

**Cedars for the Next Century Phase 3: Chrystal Creek Interpretive Space**

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ES 471

August 7, 2023

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## Abstract

Phase Three of the Galiano Conservancy Association's (GCA) *Cedars for the Next Century* ecological restoration project marks the endpoint of the created and ameliorated watershed project. As Phase 1 and 2 come together in the final flow down the main channel of Chrystal Creek there is an obvious location for a new community gathering and interpretive educational space. Our first objective in this design project was repeat photography; selecting numerous photography points throughout the site for ecological monitoring and educational purposes. Next, we aimed to design a space that was accessible and inclusive for the community. This gathering place will celebrate the interconnectivity of the watershed, as well as the hard work of the GCA community in restoring a degraded ecosystem. In addition, this space will act as a central educational point for classes and community members at the Millard Learning Centre, providing interpretive signage about the layered history of the site as well as information about the watershed restoration project. This report provides our preliminary knowledge about the intentions of the GCA for a gathering place, as well as information about what works well in designing community spaces. We draw on research done by prior students, conversations with GCA members and those in close relation, as well as our own ideas and thought processes that arose while working closely with the Chrystal Creek site. In conclusion, we provide a conceptual foundation from which the GCA can draw important themes, goals, and recommended objectives when they move forward with designing the community gathering space at Chrystal Creek.

## Introduction

Our restoration design project with the Galiano Conservancy Association (GCA) was focused on two key elements: repeat photography and design of a community gathering space. Firstly, we established new repeat photography points for monitoring and educational purposes in Phase Three of the *Cedars for the Next Century* project. These points were placed strategically to monitor ecological change over time, therefore allowing restoration ecologists to assess the effectiveness of this project, as well as to track the footprint of human use of the site. Secondly, we were entrusted to begin designing a communal gathering space which focused on community, accessibility, celebration, and education.

This paper provides a preliminary understanding of a future gathering space at Chrystal Creek, drawing together the important themes, values, goals, and factors necessary for moving forward with the implementation of a communal space. Our recommendations for a gathering place are grounded in our understanding of human movement at the site, implementation of educational resources, the historical importance of the land, accessibility and community engagement, and the conceptual foundations of designing an ecologically and socially functional space. Our main theme for this design project is *connectivity*, inspired by the interconnectedness of the watershed and the ocean, as well as the significance of connected waterways for many Indigenous peoples and First Nations throughout this region and for millennia.

This gathering space pools at the end of the watershed, as the creek ventures into the ocean via Chrystal Cove. Chrystal Creek watershed has been heavily modified by people over the past century (Galiano Conservancy Association, n.d.), therefore, rebuilding the wetlands and the watershed is integral to building stability and integrity for many years to come. The gathering space being at the culmination of the watershed provides a natural social place to celebrate the entirety of the restoration ecology and the GCA community's work. Through a sensitive and thorough design, we hope this gathering space provides the opportunity for social, ecological, and community connection.

## Site Background and Historical Context

The proposed gathering space will be situated at the end of the Chrystal Creek watershed, within the *Cedars for the Next Century* project. Figure 1, a map of Phase Three of the *Cedars for the Next Century* project, shows the location for the gathering space (circled in black).



*Figure 1. GCA map of existing and proposed trails and wetlands in Phase Three of the Cedars for the Next Century project*

Through wetland creation and reforestation, this project aims to restore and enhance the residing ecosystems across the existing watershed, with the impetus of improving freshwater absorption and carbon sequestration (GCA, n.d.). Figure 1 visually presents the wetland creation and watershed restoration.

The Chrystal Creek site (Figure 1) holds a deep significance for Galiano and has a multifaceted landscape history, including agriculture, logging, homesteading, and community living. According to Duncan and Warren (2020), the specific site of the Millard Learning Centre rests upon the unceded lands of many First Nations and Indigenous peoples, including, but not limited to, Hul'qumi'num speaking peoples, the Penelakut First Nation and the Lamalcha, Lelum Sar Augh Ta Naogh, Hwlitsum, Chemainus, Cowichan, Halalt, Lyackson, and (ceded) Tsawwassen. The coasts of the Salish Sea are richly diverse, ecologically and culturally, with many intersecting and overlapping rights and responsibilities among Indigenous peoples. The understanding, according to our own conversations with those in close relation to the MLC history as well as the paper by Duncan and Warren (2020), is that the MLC land does not hold strong specific historical cultural significance for Indigenous peoples. However, we hope that the space is held for all Indigenous peoples who may have had a relationship to this place in the past and those who continue to have strong relationships with the island today. The waterways of the Salish Sea and along the coast of Galiano are well-known to

be extremely culturally salient interconnective tissue for many First Nations and Indigenous peoples for time immemorial. Waterways were a means of travel, trade, maintenance of culture, social relations, and knowledge transmission (Future Ecologies, 2022).

Duncan and Warren (2020) delve extensively into the historical lineages of the MLC, beginning in 1896 when it was purchased and cleared for agriculture by John W. Walker. The land was then sold to John Shaw, and later sold again in 1932 to the Scholefields. The Scholefields built a substantial homestead at the Chrystal Creek site (Duncan & Warren, 2020). Remnants of this homestead can still be found on the land, such as bricks, boulders, fruit trees, and other plants from their garden. Following the Scholefields, the Galiano Co-operative Association owned the land next, and eventually sold it to William Campbell, a logger who contributed significantly to the community through lumbar supply and allowing families to live communally on his land. Until 2001, the Campbells lived at near the restoration project site above (Chrystal Cove).

In 2012, the Campbells decided to sell his parcel of land to the Galiano Conservancy Association. The GCA (originally called “Clear Cut Alternatives”) had begun as activism against clear-cut logging, and has now evolved into a complex, community integrated place for ecological restoration, innovation, and experimentation. Ken and Linda Millard were at the forefront of this organization, and donated countless hours and expertise to the many restoration, conservation, and community projects (Duncan & Warren, 2020).

The GCA already owned several conservation and restoration properties on Galiano and saw that with the addition of Campbell’s land, a highly connected network of land running North-South mid-island could be achieved for conservation and restoration purposes. Then began years of fundraising, acquisition of government grants, and pledges from supporting community members. Chrystal Creek is named after Dr. Chrystal Kleiman, who pledged a significant financial gift to the GCA for land acquisition (Duncan & Warren, 2020). The land was finally secured by the GCA, and all debt was paid off by 2019 (Duncan & Warren, 2020).

According to the GCA (n.d.) “the *intensive and exploitative* land use through agriculture, logging, mining, fishing, and urbanization” by colonists and settlers has left the Pacific Northwest Coast degraded and damaged. As land protection and conservation alone fall short in aiding the return of ecosystem health and integrity, the application of community-based ecological restoration methods rose in prominence. The Millard Learning Centre is a place for demonstration and experimentation, ecological and social innovation, relationship building, and deeper education. The gathering space at the end of the watershed provides a rich opportunity for celebrating these ecological restoration efforts of the GCA, as well as incorporating educational resources for the community.

## **Goal**

Our first goal for the third phase of the *Cedars for the Next Century* project is to design an interpretive space which encourages connectivity with the land, history, and each other. We

aim to incorporate three key elements to achieve this goal. The first is to fulfill a need for a celebratory space. This is the final phase of the *Cedars for the Next Century* project, and therefore upon its completion, the Galiano Conservancy Association desires a space to commemorate the hard work that has been dedicated to this project for the previous three years. Celebration at the site will also thank the community support and donors of the project. Secondly, this interpretive space will be a centre for education. It is intended that the space will teach visitors about *Cedars for the Next Century*, the watershed, and the history of the landscape. Further, the space will be utilized by students of all ages as an outdoor classroom. Finally, this interpretive space will ideally become a community gathering place that encourages visitors to engage with the landscape as well as the broader work of the Galiano Conservancy Association.

Connectivity is built into the location of the interpretive space due to its centrality in the watershed. Our goal is to honour this inherent relationship to the land by drawing attention to the regenerated wetlands, the history of humans on the landscape, and the future of restoration at the Millard Learning Centre.

Secondly, we aim to establish a monitoring system so that the GCA could determine changes to the landscape over time. This goal is significant for management of the restoration site as baseline data is required to effectively understand how changes have impacted the environment. It is important that this monitoring system is also formatted in such a way that it could be shared with the community so that if the GCA chooses they can demonstrate the full scope of their work to investors, stakeholders, and guests.

## **Objectives**

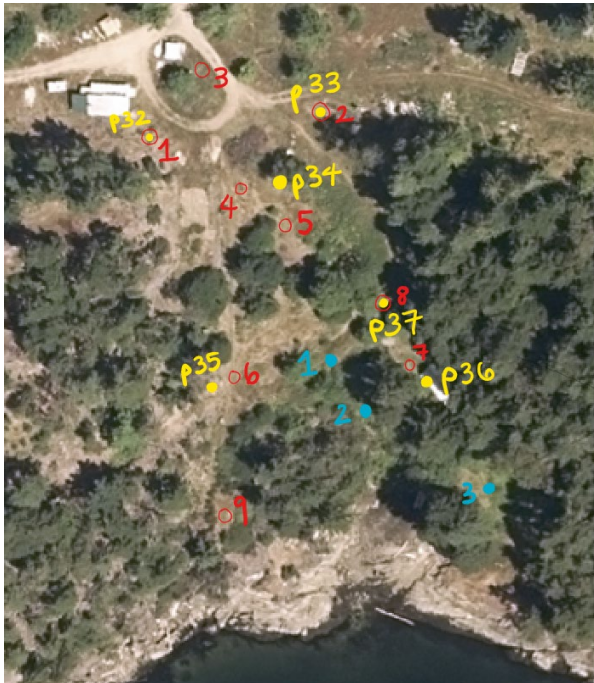
To achieve these goals, we have outlined five objectives. The first is to establish photo point monitoring through repeat photography. Part of the *Cedars for the Next Century* project has been to establish repeat photography points so that changes to the landscape can be tracked through time. While this objective will not impact the design of the community space it is an integral indicator of change at the Chrystal Creek site and will demonstrate the success of the overall project beyond the scope of our community space. Our second objective for the interpretive space is to integrate signage into the design to educate visitors. These signs will be thematically defined and focus on key features of the phase three site. This objective aims to fulfill the educational element of the project. Thirdly, it is important that we incorporate shade and seating into the design. As the space will primarily be used during the late spring, summer, and early fall, high temperatures can pose concerns for visitors. Therefore, adequate shade is necessary so that those using the space can enjoy it without worry of extensive sun exposure. Seating is also a necessary consideration as it is hoped that this will be used as a classroom as well as a picnic spot and place of reflection. As there is a diversity of needs, a multitude of seating options is ideal. The fourth objective is to incorporate the environment around the interpretive space. As this is a place of celebration, a seamless flow between the watershed and community space will allow for visitors to admire and learn from the wetlands surrounding it.

Further, plants nearest to the gathering space will provide services such as shade and food for visitors. The final objective is to ensure that the larger gathering space is accessible to the entire community. Considerations for mobility devices will be integrated into the design. As well, recommendations will be put forward to make signage accessible to many education levels and backgrounds.

## Methods

In taking on this project, we first needed to start with identifying what the Conservancy and the community wanted to get out of the gathering place we are designing, and gain a good understanding of the space we are working within. Chrystal Cove is a large area with many potential spots for a gathering space as well as trails, benches, signs and maps. We began our work by developing a series of basic questions for staff members of the Conservancy to understand what the Conservancy wanted from an interpretive gathering space. This first phase of questions focused on the Chrystal Creek restoration project leads so that we could ensure that our design work integrated into the broader site plans. We then extended these conversations out to Eric Higgs, instructor for the field course, and other Conservancy staff members. Once a basic understanding of the needs and wants of people were gained, we needed to understand the place ourselves in order to develop our goals and objectives. Time was spent walking, mapping, and considering what areas would see the most drastic change through restoration in the space.

Once we had a better understanding of the space, we developed our initial project outline.



### *Repeat Photography and Photo Point Monitoring*

We used our time in the field to choose sites for repeat photography points as well as spots to take 360 degree photosphere “bubbles”. Each repeat photography point had two or more angles taken, to generate as much comparable data as possible. Each site chosen was a good vantage point that would likely not be destroyed in the restoration process, and showed a landscape that would likely experience great change. The process of creating these points included gathering GPS locations, lens height, date, time of photograph, azimuth (compass direction) of the lens and the number system designations for each photograph.

*Figure 2.* Map of repeat photography, 360, and mystery photograph locations.

In total we created six repeat photography points. These photopoints were also used for 360 degree photosphere points. We additionally chose three other distinct photosphere points

(see Appendix for example photographs and links to “bubbles”). The “Bubbli” photospheres were created to provide the GCA with material to create a 360° virtual tour of the project site. Unfortunately, two of the photosphere were not properly processed within the ‘Bubbli’ app and could not be finished. The repeat photography field work strengthened our understanding of the area, and helped us in moving on towards our design goals. On the map shown above, the points in yellow are our repeat photography points, while the red circles are the locations of 360 photosphere points. The blue points are locations of our “2015 mystery photos” that we found.

### *Interpretive signage*

In regards to design, application of our second objective to propose educational signage ideas began in the field. While walking the site, we brainstormed and discussed the best places for signage that did not disrupt views or walkways which would be seen, used and appreciated by the public. Here, we considered who may use the space, how they may use it, and what information is important about the space to communicate with visitors. We also thoroughly discussed the movement of people across the space, and how that would impact interaction with signage. Would people read signs more on trails, or by the gathering space? Would a sign by the homestead be educational? Or redundant? How many signs are too many and therefore increase apathy? What is the most effective way to relay information? What areas of the site are accessible to all? All of these questions were considered when thinking about the locations of signs, trails and the gathering space. Further research was then done to help answer some of these questions. Our proposals for educational signage are explained in depth below.

Our third objective was to create a design to create shade for our gathering space. To do this we researched designs from all around the world that integrate shade. The location of our gathering space makes shade difficult as it is an extremely hot, dry meadow in the summer times, with not many large trees around. We also needed to consider what would be practical in reality, with the location of the site, budget, and matching the aesthetic we want to create for the gathering space that also still connects to the nature around it. Options for shade designs are discussed below.

Our fourth objective, and perhaps the most challenging, was to incorporate the nearby ecosystems into the gathering space itself. As this location is integral to the GCA and the wider community, we were conscious not to create a space that seemed separate from the nature around it, but a part of it. We want it to look like it is a part of this restoration process, a space to come to rest, learn, ponder and reflect on the habitats surrounding it. While we did some research to brainstorm, many of the ideas we produced have already been enacted at the Conservancy in different areas. Discussions on ecological connections in the gathering space included: planting native plants in and around the space to create shade, using as many sustainable products as possible (and as many from the Conservancy land) in the build of the space, and including Indigenous and local art throughout.

Our fifth and final objective was accessibility, which was deemed extremely important to this space, as the gathering space is located beside a parking lot and is one of the only fully



accessible sites on the Conservancy. We wanted this to be a place that remained accessible for all to enjoy. Research went into questions such as: what is the best material for paths for accessibility? How can we create a wheelchair friendly seating area? Can we make this gathering area flat for those with mobility issues? While not every idea may be plausible on this site, we have made some suggestions below on how to create a more accessible site.

In working to fulfill these objectives, our team drew upon an initial map of trails to assess gathering space location (figure 4). Proposed gathering spaces can be seen on figure 3, circled in purple and in orange.



With suggestions from Adam Huggins and Chessi Miltner, we created a route for trails that connected to existing trails along the bluffs, the outhouse, the gathering space, classroom, and the parking lot. We believe this route has the best potential for several reasons. First, we divert foot traffic from both the Applebee and Tranquility Bluff trail which would move people towards the gathering space,

*Figure 3.* Our rough map of proposed trails and gathering spaces. This will also bring people to the outhouse which will be right beside the gathering space, for convenience, as well as link the parking lot directly to multiple trails. The route we propose will mean that the land near the homestead site will be allowed to recover due to the reduced foot traffic, and more visitors will be directed to the gathering space. Our proposed route will also allow for convenient access back to the classroom, with only two bridges being needed to cross the creek.



*Figure 4.* GCA map of existing and proposed trails.

## Design

Chrystal Creek restoration site has the potential for two interpretive places; a larger accessible one featuring seating and signage, and a second location closer to the ocean and intended as a place of reflection.

### *First Gathering Space*

This first gathering space will be accessible from the parking lot and will be flat so that those with mobility concerns can move more easily through the space (depicted in purple in figure 3). We suggest that any paths connecting the parking lot to the gathering space and outhouse are made of gravel as this material is easier than wood chips for mobility devices to navigate over. As the trails leading from the outhouse towards the water and other existing trails will be steep and therefore less accessible, it is imperative that close attention is paid to this first gathering space as one of the only accessible areas of the Millard Learning Centre (see figure 3 and 4). For this reason we also suggest that if picnic tables are put in that they are made with mobility devices in mind. One example is to make picnic tables accessible by removing part of the bench to allow space for a mobility device to pull completely up to the table (figure 5).



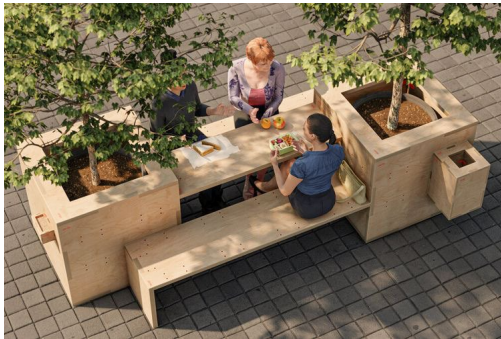
*Figure 5. Wheelchair Accessible Picnic Tables*  
(MGTimberProductsLTD, n.d.)

Another concern for this space is the lack of shade. Use of nearby trees for shading during varied times of day will help to create protection from the sun, however there are not currently enough mature trees surrounding the gathering space to provide shade throughout the entire daylight hours. We suggest introducing shade through a waterproof semi-permanent tarp (figure 6). This would provide the most consistent shade across the most area, as well a light coloured tarp would aid in cooling of the space. Ideally, this tarp would cover the centre of the gathering space, particularly shading the main seating area. This would work in relation to the large tree (seen in the background of figure 11 in appendix) near to the proposed new creek site which provides shade in the early parts of the day. It is recommended that a rainproof tarp be used but with the increasing frequency of extreme weather events it would be advantageous for the GCA to consider a more protective shelter in the future should a more significant budget become available. As a large tarp may be outside of the budget, other small scale methods of shade creation could be implemented to increase the shaded area. One potential way to do this is to plant shrubs or small trees in planter boxes. These plants could be planted directly into the ground, but would require more time to grow to a height useful for shade. If planter boxes were used they could be attached to seating such as benches or picnic tables, thereby encouraging visitors to engage more closely with these plants (figure 7). Connectivity with the landscape is one of our key themes, by placing native plants within the space, visitors would be able to easily

access these plants and appreciate them, especially for those that may not be able to move around the rest of the Millard Learning Centre.



*Figure 6. Semi-Permanent Tarp in Park (Bujnovszky, Vermes, Nyari, & Ujirany/New Directions Landscape Architects, 2014)*



*Figure 7. Integrated Planter Boxes and Seating (Kateb, Daccache, and Marso, 2019)*

As this gathering space would likely be used as an outdoor classroom functional seating is also necessary. We suggest that a circular seating arrangement be used. This would encourage conversation and a sense of community. This shape would also provide a natural space for a speaker to stand while giving a lecture or offer words in celebration of the watershed, while the circular shape encourages reciprocity and connectivity. Further, a circular shape highlights the winding movement of water through the watershed regenerated by the Galiano Conservancy Association. It is not encouraged that this be a completed circle as that would limit accessibility to those with mobility devices. There are many ways that this seating area could be created. The first is with stumps as seen in the Nuts‘a’maat Forage Forest. This would be the lowest cost option. However we suggest that a more traditional bench style be used, either as one continuous bench or as multiple benches. Benches would provide the benefit of comfort for those unable to sit on stumps. Further this bench could be single-level (figure 8) or multi-level (figure 9). A multi-level bench would increase the number of seats without significantly increasing the seating area, and would provide the potential for back rests for those who may not be able to sit unassisted for long periods of time. As earlier mentioned, accessible picnic tables are also

encouraged to be put into this space for the use of hikers and small groups, or as alternative writing spaces for students.



*Figure 8. Single-level Circular Bench (Earth Wrights, n.d.)*



*Figure 9. Multi-level Circular Bench (Earth Wrights, n.d.)*

Interpretive signage in the gathering space would be used to provide education of the watershed, history, and significance of the landscape. Details of these signs are provided later in this report. For signs placed along the waterways, we suggest that these signs are placed on an angle at approximately average waist height so that they do not block the view of the watershed. Any signs placed away from viewpoints, such as in front of the proposed slope, can be placed upright, perpendicular to the ground, as desired.

Due to the many trees and dense branches on the west side of the gathering space, there is no view of the ocean. As this is the only accessible space in the Chrystal Creek area, consideration may be given to pruning of some trees to open up the view. This would support connectivity of the space to the ocean and highlight the important role the waterways connecting the islands played for Indigenous communities, as discussed in the proceeding section. Restoration projects require a balancing of ecological and social values (Rhemtulla, 2023). A decision to not prune or remove any trees on this site would reflect a decision to increase ecological value, however a decision to open the view would increase social value. This decision should be left to the discretion of GCA.

### *Interpretive and Educational Signage*

A key feature of the gathering space at Chrystal Creek is the implementation of interpretive signage to engage community members. The layered historical context is important to ground visitors in the space by providing insight into the landscape-level and social change through time. According to Ben-Ari (2000), a major goal of interpretive and educational signage, in the context of ecological restoration, is to foster support, engagement, and appreciation for ecosystem integrity and biodiversity. Through awareness and understanding, community members can build a relational sense of responsibility to a specific place. Interpretive signage should “speak to the public’s heart” and create a pull of caring connection to the Chrystal Creek watershed (Ben-Ari, 2000).

Interpretative signage can promote inquiry and discussion, increasing the engagement of those in the space (Wandersee & Clary, 2007). The balance of information is essential, as is the method of dispatching said material. According to Wandersee and Clary (2007) important factors of interpretive signage include: diversity of topics, quality of scientific writing, and a focus on meaning making. Additionally, Ben-Ari (2000) argues that *assessing the target audience* is integral when developing programs that are accessible and engaging. As the target audience is likely a diverse array of individuals and groups, we recommend that language is accessible (no scientific jargon) and engaging (short texts and inclusion of images). Our recommendation is to implement 2-3 signs at the gathering space for the Chrystal Creek watershed, with no signage obstructing the view of the wetlands or the creek.

The “Site Background and Historical Context” section of this paper has provided a preliminary, yet comprehensive, overview of the MLC land use changes over time. We recommend that at least one sign in this space is dedicated to historical presentation. This information may be integral to sharing with the public, allowing for deeper understanding of the complexity of historical layers. Our recommendation, based on Wandersee and Clary’s (2007) research, as well as anecdotal references, is to keep text length brief and to the point. For example, a “flow chart” of different land uses (e.g., agriculture and homesteading, logging, ecological restoration) could concisely demonstrate the multiplicities of the landscape over time.

Furthermore, a territory acknowledgement, such as the GCA’s acknowledgement on their website, is necessary for honoring and respecting the intersecting and overlapping rights and responsibilities of many Indigenous peoples on this land to this day, and for millennia. We recommend that the historical context signage point to the waterways beyond Chrystal Creek, explaining the ecological and social significance of this connective tissue for many First Nations. This signage is an excellent place to reground the theme of this gathering space: *connectivity*. For example, a message such as:

*This gathering space was inspired by the theme of connectivity, drawing from the interconnectedness of the Cedars for the Next Century watershed project as well as the integral connected nature of the waterways of the Salish Sea. For time immemorial, the coastal waters visible from where you stand have been culturally and ecologically significant for many Indigenous peoples. There are many overlapping rights,*

*responsibilities, and relationships on this land and in these waters, and we honour with the respect Hul'qumi'num speaking peoples, the Penelakut First Nation and the Lamalcha, Lelum Sar Augh Ta Naogh, Hwlitsum, Chemainus, Cowichan, Halalt, Lyackson, and (ceded) Tsawwassen, among others.*

Our "Site Background and Historical Context" section provides other words that may also be helpful.

Furthermore, we recommend including signage that commemorates the work of the GCA throughout the *Cedars for the Next Century* project. Through celebration, the community can also begin to draw personal ties to the Chrystal Creek watershed restoration and be educated about the importance of this work. For example, words such as:

*The Millard Learning Centre rests on lands that have been damaged and degraded from many land uses, such as agriculture, logging, and communal living. The application of restorative measures, such as wetland creation, creates increased integrity and stability of the landscape. This project specifically aims to improve freshwater absorption, decrease erosion, and increase carbon sequestration. The land you stand on now has been significantly altered over many years, but hopefully the alterations made in the last few by the GCA can ameliorate the land for many to come. Restoring a watershed impacts all of the interconnected life around it, including plants, animals, soil, weather, other waterways, and even community members!*

Signage should be unique, engaging, and durable through weather, connecting the landscape around the site with history, knowledge, and time. Figure 10 below offers an example of an engraved sign that provides information about a native species and is small enough that it could easily be placed on a trail. Figure 11 provides another example of signage that can be used to relay the layered aspect of the landscape.



Figure 10. Engraved Species Sign (Ellis & Boms, n.d.)



Figure 11. Layered Landscape Signage (Bored Panda, 2021).

Additionally, the GCA could choose to focus on the recent past, paying homage to the ecological restoration efforts of the GCA through the *Cedars for the Next Century* project and the creation of watershed integrity. We are recommending that one sign focuses on the celebration of these successes. This sign will provide a map (Figure 1) of the watershed and *Cedars for the Next Century* project, as well as explanatory information detailing the implications of ecological restoration at Chrystal Creek. For example, creating an accessible and digestible explanation of the instability of the site due to varied land uses, and the necessity of wetland creation and watershed stabilization to create lasting ecological integrity, provides an instant community connection for the public (Huggins, 2021). Focusing on the importance of the watershed project for present and future generations allows the community to join with the GCA in their celebration of the work. As Ben-Ari (2000) states: “one key way to engage people is to explain natural history subjects in terms that are relevant to their lives”, which means explaining the importance of the watershed in terms of issues such as community health, wellness, and ecological stability.

### *Second Gathering Space*

The lower gathering space, overlooking the mouth of the creek and the waterway between Galiano Island and Salt Spring Island, would work well as a space for reflection (shown in orange in figure 3). It is possible that interpretive signs may be placed here, however we propose that only seating be placed in this area. Either one or two benches angled to observe the view or a series of stump seating in a circular formation would allow for users to enjoy the sights in a calm and restorative space. Circular stump seating would likely only be ideal if this space is intended to be an extension of the outdoor classroom, otherwise it is likely that simple benches would fulfill the needs of visitors.

### *Trails*

We propose that in addition to the interpretive signs placed in the large gathering space, that several signs be placed along the trails. Figure 4 indicates the Conservancy’s proposed trails, one of which directs individuals through the gathering space and forks into two trails. One of these trails bypasses the outhouse and crosses Chrystal Creek, eventually meeting up with the Appleby Trail. The other fork directs individuals down towards Chrystal Cove, meeting up with the Tranquility Bluff Trail on the way.

The first type of sign we suggest are small plaques with plant identification information on them (figure 10). Native plants such as, arbutus (*Arbutus menziesii*), ocean spray (*Holodiscus*

*discolor*), salal (*Gaultheria shallon*), or sword fern (*Polysticum munitum*) could be featured in the locations where they are growing. These signs would increase education of native plants found in the Chrystal Creek site. It is recommended that in addition to the English and scientific names of these plants that traditional names also be placed on the signs.

The second type of trail sign we suggest is an acrylic sign at the site of the homestead with an etching of the original homestead on it (figure 11). This style of signage allows for viewers to visualize buildings that are no longer standing within the space that they are located. Due to the growth of new plants in and around the homestead site, it may be challenging for visitors to picture the building, and therefore limit their understanding of the history of the landscape.

## Budget

The information below provides a preliminary budget for this design project. We have drawn on several different referential sources, including: Satinflower Nurseries, BCE’s 2021/22 “Interpretive Frames Catalog and Pricing Guide, Country Casual Teak, Amazon, and Home Depot, to provide examples of monetary values for each required item.

Item	Estimated Cost (individual)	Proposed Quantity	Total
<u>Interpretive Space Structures</u>			
Engraved Acrylic Sign (16’’x12’’)	\$81	1	\$81
Metal Interpretive Sign (main signs)	\$340	3	\$1020
Wooden Interpretive Sign (small trail signs)	\$50-200	2	\$100-400
Semi-permanent Tarp (20’x20’x20’)	\$250	2	\$500
Wooden Benches (circular) (10ft diameter, semi-circle, single-level)	\$6000	1	\$6000
Wooden Benches (standard)	\$1000	4	\$4000
Planter Boxes	\$50 - \$200 per box, on average \$100	4	\$400
Picnic Table (accessible)	\$2000	2	\$4000



<u>Native Plants</u>	\$12 per plant at Satinflower Nurseries		
Tall Oregon Grape	\$12	3	\$36
Pacific Ninebark	\$12	3	\$36
Oceanspray	\$12	2	\$24
<u>Total</u>			Approx. \$16,347

**Discussion and Conclusion**

Throughout this report our team has suggested several ideas for the Galiano Conservancy Association to use in building an interpretive space for the Chrystal Creek area. We relied on input from Conservancy employees, in depth observations (and photography) of the site, historical and traditional backgrounds, and research on communal spaces and education. We have included a design for possible trails, two locations for gathering spaces, building design ideas for each location, accessibility options, as well as suggestions for possible interpretive signage. Our team recommends using the theme of *connectivity* when approaching this project, as the location emphasizes the interconnection between waterways, people, and time. We hope that throughout this report we have created a strong design with thorough recommendations that may be useful for the GCA when Phase 3 of the *Cedars for the Next Century* project begins.

As we have worked on this project, we have had the opportunity to try many new skills, including repeat photography, creation of interpretive signage, and community space design.

In engaging in this work we gained a knowledge of the complexity of design processes in balancing multiple perspectives and needs. Through the creation of our design recommendations we were able to experience the many possibilities that the Chrystal Creek gathering space could become. We demonstrate throughout this paper how our central theme of connectivity can be utilized to create a collective space for gathering. Our objectives outlined are strongly rooted in the theme of connectivity and theoretically enable the completion of our central goals. We successfully established repeat photography points for the maintenance of monitoring change over time within the site, as well as for virtual educational experiences. Furthermore, we have offered extensive examples and suggestions for elements we deemed important within the gathering space. Educational signage, historical information, shade and seating, accessibility concerns, and an example budget, are some of the areas we have focussed our attention on within this work. We attempted to continually encircle the tangible design work (e.g. examples of educational signage) within the greater pathos and values of the project. Community, connectivity, education, and engagement are at the forefront of every recommendation we have made. We hope that our work as students can offer a starting place for the GCA as they embark

on designing and implementing a community gathering space within the final stage of the *Cedars for the Next Century* restoration project.

## References

- BEN-ARI, E. T. (2000). Speaking for Nature: Nature interpreters foster connections between people and the natural world. *Bioscience*, 50(7), 556–562. [https://doi.org/10.1641/0006-3568\(2000\)050\[0556:SFN\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2000)050[0556:SFN]2.0.CO;2)
- Bureau of Correctional Enterprises (n.d.). Interpretive Frames Catalog and Pricing Guide. *Shop BCE*.  
[https://www.shopbce.com/PDFs/PR\\_INT\\_0321\\_R5%20Interpretive%20Catalog.pdf](https://www.shopbce.com/PDFs/PR_INT_0321_R5%20Interpretive%20Catalog.pdf)
- Bored Panda. (2021). *Krusevac Fortress Interpretive Sign*. Daily Mail. Retrieved 2023, from <https://www.dailymail.co.uk/femail/article-9147985/amp/People-reveal-clever-creations-theyve-come-across.html>
- Bujnovszky, T., Vermes, T., Nyari, G., & Ujirany/New Directions Landscape Architects. (2014). *Semi-permanent tarp in park*. World Landscape Architects. Retrieved 2023, from <https://worldlandscapearchitect.com/22168-2/?v=3e8d115eb4b3>
- Country Casual Teak (n.d.). Curved Benches. *Country Casual Teak*.  
<https://www.countrycasualteak.com/benches/curved-benches>
- Country Casual Teak (n.d.). Circa 2 pc 10 ft. diameter half-circle backless bench. *Country Casual Teak*. <https://www.countrycasualteak.com/benches/curved-benches>
- Custom garden sign. handmade country sign for your flower - etsy canada*. Custom Garden Sign. Handmade Country Sign for Your Flower - Etsy Canada. (n.d.).  
[https://www.etsy.com/ca/listing/1048349041/custom-garden-sign-handmade-country-sign?ga\\_order=most\\_relevant&ga\\_search\\_type=all&ga\\_view\\_type=gallery&ga\\_search\\_query=engraved%2Bwood%2Bsign%2Bplant%2Bidentification&ref=sr\\_gallery-1-24&sts=1&organic\\_search\\_click=1](https://www.etsy.com/ca/listing/1048349041/custom-garden-sign-handmade-country-sign?ga_order=most_relevant&ga_search_type=all&ga_view_type=gallery&ga_search_query=engraved%2Bwood%2Bsign%2Bplant%2Bidentification&ref=sr_gallery-1-24&sts=1&organic_search_click=1)
- Ellis, E., & Boms, S. (n.d.). *Botanical Interpretive Signage*. Ellis. Retrieved 2023, from <http://www.erinellis.com/science-nature#/botanical-id-signage-at-facebook-hq/>
- Future Ecologies (Host). (2022, August 13). *An Island Unto Itself* [Audio podcast]. Future Ecologies. <https://www.futureecologies.net/listen/fe-4-6-an-island-unto-itself>
- Galiano Conservancy Association (n.d.). *Restoring an Island's Ecology*. Galiano Conservancy Association. <https://galianoconservancy.ca/our-work/restoration/>
- Huggins, A. (2021, November 18). *Why Transforming 'wet land' into Wetlands is the Perfect Antidote to Rainy Days*. Galiano Conservancy Association.

<https://galianoconservancy.ca/why-transforming-wet-land-into-wetlands-is-the-perfect-antidote-to-rainy-days/>

*JNEAICN Shade Sail Waterproof outdoor UV sun shade sail rectangle cream 10'x 16'Protection Cool Party beach leisure garden accept customization.* Amazon.ca: Patio, Lawn & Garden. (n.d.). [https://www.amazon.ca/Jneaicn-Waterproof-Rectangle-Protection-Customization/dp/B097SWYGDZ/ref=asc\\_df\\_B094CQF39F/?tag=googleshopc0c-20&linkCode=df0&hvadid=579775860143&hvpos=&hvnetw=g&hvrand=10317033434868776473&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvloophy=9001594&hvtargid=pla-1647667575510&th=1](https://www.amazon.ca/Jneaicn-Waterproof-Rectangle-Protection-Customization/dp/B097SWYGDZ/ref=asc_df_B094CQF39F/?tag=googleshopc0c-20&linkCode=df0&hvadid=579775860143&hvpos=&hvnetw=g&hvrand=10317033434868776473&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvloophy=9001594&hvtargid=pla-1647667575510&th=1)

Kateb, E., Daccache, S., & Marso, C. (2019). *Integrated Planter Boxes and Seating*. Livelyicity. Retrieved 2023, from <https://www.livelocity.com/projects/urbangatherings>

MGTimberProductsLTD. (n.d.). *Wheelchair Accessible Picnic Tables*. Etsy.com. Retrieved 2023, from [https://www.etsy.com/uk/listing/1039864858/wheelchair-accessible-picnic-tables?epik=dj0yJnU9dmdNUWZnQTktczJzRWNSSFJQV2t2LTRDd2NXSEJtR0omcD0wJm49OEINZDFQMUhwWDRkVDRSekxZeFZ0ZyZ0PUFBQUFBR1M0RDFR&l\\_oad\\_webview=1&bid=6bl12gCPQqZJbqj8iX2JQ0bJXysE](https://www.etsy.com/uk/listing/1039864858/wheelchair-accessible-picnic-tables?epik=dj0yJnU9dmdNUWZnQTktczJzRWNSSFJQV2t2LTRDd2NXSEJtR0omcD0wJm49OEINZDFQMUhwWDRkVDRSekxZeFZ0ZyZ0PUFBQUFBR1M0RDFR&l_oad_webview=1&bid=6bl12gCPQqZJbqj8iX2JQ0bJXysE)

*Multi-level circular bench.* (n.d.). Earth Wrights. Retrieved 2023, from <http://earthwrights.co.uk/previous-work/#gallery>

*Planter Boxes - Planters.* The Home Depot. (n.d.).

<https://www.homedepot.com/b/Outdoors-Garden-Center-Planters-Planter-Boxes/N-5yc1vZ2fkp30b>

Rhemtulla, J. (June, 27, 2023). Lecture “Restoring Forests for People and Nature”.

SatinfLOWER Nurseries (n.d.). In Stock Now! *SatinfLOWER Nurseries*. <https://satinfLOWER.ca/collections/in-stock>

*Single-level circular bench.* (n.d.). Earth Wrights. Retrieved 2023, from <http://earthwrights.co.uk/previous-work/#gallery>

Wandersee, J. H., & Clary, R. M. (2007). Learning on the Trail: A Content Analysis of a University Arboretum’s Exemplary Interpretive Science Signage System. *The American Biology Teacher*, 69(1), 16–23. <https://doi.org/10.1662/0002-7685%282007%2969%5B16%3ALOTTAC%5D2.0.CO%3B2>

*Wheelchair accessible picnic tables: ADA Compliant Picnic Table: Ada Commercial Picnic Table: Recycled Plastic Ada Picnic Table. Picnic Tables | ADA Compliant Picnic Table | ADA Commercial Picnic Table | Recycled Plastic ADA Picnic Table. (n.d).*  
<https://www.occoutdoors.com/picnic-tables/wheelchair-accessible/>

**Appendix A**  
**Repeat Photography**

2023 Repeat Photography, 15 Photographs taken from 6 different locations.

MLC_PP_32A	
MLC_PP_32B	

MLC\_PP\_32C



MLC\_PP\_33A



MLC\_PP\_33B



MLC\_PP\_33C



MLC\_PP\_34A



MLC\_PP\_34B



MLC\_PP\_35A



MLC\_PP\_35B



MLC\_PP\_36A





MLC\_PP\_36B



MLC\_PP\_37A



MLC\_PP\_37B



MLC\_PP\_37C



**Appendix B  
Bubbli Photospheres**

**Bubbli Photosphere Links:** 7/9 Photospheres taken. Two remain permanently unfinished due to technical difficulties.



<b>Bubbli 360 #</b>	<b>Location Description</b>	<b>GPS Location</b>	<b>Time/Date</b>	<b>Link</b>
360 - 1	Shed/Slope	GPS data: N 48°55.694 W 123°28.082	4pm 06/29/2023	Incomplete (cannot be recovered)
360 - 2	Wetland/Upper Creek	GPS data: N 48°55.792 W123°28.511 Decimal Degrees: 48.929867° N 123.475183° W	4pm 06/29/2023	<a href="https://on.bubb.li/559981axufsh0o7uiixhpbh/">https://on.bubb.li/559981axufsh0o7uiixhpbh/</a>
360 - 3	Shed/Wetland	GPS data: N 48°55.838 W 123°28.525	5pm 06/29/2023	Incomplete (cannot be recovered)
360 - 4	Middle of proposed gathering space	GPS data: N 48°55.822 W 123°28.527	5pm 06/29/2023	<a href="https://on.bubb.li/559981akh1lq2zo7qkq8oov/">https://on.bubb.li/559981akh1lq2zo7qkq8oov/</a>

		Decimal Degrees: 48.930367° N 123.47545° W		
360 - 5	Outhouse	GPS data: N 48°55.799 W 123°28.503 Decimal Degrees: 48.929983° N 123.47505° W	2pm 06/30/2023	<a href="https://on.bubb.li/559981a7rudacgu0np8a0ta/">https://on.bubb.li/559981a7rudacgu0np8a0ta/</a>
360 - 6	Tranquility Bluff Trail X	GPS data: N 48°55.799 W 123°28.548 Decimal Degrees: 48.929983° N 123.4758° W	2pm - 06/30/2023	<a href="https://on.bubb.li/559981afhz87aq1mx2r2jor/">https://on.bubb.li/559981afhz87aq1mx2r2jor/</a>
360 - 7	Periwinkle	GPS data: N 48°55.790 W 123°28.508 Decimal Degrees: 48.929833° N 123.475133° W	2:17pm - 06/30/2023	<a href="https://on.bubb.li/559981altzwn1i58itcj2y/">https://on.bubb.li/559981altzwn1i58itcj2y/</a>
360 - 8	Lower Creek	GPS data: N 48°55.801 W 123°28.509 Decimal Degrees: 48.930017° N 123.47515° W	2:35 pm - 06/30/2023	<a href="https://on.bubb.li/559981a225xna71raytie8x/">https://on.bubb.li/559981a225xna71raytie8x/</a>
360 - 9	Lower Landing	GPS data: N 48°55.787 W 123°28.557	2:41 pm 06/30/2023	<a href="http://on.bubb.li/559981ahb7z7bt1ga4ktfb">http://on.bubb.li/559981ahb7z7bt1ga4ktfb</a>

		Decimal Degrees: 48.929783° N 123.47595° W		
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**Appendix C**  
**2015 Found Mystery Photos**

One additional task was to locate the exact site of “mystery” photos taken in 2015 that did not have recorded GPS locations. We found where these photographs were taken, took a new photograph of the exact same frame, and recorded the GPS location.

<b>Mystery Photo # (for map reference in figure 2) and location description</b>	<b>GPS coordinates</b>	<b>Time and Date of repeat photography</b>	<b>2023 Repeat Photograph</b>
<b>P1</b> - View over Chrystal Cove	GPS data: N 48°55.798 W 123°28.526 Decimal Degrees: 48.929967° N 123.475433° W	1:57pm 06/30/2023	
<b>P2</b> - Below periwinkle	GPS data: N 48°55.789 W 123°28.528 Decimal Degrees: 48.929817° N 123.475467° W	2:03pm 06/30/2023	
<b>P3</b> - Chrystal Cove steps and bridge	GPS data: N 48°55.765 W 123°28.503 Decimal Degrees: 48.929417° N 123.47505° W	2:13 pm 06/30/2023	