



HABITAT
CONSERVATION TRUST
FOUNDATION

Land Stewardship Grants

Year 3 Reports
2020-23 Funding Cycle

Introduction

In 2008, the Habitat Conservation Trust Foundation (HCTF) was awarded a \$9M endowment contribution from the Province of British Columbia to fund operations and maintenance activities on Conservation Lands. \$3M of the endowment was allocated for activities on lands managed by non-profit organizations. The first intake of this program occurred in late 2016 and 12 grants were awarded to be used from April 2017 to March 2020. The second intake for this program occurred in 2019 and 13 grants were awarded for 2020-2023. In the fall of 2022 the application process for the 2023-2025 cycle opened and 7 grants were awarded. More information about this grant program is available [HERE](#). This document provides copies of all reports submitted for the final 2022 -2023 fiscal year (Year 3 of 3). The table below lists all reports included plus the total amount spent for each project over the 3 years. Note that the detailed financial reporting is removed for confidentiality purposes. If you have any questions about the Land Stewardship Grant program, please contact Barb von Sacken, Conservation Lands Program Coordinator at 250-940-3013 or bvonsacken@hctf.ca.

Project #	Project Name	Organization	Amount Spent up to Year 3
1-647	Martha's Place	Nanaimo Area Land Trust	\$10,719
1-651	Matson Conservation Area	Habitat Acquisition Trust	\$33,000
1-733	Central Denman Conservation Complex	Denman Conservancy Association	\$32,174
1-734	Millard Learning Centre	Galiano Conservancy Association	\$43,780
1-735	Chemainus Estuary	Q'ul-Ihanumutsun Aquatic Resources Society (QARS)	\$100
2-673	Rogers Road Properties	Savary Island Land Trust	\$7,745
2-674	Savary Island Road	Savary Island Land Trust	\$7,931
2-675	Vancouver Boulevard	Savary Island Land Trust	\$7,688
2-676	Frenchies Island	Ducks Unlimited Canada	\$7,700
3-425	Turtle Valley Farm/Toad Hollow Invasive Plant Management and Rehabilitation	The Nature Conservancy of Canada	\$45,051
4-551	Fort Shepherd Conservancy Area	The Land Conservancy of BC	\$11,800
4-606	Morrissey Meadows	The Nature Conservancy of Canada	\$19,256
8-457	R.E. Taylor Conservation Property	Southern Interior Land Trust (SILT)	\$9,130
			\$236,074



1-647

Martha's Place



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

HCTF Project Number: 1 - 647

Please refer to the Land Stewardship Grant Final Year Reporting Instructions when completing this report.

This report must be completed in conjunction with the Activities and Expenditures Report (spreadsheet) customized for your project based on your proposal.

1. PROJECT INFORMATION

Project/Property Name: Martha's Place

Project Leader Name: Paul Chapman

Name of Organization: Nanaimo & Area Land Trust (NALT)

Date of Report: March 27th, 2023

Author of Report (if different than Project Leader):

Name of Organization:

Contact Information:

2. SUMMARY

Provide a general description of project work completed in the last year (500 words max).

Maintenance of areas of removal or control of priority invasive plant species English ivy, English holly, and Himalayan blackberries from previous year.

Please provide a general summary of overall project outcomes (500 words max).

Over the course of the 3-year funding, NALT completed a baseline inventory for the property and removed priority invasive plant species (2020); and maintained areas cleared of invasive species in 2021 and 2022.

Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

3. LESSONS LEARNED

Describe any problems or challenges that arose and how you addressed them in order to proceed with the project. What have you learned that would be valuable to share with others that may be undertaking a similar project?

The biggest challenge to the project has been completing it during the course of the pandemic. We adapted safety protocols as guidance from the provincial health authority changed with new information.

4. COMMUNICATIONS

Project Outreach Activities: Provide information on any outreach activities during the year that directly relate to the project.

The outreach opportunities are limited on this property as it is the main residence of the onsite care takers. As the land is managed for conservation values, and due to the assumption that NALT owned lands are open to the public for recreation, we do not normally promote events and activities on the property.

Communicating about HCTF: Provide information on any activities specific to communicating about HCTF undertaken during the year.

NA

Media Coverage: Provide a list of any articles or media coverage during the year.

NA



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

5. PHOTOS

Include a minimum of three photos as part of your report, attached as separate JPG files. List the filenames below, plus a description of each photo.

Photo 1 File name and Photo Description: MW invasives 1. Control of ivy and removal of daphne.

Photo 2 File name and Photo Description: MW invasives 2. Removal of English ivy from tree

Photo 3 File name and Photo Description: MW invasives 4. Removal bin with ivy.



Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 1 Martha Warde invasives 1. Control of ivy and removal of daphne.



Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 2 Martha Warde invasives 2. Removal of English ivy from tree



Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



MW invasives 4. Removal bin with ivy.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

6. ADDITIONAL DETAILS

Provide a description of any materials and supplies purchases funded by HCTF that are considered capital assets. See Final Year Reporting Instructions for information on Capital Assets.

N/A

Provide any other information you wish to share with HCTF.

The timing of this project, over the course of a pandemic has been challenging. The flexibility of the funder and our contractor, in moving with changing timelines and adapting to safety protocols made the successful completion of this project possible. Projected in-kind volunteer involvement was not possible due to COVID safety protocols. Due to reduced contractor time on the property in 2021, the overall project costs are below the original estimate.



Please read the Year 3 Reporting Instructions before completing this form.

From Application					Progress Year 3/Final Year			
Property/Complex Name:		Goal	Objective	Expected Outcome/Performance Indicators by End of Year 3	Activities	Activities Completed in the Final Year	Expected Outcome/Performance Indicators met? (Yes/No/Partial)	If Expected Outcome/Performance Indicators not met, or partial met, provide an explanation
Martha's Place 								



1-651

Matson Conservation Area



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

HCTF Project Number: ____1-651____

Please refer to the Land Stewardship Grant Final Year Reporting Instructions when completing this report.

This report must be completed in conjunction with the Activities and Expenditures Report (spreadsheet) customized for your project based on your proposal.

1. PROJECT INFORMATION

Project/Property Name: Matson Conservation Area

Project Leader Name: Paige Erickson-McGee

Name of Organization: Habitat Acquisition Trust

Date of Report: April 14 2023

Author of Report (if different than Project Leader):

Name of Organization: Max Mitchell

2. SUMMARY

Provide a general description of project work completed in the last year (500 words max).

Restoration efforts at the Matson Conservation Area (MCA) have continued successfully over the course of this past year. Stewardship efforts have resulted in a significant amount of Garry oak habitat being cleared of invasive species, creating space for the reintroduction of native plants. Our resident volunteer stewardship group, the Matson Mattocks, have continued their weekly restoration work parties; focusing their efforts on the Garry oak/Douglas fir woodland portion of the property heavily infested with English ivy (*Hedra helix*) and Himalayan blackberry (*Rubus armeniacus*).

Over the past year, the Matson Mattocks convened for 52 work events, contributing 490 volunteer hours, removing 65 cubic meters of invasive species biomass, and clearing an area measuring approximately 1000m². HAT's 2022 Fall Restoration Field Crew also spent 202.5 hours working on the site, removing 9 cubic meters of invasive species biomass (primarily invasive grasses from the meadow), and clearing an area of 335m². A 650m² meadow area at the site was seeded with a diverse suite of native species provided by biologist Kristen Miskelly. Over 510 native plants have been salvaged from other sites and planted in the Conservation Area, including a planting event with 6 HAT volunteers in November 2022. Based on recommendations to address deer browsing, the Mattocks and HAT staff have installed 46m of wire fencing around vegetation on site being negatively impacted by browsing.

Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

Installation of fencing has been identified as a high priority for protecting native vegetation, and an additional 60 meters of fencing is scheduled to be installed in Spring 2023.

The Matson Mattocks have been trained in conducting photo-point monitoring and documentation of the restoration work to track progress, they conduct annual photo-point monitoring and keep a detailed log of all the work done on site and changes that are observed. This year also saw new community outreach opportunities. HAT hosted the Matson Spring Fling event May 15, 2022. 142 community members attended the event, featuring interpretive walks about the natural features of the site. 13 individuals signed up for the HAT newsletter, and 6 registered as volunteers. January 2023, we met with 2 students from the UVic Restoration of Natural Systems Program (RNS) to discuss potential restoration sites for them to explore as their capstone projects. A third RNS student met with Sara Lax June 2022.

Matson has also received new interpretative signage; these signs represented the first collaborative partnership between Songhees and Esquimalt First Nations community members and HAT staff since the COVID-19 pandemic. The signs were developed through consultation with Esquimalt knowledge keeper Edward Thomas and Elder/ləkʷəŋən speaker Elmer George. The signs were designed by Esquimalt Nation member and artist Darlene Gait. The signs encourage public learning about the ecology and history of the site, featuring ləkʷəŋən language translations of many of the plants and animals that can be observed.

The Matson Management Advisory Group (MAG) held their first meeting since the COVID-19 pandemic July 14, 2022. The MAG will hold meetings as site developments require. Next meeting is scheduled for May 2023. Updates to the 2004 Management Plan are underway, and a draft plan has been prepared for MAG review.

Three consultation visits were held on site with local restoration specialists Kristen Miskelly, Matt Fairbarns, and Wylie Thomas to identify and guide restoration priorities and strategies.

Please provide a general summary of overall project outcomes (500 words max).

This project has successfully enhanced the native ecology of the Garry oak and associated ecosystems at Matson. Throughout the duration of this project, the Matson Mattocks have hosted 195 community volunteer sessions, totalling a cumulative 1770 hours of volunteer work and the removal of 197m³ of invasive biomass being removed from the site (consisting of plant species which threaten biodiversity and native plant survival). Using a photo-point monitoring protocol, and weekly tracking of work metrics we determined that an estimated 3,607 m² of land has been cleared of invasive plants. With the Conservation Area measuring 9712 m² (0.98 hectares) resulting in a reduction in invasive species ground cover of 37%.

HAT staff met with Matson Mattocks on-site monthly to review priority management activities, previous achievements and challenges, and approaches to restoration moving forward. Consultations with biologists Matt Fairbarns, Kristen Miskelly, and Wylie Thomas were compiled to create an operational



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

Invasive Plant Management Strategy (see Report 1: 2023 Matson Annual Invasive Plant Management Guide) to be carried out by the Mattocks and HAT Crew. Site consultations with Wylie Thomas determined ecological need, site specific best practices, and appropriate timeline for herbicide application via an Integrated Management Approach (See Report 2: Integrated Pest Management Approach) for targeted invasive species.

Both the native plant diversity and abundance at this site increased by an estimated 20% within the areas that were enhanced with \$4,000 of native seed and 2673 native plants purchased and salvaged in the meadow, woodland, wet area featuring storm drain runoff. Bolstering native plant populations on-site also added habitat providing larval food for native pollinators, as well as nesting and cover sources for wildlife (such as the many migratory birds who visit the Conservation Area). Seeding enhanced biodiversity as it introduced species not abundantly found at MCA but are Garry oak ecosystem associated. Seeding was done at high density to increase competition with invasive plants to prevent their re-establishment post-removal. Species selection and dispersal method was determined through consultation with Kristen Miskelly.

HAT staff and Matson Mattocks established an ongoing monitoring program using USDA photo-point monitoring protocols to visually assess and approximate vegetation cover to monitor and manage progress and success using both qualitative and quantitative data collection methods. In Spring 2023, vascular plant line-transect surveys with Kristen Miskelly will provide a vegetation species inventory to further update management plans. The forthcoming report will be provided to HCTF upon receipt.

Dr. Lora Morandin of Pollinator Partnership Canada performed a pollinator survey of the Conservation Area and prepared a report compiling her findings and recommendations. Three rounds of site surveys were conducted (April 7, May 9, and July 7) at the Matson Conservation Area led by pollinator specialist Dr. Lora Morandin of Pollinator Partnership Canada to provide baseline species data on both abundance and diversity to compare to in future survey efforts, providing HAT with qualitative monitoring metrics to evaluate the impact of restoration efforts on pollinator population health. Dr. Morandin found that the Matson Conservation Area supported a large number and diversity of pollinators, notably native bees. The survey found that Matson supports (at least) 37 species of native bee. The survey results also indicated that native plants were providing greater pollinator support than introduced (invasive species). The report recommends continued control of invasive plants, supplementing native plant populations, managing deer browsing, and limiting dog and foot traffic. These insights are valuable inputs for updating the Matson management plan.

3. LESSONS LEARNED

Describe any problems or challenges that arose and how you addressed them in order to proceed with the project. What have you learned that would be valuable to share with others that may be undertaking a similar project?



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

While overall project outcomes were achieved, there were challenges over the course this project. These challenges provided HAT staff and volunteers with learning opportunities which have worked to strengthen efforts moving forward. Perhaps the most universal challenge would have been the COVID-19 pandemic that took place throughout the duration of much of this project. Pandemic restrictions disrupted recruitment of new membership to the Matson Mattocks. Due to social distancing recommendations, uptake of new volunteers slowed down as people became hesitant to get involved. These anxieties have eased more recently, but it speaks to the importance of active community outreach when to organizing volunteer stewardship groups in a post-pandemic context. **Lesson learned: active recruitment and outreach to community members will be necessary for growing stewardship group membership post-COVID.**

COVID-19 prevented MAG meetings from being held between March 2020 and July 2022. This meant that when organizing the first MAG meeting in 2 years that it was important to re-establish these collaborative partnerships in re-engaging Matson community stakeholders. **Lesson learned: engaging Matson community stakeholders following a multi-year disruption involves rebuilding relationships and connections between organizations.**

Relationship building with members of the Songhees and Esquimalt First Nations was impacted by the pandemic given how acutely Indigenous communities were affected by the virus. Addressing COVID-19 at the community level drastically diminished the capacity of members to engage in external projects due to the immediate concerns faced within communities. Because of these limitations, it was recommended that we work to build relationships at the community level rather than risk increasing any burden of Chief and Council. **Lessons learned: challenges faced at the level of the individual and within community remain as realities to navigate when collaborating with Indigenous communities.**

Tiffany Joseph, a member of the W̱SÁNEĆ community, joined HAT as Indigenous-led Planning Consultant. Through Tiffany guiding HAT Staff in observing proper cultural protocols, HAT was able to strengthen a collaborative partnership that resulted in the creation of two new interpretive signs for Matson. The content was developed with Songhees and Esquimalt community representatives, containing ləkʷəŋən language translations of plant and animal species observed at Matson. **Lesson learned: meaningful partnership building with indigenous communities involves working within the confines of limited time and capacity resources. Developing these relationships may be a slow gradual process, especially when mindful of proper cultural protocols.**

Since the beginning of this project, three mature Garry oak trees have fallen due to soil oversaturation during atmospheric river events. Conversely, many plants on site have struggled during the increasingly hot and dry summer droughts. These unpredictable weather conditions mean that restoration outcomes observed in the past are not guaranteed in the future. **Lessons learned: impacts of climate change underscore the importance of monitoring restoration outcomes, as we adapt to changing weather patterns and conditions.**

Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

From a practical management perspective one of the greatest challenges presently faced is the presence of deer. Consultants have identified deer browsing as a major threat to native ecosystem health and to achieving successful restoration outcomes around increasing abundance and diversity of native plants.

Lesson learned: Investing in deer fencing is important to ensuring desired project outcomes.

Other challenges include pressure from human activity. This includes off-leash dogs, garbage, walking off trails, and unhoused individuals creating temporary encampments. We have found these are issues that are inherently the part of working to conserve nature in an urban setting. The more visible that active management and stewardship becomes (signage, fencing, clear work being present) the less frequently we observe trespassing, vandalism, and camping. **Lesson learned: Public communication and visibility of active management help support conservation and restoration activities and reduce detrimental human activities on the property.**

4. COMMUNICATIONS

Project Outreach Activities: Provide information on any outreach activities during the year that directly relate to the project.

Matson Spring Fling, 15 May 2022: This event opened Matson Conservation Area to the wider community and saw 142 individuals participate in the various guided ecosystem walks, artist talks (local painters live-painted the ecosystem during the event), listen to the 'Getting' Higher Choir sing on the shoreline, and spend time learning about the conservation area from HAT staff.

HAT has also been active in communicating with members of the local community through semi-regular articles and write-up published in *Swallows Nest*, the monthly newsletter for residents of Swallows Landing (one of the large residential buildings that overlooks MCA). Throughout the year, HAT submits articles and other writings to *Swallows Nest*, giving us the chance to inform the community of projects going on at Matson, and to recruit volunteers to the Mattocks. In 2022, for example, HAT authored 8 sections for this publication.

The installation of new signs at MCA has increased HAT's visibility at the site and made the sensitive nature of the site more easily understood to a wide audience of visitors. These signs also highlight the role of our partners like HCTF in stewardship efforts at MCA. Most importantly, the signs were designed by Esquimalt Nation member and artist Darlene Gait and include information and knowledge about MCA shared by Hereditary Chief Edward Thomas and Elder/lək'wəḡən speaker Elmer George. These signs showcase current and pre-colonial relationships between local Indigenous communities and the land and share lək'wəḡən language resources with the wider community. The creation of these signs has assisted HAT in establishing contacts with Songhees and Esquimalt First Nations community members. While not a written or published form of communication, these relationships are vital for community level-relationship building, and we see the cultivation of these relationships as equally important to other forms. These signs were installed on site June 16th, 2022.

Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

HAT has also connected with the Restoration of Natural Systems (RNS) program at UVic, bringing students onto other HAT conservation areas. While not related to Matson, this relationship is in development, and while 2 individual students have spent time with HAT restoration staff at MCA to work on individual projects, HAT's relationship with RNS instructors, and the needs for future work at MCA, means the collaboration potential is high and we are planning to host larger engagement sessions with RNS students.

HAT also undertook a site visit tour of MCA with Mayor Barb Desjardin and Esquimalt Parks staff to introduce them to all the work being undertaken at MCA, and the areas importance to the Esquimalt residents, the Esquimalt and Songhees First Nations, and to the wider community.

Communicating about HCTF: Provide information on any activities specific to communicating about HCTF undertaken during the year.

On 15 May 2022 HAT hosted the "Spring Fling" at Matson Conservation Areas (MCA), giving the local community a chance to learn from HAT staff and volunteers more about the only remaining Prairie Oak ecosystem in the inner harbour. This involved partnerships with 5 local organizations (the Matson Mattocks and the Getting' Higher Choir, and others), and gave HAT staff the opportunity to mention HCTF's long-standing funding for works done at MCA. There were 142 public visitors who attended the day, all of which were verbally informed of our funder HCTF.

June 16, 2022, HAT installed 2 interpretive signs at MCA. These signs describe the Songhees and Esquimalt relationships to MCA in a culturally appropriate way, and the Prairie oak (or Garry oak) ecosystem at MCA in lək'wəŋən. Both signs list HCTF (with logo) as principle funder for our work at MCA. Throughout the project Year 3, HAT staff shared 5 five articles on the HAT website mentioning HCTF as principle funder.

Media Coverage: Provide a list of any articles or media coverage during the year.

May 12, 2022: Published newspaper article in Victoria News titled "Habitat Acquisition Trust throws Spring Fling for work on Matson Conservation Area" <https://www.vicnews.com/community/habitat-acquisition-trust-throws-spring-fling-for-work-on-matson-conservation-area/>

HAT Website Staff Articles posted (blog entries)

Feb 25, 2023: <https://hat.bc.ca/blog/spring-at-matson>

Nov 9, 2022: <https://hat.bc.ca/blog/seeding-at-matson-conservation-area>

July 12, 2022: <https://hat.bc.ca/blog/new-signage-mca>

May 2, 2022: <https://hat.bc.ca/blog/migratory-birds-2022>

April 1, 2022: <https://hat.bc.ca/blog/spring-fling>



HABITAT
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Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

May 26, 2022: Social media post after the Spring Fling event:

<https://twitter.com/HabitatAcqTrust/status/1530005871907962886>

5. PHOTOS



Photo 1 Volunteers and Visitors gather at Matson for Spring Fling

Volunteers and visitors gather at Matson Conservation Area for Spring Fling in May 2022.



HABITAT
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Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 2 HAT Matson Mattock Roger Hird explains ivy to volunteers

Volunteers learn about invasive english ivy from Matson Mattock lead volunteer Roger Hird.



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Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 3 Under the Oaks

Participants gather under the oak trees to explore Matson Conservation Area during Spring Fling event in May 2022.



Land Stewardship Grant Report Year FINAL YEAR 3 OF 3 of 2020-23 Cycle

Please read the Year 3 Reporting Instructions before completing this form. Yellow cells will calculate automatically. Please do not edit these cells.

From Application					FINAL OUTCOMES		
Property/Complex Name:	Goal	Objective	Expected Outcome/Performance Indicators by End of Year 3	Activities	Describe Activities Completed in the Final Year	Expected Outcome/Performance Indicators met? (Yes/No/Partial)	If Expected Outcome/Performance Indicators not met, or partially met, provide an explanation
Matson Conservation Area	Enhance, restore and sustain the native Garry Oak associated ecosystems and the native wildlife that occurs in this Conservation Area	Remove invasive tree, shrub and grass species that threaten biodiversity and native plant germination and success.	1. Invasive species cover on Matson Conservation Area will be reduced by 25% over 3 years. 2. Through collaboration, Matson Mattocks will continue to volunteer restoration efforts weekly. 3. Creation of an Invasive Plant Management Strategy utilizing Best Management Practices and an integrative management approach. 4. Application of herbicide to manage specific Invasive Species	Hold at least two community-based restoration events (1 per year) targeting highest priority invasive plant species that threaten the site.	Year 3 HAT hosted 1 community-based event and several volunteer & crew work sessions: 1. Spring Fling hosted on May 15th 2022 2. Mattocks hosted 52 invasive plant removal work parties inviting the broader community to participate (equal to 490 hours of volunteer time) 3. The HAT Restoration Crew dedicated 10 work days of invasive plant removal (equal to 202.5 hours of staff time)	Yes	1. From the invasive removal work completed by the Matson Mattocks volunteers and the HAT Restoration Crew, invasive species cover on Matson Conservation Area was reduced by 37% (Target 25%) over 3 years. In total, the HAT crew and Matson Mattocks volunteers restored over 3,607/9712m ² (37%) of this site. The Matson Conservation Area is 2.4 acres (9,712 meters squared). Over 3 years, Matson Mattocks have completed 195 community volunteer events and 1770 hours removing 197 cubic metres of high priority invasive plants.
				Meet with the Matson Mattocks three times per year to establish priority management activities and review previous activities and achievements; attend occasional Matson Mattocks volunteer days	Year 3 1. HAT staff met with Matson Mattocks on site monthly (11 meetings) to review priority management activities, previous activities and achievements, and to coordinate logistics of the work carried out on site. 2. HAT staff hosted MAG formal meeting on July 14 2022, and providing input on the development of an operational Invasive Plant Management Strategy for the volunteers to refer to as a guiding document 3. HAT staff developed an updated version of the Invasive Plant Management Strategy, indicating restoration priorities	Yes	2. & 3. Through regular on-site meetings and collaboration, and virtual communication with HAT staff, the Matson Mattocks continue to carry out volunteer restoration efforts weekly. The Mattocks work is based on identified priority management activities. During check-in meetings Mattocks volunteers and HAT staff review past completed work, providing input on the HAT Invasive Plant Management Strategy utilizing Best Management Practices and an integrative management approach, to identify successes and challenges. These learnings guide an adaptive approach to the restoration work. These regular check-ins cover topics such as: 1) addressing fallen Oak trees during winter storms (and implications of changing site hydrology) 2) discussing next steps for herbicide treatment on English ivy covering the rocky slopes at the end of Garrett Place, 3) planting native salvage plants in restored areas, 4) removing invasive plant species (discussing site priorities, work timing, and best practices), 5) seeding de-thatched open meadow areas, 6) as well as discuss plans around managing illegal tenting and waste on site, 7) managing the issue of deer browsing on native plants, and the installation of protective fencing 3. Through consultation with experts Kristen Miskelly, Matt Fairbairns, and Wylie Thomas, HAT staff created an Invasive Plant Management Strategy (See Report 1: 2023 Matson Annual Invasive Plant Management Guide) utilizing Best Management Practices for MCA. The strategy's site specific efficacy and success is evaluated on an ongoing basis by the Matson Mattocks.
				Work with contractor on herbicide application	Year 3 1. Contractor secured - biologist Wylie Thomas 2. Two site visits with Wylie to assess ecological need and timeline for herbicide application via an integrated Pest Management Plan for problem invasive plant species (See Report 2) 3. HAT Habitat Restoration Coordinator Max Mitchell was certified for professional herbicide application.	Partial	4. HAT staff contracted biologist Wylie Thomas to provide two site visits assessing the ecological need, determining site specific best practices, and appropriate timeline for herbicide application via an Integrated Management Approach (See Report 2: Integrated Management Approach) for problem invasive species English ivy (Hedera helix) and Himalayan blackberry (Rubus armeniacus). Max, the new Habitat Restoration Coordinator obtained his Industrial Vegetation & Noxious Weed Pesticide Applicator Certificate in February 2023. Certification valid until 2028. Due to contractor unavailability (resulting from an unforeseen family health emergency) and HAT staff turnover (incoming program coordinator was not yet certified during recommended 2022 treatment window), the herbicide treatments have been deferred to August 2023 and will be conducted by HAT's Habitat Restoration Coordinator at recommended time.
				Install at least 500 native plants in the meadow and Douglas fir understory in years 1 and 2	Year 3 1. 510 native plants established by Matson Mattocks 2. Vegetation surveys completed in Spring 2023	Yes	1. Overall, the habitat diversity and abundance at this site increased by 20% between the areas that were enhanced with native seed, native salvage plants, and native plugs and potted plants from Satinflower nurseries. In Year 2, the volunteers and staff installed 2163 native plants in the meadow and Douglas fir understory. In Year 3, approximately 510 salvaged native plants were installed by Matson Mattocks. This was determined by visual assessments using photopoint monitoring, vegetation surveys, and plant/seed species selection. 2. This addition of select native plants providing larval food for pollinators has been monitored through successfully completed surveys by Dr. Lora Morandin, and post-planting vegetation surveys by Biologist Kristen Miskelly in Spring of 2023. These surveys work to effectively monitor the impact of invasive species management and native species planting, as they relate to indicators of broader ecosystem health (native pollinator abundance).
				Disperse at least \$2000 of annual and perennial seeds suitable for the Garry Oak Meadow in years 1 and 2	Year 3 1. October - \$2100 seed dispersed in meadow area	Yes	1. In Year 2, HAT staff and Matson Mattocks volunteers dispersed \$2000 (1kg) of annual and perennial seeds from Satinflower Nurseries suitable for the Garry Oak Meadows at this site. The native seeds dispersed in this meadow area were Sea Blush (Plectritis congesta), Yarrow (Achillea millefolium), as well as two reintroduced species: Small-flowered blue-eyed Mary (Collinsia parviflora) and Farewell-to-spring (Clarkia amoena). 2. In Year 3, October 2022 HAT staff and Matson Mattocks volunteers dispersed an additional \$2100 of seeds Satinflower Nurseries suitable for the Garry Oak Meadows at this site. Species were selective for pollinator larval food plants, nectaring plants, nesting and cover habitat (see Report 10 Satinflower Plant Order, MatsonCA Seeds 2022). The seeding enhanced biodiversity as it included plant species not found at MCA but GOE associated, and chosen species seeding density was high to increase competition with recurring invasive plants and prevent their re-establishment.
				Perform a species survey (over 2 seasons) to gather information for a baseline on species and abundance.	Year 3 1. April 2022 Pollinator Surveys conducted by Lora Morandin of Pollinator Partnership Canada. 3 Repeat surveys were conducted over the Summer 2022 growing season. Pollinator Survey report was submitted to HAT November 28th 2022 (Report 3). 2. Spring 2023 vascular plant surveys conducted with Kristen Miskelly of Satinflower Nurseries (report forthcoming) 3. Ongoing observations recorded by the Matson Mattocks through weekly work field logs (Reports 4 & 5).	Yes	Three rounds of site surveys were conducted (April 7, May 9, and July 7) at the Matson Conservation Area led by pollinator specialist Dr. Lora Morandin of Pollinator Partnership Canada to provide baseline species data on both abundance and diversity to compare to in future survey efforts, providing HAT with qualitative monitoring metrics to evaluate the impact of restoration efforts on pollinator population health. Dr. Morandin found that the Matson Conservation Area supported a large number and diversity of pollinator, of particular note native bees. The survey found that Matson supports (at least) 37 species of native bee. The survey results also indicated that native plants were providing greater pollinator support than introduced (invasive) species. The report recommends continued control of invasive plants, supplementing native plant populations, managing deer browsing, and limiting dog and foot traffic. This survey quantitatively informs HAT's measurement of the impact of restoration efforts and invasive species removal on pollinator population health, gauge success over time, and contribute valuable information vital for implementing an adaptive management plan. HAT also introduced volunteers to Naturalists protocols to monitor incidental observations of species associations (pollinator-plant). 1. Monitoring at Matson Conservation Area came in a number of forms. Matson Mattocks lead volunteer Roger Ford keeps a detailed weekly work log, which includes qualitative records of how native plant populations are responding to restoration efforts, in addition to keeping track of the work tasks performed each week. Contracting Dr. Morandin to conduct pollinator surveys provides us with detailed quantitative data about pollinator and vegetation health at the property, and Spring 2023 vascular plant surveys conducted by Kristen Miskelly provide HAT with even greater quantitative data to inform management decisions. 2. HAT volunteers use Naturalists to log observations on site. Mid-Arne has been identified by Kristen Miskelly as the ideal time to have a community biodiversity event given the timing that most plants will be visible on site. 3. The approach to restoration tasks outlined in the guiding Invasive Plant Management Strategy document are based on the observations recorded by the Matson Mattocks over the years of the outcomes of work done on the property, and of the observations and recommendations of expert consultants. As such plans and priorities are adapted to new observations and recommendations in the work evolves organically.
Project #1-651	Monitor/manage progress and success		1. Utilizing a monitoring program, both quantitatively and qualitatively data collected will provide valuable information to gauge				

	using qualitative and quantitative data collection methods and reporting results at the end of 3 years.	success over time. 2. In monitoring annually utilizing volunteer community members we can provide learning opportunities for the stewardship members. 3. Monitoring will provide data that can provide valuable information vital for implementing an adaptive management program.	Monitor planting sites and meadow annually using photo-point surveys (qualitative) and collecting line-transect data (quantitative) in meadow and Douglas fir forest.	Year 3 1. Annual photopoint monitoring conducted by the Matson Mattocks volunteers (Excel Report 6, photographs, photographs in zip file Report 7). 2. Additional photographic documentation of work is also carried out throughout the year as the restoration work progresses, and is included in detailed weekly work logs. 3. Spring 2023 biologist Kristen Miskelly conducts vascular plant line-transect surveys in meadow and Douglas fir forest.	Yes	Photopoint monitoring has been conducted in an ongoing basis by Matson Mattocks volunteers, providing a qualitative visual reference for evaluating restoration successes and challenges. Since April 2021, HAT staff trained the Matson Mattocks on annual photo-point monitoring protocols including as outlined in the USDA's Guide to Photo Point Monitoring (Report 8). Following their procedures, the photos are recorded by the Mattocks. All additional volunteer stewardship activities are tracked through a weekly work log (Reports 4 & 5) Photo-points selected to provide an overall visual reference for the transformation of the property through active management. Photo point sites are selected based on their ability to represent areas that have been identified as restoration priorities. These sites include the rocky outcrop meadows, as well as Douglas fir/Garry oak woodlands that have been the focus of volunteer and crew efforts. Spring 2023 vascular plant surveys conducted by Kristen Miskelly of Satinflower Nurseries (report forthcoming) will provide an up-to-date species inventory, setting a new baseline for HAT's restoration management plan and invasive management strategy moving forward. Most recent in-depth site report was conducted in 2009 prior to the creation of the conservation covenant. A report based on these surveys is forthcoming and will be provided to HCTF upon receipt. The photo-point monitoring and vegetation surveys provide valuable datasets vital in evaluating restoration successes and in implementing future management plans for MCA.
			Write summary report depicting activities performed, successes and monitoring results.	Year 3 1. Summary report of stewardship activities to be presented to Matson MAG	Yes	A Summary Report for Year 3 has been provided in supplemental documents (refer to Report 9: Summary Report Matson Year 3). The Matson Mattocks keep a detailed tracking database of all the work on site (Reports 4 and 5). Habitat Restoration Coordinator has kept a database of all of the field crew's work and activities. An overall site report template is currently being developed with the support of Kristen Miskelly of Satinflower Nurseries and is to be completed in 2024 to enhance reporting capacity.
Restore and enhance land near Garrett Place at public entrance of property	Create and enhance wildlife habitat at a disturbed site near the public entrance to the MCA	1. Creation of bird and wetland habitat; mitigation of pollutants and runoff from roadway 2. Enhancement of public access; decrease in site disturbance due to homeless encampments by opening site-lines and increasing foot-traffic	Clean up disturbed site at end of Garrett Place (removal of invasive species and debris) – in-kind by Mann Construction	Year 3 2. Monitoring of native plantings from year 2, invasive plant removal as needed	Yes	In Year 2, the HAT staff, restoration crew and Matson Mattocks volunteers created wildlife habitat and cleaned up disturbed area at the end of Garrett Place through removal of invasive plant species and waste debris, as well as planting of native plants. These native plants will provide filtering of pollutants from road and drainage runoff, and enhance the aesthetic of the public entrance. In Year 3, the Matson Mattocks continue to monitor the site for native plant success and remove invasive plants as needed.
			Fencing materials for deer fencing around new plantings in the wet/drainage area.	Year 3 3. Deer fencing materials installed around key planting areas	Yes	Project Change Approved: In Year 2, collaboration and site visits with the Township of Esquimalt parks staff and Matson Mattocks, HAT staff have re-evaluated the need and appropriateness of the planned trail to decrease site disturbance. Together we determined the best course of action would be to deter public access with additional signage and reallocate trail/building funds to install 45.72m of deer fencing around plantings areas in the wet/drainage area, in the meadow, and the forest.
			Wetland habitat creation at the site of natural drainage	Year 3 Monitoring the installed native plants and fencing removed	Yes	In Year 1, HAT staff held a preliminary on-site meeting with wetland expert Robin Annschild for creebed and design consultation. Robin's assessment was that it is not appropriate site for wetland habitat creation, but it was for a wet meadow/drainage planting. Staff then held on-site discussions with restoration consultant Kristen Miskelly to solicit treatment and design for a wet meadow planting. In Year 2, HAT staff, restoration crew, and Matson Mattocks volunteers created a wetland habitat at the site of natural drainage at the end of Garrett Place through planting native forbs, grasses, and small shrubs selected by biologist and restoration specialist Kristen Miskelly of Satinflower Nurseries. Deer fencing was installed around the planting area to prevent browsing. In Year 3, these new plants were monitored, and returning invasives (blackberry, ivy, creeping buttercup, thistle) were removed by volunteers. The fencing installed to prevent deer browse of new plants was removed, and deer browsing does not appear to be a problem in this area.
			Coordinate Management Advisory Group meetings 2x/year	Year 3 1 MAG meeting was held in July 2022	Partial	Year 1, HAT staff coordinated and hosted the first Matson Advisory Group (MAG) meeting in March 2020. Due to COVID-19 restrictions, another meeting was not held in 2020 or 2021. Year 2, HAT staff held a first introductory meeting with local Elders from the Esquimalt and Songhees Nations to discuss working together on site signage and stewardship goals. HAT staff will be continuing to work towards building positive relationships and friendships with these members of the Esquimalt and Songhees Nation, and exploring opportunities for collaboration on the Matson Management Advisory Group reformation. Year 3, HAT Staff held another MAG meeting in July 2022. It was determined by the members of the MAG (Esquimalt Parks, Nature Conservancy of Canada, Westbay Residents Association, Friends of Victoria Harbour Migratory Bird Sanctuary) have limited capacity and are not able to attend meetings twice annually. Annual meetings were set moving forward. We have successfully coordinated the MAG and made substantial updates on both the Management Plan and the Restoration Plan (see Report 1 and Report 11).
Successfully coordinate the newly established MCA collaborative group of partners (Management Advisory Group)	Coordinate and implement priority management activities	1. Management Advisory Group will meet 2x/year to coordinate implementation of the Management Plan and Restoration Plan for Matson Conservation Area.	Provide Annual Summary Reports to Management Advisory Group	Year 3 Summary Report Provided to MAG	Partial	2022-2023 Summary Report for the Matson Conservation Area will be presented to MAG members at next meeting (scheduled for May 2023) (see Report 11: MAG July 14 2022 Minutes and Report 12: July 14 MAG Agenda)
Establish public outreach and educational opportunities	Encourage community support and engagement in Conservation Area	1. Interpretive signs will be installed to encourage public learning about the ecology and history of the site	Design, print and install interpretive signage onsite.	Year 3 Two interpretive signs completed and installed June 16 2022		In Years 1 & 2, HAT Staff successfully established public outreach and educational opportunities by encouraging community support and engagement through new signage, outreach events, and workshops. Through additional funding provided by HCTF in December 2021, two signs were designed, printed and installed along the Songhees Walkway. The focus is on Garry oak ecology and Lekwugen history and culture. Designed by Esquimalt First Nation member artist Darlene Galt and created in collaboration with Esquimalt First Nation Elders Elmer George and Edward Thomas. In Year 3, the signs were installed June 16 2022 in two locations along the public walkway to maximize exposure The signage encourages public learning and communicates the ecological and cultural importance of this place to public visitors, and include laḲʷəjan language for species names. Additionally, HAT hosted 4 educational workshops to encourage community support and engagement in the conservation area.

1-733

Central Denman Conservation Complex





Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

HCTF Project Number: 1-733

Please refer to the Land Stewardship Grant Final Year Reporting Instructions when completing this report.

This report must be completed in conjunction with the Activities and Expenditures Report (spreadsheet) customized for your project based on your proposal.

1. PROJECT INFORMATION

Project/Property Name: Central Denman Conservation Complex

Project Leader Name: Erika Bland / Andy Blackburn

Name of Organization: Denman Conservancy Association

Date of Report: 14 April, 2023

Author of Report (if different than Project Leader): Erika Bland / Andy Blackburn

Name of Organization: DCA

Contact Information:

2. SUMMARY

Provide a general description of project work completed in the last year (500 words max).

Pollinator Stewardship: The former DCA Land Manager carried out follow-up surveys of areas where native species were planted and seeded in Y1 & Y2 to assess survival. The temporary fencing initially installed at the Demonstration Garden in 2019 was removed and the site is now more integrated with the natural landscape as was originally intended. Plant and project description signs were left in place for visitor information.

Invasive Species Control: Contractors carried out 80 hours of invasive species removal across the complex, focused on English Holly, Scotch Broom and Daphne. Previously cut Holly stumps in Y1&2 were revisited and regrowth removed where necessary. BCIT Masters student carried out invasive Reed Canary Grass control experiment at Settlement Lands contributing 60 hours in-kind invasive control work. Volunteer work bees were coordinated to continue control efforts on St John's Wort patch, and continued work on holly, broom and daphne throughout the complex.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

Wetlands Stewardship: Weekly acoustic Bullfrog monitoring took place by 16 volunteers through summer 2022, totalling over 80 hours of volunteer monitoring hours. BC Parks provided in-kind funding to hire Bullfrog eradication specialist to conduct night-time survey of Chickadee Lake at Winter Wren Wood and produce an informative report and information for DCA volunteers. A Water Monitoring Coordinator was hired for Y3, coordinating volunteers to assist with ongoing data collection and analysis, producing a report for DCA with recommendations for future water stewardship work.

Management Aids & Signage: A local artist designed new interpretive signs for the Winter Wren Wood nature trail, printed on durable metal, and these were installed in Spring 2023 with Denman homeschool group.

Printed metal Boundary Marker signs were installed at appropriate locations around the complex by Land Manager and volunteer, focusing on boundaries adjacent to privately held lands where potential encroachment issues are more likely. Management signage continued to be replaced as needed with the signs printed in Y1.

Fire Prevention: 6 volunteers continued to carry out daily monitoring of fire risk areas at Winter Wren Wood and Chickadee Lake from June-Sept 2022. Cigarette-butt receptacles were also maintained at trailheads throughout the complex. In-kind contributions from local contractors facilitated the installation of boulders preventing vehicle access into Winter Wren Wood, therefore further reducing fire risk during summer and providing opportunity for future restoration of the degraded forest floor. Cost savings from the initial estimate for the refurbishment of the entrance to Winter Wren Wood were redirected to the restoration project and to invasive species control.

Please provide a general summary of overall project outcomes (500 words max).

Invasive species removal across the complex throughout the 3 years has had a dramatic impact on areas that were identified as high priority and the scope of the problem in many parts of the complex is increasingly manageable due to the large efforts afforded by this grant. Control efforts will need to continue in future years, more specifically to address newer threats such as the spread of Daphne and to continue follow-up work of previously cut stumps etc., however the Conservation Complex is much improved since Year 1, particularly with respect to Scotch Broom & English Holly.

Several of the species introduced at the Butterfly Reserve Pollinator Garden and in areas where invasive species removal has taken place are now well-established and some are self-propagating/seeding: Woodland strawberry, Red-flowering currant, Self-heal, Yarrow, Blue-eyed Mary, Baldhip Rose, Nootka Rose, and Orange trumpet honeysuckle.

Wetland stewardship efforts have maintained high vigilance for the presence of invasive American Bullfrogs, and the professional survey carried out in Y3 indicated these efforts have thus far been successful in not allowing Bullfrogs to establish in Denman's wetlands. Outreach and education around

Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

Bullfrogs and invasive plant species have increased interest and awareness in the community throughout the 3 years, with significant volunteer efforts contributing to these areas of stewardship.

Signage improvements throughout the Complex have replaced degraded old signs and have improved the appearance of many conservation areas for the community and visitors. Boundary marker signs have clarified key areas with adjacent landowners and will reduce encroachment issues.

3. LESSONS LEARNED

Describe any problems or challenges or unexpected benefits that arose and how you addressed them in order to proceed with the project. What have you learned that would be valuable to share with others that may be undertaking a similar project?

Recruiting and maintaining sufficient volunteer labour for physical work is an ongoing challenge, especially considering that much of DCA's core membership are of advanced age. The COVID pandemic increased these challenges throughout the term of this grant. Volunteer turnout to work bees was generally low at times when gathering (even outdoors) was discouraged. Hiring contracted labourers to carry out invasive species removal proved a more effective use of time, money and energy during this period, but has also shifted somewhat DCA's previous standard practice of maintaining lands using almost entirely volunteer labour. It will be interesting to see whether volunteer involvement increases again in the coming years.

There have been significant challenges with respect to the ongoing management of the DCA Settlement Lands Butterfly Reserve and activities surrounding the stewardship of pollinator species (including critical habitat for the Taylor's Checkerspot Butterfly). Forest regrowth within the originally designated 3.64 hectare reserve is happening faster than we can realistically keep up with, and continued large tree removal on a very limited budget with mainly volunteer labour is not feasible. Support for ongoing tree removal at this site is also not unanimous among the DCA membership, which, along with the absence of Taylor's Checkerspots in annual flight season monitoring, has called into question whether the continued removal of trees (restoration/stewardship practice recommended provincially for this species) makes sense at this location any longer. Funding from provincial partners for work at the DCA Reserve in the past 3 years has also been inconsistent. Despite these challenges, DCA has continued work to enhance the Butterfly Reserve area habitat for several pollinator species at risk present there through removal of invasive species (mainly Scotch Broom) and the seeding and planting of native plant species both at the Demonstration Pollinator Garden site and throughout the Reserve area more broadly.

It has been very challenging to maintain a 'garden' environment at this highly exposed site due to summer drought, and a dearth of volunteers enthusiastic to take on watering and other tasks such as maintenance of infrastructure (fencing, gates, etc). Repeated efforts to involve dedicated volunteers in regular maintenance activities at the garden have been largely unsuccessful, perhaps due to the remoteness of the site or general challenges with attracting volunteers during the pandemic. Despite



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

this, several of the species planted/seeded at the site have persisted over the term of this grant and are now well established and self-propagating in those areas.

Water monitoring has such a huge scope that it could be an entire project by itself. Data collected and lessons learned have been useful, however DCA's capacity to carry out comprehensive water monitoring is stretched. DCA is exploring possibilities for collaborating as part of wider Comox Valley multi-municipality water monitoring program for future efforts. There was also some trouble with maintaining expensive equipment over long term with intermittently involved and relatively unskilled conservation practitioners. Better consistent skilled leadership would help this, but such leaders have been few and far between.

A change in leadership of this project midway through the grant (Erika Bland, former Land Manager had a baby and a new Land Manager, Andy Blackburn was hired) meant that work planned and carried out in the first years of the grant was continued by a new person in Year 3. While this posed some challenges for cohesiveness across the grant overall, we did our best to ensure a smooth transition by planning an overlapping period in which both Land Managers worked together on the grant to ensure an effective handoff of the project activities. The former Manager (Erika) was involved wherever possible in Year 3 including in the creation and review of this Final report.

4. COMMUNICATIONS

Project Outreach Activities: Provide information on any outreach activities during the year that directly relate to the project.

DCA outreach table at Summer Markets featured information about fire monitoring, wetland stewardship and invasive species control. Board members signed up new volunteers for work bees. Outreach activities focused on Bullfrog monitoring and invasive species control, mostly through newsletter articles, website and social media posts and summer market in-person outreach. Denman Biodiversity Forum event (March 2023) centered around education & outreach regarding invasive species control and pollinator stewardship.

Communicating about HCTF: Provide information on any activities specific to communicating about HCTF undertaken during the year.

Newsletter articles in the island paper updating the community on ongoing projects eg. Bullfrog monitoring, invasive species control. (Attached example: 'DCA_newlsetter_Oct22')

Regular updates to DCA website, social media pages & noticeboard outlining ongoing projects.

Summer market outreach May-Oct 2022

Email mailouts for volunteer work bees (Fall 2022, Spring 2023)

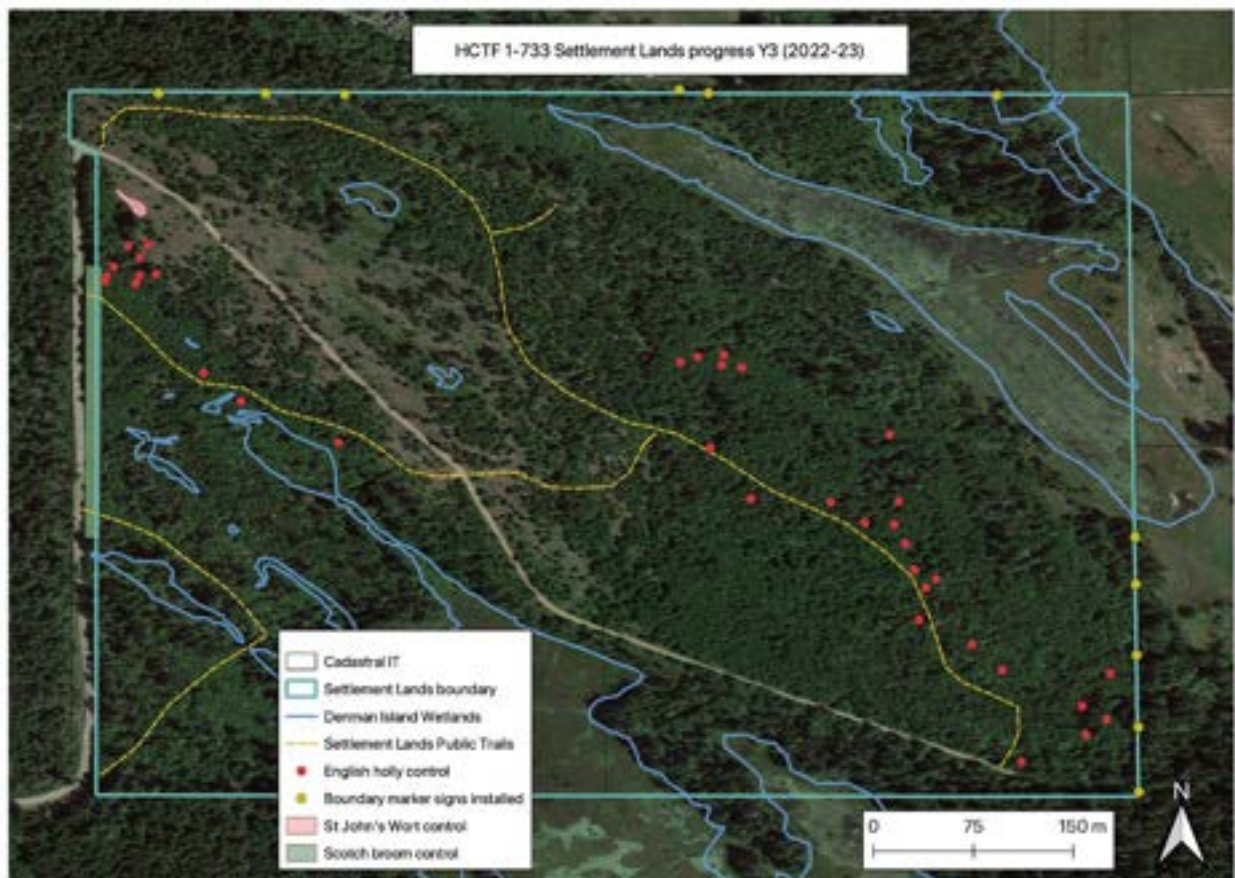


Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

Bullfrog monitoring email outreach Spring 2022 and follow-up Fall 2022.
Monthly reports to Lands Committee & DCA Board of Directors
Collaboration with BCIT/SFU student on invasive species control in Settlement Lands
BCIT Ecological Restoration student group visit & tour Oct 2022 to Central Denman Conservation Complex
DCA Annual General Meeting Feb 2023 report and presentation
DCA Biodiversity Forum March 2023

5. PHOTOS

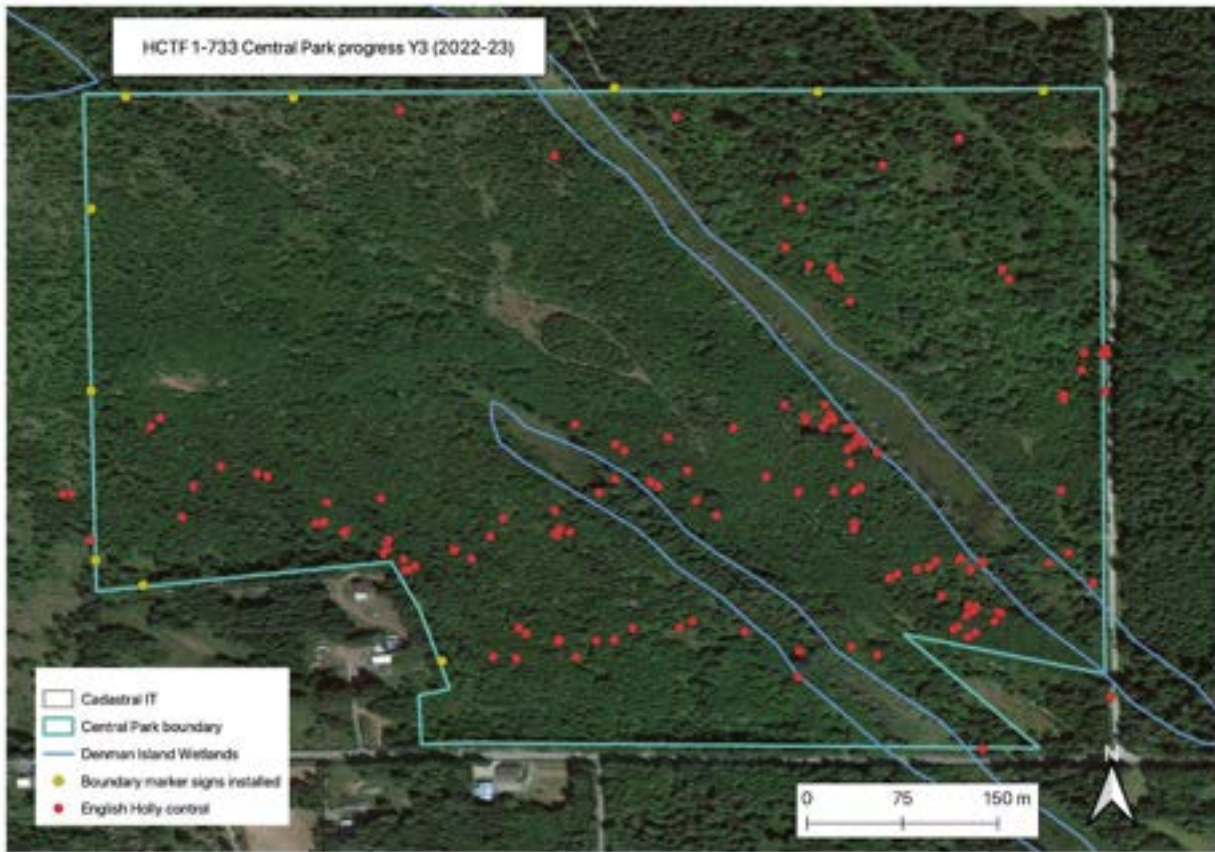


Map of progress in Settlements Lands in Year 3



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

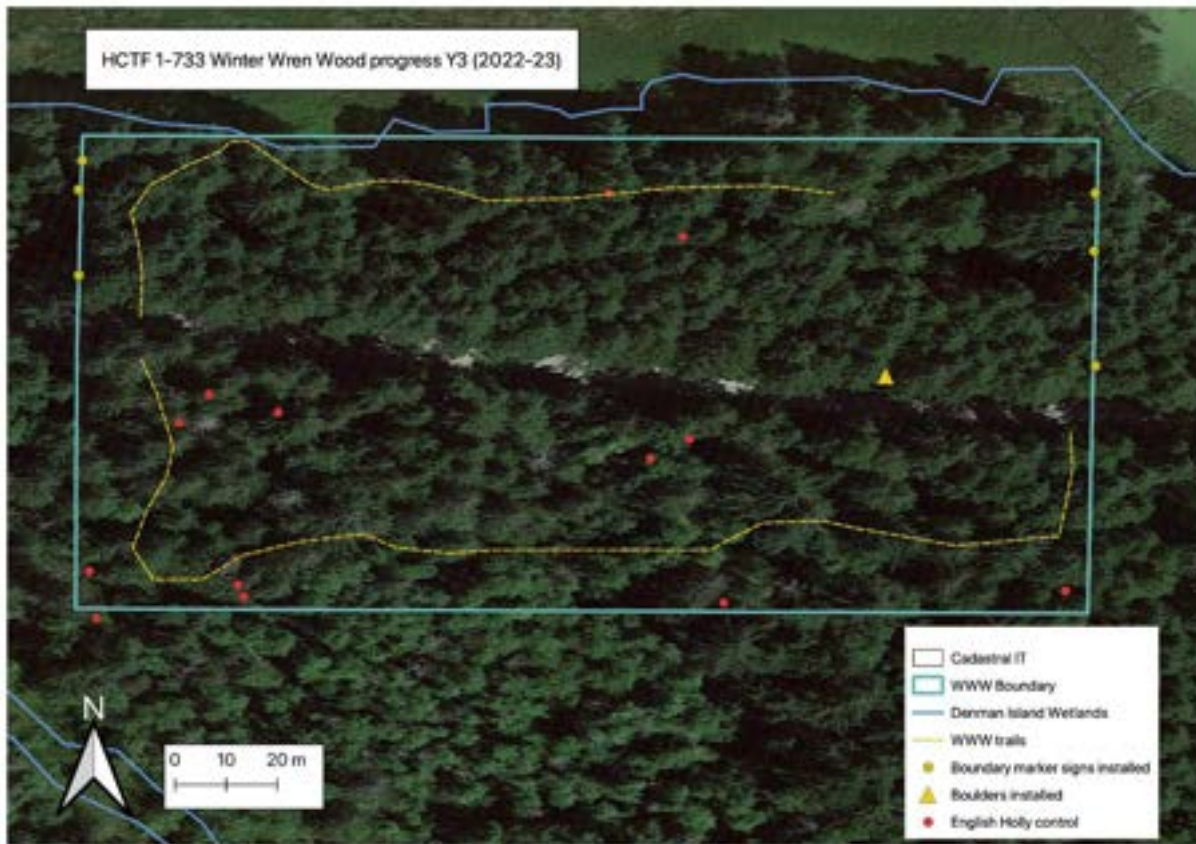


Map of progress in Central Park in Year 3



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM



Map of progress in Winter Wren Wood in Year 3.



HABITAT
CONSERVATION TRUST
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Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

Photos on following pages:

Photo 1 Volunteer Jenny Balke installing boundary marker sign at Settlement Lands, Jan 2023, cred: Andy Blackburn

Photo 2 Volunteer Leya Anderson next to a pile of cut English Holly in Settlement Lands, cred: Andy Blackburn

Photo 3 Invasive St John's Wort patch at Settlement Lands after being cut back whilst flowering and covered with plastic for solarization following previous year's recommendations, cred: Andy Blackburn

Photo 4 Coordinator collecting data from water level gauge at Homestead Marsh, winter 2022, cred: Leya Anderson

Photo 5 Installed boulders and new signage at entrance to Winter Wren Wood blocking vehicle access to inner parking area which will be restored, cred: Andy Blackburn

Photo 6 Denman homeschool group helping to install new interpretive signs in Winter Wren Wood, cred: Andy Blackburn

Photo 7 Installed interpretive sign along nature trail in Winter Wren Wood, March 2023, cred: Andy Blackburn





From Application					FINAL OUTCOMES		
Property/Complex Name:	Goal	Objective	Expected Outcome/Performance Indicators by End of Year 3	Activities	Activities Completed in the Final Year	Expected Outcome/Performance Indicators met? (Yes/No/Partial)	If Expected Outcome/Performance Indicators not met, or partial met, provide an explanation
Central Denman Conservation Complex	Maintain/increase populations of Species at Risk: Taylor's Checkerspot (SARA Endangered); Little brown bat (Endangered); Dun Skipper (BC Red List); Western Pondhawk (BC Blue List); N. Red-legged frog (BC Blue List); Olive-sided flycatcher (BC Blue List); C.Nighthawk (SARA Threatened)	Enhance habitat for Taylor's Checkerspot (TC) & other invertebrate pollinators by controlling ingrowing vegetation & increasing density of food & nectar plants for larvae & adult TCs and other species;	1000+ ingrowing trees (0-2m tall) are removed from Butterfly Reserve area, to retain sunny areas for native meadow species used as nectar & larval host plants for TC. 0.02ha Butterfly Garden produces seeds & forbs from 8+ TC host species, for translocation/seed collection used in Butterfly Reserve. Surplus plants/seeds distributed annually to 10 private landholders with critical TC habitat. Translocated plants show survival rate of min 50% after 1 year. Germination present at min 50% of seed distribution sites in Butterfly Reserve within 2 years.	DCA Land Manager & volunteers dig up 1000+ conifer trees <2m from Butterfly Reserve, retaining moist root masses & staging in fenced Butterfly garden for distribution to landholders with critical TC habitat (Y 1-3)			
				Garden seeded with TC host spp by volunteers and youth. Seedlings translocated to Zha Reserve habitat (Y2&3). Garden & purchased seed distributed to 0.4ha vernal wetland & adjacent habitat (Y 1-3).	In spring and fall of 2022, 11 volunteers were engaged in work to maintain and enhance the Demonstration Pollinator Garden and Butterfly Reserve habitat at the Settlement Lands.	Partial	Native host plant seeds from ### plant species were spread at the garden and throughout the vernal wetland and upland areas within the Butterfly Reserve.
				Follow-up monitoring /survival rate data collection annually in fall.	Seeded plots in demonstration garden and butterfly reserve monitored for growth in spring and fall 2022 and early spring 2023.	Yes	The 2 annual species (collinsia parviflora and prunella vulgaris) which flowered and produced seeds in Year 2 were still present at time of monitoring in fall of 2022. Woodland strawberries transplanted to the site have survived and are self-propagating across the garden. Survival of shrubs planted in garden in 2022 was about 60 percent in fall 2022 and those plants alive at the end of summer (mostly red-flowering currant and two rose species) 2022 were still thriving and showing new growth in March 2023.
	Maintain/increase populations of Species at Risk: Taylor's Checkerspot (SARA Endangered); Little brown bat (Endangered); Dun Skipper (BC Red List); Western Pondhawk (BC Blue List); N. Red-legged frog (BC Blue List); Olive-sided flycatcher (BC Blue List); C.Nighthawk (SARA Threatened)	Augment invasive species removal efforts by revegetating treated areas with native plant species to create varied shade and reduce ingrowth of new Broom and other invasive plants.	The DCA Land Manager organizes 20 volunteers to seed native species of local provenance and representative of natural species diversity (8+ species) within areas treated for Scotch Broom removal. Germination of seeded species observed at a minimum of 50% of treated areas within 2 years.	DCA Land Manager and 20 volunteers collect seeds and berries from native forbs/shrubs of local provenance & distribute across 20ha where Scotch Broom control has taken place. (Y 1-3)	Seeds from native shrubs and plants collected by volunteers were spread throughout invasive species control areas.	Yes	Native host plant seeds from ### plant species were spread in areas where Scotch broom removal had taken place. While we did meet our expected outcome, there was insufficient mature plant material to transplant native shrub and forb species in all areas where invasive species removal took place, but seeds and plants were prioritized in areas that were deemed most likely to facilitate successful survival and establishment, such as shady sites and areas with existing native vegetation to provide cover from deer browsing.
				Follow-up monitoring /survival rate data collection annually in fall.	Monitoring of seeding/transplanting sites took place in fall 2022 and early spring 2023.	Partial	Survival rates of transplanted shrubs, especially red flowering currant and rose species was high throughout the treatment area. Wildflower and shrub seeding was, unfortunately, largely unsuccessful. Areas where seeds were sown are largely grass-dominated and even with preparing some seed beds, the combination of competition by existing species and summer drought meant that very few instances of established plants grown from seed were noted. Watering areas sufficiently to ensure establishment and survival of seeded species is not practical at this site. Continuation of the native seeding program is not recommended for this remote and very dry area, however, transplanting of native shrubs in fall months is a viable alternative and success is improved further where watering the shrubs is possible for the first year after transplanting.
	Maintain/increase populations of Species at Risk: Taylor's Checkerspot (SARA Endangered); Little brown bat (Endangered); Dun Skipper (BC Red List); Western Pondhawk (BC Blue List); N. Red-legged frog (BC Blue List); Olive-sided flycatcher (BC Blue List); C.Nighthawk (SARA Threatened)	Enhance wetland & upland habitats by restoring native plant diversity through manual removal of invasive species (Scotch broom, English Holly, Daphne Laurel, Canada Thistle, Everlasting Pea, St.John's Wort, Reed Canarygrass, English Hawthorne).	Coordinator organizes 1800 volunteer hours + 240 paid hours to remove invasive plants from 30ha habitat throughout Conservation Complex (except Inner Island Nature Reserve). Treated areas are mapped and photographed. 100 English Holly plants >2m tall removed within the Complex, with focus on female plants producing berries. GPS locations of cut holly trees are marked, & follow-up treatments in Y2&3 to cut resprouting shoots. Completed work is documented with photographs & maps of treated areas to guide continual management efforts.	Carry out 10 volunteer work-bees each year + hire contractor for 80h per year to remove invasive Scotch Broom, Canada Thistle, English Holly, Daphne Laurel and other species) across the Conservation Complex (Y 1-3).	Contractors hired for invasive removal work across complex inc. Holly, St John's Wort, Broom, Daphne, mostly focused in Settlement Lands. Student project on Reed Canary Grass control in-kind contributions. 4 volunteer work bees tackled Holly & Daphne in Settlement Lands.	Partial	Unable to carry out 10 organized volunteer work bees due to difficulties recruiting enough volunteer availability & time constraints. Additionally, many invasive incidences in the complex are located in hard-to-access areas that are not very suitable for volunteer labour. Volunteers continued to remove invasive plants on an individual basis throughout the year. Contractors were successfully hired to carry out much of the important 'heavy' work of invasive removal.
				Hire contractor to remove min. 100 large English Holly Plants, marking GPS locations of plants removed, focusing especially on plants with berries, using a chainsaw (Y 1).			
				DCA Land Manager & volunteer Land-Keepers use GPS locations to monitor cut Holly stumps & remove resprouting shoots (Y 2 & 3)	Contractor & volunteers used GPS locations to revisit cut holly stumps & remove regrowth. New instances of Holly were also mapped for future efforts.	Yes	
Project # 1-733	Following positive ID of one American Bullfrog on Denman Island (2018), protect native wildlife diversity & habitat for Northern Red-legged frog (BC Blue List), other amphibians & breeding waterfowl. Prevent colonization of American Bullfrog into areas where it is currently	Initiate monitoring program for early detection of invasive American Bullfrogs (HCTF & HSP Funds - Application pending).	Volunteer working group is initiated to carry out bi-weekly monitoring for American Bullfrog in perennial Lake/wetland habitats within the Central Denman Island Conservation Complex. Trained working group personnel record monthly baseline water quality data (depth, pH, temperature, Dissolved Oxygen, Electrical Conductivity) using professional equipment within Chickadee-Beadnell watershed. 10 community leaders trained in water quality monitoring (HCTF) and identification and methods for Early	Early-detection monitoring (acoustic & eyeshine surveys) at perennial wetlands in the Complex (Pickles Marsh, Homestead Marsh, Chickadee Lake, Swale Marsh, Graveyard Marsh) weekly May-Sept for 3 years (Y 1-3).	Land Manager coordinated 16 volunteers conducting acoustic survey monitoring throughout summer months totalling 80h volunteer hours. Professional night-time survey of Chickadee Lake conducted May 2022 through in-kind funding.	Yes	
				Implement outreach in D.I. community, focusing on Early Detection and Rapid Response protocols for American bullfrogs including ID (visual, acoustic), habitat characteristics & native amphibian interactions (Y2)	Newsletter, website & social media articles circulated. Professional survey report circulated. Other agencies & experts consulted for ID and control advice.	Yes	

	unrecorded.		Detection Rapid Response (EDRR) protocols for American Bullfrogs (HSP).	Water quality parameters measured monthly for 3 years at 4 sites in Beadnell headwaters by trained DCA Landkeeper volunteers and Land Manager.	Y3 Coordinator hired, monitoring & data collection by coordinator & volunteers monthly at 2 sites. Report & analysis produced.	Partial	Project re-evaluated to only include 2 monitoring sites rather than 4, based on accessibility and ability to collect worthwhile representative data. Data collected monthly throughout Y3. Report, analysis & recommendations produced by coordinator.
	Protect sensitive habitat from damage with management aids in areas of concern for wildlife & rare plant communities (migrating/nesting waterfowl; at-risk invertebrates & amphibians; old-growth Coastal Douglas-fir forest stands; sensitive bluff flora).	Clarify & mark conservation area boundaries, especially where land use changes occur due to private or other-agency landownership.	Install 30 boundary markers at property corners & along boundary lines, specifically focusing on sites where changes in land use / ownership / management objectives occur with adjacent neighbouring properties (see Inset Map showing proposed marker sites).	DCA Land Manager & retired professional surveyor volunteer locate key boundary points/property corners, in collaboration with neighbours including 8 private landholders, and the following agencies: Islands Trust Conservancy, BC Parks, & Denman Island Memorial Society (Y1) 30 Boundary marker signs are fabricated & installed on painted metal T-posts at sites located by retired surveyor volunteer & DCA Land Manager (Y1)	Boundary points located using GPS, compass, basic surveying techniques. Key DCA/Private land boundary areas identified and landowners notified. Boundary marker signs installed at key points along DCA/Private boundaries by Land Manager & volunteer	Yes Yes	
	Protect sensitive habitat from damage with management aids in areas of concern for wildlife & rare plant communities (migrating/nesting waterfowl; at-risk invertebrates & amphibians; old-growth Coastal Douglas-fir forest stands; sensitive bluff flora).	Install new/ repair degraded signage along trails at key locations where incursion into sensitive areas is anticipated by the public.	35+ signs are designed & installed at locations a) where visitor access passes through or near to areas of high ecological sensitivity or b) where information is needed for wayfinding/appropriate use of properties; and c) where signs have degraded through long-term use.	Replace or repair 15+ plywood management signs in Complex (degraded from long-term use) with durable aluminium or coated wood signs (Y2) Work with artist to refurbish and re-install 20+ existing degraded plant ID signs (Winter Wren Wood): touch up paint & coat with permanent sealer (Y2) Install a sign at 'Overlook Trail' suggesting caution to protect sensitive bluff flora.	Land Manager replaced 17 degraded plywood signs with metal printed signs in Y3 Artist designed 14 new plant signs, printed durable metal signs produced and installed by Land Manager with local homeschool group.	Yes Yes	
	Protect sensitive habitat from damage with management aids in areas of concern for wildlife & rare plant communities (migrating/nesting waterfowl; at-risk invertebrates & amphibians; old-growth Coastal Douglas-fir forest stands; sensitive bluff flora).	Protect against wildfire by encouraging seasonally-appropriate access to Conservation Complex lands & providing means for safe disposal of flammable materials.	Volunteer coordinator organizes volunteer fire monitoring crew to carry out daily monitoring in high fire-risk areas throughout extreme fire hazard season (June-August). In collaboration with volunteer Fire Department, fireproof cigarette-butt receptacles & no-smoking signs are placed at 4 main property entrances in summer & maintained by fire monitoring crew.	Volunteer coordinator organizes fire monitoring crew for daily fire monitoring through fire season (Y1-3) Refurbish chain closure used to restrict vehicle access to Winter Wren Wood parking area during extreme fire season. New posts installed for chain supports (Y1) Metal receptacles & no-smoking signs are placed at all entrances to public trails in Conservation Complex (placed ~June, removed Septmeber) (Y1-3)	Daily monitoring carried out for 80 days through fire risk season. Large boulders placed to replace chain & prevent vehicle access. New sign installed to explain restoration project. Receptacles monitored & emptied when necessary by volunteers.	Yes Yes Yes	



1-734

Millard Learning Centre



Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM

HCTF Project Number: 1-734

Please refer to the Land Stewardship Grant Final Year Reporting Instructions when completing this report.

This report must be completed in conjunction with the Activities and Expenditures Report (spreadsheet) customized for your project based on your proposal.

1. PROJECT INFORMATION

Project/Property Name: Millard Learning Centre

Project Leader Name: Adam Huggins

Name of Organization: Galiano Conservancy Association

Date of Report: April 21, 2023

Author of Report (if different than Project Leader):

Name of Organization:

Contact Information: restoration@galianoconservancy.ca

2. SUMMARY

Provide a general description of project work completed in the last year (500 words max).

Work completed in the final year of this project includes:

1. Introduced species managed and removed from Chrystal Cove, the Mill Site, and sensitive sites (cliffs and seeps). There is a notable reduction in the population and regeneration of these species across the three years of the project.
2. T ragwort from removed across the property. This requires several passes during the months of July and August. Again, we observed a marked reduction in the abundance of this species across the three years.
3. One additional set of paired deer enclosure and control monitoring plots established in a wetland ecosystem. Deer monitoring protocol carried out for the third year.
4. Introduced weeds controlled and removed in the Nuts'a'maat Forage Forest. Annual monitoring protocol performed for the fifth successive year. Additional native wildflowers planted into the camas meadow garden, including blue-listed *Allium amplexans* propagated from local population on Galiano Island.



Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM

5. Annual monitoring and minor maintenance activities performed at the Mill Site.
6. *Rana aurora* rapid habitat assessments and water quality measurements performed by visiting BCIT students across the Chrystal Creek watershed. Hydrophone and egg-mass survey monitoring performed by GCA staff and interns across the Chrystal Creek watershed at five distinct sites. Breeding red-legged frogs and egg masses confirmed at 2 of 5 sites, including a newly constructed wetland (Oct. 2021) in Phase 1 of the Chrystal Creek watershed area. Red-legged frogs are expected to expand into the remaining monitoring wetlands over the next 3 years.
7. Artificial cover objects (ACOs) for *Contia tenuis* detection monitoring placed at suitable sites in dry, open coastal forest along the 2 km Millard Learning Centre shoreline. Surveys planned for the next three years. A meeting with the Islands Trust Conservancy resulted in a plan to secure the proper permits for GCA staff to perform monitoring at both the Millard Learning Centre and the neighboring Trincomali Nature Sanctuary, where ACOs are already in place.
8. Funding secured to complete the Chrystal Creek watershed restoration by 2025, and restoration planning completed for Phase 3 of this three-phase project. 2.77 ha treated in 2022, including the construction of 65 individual wetland pools.
9. BCIT students trained to use live-stakes and miniature beaver dam analogs to manage spillway erosion in newly constructed wetlands, and treatments applied.
10. Trail network maintained, and Tranquility Bluff destination trail completed and opened to the public.
11. 10-year update of Millard Learning Centre management plan completed, with additional input from Indigenous youth and educators.

Please provide a general summary of overall project outcomes (500 words max).

Project outcomes include:

1. A notable reduction in the population and regeneration of *Cytisus scoparius*, *Rubus armeniacus*, *Rubus laciniatus*, and *Ilex aquifolium* at Chrystal Cove due to thorough and consistent removal efforts over the last three years. Ongoing removal efforts are still required, but mature seeding individuals have been eliminated, and populations are now restricted to recruits from the seed bank.
2. The removal of mature *Cytisus scoparius* from the entire Millard Learning Centre property, including sensitive seepage sites and the 2 km coastline. Ongoing removal efforts will be required to manage the seed bank in these areas, but the only remaining mature individuals on the property are on inaccessible cliffs above the ocean. We now have GCA staff with Rope Access certification and appropriate gear to access these locations as well over the next three years.
3. *Jacobaea vulgaris* managed across the property and prevented from seeding. Population greatly reduced, but ongoing management required.
4. Six permanent paired 10x10m deer enclosure and control monitoring plots established in distinct ecosystems across the property, and three years of monitoring data collected. It is still too early to note distinct trends in the data; several more years required to draw statistically significant conclusions.

Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM

5. Weeds managed and a variety of native species established in the Nuts'a'maat Forage Forest to supplement the original plantings. Three years of monitoring data collected.
6. Mill Site and Chrystal Cove restoration sites assessed, and management recommendations implemented. New fenced enclosure established at the Mill Site, and additional tree species planted to restore utility road cut. Introduced species managed.
7. Three years of hydrophone and breeding surveys performed for *Rana aurora* at five unique restored wetland sites. Breeding population confirmed to be expanding into newly constructed wetlands after one year.
8. Artificial cover objects for *Contia tenuis* monitoring placed at suitable sites across the 2 km Millard Learning Centre coastline. Plans made to acquire necessary permits for detection surveys over the next three years.
9. Ambitious Chrystal Creek watershed restoration program initiated, planned, funded, and partially completed. 4.65 ha treated to date, with 88 individual wetland pools constructed, 2,145 native trees and shrubs planted, 6,540 kg of solid waste removed, and 955 m of ditches removed.
10. Live-stakes and other soil bioengineering practices implemented to limit erosion in newly constructed wetlands.
11. Millard Learning Centre trail network maintained and expanded, including the completion of the Tranquility Bluff destination trail.
12. Millard Learning Centre management plan and Introduced Species management plan revised and updated, with extensive additional mapping and input from Indigenous youth and educators.
13. Eight detailed reports by post-secondary students that directly informed our project-related management activities were produced during field courses and/or independent studies at the Millard Learning Centre during the project period. Our project built on student reports that were authored prior to 2020 as well.
14. Two UVic Restoration of Natural Systems program students performed detailed surveys, provided restoration prescriptions, and authored reports to inform the Chrystal Creek watershed restoration project (100+ hour commitment each).

3. LESSONS LEARNED

Describe any problems or challenges that arose and how you addressed them in order to proceed with the project. What have you learned that would be valuable to share with others that may be undertaking a similar project?

Permits to handle Species at Risk can delay monitoring activities. Our *Rana aurora* survey protocol requires no contact with individuals, so no permits were necessary to conduct the work, and we were able to collect three years of quality data. *Contia tenuis* surveys potentially require handling individuals and require the appropriate permits, which we were not able to obtain within the project period. ACOs have now been established, and surveys are planned for the next three years, but lack of permit has delayed our efforts in this area. Our recommendation here is that the need for permits be identified and addressed as early as possible in the project period; additional funding may be necessary to secure the appropriate expertise for the Species at Risk concerned.

Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM

4. COMMUNICATIONS

Project Outreach Activities: Provide information on any outreach activities during the year that directly relate to the project.

1. Social media posts featuring the *Rana aurora* monitoring efforts, *Contia tenuis*, and the restoration of the Chrystal Creek watershed were produced and circulated across several platforms.
2. Three YouTube videos featuring the *Rana aurora* monitoring efforts and the restoration of the Chrystal Creek watershed were produced and posted: "[Red-legged Frog Mating Calls](#)", "[Cedars for the Next Century – Phase 1 Wetland Restoration](#)", and "[Cedars for the Next Century – Phase 2 Wetland Restoration](#)".
3. The 2021 BCWF Wetlands Institute was hosted at the Millard Learning Centre and participated in volunteer and education activities related to the project.
4. Dozens of K-12 education programs visited the Millard Learning Centre and participated in volunteer and education activities related to this project. Field courses from the University of Victoria (3x), the University of British Columbia (2x), and BCIT (2x) participated in volunteer and education activities related to this project. Other major events, including our annual Supporter Appreciation Event and the annual Musical Walkalong for Learning, provided guided tours of project sites with interpretation by project leads.
5. Three unique interpretive signs exploring wetland ecology, forest restoration and carbon, and wetland restoration were installed at prominent locations on the trail network. Final drafts of these signs were approved by HCTF.

Communicating about HCTF: Provide information on any activities specific to communicating about HCTF undertaken during the year.

HCTF was acknowledged in writing and/or verbally as part of all the above outreach efforts. HCTF is also acknowledged on interpretive signage relating to the project, and on our website.

Media Coverage: Provide a list of any articles or media coverage during the year.

The Galiano Conservancy produced the following articles that were distributed in local publications:

1. An article on the Chrystal Creek watershed restoration project was written and [published on our website](#) and in our local newspaper, the *Active Page*.
2. A second article on the Chrystal Creek watershed restoration project was published in the [2022-2023 edition of the Galiano Island Stewardship News](#) and mailed to all island households.

In addition, our work at the Millard Learning Centre was featured:

1. In a 2022 article published by Raincoast Conservation Foundation: "[The story of Coastal Douglas-fir Forests: Living within rather than apart from the places that sustain us](#)"
2. In webinar presentations solicited and delivered as part of the 2022 UN Decade on Ecological Restoration's "Make a Difference Week", as well as the 2023 Coastal Douglas-fir Conservation Partnership webinar series ("[Climate Resilience in the Freshwater and Marine Environment](#)").



Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM

5. PHOTOS



Photo 1: GCA volunteers and staff remove Scotch broom from sensitive coastal bluffs in May of 2020



Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM



Photo 2: Hydrophone monitoring for red-legged frogs in March of 2023



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Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM



Photo 3: Aerial image of newly constructed wetlands in old pasture in March of 2023



Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM



Photo 4: GCA volunteers and staff use live-stakes and soil bioengineering techniques to manage erosion in spillways between newly constructed wetlands in March of 2023



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Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM



Photo 5: GCA volunteers and staff pose over a newly constructed wetland after planting native species in November of 2022



Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM



Photo 6: Restoration of Natural Systems student Maddie Wong plants native species into the restored Chrystal Creek watershed as part of a capstone project she designed in November of 2022



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Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM



Photo 7: Sunrise over newly constructed wetland in November of 2022



Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM



Photo 8: GCA volunteers help to establish native species in restored Chrystal Creek watershed in November of 2022



Land Stewardship Grant 2020-2023 FINAL YEAR REPORT FORM



Photo 9: Wetland restoration practitioners-in-training Sara Yeomans and Kendall McLaughlin participate in wetland construction activities in November of 2022. Both were previously GCA seasonal staff who are now working in the field professionally at Rewilding Water & Earth Inc. and the BCWF, respectively.



Land Stewardship Grant 2020-2023

FINAL YEAR REPORT FORM



Photo 10: GCA volunteers and staff removing yellow flag iris from Chrystal Cove during "Make a Difference Week 2022" as part of the UN Decade on Ecosystem Restoration.

From Application					FINAL OUTCOMES		
Property/Complex Name:	Goal	Objective	Expected Outcome/Performance Indicators by End of Year 3	Activities	Describe Activities Completed in the Final Year	Expected Outcome/Performance Indicators met? (Yes/No/Partial)	If Expected Outcome/Performance Indicators not met, or partially met, provide an explanation
Millard Learning Centre Project # 1-734	1. Protect sensitive ecosystems from invasive species and excessive browsing	Control target invasive species across property and eliminate from sensitive areas	Scotch broom (<i>Cytisus scoparius</i>) and tansy ragwort (<i>Senecio jacobaea</i> syn. <i>Jacobaea vulgaris</i>) controlled or eliminated at target sites	Remove scotch broom (<i>Cytisus scoparius</i>) from Chrystal Cove annually	All mature Scotch broom individuals removed from Chrystal Cove.	Yes	
				Remove scotch broom (<i>Cytisus scoparius</i>) from seepage sites and sensitive areas annually	All mature Scotch broom individuals removed seepage sites and sensitive areas.	Yes	
				Remove tansy ragwort (<i>Senecio jacobaea</i> syn. <i>Jacobaea vulgaris</i>) across the property annually	Tansy ragwort removed from the entire property. Several passes required.	Yes	
	1. Protect sensitive ecosystems from invasive species and excessive browsing	Expand, maintain, and monitor deer exclosures at restoration sites and permanent monitoring plots	Three years of data collected from permanent monitoring plots; deer exclosures maintained, allowing restoration sites and permanent monitoring plots to remain protected from browsing	Perform annual monitoring protocol at permanent monitoring plots	Monitoring protocol performed.	Yes	
				Regularly inspect deer exclosures to ensure their integrity against incursions; repair and / or replace damaged exclosures as needed	Deer exclosures inspected and maintained as needed. Minimal maintenance	Yes	
				Create additional permanent monitoring exclosures at key locations to expand understanding of browsing impacts across ecosystem types / seral stages	One additional monitoring exclosure installed in Year 3 in a marsh wetland site.	Partial	We still have some leftover fencing and plan to establish one or two additional exclosure monitoring plots on the property when the capacity is available.
	2. Ensure effective restoration by maintaining and monitoring established restoration projects	Maintain and monitor the Nuts'a'maat Forage Forest	Three years of detailed monitoring data collected for adaptive management and future publication; Nuts'a'maat Forage Forest maintained and expanded, with edible products obtained from most species by the end of year 3	Perform annual monitoring protocol in the Nuts'a'maat Forage Forest as laid out by Park & Higgs, 2017	Monitoring protocol performed.	Yes	
				Control introduced thistles (<i>Cirsium</i> spp.) and agronomic grasses to assist establishment and productivity of native species	Introduced thistles, grasses, and other weeds controlled through both hand-weeding	Yes	
				Establish additional native species as propagules become available from the nursery	Additional species established, including blue-listed <i>Allium amplexans</i> and a wide variety of wildflowers.	Yes	
	2. Ensure effective restoration by maintaining and monitoring established restoration projects	Maintain and monitor the old mill and Chrystal Cove restoration sites	Old mill and Chrystal Cove restorations revisited, monitored, and maintained	Monitor to determine health and success of restoration treatments at old mill and Chrystal Cove restoration sites; determine necessary follow-up treatments	This task was completed in a previous year.	Yes	
				Perform follow-up treatments (removing cages, replacing dead plants, invasive species control, etc.) based on monitoring	Introduced species managed at both sites, including placement of pond liner to suppress periwinkle. Extensive management and removal activities at Chrystal Cove.	Yes	
				Restory utility road cut on old mill site	This task was completed in a previous year.	Yes	
	3. Improve knowledge of species at risk on the property	Carry out surveys to identify new populations, suitable habitat, and / or health trends of existing populations for target species at risk	Data on habitat and population trends for red-legged frogs (<i>Rana aurora</i>) and dense-spike primrose obtained, and additional suitable habitat identified; presence/absence of sharp-tailed snake (<i>Contia tenuis</i>) determined, and suitable habitat areas assessed for introduction potential	Establish and perform annual monitoring protocol for red-legged frogs (<i>Rana aurora</i>) based on 2018 report, including presence / absence across suitable habitat on the property and population trends within known populations	Monitoring protocol performed. Expansion of breeding population into newly-constructed wetlands confirmed.	Yes	
				Survey suitable habitat for signs of sharp-tailed snake (<i>Contia tenuis</i>) as per the 2015 Provincial Recovery Strategy and 2011 status report on Species at Risk for Galiano Island	Artificial cover objects placed in suitable locations.	Partial	We were unable to perform detection surveys during the project period due to lack of the appropriate expertise on staff required to secure a permit to handle SAR. We are currently coordinating with the Islands Trust Conservancy to secure the necessary training and take over surveys for both the Millard Learning Centre and the Trincomali Nature Sanctuary.
				Survey property for additional populations of dense-spike primrose (<i>Epilobium densiflorum</i>) and identify sites for seeding	Red-listed dense-spike primrose seeded and thriving in several restoration sites.	Partial	Survey efforts determined that the population discovered at the Millard Learning Centre likely originated in soil imported from Vancouver Island. Nevertheless, populations established from seeds of this population have been successfully established at restoration sites across the property.
	4. Restore hydrological processes across the property	Prepare comprehensive restoration plan for the Chrystal Creek watershed based on expert consultation, reports, and additional surveys	Restoration plan for Chrystal Creek watershed prepared and budgeted; riparian vegetation established in key areas to prevent erosion	Review Design Concept Plan for Chrystal Creek Re-construction (2016) and perform additional surveys to expand project scope to watershed scale	Restoration program initiated at the watershed scale, and is well-underway.	Yes	
				Consult BCWF experts during summer 2020 wetland creation workshop at the MLC to assess restoration potential of the Chrystal Creek watershed	This task was completed in a previous year.	Yes	
				Prepare comprehensive restoration plan for the Chrystal Creek watershed	Restoration planning completed for the entire watershed.	Yes	

4. Restore hydrological processes across the property	Revegetate eroded riparian areas	Riparian areas protected against erosion across the property	Live-stake riparian areas and pond perimeters to stabilize soils and prevent erosion	Live-stakes, miniature beaver dam analogues, and other soil bioengineering treatments applied to control and prevent erosion.	Yes	
5. Encourage public access to conservation lands, demonstration facilities, and restoration sites	Expand and maintain a high quality public trail network	10 km of trails maintained across the property, with some trails available at all times regardless of educational programs; clear signage and maps posted across trail network	Complete 2 km destination trail connecting parking area to Tranquility Bluff, to be open to the public year-round	Tranquility Bluff Destination Trail completed and opened to the public.	Yes	
			Maintain existing 8 km of trails, to be open to the public when youth education programs are not in session	Trail network maintained and expanded.	Yes	
			Repair and improve trail signage as needed	No additional trail signage needed.	No	
6. Ensure long term management goals are met	Update relevant management plans for 2020, taking organizational successes, feedback, and climate change into consideration	Key management plans updated to reflect successes and revise management priorities for the next decade	Revise and update Millard Learning Centre Management Plan (2013) for 2020	Millard Learning Centre Management Plan revised and updated for 2023.	Yes	It took longer than expected to update this document. We shifted target to 2023 to hit the 10-year anniversary of the original plan.
			Revise and update Invasive Alien Species Management Plan (2014) for 2020	Introduced Species Management Plan revised and updated for 2022, with data collected in 2021.	Yes	

2-673

Conservation – Rodgers





Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

HCTF Project Number: 2-673 _____

Please refer to the Land Stewardship Grant Final Year Reporting Instructions when completing this report.

This report must be completed in conjunction with the Activities and Expenditures Report (spreadsheet) customized for your project based on your proposal.

1. PROJECT INFORMATION

Project/Property Name: Rodgers Rd

Project Leader Name: Liz Webster

Name of Organization: Savary Island Land Trust

Date of Report: April 13, 2023

Author of Report (if different than Project Leader):

Name of Organization:

Contact Information:

2. SUMMARY

Provide a general description of project work completed in the last year (500 words max).

In the last year we were able to provide 3 guided walks of the properties led by Phil Henderson R.P Bio. of Strix Environmental Consulting. Community members were keen and interested to learn more about the forests, soils and ecosystems on Savary Island from a knowledgeable professional in the field. The walks were made part of our 25th birthday celebration for SILT. In addition, SILT staff, a graphic designer and Phil Henderson worked together to develop an educational handout for each property. In total 2150 copies were printed and these will be shared on Savary Island at face-to-face events this Spring and Summer and will be made available online.

Please provide a general summary of overall project outcomes (500 words max).

These projects each began with a legal survey of the land in the first year, next ecological assessments for each parcel were conducted and reports written by a Phil Henderson R.P. Bio. These were useful



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

activities to learn more about the lands in our trust. A summary of findings was published in our newsletter. The added educational component in year three was made possible by a change request. This component included, guided educational walks to each property and printed/digital educational resources to share what was learned with our community. In each year we learned more about each property. The opportunity to share it in year three was important and useful.

3. LESSONS LEARNED

Describe any problems or challenges or unexpected benefits that arose and how you addressed them in order to proceed with the project. What have you learned that would be valuable to share with others that may be undertaking a similar project?

Adding the educational components in year 3 really brought each project full circle by sharing the findings with the community, on the ground, in print and on line.

We appreciated the opportunity to add on the educational components in the final year, thanks to the adoption of change requests. The resources developed will be a legacy for our community.

4. COMMUNICATIONS

Project Outreach Activities: Provide information on any outreach activities during the year that directly relate to the project.

In May 2022, guided walks to each of the properties took place over the long weekend. Phil Henderson led the walks to Rodgers Road wetland, Savary Island Rd and Vancouver Blvd forest lands. These walks were included as part of our 25th birthday celebrations, and cake was served at the SILT office after each walk, inviting participants to chat, engage, and build community around conservation.

Communicating about HCTF: Provide information on any activities specific to communicating about HCTF undertaken during the year.

Walk participants were informed about the support from HCTF and how it made the research and the walks possible. Each educational handout that was developed contains the HCTF logo and a message of gratitude for the HCTF support.

Media Coverage: Provide a list of any articles or media coverage during the year.

Savary Island Land Trust Newsletter
Face Book posts



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

5. PHOTOS

Include a minimum of three photos as part of your report, attached as separate JPG files. List the filenames below, plus a description of each photo.



Photo: Rodgers Road Wetland Walk. Phil Henderson R.P. Bio shares his research about the property, the only protected wetland on Savary Island with community participants. Photo credit: Liz Webster.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

6. ADDITIONAL DETAILS

Provide a description of any materials and supplies purchases funded by HCTF that are considered capital assets. See Final Year Reporting Instructions for information on Capital Assets.

NA

Provide any other information you wish to share with HCTF.

We are a small organization largely funded by our own community. We are grateful for the support of the HCTF to help us steward these lands. The research and education completed in the projects will provide a baseline of data and legacy to our community. Thank you.

From Application					FINAL OUTCOMES		
Property/Complex Name:	Goal	Objective	Expected Outcome/Performance Indicators by End of Year 3	Activities	Describe Activities Completed in the Final Year	Expected Outcome/Performance Indicators met? (Yes/No/Partial)	If Expected Outcome/Performance Indicators not met, or partially met, provide an explanation
Rodgers Road Properties	Legal Survey of Property	Determine and register legal boundaries	Perimeter survey, mark corners, register with Land Title Office	Contract legal surveyor to survey perimeter, mark, determine and register boundaries			
	Baseline Inventory of Properties	Determine site use by and presence of plants and animals; refine ecological classification; determine ecological context, threats and value;	Better understand ecological attributes of properties and landscape (spatial) consideraions to guide future acquisitions and land use.	vegetation plot sampling for BEC site series and delineation within properties soil sampling for wetland properties (Rodgers Rd.) wetland classification			
				other features: snags, coarse woody debris significant features (veteran trees, boulders, seepage sites, ephemeral wetlands or depressions)			
				general plant species inventory rare plant species: vascular plants and bryophytes			
				breeding bird survey (point count) + incidentals during other work bird nest survey (particularly raptors and herons) bird use survey: other sign such as roosting, etc. ecological/landscape context, threats identify collected plants (vascular and bryophytes) deposit plant specimens at UBC herbarium			
	Community Education	Inform the public about the ecological features and significance of the land.	Build stronger connections between the public and the ecosystems of Savary Island. Promote and encourage environmental stewardship.	Biologist lead guided walks on the property.			
				Develop, design, post & print an interpretive hand out about the property.			

Project # 2-673

2-674

Conservation - Savary Island Road



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

HCTF Project Number: 2-674 _____

Please refer to the Land Stewardship Grant Final Year Reporting Instructions when completing this report.

This report must be completed in conjunction with the Activities and Expenditures Report (spreadsheet) customized for your project based on your proposal.

1. PROJECT INFORMATION

Project/Property Name: Savary Island Road (2-674)

Project Leader Name: Liz Webster

Name of Organization: Savary Island Land Trust

Date of Report: April 13, 2023

Author of Report (if different than Project Leader):

Name of Organization:

Contact Information:

2. SUMMARY

Provide a general description of project work completed in the last year (500 words max).

In the last year we were able to provide 3 guided walks of the properties led by Phil Henderson R.P Bio. of Strix Environmental Consulting. Community members were keen and interested to learn more about the forests, soils and ecosystems on Savary Island from a knowledgeable professional in the field. The walks were made part of our 25th birthday celebration for SILT. In addition, SILT staff, a graphic designer and Phil Henderson worked together to develop an educational handout for each property. In total 2150 copies were printed and these will be shared on Savary Island at face-to-face events this Spring and Summer and will be made available online.

Please provide a general summary of overall project outcomes (500 words max).

These projects each began with a legal survey of the land in the first year, next ecological assessments for each parcel were conducted and reports written by a Phil Henderson R.P. Bio. These were useful activities to learn more about the lands in our trust. A summary of findings was published in our newsletter. The added educational component in year three was made possible by a change request.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

This component included, guided educational walks to each property and printed/digital educational resources to share what was learned with our community. In each year we learned more about each property. The opportunity to share it in year three was important and useful.

3. LESSONS LEARNED

Describe any problems or challenges or unexpected benefits that arose and how you addressed them in order to proceed with the project. What have you learned that would be valuable to share with others that may be undertaking a similar project?

Adding the educational components in year 3 really brought each project full circle by sharing the findings with the community, on the ground, in print and on line.

We appreciated the opportunity to add on the educational components in the final year, thanks to the adoption of change requests. The resources developed will be a legacy for our community.

4. COMMUNICATIONS

Project Outreach Activities: Provide information on any outreach activities during the year that directly relate to the project.

In May 2022, guided walks to each of the properties took place over the long weekend. Phil Henderson led the walks to Rodgers Road wetland, Savary Island Rd and Vancouver Blvd forest lands. These walks were included as part of our 25th birthday celebrations, and cake was served at the SILT office after each walk, inviting participants to chat, engage, and build community around conservation.

Communicating about HCTF: Provide information on any activities specific to communicating about HCTF undertaken during the year.

Walk participants were informed about the support from HCTF and how it made the research and the walks possible. Each educational handout that was developed contains the HCTF logo and a message of gratitude for the HCTF support.

Media Coverage: Provide a list of any articles or media coverage during the year.

Savary Island Land Trust Newsletter
Face Book posts



HABITAT
CONSERVATION TRUST
FOUNDATION

Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

5. PHOTOS



Photo: Community Building and cake after guided walks. SILT Executive Director serves cake celebrating SILT's 25 years to walk participants. SILT added this treat on to the walk, to enhance community building around conservation on Savary Island. Photo credit: Truls Skogland.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

6. ADDITIONAL DETAILS

Provide a description of any materials and supplies purchases funded by HCTF that are considered capital assets. See Final Year Reporting Instructions for information on Capital Assets.

NA

Provide any other information you wish to share with HCTF.

We are a small organization largely funded by our own community. We are grateful for the support of the HCTF to help us steward these lands. The research and education completed in the projects will provide a baseline of data and legacy to our community. Thank you.

From Application					FINAL OUTCOMES		
Property/Complex Name:	Goal	Objective	Expected Outcome/Performance Indicators by End of Year 3	Activities	Describe Activities Completed in the Final Year	Expected Outcome/Performance Indicators met? (Yes/No/Partial)	If Expected Outcome/Performance Indicators not met, or partially met, provide an explanation
Savary Island Road	Legal Survey of Property	Determine and register legal boundaries	Perimeter survey, mark corners, register with Land Title Office				
	Baseline Inventory of Properties	determine site use by and presence of plants and animals; refine ecological classification; determine ecological context, threats and value;	Better understand ecological attributes of properties and landscape (spatial) consideraions to guide future acquisitions and land use.	vegetation plot sampling for BEC site series and delineation within properties; other features: snags, coarse woody debris			
				significant features (veteran trees, boulders, seepage sites, ephemeral wetlands or depressions) general plant species inventory rare plant species: vascular plants and bryophytes			
				breeding bird survey (point count) + incidentals during other work bird nest survey (particularly raptors and herons) bird use survey: other sign such as roosting, etc. ecological/landscape context, threats identify collected plants (vascular and bryophytes) deposit plant specimens at UBC herbarium			
	Community Education	Inform the public about the ecological features and significance of the land.	Build stronger connections between the public and the ecosystems of Savary Island. Promote and encourage environmental stewardship.	Biologist lead guided walks on the property.			
				Develop, design, post & print an interpretive hand out about the property.			

Project # 2-674

2-675

Conservation - Vancouver Boulevard



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

HCTF Project Number: 2-675 _____

Please refer to the Land Stewardship Grant Final Year Reporting Instructions when completing this report.

This report must be completed in conjunction with the Activities and Expenditures Report (spreadsheet) customized for your project based on your proposal.

1. PROJECT INFORMATION

Project/Property Name: Vancouver Blvd, Savary Island

Project Leader Name: Liz Webster

Name of Organization: Savary Island Land Trust

Date of Report: April 13, 2023

Author of Report (if different than Project Leader):

Name of Organization:

Contact Information:

2. SUMMARY

Provide a general description of project work completed in the last year (500 words max).

In the last year we were able to provide 3 guided walks of the properties led by Phil Henderson R.P Bio. of Strix Environmental Consulting. Community members were keen and interested to learn more about the forests, soils and ecosystems on Savary Island from a knowledgeable professional in the field. The walks were made part of our 25th birthday celebration for SILT. In addition, SILT staff, a graphic designer and Phil Henderson worked together to develop an educational handout for each property. In total 2150 copies were printed and these will be shared on Savary Island at face-to-face events this Spring and Summer and will be made available online.

Please provide a general summary of overall project outcomes (500 words max).

These projects each began with a legal survey of the land in the first year, next ecological assessments for each parcel were conducted and reports written by a Phil Henderson R.P. Bio. These were useful activities to learn more about the lands in our trust. A summary of findings was published in our newsletter. The added educational component in year three was made possible by a change request.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

This component included, guided educational walks to each property and printed/digital educational resources to share what was learned with our community. In each year we learned more about each property. The opportunity to share it in year three was important and useful.

3. LESSONS LEARNED

Describe any problems or challenges or unexpected benefits that arose and how you addressed them in order to proceed with the project. What have you learned that would be valuable to share with others that may be undertaking a similar project?

Adding the educational components in year 3 really brought each project full circle by sharing the findings with the community, on the ground, in print and on line.

We appreciated the opportunity to add on the educational components in the final year, thanks to the adoption of change requests. The resources developed will be a legacy for our community.

4. COMMUNICATIONS

Project Outreach Activities: Provide information on any outreach activities during the year that directly relate to the project.

In May 2022, guided walks to each of the properties took place over the long weekend. Phil Henderson led the walks to Rodgers Road wetland, Savary Island Rd and Vancouver Blvd forest lands. These walks were included as part of our 25th birthday celebrations, and cake was served at the SILT office after each walk, inviting participants to chat, engage, and build community around conservation.

Communicating about HCTF: Provide information on any activities specific to communicating about HCTF undertaken during the year.

Walk participants were informed about the support from HCTF and how it made the research and the walks possible. Each educational handout that was developed contains the HCTF logo and a message of gratitude for the HCTF support.

Media Coverage: Provide a list of any articles or media coverage during the year.

Savary Island Land Trust Newsletter
Face Book posts



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

5. PHOTOS



Photo: Vancouver Blvd Forest walk. Phil Henderson R.P. Bio shares his research about the property with community participants. Credit: Liz Webster.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

6. ADDITIONAL DETAILS

Provide a description of any materials and supplies purchases funded by HCTF that are considered capital assets. See Final Year Reporting Instructions for information on Capital Assets.

N/A

Provide any other information you wish to share with HCTF.

We are a small organization largely funded by our own community. We are grateful for the support of the HCTF to help us steward these lands. The research and education completed in the projects will provide a baseline of data and legacy to our community. Thank you.

From Application					FINAL OUTCOMES		
Property/Complex Name:	Goal	Objective	Expected Outcome/Performance Indicators by End of Year 3	Activities	Describe Activities Completed in the Final Year	Expected Outcome/Performance Indicators met? (Yes/No/Partial)	If Expected Outcome/Performance Indicators not met, or partially met, provide an explanation
Vancouver Boulevard	Legal Survey of Property	Determine and register legal boundaries	Perimeter survey, mark corners, register with Land Title Office	Contract legal surveyor to survey perimeter, determine and register boundaries			
	Baseline Inventory of Properties	determine site use by and presence of plants and animals; refine ecological classification; determine ecological context, threats and value;	Better understand ecological attributes of properties and landscape (spatial) consideraions to guide future acquisitions and land use.	vegetation plot sampling for BEC site series and delineation within properties; other features: snags, coarse woody debris			
				significant features (veteran trees, boulders, seepage sites, ephemeral wetlands or depressions) general plant species inventory rare plant species: vascular plants and bryophytes			
				breeding bird survey (point count) + incidentals during other work bird nest survey (particularly raptors and herons) bird use survey: other sign such as roosting, etc. ecological/landscape context, threats identify collected plants (vascular and bryophytes) deposit plant specimens at UBC herbarium			
	Community Education	Inform the public about the lands we steward.	Build knowledge in the community about SILT conservation land features and sensitive ecosystems. Engage community members in learning about the ecology of the land and environmental stewardship.	Biologist guided walks of the property.			
				Design, develop post & print property handout about the ecological features and ecosystems represented.			



3-425

**Turtle Valley Farm/Toad Hollow Invasive
Plant Management and Rehabilitation
Project**



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

HCTF Project Number: __3-425__

Please refer to the Land Stewardship Grant Final Year Reporting Instructions when completing this report.

This report must be completed in conjunction with the Activities and Expenditures Report (spreadsheet) customized for your project based on your proposal.

1. PROJECT INFORMATION

Project/Property Name: Turtle Valley Farm/Toad Hollow Invasive Plant Management and Rehabilitation Project

Project Leader Name: Danielle Cross

Name of Organization: Nature Conservancy of Canada

Date of Report: April 3, 2023

Author of Report (if different than Project Leader):

Name of Organization:

Contact Information:

2. SUMMARY

Provide a general description of project work completed in the last year (500 words max).

During Year 3 the Nature Conservancy of Canada (NCC) completed the following tasks in accordance with this grant:

- Assessed the two transects established in Year 1 within the disturbed meadow to measure species composition change post Year 1 invasive plant treatment.
- Inspected fence and completed a repair.
- Created and installed additional property signs along the perimeter of the property.
- Planted ~130 native shrubs (hawthorn, rose, snowberry and Douglas fir) sourced from Splitrock Environmental. Plantings were focussed at base of disturbed meadow and along riparian area.
- Continued communication with neighbours regarding compatible use and issues on the conservation area.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

Please provide a general summary of overall project outcomes (500 words max).

Overall, all project outcomes were achieved despite the issues identified in the lessons learned section below.

Livestock trespass has been greatly reduced. During 2022 monitoring visits even with the loss of the stolen gates along the road, there were no observations or signs of horse activity on the property.

Invasive plant treatments in the meadow were the greatest success on this project, exceeding the desired outcomes with both transects seeing a remarkable decline in invasive plant cover and increase in grass cover creating a clean site for native shrub restoration work to begin (Figure 1).

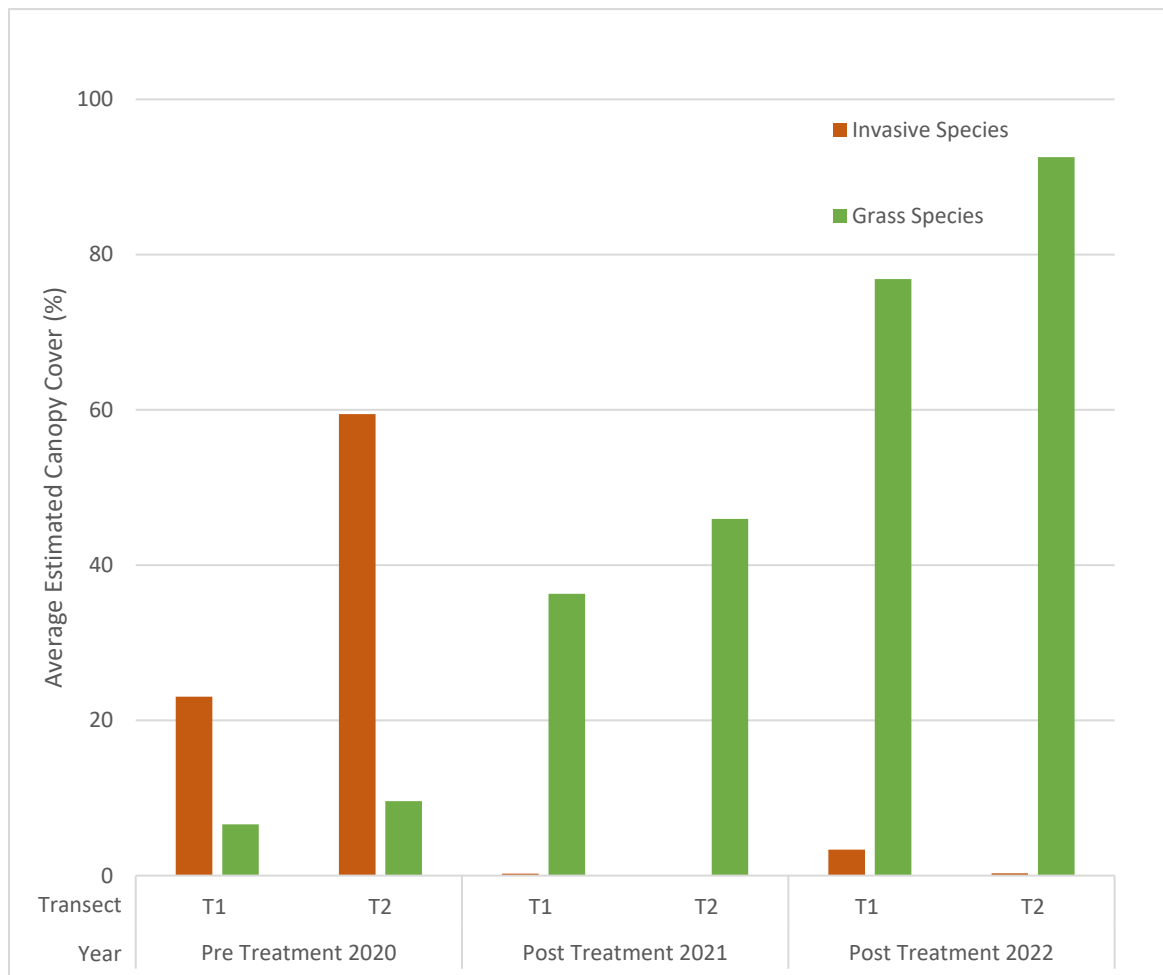


Figure 1. Average canopy cover of invasive plant species and grass species along two permanent established transects pre and post herbicide treatment at Turtle Valley Farm/Toad Hollow Invasive Plant Management and Rehabilitation Project.

Over 130 native shrub species were planted in the fall of 2021 to begin the process of restoring this previously cleared riparian area and meadow/field.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

NCC will continue to have an active presence on this property through annual monitoring, including monitoring of restoration plantings, weed treatments, riparian areas, and infrastructure. NCC's increased presence has not seem to reduce the vandalism issues listed in the Lessons Learned section but it has resulted in a decrease in livestock trespass.

3. LESSONS LEARNED

Describe any problems or challenges or unexpected benefits that arose and how you addressed them in order to proceed with the project. What have you learned that would be valuable to share with others that may be undertaking a similar project?

As stated in previous reporting and correspondence with HCTF, theft and vandalism continue to be a major issue. A fencing contractor had major equipment implements stolen, the gates NCC installed across Butler Rd were stolen less than 2 weeks after install, and a secured trail camera mounted 12 feet up a tree was stolen. Both the equipment and gate incidents (separate incidents) were reported to the local RCMP but not much can be done beyond that. Other issues during the extent of this project have included illegal harvesting of two live trees adjacent to Butler Rd., dumping of home reno debris and other garbage on the conservation area, new off-road vehicle use in the disturbed meadow and removal of all installed signs. The only lesson in this is to continue to show up and not give up when met with challenges, land stewardship is filled with them and community relationships take years to build. NCC continues to do its best to address issues at this property and rectify them if possible and as funding permits. Signs have been replaced and some fence repairs made.

4. COMMUNICATIONS

Project Outreach Activities: Provide information on any outreach activities during the year that directly relate to the project.

Four volunteers from Thompson Rivers University assisted NCC contractor with a day of restoration planting last fall. See photos.

Communicating about HCTF: Provide information on any activities specific to communicating about HCTF undertaken during the year.

None, during this final year, see previous year's reporting for details surrounding past communications. Based on complications NCC has had around theft and vandalism, NCC chose not to highlight the restoration planting for fear of it being destroyed. We also did not include any wire cages, just matting, since most infrastructure we install or work we complete on this property is stolen, vandalized, or destroyed.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

Media Coverage: Provide a list of any articles or media coverage during the year.

None, during this final year for the same reasons listed under communications section. See previous year's reporting for details surrounding past communications.

5. PHOTOS

NCC Toad Hollow Invasive Treatment



Yr. 1 - 2020



Yr. 3 - 2022

Photo 1: Look across meadow prior to 2021 herbicide treatment and post treatment in 2022. No hawkweed present in 2022. Photo taken by NCC (Danielle Cross).



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

NCC Toad Hollow - Transect 1 – Frame 8



Photo 2: Example of one frame from Transect 1 taken pre herbicide treatment, and post treatment in year 2 and year 3. Photo taken by NCC (Danielle Cross).

NCC Toad Hollow - Transect 2 – Frame 10



Photo 3: Example of one frame from Transect 2 taken pre herbicide treatment, and post treatment in year 2 and year 3. Photo taken by NCC (Danielle Cross).



Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 4: Native shrub pots waiting to be planted in fall 2022. Photo taken by Contractor (Brianna Powrie).



Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 5: 2022 native shrub planting in previously disturbed meadow. Photo taken by Contractor (Brianna Powrie).



Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 6: 2022 completed plantings represented by orange flags along riparian area. Photo taken by Contractor (Brianna Powrie).



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

6. ADDITIONAL DETAILS

Provide a description of any materials and supplies purchases funded by HCTF that are considered capital assets. See Final Year Reporting Instructions for information on Capital Assets.

None.

Provide any other information you wish to share with HCTF.

This is a great fund for land trust and land stewardship organizations for the work that needs to get done but can be difficult to find funding for. On the ground presence, upkeep and maintenance of conservation areas is key to the reputations of conservation organizations, thank-you for understanding this need and supporting these activities.

From Application					FINAL OUTCOMES		
Property/Complex Name:	Goal	Objective	Expected Outcome/Performance Indicators by End of Year 3	Activities	Describe Activities Completed in the Final Year	Expected Outcome/Performance Indicators met? (Yes/No/Partial)	If Expected Outcome/Performance Indicators not met, or partially met, provide an explanation
<p>Toad Hollow (Turtle Valley Farm)</p> <p>Project # 3-425</p>	Reduce invasive plant species coverage on disturbed meadow and along road right-of-way	Control or eradicate invasive plant species using best management practices	Invasive species inventory completed and target of 60% reduction in coverage of priority species by 2023 (Year 3)	Chemical control applications by contractor - Year 1 and 2, using best management practices as discussed with local invasive species council and through research by NCC staff	Completed herbicide application Yr. 1, monitored in Yr. 2 and 3.	Yes	
				Release of biocontrol agents as available for Canada thistle and spotted knapweed in particular	Completed herbicide application Yr. 1, monitored in Yr. 2 and 3.	Yes	
				NCC staff to conduct pre-treatment inventory and assessment and monitor effectiveness of invasive management control adjusting if necessary to ensure effectiveness (Year 1, 2 and 3)	Completed, monitoring of the treated area completed in all years. 60% reduction achieved see photos.	Yes	Both transects saw a remarkable decline invasive plant cover, with Transect 2 being particularly successful post herbicide treatment. Transect 2 saw average cover of invasive plant species decline from 59.5% in Yr 1. to 0.3% in Yr 3. Grass cover increased from 9.6% in Yr.1 to 92.5% in Yr. 3.
	Maintain reduction in invasive plant coverage	Control or eradicate invasive plant species using best management practices	Invasive plant management plan in place and being utilized (Start of Year 2 and beyond).	TNIPMC to develop Invasive Plant Management Plan by 2021.	Completed, Yr. 1.	Yes	
	Maintain or increase riparian health scores	Protect riparian areas for wildlife such as wetland dependant birds, moose and species at risk including Western Toad	Riparian Health Assessments completed and riparian areas score a Healthy rating by 2023 (Year 3)	NCC staff to conduct Riparian Health Assessments in Year 1 prior to invasive species control and fencing and then in Year 3 to measure effectiveness of treatments and fencing.	Completed in Yr 1 and Yr 2.	Partial	Because of how Riparian Health Assessment score, even if we are able to mechanically and biologically control invasive species over time, the disturbance caused (seeded non-native species) within the riparian perimeter will continue to persist keeping the main wetland from reaching the 'Healthy or Proper Functioning' category (score of 80% or higher). NCC will continue to monitor the riparian health which remains high at 79% in the 'Healthy with Problems, or Functioning at Risk' category. As the restoration planting establishes, some disturbance and invasive plant species should be shaded out and with the removal of the livestock trespass shrub establishment will increase and trailing and associated bareground will decrease all improving the wetlands' score. Riparian Health Scores are still valuable in that NCC will be able to measure any future declines in health score, determine the cause and select appropriate management actions to remedy.
	Increase cover of natural vegetation on disturbed meadow	Establish natural vegetation including shrubs on the disturbed meadow	Restoration site assesment completed with natural vegetation and grass species establishing on 30% of the site by 2023 (Year 3)	NCC to conduct pre-treatment inventory of disturbed meadow and then post-treatment inventories in Year 2 and Year 3	Completed.	Yes	Surpassed goal of 30% grass cover establishing by Yr. 3. Grass cover average on Transect 1 was 76.9% and on Transect 2 was 92.5%.
				Fall seed after spring chemical application on disturbed meadow	Completed.	Yes	
				Plant shrubs in disturbed meadow (Year 3)	Completed.	Yes	
	Control livestock trespass on the property	Eliminate horse trespass and associated grazing and trailing on the property	Cattleguard installed along the road transecting the property and 2.4 km of functioning wildlife friendly fencing are in place along the property boundary to prevent livestock, mainly horses, from accessing the property via adjacent private land.	Replace or repair when possible: 2.4 km of fence with wildlife friendly fencing (smooth top wire no more than 40" high, with bottom wire 18" above ground), no stays, post placement about 16 ft. apart, remove all existing fence and wire and dispose off site (Year 1).	Completed.	Partial	As explained in Yr. 2 reporting NCC continues to struggle with theft and vandalism at this site. The fence gates were stolen, fence wires were cut. Some repairs were made in 2022, but this will require ongoing maintenance and monitoring by NCC. On the positive despite all this horse trespass has been much reduced and the grass established well in 2022 surpassing the goal of 30% coverage by Yr. 3 of this project.
				Inspect fence annually. Make adjustments and repairs as necessary to ensure horses do not enter the property (Year 2 and 3)	Completed.	Yes	
				Install cattleguard along the road at east property boundary (Year 1). Deleted - \$ reallocated to fencing	N/A	N/A	
	Engage local community in invasive plant awareness and management and conservation lands	Engage local community members to participate in weed pulls or shrub planting volunteer days	A handful of local volunteers take an interest in and actively participate in the continued conservation activities on this property.	Host weed pull day to assist with mechanical removal around wetland and forest edges - Year 1, with potential for second in year 2	Not completed.	Partial	Although a public weed pull was not completed due to covid and then timing constraints, a group of volunteers did assist with the restoration planting and the corresponding site site prep.
				Engage neighbors to report any livestock or other issues on the property - ongoing	Completed.	Partial	Listed as partial as this is ongoing, relationships are not built even in 3 years, and although community engagement is more frequent, there are still unknown members of this community that vandalize this property and some livestock trespass has still occurred, but has been greatly reduced with NCCs increased presence in the area. NCC will continue on this path.
				Install additional property signs - Year 2	Completed.	Yes.	



4-606

Morrissey Meadows



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

HCTF Project Number: 4-606

Please refer to the Land Stewardship Grant Final Year Reporting Instructions when completing this report.

This report must be completed in conjunction with the Activities and Expenditures Report (spreadsheet) customized for your project based on your proposal.

1. PROJECT INFORMATION

Project/Property Name: Morrissey Meadows Habitat Enhancement / Morrissey Meadows Conservation Area

Project Leader Name: Richard Klafki

Name of Organization: Nature Conservancy of Canada

Date of Report: April 6th, 2023

Author of Report (if different than Project Leader): Haley MacDonald

Name of Organization: Nature Conservancy of Canada

Contact Information:

2. SUMMARY

Provide a general description of project work completed in the last year (500 words max).

Invasive plant management went ahead in Year 3 as planned. Nature Conservancy of Canada (NCC) staff coordinated with the East Kootenay Invasive Species Council (EKISC) to complete chemical treatments in fall of 2022. This is the fourth year that EKISC and NCC have collaborated on invasive plant treatments at Morrissey Meadows. According to the treatment report provided by EKISC in 2022, infestations on the property are manageable and continued treatment efforts over the next several years are likely to achieve significant results.

The riparian/fish habitat restoration project in partnership with the Regional District of East Kootenay (RDEK) was completed in Year 2. Annual monitoring will be completed by the RDEK until 2026 to measure the success of the project and to complete any maintenance work as required. A new wildlife friendly 985m range fence was constructed parallel to the river, tying into the cross fence south of the big field and with the highway fence at the north end. This fence was constructed to protect the



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

restored riparian area from cattle. Additionally, 4 elk exclusion "pods" were installed between range fence and the river to protect some of the new riparian planting from the RDEK and Elk River Alliance (ERA).

ERA organized a planting event with student volunteers from Fernie Secondary School where they planted 800 native plants with 35 students over 5 hours. Species planted included Red-osier Dogwood, Spirea, Saskatoon, Woods Rose, and Snowberry. Plantings occurred in the fish habitat restoration area, between the range fence and the river within the elk exclusion pods. NCC and ERA are currently working towards a Stewardship Agreement to allow ERA to continue riparian Cottonwood restoration work on the NCC Morrissey Meadows property. ERA hopes to start on-the-ground work this spring. NCC purchased riparian native grass seed and completed seeding of riparian planting areas, including Regional District of East Kootenay (RDEK) construction areas.

Please provide a general summary of overall project outcomes (500 words max).

The original plan to complete riparian vegetation plantings along the Elk River shoreline was significantly expanded upon when an opportunity came up for NCC to partner with the RDEK on a larger fish habitat restoration project. In order to comply with regulations set by the federal Fisheries Act, the RDEK was required to complete a fish habitat creation project along the Elk River in order offset damages to fish habitat caused by an upstream shoreline hardening project near Cokato. NCC agreed to collaborate with the RDEK to complete this project and construct fish habitat in a backwater channel on Morrissey Meadows, in the same location that NCC had originally planned to re-vegetate following degradation by cattle. The project involved the construction of two ponds in the backwater channel that are connected by a stream to facilitate fish passage. The shoreline was regraded and stabilized using root wads and placement of live dogwood and willow cuttings embedded into the banks, which will prevent bank erosion while the site naturalizes. The entire project area was seeded with a native grass mix, planted with appropriate riparian vegetation, and fenced off from cattle. Construction was completed in Year 2. Cattle exclusion fencing was installed following construction in Year 3, while the grazing licence on the property was still active. Several elk and deer exclusion "pods" were installed to improve establishment and success of riparian plantings. Annual monitoring will be completed by the RDEK until 2026 to measure the success of the project and to complete any maintenance work as required.

Cattle operations on Morrissey Meadows were discontinued following the 2022 grazing season, allowing NCC to explore a new opportunity to partner with ERA to undertake a Cottonwood forest restoration initiative starting in 2022. The ERA also partnered with NCC to complete riparian planting as part of an outreach event with Fernie Secondary School students in Year 3.

The funding provided by HCTF allowed for NCC to work with EKISC to coordinate invasive plant treatments on NCC's Morrissey Meadows property for the past 3 years. While Year 3 treatments were not directly fund by HCTF, the collaborative partnership was strengthened through our continued work together, facilitated by the HCTF funding. Other partnerships facilitated by this funding included those with the Kootenay Community Bat Project (KCBP) and Wildlife Conservation Society Canada (WCS). Details on these relationships are further described in the following section.



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

Other outreach events included an NCC staff hosted field tour at the Morrissey Meadows property in October 2020 as part of the Kootenay Conservation Program (KCP) annual AGM and fall gathering event. Attendees included academic researchers, conservation partner groups, and staff from the Ministry of Forest, Lands, Natural Resource Operations and Rural Development. NCC staff shared information about current and future stewardship activities taking place on the property, including fish habitat/riparian restoration and invasive plant management. Reactions from attendees were overwhelmingly positive, and new connections were made that will advance conservation/stewardship partnerships and collaboration opportunities in the East Kootenay region.

3. LESSONS LEARNED

Describe any problems or challenges or unexpected benefits that arose and how you addressed them in order to proceed with the project. What have you learned that would be valuable to share with others that may be undertaking a similar project?

Two contractors were invited to bid on work related to refuse removal and general clean-up around the homestead site in Year 2. One contractor was not interested, and the other lacked capacity. The contractor lacking capacity was approached again in Year 3, however, they still lacked the capacity to complete this project. Due to difficulty finding qualified contractors to complete the work, it was determined that the money for this activity was best spent towards the cattle and wildlife exclusion fencing to protect the ongoing riparian restoration work.

Additionally, NCC had conversations with Cori Lausen, a bat expert with WCS, and are currently exploring the possibility of converting the derelict buildings on the property to bat houses. The abandoned buildings associated with the historical homestead are known to provide roosting habitat for several bat species including the endangered Little Brown Myotis. The KCBP conducted bat surveys in of these derelict buildings in 2022 and confirmed use by bats. These conversations and partnerships will continue to focus on the best way to utilize the currently standing buildings to enhance habitat for at-risk bats of BC.

4. COMMUNICATIONS

Project Outreach Activities: Provide information on any outreach activities during the year that directly relate to the project.

ERA organized a planting event with student volunteers where they planted 800 native plants with 35 students over 5 hours. NCC paid ERA for half of the cost of the plants. Species planted included Red-osier Dogwood, Spirea, Saskatoon, Woods Rose, and Snowberry. Planting occurred between the range fence and the river within the fish habitat restoration area.

This outreach event has facilitated collaboration between ERA and NCC, which has led to continued partnership on restoration projects on the Morrissey Meadows property. This collaboration can create



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

an even greater positive conservation impact than we would be capable of alone. In addition, the inclusion of school-aged children in hands-on restoration work can help foster an appreciation for nature early in life, strengthening individual and community bonds with nature and encouraging future stewardship.

Communicating about HCTF: Provide information on any activities specific to communicating about HCTF undertaken during the year.

There were no media releases or communications specifically focusing on the HCTF funding in Year 3.

Media Coverage: Provide a list of any articles or media coverage during the year.

There were two stories posted by local news organizations discussing the riparian planting event with Fernie Secondary School students, organized in partnership with ERA:

<https://www.thefreepress.ca/news/fernie-secondary-school-students-plant-hundreds-of-trees-for-conservation/>

<https://www.e-know.ca/regions/elk-valley/fernie-students-and-era-plant-trees-at-morrissey-meadows/>

A story about the important riparian restoration work completed in partnership with RDEK is also posted on the NCC website:

<https://www.natureconservancy.ca/en/where-we-work/british-columbia/stories/morrissey-meadows-rdek.html>



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

5. PHOTOS



Photo 1: NCC's Kate MacKenzie uses a drone to capture images of the NCC/RDEK fish habitat offsetting restoration project. Image depicts the backwater channel with some bank staking visible. New wildlife friendly range fence and elk exclusion pods are also shown. Credit: Kate MacKenzie, NCC



Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 2: Group photo of the Fernie Secondary School student volunteer group, who planted over 800 native plants within the riparian restoration area along the bank of the Elk River. Elk exclusion pods and range fence are visible in the background. Credit: ERA staff



Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 3: Three students from the Fernie Secondary School volunteer group, who planting native plants within the riparian restoration area along the bank of the Elk River. Along with the elk exclusion pods, live stakes can be seen along the riverbank of the restored backchannel. Credit: ERA staff



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Land Stewardship Grant 2020-23 FINAL YEAR REPORT FORM



Photo 4: Close up photo of the wildlife friendly range fence and elk exclusion pods on the Morrissey Meadows property. Some live stakes are visible inside the exclusion pods, as well as in the background along the riverbank. Credit: Kate MacKenzie, NCC



Land Stewardship Grant 2020-23

FINAL YEAR REPORT FORM

6. ADDITIONAL DETAILS

Provide a description of any materials and supplies purchases funded by HCTF that are considered capital assets. See Final Year Reporting Instructions for information on Capital Assets.

No capital assets were purchased in Year 3.

Provide any other information you wish to share with HCTF.

The grazing licence held by the licensee was terminated in August of 2022. This decision was made in efforts to facilitate the restoration of the property back to a riparian Spruce-Cottonwood riparian forest. The range fence was constructed in Year 3 because the grazing lease was still active after the RDEK riparian restoration work. NCC recognized that this range fence was a short-term necessity, and installed the range fence with plans to deconstruct the fence once the cattle grazing licence was terminated, to reuse the materials for other projects such as the upcoming Cottonwood restoration work by ERA.

Kootenay Community Bat Project completed two bat counts in two of the derelict structures located on the Morrissey Meadows property. Data showed that these structures are important bat roosting locations. This knowledge led to further conversations between NCC staff and Cori Lausen of WCS about the possibility of improving the structures for bat habitat enhancement. While actionable items related to this were not completed within the three-year funding window, the HCTF funding has helped facilitate these conversations and partnerships, which will continue to benefit wildlife long into the future.

The HCTF funding benefitted countless species by allowing for tangible habitat improvements over the three year period. Even actions that were not directly funded by HCTF were made possible through the support of this grant. Riparian channel restoration improved habitat for Westslope Cutthroat Trout and Bull Trout; riparian native shrub planting by ERA and school groups will also benefit aquatic species through bank stabilization, in addition to re-naturalizing the important migration corridor for Grizzly Bear, Cougar, ungulates, and other large mammals; a number of bat species-at-risk will be benefitted by the continued brainstorming on how to best enhance the existing structures on the property for roosting habitat. Continued partnerships and collaboration, brought on by the HCTF grant, are invaluable to ongoing conservation and stewardship at NCC's Morrissey Meadows property.

From Application					FINAL OUTCOMES		
Property/Complex Name:	Goal	Objective	Expected Outcome/Performance Indicators by End of Year 3	Activities	Describe Activities Completed in the Final Year	Expected Outcome/Performance Indicators met? (Yes/No/Partial)	If Expected Outcome/Performance Indicators not met, or partially met, provide an explanation
Morrissey Meadows	Restore and enhance the shoreline and riparian habitat of the Elk River and its side channels.	Improve bank stability and the condition of riparian vegetation along the Elk River for aquatic species such as Bull Trout and Westslope Cutthroat Trout.	Strategic fencing is installed to exclude cattle from the Elk River shoreline in spring of 2021 prior to restoration activities. Restoration activities are completed to enhance the riparian vegetation along approx. 350m of Elk River shoreline.	Develop a plan to restore riparian vegetation, and provide support in the form of materials to the rancher to install fencing to exclude cattle from riparian areas.	In Year 3, riparian fencing was installed to protect the riparian restoration completed in partnership with RDEK in Year 2. The fencing was intended to keep the cattle out of the restored riparian area and to protect the vegetation planted with ERA and Fernie Secondary School students. The grazing licence held between the rancher and NCC has since been terminated. NCC planned for this, and constructed the fence with the intention of re-using the fencing materials for future projects, including additional elk exclusion fencing to protect plantings as part of the ERA Cottonwood restoration project.	Yes	
				Purchase vegetation and grass seed to complete riparian plantings, and install temporary wildlife exclusion fences to avoid damage to plants from wildlife.	HCTF funding purchased seedlings and plugs for the riparian planting work completed in partnership with ERA and Fernie Secondary School students. Plantings were done behind the cattle exclusion fence and within the elk exclusion "pods". Grass seed was also purchased, which NCC staff used to seed areas disturbed by the riparian restoration project to prevent colonization by invasive species and to stabilize the soils.	Yes	
				Establish monitoring plots to measure effectiveness and track recovery of riparian vegetation	RDEK has committed to annual monitoring of the in-stream and riparian restoration work completed on the restored side channel of the Elk River. Annual monitoring will run until 2026, and they will report to NCC on the effectiveness of the project, while also conducting maintenance and repairs on the restoration site as necessary.	Yes	
	Enhance biodiversity and improve the condition of ungulate winter range and species at risk habitat.	Invasive species are controlled or removed based on the most effective techniques.	High priority invasive species are controlled according to past inventory data, and current populations are reduced or eliminated where possible.	Work with the East Kootenay Invasive Species Council (EKISC) and local contractors to control invasive plants through treatments and monitoring.	Chemical treatments were completed by EKISC in fall of 2022. High priority species around the homestead and adjacent to Elk River were targeted with herbicide treatments, including Canada Thistle, Caraway, Yellow/Common Toadflax, and Common Tansy.	Yes	
Project # 4-606	Enhance biodiversity and improve the condition of ungulate winter range and species at risk habitat.	Improve habitat for wildlife and species at risk (e.g. Little Brown Myotis, Elk).	Refuse left of the property from previous landowners is removed.	Due to difficulty finding qualified contractors to complete the work, it was determined that the money for this activity was best spent towards the cattle and wildlife exclusion fencing. Additionally, NCC had conversations with Cori Lausen (Wildlife Conservation Society), and we are currently exploring the possibility of converting the derelict buildings on the property to bat houses. The Kootenay Community Bat Project conducted bat surveys of these derelict buildings and confirmed use by bats. Conversations and partnerships will continue to focus on the best way to utilize the currently standing buildings to enhance habitat for the at-risk bats of BC.		Partial	As mentioned in the description, NCC was unable to find contractors willing or able to complete the refuse removal from within and around the derelict buildings. However, NCC was still able to work towards benefitting wildlife populations as part of this project. Firstly, the funding that was intended to go towards the refuse removal was put towards the cattle exclusion fencing protecting the restored riparian wetland, and elk exclusion pods protecting additional riparian plantings. NCC also had discussions with Cori Lausen about the potential to turn the derelict buildings on the property into bat houses, therefore creating and improving habitat for at-risk species on the property despite being unable to contract refuse removal.
				Hire contractor and rent roll off dumpster bin to remove refuse from the property that has been dumped or left by previous landowners.			

Engage partner organizations and the local community to participate in conservation and restoration activities.	Community members participate in restoration activities.	10-15 volunteers participate in planting riparian vegetation.	Partner with local organizations (e.g. Elk River Alliance, Wildsight) to help coordinate local volunteers to complete the vegetation planting, install wildlife exclosures and provide tools for volunteers.	NCC partnered with ERA to complete a successful riparian planting event with 35 Fernie Secondary School student volunteers. Planting occurred in the wildlife exclusion zone. Exclusion fencing costs are included in goal 1, activities 2 and 3. Other local organizations NCC partnered with include the Kootenay Community Bat Project, who completed bat surveys in the buildings on the property and confirmed their use by bats. This lead to further communications with Cori Lausen of Wildlife Conservation Society Canada - a potential future project may involve converting the derelict houses into bat houses as a habitat enhancement effort. NCC also continues to work with ERA to plan for future collaborative Cottonwood restoration on the Morrissey Meadows property.	Yes	