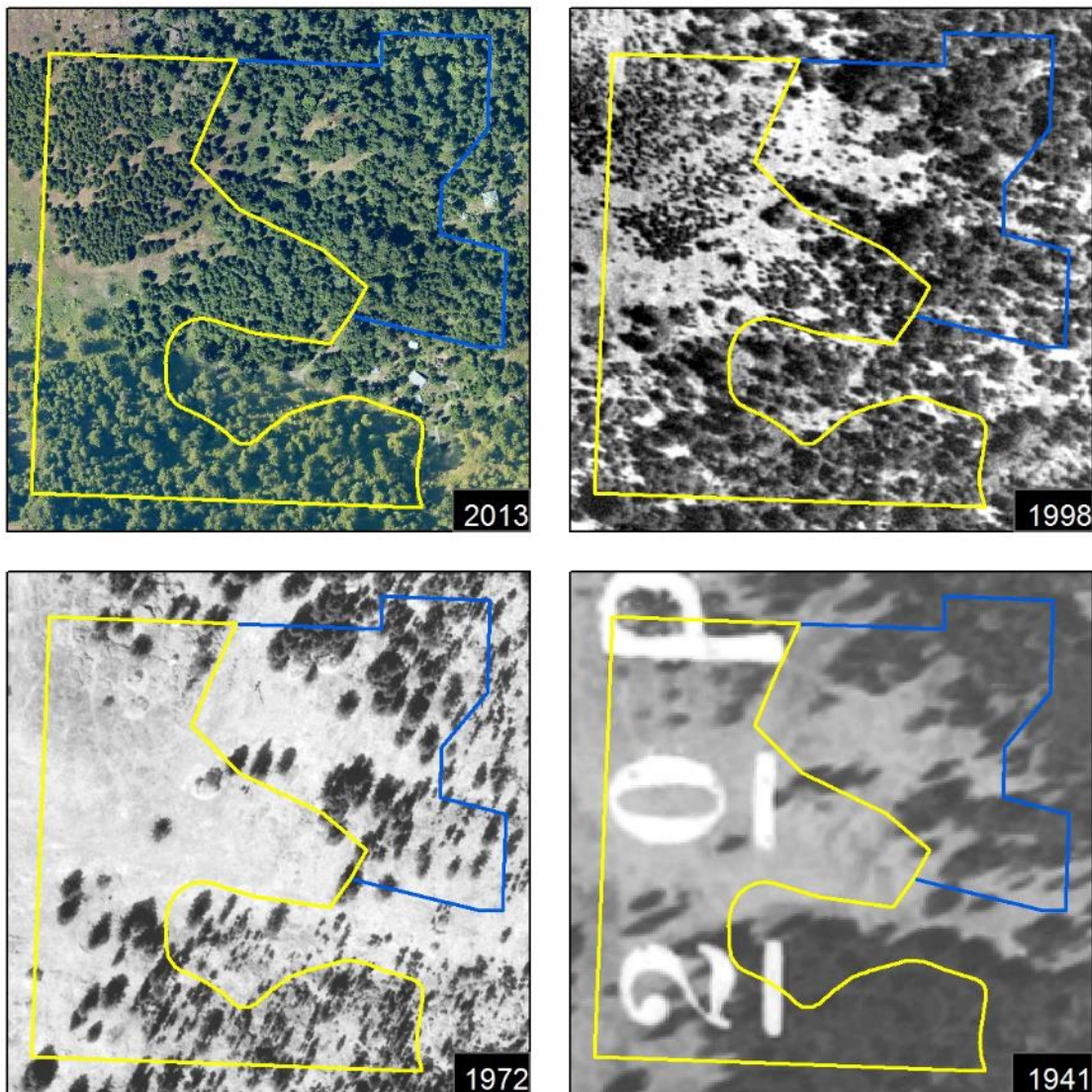


Figure 4. Historic Aerial Photos

Aerial photos taken from USDA and San Juan County databases. Boundaries overlay is approximate. Photos demonstrate landcover change over time. 1941 shows distinct separation between grasslands and forestlands. This condition was likely due to fire regime and later maintained by grazing animals. Image from 1972 shows dramatic reduction of forest likely due to timber harvest in the 1950-1960s, with some recruitment of young trees, presumably Douglas fir. Image from 1998 demonstrates rapid infill of Douglas fir forest including encroachment into former grasslands. The final image from 2013 shows the maturation and continued infill of forest throughout.



Appendix A. Priority Habitats and Species

(Adapted from *Mount Ben Preserve Ecological Assessment*, Habegger, 2006)

The Washington State Department of Fish and Wildlife maintains a list of Priority Habitats and Species for each region of the state. Some listings are made based on ecological significance, others because of their importance as game animals. As defined in the current state Priority Habitats and Species List (2008, updated June 2016), three priority habitats and four species have been identified on Mount Ben:

Snags and logs
Westside Prairie/Herbaceous Balds
Pileated Woodpecker
Bald eagle
Band-tailed Pigeon
*Columbian black-tailed deer

*Columbia black-tailed deer are abundant and thriving in the San Juans and are not considered a priority species in the context of Land Bank management of this preserve.

Appendix B. Preserve Rules and Use Restrictions

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

The Land Bank generally relies on signage and periodic contact from staff or volunteers to educate visitors about use restrictions. An enforcement ordinance governing 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.

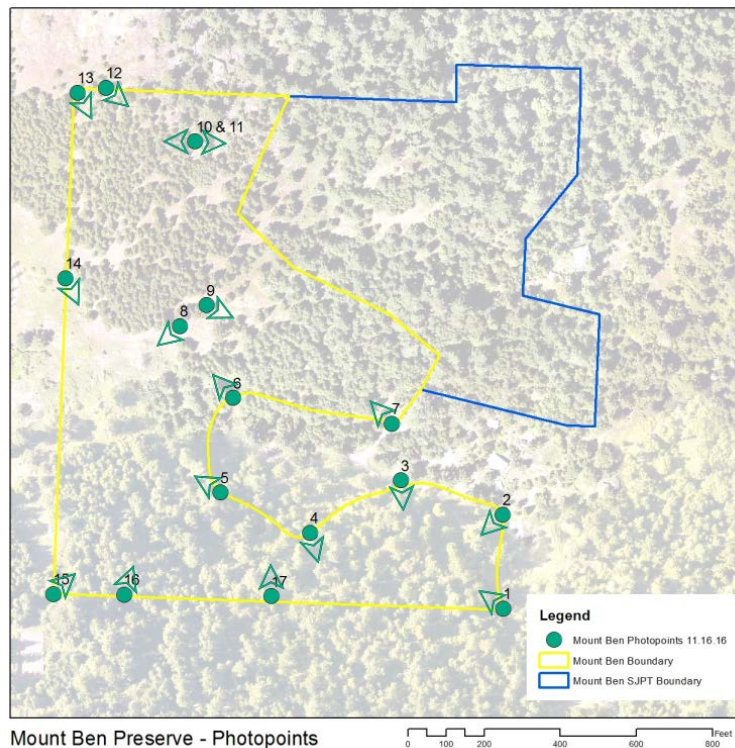
- No camping
- No fires
- No hunting
- No discharge of firearms
- Daytime use only
- Dogs must be leashed
- Pedestrian access only beyond road
- No vehicles off road
- No bicycles off road
- No horses off road
- No commercial use
- No collection of botanical, zoological, geologic or other specimens except on a permission-only basis for scientific or educational purposes

Appendix C. Photomonitoring

Photomonitoring is used to document the physical condition of the Preserve at a set point in time and provide a baseline from which to track changes. The Land Bank has employed photomonitoring to a limited extent on some Preserves and for tracking ecological restoration efforts. In an effort to create a deeper baseline, photomonitoring will be incorporated into this and subsequent management plans with intent to repeat the photographs on a decadal basis as part of the review and, as necessary, updating of the plans.

Photos below are lower resolution for context only. Original photos will be maintained in separate digital archive. GPS coordinates and physical descriptions of the photo location have been recorded in order that future photos will be taken from easily recoverable and repeatable locations. Photos are intended to show context of the Preserve's biological communities as well as any areas likely to be impacted by public access and management activities on adjoining properties. They are not intended to provide a comprehensive picture of the Preserve in its entirety. Photopoints established in this effort may be abandoned or have additional points added as necessary.

Photographs for this management plan were shot an iPhone 6s featuring a built in 12 MP, f/2.2, 29mm, camera. Images were shot using the panorama feature which can cause some distortion but provides uninterrupted perspective for each photopoint. Angles of panoramas ranged between 90 and 180 degrees.





1. Rebar marking outside edge of road easement, approx. 20' east of SE Preserve corner, northwestern panorama



2. Base of large boulder roughly 250' north along property line from SE Corner



3. From road approximately 12 north of survey marker looking southerly



4. 8' NW of survey lathe nailed to tree, southerly panorama



5. 20' NE of survey marker, southwesterly panorama



6. Straddling survey marker, northerly panorama



7. Straddling survey marker (uncapped rebar), northerly panorama



8. Prominent rock outcrop, westerly panorama



9. Prominent rock outcrop, overlooking large maple, easterly panorama



10. Bench 25' to west and above maple, easterly panorama



11. Same location as Photopoint 10, westerly panorama



12. 10' west of T-post (NE corner of previous 1 acre lot), southerly panorama



13. NW Preserve corner, SE panorama



14. Along western property line, 30' east of neighbor's middle orchard row



15. Southwest property corner (neighbor's fence corner), NE panorama



16. 40' west of oak tree, northerly panorama



17. Approximately 100' uphill (west) from survey line marker, northerly panorama

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