DRAFT

Management Plan for The Settlement Lands

Denman Island, British Columbia

Prepared for

Denman Conservancy Association
Box 60, Denman Island BC

In consultation with

Islands Trust Fund
1627 Fort Street, Victoria BC

by

Denman Conservancy Association
Lands Committee
Denman Island, BC

January 2017

Approved by
Denman Conservancy Association Board of Directors
[DATE]

Trust Fund Board
[DATE]
Resolution [###]

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i. Executive Summary

The Settlement Lands (hereafter "the Lands") is situated in the northern portion of Denman Island and is comprised of 157 acres in two legal parcels of land. Its name is derived from the history of its acquisition by Denman Conservancy Association (DCA) in 2006 as part of a lengthy and complicated legal settlement, and beause beginning in the 1890s early pioneers settled this land with a homestead and orchard. The Lands were most recently logged in 2000-2001 and are now regenerating naturally after extensive community efforts to protect sensitive ecosystems on Denman. DCA's acquisition of the Lands and the establishment of the Denman Island Provincial Park together with the existing Inner Island Nature Reserve owned by Trust Fund Board (TFB) and Central Park and Winter Wren Wood owned by DCA, have resulted in an extensive network of protected lands in this area.

The Lands lie within the Coastal Douglas-fir biogeoclimatic zone and contain numerous rare and uncommon species and are characterized by wetlands and high biodiversity. A Butterfly Reserve has been established in the Uplands area for the management of habitat for Taylor's checkerspot butterfly and other open woodland pollinator species at risk. Beavers occupy the entirety of the property, and are a keystone species in maintaining the ecological composition and integrity of the property and its extensive wetlands.

The SL property is within the asserted traditional territory of four First Nations and seven First Nations Treaty Groups, including the K'ómoks and Tla'amin First Nations. Tla'amin Nation negotiated a Final Treaty Agreement as of April 5, 2016. Details of First Nations' use of the Lands have not yet been identified by DCA but communications have been initiated between the organizations with this intent.

The TFB will soon hold a conservation covenant on the Lands and DCA and Islands Trust Fund (ITF)[1] will work together to ensure that ecological communities and native species are protected in perpetuity on the Lands, as they have in other Denman Island nature reserves. The Purpose, Goals and Objectives defined in this Plan demonstrate how this will be achieved achieved and are approved by both the DCA as the owner of the Lands and the TFB as the holders of the conservation covenant, which is a registered interest in the Lands. Current important threats to the Lands include: degradation of riparian and wetland ecosystems; harm to beaver populations; border encroachment; accidental wildfire; invasive alien species; and, climate change. These were carefully considered in defining the management approaches outlined in this Plan.

In order to achieve the Purpose, Goals and Objectives outlined for the Lands, the following actions are recommended: Monitor the Lands, especially its wetlands and riparian areas, on an ongoing basis to ensure that ecological values are protected; carry out habitat stewardship activities, according to best practices, for at-risk pollinator species within the Butterfly Reserve;

[1] The Trust Fund Board is the legal entity that manages the interests of the Islands Trust Fund. See www.islandstrustfund.bc.ca for more information.

control and remove invasive alien species where possible throughout the Lands; establish and maintain a small network of designated trails to encourage low-impact public enjoyment of the Lands through walking and nature observation; and, provide signage, interpretive information and boundary markers where appropriate.

These items and related activities will be addressed in priority sequence by Denman Conservancy Association as resources permit. Covenant monitoring will be carried out by the TFB according to the conservation covenant registered on the land title.

ii. Acknowledgements

The Denman Conservancy Association is grateful to many individuals, organizations, government agencies and the community for their support in acquiring, and now conserving, the Settlement Lands. We acknowledge:

- Denman Conservancy Association's Board of Directors, Lands Committee, and particularly the Settlement Lands Committee: Jenny Balke (Registered Professional Biologist – Baseline Documentation Report), Erika Bland (DCA Land Manager – Management Plan compiler), Andrew Fyson (PhD botanist, former DCA Land Manager), Jackie Hipwell, John Millen, J Thornton and Patti Willis.
- Denman Conservancy Association General Membership
- Trust Fund Board and Islands Trust Fund Staff
- Denman Island Local Trust Committee
- Community Volunteers
- Contract workers
- Environment and Climate Change Canada's Habitat Stewardship Program
- Habitat Conservation Trust Fund (Maybe)
- Chris Pielou (PhD Ecologist – leadership in education in identification and protection of Denman's sensitive ecosystems
- Legal support in 4064 case: Olstead & Holekamp; Arvay Findlay; and, Underhill, Falkner, Boies Parker
- West Coast Environmental Law (Environmental Dispute Resolution Fund)

iii. Interpretation

I. Acronyms/Abbreviations Used:

ALR	Agricultural Land Reserve
DCA	Denman Conservancy Association
ITF	Islands Trust Fund
PAN	Protected Areas Network
TFB	Trust Fund Board (ITF Board of Directors)

"Baseline"	Refers to the Baseline Documentation Report for the conservation covenant (Balke 2017)
"The Lands"	Refers to the two combined Settlement Lands properties.

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1.0 Introduction

1.1 Denman Conservancy Association (DCA)

DCA, owner of the Settlement Lands, is a volunteer organization formed in 1991 to preserve, protect and enhance the quality of the human and natural environment of Denman Island.

The **Vision** of the Society is,

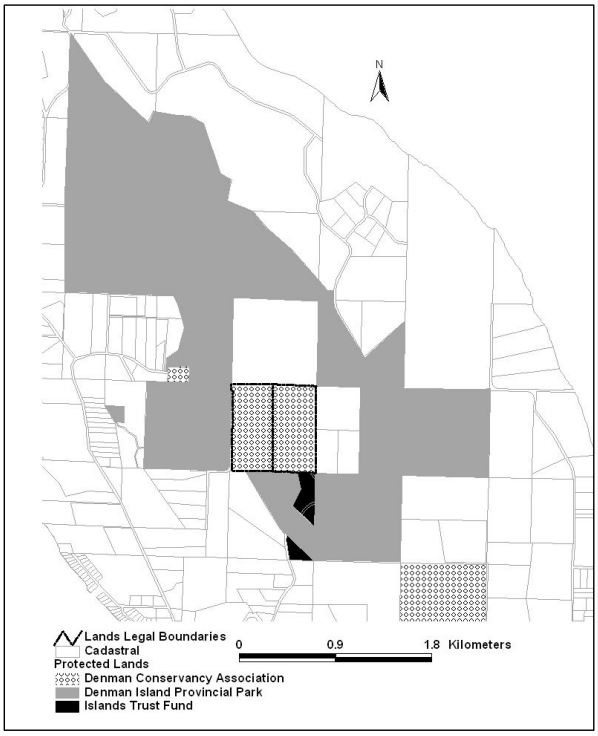
> *"Diverse and resilient ecosystems in perpetuity, stewarded by an inspired and informed community."*

This Vision is enacted through the DCA **Mission**:

> *"To engage the Denman Island community in the protection of natural ecosystems on the island, through: Education; Building collaborative relationships; Enhancing human and financial resources to assure longevity; Acquisition, Management and Stewardship of Lands; Active, experiential involvement; Examining our work/role in the context of global environment issues."*

1.2 DCA Protected Areas Network "PAN" Vision

DCA has worked, alongside other agencies, toward the vision of a Protected Areas Network (PAN) across Denman Island, by focusing acquisition and stewardship efforts on adjoining parcels of ecologically significant land wherever possible. DCA's Settlement Lands, Central Park and Winter Wren Wood properties, together with Inner Island Nature Reserve owned by Islands Trust Fund, and the Denman Island Provincial Park, make up a network of linked protected areas covering more than 760 contiguous hectares in the northern half of Denman Island (over one quarter of the total land area from Denman Road north). Depicted in Map 1, in the context of surrounding protected lands, the Lands provide a key link in this Protected Areas Network.



Map 1. Settlement Lands Connectivity to Adjacent Protected Lands

Settlement Lands Conservation Significance

The Lands' biodiversity of species and habitats is ecologically noteworthy. At least 125 wildlife species were observed including sixteen species and six vegetation communities identified as at risk by either the provincial or federal governments. The abundant wetlands are unusual and important on the usually dry BC Gulf Islands, and the forests consist of patches of older forest, 30-116 years, with over 60 remnant old-growth veteran trees, as well as young regenerating forest areas. The ecosystems of the Lands are particularly significant as the properties are situated in the moist-maritime coastal Douglas-fir biogeoclimatic zone (CDFmm). Due to both growing human populations and accompanying land development pressures, the CDFmm zone is the least protected and most a risk zone in British Columbia (REFERENCE?).

1.3 DCA Management Planning

To ensure that the ongoing management of the Lands aligns with the above Vision, Mission and PAN Vision, DCA has undertaken a formal management planning process. A Settlement Lands Committee was formed for the creation of this Plan. Management planning and the implementation of completed plans is informed by the Baseline Documentation Report (hereafter, "Baseline") and undertaken in consultation with the DCA Board of Directors, DCA Lands Committee and Land Manager, DCA general membership, the covenant holder (TFB), relevant agencies (BC Hydro & BC Parks), adjacent landowners and other community members (see Section 5).

1.3.1 Intent of the Settlement Lands Management Plan

(1) Define the Purpose and Goals for the ongoing management of the Lands
(2) Provide a summary of ecological and cultural attributes of the Lands (making reference to relevant documentation including the Baseline).
(3) Identify current and ongoing management issues relevant to the Lands
(4) Establish management strategies and actions that address management issues and fulfill the Purpose of and Goals for the Lands
(5) Outline the immediate, mid-term and long-term actions for the Lands and provide direction for their implementation

1.3.2 Management Plan Review and Updates

A review of this Plan should be completed:

- 5 years after the date of the initial creation of the Plan; and,
- Subsequently at least every 10 years (as required by the conservation covenant).

1.4 Settlement Lands Purpose

The Purpose of the Lands is to protect, restore, maintain and enhance the ecological values identified in the Baseline, and to ensure ongoing stewardship of the diverse ecosystems and species represented therein.

1.5 Overarching Goals for the Settlement Lands

(1) Conserve habitat for native wildlife and plant species;

(2) Provide for the use, enjoyment and education of the residents of Denman Island through low-impact activities such as walking, hiking and nature viewing, where appropriate; and,
(3) Undertake or endorse scientific research, monitoring and ecological restoration activities on the Lands that is consistent with the conservation covenant.

1.6 Covenant Holder, Trust Fund Board

The object of the **Islands Trust** is,

> *"To preserve and protect the Trust area and its unique amenities and environment for the benefit of the Trust area and of British Columbia generally, in co-operation with municipalities, regional districts, improvement districts, other persons and organizations and the government of British Columbia."*

The **Islands Trust Fund (ITF)** assists in implementing this objective through its mission to

> *"protect special places by encouraging, undertaking, and assisting in voluntary conservation initiatives within the Islands Trust Area."*

This Plan was created in conjunction with the conservation covenant held by the TFB, and in accordance with the above objectives of the Islands Trust and the ITF. Prior to registration of the covenant, this Plan was reviewed and approved by the TFB.

2.0 Property Information

2.1 Location

The location of the Lands is shown on Maps 2 & 3.

The Settlement Lands is located near the middle of Denman Island, British Columbia, north of Denman Road, and 4 km from the B.C. Ferries' Denman West terminal. The total size of the two properties together is 63.14 ha (156 acres) consisting of 30.69 ha (76 acres) for the western parcel and 32.45 ha (80 acres) for the eastern parcel. The property in its entirety is nearly square and is most of a quarter section.

2.2 Directions to the Settlement Lands

From the ferry on Denman Road, travel up the ferry hill, then up the big hill on Denman's longitudinal ridge. At the crest of this hill 1.6 km from the ferry, turn sharp left onto Pickles Road. There is a large painted fence on the south side of Denman Road at the hillcrest opposite the Pickles Road junction. Continue northwest on Pickles Road. Cross Pickles Marsh bridge at 2.7 km from the ferry and at 3.1 km turn left onto Central Road. Going straight at this curve continues into private property, the Swale Farm. Central Road crosses the southeast border into the Lands' eastern parcel and at 4.0 km is the designated parking area for the Lands. Central Road continues at a diagonal across both parcels and emerges near the northwest corner of the western parcel.

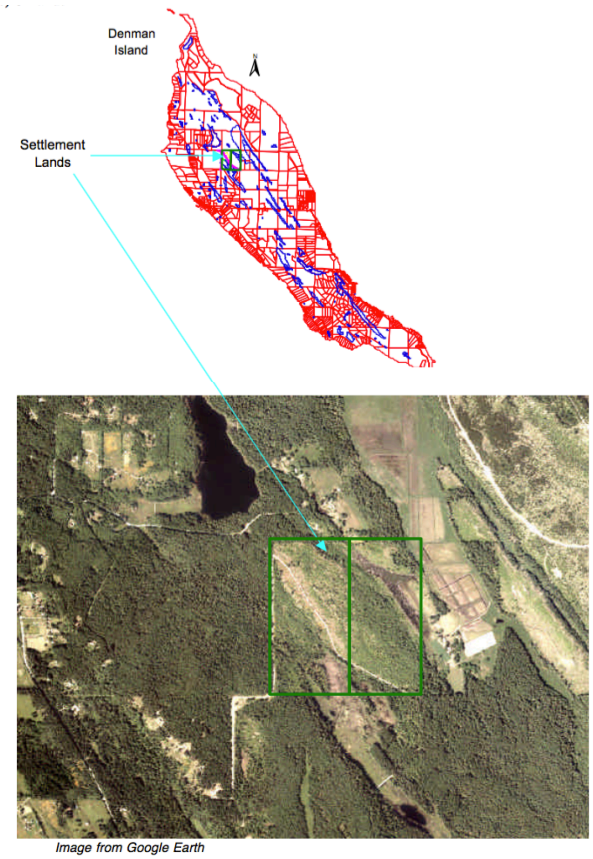


Image from Google Earth

Maps 2 & 3. Location of Settlement Lands on Denman Island

2.3 Legal Description

(1) Lot 1: E 1/2 of NE 1/4 Section 21 Denman Island. Folio Number 107385000; Parcel Identifier (PID): 006-639-771; 32.45ha
(2) Lot 2: W 1/2 of NE 1/4 Section 21 Denman Island, except that part in Plan VIP78186; Folio Number 77107386000 Parcel Identifier (PID): 006-657-656; 30.69ha

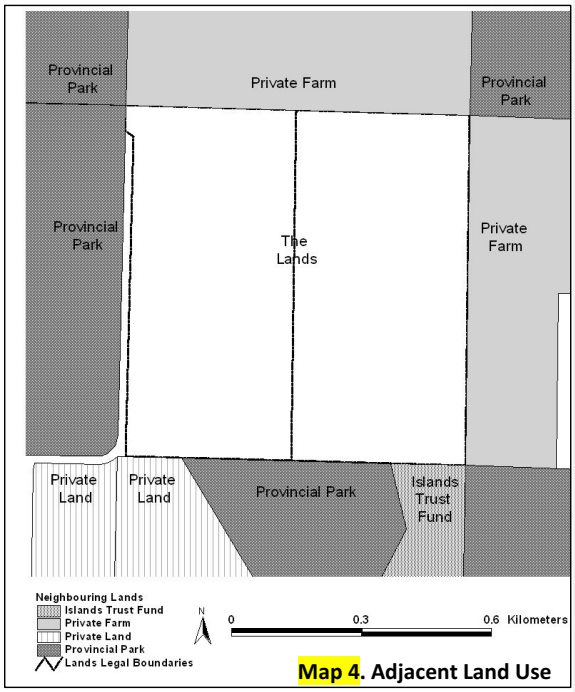
District: Nanaimo

2.4 Local and Regional Context

Denman Island is within the Comox Valley Regional District (CVRD) area, and land use activities and decision making are governed by Islands Trust, in addition to provincial and federal laws.

2.4.1 Adjacent Land Use

Map 4 shows the Lands in relation to surrounding properties. Provincial parkland borders three of the four corners of the Lands, as well as along Chickadee Road that borders the property's west side and approximately 60% (in the centre) of the southern border. The Inner Island Nature Reserve, owned by TFB, is adjacent to 20% of the southern border.



Map 4. Adjacent Land Use

The Lands are bisected on a NW-SW diagonal by a non-gazetted section of Central Road and bordered on the west by the newer Chickadee Road, constructed in 2005-6 to access a new subdivision to the southwest. Large, private lots, all greater than 15 acres, border the remainder of the Lands and are either settled and managed for agriculture (Swale Farm and Chickadee Lake Farm), undeveloped and awaiting sale or occupation (Raven Forest Products).

2.5 Site History

Below is a brief description of previous uses of the Lands. The Baseline describes their use and occupation history in further detail. Land use by First Nations is unknown to the DCA at this time. Other land uses prior to DCA acquisition include:

- Residential occupation of an historic homestead site;
- Selective logging and more recent high-grade logging;
- Agriculture including orchard cultivation and livestock grazing;
- Transportation along Central Road and various logging tracks and railway grades;
- Transmission of power via a BC Hydro line at the northeast corner of the Lands; and,
- Refuse dumping at an old community landfill site at the northwest corner of the Lands.

2.5.1 Pre-Contact

As noted in the Baseline, First Nations use of the Denman shoreline dates from at least 3500 years ago, and Denman was known to be the location of a Pentlatch village. Information about the use of the interior areas of Denman Island by First Nations peoples is scarce and we were unable to find reference to First Nations' historic use of the Lands.

It is likely that the Lands were used by First Nations because of the proximity to beaches with abundant shellfish and the presence of freshwater creeks and wetlands, as well as the presence and abundance of native species which were used by Coast Salish First Peoples. Though the historical relationship of local First Nations to these lands in particular is not well understood by DCA, DCA acknowledges that that Denman Island is situated within asserted territory of Coast Salish First Nations including the K'ómoks, Qualicum, and Tla'amin (formerly Sliammon) Bands. Denman Island is encompassed in the territory defined within a recent Treaty signed by the Tla'amin Nation (REFERENCE). Further consultation is needed to determine traditional use of the Lands by First Nations.

2.5.2 European Settlement

European settlement in the area began in 1876. The area was pioneered by European settlers around the 1890s, though sections of split rail fence and an overgrown orchard of old apples trees are all that remain of the original homestead on the Lands. According to neighbours and more recent land titles records, ownership of the Lands included the following families or parties, in order from earliest to latest:

- Pickles Family (first David, then Bert)
- Colleries Family (???)
- Weldwood of Canada Ltd.
- Hancock Timber Resource Group
- Comox Timber Ltd.
- 4064 Investments Ltd.
- 0736800 Ltd.

Travel between Swale Farm and Chickadee Lake Farm along an existing 4-metre wide farm track at the northeast corner of the Lands continues to date since it was first established to facilitate early settlement and agricultural activities in the area. It is not clear whether the Pickles Right of Way 51870G from 1924 listed in Section 2.6.3 describes this farm track.

2.5.3 Logging and Agriculture

Railway logging took place on north Denman in the late 1890s, early 1900s and remnants of two old railway grades remain on the property. Sections of the grade on which the rails were placed, consisted of elevated mounds built in order to cross the lowland wetlands. Some sections of the railway mounds have remnants of the original wooden ties.

The Lands were 'messily' logged during 2000-1 and is crossed by skid roads and landings created during this period. Ditches were dug in several locations on the eastern property to drain the area for agriculture. Beaver have continually created dams in the ditches and have enhanced the water coverage of the Homestead Marsh. Water levels in this marsh were high despite the summer drought of 2015. Ongoing monitoring of beaver populations and activity throughout the property will be prioritized and undertaken as capacity allows.

2.5.4 Old Landfill and Dumping Sites

Comment [EB1]: Here is info from the Schmidt family re: previous ownership of the SL.
They put their minds together on it, so think it's close (if not legal).

1 - Pickles (first David, then Bert)
2 - Colleries
3 - Weldwood
4 - Hancock
5 – Jenks

Is Colleries a family??

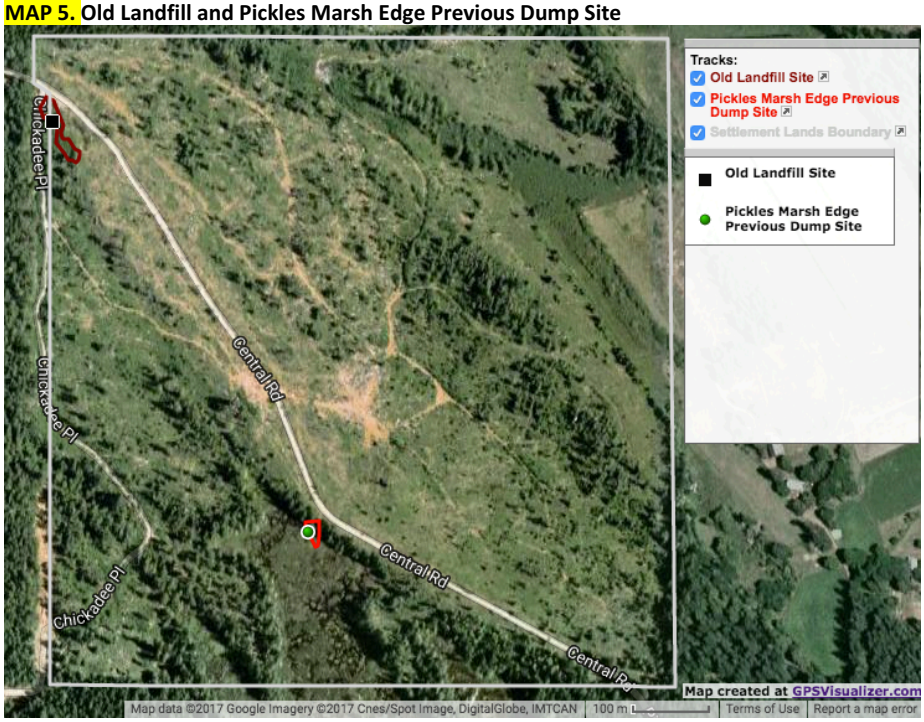
I don't know enough about the parties ---did Jenks own it or was it 4064 with Jenks working for them?

Comment [EB2]: Jenny, I don't know where – this was your text copied from the baseline, I thought (maybe the covenant proposal). Sorry, can't help with the locations.

As noted in the Baseline and in Appendix X, a former official landfill site (shown in Map 5) is located near the northwest corner of the Lands, but was closed and has not been used for over 20 years. This site is now a sand/dirt-floored gully with large trees along the edges, considerable forest regeneration throughout, and numerous invasive species. Unofficial dumping at a cliff site along Pickles Marsh also occurred decades ago (see Map 5). More recently, particularly since the 2000 logging, unauthorized dumping has occurred infrequently along Central Road and other easily accessible areas.

Along with this debris, a mixed patch of invasive St. John's Wort and Periwinkle was introduced through previous dumping of garden waste (Section 6.9.1).

MAP 5. Old Landfill and Pickles Marsh Edge Previous Dump Site



In 2016, volunteers removed much of the exposed garbage and debris from the Old Landfill Site, along the Pickles Marsh Edge cliff area, and a few deposits near the parking area and along Central Road. Some very large automobile parts remain embedded in the bank along the bluff above Pickles Marsh. The larger deposits would require mechanical equipment and considerable landscape disruption to remove. It is uncertain whether the removal of some of these deposits is desirable or warranted, considering the potentially harmful impacts of the

removal process. Section 6.9.3 of this Plan outlines possible remediation actions for sites where materials have been dumped.

2.5.5 Acquisition for Conservation

The Lands are historically significant to DCA and the community at large. The parcels were acquired as part of the settlement of DCA's landmark legal case against 4064 Investments Ltd. In 2000, DCA sued 4064 for breach of a land purchase contract. DCA asserted that 4064 had been obliged by the contract to place covenants on Denman's Komas Bluff and Railway Grade Marsh and, having not done so, proceeded to aggressively log Railway Grade Marsh. After six years the parties concluded this case on November 6, 2006. As a result of the subsequent settlement, DCA holds conservation covenants on these two large, ecologically significant areas on Denman Island (Railway Grade Marsh and Komas Bluff) as well as title to the Settlement Lands parcels, adding over 66 hectares (165 acres) to Denman Island's protected lands.

Not only is the expansion of Denman's protected lands important, but the legal case demonstrated one of the methods by which land trusts can acquire lands that are in harm's way. The willingness of a small organization such as DCA to challenge a corporate entity proved the resilience and determination of DCA, gave heart to conservation supporters and serves as an important chapter in DCA history.

The support of the Environmental Dispute Resolution Fund (EDRF) of West Coast Environmental Law Association since August 2000 was a major factor in sustaining DCA's volunteers through their years of struggle with the case. DCA is also grateful for representation provided by three law firms: Olstead & Holekamp; Arvay Findlay; and, Underhill, Falkner, Boies Parker.

2.6 Charges, Liens and Interests

2.6.1 Conservation Covenant and Statutory Right of Way

A conservation covenant under Section 219 of the BC Land Titles Act and held by TFB registered on the titles for both of the adjoining East and West SL lots outlines the intent (a) to protect, preserve, conserve, maintain, enhance and, if applicable from time to time restore, the natural state of the Lands and the Amenities as described in the Report; and, (b) to prevent any occupation or use of the Lands that will impair or interfere with the natural state of the Lands or the Amenities as described in the Report. The covenant serves as the primary reference point for the ongoing management and monitoring of the Lands. KATE MAY ADD SOMETHING ABOUT SAR.

A Statutory Right of Way under Section 218 of the BC Land Titles Act, for the conservation covenant held by the TFB is registered on both Lot 1 (East ½) and Lot 2 (West ½).

2.6.2 Water Licences and Tenancies

There are no water licenses or tenancies on either of the two lots.

2.6.3 Rights of Way

A title search revealed the following charge on Lot 1 (East ½), created in 1924 to provide "a right of way with or without horses and vehicles and for servants or agents" through to Central Road: "Right of Way 51870G 1924-01-28 14:25; Cuthbert Vivian Pickles; East 6 feet of North east ¼ section of Section 21; See DD55523I"

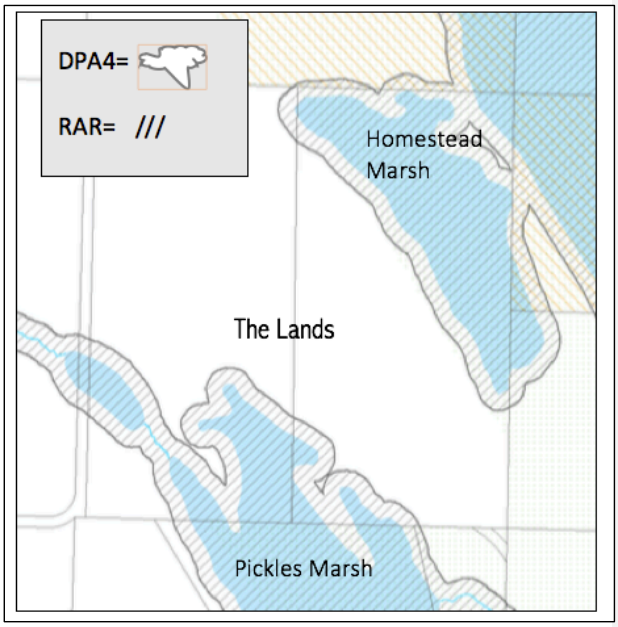
In the near future, a Statutory Right of Way under Section 218 of the BC Land Titles Act, for A BC Hydro power line which runs through the northeast corner of the property, will be registered on the title of Lot 1 (East ½). [...describe what happens with the drawing-based plan here, once we have finalized Patti].

2.6.4 Restrictive Covenants

There are no known Restrictive Covenants affecting either of the two lots.

2.6.5 Development Permit Areas (DPAs) & Riparian Areas Regulation (RAR)

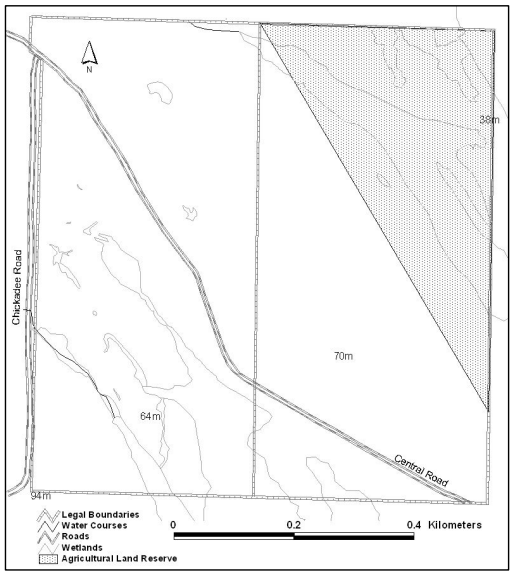
Development Permit Area 4 (Streams, Lakes and Wetlands) under Denman Island's Land Use Bylaw, is applicable to Pickles Marsh and Homestead Marsh. Both are also both part of the Beadnell Creek Watershed and are therefore subject to the Riparian Areas Regulation (RAR) of the provincial government, under the *Fish Protection Act*. (DPA4 and RAR areas are shown in Map 6).



Map 6. DPA4 & RAR in Settlement Lands

2.6.6 Species At Risk Act (SARA), Environment and Climate Change Canada

The Lands fall within an area classified as Critical Habitat for the Taylor's checkerspot butterfly under SARA. Since this species was first discovered on the property in 2005, DCA has been granted funding from the federal Habitat Stewardship Program (HSP) to carry out management of this Critical Habitat, based on current best practices, especially within a designated Butterfly Reserve area on the property (6.4.3; 6.6.9; 6.8.1).



Map 7. Settlement Lands ALR Portion

2.7 Governance and Official Community Plan

2.7.1 Zoning

Under the Denman Island Land Use Bylaw, the Lands are zoned Forestry (F), except for 12.97 hectares (32.05 acres) on the eastern parcel which are zoned Agriculture (A1) and are in the Agricultural Land Reserve (ALR). Map 7 shows the location of the ALR portion within the Lands. In the future, DCA intends to pursue a change of zoning from Forestry to Conservation Zoning for the portions of the Lands that are not in the ALR.

2.7.2 Infrastructure and Amenities

Existing structures on the Lands (See Map 8):

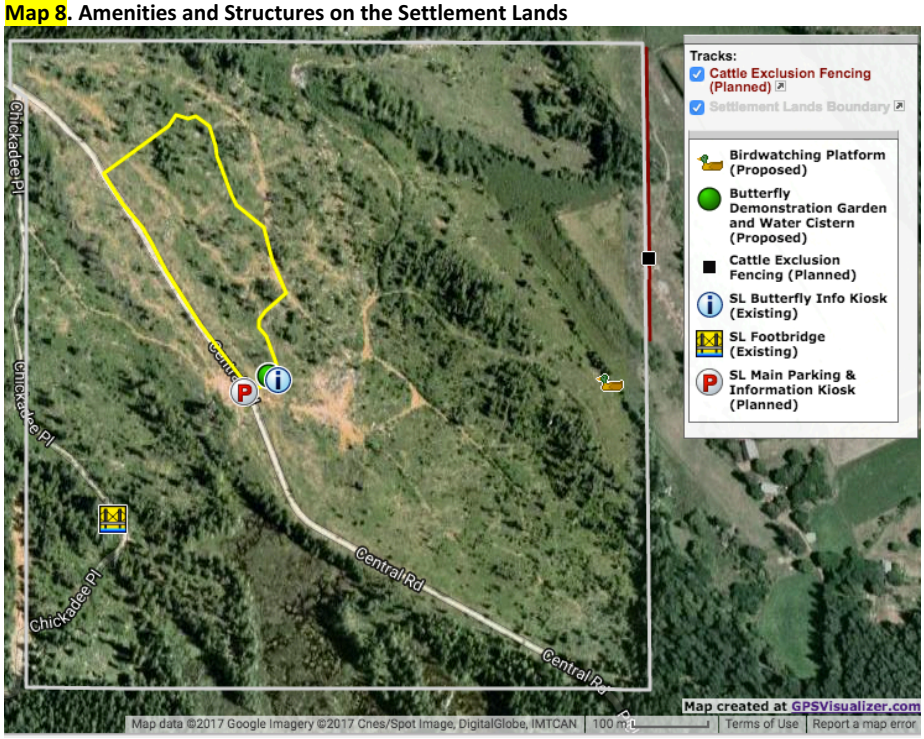
- A wooden bridge, recently restored, at the Pickles Creek crossing in the southwest corner of the Lands, along the Old Road Trail
- A Butterfly Reserve Information Kiosk

Planned or Proposed Amenities & Structures (See Map 8 and Sections 6 & 7):

- Signage and Boundary Markers (Existing and Planned)
- Main Parking Area (Existing) and Main Information Kiosk (Planned)
- Butterfly Demonstration Garden (including water cistern) (Proposed)
- Birdwatching Platform (Proposed)
- Cattle Exclusion Fencing along eastern boundary (see 4.1.1 6.7.2.1 & 7.1.5.1)

- Up to 4 Memorial or Nature Viewing Benches (None Proposed; possible locations TBD)

Map 8. Amenities and Structures on the Settlement Lands



*Note that Chickadee Pl. runs along entire Western property boundary – Road label on Google image used here is incorrect.

2.7.3 Utilities and Roads

Central Road is a non-gazetted Scenic/Heritage designated road that runs diagonally NW-SE through the two SL parcels. Road maintenance is carried out by Emcon Services Inc. and governed within the jurisdiction of the British Columbia Ministry of Transportation and Infrastructure (MOTI[2]). This portion of Central Road is classified by MOTI as an "unsurveyed travelled road" (Islands Trust, 1998) and a consultative process between MOTI and Islands Trust is to be initiated before any upgrading activities, as noted in their memorandum of understanding (Ministry of Transportation and Highways and Islands Trust, 1992). The MOU is included in Appendix X.

[2] Formerly Ministry of Transportation and Highways (MOTH)

Chickadee Lake Road follows the west boundary and its road allowance is external to the property.

3.0 Ecological Inventory

The Settlement Lands is complex of diverse ecosystems including forest, wetland, rocky cliff and previously-farmed meadows. The SL consists of three major forested slopes facing two different directions, three forested flat or undulating areas at different elevations, 2 major and six minor wetlands, two creeks, two riparian areas and the two farmed-meadows. The elevation of the terrain varies from 38 to 97m above sea level; the aspect ranges from NE to SW facing and the slope varies from flat to shear drop of up to 10m with more gradual slopes of over 30m. The terrain's surface includes dry rocky bluff, impenetrable rock flat, flowing creeks, isolated wetlands and inter-connected marsh systems. Occasional isolated rocks or erratics are reminders of the early impacts of glaciation that caused both erosion and deposition.

3.1 Species and Communities

The 2016 Baseline describes the ecological characteristics of nine major vegetation types across nineteen different terrain zones. Six CDFmm site series or ecological communities were clearly identified and three areas were considered under a 'management-impacted' category including the Butterfly Reserve, a riparian area that is being heavily harvested by beaver and the previously-farmed meadows.

3.1.1 Vegetation Types

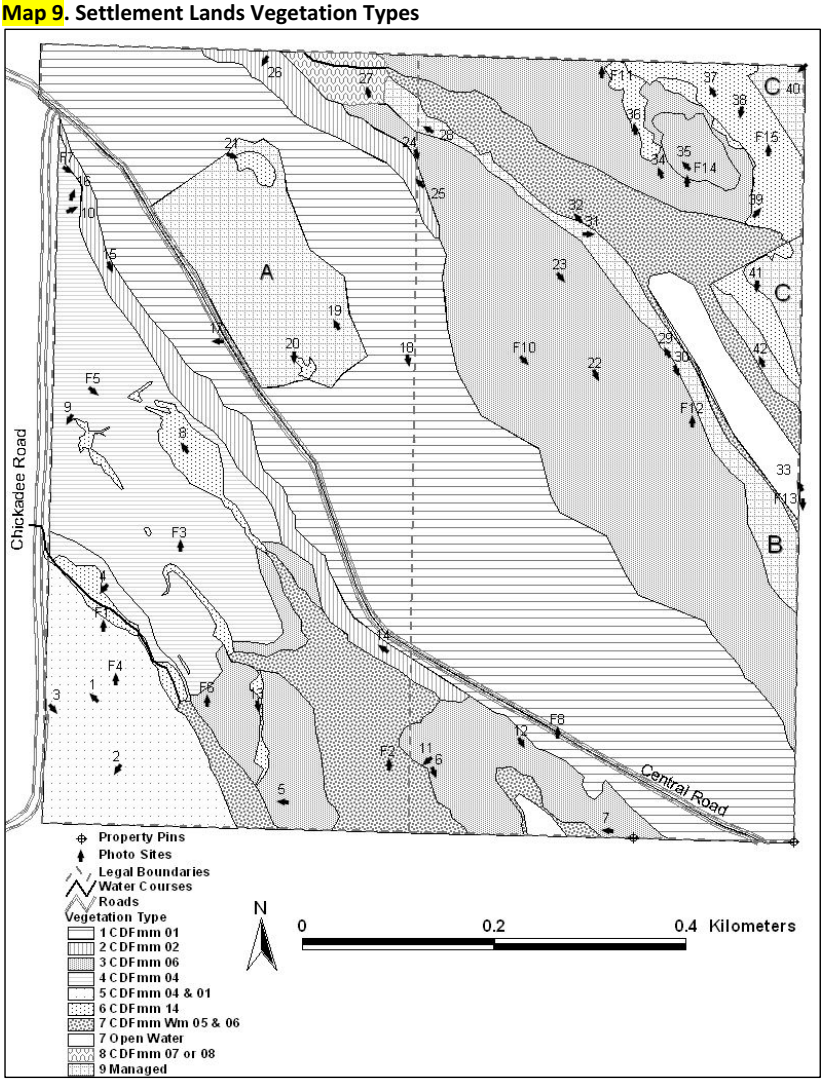
The major vegetation types (see Map 9) and site series of the Lands are:

- **Type 1 CDFmm 01** Douglas-fir – dull Oregon-grape *Pseudotsuga menziezii – Mahonia nervosa*
- **Type 2 CDFmm 02** Douglas-fir – arbutus *Pseudotsuga manziesii – Arbutus menziesii*
- **Type 3 CDFmm 06** Western redcedar, Grand fir – Foam flower *Thuja plicata, Abies grandis – Tiarella trifoliate*
- **Type 4 CDFmm 04** grand fir / dull Oregon-grape *Abies grandis* / *Mahonia nervosa*
- **Type 5 Complex - CDFmm 01 & CDFmm 04**
- **Type 6 CDFmm/14** red alder / slough sedge *Alnus rubra / Carex obnupta,* equivalent to **CDFmm** / **Ws 52** red alder – skunk cabbage *Alnus rubra – Lysichiton americanus* Complex
- **Type 7 Complex - CDFmm / Wm 05** Common cattail *Typha latifolia* & **CDFmm / Wm 06** Great bulrush (here: Soft-stemmed bulrush *Schoenoplectus tabernaemontani*)

- **Type 8 Young riparian, possible - CDFmm / 07** western redcedar / common snowberry Thuja plicata / Symphoricarpos albus or **CDFmm / 08** red alder / salmonberry Alnus rubra / Rubus spectabilis

- **Type 9 Management-impacted –** A: Butterfly Reserve, B: Beaver Impact, C: Farm Mangement.

Map 9. Settlement Lands Vegetation Types



3.1.2 Rare Species

Sixteen rare species at risk recorded in the Lands since DCA acquisition include:
Band-tailed pigeon *Patagioenas fasciata* is Blue-listed in BC and Special Concern for SARA.
Barn owl *Tyto alba* is Blue-listed in BC and Special Concern for SARA.

- Barn swallow *Hirundo rustica is* Blue-listed [3]in BC.
- Blue dasher dragonfly *Pachydiplax longipennis is* Blue-listed in BC.
- Common nighthawk *Chordeiles minor* is Threatened[4] for SARA[5].
- Common wood nymph butterfly *Cercyonis pegala* is Red-listed[6] in BC.
- Cutthroat Trout, *clarkii* subspecies *Oncorhynchus clarkii clarkii* is Blue-listed in BC.
- Dun skipper butterfly *Euphyes vestries* is Red-listed in BC and Threatened for SARA.
- Great blue heron *Ardea herodias* is Blue-listed in BC and Special Concern[7] for SARA.
- Little brown bat *Myotis lucifugus* is Endangered[8] for SARA
- Northern red-legged Frog *Rana aurora* is Blue-listed in BC and Special Concern for SARA.
- Olive-sided flycatcher *Contopus borealis* is Blue-listed in BC and Threatened for SARA.
- Taylor's checkerspot *Euphydryas editha taylori* is Red-listed in BC and Endangered for SARA.
- Western pine elfin butterfly *Incisalia eryphon* is Blue-listed in BC.
- Western pondhawk dragonfly *Erythemis collocata* is Blue-listed in BC.
- Western screech-owl *Otus kennicottii* is Blue-listed in BC and Special Concern for SARA.

3.1.3 Rare Ecosystem Communities

Six rare ecosystem communities, defined by their vegetation components, were identified:

- CDFmm 01 Douglas-fir / dull Oregon-grape *Pseudotsuga menziesii / Mahonia nervosa* is Red-listed in BC.
- CDFmm 02 Douglas-fir – arbutus *Pseudotsuga manziesii – Arbutus menziesii* is Red-listed in BC.
- CDFmm 06 grand fir / three-leaved foamflower *Abies grandis / Tiarella trifoliata* is Red-listed in BC.
- CDFmm 04 grand fir / dull Oregon-grape Abies grandis / Mahonia nervosa is Red-listed in BC.

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[3] **BC Blue-list** Includes any ecological community, and indigenous species and subspecies considered to be of special concern (formerly vulnerable) in British Columbia. Elements are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. Blue-listed elements are at risk, but are not Extirpated, Endangered or Threatened.

[4] **Threatened** is applied to a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

[5] **SARA** refers to the Canadian Government's Species at Risk Act.

[6] **BC Red-list** includes any ecological community, and indigenous species and subspecies that is extirpated, endangered, or threatened in British Columbia. Extirpated elements no longer exist in the wild in British Columbia, but do occur elsewhere. Endangered elements are facing imminent extirpation or extinction. Threatened elements are likely to become endangered if limiting factors are not reversed.

[7] **Special Concern** is applied to a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

[8] **Endangered** applies to a wildlife species that is facing imminent extirpation or extinction.

- CDFmm/14 red alder / slough sedge *Alnus rubra / Carex obnupta or equivalent* Ws 52 red alder – skunk cabbage *Alnus rubra – Lysichiton americanus* Blue-listed in BC.
- CDFmm / Wm 05 Common cattail *Typha latifolia* & CDFmm Wm 06 Great bulrush. The bulrush here is Soft-stemmed bulrush *Schoenoplectus tabernaemontani* Complex. Both Blue-listed in BC.

Probably due to the protection afforded by the extensive lobed wetlands, the Lands retain patches of original forest. More than 60 Douglas-firs, having a diameter at breast height (DBH) of greater than 900mm are dispersed throughout the property. These large trees, with the associated plant and animal species such as herbs, mosses, lichens and invertebrates may provide at least small refugia of original genetic material that may over time become dispersed throughout the recovering ecosystems of the Lands and the surrounding area.

3.2 Major Influencing Factors

The complex vegetation patterns on the Lands are a reflection of the temperature/moisture gradient from the local climate and hydrology, the underlying soil, and the previously noted variation in terrain. The current vegetation also reflects the various human influences of logging and agricultural use.

3.2.1 Climate

The climate of the Lands, in central Denman, is buffered by the surrounding landscape from some of the coastal weather systems. Also, from local observations, the area tends to be slightly cooler and wetter than the southern end of Denman. Environment Canada records for 1981 to 2010 for the Comox weather station, approximately 20 km north of the Lands, indicate that 78% of precipitation falls from October through March and that there is a mean total precipitation of 1153.6 millimetres per year (Environment Canada 2016). The warmest period is July and August with long-term normal maximums of less than 22.7ºC and 22.8ºC, respectively. Long-term minimums from December through February are above 0.5ºC.

Climate change has been identified as a potential risk that will affect the property in the future (see Section 4.6). Possibly related to climate change, a rare and unusual hurricane that swept Denman in 2006 affected some of the older trees on the Lands, in the open Uplands Zones. Several veteran old-growth Douglas-firs that were exposed above other vegetation were broken or toppled during the storm.

Denman Island is situated at the northern limit of the CDFmm biogeoclimatic zone and also tends to be a moisture-accumulating island with numerous shallow wetland depressions. Thus, due to a more northerly and wet climate, forests on Denman, while demonstrating southern Douglas-fir forest characteristics, also show some transitional characteristics to the Coastal Western hemlock xm1 zone.

3.2.2 Underlying Geology and Effects of Glaciation

The underlying geology of the Lands is primarily rock of the De Courcy formation, with the Swale marsh edge likely over the upper Northumberland formation. The De Courcy formation consists of layered beds of sandstone and conglomerate (composed of well-rounded pebble

and lesser cobble-sized volcanic, granitic and sedimentary rocks). Fragments and solid surfaces of sandstone are evident over much of the surface of the Lands. The soils are very shallow over most of the Lands; even the richer dark sandy loam of the Homestead area has coarse sandstone fragments.

Up to 14,000 years ago, glacial sheets, covered Denman Island to a depth of more than a kilometre. By moving rocks and gouging the conglomerate and sandstone bedrock they created the current tilted step-like backbone of Denman with only thin, patchy surficial deposits. This geological step-like exposure of tilted and alternating shelves/beds of sandstone and conglomerate and very little surface soil, that underlies the Lands, is easily seen in the rock–cut on the north side of the Chickadee Rd. Additionally, rock fragments, transported in the glacial ice, were deposited irregularly across the Lands as erratics—granitic or volcanic boulders, often at least 1m across.

3.2.3 Hydrology

The Lands have a variety of creek and wetland features resulting from slope drainage, impermeable surfaces, as well as beaver and human activities. The two major hydrologic features, Pickles Marsh and Homestead Marsh and their associated creeks are all part of the Beadnell Creek system; although the various sections are not connected on the Lands. The drainage from Pickles Marsh flows into the southern end of the Swale Marsh, and Homestead Marsh flows into the western side of the Swale. Ditches approximately 1m deep, created for agricultural land drainage, are located around Homestead Marsh and throughout the Swale. Beaver dams maintain the water level of both Pickles and Homestead Marshes. Beavers also continually attempt to dam ditches in the Swale, while local farmers thwart their efforts. The Beadnell Creek system is one of two major salmon spawning waterways on Denman and in addition, cutthroat trout occupy creek and marsh habitat on the Lands.

Isolated wetlands and wet pockets also occur in impermeable depressions, particularly in the Lowlands area. Some of the small wet depressions were deepened into linear ruts by logging equipment around 2000. Two small surface-isolated wetlands, also formerly important sites for breeding Taylor's checkerspot butterflies, are included in the Butterfly Reserve on the Uplands forest.

3.2.4 Land Use

Logging, both of the original timber and of the subsequent second growth in 2000, had major impacts on the vegetation and features of the Lands. Also, the various agricultural activities have altered and left impacts, including the original homestead, the previous use of the Swale Marsh Meadow and the current cattle grazing in the Swale Farm Grazing Meadow. These impacts are discussed in Section 2.5.3

3.3 Non-Vegetative Features

A variety of additional non-vegetative features are found within the Lands including:

- Beaver dams and lodges on Pickles and Homestead Marshes, and their drainage creeks. As noted, beavers maintain the hydrology of the major wetlands and creek flows. These beaver wetlands provide fresh water and habitat opportunities for numerous wildlife species. They also retain water, providing moisture for adjacent vegetation.

- Glacial erratics, isolated boulders often greater than 1m in diameter, are dispersed infrequently over the Lands.

- Old logging railway embankments remnants are in the Lowlands, Uplands and Homestead Forest terrain zones. The sections of these embankments are usually paired. At the time of the first logging, the area in which the Lands are situated was a central mill and logging camp where logs were processed.

- Cedar split-rail fences typical of Denman's early homesteads are present. An intact fence runs on the perimeter around the north and east sides of the old Home-site and Homestead Forest. Some portions of split rail are also along the southern border west of Homestead Marsh.

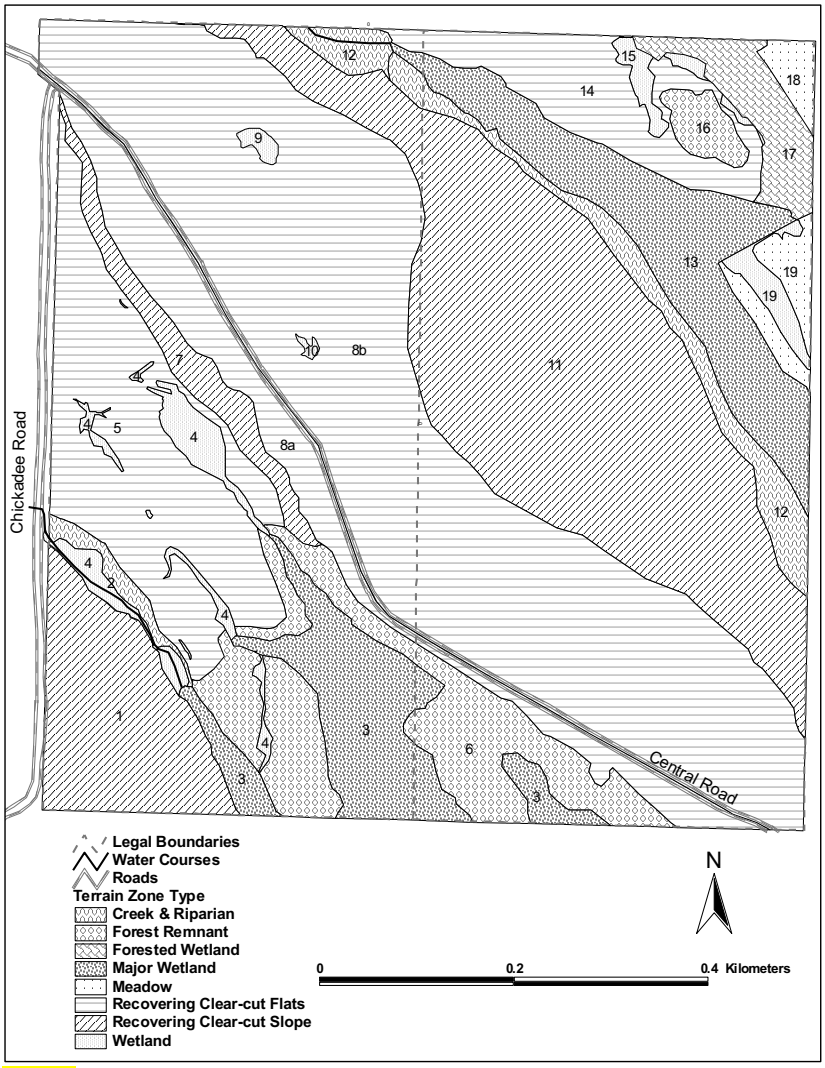
- Drainage ditches, about 1m deep, were part of earlier agricultural efforts to drain the prominent low-lying wetlands in the Homestead area, as well as in the Swale. More recently in 2015, the Swale farm neighbour built an earthen dam along the Homestead Marsh / Swale farm border to allow for fencing of this border. This dam currently runs almost across the marsh but does not block the drainage.

- Remains of previous dumping activities are present in several areas, particularly in the former Old Landfill Site and also along the Pickles Marsh Edge, where two vehicles remain partially buried and grown over by vegetation.

- Skid roads, from the 2000 logging, often outlined by rows of red alder, occur throughout the Lands. A few of these roads are proposed as future walking trails. Also, the remains of an older forestry track runs from the south side of Chickadee Road just east of Pickles Creek and enters the Lands going south. The track then turns west and crosses Pickles Creek before going uphill and back to Chickadee Road. A footbridge over the crossing at Pickles Creek was recently restored to provide safe passage.

3.4 Terrain Zones

In the Baseline, eight major vegetation types are described across nineteen terrain zones (Map 10). Among the terrain zones are three major benched-slopes facing two different directions and three extensive flat or undulating areas at different elevations. On the Lands there are four small pockets of residual forest within four large recovering messy clear-cuts and two previously farmed meadows. In addition, there are two small creeks, two major wetlands (one with three separate bays on the Lands) and six minor sedge wetlands. Refer to Appendix X for representative photographs of each terrain zone.



Map 10. Settlement Lands Terrain Zones

3.5 Wildlife

Fifteen rare at-risk species have been recorded in the Lands' diverse habitats since DCA acquisition. Nine rare animal species were seen or heard on the Lands during the 2016 Baseline inventory. A table of wildlife species found in each terrain zone, and complete plant and animal species lists for the Lands are found in Appendix X.

4.0 Threats and Risks to the Settlement Lands

4.1 Degradation of Riparian and Wetland Ecosystems

4.1.1 Harm to Beaver Population

Harm to the beaver population and the loss of beaver activities in maintaining dams and water levels would seriously damage the critical wetland features of the Lands. Principal threats to beavers on the Lands include: predation, disturbance and disease transfer from free-ranging dogs; repeated human disturbance of normal beaver activities, or physical interference with critical habitat, such as pollutant contamination of water or aquatic nutrient loading from agricultural activities resulting in harmful ecological changes.

4.1.2 Cattle Grazing from Neighbouring Property

As described in the Baseline, cattle from Swale Farm have access to graze on a 0.9 ha area of partially-flooded pasture along the eastern border of the Lands. This practice has maintained an open grassland/shallow wetland habitat that supports accompanying wildlife species, such as breeding killdeer, rails, grassland-edge-loving songbirds and many invertebrate species. The potential risks to the wetland area from the presence of cattle include surface water contamination from deposition of manure, among other things.
DCA approaches for the exclusion of cattle are outlined in Sections 6.7.4 and 6.8.2.

4.1.3 Public Access

Public access to sensitive wetland sections of the Lands has the potential to negatively impact these ecosystems, for instance through damage to and disturbance of wildlife habitat and introduction of invasive and alien species. For this reason, trails are minimized throughout the property, with no trail access provided around the major Pickles and Homestead Marshes.

4.1.4 Pollutants

Agricultural activities on surrounding lands could have impacts on the SL, depending on the practices used (such as the application of pesticides) by neighbouring landowners. Pollutants could poison wetland ecosystems or add to toxins that are accumulated through the food web.

4.1.5 Excessive nutrient loading

Excessive nutrient-loading or other pollutants in creeks and wetlands could be a concern, depending on the agricultural practices taking place on adjacent lands. Excessive nutrients could cause blooms that would choke out some species and lead to the growth of more nutrient-tolerant invasive species. These ecosystem changes would in turn impact Beaver and other wildlife.

4.2 Border encroachment

Since almost half of the Lands' borders are connected to other protected areas the risk of encroachment and associated impacts is reduced. However, unmarked long borders with private lands mean that inadvertent incursion into the Lands from these properties is possible. Different management goals on adjacent lands could pose some challenges; for instance, an

interconnected trails network linking with the nearby Provincial Park increase the likelihood that recreational uses permitted there, such as trail cycling, extend into the Lands.

Ensuring adequate boundary delineation (Section 6.7.3), and sufficiency and clarity of public information regarding the Purpose and Goals of the Lands (see Sections 6.3 and 6.6.8), will help to prevent negative impacts due to border encroachment.

4.3 Accidental Wildfire

Accidental wildfire that could result from several sources including the use of cars on Central Road through the Lands (hot undercarriage on grass, tossed-cigarette butts); unlawful campers; or use of trails in summer by careless smokers. Widespread fire could compromise the regenerating forest.
DCA approaches for fire hazard management are outlined in Section 6.11.

4.4 Invasive Alien Species and Disease

Invasive alien species, such as Scotch Broom, St. John's Wort, English Holly, Reed Canary Grass and European Black Slugs threaten the integrity of native species on the Lands. These plant species tend to dominate the habitat in which they grow and encroach upon the surrounding area such that they retard the regeneration of native species or out-compete them. Black Slugs are increasingly seen in wild lands on Denman and on Vancouver Island. These slugs may out-compete and seriously reduce Banana Slug populations, with unknown effects on the web of native plant and animal species. Active farming of the surrounding lands may also expose the Lands to further invasive alien species. DCA approaches for the control of invasive plants and animals are outlined in Section 6.9.

Another concern is the possible introduction, by visitors to the Lands, of new and more virulent forms of root-rot or other diseases. In addition, some farm practices such as spraying, or the introduction of new plant or animal species, could adversely affect the Lands' ecosystems. Information about biosecurity on the Lands could be included in the Main Information Kiosk for the property.

4.5 Climate Change

"Current and future climate change will impact forests, wetlands, rivers, and coastal areas, as well as the human communities that depend upon them."[9] The protection and conservation of ecosystems and lands, including the Lands, will provide options for the DCA to implement adaptive strategies that address ongoing climate change.

Wetlands, and small isolated populations, are particularly at risk for instability and possible loss and there is an expected increase in risk of wildfire incidence and severity. Although the Lands have not been specifically assessed for sensitivity to climate change, the wetlands have connectivity value for species travel between adjacent protected areas. They also contain at least one small isolated population of the endangered Taylor's checkerspot butterfly. There

[9] Reference needed

may be opportunity to develop climate change strategies for the Lands that complement those of the adjacent protected areas.

4.6 Wind

Wind, particularly on exposed sites, will continue to topple infirm or stressed trees, particularly as the regenerating forest canopy becomes crowded. This is an expected process of forest regeneration. Wind-throw along the borders with the private land could have more a severe impact on edge forests if the border trees on the private lands are cut. It may also have an impact on the ongoing maintenance of infrastructures such as power lines and fences on the Lands.

5.0 Community Consultation

DCA has a long history of engaging community members in efforts to conserve and protect lands in which the Society has an interest. Since acquiring the Lands, DCA has provided numerous opportunities for Denman Islanders to learn about the Lands and have input on DCA's plans for their conservation and management. Routine reviews of this Plan will ensure it remains relevant and effective in the context of changing ecological, political, climatic and other circumstances.

5.1 Adjacent Landowners

Neighbours from Chickadee Lake Farm and Swale Farm were invited to participate in two community information meetings about the Lands.

Consultations with a neighbouring property owner were undertaken regarding the construction of a fence intended to prevent cattle from Swale Farm from entering the sensitive wetland area at the northeast corner of the Lands (sections 6.7.4 and 6.8.2).

5.2 Local First Nations

Letters were sent to the K'ómoks, Qualicum and Tla'amin Bands advising them of the preparation of this Management Plan and inviting their input and participation in a Community Information Open House prior to registering the Conservation Covenant. The ongoing Treaty negotiations and assertions of Aboriginal Rights and Title to traditional territories by First Nations in this region should be recognized throughout Plan implementation.

5.3 Denman Island Community

5.3.1 Public Consultation Meetings

The Denman Island Community has been invited to participate in two Public Open Houses about the Lands:

(1) A Community Information Open House about the Conservation Proposal to Islands Trust Fund to Hold a Conservation Covenant on the Lands
(2) A Community Information Open House about the Draft SL Management Plan and Conservation Covenant

5.3.2 DCA Outreach

Through DCA's Outreach program, in addition to Public Consultation meetings, the Denman Island community has been invited to learn about the Lands by various means including the DCA website; Facebook page; newsletters; events; Annual General Meetings, and personal communication. In February 2016, 44 people were guided through a section of the Butterfly Reserve and oriented to various ecological features of the Lands. A guided walk to the Lands also took place in June 2013.

6.0 Management Plan

Settlement Lands Purpose

The Purpose of the Lands is to protect, restore, maintain and enhance the ecological values identified in the Baseline, and to ensure ongoing stewardship of the diverse ecosystems and species represented therein.

Overarching Goals for the Settlement Lands

(1) To conserve habitat for native wildlife and plant species;
(2) To provide for the use, enjoyment and education of the residents of Denman Island through low-impact activities such as walking, hiking and nature viewing, where appropriate; and,
(3) To undertake or endorse scientific research, monitoring and ecological restoration activities on the Lands that is consistent with the Intent of the Conservation Covenant.

6.1 Sharing of Management and Protection Responsibilities

Management of the Lands will be undertaken by DCA, possibly with additional support as warranted, and as capacity allows, from ITF.

6.2 Ecological Management Zones

Four Ecological Management Zones—groupings of terrain and vegetative features into larger areas (Map X)—were identified for the Lands, using the Baseline and Ecological Inventory. Zone-Specific Management Goals (outlined below) provide guidance for decision-making related to each Zone.

6.2.1 Goals for Management Zone 1: Pickles Marsh & Lowland Riparian

- Conserving and enhancing habitat for wildlife in Pickles Marsh wetland system, including populations of aquatic amphibian, invertebrate, mammal & bird species at risk: red-legged frog; beaver; cutthroat trout; common nighthawk; great blue heron; olive-sided flycatcher; band-tailed pigeon; barn owl; western screech owl; barn swallow; common wood nymph; blue dasher dragonfly; and many other aquatic-dependent species
- Monitoring of hydrological changes over time
- Protecting forested riparian ecosystems connected to headwaters of salmonid-bearing Beadnell watershed
- Protecting Coastal Douglas Fir-mm biogeoclimatic zone remnants with veteran old trees as biodiversity refugia

6.2.2 Goals for Management Zone 2: Pickles Slope

- Regeneration of forest & woodland areas
- Maintenance of travel corridors central to DCA Protected Areas Network (PAN) Vision
- Preservation of native flora; Prevention of encroachment of invasive species

6.2.3 Goals for Management Zone 3: Uplands, Isolated Wetlands, & Butterfly Reserve

- Conservation and enhancement of woodland and wetland habitats for at-risk invertebrate species including: Taylor's checkerspot (TC) butterfly; Dun skipper butterfly; common wood nymph butterfly; western pine elfin; western pondhawk dragonfly; blue dasher dragonfly; and other aquatic-dependent species
- Control of invasive species
- Prevention of impacts from Central Road such as refuse dumping

6.2.4 Goals for Management Zone 4: Old Homestead & Swale

- Conservation and enhancement of habitat for, and protection of, beavers and aquatic-dependent species
- Monitoring of hydrological changes over time
- Monitoring of agriculturally-impacted ecotone over time

6.3 Prohibited Uses

Section 4 of the Conservation Covenant for the Lands sets out restrictions on the use of the Covenant Area (Appendix X). In addition, risks to the ecological values of the Lands have been identified within the Baseline and in Section 4 of this Plan.

Based on covenant restrictions and identified threats and risks, the following activities are prohibited within the Lands:

(1) Dumping of refuse
(2) Cutting or removal of any indigenous vegetation except that which occurs within the Butterfly Reserve in accordance with best practices
(3) Domestic cultivation of any flora or fauna, with the exception of cultivation of native plant species within the Butterfly Reserve Butterfly Garden, in accordance with this Plan;
(4) Camping or overnight parking
(5) Smoking, or the creation of fires for any purpose
(6) Hunting, fishing, foraging, or grazing of domestic animals, or transport of domestic animals through or across the land or water surfaces of the Lands;
(7) Presence of domestic animals in the Lands, except on Central Road. Due to the sensitive nature of the wetlands, the significant wildlife species and the neighbouring farms, the intent is to minimize disturbance on the Lands. Thus, all visitors with accompanying domestic animals are requested to use Central Road, which runs through the centre of the property, while human walkers are invited to use the rough trails through these critical wildlife wetland habitats.

The above list is subject to change upon periodic revision of this Plan or identification of other activities deemed likely to violate the terms of the conservation covenant or negatively impact the values of the Lands.

6.4 Public Access and Amenities

Map 8 (Section 2.7) shows the locations of planned infrastructure and amenities. Future installations of infrastructure or amenities, and any alterations to the Lands made through the implementation of this Plan, will be documented with photographs and GPS locations.

6.4.1 Roads and Utilities Maintenance

Chickadee Road runs along the length of the western property boundary and is a public road, managed by the Ministry of Transportation and Infrastructure (MOTI) and maintained by Emcon Services Inc.

Central Road traverses the property from approximately the southeast corner to the northwest corner, and has been designated by MOTI and Islands Trust to be a Scenic/Heritage Road (see Section 2.7.3 and Appendix X). Because the land under this road is owned by DCA, MOTI and Emcon only maintain the travelled way.

[Refer to Hydro ROW and Sketch plan when it's done, and link to Section X above]

Measures such as non-chemical dust suppression may be considered in future to mitigate impacts associated with road maintenance that may compromise the ecological values of the Lands.

6.4.2 Parking

A small Central Parking Area is provided for visitors. Midway along Central Road, at a nexus of walking trails extending to the northeast and western sections of the property, and adjacent to the site of the Main Information Kiosk, an area of compacted soil which was once a logging landing has been selected for the Central Parking Area that accommodates 2-3 vehicles off the roadway. Vegetative barriers around its edges ensure vehicles stay within the designated area, and the installation of wooden bollards along the western edge may be considered in future.

Some visitors to the Lands park along Central and Chickadee Roads and it is anticipated that this will continue. Parking along the roads is restricted to the roadside. If necessary, signage will be considered along the roads where parking is observed, to encourage use of the designated Central Parking Area. A bicycle rack may be provided in future to provide a safe place for visitors to leave their bicycles while enjoying the Lands' pedestrian-only trails.

6.4.3 Trails

Several walking trails for nature appreciation have been designated, many of these along various skid roads created during recent logging. Designated public trails, as well as the limited-access Butterfly Reserve access trail and monitoring transect, are shown on Map 11.

Public trail routes were chosen to allow linkages between adjacent Provincial Park blocks and to leave wetland areas buffered from disturbance. Public trails may have signs to indicate prohibited uses. Equestrian traffic, bicycles and domestic animals including dogs are allowed only on Central Road. The Denman Public will be alerted, through signage at the Main Information Kiosk and along trails, that if this provision is not honoured fully the Lands will be permanently closed to dogs. Regular monitoring of trails will occur throughout the initial implementation phase for this Plan (5 years) and any dog owners encountered with dogs in areas where dogs are not permitted will be informed of this policy.

Roughly cleared wilderness trails throughout the Lands are minimally maintained for the purpose of providing safe public passage with minimal impact on surrounding vegetation and ecology. Trail surfaces will be maintained to a maximum width of 1m and corridors cleared through vegetation will be brushed out to accommodate the height of a walking person. Some sections of trail, especially those located in open clear-cut where broom invasion is a problem, may be cleared with power tools.

A small footbridge provides a safe crossing across Pickles Creek on the Old Road Trail in the southwest portion of the Lands. The crossing was recently restored and will be annually monitored for necessary maintenance.

From time to time, temporary trail closures may be needed throughout the Lands due to incidental concerns such as sensitive species or elevated fire risk. The need for trail closures will be determined by DCA through ongoing monitoring of the Lands and, where appropriate, will involve communications with the Denman Island Volunteer Fire Department. Signage may be posted at the Main Information Kiosk, and elsewhere if needed, to alert visitors about temporary trail closures.

6.4.4 Benches

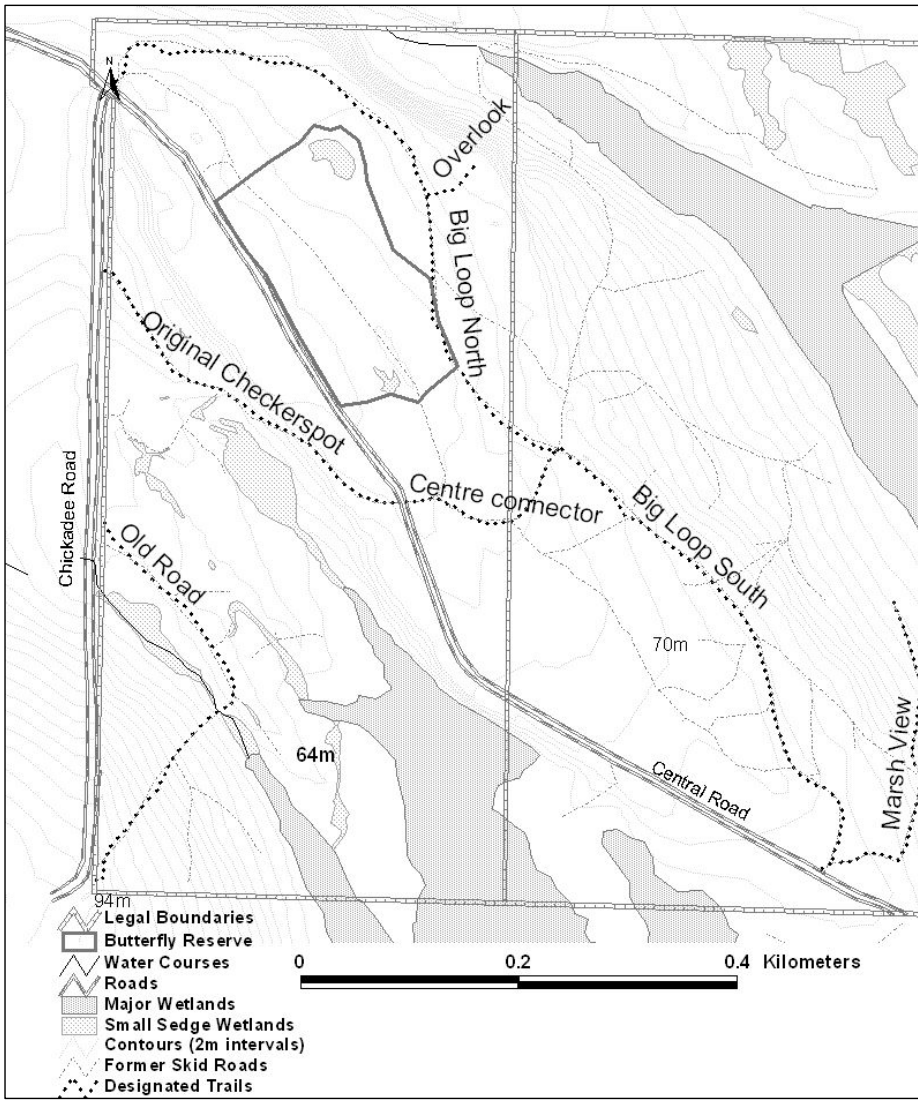
DCA's Memorial Bench Policy shall guide the approval, design, siting and installation of Memorial Benches on the Lands. A maximum of 4 benches for the purpose of resting and nature viewing may be installed, where and when appropriate, so long as they comply with the intent of the Covenant and this Plan.

6.4.5 Public Safety

DCA carries general public liability insurance covering Board members, contractors, volunteers and visitors within DCA lands.

Because trails throughout the Lands are minimally maintained they may not be universally accessible. For the purposes of public safety, main access trails are routinely inspected and cleared under the direction of the Land Manager. Some signage to ensure public safety may be needed (see 6.6). A safety barrier could be considered at the Overlook Trail viewpoint to prevent visitors from venturing too close to the steep slope there.

Map 11. Settlement Lands Designated Trails



[Erika to do - PHOTOS OF EACH TRAIL—Appendix X]

6.4.6 Kiosks

Two Information Kiosks provide interpretive and wayfinding information to visitors as well as facilitate public outreach through provision of educational resources, maps, photographs and other materials. Kiosk locations are shown on Map 8.

- Main Information Kiosk (Planned):

Located at the main entrance to & Parking Area for the Lands on Central Road; Wooden construction with a small awning for protection against the elements, positioned on a concrete pad; Sign area maximum 1.5x1.5m per side. Information to be displayed may include: maps and interpretive information; permitted and prohibited uses; covenant information; site history and acknowledgements; DCA contact information; occasional notices, etc.

- Butterfly Reserve Kiosk (Existing):

Located south of the Butterfly Reserve, at the junction of the Centre Connector and Butterfly Access trails; Wooden construction with a small awning for protection against the elements, positioned on a concrete pad; Sign area 1x1m per side; Information to be displayed may include: maps and interpretive information; descriptions of butterfly/pollinator species and habitat; land use restrictions; etc.

6.4.7 Demonstration Butterfly Garden (Proposed)

Design, installation and maintenance of a small (<0.02 hectares) Butterfly Garden, near the main entrance to the Lands and the Butterfly Reserve, may be undertaken if capacity allows (Proposed location shown in Map 8). This fenced garden would be planted with indigenous flora attractive to butterflies. An above ground water cistern to provide, for irrigation, would be located in or near the garden area. The cistern would be located close enough to Central Road to allow filling by a mobile water delivery service, and may be designed to capture rainwater from the roof of the Butterfly Reserve Kiosk. Plants would have identification signs, and information would be provided on how to establish such a garden.

6.4.8 Birdwatching Platform (Proposed)

Because the Lands have significant opportunities for wildlife and bird viewing, especially in the wetland areas, a simple birdwatching platform may be considered in future. Such a structure would have a total footprint of no more than 6 square metres and a maximum height of 3 metres, and could include interpretive and wayfinding signage. The approximate location proposed for the platform is shown on Map 8.

6.5 Signage and Boundary Delineation

Signage and boundary markers are required for a variety of purposes including those outlined below. Care will be taken to ensure that signs and boundary markers are as unobtrusive as possible, and based on clearly defined needs. The creation and installation of signage on the Lands will comply with the Denman Island Land Use Bylaw, which guides the use of signs in accordance with property zoning.

6.5.1 Directional Signs

Trails may have directional or wayfinding signage as needed to provide safe public access and protect sensitive areas from disturbance. Consideration will be given to installation of "You are Here" map signs in a few locations.

6.5.2 Signage Denoting Permitted and Prohibited Uses

"No Hunting" signs may be posted in various locations along Central Road and Chickadee Road, and on property boundaries. These may be removed outside of hunting season.

"No Smoking/No Fires" signs may be placed at trail heads and on Central Road and Chickadee Road. Postings to warn the public of trail closures due to high fire risk will be undertaken in cooperation with the Denman Island Volunteer Fire Department.

"No Dumping" signs may be placed at various points along Central and Chickadee Roads to discourage dumping of refuse within the Lands.

6.5.3 Warning/Alert signs

From time to time, signage may be needed to alert visitors of various hazards or danger areas, including steep slopes, remnants from the old landfill sites, or sensitive ecosystems or wildlife habitats.

6.5.4 Boundary Markers and Survey Pins

Survey pins, boundary markers, and flagging may be used to delineate property boundaries, as well as the boundaries of smaller specified land use areas within the Lands, such as the Butterfly Reserve and the Wetland and Beaver Reserve.

6.5.5 Fencing

Fencing will be installed in collaboration with the neighbour, sited along up to 500m of the Lands' eastern boundary, to restrict cattle from accessing the Homestead Marsh area. This fencing will be a combination of wire mesh (4') and barbed wire (strung above wire mesh) hung on wooden posts. (See also Sections 6.6.4 and 6.8.2.)

Given that the property lies adjacent to various farmed and other private lands, it may be necessary in future to install additional fencing. Such fencing would require approval of the covenant holder. Where possible, this fencing will be designed to allow the uninhibited movement of wild animals.

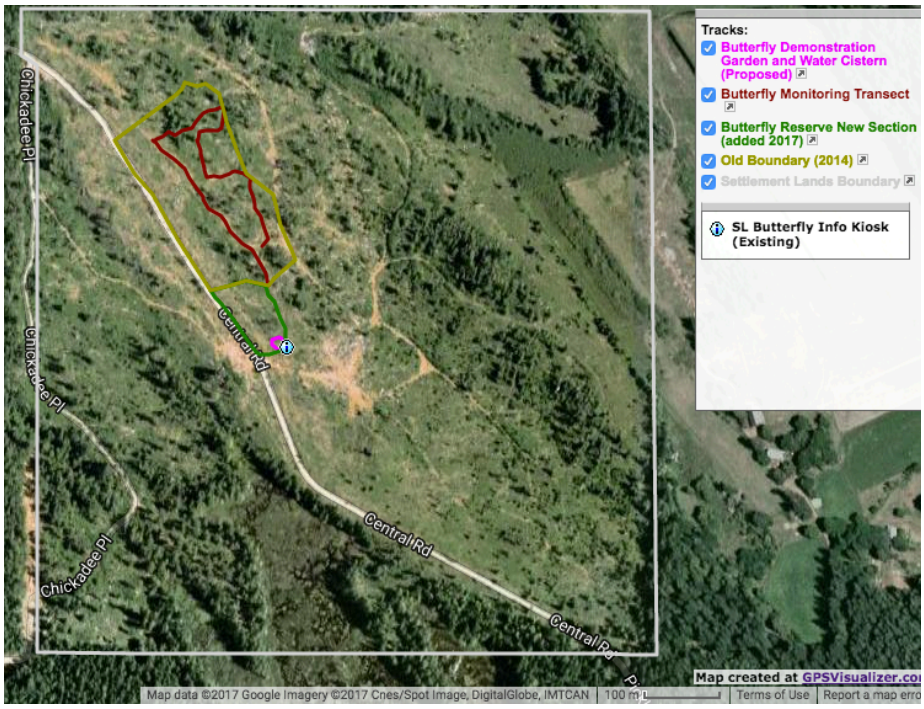
6.6 Protection of Sensitive Ecosystems and Species at Risk

6.6.1 Butterfly Reserve

Because suitable protected butterfly habitat is scarce and the endangered Taylor's checkerspot butterfly is found on the site, management of a small portion of the Lands began in 2014 with a grant from the Habitat Stewardship Program (HSP). Initial management included removal of

young trees to retain low vegetation around the small wetlands and along a linking travel corridor that was an old logging road. In addition, encroaching Scotch broom was removed. Work in the Reserve continued through 2015 and 2016, and signage was designed and installed to alert the public to the reserve boundaries. Initially, the Butterfly Reserve encompassed 3.12 hectares, as is reflected in the Baseline. In 2017, the boundary was extended to include an additional 0.5 hectares at its south end where a kiosk is built and a Demonstration Butterfly Garden is proposed (Section 6.6.9). In Map 12, the full 3.62 hectare Reserve, with its initial boundary and the subsequent extension, is shown.

Map 12. Settlement Lands Butterfly Reserve



In addition to habitat maintenance efforts, a 600m monitoring transect (Map 12) was established to systematically record sightings of TC and other species within the Reserve, and distance markers are placed along this transect at 50m intervals. Monitoring along this transect began in spring 2016 and continues annually during the principal flight season of TCs (late March-late June).

Ongoing data collection about various host plants and other species along this transect route is anticipated. Funding has been secured for habitat work in 2017, and additional funds will be sought to continue habitat maintenance and restoration work over the long term.

6.7 Ecological Restoration and Management of Ecological Changes

6.7.1 Control of Invasive Plants

A number of introduced species are present on the Lands (Appendix X). Of these, the most serious concerns are Scotch Broom, English Holly and Reed Canary Grass.
Efforts to date for the removal of Scotch Broom (*Cytisus scoparius*) on the Lands include volunteer 'work bees' plus contracted labour to maintain and enhance habitat within the Butterfly Reserve. The preferred methods for Scotch Broom control are pulling young plants or cutting at the base (root tissue) of large plants, from areas which will remain open (particularly the Butterfly Reserve and landing areas) or are likely sources of further spread (e.g. along the roads and trails). Scotch Broom control should be carried out at flowering time or in late autumn to spring. Cut plants can be removed from the Lands if capacity allows, or left on-site, placed in small, scattered low piles to avoid the creation of fire hazards.

English Holly (*Ilex aquifolium*) spreads quickly and is difficult to control once established. Annual monitoring for and documentation of Holly plants across the property should be carried out by the Land Manager. Small plants should be removed by pulling or digging up from the roots immediately, and larger plants should be cut, or dug out if possible, as soon as labour is available to do so. Cut plants should be monitored for re-growth, and any new shoots removed immediately.

Reed Canary Grass (RCG) (*Phalaris arundinacea*) is highly invasive and nearly impossible to remove completely without significant impacts on surrounding ecology. No actions are planned for the removal of RCG on the Lands at present. However, monitoring over time may prompt the consideration of future control actions for RCG, especially in areas where it is not yet well established and where preventing further spread may be possible through manual digging of isolated patches.

Bracken fern (*Pteridium*) is native, but is invading grassy areas within the Butterfly Reserve and as such is detrimental to nectar source species. Bracken should be controlled by pulling fronds or cutting near to the base during the growing period (June-September). Some bracken management occurred in early 2016, and this will continue if funding for this effort can be secured at the appropriate time of year.

Narrow-leaved everlasting (flat) pea (*Lathyrus sp.*) is an introduced species becoming a serious issue on Denman Island, particularly in southwest coastal areas, and has appeared on the Lands in recent years. It is found at the designated parking spot on Central Road and along the east side of Chickadee Road. Control of this species requires at least removal of any obvious pea stems and flowers, or at best digging out the deep roots. Surveys for occurrences of the plant will be carried out and control measures instituted as soon as possible.

English Hawthorne is highly invasive and will be controlled by pulling small plants or cutting larger plants to ground level.

Three garden-escapees likely from the former dumping of garden waste are also a concern on the Lands:

Vinca sp.	Lesser Periwinkle
Hypericum sp.	St. John's-wort
Narcissus pseudonarcissus	Daffodil

The Lesser Periwinkle and St. John's-wort are currently growing intermingled in a dense patch, covering an area of ~715 square metres, along the upland ridge about 25 to 50 metres southeast of the junction of Central and Chickadee Roads, at the edge of the old landfill site (Section 2.5.4). At present, this is the only known location of either plant, and monitoring will be undertaken to identify future infestations and any further spread in existing sites. Control methods and their associated impacts should be investigated.

In the light of climate change, and associated alterations to vegetation on the Lands, invasive species of concern are likely to change over time. Shade-tolerant Daphne and English holly may become more problematic. Monitoring will include recording occurrences of such species and, if possible, physical removal will be carried out when the plants are still small and non-seedbearing. As the forest regenerates on the Lands, there will likely be a reduction in the number of invasive species because most of them prefer open land, being intolerant of deep shade.

6.7.2 Control of Invasive Animals

Non-native animal species present on the Lands include the Cabbage white butterfly and the European black slug. It is not clear what effect such species have on native species and because control will be difficult no control actions are planned. These and other non-native and potentially invasive species of concern, including the American bullfrog (*Lithobates catesbeianus*), Virginia opossum (*Didelphis viginiana*) and the European rabbit (*Oryctolagus cuniculus*), will be the focus of monitoring efforts in the future.

6.7.3 Restoration of Old Landfill and Dumping Sites

As noted above (Section 2.5.4) and in Appendix X, a few areas on the Lands have been subject to dumping of refuse. In 2016 volunteers successfully removed many of the remaining foreign materials from previous dumping, though some larger or buried items remain. Further ecological restoration of old dump sites will be considered. Efforts to remove smaller items may be continued as capacity allows. Removal of larger debris would require machinery and is likely to cause significant erosion of the slopes into which it is embedded.

An assessment of the impacts of larger scale remediation activities should be carried out to inform possible future management of areas where dumping has occurred. Additional signage

will be posted and public awareness efforts undertaken if it is found that unauthorized dumping on the Lands continues.

6.8 Scientific Research and Education

The Lands will be considered for the hosting of educational and scientific research activities on a case-by-case basis. The Baseline describes its unique and varied ecological values and features and can provide direction for research and educational activities. Educational and scientific research activities must be in accordance with this Plan and comply with the terms of the ITF Covenant, and are subject to approval by the DCA Board of Directors.

A principal part of DCA community outreach is the organization of presentations and outings relevant to land conservation and stewardship on Denman Island and the surrounding region. Given the significant conservation values of the Lands it is anticipated that some of the DCA 'Walks and Talks' will take place there. To date, two 'Walks and Talks' have occurred: a tour of the Butterfly Reserve in February 2016, and a property walk in June 2013.

6.9 Fire Hazard Management

Although wildfire has been a rare occurrence in this ecosystem, it could still pose a risk to the Lands (Section 4.3), especially given that fire incidence and severity across the province is increasing. If accumulations of combustible material are found along human travel routes in the Lands, they will be scattered away from the travel area to reduce the risk of fire. Debris from the clearing of invasive species such as Scotch broom will be removed from the Lands, or placed in small, scattered piles.

Users of the Lands will be encouraged, through signage and other means of public information as needed, to extinguish any fire they see or to report the fire to the Denman Island Volunteer Fire Department (DIVFD). If necessary, DCA will assist DIVFD with restricting public access through the closure of trails during times of extreme fire hazard.

7.0 Action Items

Priority Level	Action ID	Action Description	Relevant SL Objective(s)	Relevant MP Section(s)	Threat/Risk or Goal Addressed	Specific Location(s)	Target Date	Budget or Other Considerations
Immediate (1-2 years)	I-1	Install non-slip surface on restored footbridge on Old Road trail	2	6.4.3; 6.4.5	Safe and Appropriate Public Access while buffering sensitive areas from disturbance	Old Road Trail Pickles Creek crossing	2017	Metal diamond mesh (lath) is best suited for this purpose.
Immediate (1-2 years)	I-2	Install barriers or to restrict vehicle access beyond Central Parking Area	2	6.4.2	Safe and Appropriate Public Access while buffering sensitive areas from disturbance	Central Parking Area	2017	$50 previously approved by DCA for materials
Immediate (1-2 years)	I-3	Install Main Information Kiosk; Install boundary markers, trail markers as needed	2		Public Information; Safe and Appropriate Public Access while buffering sensitive areas from disturbance	Northeast corner; Wetland Beaver Reserve	2017	
Immediate (1-2 years)	I-4	Install signage: -no hunting -no dumping -no smoking/fires-extinguish fires seen or report to DIVFD -no dogs on trails -danger areas -user liability -Reserve areas	2			Various locations according to MP	2017-2018	
Immediate (1-2 years)	I-5	Provide interpretive information on Kiosks	2			Main Information Kiosk; Central Parking Area	2017	
Immediate (1-2 years)	I-6	Initial monitoring of trails for presence of dogs; Creation of public awareness information and/or signage as needed re: 'No Dogs on SL Trails' policy	1, 2		Degradation of Riparian and Wetland Ecosystems	All trails	2017-2018	
Immediate (1-2 years)	I-7	Assess need for safety barrier at overlook trail, and install if needed	2			Overlook Trail eastern end	2018	
Immediate (1-2 years)	I-8	Control/remove Scotch broom: cut or pull plants and place in small, scattered piles or remove	1, 3	4.4	Invasive Alien Species		2017-2018 May/June or late autumn to early spring	

		from site, to minimize fire hazard						
Immediate (1-2 years)	I-9	English holly: annual monitoring by DCA Land Manager; cut observed plants	1, 3	4.4	Invasive Alien Species		2017-2018	
Immediate (1-2 years)	I-10	St. John's Wort/Periwinkle: Investigate possible control methods and their associated impacts.	1, 3	4.4	Invasive Alien Species		2017-2018	
Immediate (1-2 years)	I-11	Everlasting pea: Remove pea stems and flowers, or manually dig and remove plants along Chickadee Rd and at Central Parking Area.; Survey for additional plants and remove as capacity allows.	1, 3	4.4	Invasive Alien Species		2017, as soon as possible Spring (April-June)	
Immediate (1-2 years)	I-12	Work with A. Schmidt to install up to 500 metres of cattle fencing along eastern boundary with Swale Farm	1, 3	4.1; 4.1.1	Degradation of Riparian and Wetland Ecosystems - cattle grazing; Boundary encroachment	Along northernmost ~500m of eastern property boundary	2017 Post installation in spring 2017	Grant funding sought from NWCF and HCTF; cost sharing with Alan Schmidt
Priority Level	**Action ID**	**Action Description**	**SL Objective Addressed**	**Relevant MP Sections**	**Threat/Risk Addressed**	**Specific Location(s)**	**Target Date of Implementation**	**Budget or other considerations**
Short-Term (3-4 years	S-1	Assess impacts of further restoration of old landfill and dumping sites: Continue hand removal of surface debris as capacity allows. Consider mechanical removal of larger embedded debris and remediation of those sites;	1	2.5.4; 6.9.3	Degradation of Riparian and Wetland Ecosystems;	Old Landfill and Pickles Marsh Edge		
Short-Term (3-4 years	S-2	Install bicycle rack	2		n/a	Central Parking Area		
Short-Term (3-4 years	S-3	Install water depth gauges and purchase h20 testing instrumentation; Begin monitoring program and data collection for water levels and quality	1, 3	4.5	Degradation of Riparian and Wetland Ecosystems; Potential threats: pollutants, excessive nutrient loading and climate change)	Pickles Marsh; Homestead Marsh; Transect Marsh; Big Tree Marsh	2017-19	Grant funding sought - NWCF, 2017-2019

Short-Term (3-4 years	S-4	Bracken fern: Remove from Butterfly reserve areas as warranted, according to best practices	1, 3	4.4	Invasive Alien Species	Butterfly Reserve	Pull plants from June to September	Funding must be secured at appropriate time of year to undertake this action
Priority Level	**Action ID**	**Action Description**	**SL Objective Addressed**	**Relevant MP Sections**	**Threat/Risk Addressed**	**Specific Location(s)**	**Target Date of Implementation**	**Budget or other considerations**
Mid- to Long-Term (5+ years)	ML-1	Consider creation of SL biosecurity plan	1, 2, 3	4.4	Invasive Alien Species - Root Rot etc.			
Mid- to Long-Term (5+ years)	ML-2	English Hawthorne: survey SL and pull or cut plants to ground level	1, 3	4.4	Invasive Alien Species			
Mid- to Long-Term (5+ years)	ML-3	Asses Reed Canary Grass; Create plan for remediation of invaded sites;	1, 3	4.4	Invasive Alien Species			Grant funding sought - NWCF 2017-2019
Mid- to Long-Term (5+ years)	ML-4	Monitor SL for signs of regeneration of invasive species where previously removed; removal of and regenerating plants	1, 3	4.4	Invasive Alien Species			
Mid- to Long-Term (5+ years)	ML-5	Monitor SL for occurrence of previously undocumented invasive species (i.e. daffodils, American bullfrog, opossum, European rabbit); GPS record new instances; Consider future controls if species observed	1, 3	4.4	Invasive Alien Species			
Mid- to Long-Term (5+ years)	ML-6	Consider design and installation of 'you are here' maps	2					
Mid- to Long-Term (5+ years)	ML-7	Monitor and mitigate impacts (i.e. dust) of road use on adjacent vegetation	1, 3					
Mid- to Long-Term (5+ years)	ML-8	Assess need for additional boundary fencing			Boundary encroachment			
Priority Level	**Action ID**	**Action Description**	**SL Objective Addressed**	**Relevant MP Sections**	**Threat/Risk Addressed**	**Specific Location(s)**	**Target Date of Implementation**	**Budget requirements if known**
Ongoing	O-1	Scatter combustible debris found near trails to reduce fire risk	1, 2	4.3	Fire Hazard		n/a	
Ongoing	0-2	Consider installation of signage to encourage use of Central Parking Area	2	6.6.2		Central Rd, Chickadee Rd	n/a	material cost of signage ~$15 per square foot for alupanel signs

Ongoing	O-3	Habitat stewardship work in Butterfly Reserve: -habitat enhancement; -transect monitoring; -education and scientific research; -consider creation of butterfly garden	1, 3			Butterfly Reserve		Possible continued HSP funding through BC Ministry of Environment
Ongoing	O-4	Refer to DCA protocol regarding any roads/utilities works						
Ongoing	O-5	Maintain trails (trail surface max 1m wide and brushed out to height of walking person) to ensure public safety; Use of power tools must not occur from mid-February through the end of May	2			Trails		
Ongoing	O-6	Monitor existing infrastructure and amenities to ensure public safety; update Record of SL infrastructure & Amenities	2				Annual	
Ongoing	O-7	Asses need for trail closure due to extreme fire risk, in collaboration with DIVFD; Post trail closure signage, if warranted	2	4.3	Fire Hazard			
Ongoing	O-8	Accompany ITF covenant monitors on annual site visits; Limit monitoring access to Butterfly Reserve from Feb-April	1, 3					
Ongoing	O-9	Consider educational and scientific research activities on a case-by-case basis, using Baseline for direction	3					
Ongoing	O-10	Control and remove invasive species as warranted.	1, 3	4.4	Invasive Alien Species			
Priority Level	**Action ID**	**Action Description**	**SL Objective Addressed**	**Relevant MP Sections**	**Threat/Risk Addressed**	**Specific Location(s)**	**Target Date of Implementation**	**Budget requirements if known**
Un-prioritized (Implement as capacity allows)	U-1	Pursue SL change of zoning to conservation						
Un-prioritized (Implement as capacity allows)	U-2	Develop climate change strategies for the SL						

Un-prioritized (Implement as capacity allows)	U-3	Consultation with First Nations about traditional use of SL						
Un-prioritized (Implement as capacity allows)	U-4	Consider creation of Butterfly Garden	1, 3			Butterfly Reserve		grant funding sought - HCTF 2017-2020
Un-prioritized (Implement as capacity allows)	U-5	Install a limited number of Memorial and Nature Viewing benches						
Un-prioritized (Implement as capacity allows)	U-6	Construct small Equipment Shed				Butterfly Reserve	target completion by 2021	
Un-prioritized (Implement as capacity allows)	U-7	Construct birdwatching platform				South edge of Homestead Marsh, just outside boundary of Wetland and Beaver Reserve		grant funding sought - HCTF 2017-2020
Un-prioritized (Implement as capacity allows)	U-8	Monitor beaver populations				Homestead Marsh; Pickles Marsh		grant funding sought - NWCF

8.0 Monitoring Program

DCA carries out monitoring to ensure ongoing preservation of the natural values of the Lands, and to ensure that public access and activities are in compliance with the Covenant and Management Plan.

At present, DCA monitoring includes:

- Scientific observation along a 600m Butterfly Transect within the Butterfly Reserve
- Monitoring of the Lands for the presence and extent of invasive species
- Monitoring of amenities and infrastructure including signage, parking areas, barriers, trails and boundary markers, etc. to ensure public safety and visitor compliance with permitted and prohibited uses within the Lands, and that ongoing routine maintenance is carried out as needed.

Future DCA monitoring could include:

- Monitoring for occurrences of previously unrecorded introduced or invasive alien species
- Observation of impacts of traffic on roadside vegetation
- Observation of climate change impacts over time

8.1 Covenant Area Monitoring

The Islands Trust Fund Board holds a Conservation Covenant on the Lands and conducts annual monitoring of the property to ensure owner compliance with the covenant terms. Where possible, DCA personnel will accompany monitors when they conduct this monitoring. Monitoring within the Butterfly Reserve should not be scheduled between February and April, when the post-diapause larvae of Taylor's checkerspot butterfly are active.

9.0 Conclusion

NOT SURE IF WE NEED THIS? Would just be redundant?

10.0 References

10.1 Documents relating to the Settlement Lands and Denman Island

Balke, J. 2007. Ecological Overview Inner Forest Marsh Reserve/the Settlement Lands. report to DCA.

Balke, J.M.E., Miskelly, J. 2007. *Taylor's Checkerspot Euphydryas editha taylori and rare dragonflies on Denman Island, B.C.* 2007. Report to GOERT, Victoria, BC.

Denman Conservancy Association. 2014. *Draft Guide to the stewardship of Taylor's Checkerspot Euphydryas editha taylori on Denman Island.* Report to the Habitat Stewardship Program, Environment Canada

Fyson, A. 2014. *Settlement Lands Taylor's Checkerspot reserve*. Draft description and management plan. Fyson, A. 2015. Plant list for the Settlement Lands – updated 2015.

Fyson, A. 2015. *Vegetation control in the Settlement Lands butterfly reserve*. Report to J. Heron, Ministry of Environment, BC.

Guppy, C.S. 2007. *Taylor's Checkerspot (Euphydryas editha taylori) on the Denman Island Settlement Lands*. Report for Parks Canada, Victoria.

Isle West Appraisals Ltd. 2006. Appraisal: Central Road lands, Denman Island, BC.

Millen, J. 2015. *Report of former dump sites on Settlement Lands, Denman Island, BC.* Report to Denman Conservancy Lands Committee.

10.2 Other Documents Relevant to the Settlement Lands Management Plan

Clarke, S.A., Green, D. G., Bourn, N. A. and Hoare, D. J. 2011. *Woodland management for butterflies and moths: a best practice guide*. Butterfly Conservation, Wareham, Dorset, UK. Available at <http://butterfly-conservation.org/3976/Woodland-managementforbutterfliesandmoths.html>

E-Flora BC, 'Invasive, Noxious and Problem Plants Of British Columbia March 2012 update,' accessed 01.15.2017
<http://ibis.geog.ubc.ca/biodiversity/eflora/Invasive_Species_Checklist_2012.pdf>

Islands Trust. 1998. Scenic and Heritage Roads. Fax Memorandum received by Denman Local Trust Committee from David Marlor regarding the scenic heritage roads on Denman as approved by the Ministry of Transportation and Highways 1996.

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Ministry of Transportation and Highways and Islands Trust. 1992. Memorandum of Understanding regarding Road standards and classification and MOTH/IT consultative process in the Islands Trust area. Available at: www.islandstrust.bc.ca/tc/pdf/orgagrdec081992pro.pdf.

APPENDICES (TBC)

APPENDIX X. Community and Public Consultation Meetings

Community Information Open House: Settlement Lands Conservation Proposal to ITF

In September 2015, an open house was held by DCA for the purpose of showcasing and garnering community feedback about a draft Conservation Proposal for the Lands. Visual displays, photographs, and reports outlined historical, cultural and ecological attributes. Copies of the draft Proposal were made available online in advance of the open house, which was publicized in the Island Grapevine and Flagstone; on the DCA website and Facebook page; by direct communication between the Land Manager and relevant agencies and neighbours (email/phone/in-person); and by word of mouth.

Approximately 60 people attended. A feedback form was provided and attendees were encouraged to provide comments in paper format or via email. 13 feedback forms were submitted and the comments from these provided valuable community input for the Proposal, especially with regards to the desire for public trails through the Lands. Following the open house, the Settlement Lands Committee presented the revised Proposal to the DCA Board and, once approved, submitted to the Islands Trust Fund Board (TFB). This proposal to TFB was approved in early 2016.

Public Information Open House: Management Plan and Conservation Covenant Drafts

A Public Information Open House on March 4, 2017, showcased drafts of the Management Plan and Conservation Covenant. This open house was advertised through the local *Island Grapevine* and DCA Newsletter, and through personal and written communication with relevant community members, neighbours and the K'ômoks First Nation. The event was attended by approximately # people and important feedback was about DCA plans for ongoing management of the Lands. Input was offered on [...].

APPENDIX X. Islands Trust MOU with MOTI

APPENDIX X. Old landfill and Dumping site reports

APPENDIX X. Conservation Covenant Section 4: Restricted Uses

4.1 Except as expressly permitted in this Agreement, the Owner must not do anything, omit to do anything, allow anything to be done or allow the omission of anything, that does or could reasonably be expected to destroy, impair, diminish, negatively affect or alter the Lands or the Amenities from the condition described in the Report.
4.2 Without restricting the generality of section 4.1, the Owner must not, except in accordance with the Management Plan, or with the prior written approval of the Covenant Holder, in the Covenant Holder's sole discretion:
(a) use or permit the use of the Lands for an activity or use which:
(i) causes or allows silts, leachates, fills or other deleterious substances to be released into any watercourse on the Lands;
(ii) causes the erosion of the Lands to occur;
(iii) causes or facilitates the loss of soil on the Lands;
(iv) alters or interferes with the hydrology of the Lands, including by the diversion of natural drainage or flow of water in, on or through the Lands;
(v) causes or allows fill, rubbish, ashes, garbage, waste or other material foreign to the Lands to be deposited in, on or under the Lands;
(vi) causes or allows any component of the Lands, including soil, gravel or rock, to be disturbed, explored for, moved, removed from or deposited in or on the Lands;
(vii) causes or allows pesticides, including but not limited to herbicides, insecticides or fungicides, to be applied to or introduced onto the Lands; or
(viii) causes or allows any indigenous flora on the Lands to be cut down, removed, defoliated or in any way tampered with;
(b) use or permit the use of the Lands for hunting, fishing, gathering or for the grazing of domestic animals;
(c) construct, build, affix or place on the Lands any buildings, structures, fixtures or improvements of any kind;
(d) lay out or construct any new roads or paths on the Lands; and
(e) lease or license the Lands or any part thereof unless the lease or license is expressly made subject to the provisions of this Agreement and expressly entitles the Owner to terminate the lease or license if the tenant or licensee breaches any of the provisions of this Agreement.
4.3 Notwithstanding any other provision in this Agreement, nothing in this Agreement prohibits the use of any portion of the Lands that is within the Agricultural Land Reserve under the Agricultural Land Commission Act for farm purposes under that Act.
4.4 Despite any other provision in this Agreement, nothing in this Agreement prohibits the use of the area identified as Central Road in the Report as a public road.

Appendix X. Terrain Zones, with Vegetation Types (VT) & Representative Photographs (TBC)

- Pickles Slope (East-facing); VT 5
- Pickles Creek & Forest (East side); VT 4, 6
- Pickles Marsh; VT 7, 9
- Lowlands Marshes; VT 6
- Lowlands Forest; VT 4
- Pickles Marsh Buffer Forest; VT 2, 3, 6
- Lowlands Slope (West-facing); VT 2, 4
- a) Uplands Forest (West); VT 1
  b) Uplands Forest (East); VT 1, 10
- Big Tree Marsh (Uplands East South); VT 6
- Transect Marsh (Uplands East North); VT 6
- Homestead Slope (East-facing); VT 1, 2, 3
- Homestead Riparian (West Edge); VT 8, 10
- Homestead Marsh; VT 7, 9
- Homestead Forest; VT 3
- NE Marsh; VT 6
- Home-site Forest; VT 3
- Swale Woods; VT 3, 6
- Former Swale Marsh Meadow; VT 10
- Swale Farm Grazing Meadow; VT 10

APPENDIX X. Wildlife and Species Lists
X.X. Full Settlement Lands Species List
X.X. Species by Terrain Zone
X.X. Introduced Species Present on the Settlement Lands

Cirsium arvense	Canada thistle
Cirsium vulgare	Bull thistle
Crataegus monogyna	English hawthorn
Cytisus scoparius	Scotch broom
Digitalis purpurea	Foxglove
Galium aparine	Cleavers
Geranium robertianum	Herb Robert
Gnaphalium uliginosum	Marsh cudweed
Hypochaeris radicata	Hairy cat's ear
Ilex aquifolium	English holly
Leucanthemum vulgare	Ox-eye daisy
Phalaris arundinacea	Reed canary grass
Ranunculus repens	Creeping buttercup
Rubus armeniacus	Himalayan blackberry
Rumex acetosella	Sheep's sorrel
Sonchus asper	Prickly sow-thistle
Tanacetum vulgare	Tansy