

**Comox Valley Nature
Restoration Project
Courtenay River Airpark**



**Frank Hovenden
November, 2017**

Introduction

I have been involved with the Restoration Project of Comox Valley Nature for many years. In particular I have worked as a volunteer in the Courtenay River Airpark for over 20 years. This is a project where I have a considerable investment in labour, time and love. I now see some of Garry Oaks (*Quercus garryana*) which I planted, maturing into large trees.

It is especially gratifying to see other organizations taking a keen interest in this special area. In this past year we have had great support from the Courtenay Airpark Association. As well we have worked and been supported by our friends and colleagues from the BroomBusters and Project Watershed. The City of Courtenay has also increased its support for this project as well as doing some invasive plant control themselves.

The Courtenay River Airpark borders the estuary of the Courtenay River. Its importance in terms of maintaining biodiversity in the Comox Valley can not be understated.

It is an interesting human-constructed experiment in restoration which is continuing to evolve. Its background in recent times has been as Courtenay's former sewage lagoon. This was opened to the estuary in the early 1980s and fill trucked in to form the upland areas. This was done as part of the "no net loss" policy of the DFO to compensate for the expansion of the Comox Marina. In 2015 Project Watershed created a second opening to the lagoon by installing a large culvert to the Courtenay River which allowed the free movement of water through the lagoon from the Courtenay River to the estuary.

The Courtenay River Walkway passes through the park and is arguably one of the most popular walking trails in the City of Courtenay.

I feel it is important to document and record the work and changes that have gone into this small but important area.

Invasive Plants

Since its creation the Airpark has been infested with invasive plants. As pointed out in the introduction this site was man-made from fill. This was composed of civic waste materials such as concrete, tarmac, and soils from excavations. To this mix was added the more natural river dredgings from the Courtenay River¹. Scotch broom (*Cytisus scoparius*) dominated much of the site for many years. Efforts by this Project were successful in controlling this plant. As

¹ Until relatively recently the Courtenay River was dredged to allow navigation upstream of the estuary.

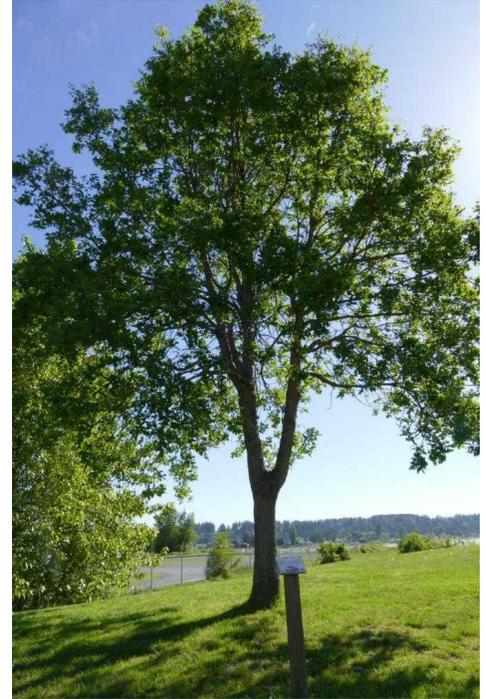


Illustration 1: 20 year old Garry oak planted in the Courtenay River Airpark.

well, small infestations of knotweed (*Polygonum spp.*) have also been controlled. Our current efforts have been directed toward Himalayan blackberry (*Rubus discolor*). This introduced invasive plant is widespread in the region and occupies much of the Airpark. We are taking a measured approach in controlling this plant. We have prioritized, and concentrated on areas where control is possible within well defined boundaries (see Appendix I). These are areas where we have planted native plants and where the infestation is accessible and has the potential to spread. It should be noted that our efforts are limited to manual control and we use no herbicides, as the Park is surrounded by fish-bearing waters and is highly used by the general public.

A disciplined approach to blackberry control was started in 2016. Areas within the Park were chosen and the blackberry was cut in these areas four times spread out over the growing season. Cutting was done using loppers as well as a mechanical brush saw. This had the effect of greatly weakening the plants. In 2017 these areas were cut only twice as the emerging blackberry was very small. It is expected that an annual sweep will be required to maintain the treated areas. While the continuous cutting method employed is effective against the large established plants, seed and new plants can be expected to be introduced into the control area from nearby infestations so efforts must be maintained annually.



Illustration 2: The excavator prepares the site for planting

This year the efforts to control blackberry have greatly increased due to the efforts of the Courtenay Airpark Association and Project Watershed. The Association supplied a small excavator to dig up the blackberry and do general cleanup inside their fence on the west side of the lagoon. They also supplied funds to purchase appropriate native plants to re-vegetate the site. The excavator spend 3 days, removing debris and digging up blackberry. The debris including creosote treated decking which was disposed of by the Association at the Comox Valley Waste Management Centre. The City of Courtenay removed and disposed of the piles of blackberry.

It was our intention to recut all the sprouting blackberry from the area that had been excavated. Due to our limited volunteer base this was not possible. An area between the two main planting



Illustration 3: Machine piles of blackberry

areas 2017 N and 2017 S (Appendix I) was omitted from control efforts. It is our intention to tackle this area in 2018.

Our contractor made two sweeps of the Airpark to remove knotweed from the two sites where it has been found. The first site is virtually free of the weed after more than five years of effort. The second site is still sending up weak shoots after three years of removal effort. This site, adjacent to the plane ramp is difficult to control because of the large boulders and concrete rip rap which impedes digging out the rhizomes. We will continue an annual sweep and removal of knotweed on these two sites.

Planting

While removing blackberry canes on the Airpark Association site with the excavator, effort was made to insure a good planting site was created. The machine operator insured that area was left "rough and loose" rather than compacted. This method results in many micro sites with hummocks and pits conducive for plant growth. Large rocks and concrete were separated, piled and left as snake habitat.

Project Watershed organized a planting bee to coincide with Earth Day (April 22). Plants (Appendix II) were purchased from Streamside Native Plants and transported to the site. These were paid for by a donation from the Courtenay Airpark Association. These were augmented with native plants raised, or rescued by Comox Valley Nature. A wide variety of plants were chosen which reflects the range of sites in this area, starting from the upper tidal zone and extending to dry upland. On the day itself volunteers came from Comox Valley Nature, Project Watershed, and students from Mark R Isfeld Secondary School to do the planting. The BroomBusters went over the site removing blackberry roots and plants which had been missed by the excavator.

Plant Care

The Courtenay Airpark site can be difficult to establish plantings. Most of the soils in the park are derived from fill and are deficient in organic matter. This combined with the lack of an up-slope watershed means that low moisture levels can pose a problem. We do not have the personnel to water plants during the hot summer months. We have attempted to lessen this problem by planting in the early spring to ensure there is good root growth before the summer drought period hits. As well we have used wood mulch around the new plantings to conserve moisture. This year the City of Courtenay supplied and delivered loads of mulch to the work sites in the Park. The Airpark Association did



Illustration 4: Volunteers planting on Earth Day (April 22, 2017)

some watering of the new plants with a 45 gallon drum on a small trailer. In a hot dry summer like we have experienced this year some mortality can be expected and can be offset by over planting the sites.

One of our initial goals of the Restoration project was to create a Garry Oak meadow on the Airpark site. In hindsight this was optimistic and not possible in a short time frame. Many of the ecological processes leading to a Garry Oak landscape are missing and can not be replicated on this site. For example the soil itself is unnatural. Also it is not really feasible to institute a regular fire regime inside a city. Nevertheless we have been successful in growing Garry oak trees (Illustration 1) in a meadow setting. To

complement these we have also succeeded in growing many of the shrubs one would find in a natural Garry oak meadow. An iconic forb associated with the Garry oak is the camas lily (*Camassia quamash*). We have had mixed results in the introduction of camas in the Airpark. Planting bulbs has been more successful than spreading seed. It is my belief that much of failure can be attributed to the competition from non-native grasses which dominate most sites. It is our plan to carry on introducing camas to various sites in the Park and continue to monitor their numbers.

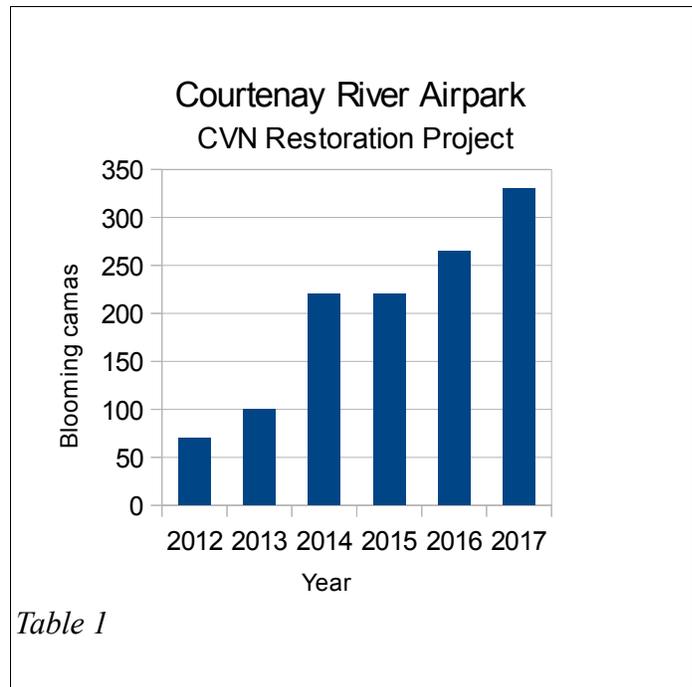


Table 1

Some work was done on our restoration site north of the Courtenay Railway station along the Rotary Trail. It appeared that the Garry oaks planted on this site were being browsed by rabbits. Several wire mesh cages were installed around the smaller Garry oaks at this site to protect them. It should be noted that the eastern cottontail rabbit are an introduced species on Vancouver Island. They have been spreading northward and made their first appearance in our area about 10 years ago. They were introduced at Sooke in 1964 and are now found north of Campbell River.

Volunteer Stats

The hours put in by our volunteers have been recorded for the last five years. These hours (Table 2) show time spent on the ground and do not include administration time. A diary is kept to record the participants, the site and the nature of the work done at every work party. I have revisited the number of hours for the last few years so that the graph reflects only the hours spent in the City of Courtenay, and not the hours spent on other areas in the Comox Valley Regional District. The majority of our work in the City of Courtenay has been in the Courtenay River Airpark, however effort has also been spent in Simms Park, Puntledge Park

and the Rotary Trail. The increase in hours for the last two years reflects the extra work done working with Project Watershed on the Lagoon Breech project, and this year's work done with the Airpark Association.

Acknowledgements

Comox Valley Nature has membership with a wide variety of nature related interests, whether it be birding, botany or photography. There is no doubt that this diversity gives us strength. Our work in the community gives us a chance to

interact with other groups and organizations with diverse interests. The common thread is desire to make the Comox Valley a better place.

I want to thank Tyler Johns the horticulture supervisor with the City of Courtenay; Morris Perrey from the Courtenay Airpark Association has been very generous with his donations of machine time and funds to purchase planting material. Bev Agur of the BroomBusters has helped out with supplying volunteers to do some of the more onerous work of removing blackberry. I would like to thank Dan Bowen who is what I consider our point man from Project Watershed. I have known Dan for over 20 years and I can attest he has a deep love of nature and the Comox Valley. He knows not only all the birds and fishes but most of the people here too. Murray Little coordinates the Restoration Project for Comox Valley Nature. His steady hand at the wheel has ably guided this project for the last two years. Lastly I would like to thank all the unnamed volunteers who do the real work outside in the dirt.

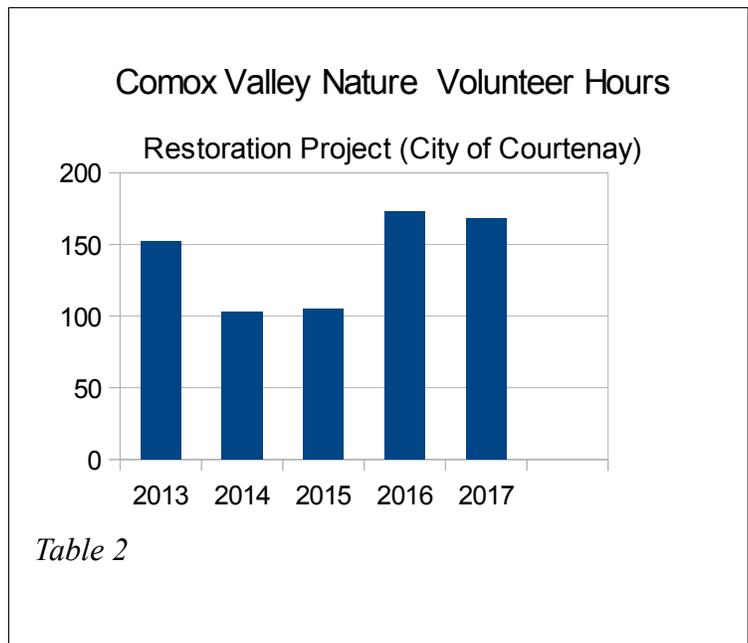


Table 2

Appendix II 2017 Plant List

Sword Fern	<i>Polystichum munitum</i>	5	2 gal
Thimbleberry	<i>Rubus parviflora</i>	1	5 gal
Indian Plum	<i>Oemleria cerasiformis</i>	1	2 gal
Garry oak	<i>Quercus garryana</i>	3	5 gal
Pacific ninebark	<i>Physocarpus capitatus</i>	10	1 gal
Tall Oregon grape	<i>Mahonia aquifolium</i>	13	1 gal
Nootka rose	<i>Rosa nutkana</i>	11	2 gal
Black Hawthorn	<i>Crataegus douglasii</i>	2	2 gal
Western Flowering Dogwood	<i>Cornus nuttallii</i>	2	5 gal
Red Osier Dogwood	<i>Cornus stolonifera</i>	8	5 gal
Black Twinberry	<i>Lonicera involucrata</i>	10	2 gal
Red Elderberry	<i>Sambucus racemosa</i>	5	1 gal
Pacific Crab Apple	<i>Malus fusca</i>	10	2 gal
Ocean Spray	<i>Holodiscus discolor</i>	10	1 gal
Western Trillium	<i>Trillium ovatum</i>	2	1 gal