AQUAPARIAN
Environmental Consulting Ltd.

BIOPHYSICAL ASSESSMENT & USER GROUP LAND REVIEW FOR 2191 EAST WELLINGTON ROAD, NANAIMO

CITY OF NANAIMO
PARKS, RECREATION & CULTURE
500 BOWEN ROAD
NANAIMO, BC
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1.0 INTRODUCTION

Aquaparian Environmental Consulting Ltd (Aquaparian) was retained by the City of Nanaimo Parks, Recreation and Culture Department to complete a Biophysical Assessment and a user group land review for CON property located at 2191 East Wellington Road, Nanaimo, BC. The subject parcel was obtained by City of Nanaimo under its Parks division in 2010. The subject parcel is known locally as Millstone Flats, is legally identified as follows:

1. Lot 1, Section 14 and 15, Range 7, Mountain District, Plan 14201, Except Part in Plan 45345.

This study was requested by City of Nanaimo staff to provide additional natural resource information for the property as an addendum to the initial April 2011 report completed by Chatwin Engineering (Chatwin) and explore park management issues arising from interests expressed by various potential and existing user groups.

The 2011 Chatwin report involved a background information review and early spring site visit, along with an additional site walk in mid-April with representatives from the City of Nanaimo and the Department of Fisheries and Oceans (DFO) to explore opportunities with creating a new connecting fish channel and wetland complex to the Millstone River. The 2018 study gathered additional information about breeding season use of the site by birds and other wildlife, along with a summary plant list. A site location aerial image of the property is included as Figure 1, and a selection of photographs taken during the summer 2018 site visit has been included as Appendix A.

2.0 SCOPE OF WORK

Tasks included in the initial 2011 Biophysical Inventory for this site by Chatwin included:

- Review of background information available from the City of Nanaimo, provincial Conservation Data Centre (BC CDC) and federal government database of fish presence for the Millstone River.
- Aerial photograph interpretation to identify variants in vegetation communities and the presence of environmentally sensitive features including creeks, wetlands, steep slopes, and rock outcrops. Variants in plant communities were pre-typed prior to field investigation.

- Field surveys of the site to confirm and document the site's ecological composition and the presence of aquatic and wildlife habitat values (including birds and their nests, small mammals, amphibians, and reptiles), rare plants and animals as well as Environmentally Sensitive Areas (ESA's) identified during pre-typing of aerial photographs.
- The production of a baseline biophysical map, including the location of ESA's, vegetation communities and water features.
- Completion of an environmental assessment report that identifies and summarizes the presence of vegetation communities, wildlife, and fisheries resources, and potential opportunities for habitat enhancement on the site. Recommendations to minimize impacts on site ESA's and the surrounding environment was included.

Additional tasks of the current (2018) study by Aquaparian included:

1. Field investigation of breeding bird use in and near the site, including early morning surveys and opportunistic observations.

2. Compilation of a plant species list for the site and enhanced description /refinement of plant communities occurring on the site.

3. Identification of park management issues associated with user groups identified during a June 20, 2018 meeting hosted by the City of Nanaimo.

4. Providing recommendations for mitigating the impacts associated with activities proposed by the identified user groups.

3.0 SITE DESCRIPTION

The subject property is approximately 12 ha (29.7 acres) in size and has been used as an agricultural field to grow hay for a number of years. It is understood that the City of Nanaimo still has an agreement in place to continue haying operations through a private operator. The property has an irregular shape averaging approximately 250m wide by 580 m in length, oriented northwest to southeast. The property is confined between the Millstone River forming the southwest border of the property and a rocky escarpment along the southeast boundary.

As identified by the City of Nanaimo's Habitat Atlas, the property lies within the floodplain of the Millstone River. The property is also identified as an Environmentally Sensitive Area (ESA) – Seasonally Flooded Agricultural Field. The majority of the parcel is a grass field bordered by

stands of deciduous and coniferous trees with a dense shrub understory. The Millstone River provides important regional habitat for both fish and wildlife use and forms the main influencing resource feature within the property and its socio-economic use whether by for it's agricultural value or in attracting a variety of recreational park users.

4.0 PHYSICAL AND HISTORICAL SITE INFORMATION

The following section provide a physical and historical assessment of the property, including information previously provided in the 2011 Chatwin report gathered from provincial sources and seasonal spring observations within the site. Information is as follows:

4.1 Physical Resources

The physical resources of the region are interrelated and are influenced by the surficial geology, topography, climate and drainage of the surrounding environment. These physical attributes are described as follows:

4.1.1 Climate

The property lies within the Moist Maritime Douglas Fir Subzone (CDFmm). The CDFmm is restricted to low elevations along southeast Vancouver Island from Bowser to Victoria, the Gulf Islands south of Cortes Island, and a narrow strip along the Sunshine Coast near Halfmoon Bay. Elevational limits range from sea level to approximately 150m.

The CDFmm lies in the rainshadow of the Vancouver Island Olympic Mountains resulting in warm, dry summers and mild, wet winters. Growing seasons are very long and feature pronounced water deficits on zonal and drier sites. The CDF represents the mildest climate in Canada (Green, R.N. and K Klinka, 1994).

4.1.2 Land/Soils

The Soils of Southern Vancouver Island MOE Technical Report 17 identified the soil association within the subject property as the Chemainus Soil Association (CH). Chemainus soils are common throughout the Coastal Douglas Fir Subzone. They occur mainly in the Nanaimo Lowland physiographic subdivisions and on the floors of low elevation valleys in the Vancouver Island ranges. They have developed in deep, silty fluvial deposits and are subject to varying degrees of flooding. Slopes are usually less than 5% with elevational ranges from seal level to approximately 700 m.

Chemainus soils are moderately well-drained to imperfectly drained. The upper horizons are usually comprised of loam or silt, and subsoils consist of fine sandy loam. Chemainus soils are normally free of coarse fragments, although minor gravelly areas may occur. Surface and sub-surface horizons are usually less than 100 cm thick, dark yellowish brown to olive brown in colour, and medium to strongly acidic. Relatively unweathered parent material is encountered at depths of between 100 and 250 cm. A modar or mull layer between 1 and 15 cm thick is present on the soil surface. The usual taxonomic classification is Ortho Dystric Brunisol (Jungen 1985).

4.1.3 Surface Water

The City of Nanaimo Habitat Atlas identifies the property as located within the floodplain of the Millstone River. The Millstone River forms the southwestern boundary of the property. A drainage ditch is located along the northeastern edge of the field which flows southeast, forming ponded areas in the field during the rainy season. The drainage ditch located along the northeastern edge of the field is likely influenced by groundwater seepage existing near the toe of the escarpment. A ponded area in the centre of the field appears to be wetted during seasonal periods of high precipitation. Ponded water on site is directly related to seasonal water levels in the Millstone River and from underlying groundwater levels.

4.1.4 Ground Water

Groundwater levels within the site are expected to be high throughout the year due to the topography of the area and the proximity of the Millstone River. Seasonal perched groundwater during wet winter months form a series of shallow wetlands within the northern half of the field. At the time of the June & July 2018 site visit, these shallow wetlands were dry but supported an abundance of tall grasses and sedges.

5.0 FIELD OBSERVATIONS (2011 & 2018)

Finding in the 2011 Chatwin Biophysical Assessment report included a general inventory of the vegetation communities (April 2011) within the property, as well as, a review of rare and endangered plants and animal species known to occur regionally or in similar ecological settings with the BC Conservation Data Centre and identified fish and wildlife presence. Fieldwork by Aquaparian in 2018 involved additional surveys and reconnaissance of bird and plant occurrence emergent within the spring and summer growing season. The following sections present an ecological overview of the site, and a discussion of vegetation, fish, bird, and terrestrial wildlife habitat.

5.1 Ecological Overview

The following section includes a review of vegetation, wildlife, and aquatic resources within the study site. A biophysical map using 2010 orthophoto imagery of the property was generated to show ecological attributes documented during the site visits. A map of the wetted areas within the site has been included as Figure 2 within this report. A map showing the distribution of habitat types and the dominant vegetation within the property has been included as Figure 3. The site plant list compiled in June of 2018 is included as Appendix B in this report.

5.2.1 Flora (Vegetation)

As indicated in the plant list for the site (Appendix C) a total of 57 plant species were identified during the June 2018 field study. Of these six were types of trees, 17 were shrubs species, and 34 were non-woody plant species. None of the plants identified on the site appear on regional lists of rare or endangered plants.

The majority of the property is a grass field used to grow hay for many years. The northeast side of the property between the field and the base of the rock bluffs is vegetated with a mixed canopy of deciduous and coniferous trees and dense shrub cover. A drainage ditch is located within the vegetated buffer and runs parallel to a City sanitary sewer line. Canopy species include mature Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), red alder (*Alnus rubra*), big leaf maple (*Acer macrophyllum*), and black hawthorn (*Crataegus douglasii*).

Tall shrub species dominate the canopy along the wetted drainage and include willows and red-osier dogwood (*Cornus stolonifera*). Low shrub cover in wetted areas are dominated by hardhack (*Spirea douglasii*) while drier soil areas are dominated by snowberry (*Symphocarpus albus*) and Nootka rose (*Rosa nutkana*). Invasive species found in this area include Himalayan blackberry (*Rubus discolor*) and spurge laurel (*Daphne loreola*). Other species include sword fern (*Polystichum munitum*), dull Oregon grape (*Mahonia nervosa*) and oceanspray (*Holodiscus discolor*). The ditch and adjacent ponded areas are vegetated with Pacific water parsley (*Oenanthe sarmentosa*), common rush (*Juncus effusus*), and common horsetail (*Equisetum arvense*).

Mossy bluff areas of the rocky escarpment are dominated by veteran Douglas fir, mature Garry oak (*Quercus garryana*) and big leaf maple. Understory species include licorice fern (*Polypodium glycyrrhiza*), white fawn lily (*Erythronium oregonum*), lanky moss (*Rhytidelphus loreus*), step moss (*Hylocomium splendens*) and Oregon beaked moss (*Kindbergia oregana*). Other flowering plants typically found in Garry oak meadows are likely to be found in this area later in the spring season.

The riparian vegetation buffer for the Millstone River located on the southwest side (Agricultural Field side) of the property varies in width with portions of the setback as wide as 10-15m and as narrow as 5m. Riparian vegetated consists of a mixed stand of coniferous and deciduous trees with a dense shrub understory. Sections of the riparian area toward the southeast are dominated by shrubs with little canopy cover. Canopy species include Douglas fir, red alder, and black hawthorn. Shrub species include hardhack, snowberry, Nootka rose, thimbleberry (*Rubus parviflorus*), and Indian plum (*Oemleria cerasiformis*). Herb stratum species include palmate coltsfoot (*Petasites palmatus*), trailing blackberry (*Rubus ursinus*) and giant horsetail (*Equisetum telmatiea*). Invasives include Himalayan blackberry, spurge laurel and common hawthorn (*Crataegus monogyna*).

Short sections of shrub-dominated hedgerow plant communities occur in the central and southern parts of the property. These linear bands of vegetation separating areas of grass field are comprised predominantly of non-native common hawthorn, interspersed with patches of invasive Himalayan blackberry, cascara (*Rhamnus purshiana*) and Pacific ninebark (*Physocarpus capitatus*). At time of 2018 survey, the open dry field had not been cultivated and was observed to support a variety grasses including bentgrass, ryegrass, velvet grass, clover, oxeye daisy and tansy. Wet soils were dominated by reed canary grass, buttercup, horsetail and rush. These stand of grass located next to forest edges were observed to supported important foraging habitat for several bird species.

5.2.2 Fauna (Wildlife)

The Millstone River watershed supports a diversity of wildlife including large and small mammals, bats, songbirds, and amphibians. Black-tailed deer (*Odocoileus hemoinus*) sign was noted across the site, while large carnivores such as the black bear (*Ursus americanus*) and Cougar (*Puma concolor*) are reported in the area from time to time. Smaller mammals observed in the area include the raccoon (*Procyon lotor*) and Eastern cottontail (*Sylvaginus floridanus*). Native mustelids such as American mink (*Mustela vison*) and river otters (*Lontra canadensis*) are also expected to occur on the site, primarily within riparian areas, along with varieties of shrews and mice. Of the latter, Townsend's Voles (*Microtus townsendii*) in particular are associated with moist old field habitats like those present across much of the study area. This field mouse is an important source of prey for a variety of raptors and, in winter, Great Blue Herons (*Ardea herodias*). The white-footed deer mouse (*Peromyscus maniculatus*), a common and widespread rodent, is expected to occur at the site as well, although detailed surveys for small mammals was not conducted as part of this assessment.

Seasonally inundated wetlands may support breeding by several native amphibians, primary those which breed early and develop rapidly such as the Pacific Chorus Frog (*Pseudacris regilla*), Long-toed Salamander (*Ambystoma gracilis*), and Rough-skinned Newt (*Taricha granulosa*). Two species of garter snakes are common and widespread on Vancouver Island. The Northwestern garter snake (*Thamnophis ordinoides*) is considered more terrestrial than the Common Garter Snake (*Thamnophis sirtalis*), and is seldom seen near water (Matsuda *et al.* 2006).

5.2.3 Avian Species

The interspersion of open field, seasonal wetland, mixed riparian, and hedgerow habitats has resulted in a relatively diverse bird assemblage for this site. As indicated in Table 1, 33 species of birds were recorded during three site visits of the property during the 2018 breeding season. Several others, mostly waterfowl and water birds, are very probable during the autumn and winter were noted during the 2011 study. Raptors recorded at or near the site include the Red-tailed Hawk (*Buteo jamaicensis*), Bald Eagle (*Haliaeetus leucocephalus*), and Cooper's Hawk (*Accipiter cooperi*). No nests of these raptors were detected at the site, although apparently suitable nesting stands occur nearby. A single Great Blue Heron was noted in a snag over the Millstone River, but no evidence of recent or active nesting was observed. Although no surveys specific to owls were conducted, it is anticipated that forest fringes would attract use by several owl species such as the Barred Owl (*Strix varia*), Great Horned Owl (*Bubo virginianus*) and Western Screech-owls (*Megascops kennicotti*).

Songbirds are well-represented in the bird assemblage, with several species of sparrows, finches, and warblers frequenting shrub-dominated habitats, along with the Willow Flycatcher (*Empidonax traillii*) and American Bushtit (*Psaltriparus minimus*)). Several thrush species, bark-gleaning species, and hummingbirds occur primarily along the fringing forests of the site. Open field habitats provide important foraging habitat for the Blue-listed Barn Swallow (*Hirundo rustica*), Violet-green Swallow (*Tachycyneta thalassina*) as well as nesting habitat for the Savannah Sparrow (*Passerculus sandwichensis*). Large congregations of swallows were observed foraging within the tall grasses as the authors of this report traversed through the fields.

5.2.4 Fish and other Aquatic Life

The Millstone River forms the southwestern property line. A search of the provincial Fisheries Inventory – FISS Fish Distributions Report identified the following species are found in the Millstone River: cutthroat trout (*Oncorhyncus clarkii*), sculpin, chum salmon (*Oncorhyncus keta*), coho salmon (*Oncorhyncus kisutch*), pumpkinseed (*Lepornis gibbosus*), steelhead salmon (*Oncorhyncus mykis*) and threespine stickleback (*Gasterosteus aculeatus*). A copy of the FISS database search results has been included as Appendix C.

5.2.5 Species-at-Risk

The Species-at-Risk Act (SARA) is designed to create species awareness and prevent or reduce the likelihood of wildlife species from becoming extinct or extirpated due to habitat disturbance or destruction. SARA also provides for the recovery and management of

endangered species as a result of harm by human activity. Provisions of SARA include prohibiting the taking or possession of listed species and the damage or destruction of their resident and critical habitat.

A search of the BC CDC database for species occurrence records for the subject property was completed. No known rare element occurrences were identified within the property. A search of the BC CDC database Red-listed or Blue-listed taxa in the Nanaimo region produces a list of 31 Red-listed species and 54 Blue-listed species of potential occurrence. Red-listed species are deemed extirpated, endangered or threatened, while Blue-listed species are deemed to be of special concern. A copy of the CDC database search results has been included as Appendix D.

The following is a description of the sensitive species that have been documented on the site, or have some probability of occurring there based on observed habitat conditions:

American Water Shrew (*Sorex palustris brooksi*): Red-Listed

A relatively rare shrew dependent on suitable aquatic/riparian habitat, the American Water Shrew is widely but thinly distributed across Vancouver Island. Water shrews are habitat specialists, living at the water's edge. They are dependent on the presence of high quality intact riparian systems. They live in a diverse range of stream habitats, from narrow to wide streams, and from slow-moving to moderately fast-flowing waters. The substrate of the streambed is usually cobble or gravel, and the stream typically has a complex environment with in-stream coarse woody debris and dense riparian vegetation (shrubs and herbs). They are found at low elevations, in a variety of forest types and age classes, as long as the riparian corridor is intact. American water shrew feed on a diet predominately of aquatic insects but will eat small fish, tadpoles, snails and vegetation. Down wood supports main source of cover for this species. The Millstone River may provide suitable habitat for this species (BC Conservation Centre).

Northern Red-legged Frog (*Rana aurora*): Blue-listed

Range extends from southwestern British Columbia, including Vancouver Island, south along the Pacific Northwest Coast of the United States. Red-legged frogs have been recorded in a variety of aquatic and terrestrial habitats. They breed in shallow, littoral zones of lakes, temporary and permanent pools and wetlands, and bogs and fens. Breeding habitats, regardless of size, occur in close proximity to forests. Tadpoles gather in shallowest parts of the breeding area. Lotic habitats with little or no flow may be utilized

by red-legged frogs. Riparian areas are important for recently metamorphosed froglets, and for adults during dry spells. Outside of the breeding season, red-legged frogs use all forest and woodland types as “core” habitat, but individuals are occasionally found in more open and rural areas such as shrubland, cropland/hedgerow, old field and suburban orchard areas (*BC Conservation Centre*). A single adult male red-legged frog was observed during the June 2018 fieldwork, along the Millstone River floodplain. Ditches and seasonal wetlands on the site may also provide moist refuges for this species, but are likely too unstable to permit egg masses to fully develop.

Great Blue Heron (*Ardea herodias fannini*): Blue-listed

Resides along the Pacific coast from southeastern Alaska (Yakutat Bay) south to Washington. Non-breeders range north to Cook Inlet, Alaska and east to the interior central and southern British Columbia. They nest colonially in tall Sitka spruce, western redcedar, western hemlock, pine, red alder, and black cottonwood trees. Isolation from disturbance appears to be an important factor in nest site selection. Foraging habitat includes aquatic areas generally less than 0.5 m deep, such as: marine intertidal areas, estuaries, riparian areas, wetlands, freshwater lakes, and muskegs. These areas are generally within 5 km of the nest site, although some areas have been identified up to 33 km away (*BC Conservation Centre*). The nearest known historical heron colony was located about 2.2 km to the west (GBHE-105-010), dating back to 1999. At the site, a single great blue heron was observed on a low branch overhanging the Millstone River during the June 2018 fieldwork.

Barn Swallow (*Hirundo rustica*): Blue-listed

This aerial insectivore breeds from southern Alaska across Canada to southern Newfoundland and south to Mexico. It is a neotropical migrant species that usually returns to the same North American site to breed every year. It forages for insects over open areas, particularly water and, as its name suggests, is known for nesting in buildings, under bridges and on other human structures. The swallows aggregate into large flocks of up to 2000 birds during migration. Populations of this common and widespread bird have declined steadily in the BC over the past 30 or 40 years, and particularly rapidly over the past decade (*BC Conservation Centre*). The causes remain unclear but breeding success may be impacted by roadways between nesting and foraging sites, pesticide use, and possible light pollution. Although no nests of this species were found on the site, apparently suitable structures occur on the opposite side of the Millstone River, to the

west. A large flock of 35-40 barn swallows were observed feeding on insects over the central and south field areas in late June of 2018.

Short-eared Owl (*Asio flammeus*): Blue-listed

This species breeds in small numbers in every province and territory in Canada. During the non-breeding season, this owl occurs mostly in the southern parts of most Canadian provinces. Local abundance varies with vole abundance. In the winter, short-eared owls congregate at sites that provide good foraging. Breeding habitat includes broad expanses of open land with low vegetation for nesting and foraging such as fresh an saltwater marshes, bogs, dunes, prairies, grassy plains, old fields, tundra, moorlands, river valleys, meadows, savannah, open woodland, and heathland. In general, any area that is large enough, has low vegetation with some dry upland for nesting, and that supports suitable prey may be considered potential breeding habitat for short-eared owls. They nest on the ground, generally in a slight depression, often beside or beneath a bush or clump of grass. Many nests are near water but generally are on dry sites. Open fields and adjacent forest edges within the subject property may provide suitable habitat for this species (*BC Conservation Centre*).

Slimleaf Onion (*Allium amplectens*): Blue-listed

This member of the onion family grows on vernally moist rocky bluffs and meadows in the lowland zone. It is infrequent on Southeast Vancouver Island, the Gulf Islands and the adjacent mainland (Powell River). Mossy bluffs on the northeast side of the property provide suitable habita for this rare vascular plant (*BC Conservation Centre*).

Geyer's Onion (*Allium geyeri* var. *tenerum*): Blue-listed

This member of the onion family grows on moist meadows, banks, and rock outcrops in the lowland, steppe, and montane zones. It is of infrequent occurrence on Vancouver Island and in the Fraser and Thompson River valleys. Mossy bluffs on the northeast side of the property may provide suitable habitat for this rare vascular plant (*BC Conservation Centre*).

5.3 Land Use

The following section outlines a broad assessment of the land use immediately surrounding the study area.

5.3.1 Present Land Use

The property fronts onto East Wellington Road and rural residential properties abut the subject property on the other three sides. The majority of the property is an agricultural field. Remnants of an old building and a small shed that may have been a pump house are located on the northwest corner near the road.

5.3.2 Municipal Protection Measures

The property lies within the floodplain of the Millstone River and is classified as an Environmentally Sensitive Area (ESA) – Seasonally Flooded Agricultural Field on the City of Nanaimo's Habitat Atlas.

Land use activities in leave strips are regulated under the Zoning Bylaw (Bylaw 4000) and Plan Nanaimo (Bylaw 6000), and the City's Official Community Plan (OCP). All watercourses and their leave strips within the City's boundaries are designated as Watercourse Development Permit Areas (DPA1) as follows:

- 30 metres from the top of bank on the Nanaimo and Millstone Rivers.
- 15 metres from the top of bank on most other creeks and streams.
- 15 metres from the natural boundary (or high water mark) for lakes, ponds, and wetlands.

The Millstone River and other watercourses (including wetlands and lakes) in Nanaimo Municipal district are also regulated by the provincial government under the Riparian Areas Regulation (RAR).

5.3.3 Special Places

A request for information from the Archaeological Branch of the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) was completed. No known archaeological sites were identified within the property. However, while there are none mapped on the subject property, some portions of the property have a high potential for

previously unrecorded archaeological sites. While all archaeological sites, recorded or not, are protected under the Heritage Conservation Act, the open field within the property has been altered for many years by agricultural use (including ploughing). A copy of the archaeological database search results has been included as Appendix E.

5.3.4 Identified User Groups and Potential Issues

During a City of Nanaimo's open parks planning session for Millstone Flats (June 2018), a number of community groups were identified as wanting to make use of the park at 2191 East Wellington Road. These user groups include the following:

1) Radio-controlled Fliers
2) Dog Owners
3) Vancouver Island University (VIU) Agricultural Group
4) Astronomy Enthusiasts
5) Fly Fishers
6) The City of Nanaimo

1. The desire of the radio-controlled (RC) fliers group, who fly both gas and battery powered RC planes and drones, has interests in establishing a permeant flying area at the north end of the property, complete with a small gravel air strip. However, studies into the impact of flying RC models on birds have shown that, even when noise impacts are reduced through the use of electric motors, birds become and remain alarmed by the presence of airborne RC models (Kempf and Huppop 1998). This planes maybe associated with avian predators and may result in songbirds reducing/altering feeding behaviour, or indirectly by stressing birds or driving them off their nests, which in turn leads to increased nesting failures. As bird use of the site extends across the breeding and overwintering seasons, and may affect provincially Blue-listed species, the operation of RC planes and drones appears incompatible with protecting the natural values of this site.

2. A number of local dog owners have approached the City for designation of part of the East Wellington park for off-leash use. The ability to walk their dog off-leash presumably provides a more vigorous and enjoyable outing for their pets than under the existing regulations. Their proposal generates some issues surrounding wildlife disturbance, particularly around the Millstone River riparian area, which acts as a year-round movement corridor for larger wildlife, and for ground-nesting birds (e.g. Savannah Sparrows, Spotted Towhees) and wintering waterfowl (e.g. ducks and geese). These potential impacts could be mitigated by constructing an off-leash trail

that is aligned along the base of the rock bluffs (NE side of the field), that would then turn southwest along the first hedge row and then circle back north along the riparian edge of the Millstone River. The trail could be 5 to 10m in width and contained by installing page wire fencing at a height of 4ft. The fence would separate dogs from the open field and could be adjusted along a width of 15m as a defined riparian setback from the Millstone River allowing for the natural expansion and reinstatement of riparian vegetation and separating impacts from the cultivation of the field. A narrow trail network through the existing forest sections would also allow for developing 3-4 view corridors along the rivers edge.

3. Vancouver Island University has indicated an interest in using part of the park to establish a modest research farm at the site. Apart from the footprint impact of the proposed facility itself, the main environmental concern would appear to be the potential for the unintended spread of trial plants to remnant natural areas within and immediately adjacent to the park boundaries. The main mitigation measure would be siting the research farm in an area which is already heavily disturbed (the area near the parking lot would be a good candidate) and somewhat distant from intact riparian habitats.

4. A group of astronomy enthusiasts have expressed their desire to the City to set up a viewing area near the existing parking lot. The site is considered attractive for stargazing due to the low residential density in the surrounding area and the low levels of light pollution. To further reduce background lighting, they have indicated their need for a small (1.5 to 2 m ht.) blind. As the required space is small and presumably located close to the parking lot, the potential for disturbance of nocturnal wildlife (e.g. bats and owls) is considered small. There may be a location behind existing vegetation along East Wellington Road that would effectively screen streetlights and vehicle lights or an elevated wood platform could also be constructed further along the area proposed for a walking trail. The area would be moved further away from street lights located near the corners of Maxey Road and East Wellington Road.

5. A fly fishers group that was previously involved in restoration work on reaches of the Millstone River forming the western park boundary have raised a concern that flows have recently been reduced on the Millstone through bank sloughing and the accumulation of in-stream coarse woody debris. Aquaparian conducted a site inspection of the northwest corner of the site on June 29th, 2018 and did find cause for concern. A significant amount of bank sloughing was noted on the east bank of the river and some evidence of diverted flow was seen just downstream of the sloughing

area. It is beyond the scope of the current study to provide detailed recommendations for this issue, but consideration should be given to removing the sloughed material during the fisheries window, in consultation with a qualified biologist and hydrogeologist.

6. In addition to managing the site as a nature park, The City of Nanaimo is interested in creating opportunities for new fish habitat by excavating a side channel and pond system that would allow for seasonal use by fish. Provided the excavation work is completed during the dry season, the potential for migration of sediment into the Millstone River would be considered low. The potential impacts of pond construction could affect some ground-nesting Savannah Sparrows, unless the work was timed outside of their breeding period, which typically extends from mid-April to the end of July.

   The City of Nanaimo has indicated that it has plans to upgrade the sanitary sewer line that runs along the northeast edge of the field area. In concert with the pipeline replacement, the City would like to place a raised crushed gravel path on the alignment for people to use as a public green-way. As this location is in close proximity to ditching which may support native amphibian breeding, there is some potential for the pipeline trench to accidently trap migrating amphibians. However, this would primarily be of concern if the trench was open after the first autumn rains or the early-to-mid spring period. This impact could be mitigated by backfilling trenches at the earliest opportunities, and by using plywood sheeting to cover them during the above-mentioned timings. The raised gravel path would be a welcome feature for existing park walkers of the area. The area tend flood when both creek and drainage level are high during the winter and early spring period.

A summary of potential issues associated with each of the above user groups and suggested level of impact is summarized in Table 2.

6.0 SUMMARY & RECOMMENDATIONS

Aquaparian completed a biophysical assessment of review of environmental issues related to park use by recreational user groups for the Millstone Flats site at 2191 East Wellington Road, in July of 2018. The purpose of the assignment was to expand on the site's resource information collected during a 2011 biophysical assessment by Chatwin Engineering. Additional information regarding wildlife use and plant occurrence was collected during site visits in mid-June of 2018.

This information was used to assess the potential impacts of various user groups on the environmental resources present, and to suggest practical means of mitigating those impacts and means of enhancing natural resource values.

Flora & Fauna:

A total of 57 plant species were identified during the 2018 field study. None of the plants identified on the site appear on regional lists of rare or endangered plants. Ecological site conditions show the property to be a seasonally flooded agricultural field within the floodplain of the Millstone River. A ditch with seasonally inundated area is located along the northeast side of the property. The southwest and northeast sides of the property are comprised of mixed stands of mature trees with several veteran Douglas firs and a thick shrub understory providing important edge habitat for several species of birds including raptors, owls and neotropical migrant songbirds. The grass field provides habitat for several species of small mammals, most notably Townsend's voles, which are an important prey species for raptors and the Blue-listed Great Blue heron. The fields are well-used during the breeding season by foraging Blue-listed Barn Swallows and Violet-green swallows, and also provide nesting habitat for a number of Savannah Sparrows. The Millstone River is a locally known watercourse supporting populations of chum and coho salmon and cutthroat and rainbow trout. The seasonally flooded areas of the property provide wintering habitat for ducks and geese, and winter foraging sites for great blue herons. In total, 33 species of birds were identified as using the site during the breeding season, representing a diverse assemblage of raptors, corvids, woodpeckers, sparrows, and insect-eating aerialists.

Interested Park Users:

Six parks user groups were identified during a public Parks planning session organised by the City of Nanaimo Parks, Recreation and Culture as having an interest in activities within the park. Of these, only the radio-controlled fliers group have plans that are not considered consistent with protecting the natural values of this park. Proposals to allow off-leash dog walking could proceed with minimal impact provided the walking area is confined along 30 m width riparian buffer area is protected using page wire fencing, and other parts of the trail are routed away from sensitive riparian areas. The VIU agriculture group's desire to establish an experimental farm at the site could be accommodated providing the facility is sited in an area already heavily disturbed, and follow-up monitoring/maintenance is carried out within intact ecosystems to discourage the spread of non-native plants. No significant environmental issues were identified with use of the site by astronomy enthusiasts.

Both the City of Nanaimo and the fly fishers group are concerned with improving fisheries habitats on the site. The former would like to create new juvenile rearing habitat by excavating ponds and channels, while the latter would like to see remedial work done in reaches of the Millstone River impacted by bank sloughing and the accumulation of large woody debris in-stream. At the time of the 2018 fieldwork, the water level in the Millstone River was approximately 2m below the elevation of the field. A short side channel was identified that appeared to provide some drainage from the centre wetted area of the field. Evidence of recent flooding was observed up the side channel and across portions of the field from the Millstone River in the spring of 2011. Due to the topography of the property and the proximity of the Millstone River as well as wetted areas on the other side of the property, there is potential for fish and wildlife habitat enhancement on the site. Enhancement could include the excavation of a large, moderately deep central pond with a series of smaller shallow ponds (Seasonally flooded) all connected by an excavated side channel to the Millstone River. The stream and wetland system could allow for seasonal rearing of fish and new foraging, nesting and rearing habitat for various forms of wildlife. Impacts to other natural values in the park during this work could be mitigated by scheduling excavation for the dry season and avoiding work during the nesting season extending from mid-April through to the end of July.

While the property offers good opportunities for the development of side channels and wetland ponds, Aquaparian recommends the following environmental protection measures be considered during construction:

1. Restrict trail construction and ponds/side channel excavations to outside the period of January 30 to June 30 in a given year, if possible in consideration of the incubation and fledging of forest songbirds and raptors that may nest near the property; or have a biologist examine the further to identify whether nest (S) have bene constructed and are in use and that active nests are protected during construction operations.

2. Pond/side channel excavations should be restricted to the dry season months due to the proximity of the Millstone River. An appropriate sediment and erosion control plan should be in place before any stripping of the site is allowed to commence.

3. Following construction of side channels and wetland ponds for fish habitat, riparian areas and ponds should be planted with native trees, shrubs and wetland species in the rainy season following construction.

4. The routing of trails be located on the edge of the grass field outside the treed buffer to protect bird habitat and root systems of mature trees. The use of page wire fencing at a

height of 4ft would help to delineate a walking and off-leash walking corridor within the park while still providing public viewing of the open meadow and movement of larger wildlife (i.e.deer) through the site. The use of page wire fencing along a 15m to 30m setback from the Millstone River would also allow for the separation of cultivation practices (Mowing) in the field and the natural regeneration of the forest riparian community tnest to the river to become re-established.

5. The City of Nanaimo's desire to replace the existing sanitary sewer line with a new one has some potential to trap migrating amphibians, especially if the work is completed in early autumn or spring. However, impacts can be largely mitigated by altering construction timing to avoid these periods or, alternately, by ensuring all trenching is covered / backfilled at the end of each working day.

6.1 Further Enhancement Opportunities

The following is a list of other habitat enhancement opportunities that could potentially be implemented on the site over time:

- Removal of invasive species in the treed portions of the property;
- Native tree and shrub plantings throughout the parcel with pedestrian/mixed use areas to outcompete the grass and eventually eliminate the need for mowing; and
- Installation of swallow boxes to control mosquito populations.

Aquaparian will be available to further discus habitat design features that could be created for the site or other recreational plans to increase public use.

7.0 CLOSURE

Aquaparian Environmental Consulting Ltd (Aquaparian) was retained by the City of Nanaimo to complete a Biophysical Assessment and Environmental Issues Identification to guide in management of the subject parcel.

This report has been completed in accordance with generally accepted biological practices. No other warranty is made, either expressed or implied. Aquaparian trusts that the information provided in this report meets your requirements.

Any questions regarding information provided in this document, please contact the undersigned at (250) 591-2258.

Respectfully submitted,

AQUAPARIAN ENVIRONMENTAL CONSULTING LTD.

Chris Zamora, B.Sc., R.P.Bio Senior Biologist/ Principal	Joe Materi, Biological Technician

Attachments:

Figure 1: Site Location Map
Figure 2: Site Plan
Figure 3: Biophysical Site Map (2018 Revision)

Table 1. Summary of Bird Observations in and near 2191 East Wellington Road June 2018 and April 2011
Table 2. Summary of Identified User Groups and Potential Impacts of Park Use

Appendix A: Site Photographs
Appendix B: Site Plant List Compiled in June of 2018
Appendix C: FISS Database Search Results
Appendix D: BC Conservation Data Centre Rare Element Search Results
Appendix E: Archaeological Database Search Results

8.0 REFERENCES

British Columbia Conservation Data Centre. BC Species and Ecosystem Explorer Search Results. http://srmapps.gov.bc.ca/apps/eswp/

BC Great Blue Heron Nest database Internet Website: http://cmnmaps.ca/gbhe/

BC Ministry of Environment. Habitat Wizard Database Internet Website: http://webmaps.gov.bc.ca/imf5/imf.jsp?site=moe_habwiz

BC Ministry of Environment, *Sensitive Ecosystem Inventory of the East Coast of Vancouver Island and the Gulf Islands,1993-1997*. http://www.env.gov.bc.ca/sei/van_gulf/publications.html

Canadian Wildlife Service, Species at Risk database. Internet website: http://www.sis.ec.gc.ca/ec_species/

Green, R.N and K. Klinka, 1994. *A Field Guide for Site Identification and Interpretation for the Vancouver Forest Region*. 285 pp

Jungen, J.R. Ministry of Environment, *Soils of Southern Vancouver Island, MOE Technical Report 17.* 1985.

Kempf, N. and O. Huppop. 1998. What Effect Do Airplanes Have on Birds – A Summary. https://www.fai.org/sites/default/files/documents/ln_3-1_aircraft_effects_on_birds.pdf

Matsuda, B., D.M. Green, and R.W. Campbell. 2006. *Amphibians and Reptiles of British Columbia.* Royal B.C. Museum, Victoria, B.C. 266pp.

Wildlife Tree Stewardship (WITS) Atlas. Internet website: http://www.cmnmaps.ca/wits/

FIGURE 1:

SITE LOCATION MAP

East Wellington (Millstone Flats) – Site Location Map

Figure 1

FIGURE 2:

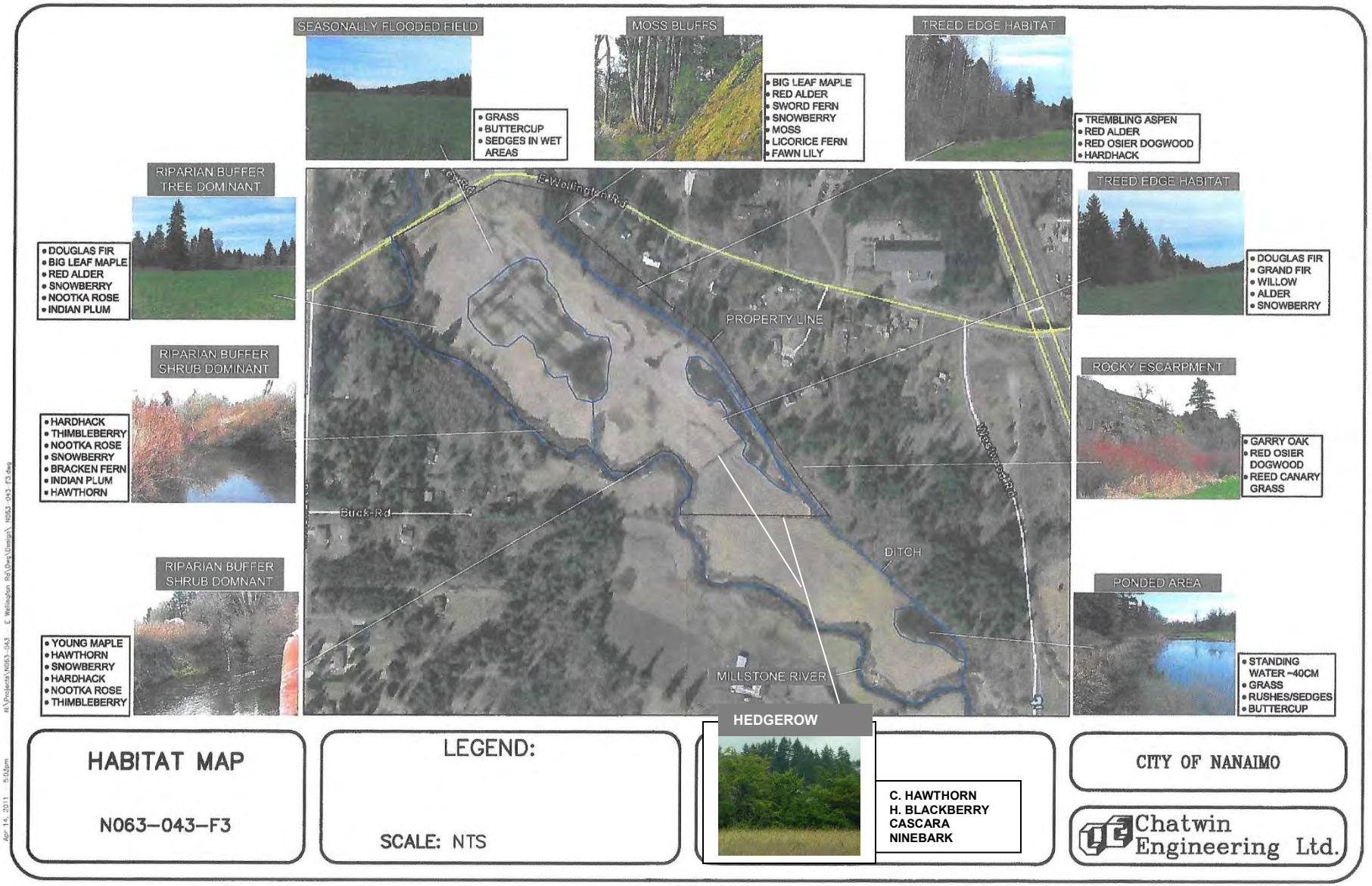
SITE LOCATION PLAN

East Wellington (Millstone Flats) – Site Plan Study Area

Figure 2

FIGURE 3:

BIOPHYSICAL SITE MAP (2018 REVISION)



HABITAT MAP

N063–043–F3

LEGEND:

SCALE: NTS

CITY OF NANAIMO

Chatwin Engineering Ltd.

N:\Projects\N063-043 E Wellington Rd\Dwg\Design\ N063-043-F3.dwg
Apr 14, 2011 - 5:03pm

TABLE 1:

SUMMARY OF BIRD OBSERVATIONS IN AND NEAR 2191 EAST WELLINGTON ROAD JUNE 2018 AND APRIL 2011

Table 1. Summary of Aquaparian's bird observations in and near 2191 East Wellington Road to the 26th of June, 2018.

SPECIES	TYPE OF OBSERVATION	COMMENTS
American Bushtit	Visual, Auditory	Frequenting hedgerow habitats.
American Goldfinch	Auditory, Visual	Observed in hedgerow habitat.
American Robin	Auditory, Visual	Common and abundant.
Bald Eagle	Visual	Recorded in spring of 2011.
Barn Swallow	Visual, Auditory	Lg. numbers (35+) feeding over central & southern fields.
Black-headed Grosbeak	Visual, Auditory	Heard in taller riparian and mixed tree/shrub cover
Brown Creeper	Auditory	Heard in mature forest fringes.
Dark-eyed Junco	Visual	One male seen on forest floor.
Canada Goose	Visual	Recorded in Spring of 2011.
Cedar Waxwing	Visual, Auditory	Seen in forest and riparian fringes.
Chipping Sparrow	Auditory	In shrubs near East Wellington Rd
Common Yellowthroat	Auditory, Visual	Heard in hedgerows and in riparian shrub cover.
Cooper's Hawk	Visual	Flying over field from east to west.
European Starling	Visual, Auditory	Seen in various locations west side.
Great Blue Heron	Visual	1 perched in snag over Millstone R, probable winter use of fields
Hermit Thrush	Auditory	Heard in fringing mixed forest.
Killdeer	Visual	Recorded in spring of 2011.
Mallard	Visual	Recorded in spring of 2011.
Northwestern Crow	Auditory, Visual	Overflight.
Orange-crowned Warbler	Auditory	Heard in adjacent mixed forest and riparian shrub cover.
Purple Finch	Visual, Auditory	3 seen in riparian shrub cover.
Red-breasted Nuthatch	Auditory	Heard in riparian forest in NW corner.
Red-breasted Sapsucker	Visual, Feeding Sign	3 seen on snag near Millstone Feeding sign on mature willows.
Red-tailed Hawk	Auditory, Visual	2 adults seen perched in trees along east side 100 m apart.
Rufous Hummingbird	Visual	Seen in hedgerows
Savannah Sparrow	Visual, Auditory	Several seen in grassy meadows; which are used for nesting.
Song Sparrow	Auditory, Visual	Observed in riparian shrub cover
Spotted Towhee	Auditory, Visual	Nests low in shrubs
Turkey Vulture	Visual	2 perched in lg. snag north of site.
Yellow Warbler	Auditory	Heard in riparian forest and hedgerows.
Violet-green Swallow	Visual	Seen foraging over fields and riparian habitats.
Wilson's Warbler	Auditory	Heard in hedgerow habitat.
Willow Flycatcher	Auditory	Several heard in fields and hedgerows.

TABLE 2:

SUMMARY OF IDENTIFIED USER GROUPS

AND POTENTIAL IMPACTS OF PARK USE

Table 2. Summary of User Groups and Potential Impacts of Their Activities on Park Resources

User Group	Proposed Activity / Facility	Potential Impacts from Users	Recommended Mitigation Measures
Radio-controlled Fliers	Operation of RC model aircraft & drones. Construction of a gravel landing strip.	Disturbance of bird nesting, foraging behaviours in breeding season. Disturbance of wintering waterfowl. **Suggested Impact Rating: Moderate - High**	Few times when birds would not be impacted. Considered incompatible with protection of natural values esp. for Blue-listed bird species.
Dog Owners	Off-leash dog walking.	Wildlife disturbance, particularly of riparian-associated mammals using Millstone R. as a movement corridor. Potential disturbance of ground-nesting birds in spring. **Suggested Impact Rating: Low to Moderate**	Installation of page wire fencing offset by 5 to 10m from pathway on NE side near drainage allowing dogs to run along confined corridor but outside of open field. Also including fencing 15m to 30m away from TOP along Millstone River to separate users and cultivation of grasses.
Vancouver Island University Ag. Group	Establish a modest research farm.	Footprint impact. Potential for accidental spread of plants to intact forest / riparian areas. **Suggested Impact Rating: Low**	Locate planting areas in areas already heavily disturbed. Monitor & maintain adjacent intact ecosystems.
Astronomy Enthusiasts	Establish a viewing platform for stargazing.	Minor potential for disturbance of nocturnal wildlife such as bats & owls. **Suggested Impact Rating: Low**	None required.
Fly Fishers	Concerns regarding bank sloughing / coarse woody debris affecting flows and erosion.	Reduced flows and back-watering upstream during high flow periods. **Suggested Impact Rating: Low**	Mitigation measures to improve stream bank stabilization and improvements to fish habitat. Instream works to follow Least Risk Work Window and in consultation with hydrogeologist.
City of Nanaimo	Creation of new fish habitat By excavating pond & channel.	Potential for migration of silt into Millstone R. Possible disturbance of nesting Savannah Sparrows. **Suggested Impact Rating: Low**	Schedule excavation for dry season. Avoid sparrow nesting season of mid-April to end of July. Installation of small culverts to allow amphibian passage.
City of Nanaimo	Replacement of sanitary sewer line.	Accidental trapping of migrating amphibians breeding in adjacent ditch. **Suggested Impact Rating: Low to Moderate**	Avoid construction in early fall and early-to mid spring. Otherwise, cover open trenching at end of work day.

APPENDIX A:

SITE PHOTOGRAPHS

SITE PHOTOGRAPHS

Photo Sheet 1

Photo 1. View from southeastern part of field looking north towards rock bluffs.

Photo 2. Ditching along the northeastern part of site floods seasonally and supports dense stands of aquatic emergent vegetation.

Photo Sheet 2

Photo 3. View of extensive woody debris possibly affecting flows in the Millstone River in the northwest part of the site.

Photo 4. Adult Northern Red-legged Frog making use of the Millstone River in June of 2018.

Photo Sheet 3

Photo 5. A large piece of sloughed riverbank found in the northwest corner of the study area.

Photo 6. Southern edge of mature mixed riparian forest along the Millstone River.

Photo Sheet 4

Photo 7. Areas of dense common hawthorn form hedgerows along the central and southern parts of the property that provide cover for songbirds.

Photo 8. View to southeast from parking area. Note shrub-dominated riparian area (distant right) and recent disturbance in foreground.

APPENDIX B:

FISS DATABASE SEARCH RESULTS

Back Main Queries Page

Fisheries Inventory - FISS Fish Distributions Report

50 record(s) matched your query.
Report created on : Mon Apr 11 14:32:44 PDT 2011

Your report was based on the following criteria:

Gazetted Name/Alias : Millstone River
Watershed Code : 920-395400
Ordered By : Gazetted Name

Gazetted Name	Region	Code	Species Name	Stock Type	Stock Char	Stock Name	Management Class	Activity	Map 1	Point 1	Type 1	Map 2	Point 2	Type 2	Refs And Dates	DFO District	DFO Sub-District	DFO Habitat	Watershed Code
MILLSTONE RIVER	1	ACT	Cutthroat Trout (Anadromous)	NOT SPECIF	Not Specif	1046	Hatchery production	OBL Fish observed at this point or zone		307190 W					(REL-SUM, no date)	3	17	SOUTH COAST	920-395400
MILLSTONE RIVER	1	ACT	Cutthroat Trout (Anadromous)	NOT SPECIF	Not Specif	1048	Hatchery production	OBL Fish observed at this point or zone		307190 W					(REL-SUM, no date)	3	17	SOUTH COAST	920-395400
MILLSTONE RIVER	1	ACT	Cutthroat Trout (Anadromous)	NOT SPECIF	Not Specif	1049	Hatchery production	OBL Fish observed at this point or zone		307190 W					(REL-SUM, no date)	3	17	SOUTH COAST	920-395400
MILLSTONE RIVER	1	ACT	Cutthroat Trout (Anadromous)	NOT SPECIF	Not Specif	1050	Hatchery production	OBL Fish observed at this point or zone		307190 W					(REL-SUM, no date)	3	17	SOUTH COAST	920-395400
MILLSTONE RIVER	1	ACT	Cutthroat Trout (Anadromous)	NOT SPECIF	Not Specif	1056	Hatchery production	OBL Fish observed at this point or zone		307190 W					(REL-SUM, no date)	3	17	SOUTH COAST	920-395400
MILLSTONE RIVER	1	ACT	Cutthroat Trout (Anadromous)	NOT SPECIF	Not Specif	1057	Hatchery production	OBL Fish observed at this point or zone		307190 W					(REL-SUM, no date)	3	17	SOUTH COAST	920-395400
MILLSTONE RIVER	1	ACT	Cutthroat Trout (Anadromous)	NOT SPECIF	Not Specif	1058	Hatchery production	OBL Fish observed at this point or zone		307190 W					(REL-SUM, no date)	3	17	SOUTH COAST	920-395400
MILLSTONE RIVER	1	ACT	Cutthroat Trout (Anadromous)	NOT SPECIF	Not Specif	1059	Hatchery production	OBL Fish observed at this point or zone		307190 W					(REL-SUM, no date)	3	17	SOUTH COAST	920-395400

MILLSTONE RIVER	1	ACT	Cutthroat Trout (Anadromous)	NOT SPECIF	Not Specif	Augmented	OBL Fish observed at this point or zone	092G04	22	U			(14-9, 01-JAN-1993)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CC	Sculpin (General)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	336562	P			(RABSVY-175209, 02-OCT-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CC	Sculpin (General)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340728	P			(RABSVY-182248, 02-OCT-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CC	Sculpin (General)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340729	P			(RABSVY-182249, 16-MAY-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CC	Sculpin (General)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340730	P			(RABSVY-182251, 13-SEP-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CH	Chinook Salmon	NOT SPECIF	Anadromous	Not Specified	OBL Fish observed at this point or zone		307190	W			(17-21, 01-JAN-1982)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CM	Chum Salmon	NOT SPECIF	Anadromous	Not Specified	OBL Fish observed at this point or zone	092G04	18	P			(SISSM01, 01-JAN-1995)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CM	Chum Salmon	NOT SPECIF	Anadromous	Not Specified	SPL Spawning location	092G04	19	U			(14-9, 01-JAN-1993) (17-20, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CO	Coho Salmon	NOT SPECIF	Anadromous	Not Specified	OBL Fish observed at this point or zone	092F01	18	P			(14-12, no date) (14-9, 01-JAN-1993)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CO	Coho Salmon	NOT SPECIF	Anadromous	Not Specified	OBL Fish observed at this point or zone	092G04	20	P			(SISSM01, 01-JAN-1995)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CO	Coho Salmon	NOT SPECIF	Anadromous	Not Specified	SPL Spawning location	092G04	21	U	092G04	19	D (14-9, 01-JAN-1993) (17-15, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CT	Cutthroat Trout	NOT SPECIF	Fluvial	Wild indigenous	OBL Fish observed at this point or zone	092F01	6500	U			(14-9, 01-JAN-1993) (17-20, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CT	Cutthroat Trout	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this	092F01	336562	P			(RABSVY-175209, 02-OCT-1979)	3	17	SOUTH 920-COAST 395400

							point or zone							
MILLSTONE RIVER	1	CT	Cutthroat Trout	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340728	P	(RABSVY-182248, 02-OCT-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CT	Cutthroat Trout	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340729	P	(RABSVY-182249, 16-MAY-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CT	Cutthroat Trout	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340730	P	(RABSVY-182251, 13-SEP-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	CT	Cutthroat Trout	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone		307190	W	(HQ1478, 01-FEB-1998)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	PMB	Pumpkinseed	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	336562	P	(RABSVY-175209, 02-OCT-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	PMB	Pumpkinseed	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340730	P	(RABSVY-182251, 13-SEP-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	PMB	Pumpkinseed	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone		307190	W	(17-14, 01-JAN-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	SB	Stickleback (General)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	336562	P	(RABSVY-175209, 02-OCT-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	SB	Stickleback (General)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340728	P	(RABSVY-182248, 02-OCT-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	SB	Stickleback (General)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340729	P	(RABSVY-182249, 16-MAY-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Anadromous	WINTER Augmented	OBL Fish observed at this point or zone	092G04	24	P	(14-31, 01-JAN-1994) (14-9, 01-JAN-1993)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Anadromous	WINTER Augmented	SPL Spawning	092G04	23	P	(14-9, 01-JAN-1993) (17-22, no date)	3	17	SOUTH 920-COAST 395400

							location					
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	158	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	164	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	167	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	168	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	169	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	170	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	171	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	172	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	173	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	174	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif	3695	Hatchery production	OBL Fish observed at this point or zone	307190 W	(REL-SUM, no date)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	ST	Steelhead	NOT SPECIF	Not Specif		Not Specified	OBL Fish observed at this	307190 W	(STLHD-SUM, no date)	3	17	SOUTH 920-COAST 395400

						point or zone							
MILLSTONE RIVER	1	TSB	Threespine Stickleback	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone		307190 W	(14-9, 01-JAN-1993)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	WST	Steelhead (Winter-run)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	336562 P	(RABSVY-175209, 02-OCT-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	WST	Steelhead (Winter-run)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340728 P	(RABSVY-182248, 02-OCT-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	WST	Steelhead (Winter-run)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340729 P	(RABSVY-182249, 16-MAY-1979)	3	17	SOUTH 920-COAST 395400
MILLSTONE RIVER	1	WST	Steelhead (Winter-run)	NOT SPECIF	Not Specif	Not Specified	OBL Fish observed at this point or zone	092F01	340730 P	(RABSVY-182251, 13-SEP-1979)	3	17	SOUTH 920-COAST 395400

Download this information as a .csv file

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APPENDIX C:

SITE PLANT LIST COMPILED IN JUNE OF 2018

2191 East Wellington Road
June 21 & 26, 2018

PLANT LIST

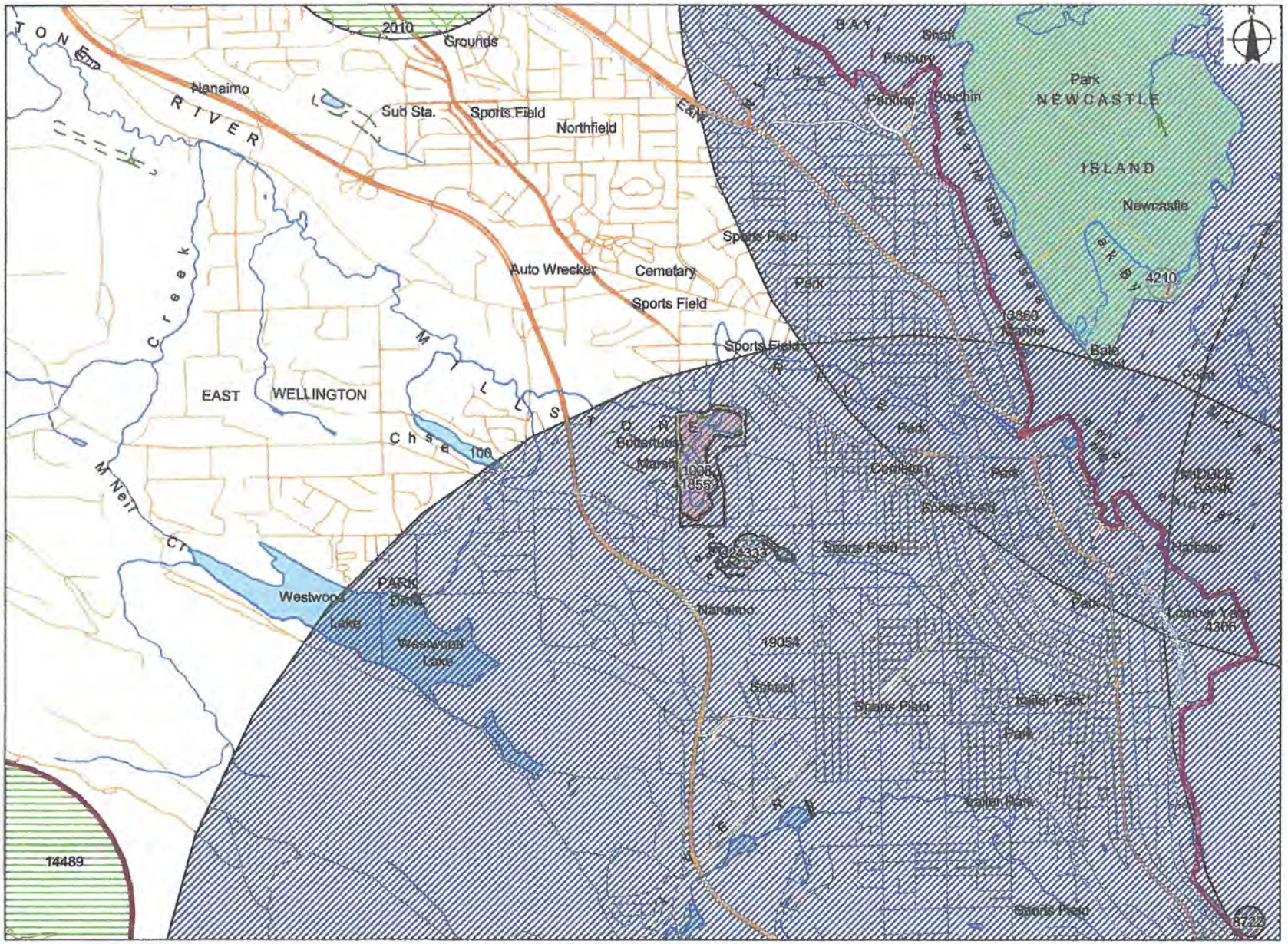
Scientific Name	Common Name
Trees	
Acer macrophyllum	Bigleaf maple
Alnus rubra	Red alder
Populus tremuloides	Trembling aspen
Prunus emarginata	Bitter cherry
Pseudotsuga menziesii ssp. *menziesii*	Douglas-fir
Quercus rubra	Red oak
Shrubs	
Amelanchier alnifolia	Saskatoon
Cornus stolonifera	Red-osier dogwood
Crataegus douglasii	Black hawthorn
*Crataegus monogyna**	Common hawthorn
*Daphne laureola**	Spurge-laurel
Oemleria cerasiformis	Indian-plum
Physocarpus capitatus	Pacific ninebark
Rhamnus purshiana	Cascara
Rosa nutkana	Nootka rose
*Rubus discolor**	Himalayan blackberry
*Rubus laciniatus**	Evergreen blackberry
Rubus parviflorus	Thimbleberry
Rubus ursinus	Trailing blackberry
Salix lucida ssp. *Lasiandra*	Pacific willow
Salix scouleriana	Scouler's willow
Spirraea douglasii ssp. Douglasii	Hardhack
Symphoricarpos albus	Common snowberry
Herbs	
Agrostis exarata	Spike bentgrass
Agrostis scabra	Hair bentgrass
Alopecurus aequalis	Shortawn foxtail
Carex macloviana	Falkland Island sedge
Carex obnupta	Slough sedge
Cirsium arvense	Canada thistle
Daucus carota	Queen Anne's lace
Eleocharis palustris	Creeping spike-rush
Equisetum arvense	Common horsetail
Heracleum maximum	Cow parsnip
Holcus lanatus	Common velvet-grass
*Hypochaeris radicata**	Hairy cat's ear
Juncus effusus	Common rush
Leucanthemum vulgare	Oxeye daisy
Lolium multiflorum	Italian ryegrass
Medicago lupulina	Black medic
Oenanthe sarmentosa	Pacific water-parsley
Phleum pratense	Timothy
Phalaris arundinacea	Reed canary-grass
Plantago lanceolata	Ribwort plantain
Polygonum lapathifolium	Willow weed
Potentilla anserina ssp. Pacifica	Silverweed
Prunella vulgaris	Self-heal
Pteridium aquilinum	Bracken fern
Ranunculus occidentalis	Western field buttercup
Ranunculus repens	Creeping buttercup
Ranunculus uncinatus	Small-flowered buttercup
*Rumex crispus**	Curled dock
*Senecio jacobaea**	Tansy ragwort
Tanacetum vulgare	Common tansy
Trifolium pratense	Red clover
Trifolium repens	White clover
Veronica beccabunga ssp. *americana*	American brooklime
Vicia americana	American vetch

*invasive plant species

APPENDIX D:

BC CONSERVATION DATA CENTRE

RARE ELEMENT SEARCH RESULTS


2010
Grounds
Nanaimo
RIVER
Sub Sta.
Sports Field
Northfield
BAY
Shaft
Pipeline
Park
NEWCASTLE
ISLAND
Newcastle
Sports Field
Auto Wrecker
Cemetery
Sports Field
Park
4210
Sports Field
EAST
WELLINGTON
Park
Cemetery
Park
Sports Field
Sports Field
Harbour
Westwood
Lake
Nanaimo
19054
School
Sports Field
Park
14489
8722

BC Species and Ecosystems Explorer Search Results

			Status				
Scientific Name	**English Name**	**RISC Code**	**Provincial**	**BC List**	**COSEWIC**	**Global**	**CF Priority**
Abronia latifolia	yellow sand-verbena	ABROLAT	S3 (2002)	Blue		G5 (1988)	1
Accipiter gentilis laingi	Northern Goshawk, *laingi* subspecies	B-NOGO-LA	S2B (2010)	Red	T (2000)	G5T2 (2008)	1
Allium amplectens	slimleaf onion	ALLIAMP	S3 (2001)	Blue		G4 (1988)	2
Allium crenulatum	Olympic onion	ALLICRE	S2 (2000)	Red		G4 (1988)	3
Allium geyeri var. *tenerum*	Geyer's onion	ALLIGEY2	S2S3 (2005)	Blue		G4G5T3T5 (2002)	3
Anagallis minima	chaffweed	ANAGMIN	S3 (2008)	Blue		G5 (1984)	2
Ardea herodias fannini	Great Blue Heron, *fannini* subspecies	B-GBHE-FA	S2S3B,S4N (2009)	Blue	SC (2008)	G5T4 (1997)	1
Asio flammeus	Short-eared Owl	B-SEOW	S3B,S2N (2009)	Blue	SC (2008)	G5 (2008)	2
Bartramia stricta	apple moss	BARTSTR	S2 (2008)	Red	E (2009)	GU (2006)	2
Botrychium simplex	least moonwort	BOTRSIM	S2S3 (2000)	Blue		G5 (1998)	3
Brachyramphus marmoratus	Marbled Murrelet	B-MAMU	S3B,S3N (2010)	Blue	T (2000)	G3G4 (2008)	1
Bulbostylis capillaris	densetuft hairsedge	BULBCAP	S1 (2006)	Red		G5 (1984)	2
Butorides virescens	Green Heron	B-GRHE	S3S4B (2009)	Blue		G5 (1996)	4
Callophrys eryphon sheltonensis	Western Pine Elfin, *sheltonensis* subspecies	IL-CALERY-SH	S3 (2006)	Blue		G5TNR	4
Callophrys mossii mossii	Moss' Elfin, *mossii* subspecies	IL-CALMOS-MO	S2S3 (2006)	Blue		G4T4 (2001)	2
Carex feta	green-sheathed sedge	CAREFET	S2 (2002)	Red		G5 (1990)	2
Carex tumulicola	foothill sedge	CARETUM	S2 (2007)	Red	E (2008)	G4 (1985)	2
Carychium occidentale	Western Thorn	IM-CAROCC	S2S3 (2008)	Blue		G3G4 (2002)	2
Ceratophyllum echinatum	spring hornwort	CERAECH	S3 (2002)	Blue		G4? (1995)	4
Cercyonis pegala incana	Common Wood-nymph, *incana* subspecies	IL-CERPEG-IN	S2 (2006)	Red		G5T4T5 (2003)	2
Chamaesyce serpyllifolia ssp. *serpyllifolia*	thyme-leaved spurge	CHAMSER1	S2S3 (2000)	Blue		G5T5 (2001)	2
Chrysemys picta pop. 1	Western Painted Turtle - Pacific Coast Population	R-CHPI-01	S2 (2007)	Red	E (2006)	G5TNR (2007)	2
Coenonympha tullia insulana	Common Ringlet, *insulana* subspecies	IL-COETUL-IN	S1 (2006)	Red		G5T3T4 (1998)	1
Contopus cooperi	Olive-sided Flycatcher	B-OSFL	S3S4B (2009)	Blue	T (2007)	G4 (2008)	2
Corynorhinus townsendii	Townsend's Big-eared Bat	M-COTO	S3 (2006)	Blue		G4 (1996)	2
Cuscuta campestris	field dodder	CUSCPEN	S2S3 (2000)	Blue		G5 (2007)	2

Cyperus squarrosus	awned cyperus	CYPESQU	S3 (2001)	Blue		G5 (1993)	2
Dryopteris arguta	coastal wood fern	DRYOARG	S2S3 (2000)	Blue	SC (2001)	G5 (1999)	2
Entosthodon fascicularis	banded cord-moss	ENTOFAS	S2S3 (2007)	Blue	SC (2005)	G4G5 (2001)	2
Epilobium densiflorum	dense spike-primrose	EPILDEN	S1 (2010)	Red	E (2005)	G5 (1988)	1
Eremophila alpestris strigata	Horned Lark, *strigata* subspecies	B-HOLA-ST	SXB, SNA (2009)	Red	E (2003)	G5T2 (2008)	1
Erynnis propertius	Propertius Duskywing	IL-ERYPRO	S2S3 (2006)	Blue		G5 (2009)	2
Euchloe ausonides insulanus	Large Marble, *insulanus* subspecies	IL-EUCAUS-IN	SX (2006)	Red	XT (2010)	G5T1 (2010)	2
Euphyes vestris	Dun Skipper	IL-EUPVES	S3 (2006)	Blue	T (2000)	G5 (2006)	2
Falco peregrinus anatum	Peregrine Falcon, *anatum* subspecies	B-PEFA-AN	S2B (2005)	Red	SC (2007)	G4T4 (2006)	2
Falco peregrinus pealei	Peregrine Falcon, *pealei* subspecies	B-PEFA-PE	S3B (2005)	Blue	SC (2007)	G4T3 (1997)	1
Githopsis specularioides	common bluecup	GITHSPE	S2S3 (2000)	Blue		G5 (1994)	2
Glaucidium gnoma swarthi	Northern Pygmy-Owl, *swarthi* subspecies	B-NPOW-SW	S3 (2009)	Blue		G4G5T3Q (1996)	1
Hemphillia dromedarius	Dromedary Jumping-slug	IM-HEMDRO	S2 (2008)	Red	T (2003)	G3G4 (2005)	2
Hemphillia glandulosa	Warty Jumping-slug	IM-HEMGLA	S2S3 (2008)	Blue	SC (2003)	G3G4 (2005)	2
Hesperia colorado oregonia	Western Branded Skipper, *oregonia* subspecies	IL-HESCOL-OR	S2S3 (2006)	Blue		G5T3T4 (2000)	2
Hirundo rustica	Barn Swallow	B-BASW	S3S4B (2009)	Blue		G5 (1996)	2
Isoetes nuttallii	Nuttall's quillwort	ISOENUT	S3 (2001)	Blue		G4? (1995)	2
Juncus oxymeris	pointed rush	JUNCOXY	S2S3 (2000)	Blue		G5 (1993)	3
Limnanthes macounii	Macoun's meadow-foam	LIMNMAC	S2 (2007)	Red	T (2004)	G2 (2006)	1
Lotus pinnatus	bog bird's-foot trefoil	LOTUPIN	S1 (2000)	Red	E (2004)	G4G5 (2001)	1
Malaxis brachypoda	white adder's-mouth orchid	MALABRA	S2S3 (2000)	Blue		G4Q (2002)	3
Meconella oregana	white meconella	MECOORE	S1 (2005)	Red	E (2005)	G2G3 (2004)	1
Megalodonta beckii	water marigold	MEGABEC	S3 (2001)	Blue		G4G5 (1984)	4
Megascops kennicottii kennicottii	Western Screech-Owl, *kennicottii* subspecies	B-WSOW-KE	S3 (2009)	Blue	SC (2002)	G5T4 (2003)	1
Microseris bigelovii	coast microseris	MICRBIG	S1 (2000)	Red	E (2006)	G4 (1995)	1
Monadenia fidelis	Pacific Sideband	IM-MONFID	S3S4 (2008)	Blue		G4G5 (2002)	2
Mustela erminea anguinae	Ermine, *anguinae* subspecies	M-MUER-AN	S3 (2006)	Blue		G5T3 (1996)	2

Myotis keenii	Keen's Myotis	M-MYKE	S1S3 (2006)	Red	DD (2003)	G2G3 (2006)	1
Myriophyllum quitense	waterwort water-milfoil	MYRIQUI	S2S3 (2000)	Blue		G4? (1995)	3
Nearctula sp. 1	Threaded Vertigo	IM-NEASP1	S2 (2008)	Red	SC (2010)	G3G5 (2006)	2
Oncorhynchus clarkii clarkii	Cutthroat Trout, *clarkii* subspecies	F-ONCL-CL	S3S4 (2004)	Blue		G4T4 (1997)	2
Packera macounii	Macoun's groundsel	PACKMAC	S3 (2001)	Blue		G5 (1993)	2
Patagioenas fasciata	Band-tailed Pigeon	B-BTPI	S3S4B (2009)	Blue	SC (2008)	G4 (2000)	2
Phalacrocorax auritus	Double-crested Cormorant	B-DCCO	S3B (2005)	Blue	NAR (1978)	G5 (1999)	2
Plebejus icarioides blackmorei	Boisduval's Blue, *blackmorei* subspecies	IL-PLEICA-BL	S3 (2006)	Blue		G5T3 (2006)	3
Plebejus saepiolus insulanus	Greenish Blue, *insulanus* subspecies	IL-PLESAE-IN	SH (2006)	Red	E (2000)	G5TH (2003)	1
Pooecetes gramineus affinis	Vesper Sparrow, *affinis* subspecies	B-VESP-AF	S1B (2005)	Red	E (2006)	G5T3 (1996)	1
Pristiloma johnsoni	Broadwhorl Tightcoil	IM-PRIJOH	S2S3 (2008)	Blue		G2G3 (2004)	2
Progne subis	Purple Martin	B-PUMA	S2S3B (2005)	Blue		G5 (1996)	3
Promenetus umbilicatellus	Umbilicate Sprite	IM-PROUMB	S3S4 (2008)	Blue		G4 (2000)	2
Prophysaon vanattae	Scarletback Taildropper	IM-PROVAN	S3S4 (2008)	Blue		G4 (2002)	4
Psilocarphus tenellus	slender woolly-heads	PSILTEN	S3 (2006)	Blue	NAR (1996)	G4 (1997)	4
Ranunculus alismifolius var. *alismifolius*	water-plantain buttercup	RANUALI1	S1 (2009)	Red	E (2009)	G5T5 (1995)	1
Rubus nivalis	snow bramble	RUBUNIV	S3? (2008)	Blue		G4? (1990)	2
Rupertia physodes	California-tea	RUPEPHY	S3 (2001)	Blue		G4 (1985)	2
Salvelinus malma	Dolly Varden	F-SAMA	S3S4 (2004)	Blue		G5 (2000)	2
Schoenoplectus americanus	Olney's bulrush	SCHOAME	S1 (2000)	Red		G5 (1984)	1
Sericocarpus rigidus	white-top aster	ASTECUR	S2 (2008)	Red	SC (2009)	G3 (2007)	1
Sorex palustris brooksi	American Water Shrew, *brooksi* subspecies	M-SOPA-BR	S2 (2010)	Red		G5T2 (1996)	1
Speyeria zerene bremnerii	Zerene Fritillary, *bremnerii* subspecies	IL-SPEZER-BR	S2 (2006)	Red		G5T3T4 (1998)	2
Sympetrum vicinum	Autumn Meadowhawk	IO-SYMVIC	S3S4 (2004)	Blue		G5 (1985)	4
Syntrichia laevipila	twisted oak moss	TORTLAE2	S2S3 (2007)	Blue	SC (2004)	GNR	2
Toxicodendron diversilobum	poison oak	TOXIDIV	S2S3 (2000)	Blue		G5 (1999)	2
Trifolium dichotomum	Macrae's clover	TRIFDIC	S2S3 (2007)	Blue		G4? (2002)	2

Tyto alba	Barn Owl	B-BNOW	S3 (2009)	Blue	T (2010)	G5 (1996)	2
Uria aalge	Common Murre	B-COMU	S2B,S4N (2005)	Red		G5 (2003)	2
Uropappus lindleyi	Lindley's microseris	UROPLIN	S1 (2000)	Red	E (2008)	G5 (1990)	1
Viola praemorsa ssp. *praemorsa*	yellow montane violet	VIOLPRA1	S2 (2005)	Red	E (2007)	G5T3T5 (2000)	1
Yabea microcarpa	California hedge-parsley	YABEMIC	S1S2 (2008)	Red		G5? (1990)	1

Search Summary

Time Performed Thu Apr 14 13:12:32 PDT 2011

Results 85 records.

Search Criteria
Species Group:Plants & Animals
AND BC Conservation Status:Red (Extirpated, Endangered, or Threatened) OR Blue (Special Concern)
AND Forest Districts:South Island Forest District (DSI) (Restricted to Red, Blue, and Legally designated species)
AND MOE Regions:1- Vancouver Island (Restricted to Red, Blue, and Legally designated species)
AND Regional Districts:Nanaimo (RDN) (Restricted to Red, Blue, and Legally designated species)
AND Habitat Types:Riverine,Terrestrial
AND BGC Zone:CDF
Sort Order:Scientific Name Ascending

Notes
1. Citation: B.C. Conservation Data Centre. 2011. BC Species and Ecosystems Explorer. B.C. Minist. of Environ. Victoria, B.C. Available: http://a100.gov.bc.ca/pub/eswp/ (accessed Apr 14, 2011).

2. Forest District, MoE Region, Regional District and habitat lists are restricted to species that breed in the Forest District, MoE Region, Regional District or habitat (i.e., species will not be placed on lists where they occur only as migrants).

Modify Search | New Search | Results

APPENDIX E:

ARCHEOLOGICAL SEARCH RESULTS

Sarah Bonar

From: Cooper, Diana NRO:EX [Diana.Cooper@gov.bc.ca]
Sent: April 13, 2011 3:36 PM
To: Sarah Bonar
Subject: RE: Data Request: SARAH BONAR R.P.BIO - R.P.Bio

Hello Sarah!

Thank you for your archaeological data request regarding 2191 East Wellington Road in Nanaimo.

I checked Provincial records for known archaeological sites, and while there are none mapped on the subject property, a large proportion of it has high potential for previously unrecorded archaeological sites. Because all archaeological sites, recorded or not, are protected under the Heritage Conservation Act, an Archaeological Impact Assessment (AIA) of the study area, completed by a qualified professional archaeologist is recommended prior to any ground-altering development.

I have included a screen shot of the area for your reference.

Please let me know if you have any questions.

Regards,

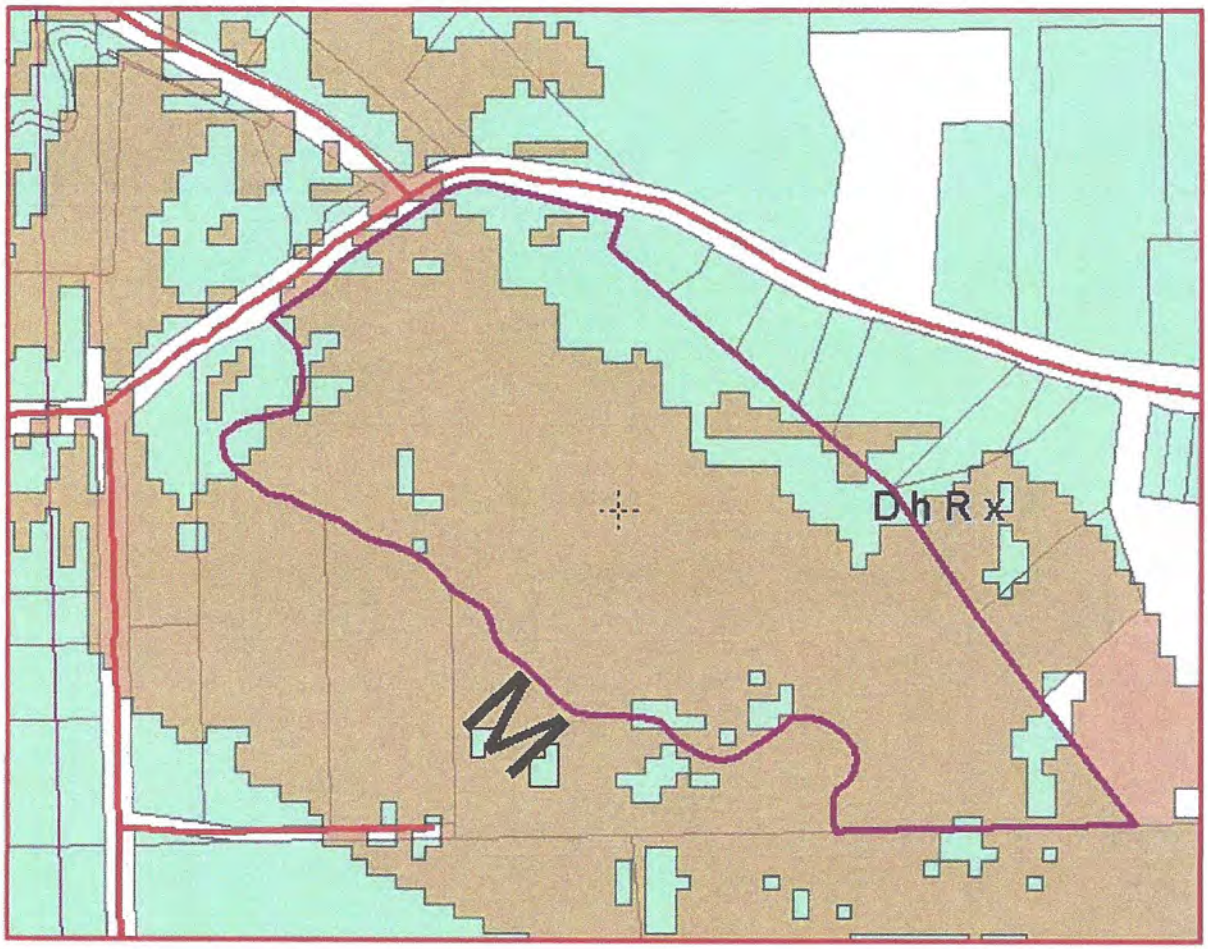
Diana

Diana Cooper | Archaeological Site Inventory Info & Data Administrator

Archaeology Branch | Ministry of Forests, Lands and Natural Resource Operations
Unit 3 - 1250 Quadra Street, Victoria BC V8W 2K7 | PO Box 9816 Stn Prov Govt, Victoria, BC V8W 9W3
Phone: 250-953-3343 | Fax: 250-953-3340 |e-mail: diana.cooper@gov.bc.ca

Visit our website at: **http://www.tti.gov.bc.ca/archaeology/**

The purple outline is our current cadastral data for the area. The brown areas have high potential for unrecorded archaeological deposits.



From: SBONAR@CHATWINENGINEERING.COM [mailto:SBONAR@CHATWINENGINEERING.COM]
Sent: Tuesday, April 12, 2011 12:50 PM
To: ARCWEB FEEDBACK NRO:EX
Subject: Data Request: SARAH BONAR R.P.BIO - R.P.Bio

Terms and Conditions Accepted	Yes
Name	SARAH BONAR R.P.BIO
Affiliation	R.P.Bio
Address	1614 MOREY ROAD
City	NANAIMO
Province	BC
Postal Code	V9S 1J7
Phone Number	(250)753-9171
Fax Number	(250)754-4459
Email	SBONAR@CHATWINENGINEERING.COM
Why Site Information is Required	Biophysical assessment for the City of Nanaimo. The City has recently aquired the property for park land and proposed fish habitat enhancement opportunities within the property that will require excavation. The property lies within the floodplain of the Millstone River. The Address is 2191 East Wellington Road.
Third Party Access	City of Nanaimo.

Information Requested	
File Attachment#1	Google 1.jpg
File Attachment#2	
File Attachment#3	
File Attachment#4	
File Attachment#5	
Format for Requested Text Data	PDF
GIS Data	No