ES 429 Assignment 4: Place Making at Esquimalt Lagoon - Contemporary Site Use

By Courtney Goulet, Ray Lewis, Erin McWillis, Alanah Nasadyk, Kaitlyn Pelletier and Zoey Verdun

Introduction - Kaitlyn

Esquimalt lagoon, located in Colwood BC, is a place rich in cultural history, diverse ecosystems, fragile marine and terrestrial habitats, community gatherings, historical significance, and a range of human values. This site has been used by local people for many generations. The lagoon is now undergoing physical changes – its beaches are returning to rocky shores instead of sand, new developments are being built, climate change is intensifying storms and unnatural processes, and erosion is leading to uncertainty and controversy over the future of the historical bridge. Members of the Capital Regional District (CRD), city planners, and other site users are debating how to move forward, while dealing with these physical changes, as well as trying to balance cultural values with contemporary site use. In this paper we will use a place-making perspective to discuss various aspects of Esquimalt Lagoon's contemporary site use, as well as the controversies on how the site should be used, and how this site should be developed and preserved for the future.

Boating – Kaitlyn and Ray

Boating in the lagoon is a controversial topic in and of itself. Some believe that boating should be prohibited in the lagoon due to the disturbance of species in the lagoon, including the birds that take sanction in the federally designated migratory bird sanctuary. On the other hand, many believe that boating in the lagoon provides a rare and unique opportunity to experience nature in the lagoon first-hand, learn about the lagoon features, and interact with the species within in it.

The Eco-rowing Environmental Education Program

The Eco-rowing program started up in 2004 after a conference that was housed at Royal Roads University regarding environmental education. The program was put together through collaboration with teachers, the school district, Royal Roads University, and the boathouse that was once located on Royal Roads land. The Eco-rowing Environmental Education Program involved bringing middle school students out to the Esquimalt Lagoon, where they participated in activities that both utilized local indigenous place based knowledge, and scientific knowledge. Teachers interested in the program were required to take an environmental education professional workshop that offered them the skills required to lead a class with an environmental science curriculum. The goal of the program was to increase young students awareness of environmental matters through the practice of environmental science. Students participating in the program spent a day out on the lagoon, learning about the biological and hydrological processes of the area through labs, and field studies. However, two years ago the program was moved.

One reason for the move was the increase of storms on the lagoon due to climate change. Frequent log debris was travelling past the beach and dunes, into the lagoon –

which posed a threat to the safety of students. The increasing frequency of storms also had a severe effect on the integrity of docks in that area, which was another strong incentive for EcoRowing to consider a move. Another reason for the move was the development of offices around the lagoon. While students were practicing environmental education out on the water, office workers were taking their coffee breaks on the shores. The interface between the two activities was too much of a contrast. The transformation of the boathouse, to an indigenous studies area also effected the decision, as there was no longer easy access to the water. For years the lagoon provided a safe, accessible, and biologically diverse area for students to learn about the environment – but due primarily to safety and development reasons the program had to be moved.

The head of the EcoRowing program is Nikki Wright, the executive director of SeaChange, and a long-time environmental educator from the greater Victoria region. In a recent interview she reflect on her time running the program at the Esquimalt Lagoon saying that, 'What we had to work with was really wonderful, the marine accessibility with the dock there, the wetland – which is an excellent place to be more reflective than active – um.. and just the ... its just a beautiful place, we were very fortunate to bring kids there' (Wright 2013). The lagoon, despite its recent limitations, still offers a stunning locale to not only educate children on the environment, but adults as well. While recreational boating on the lagoon, such as rowing training, may disturb migratory birds, boating for the purpose of environmental education causes little disturbance to a bird's natural behavior. Programs such as EcoRowing provide an opportunity for students to learn about the lagoon, while in turn increasing the respect they have for the lagoon and other natural areas. Environmental education programs need to be offered if there is to be a foreseeable future for the Esquimalt Lagoon.

<u>Disturbance of the Migratory Bird Sanctuary due to Boating</u>

In a study headed by marine bird biologist, James S. Clowater, done between April 1-May 30th 2008, researchers found that there were two types of disturbances affecting the birds in the sanctuary directly resulting from boating in the lagoon. They define disturbance as 'any factor, other than weather-related, which disrupts a bird's natural behaviour and causes it to expend energy or causes it to lose an opportunity to gain energy, or to engage in activities that are important to its survival and reproduction' (Clowater 2008). They included recreational boating and institutional boating as categories in the study. In the recreational boating category the researchers observed eight events of disturbance due to recreational boating. For the institutional boating category the researchers observed 35 events of disturbance – 32 of these identified as from 'Go Rowing and Paddling Association of Canada'. The institutional boating category included both rowing sculls and eco-educational dragon boats. The study concluded that most of the disturbance of the birds in the lagoon was a result of human activity, especially boating. Note that boating was 63% of the human-related disturbances (Clowater 2008). Clowater states that the study is 'not trying to prove that disturbance causes a decrease in survival; we are examining the amount of human-caused disturbance in relation to what birds may expect from natural causes'. Boating may be a large factor to declining bird populations, however, there are too many other potential contributing factors that play a part as well and these must be studied in further detail.

Floatplanes may also pose a serious threat to the many migratory birds that use the lagoon. Visitors to bed & breakfasts located on the shores of the lagoon sometimes take floatplanes in and out. This practice is not illegal despite the lagoon being a migratory bird sanctuary, but certainly is a source of disturbance for the birds. Noise from low-flying aircraft is reported to have a variety of effects on sea birds depending on the decibel range (Brown 1990). More frequent gross disturbance due to airplanes at higher decibel levels can lead to inciting escape behaviors in birds. This will have an effect on the breeding success of the migratory birds. Frequent disturbance through noise stresses the animals resulting in physiological changes (Brown 1990). Noise disturbance caused by seaplanes must be minimized in the Esquimalt Lagoon to maintain the sanctity of the migratory bird sanctuary. Laws regarding migratory bird sanctuaries in Canada only protect the birds from being hunted, and their nests from being disturbed. There is no regulation that protects them from human disturbance caused by floatplane, or boating activities (Migratory Bird Convention Act 1994). Despite the lack of legislation, action must still be taken to minimize disturbance. Floatplanes activity should be severely limited, if not outright prohibited, in the Esquimalt Lagoon.

Boating in the lagoon is a great way to interact with the lagoon itself and the beauty that it offers. Designating critical areas for birds and their nesting spaces and creating off-limit areas for boaters are very important; both for maintaining the welfare of the birds in the sanctuary, as well as the human relationship and interaction with the lagoon. Recreational users, such as kayakers and paddlers should be permitted to use the lagoon, providing their activities are not disturbing the migratory birds. With proper education provided to the users of the Esquimalt Lagoon, bird disturbance caused by boating may be minimized.

Beach Users – Zoey and Courtney

What a beach is made of and how it transforms over time affects both its users and the ways in which it may be used. Such an example is if a beach changes from sand to gravel (as is the predicted course for the beach across the road from the Esquimalt Lagoon - also known as the Coburg Peninsula), then those who use the beach to make sand castles or other activities involving sand can no longer do so. In other words, how a beach transforms over time can matter.

Sedimentary Changes

Historically, Coburg Peninsula was formed by glacial till and gravel (ELSI 2006). In more recent years, the spit has been maintained by a combination of (i) long-shore drift carrying sand from the eroded bluff and (ii) run-off from the Lehigh gravel-pit which together deposit fine sediments northward along the peninsula. Naturally, the peninsula is a geologically coarse beach, however the slow erosion of the bluff and the development of the gravel-pit allowed for the reclassification of the peninsula to a Class 1 recreation beach, the largest of its kind in the Victoria area. Over the past seventy-five years the gravel-pit provided a natural system of fine sediment deposit along the beach (ELSI 2006). However, at the end of 2007 the Lehigh gravel-pit shut down (Vancouver Sun 2007).

On top of that, there is currently a large village center and park development (which includes 2800 housing units) proposed at the current gravel-pit location. This development will result in the decommissioning of the gravel-pit and changes to the nearby beaches, including Coburg peninsula. The changes that are predicted to occur are a narrowing of the beach, along with a change in the sediment regime; it is likely that the beach will revert to a coarser composition. Although this is the natural condition for the peninsula, it could have a definite impact on the users and usages of the beach (CRD 2013).

During the 1920s, residents of the Esquimalt Lagoon built a pub on the north end of the lagoon, which they titled the 'Dugout' (ELSI 2006). Although it burned down it was rebuilt during the 1930s and was used as an office building by the Department of National Defence (ELSI 2006). Although the building itself is historically significant to the lagoon area, the future of the building will need to be determined by city officials and residents. Over time, the ocean waves have been degrading the base of the building, which has progressed so far that there is visible erosion beneath the building (Jody Watson, walking tour for Environmental Studies 429, May 15, 2013). To try and prevent further erosion and instability of the building, 'rip rap' (in this case large boulders) was placed in the sand on the front of the building (Douglas 2012; Jody Watson, walking tour for Environmental Studies 429, May 15, 2013). This 'hardening' or 'armouring' of the shore in attempts to prevent further building erosion is a problem (Douglas 2012). When waves crash upon hard vertical surfaces the energy of the wave does not dissipate and so it goes back towards the ocean, typically at a 90-degree angle, taking the sand from the beach along with it. This causes a quickening of erosion along the shoreline adjacent to the hardened sea wall (Goldstream Gazette 2008). This process is known as long-shore drift. So although the building is temporarily protected, the entire shoreline adjacent the building is not protected and will only degrade further (Jody Watson, walking tour for Environmental Studies 429, May 15, 2013). Although the office building represents a small portion of the peninsula, the solutions to the eroding foundation of the building may be relatable to the rest of the shoreline, as stormy winters will continue to wash away sediment from the beach shoreline.

<u>The Beach Users</u>

Significant erosion is occurring along the beach and there are limited (natural) resources to replenish the beach with finer sand. One of the key questions to ask when considering the future of the peninsula is: will a change in sediment type be a problem for beach users? The term 'beach users' encompasses any individual who uses the beach for any purpose. An observation from our walking tour of Esquimalt Lagoon indicated the peninsula is used in a wide variety of ways. Some individuals were seen walking or sitting on the beach, simply enjoying the scenery, while cigarette butts and empty beer cans that were found lying on the beach indicated the peninsula's use in a more social setting (Jody Watson, walking tour for Environmental Studies 429, May 15, 2013). From our own judgment, we infer that this specific user group will not be affected by future changes towards a coarser beach structure. In addition to said groups, the peninsula offers a unique place for a number of recreational and educational activities and organizations.

One such group of community members known to use the beach are dog walkers. Citizen Canine is a non-profit group whose mission is to support dog-owners and educate

the public on the needs and behaviours of dogs (Citizen Canine n.d.). To prevent dog walkers from being excluded from the beach altogether, Citizen Canine organized that an off-leash dog area of the beach be created (i.e. they created a space for a specific user group: dog walkers), on the South end of the peninsula (Jody Watson, walking tour for Environmental Studies 429, May 15, 2013). Due to the fact that this particular location is known to residents of Victoria as an off-leash dog walking area, we predict this group to be affected by the narrowing of the beach more so than the composition of the beach sediment.

Yet another group of beach users we will discuss is school groups. One specific example is the Nature Kindergarten offered by the Sangster Elementary School in Sooke. This is a pilot project (in its second year) offered by the Sooke School District in order to enhance children's mental, physical, and social learning capacities while improving their connection with nature at the same time (Nature Kindergarten 2013). During our walking tour we noticed the Nature Kindergarten spending some of its regular 'outdoor time' on Coburg Peninsula. From our observations, it seemed that the children and the supervisors were enjoying a snack break on the beach. However, there are also many other school groups that visit the Esquimalt Lagoon and its surrounding area (Jody Watson, walking tour for Environmental Studies 429, May 15, 2013).

Finally, the last group we will discuss are those using the beach for education through recreation purposes (although there are many more groups we have not discussed). More specifically we will look at Power to Be – an organization that we interviewed. Through activities such as canoeing, kayaking, and hiking, Power to Be brings members of the community suffering from mental and physical barriers together in a way that fosters relations with nature (Power to Be 2012; C. Kenigsberg, personal communication, May 22, 2013). When initially looking for a spot to kayak, the thing that stood out about Coburg Peninsula was that the location offered a ramp. This ramp provided Power to Be members with accessibility to the beach (C. Kenigsberg, personal communication, May 22, 2013). When we spoke to Carinna Kenigsberg, Adaptive Recreation Program Manager, she mentioned that as long as they could keep accessing the beach, (sediment) changes were irrelevant – they would even be willing to help out with initiatives, so as to help keep the lagoon available for them and for others (C. Kenigsberg, personal communication, May 22, 2013).

Although the peninsula is under natural pressures that are changing the composition of the beach, the value of the peninsula is in the access to educational and recreational opportunities it provides to its users. The value has little to do with the sediment type. We believe that the changes in sediment will have very little effect on current beach users, however it may be that the Coburg Peninsula will not persist if a solution to current erosion is not found. Without a solution, a large educational and recreational site will be lost from the Greater Victoria area.

The Lagoon Bridge and the Road – Erin and Alanah

The Esquimalt Lagoon Bridge is a controversial topic among the surrounding communities. The eighty-year-old bridge is in desperate need of repair if it is to continue to be used; erosion generated by storm damage has caused the bridge to be closed for repairs twice; once in 2008 and once in 2010 (Dove 2010a). With the combined effects of

increases in the severity of winter storms, rising sea levels, and king tides (Lebel, Carruthers, Hyde, & New 2012), the bridge needs to be armoured against further damage (Hill 2010). However, fixing the bridge would not be a permanent solution, as the overall erosion of the peninsula is the source of the problem. Focusing on fixing only the bridge could leave the City of Colwood with a 'bridge to nowhere' (Hill 2010). A former gravel-pit at the south end of the spit had been dumping sand into the ocean, which was transported and deposited along the peninsula, creating the beaches which have been a major attraction for the public (Esquimalt Lagoon Stewardship Initiative 2006). When the gravel-pit was closed, the beach's supply of sand was cut off, and the beach has been eroding rapidly ever since. This has caused the bridge to receive the direct blows from powerful winter storms without a sand buffer (Karp 2010).

With the future of both the peninsula and the bridge in question, the community is divided on a solution. Seabulk Systems Incorporated came up with a number of solutions, which range in price from zero to twelve million dollars. These include the use of stone rip rap to armour the shore and the supports of the bridge against erosion, as well as the replenishment of the beach's sand by recovering deposited sediment and returning it to the beach (a process that would need to be repeated every five years) (Seabulk Systems Incorporated 2008, 9). More intensive measures include creating offshore groynes or breakwaters which would stabilize the coastline by diminishing both the impact of waves as well as the ability of currents to remove sediment. These measures are extremely expensive (five million and twelve million dollars respectively) (Seabulk Systems Incorporated 2008, 11). The final solution would be a 'do nothing' approach, in which nature would be allowed to run its course and allow the peninsula to naturally shift and change, as is consistent with processes of spit formation.

The controversy here is a 'battle of nature versus infrastructure' (Dove 2008). There are citizens who are lobbying to armour the bridge against natural processes, and are willing to spend large portions of tax money to see this happen. The road over Coburg Peninsula, Ocean Boulevard, is a popular commuter route which saves one from the 'major inconvenience' of using Metchosin road (Van Schie 2010). It is also seen as an important route for emergency vehicles, although there is evidence that this last claim is false (Van Schie 2010). However, with a relatively small number of taxpayers, are Colwood citizens willing to fork out massive amounts of money to support the bridge and peninsula against the battle of nature's will?

One of the difficulties in finding a solution for this problem is that so many diverse stakeholders claim the area. The area is a Migratory Bird Sanctuary, attached to historic sites such as Fort Rodd Hill and Royal Roads University, as well as a popular public park. Furthermore, the area has deep roots in First Nations history. The area is home to archaeological sites containing human remains, and a former village site is in close proximity (Dove 2010b). However, this history is not often publicly recognized, and processes of relationship building between First Nations and the City of Colwood are ongoing (Esquimalt Lagoon Stewardship Initiative 2006) but slow due to a lack of coordination. Therefore, a solution to this controversy must balance the interests of all stakeholders.

Alanah and Erin support the 'do nothing' approach of allowing the bridge and peninsula to be subject to whatever natural causes. With global warming causing a rise in sea level, as well as a worldwide trend of increased storm severity, it seems futile to

throw money into battling nature. Instead, the bridge can be left alone, and the area turned into a park, once the bridge is no longer functional. While the bridge remains functional, it presents an opportunity for place-building as a means for displaying art and potentially becoming a public work of art. That way, the area remains useful for a number of different targets. Park status could lead to the introduction of interpretive tours to help cope with the obstacles of posting interpretive signs in the Esquimalt Lagoon area. The dangerous stream of traffic would be stemmed, thus improving the safety of both people and animals, including the prevention of traffic-related bird kills (Esquimalt Lagoon Stewardship Initiative 2006). Decreased traffic and reduction of parking space would improve the peninsula's sensitive dune habitat, which is sensitive to roads, parking areas, as well as foot-traffic. If the dune habitat was re-established, the peninsula would be stabilized by the vegetations' root systems, and improve the area's ecosystem integrity (Esquimalt Lagoon Stewardship Initiative 2006). Also, the cessation of vehicle traffic through the area would show respect towards the First Nations, and make it easier to recognize the cultural significance of the area. This cessation could possibly include the ability to restore traditional First Nations activities in the area (Esquimalt Lagoon Stewardship Initiative 2006).

It does not seem like a stretch to imagine that citizens who appreciate the area for its natural qualities would be supportive of removing the road and turning the area into a more natural location. However, this may not be supported by the portion of the population who values the road for ease of commuting, as well as an emergency route. It is easy to see why this situation is so controversial, as there are many stakeholders and a considerable sum of taxpayers' money involved. For the future of the Esquimalt Lagoon area, we would like to see an area that is not battling against nature in order to maintain infrastructure, but a community that is embracing the natural ebb and flow of the Earth, and making the best of this remarkable location, the Esquimalt Lagoon.

Significance and Conclusions – Alanah

The Esquimalt Lagoon is a place enjoyed by many for a variety of uses ranging from recreation to commuting, and from artistic inspiration to education. In order to preserve this natural and valuable historical site we must first understand all of the threads that weave together to form this place. It is essential to uncover the contemporary site usage today, as well as recognize the historical aspects that shape the community's current relationships to the Esquimalt Lagoon. With such knowledge and understanding, it is possible to move forward in creating a future for the lagoon that harmoniously and practically incorporates natural processes and multiple stakeholder interests. Based on current understandings of contemporary and historical site use, the ideal future for the Esquimalt Lagoon is one that incorporates a number of necessary aspects. Such as respect and protection for migratory birds and ecological functioning, communication and collaboration among site-users and cultural and artistic place-making activities. Finally it must also include a fair division of space for otherwise conflicting site-uses such as dog-walking and other recreational activities. During the process of determining definite actions for securing the future of the area, it is imperative that community members receive information. Such information must include the historical, contemporary, and possible uses of the Esquimalt Lagoon to make informed decisions. Finally it should also

ensure that community members have opportunities to actively participate in building the Esquimalt Lagoon of tomorrow. With such an incredible diversity of interests invested in the Esquimalt Lagoon and so many opportunities to engage with this well-loved place, balance, communication, and engagement are crucial to keeping the Esquimalt Lagoon a source of enjoyment and inclusion rather than frustration.

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