Management Plan for Buttertubs Marsh West (Nanaimo)

Prepared by Ducks Unlimited Canada & City of Nanaimo
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Contents

Introduction

General Location

The project is located in Nanaimo, on the east side of Vancouver Island. Jingle Pot Road provides access to the property and it is adjacent to the existing Buttertubs Marsh Conservation Area. UTM Zone 10U Easting: 428760, Northing: 5447040, NAD 83

Purpose

The purpose of the management plan is to provide the general direction for the management of the property and identify the primary goals and issues for the project. Ducks Unlimited Canada (DUC) and City of Nanaimo agree that it is important to conserve, maintain and enhance the natural state of the Lands and its amenities in perpetuity as habitat for waterfowl, fish, and wildlife. The land will be managed by the City of Nanaimo as a natural park that will provide passive recreation and education opportunities that are consistent and compatible with the conservation purposes for which the Land was purchased. Subsequent more detailed plans or updates may be completed over time and may replace this plan upon agreement with Ducks Unlimited Canada and the City of Nanaimo. As the property is the subject of an Ecological Gift, any dispositions or changes in use of the property require an authorization from the Federal Minister of the Environment.

Property Securement

The property securement was led by City of Nanaimo, and in 2011 DUC and the City of Nanaimo negotiated a purchase and sale agreement with the former owners to acquire the property. DUC and City of Nanaimo will hold the property as Tenants in Common. As part of the purchase, the former owners agreed to a donation that qualified under the Ecological Gifts Program administered by Environment Canada. DUC and the City of Nanaimo would be joint recipients of the donation.

Figure 1. Property Boundary of the Buttertubs West Property

Figure 2. Subject Property in relation to Other Conservation Areas and Parks

Property Overview

Legal Description

The property consists of one legal parcel (Figure):

1. Section 12, Range 8, Mountain District, Except the Westerly 11.979 Chains thereof and Except that Part in Plans 25503 and VIP61854 (PID 009-456-601)

Figure 3. Legal Parcel Boundary

Historical Ownership and Management

Buttertubs Marsh West is adjacent to the Buttertubs Marsh Conservation Area. Buttertubs Marsh, as a whole, was once a shallow lake. In the mid-1800's, European settlers drained much of the area to provide pasture for animals as well as potato and dairy production. This land has been in private ownership since that time. In 1975, a portion of Buttertubs Marsh was purchased by the Nature Trust of BC (at that time called the National Second Century Fund of BC). After purchase, the Nature Trust leased the property to the Ministry of Environment (MOE) under a 99-year lease and is now the Buttertubs Marsh Conservation Area, which includes DUC, City of Nanaimo and the Nanaimo Field Naturalists as partners. DUC provided engineering to restore the area back into a productive wetland. A steering

committee now guides the management and agency responsibilities for the Conservation Area. Around this same time, the City of Nanaimo built a dike to cover a municipal water main that effectively divided Buttertubs Marsh from the Buttertubs West property. In an agreement with the landowners, the City put ditching into the Buttertubs West property to try to alleviate increased water levels caused by the water main dike. The Ministry of Environment and Department of Fisheries and Oceans expressed concern with ditching and further ditch maintenance on this site because of the potential to impact fish and wildlife habitat.

Buttertubs West has been targeted for securement by the various conservation organizations in the region for the last few decades. It has remained privately owned and portions of it have continued to be used as pasture and hay production although in the last few years a good portion has reestablished as wetland. Despite previous attempts to reach agreements, the project never moved forward until now. The site is adjacent to residential properties and a golf course and the potential for development was high. The children of the previous landowners have decided to sell the property and the City of Nanaimo has worked to negotiate the terms.

Land Use

The property is zoned by the City of Nanaimo as AR-1 (Rural Resource). AR-1 zones permit uses such as agricultural uses, animal shelters, campgrounds, golf courses, and single dwellings. The property is identified as an Environmentally Sensitive Area (watercourse/wetland) in the Official Community Plan. It is also part of the Agricultural Land Reserve. This zoning may be altered in the future by the City of Nanaimo to reflect the Natural Park status.

Ecogift Designation

The Ecogift designation on the property is conferred on the property by Environment Canada for the purposes of conservation and protection of Canada's environmental heritage. The property is certified as ecological sensitive land and then the land (or portion of) is donated to a designated charity or local government (in this particular case DUC and City of Nanaimo). The donor then receives a taxation benefit for the donation. As the recipients of the Ecogift, DUC and City of Nanaimo must protect the land in perpetuity and have a responsibility to maintain the biodiversity and environmental heritage of these properties. The biological value of the ecogift was justified under the following criteria:

1. Areas identified, designated or protected under a recognized classification system
    - This area is recognized by the BC Ministry of Environment as a sensitive ecosystem based on the Sensitive Ecosystem Inventory mapping. It is mapped as wetland and riparian habitat as well as woodland.
2. Natural buffers around environmentally sensitive areas such as water bodies, streams or wetlands
    - This property includes wetland habitat as well as upland habitat that buffer the wetland and the adjacent Millstone Creek.

3. Sites that have significant current ecological value, or potential for enhanced ecological value, as a result of their proximity to other significant properties
    - This property is directly adjacent to Buttertubs Marsh Conservation Area and Millstone Creek, which are both recognized as valuable for fish and wildlife. The addition of this property will double the size of the conservation area.
4. Private lands that are zoned by municipal or regional authorities for the purpose of conservation
    - The City of Nanaimo recognizes this wetland area as Environmentally Sensitive.

Ecological

Buttertubs Marsh including Buttertubs Marsh West is a shallow, clay-bottomed wetland located on the floodplain of Millstone River. It is an urban wetland surrounded by urban developments. The wetland component comprises about 50% of the property with the remaining area functioning as riparian habitat and upland wooded sections. The area functions as important flood protection as it can absorb overflow from the Millstone Creek during high water events.

Habitat and Site Characteristics

Biogeoclimatic zone: Coastal Douglas Fir (CDFmm; one of the rarest BEC zones in BC)
Ecoprovince: Georgia Depression (Nanaimo Lowland Ecosection)
Habitat Types (as described in the Buttertubs Marsh Conservation Area Management Plan):

Marsh and Shallow Water
Dominant Vegetation = cattail, smartweed, pondweed, hardhack
Wildlife Values = habitat for red-winged blackbirds, American bittern, Virginia rails, wood ducks, mallards, pied-billed grebes, beaver, mink and more

Riparian Areas
Dominant Vegetation = English oak, Pacific willow, black cottonwood, red alder, Nootka rose, common hawthorn
Wildlife Values = habitat for barred owls, band-tailed pigeons, several hawks species and woodpeckers, deer, river otter, and fish

Vegetated Upland
Dominant Vegetation = old pasture with reed canary grass, common hawthorn, red alder, Pacific crabapple, snowberry and upland trees including some conifers
Wildlife Values = habitat for songbirds including chickadees, kinglets, American robin, deer, raccoons, Townsend's vole and shrews, Pacific tree frog and more

Exotic/Invasive species – this area has been disturbed by previous agricultural activities and local urban development and many exotic species are present. These include species such as Himalayan blackberry, yellow-flag iris, purple loosestrife, scotch broom, knotweed, and reed canary grass. Although several sites have been modified, there are still significant wetland and wildlife values that are provided by this area.

Rare and endangered species (as listed in the Buttertubs Marsh Conservation Area Management Plan 2003) – this area is known to provide habitat for the purple martin, trumpeter swan, American bittern, great blue heron, green heron, turkey vulture, short-eared owl, and western painted turtle. Recently,

western painted turtles, which are considered endangered under the Species at Risk Act, have been found nesting in the Buttertubs Marsh Conservation Area.

Infrastructure

There are no existing buildings on the property. There are two gates that restrict access off of Jingle Pot Road and a small culvert along the overgrown road access to the old field portion of the property.

Strategic Planning

Provincial Biodiversity Directions

In 2008, a BC provincial status report on biodiversity was completed Taking Nature's Pulse - the Status of Biodiversity in British Columbia (Austin et al., 2008). There were 23 major findings that identify what components of biodiversity are the most important, where impacts have occurred and where our greatest vulnerabilities are in the future. Below are the relevant major findings that are applicable to this site to direct management activities:

- Of the species assessed to date in British Columbia, 43% are of provincial conservation concern and are concentrated in the four biogeoclimatic zones of conservation concern (Coastal Douglas-fir, Interior Douglas-fir, Coastal Western Hemlock, and Ponderosa Pine). The highest percentages of ecological communities of concern also occur in these four biogeoclimatic zones
- Significant areas of wetlands in British Columbia have been converted or degraded.
- The flow of water in lakes, streams, wetlands and groundwater systems is being seriously impacted in British Columbia by dams, water diversions, logging, stream crossings and climate change.
- British Columbia has many significant seasonal concentrations of species [e.g., migratory birds, spawning salmon] that are vulnerable to human impacts.
- Alien species are seriously impacting British Columbia's biodiversity, especially on islands and in lakes.
- Climate change is already seriously impacting British Columbia and is the foremost threat to biodiversity.
- The cumulative impacts of human activities in British Columbia are increasing and are resulting in the loss of ecosystem resilience.
- Gaps in our knowledge of biodiversity in British Columbia create major challenges for effective conservation action.

City of Nanaimo Parks Master Plan

The City of Nanaimo Parks Master Plan guides park development and acquisition priorities. The Master Plan was last updated in 2005 and involved significant public input. The public suggested that additional waterfront parks and continued trail development are most needed in terms of new and improved facilities, followed by environmentally sensitive areas (ESAs) and natural /passive parks.

In addition, the idea of greenway connections throughout town and along the Millstone River was also deemed a priority. The City of Nanaimo Master Plan designated marshes around Buttertubs Marsh as "Priority A" sites for acquisition. The Master Plan states that the City should work with landowners to co- manage the ESAs and determine appropriate measures to protect hydrologic regimes and aquatic habitat.

City of Nanaimo Trail Implementation Plan

The City of Nanaimo Trail Implementation Plan looks at pedestrian connections throughout the city, plans for circulation connections, and outlines construction guidelines. A goal for the subject property is to connect it with adjacent trail connections and park systems. Given the environmental sensitivity and carrying capacity of the site, trail construction will be to the City of Nanaimo Urban Soft Surface Trail and Boardwalk standards.

Buttertubs Marsh Conservation Area Management Plan

As shown in Figure 2, several City of Nanaimo parks and the 18.7 ha Buttertubs Marsh Conservation Area owned by The Nature Trust of British Columbia, sit adjacent to the project site. A management plan for the Buttertubs Marsh Conservation Area property was prepared in 2003 in partnership with Nature Trust of British Columbia, Province of BC, City of Nanaimo, Ducks Unlimited Canada and Nanaimo Field Naturalists. Key Goals and objectives for that property include:

GOAL 1: Maintain and, where possible, enhance plant & animal resources of the Conservation Area

- Objective 1: Provide wildlife habitat
- Objective 2: Control exotic, invasive plant and animal species
- Objective 3: Gradually increase wildlife habitat and species biological diversity

GOAL 2: Provide for compatible public recreational and educational use of the area

- Objective 4: Provide controlled public access
- Objective 5: Provide wildlife and nature viewing opportunities
- Objective 6: Provide public education opportunities

Management Goals

The proposed management of the property is to conserve the property and its biodiversity values in the current state. The key management goals for the site will be:

1. Environmental Conservation (Primary Value)
    a. The Project will conserve, maintain and enhance the natural state and its amenities as habitat for fish and wildlife.
    b. All other values, principles, goals and actions must not compromise this primary value or the Certification of the land as Ecologically Sensitive under the Ecological Gifts Program.
2. Education and Passive Recreation
    a. The Project may provide interpretive and educational opportunities to foster public appreciation for the values and benefits, and an understanding of protecting sensitive values.
    b. Physical structures to support education and recreation e.g. small trails, signage will be designed and located in a manner that minimizes habitat impacts.
3. Cooperative Management
    a. DUC and City of Nanaimo will hold title in this property as "Tenants in Common" and manage the property through a management agreement and management plan. The City of Nanaimo may in the future develop more refined management plans.

Management Zones

The property is divided into two main management zones (Figure 4) based on ecology of area:

Zone 1 (Upland)

- This area contains most of the forested ecosystem on the property and is a sloped, higher elevation zone.
- This area will be managed as natural forest and will be the focus of improvements, signage or trail development (see appendix).

Zone 2 (Wetland & Riparian)

- This zone contains freshwater wetland, riparian and floodplain habitat adjacent to the Millstone River and a portion of this riparian area was once used for hay production.
- The area will be managed to maintain wetland values of the site and potential restoration activities may occur in this zone.
- Any trail development will involve boardwalks designed to City of Nanaimo standard (see appendix) and will be focused on minimizing fragmentation of the area.
- Any activities that would be considered a change in use would not be undertaken without prior permission from the Ecological Gifts Program (Federal Minister of the Environment).

Figure 4. Property Management Zones

Management Considerations

The known physical, ecological and cultural information combined with the strategic planning information, provides the following recommendations for future action on the property.

Ecological Gift Designation

The key attributes important for the Ecological Gift designation are the natural wetland and forest ecosystems on the property. These areas must remain intact in perpetuity, in order to avoid taxation pursuant to section 207.31 of the Income Tax Act. As DUC and City of Nanaimo are the recipients of the Ecological Gift, annual monitoring will be completed to track the ecological attributes. Human activities that result in the ecosystem conversion (direct and complete conversion of natural landscapes, such as wetlands to human uses e.g. buildings, houses, parking lots, agricultural fields) or ecosystem degradation (change to the structure of a natural system e.g. water diversion, impacting an ecosystem's composition and function) cannot be allowed to negatively impact the ecological functions of the project.

Habitat Conservation

Maintaining the existing wetlands, riparian areas and forest will be important to maintain the biodiversity of the property. Activities that reduce the hydrological flow should be avoided. Conserving

the existing habitat should also protect the existing assemblage of ecological communities and maintain areas for seasonal concentration of various species including wetland birds and native fish.

Habitat Enhancement

While no initial enhancement activities are anticipated in the short term, in the longer term some enhancement (or restoration) may be developed with partners to maintain or improve fish and wildlife habitat through the use of channels and other features to connect to the Millstone River and reduce dense monotypic stands of emergent vegetation and reed canary grass in zone 2. Restoration activities may also be carried out to restore historical wetland/riparian function, or address other management issues such as invasive species.

Invasive Species

Maintaining the integrity (resilience) of the natural areas will reduce the opportunities for invasive species. Several invasive species exist on the property including Himalayan blackberry, Scotch broom, knotweed, English holly and reed canary grass. Where possible, these species should be removed and replaced with native vegetation or other vegetation that supports better ecological functions of the property. Given several of these species exist on the adjacent Buttertubs Marsh Conservation Area, the inventory and removal should be coordinated with work on Buttertubs Marsh. Conducting a detailed inventory would be beneficial to developing a plan for minimizing invasive species in the area.

Monitoring

Regular monitoring of the site will be important to ensure appropriate use and maintenance of ecological integrity. Inventory for birds, invasive species, and amphibians were identified as a priority for the Buttertubs Marsh and would apply to this property.

Access and Greater Park System Trail Connections

Vehicle access occurs off of Jingle Pot Road but only authorized vehicles will be allowed onto the property. Gates will be maintained to restrict this use. Pedestrian access will be allowed through this same entrance and along future trails. With public use, access, safety, waste management and minimizing disturbance should be planned and developed for this property. Coordination with adjacent parks and protect lands would be a logical approach.

Education and Recreation

The secondary management goal of education and recreation will require a plan to guide recreational access and development of some facilities. Any new facilities will be sited outside sensitive wetland and riparian habitats. This may include a small parking lot, structures for general and interpretive signage, wayfinding signage, and gates to contain and control motorized vehicles.

References

Austin, M.A., D.A. Buffett, D.J. Nicolson, G.G.E. Scudder and V. Stevens (eds.). 2008. Taking Nature's Pulse: The Status of Biodiversity in British Columbia. Biodiversity BC, Victoria, BC. 268 pp. Available at: www.biodiversitybc.org.

Buttertubs Conservation Area Management Plan. 2003. http://www.nanaimo.ca/assets/Departments/Parks~Rec~Culture/Parks/buttertubsmp.pdf

Appendix

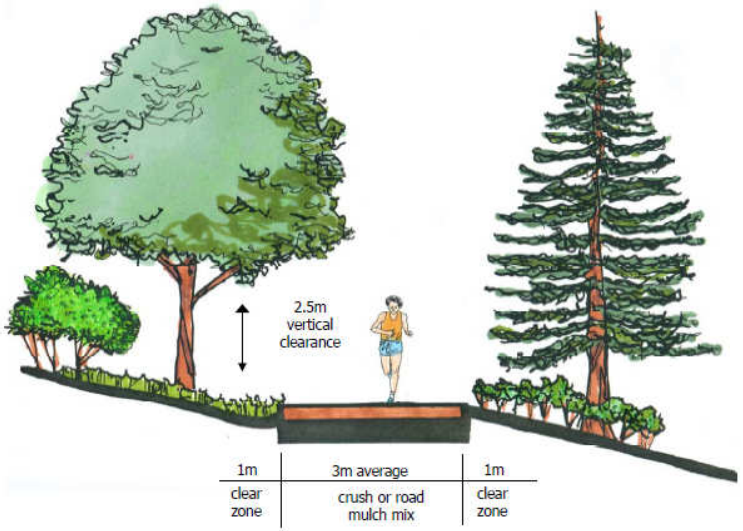
Design for City of Nanaimo Urban Soft Surface Trails

Urban Soft Surface Trail:

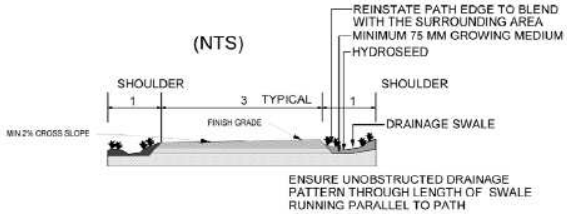
Level of use	Type of Use/ Accessibility	Surface	Width	Vegetation Clearance	Slope	Horizontal Curves	Barriers	Drainage	Residential Buffer	Level of Maintenance	Location	Comments/Variations	Example
Moderate -high	• Walking • Jogging • Cycling • Stroller • Universally accessible where possible • Wildlife viewing/ bird-watching	Crush and/or 50/50 hog fuel/road mulch for jogging routes	3m (very low use areas or pedestrian only areas may be 2m and high use may be 4m)	• 1m preferred horizontal clearance on either side of trail • 2.5m minimum vertical clearance	• Maximum 3% sustained grade • 5% for 30m or less • 10% for 15m or less • 10% for 15m or less • 2% cross slope Some stairs	Ensure adequate sightlines on corners See formulas in Bicycle Facility Design Guidelines (2.3-2.4)	Post and sleeves on multi-use routes; cattle gates or baffles may be used on non-multi-use trails	Shallow swale on uphill side and culverts at low points	2-5m	Moderate–high	City level parks (mostly natural parks)	• Generally in a woodland or riparian setting • Amenities (doggy stations, signage, garbage, benches, washrooms, change-rooms, picnic facilities, etc) • Construction within ESA's must follow environmental standards • In higher use areas, a general guideline of .5km between benches and rest areas	Westwood Lake, Jack Point, Piper's Lagoon

View along the Westwood Lake trail near the Resort on the Lake.

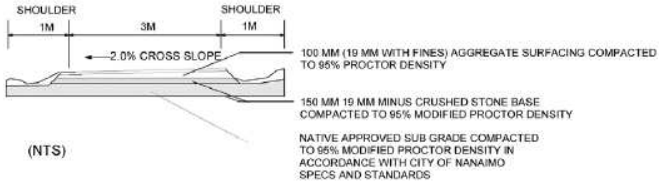
Trail Concept:



Construction Detail: Typical Trail



Construction Detail: Materials

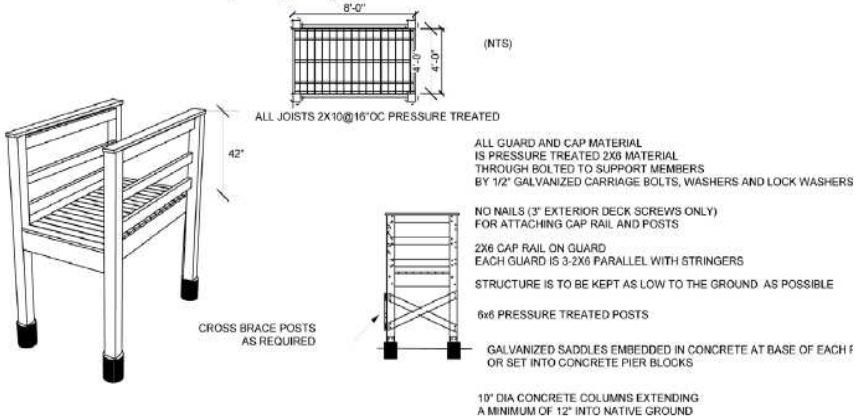


Boardwalk:

Level of use	Type of Use/ Accessibility	Surface	Width	Vegetation Clearance	Slope	Horizontal Curves	Barriers	Drainage	Residential Buffer	Level of Maintenance	Location	Comments/Variations	Example
Moderate	• Wildlife viewing • Walking • Generally not universally accessible	• Boardwalk • Wood or metal decking	1.5-2m	• Raised boardwalks are built at height that are well above high water level and away from riparian vegetation Some are at ground level in poor draining areas	NA	• Kept to a minimum for ease of construction	• None on the structure • Barriers at accessing trails	NA	10m	Moderate	• Structure provides passage over wet or sensitive areas and riparian habitats	• Methods of construction and design vary with site and sensitivity/riparian condition • Viewing platforms and interpretive signage can be built into the design	Richard's Marsh Chase River Estuary Park

Boardwalk at Richards Marsh Park.

Raised Boardwalk Detail (with guard):



Grade Boardwalk Detail:(no guard)