

Re-conceptualization & Repair:

Camosun bog and the manipulation of
natural systems

On the Easternmost side of Pacific Spirit Park lies the oldest bog in the Lower Mainland. Camosun Bog started as a sedge marsh after the last ice age 10,000 years ago, as the last glacier creating a depression in the land, retreated from the area. It evolved into a bog some 2000 years ago.¹ Over time, a unique ecosystem emerged, featuring several rare plant and animal species, including the carnivorous sundew plant, the red-legged frog, and the Pacific tree frog. However, urban development and invasive species adversely impacted the Bog, and in the early 20th century, the land was used as a dumping ground for sawdust and other waste materials, affecting its ecological health. The following research paper will reflect on the importance of an urban bog while examining the restoration efforts made by the greater community.

Camosun Bog (x^wməŋq^we:m) is located on the unceded territory of the Musqueam (x^wməθk^wəy^əm) nation. The Bog was a source of food, medicines, raw materials and trade commodities for the Musqueam people.² The origin of the name Musqueam can be traced back to the məθk^wəy^ə flowering plant that used to grow in the bog and now thrives in the Fraser River estuary. According to the legend, the sʔi:ʔqəy^ə, a massive double-headed serpent, originated from a small lake called Camosun Bog, which the elders warned the youth not to go near, or they would surely be taken. The serpent's path from the lake to the river became the creek that flows through Musqueam to this day. Its presence caused everything it passed over to die, but from its droppings grew the sacred məθk^wəy^ə plant. For this reason, it was named x^wməθk^wəy^əm (Musqueam – place of the məθk^wəy^ə).²



Fig 1. Round-Leaved Sundew (*Drosera rotundifolia*)

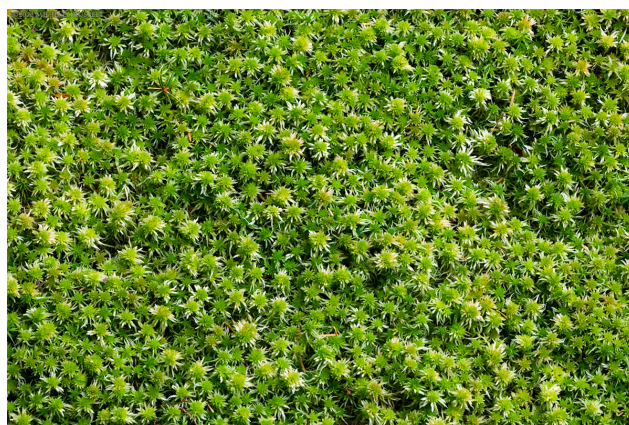


Fig 2. Sphagnum Moss (*Genus Sphagnum*)

The soft red and green carpeting the bog's surface is a collection of 13 species of the brilliant sphagnum plants. The living parts of each plant are attached to the dead plants (peat) below the surface that have existed for hundreds of years. The peat makes up the soil build of the bog, accumulating 4.5 meters deep in some sections. Sphagnum is the foundation of this bog's ecological community creating acidic, low

nutrient and water-logged growing conditions for other specialised species. ⁶ Sphagnum has been used by the Musqueam people for its rich medicinal value as a water absorbent, acidic and antiseptic species. This organism forms the basis of the restoration work that Camosun Bog has seen over the years.

The Greater Vancouver Regional District Parks (GVRD) recognized the ecological significance of Camosun Bog and began efforts to restore it in the 1970s with assistance from the UBC Technical Committee and the Vancouver Natural History Society (VNHS). In 1971, the GVRD acquired the bog and designated it as a park. They built experimental water retention structures and constructed boardwalks to prevent visitors from damaging the fragile ecosystem. 150 large hemlock trees were removed and ongoing water sampling took place monitoring any changes. Camosun Bog had been assigned to the Environmental Restoration Zone to preserve and rehabilitate its significant natural heritage. Camosun Bog Study Team directed two research projects with funding from the GVRD Parks: a continuation of measurement of water levels and chemistry and peat stratigraphy, pollen analysis and radio-carbon dating of select species. ⁴ If the Bog plants, particularly the Sphagnum moss, responded positively to the restoration treatments, additional work was to be performed.



Fig 3. The area was cleared by helicopter logging in 1991, however non-bog plants like salal and common rush dominated the area.

Although intending to minimize the summer water deficit by removing 150 hemlock trees, this kept it from becoming a forest but had little favourable impact on the water levels in the Bog and opened up opportunities for invasive species such as Birch (*Betula Papyrifera*), Salmonberry (*Rubus spectabilis*), Blackberry (*Rubus ursinus*) and sword fern (*Polystichum munitum*), all of which had to be removed.

However, GVRD workers found a way maintain the essential moss species by transplanting moss into small holes, dug down to the level of the water table beneath the bog. Within a few years the sphagnum moss had grown to the surface of the landscape, the small holes becoming “boglets”. As this was taking place, a small group of individuals took interest in the bog and came together as the Camosun Bog Restoration Society (CBRG), otherwise known as the “crazy bidders”. The society's restoration efforts began in 1997 clearing an eight by eight metre area core of the space that was dry and covered with forest litter, with hardly any bog habitat left. CBRG members worked by hand to excavate and expose the peat surface, the lowest parts being at the level of the summer water table. 250 plugs of sphagnum moss were planted in a grid across the test bog, and the experiment was intensely monitored. Within a year, sphagnum covered about 30 per cent of the test bog surface. Spontaneously, more native bog species like sundews, bog cranberry and shore pines colonised the area, along with the removal of invasive plants such as English ivy, blackberry, and scotch broom. The society then started the process of restoring the natural hydrology of the bog, which had been altered by human activities such as draining and filling. But maintaining the water levels was still a struggle. A big reason is due to the drain installed in 1929 during housing construction on the southeast corner of the bog, which caused water to drain out during the hot summer months. In addition to restoration work, the society has also been actively involved in educating the public about the importance of the bog; included organizing public tours of the bog, providing educational materials, and partnering with schools to provide hands-on learning opportunities for students.



Fig 4. 1999: The area has been cleared of non-bog vegetation and is ready for planting of Sphagnum moss.



Fig 5. 2003: Area is essentially restored. Sphagnum moss almost completely covers the lower areas and bog plants are growing well in higher areas.

It is disheartening to examine the misuse of such a valuable ecosystem - why would anyone drain a bog that carries so much life? I would like to think we are more knowledgeable now, and more holistic in our practices as a community on this land. Restoration is not only ecological enhancement, but repairing the way we think about these ecosystems, and how we interact with them. If Camosun Bog was allowed to shrink anymore, it would erase the corroborative story of Musqueam and eradicate its cultural identity. It is hopeful to see the progress that has been made in repairing it. Today, the bog serves as an important educational tool, demonstrating the value of urban wetlands and the power of collaborative efforts to heal damaged ecosystems. As we reflect on the history of Camosun Bog and the ongoing work to repair it, we're reminded of the importance of taking a thoughtful and humble approach to landscape design and management. Landscapes are dynamic and constantly changing, and repairing damaged landscapes requires an understanding of their context, a willingness to learn from past mistakes, and a commitment to work collaboratively and respectfully with the communities that inhabit and care for them.

Sources:

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- ⁵ Hermansen, Sally, and Graeme Wynn. "Reflections on the Nature of an Urban Bog." *Urban History Review* 34, no. 1 (2005): 9–27. <https://doi.org/10.7202/1016044ar>.
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Figurees:

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