



**DEVELOPMENT PERMIT NO. DP000897**

**BUDDY ROOZENBURG**

**LINDY LUTLEY**

**Name of Owner(s) of Land (Permittee)**

**3000 KEIGHLEY ROAD**

**Civic Address**

1. This development permit is issued subject to compliance with all of the bylaws of the municipality applicable thereto, except as specifically varied or supplemented by this permit.
2. This development permit applies to and only to those lands within the municipality described below, and any and all building structures and other developments thereon:

Legal Description:

**LOT: 1 SECTION: 15, WELLINGTON DISTRICT, PLAN 42127 EXCEPT THAT PART IN PLAN 45325**

**PID No. 001-341-880**

3. The land described herein shall be developed strictly in accordance with the following terms and conditions and provisions of this permit and any plans and specifications hereto which shall form a part thereof.

**Schedule A Location Plan**

**Schedule B Site Plan & RAR Drawing**

**Schedule C Executive Summary**

**Schedule D Vegetation Management Plan**

- a) If the applicant does not substantially commence the development permitted by this permit within two years of the date of this permit, the permit shall lapse.
4. This permit is not a building permit nor does it constitute approval of any signage. Separate applications must be made for a building permit and sign permit.
5. The City of Nanaimo "ZONING BYLAW 2011 NO. 4500" is varied as follows:

*Location and Siting of Buildings and Structures to Watercourses*

*- Sections 6.3.1.1 and 6.3.1.5*

- The required watercourse setback from top of bank to Departure Creek is 15.0m, the proposed watercourse setback is 3.69m, a variance of 11.31m.

AUTHORIZING RESOLUTION PASSED BY COUNCIL  
THE **29TH** DAY OF **SEPTEMBER, 2014.**

  
\_\_\_\_\_  
Corporate Officer

  
\_\_\_\_\_  
Date

GN/lb

Prospero attachment: DP000897

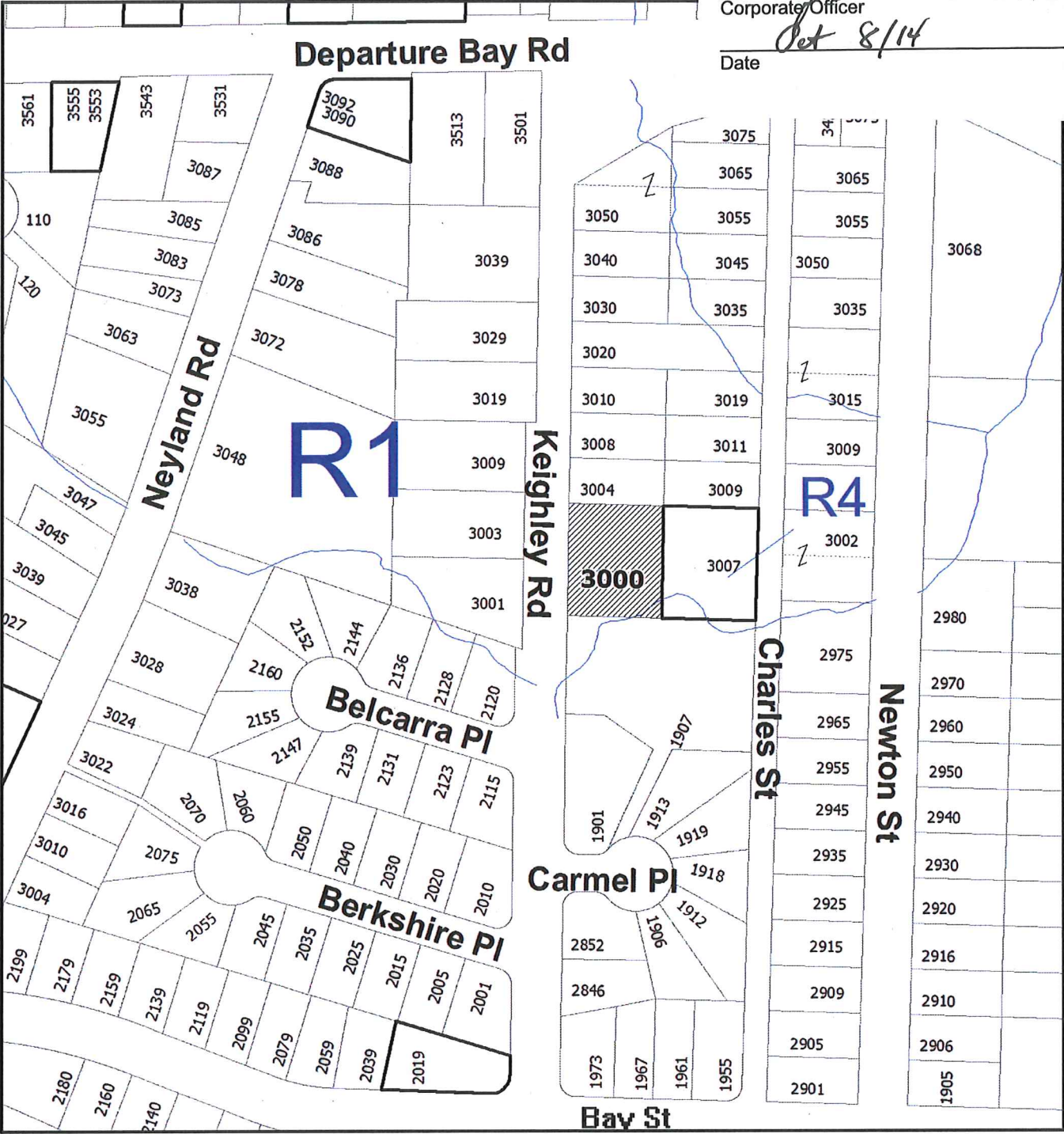
This is Schedule A referred to in the Development Permit.

SCHEDULE A

Corporate Officer

Date

*[Signature]*  
*Oct 8/14*



DEVELOPMENT PERMIT NO. DP000897

LOCATION PLAN

 Subject Property

Civic: 3000 Keighly Road  
Lot 1, Section 15, Wellington District,  
Plan 42127 except that part in Plan 45325

Development Permit DP000897  
3000 Keighley Road

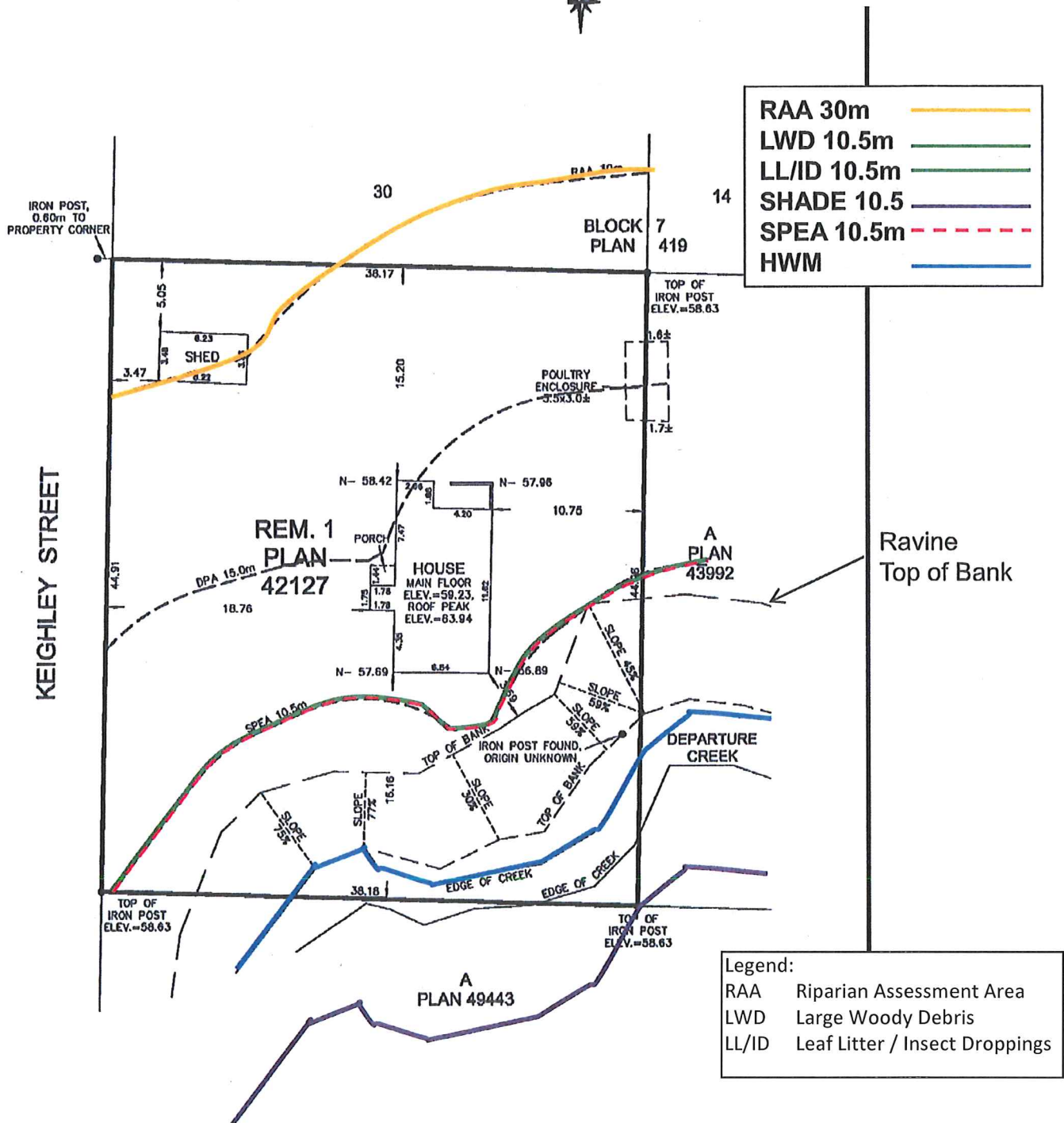
Schedule B  
Site Plan & RAR Drawing

This is Schedule B referred to in the  
Development Permit.

Corporate Officer

Date

*[Signature]*  
Oct 8/14



RAA 30m	
LWD 10.5m	
LL/ID 10.5m	
SHADE 10.5	
SPEA 10.5m	
HWM	

Legend:	
RAA	Riparian Assessment Area
LWD	Large Woody Debris
LL/ID	Leaf Litter / Insect Droppings

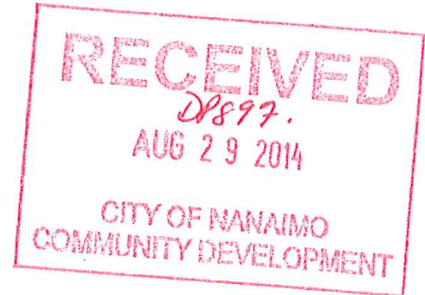


August 26, 2014

Buddy Roozenburg  
3000 Keighley Road,  
Nanaimo BC

Via Email: [buddy@tectonica.ca](mailto:buddy@tectonica.ca)

RE: **3000 KEIGHLEY ROAD  
EXECUTIVE SUMMARY**



**1.0 INTRODUCTION**

Aquaparian Environmental Consulting Ltd. (Aquaparian) was retained by Buddy Roozenburg to provide environmental services in association with a foundation replacement at 3000 Keighley Road in Nanaimo BC.

The subject parcel is located on the north bank of Departure Creek and is the remaining portion of the original farm which once included the surrounding neighbourhood. The house is approximately 100 years old and as such requires extensive renovation including the complete replacement of the foundation.

The DPA for Departure Creek extends 15m from the top of ravine bank. The existing cleared yard extends to within 2-3m of the top of ravine bank and has been that way for decades. Results of a Riparian Areas Assessment determined the Streamside Protection and Enhancement Area (SPEA) is 10.5m extending from the high water mark; approximately 2m beyond the top of ravine bank. Under the RAR existing development and land use is "grandfathered". 100% of the SPEA is vegetated but has a number of invasive species including English ivy, bamboo, spurge laurel and holly. Due to the cedar canopy, typical native understory species options are limited.

As required by the City of Nanaimo watercourse setback variance procedure, riparian restoration is needed to meet the "no net loss" of riparian habitat. The following plan has been designed to meet that requirement.

This is Schedule C referred to in the Development Permit.

  
\_\_\_\_\_  
Corporate Officer

Date   *Oct* 8/14  

A.

## 2.0 RESTORATION CALCUALTION

A calculation of the DPA impacted by the existing development and proposed foundation replacement is as follows:

**Table 1. Estimated Riparian Restoration Requirement:**

Existing Area Description	Area Estimate m <sup>2</sup>
DPA area within the parcel minus the house	~1000m <sup>2</sup>
Existing intact riparian vegetation area with ~ 15% invasive species coverage	~675m <sup>2</sup> (100m <sup>2</sup> invasive)
Existing lawn in DPA	~300m <sup>2</sup>
Area to be enhanced &/or restored	300m <sup>2</sup>

\*estimates have been derived from aerial photo interpretation.

**Table 2. Restoration Recommended:**

Restoration Area Description	Area Estimate m <sup>2</sup>	Treatment
Existing riparian vegetation area	100m <sup>2</sup>	Remove invasive species and add 25m sword fern.
Additional riparian planting on lawn area	200m <sup>2</sup>	Plant 6.5m x 30m from top of bank within riparian area.
<b>Total enhanced / restored area:</b>	<b>300m<sup>2</sup></b>	

Following restoration, there will be approximately 300m<sup>2</sup> additional riparian vegetation over existing conditions.

Sincerely,

**AQUAPARIAN ENVIRONMENTAL CONSULTING LTD.**

ORIGINAL SIGNED

\_\_\_\_\_  
Sarah Bonar, B.Sc., R.P.Bio.  
Principal



503 COMOX ROAD, NANAIMO, BC V9R 3J2  
SARAH BONAR 250-714-8446 CHRIS ZAMORA 250-714-8864

Vegetation Management Plan



August 19, 2014

Buddy Roozenburg  
3000 Keighley Road,  
Nanaimo BC

Via Email: [buddy@tectonica.ca](mailto:buddy@tectonica.ca)

RE: **3000 KEIGHLEY ROAD  
VEGETATION MANAGEMENT PLAN**

This is Schedule D referred to in the  
Development Permit.

  
Corporate Officer

Date

*Oct 8/14*

## 1.0 INTRODUCTION

Aquaparian Environmental Consulting Ltd. (Aquaparian) was retained by Buddy Roozenburg to provide environmental services in association with a foundation replacement at 3000 Keighley Road in Nanaimo BC. The subject parcel is located on the north bank of Departure Creek and is the remaining portion of the original farm which once included the surrounding neighbourhood.

The house is approximately 100 years old and as such requires extensive renovation including the replacement of the foundation. The majority of the house lies within the watercourse Development Permit Area (DPA) for Departure Creek; the existing cleared yard extends within 2-3m of the top of ravine bank and has been that way for decades.

A Riparian Areas Assessment was completed for the parcel resulting in a Streamside Protection and Enhancement Area (SPEA) of 10.5m from the high water mark. The house is not inside the SPEA. 100% of the calculated SPEA is forested with mature western red cedar but has a number of invasive species including English ivy, bamboo, spurge laurel and holly. Due to the dense, cedar canopy, native understory species options are limited for this area. The forest floor of such areas is typically barren with sparse sword fern where light penetration allows.

As required by the City of Nanaimo watercourse setback variance procedure, riparian restoration is needed to meet the "no net loss" of riparian habitat in the DPA. The following plan has been designed to meet that requirement.

## 2.0 RESTORATION CALCULATION

Tables 1 and 2 below identify the area of the existing development impact within the DPA and an estimate of the area to be restored or enhanced to meet the "no net loss" policy for the foundation replacement Development Permit application and watercourse setback variance.

**Table 1. Estimated Riparian Restoration Requirement:**

Existing DPA Area Description	Area Estimate m <sup>2</sup>
DPA area within the parcel minus the house	~1000m <sup>2</sup>
Existing intact riparian vegetation with ~ 15% invasive species coverage	675m <sup>2</sup> (~100m <sup>2</sup> invasive sp)
Existing lawn in DPA	300m <sup>2</sup>
<b>Area to be enhanced and / or restored</b>	<b>300m<sup>2</sup></b>

**Table 2. Restoration Recommended:**

Restoration Area Description	Area Estimate m <sup>2</sup>	Treatment
<b>Area A)</b> Existing riparian vegetation area	100m <sup>2</sup>	Remove invasive species and add 25 sword fern
<b>Area B)</b> Additional riparian planting on lawn area	200m <sup>2</sup>	Plant 5m x 40m from top of bank within riparian area.
<b>Total enhanced / restored area:</b>	<b>300m<sup>2</sup></b>	

## 3.0 PLANTING PLAN

Aquaparian recommends the following species to be planted:

Common Name	Botanical Name	Number	Size	Cost	Total	Area
Sword fern	<i>Polystichum munitum</i>	25	1 Gal	\$4.75	\$118.75	A
Indian plum	<i>Oemlaria cerasiformis</i>	10	1 Gal	\$4.75	\$47.50	B
Snowberry	<i>Symphoricarpos albus</i>	20	1 Gal	\$4.75	\$95.00	B
Salal	<i>Gaultheria shallon</i>	125	9cm	\$2.25	\$281.25	B
Oregon grape	<i>Mahonia nervosa</i>	25	1 Gal	\$5.50	\$137.50	B
Saskatoon berry	<i>Amelanchier alnifolia</i>	20	1 Gal	\$4.75	\$95.00	B
<b>Total</b>		<b>225</b>			<b>\$775.00</b>	B

\*Estimated wholesale cost from Streamside Native Plants on-line price list. Price does not include delivery, tax or installation.

- For the area within the existing forested ravine, groundcover options are limited due to the dense western red cedar canopy. Aquaparian recommends planting 25 sword fern in place of the spurge laurel in the hopes of limiting its re-growth.





- The remaining species are to be planted within Area B - the 200m<sup>2</sup> area starting at the edge of the existing riparian vegetation. The grass sod should be removed to prepare the planting area. A planting plan has been included as Figure 1.
- Shrub density should be 1/m<sup>2</sup> and plant placement should mimic a natural growth pattern i.e. clusters of same species.
- Install the plants in the early fall or spring with a handful of bone meal in each hole. Water as necessary through the first two dry seasons until the plants are well established. Organic mulch should be spread over the bare soil to retain water and keep weeds / grass down.
- Plants are to be maintained for two years with replanting as necessary with the end goal of allowing the plants to grow and in-fill the new riparian area.
- Removal of invasive species is likely to require annual maintenance as new shoots grow every spring from the existing seed bank or remaining rhizomes. Particular care should be observed removing the spurge laurel as it is a poisonous plant and the sap can cause severe skin irritation. The berries are poisonous and may be ingested by small children with fatal consequences. (Appendix A - WorksafeBC fact sheet).

### 3.0 BOND CALCULATION

Aquaparian assumes the actual planting and invasive removal will be completed by the landowners; however, the City requires a Bond estimate. The Bond is intended as assurance that the restoration will be carried out and would be used by the City to install the plantings if it is not. Upon successful completion the bond will be released.

Aquaparian estimates the labour effort to remove the invasive species, prepare the planting area and install the plants will take approximately 50 person hours. For the purposes of a Bond calculation, a rough labour estimate to complete the above planting based on \$20/hr is \$1000.00.

Therefore, the cost of plants, delivery, mulch, bone meal, labour is estimated to be:

<b>Plants</b>	<b>\$775</b>
<b>Mulch/bone meal</b>	<b>\$200</b>
<b>Labour</b>	<b><u>\$1000</u></b>
	<b>\$1975 plus applicable taxes</b>

\*\*actual cost will vary based on plant source, delivery fee, labour cost etc.



503 COMOX ROAD, NANAIMO, BC V9R 3J2  
SARAH BONAR 250-714-8446 CHRIS ZAMORA 250-714-8864

#### 4.0 PLANT SOURCES

##### **Streamside Native Plants**

Division of Viking Marine/Outdoors Ltd  
7455 Island Highway West  
Bowser, British Columbia V0R 1G0  
Phone/Fax: 250-757-9999  
Toll Free: 877-570-3138

[http://members.shaw.ca/nativeplants/streamside\\_home.html](http://members.shaw.ca/nativeplants/streamside_home.html)

E-mail: [Richard@streamsidenativeplants.com](mailto:Richard@streamsidenativeplants.com)

The nursery is located at 7455 Island Highway West (Highway 19A) Bowser B.C.

##### **Nanaimo & Area Land Trust**

3145 Frost Road, Cassidy BC  
*The Natural Abundance*  
Native Plant Nursery's  
Open 10 am - 4 pm Wednesdays & 11 am - 3 pm Saturdays  
For more information please call:  
250-714-1990 or 250-668-7670.

#### 5.0 CLOSURE

Aquaparian trusts this meets your requirements to meet the City of Nanaimo's "no net loss" policy for Development Permits with a watercourse setback variance. If you require further information please contact the undersigned.

Sincerely,

**AQUAPARIAN ENVIRONMENTAL CONSULTING LTD.**

ORIGINAL SIGNED

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Sarah Bonar, B.Sc., R.P.Bio.  
Principal



503 COMOX ROAD, NANAIMO, BC V9R 3J2  
SARAH BONAR 250-714-8446 CHRIS ZAMORA 250-714-8864

**FIGURE 1**  
**PLANTING PLAN**



503 COMOX ROAD, NANAIMO, BC V9R 3J2  
SARAH BONAR 250-714-8446 CHRIS ZAMORA 250-714-8864

3000 KEIGHLEY ROAD PLANTING PLAN



Area B: Remove sod and plant 200 native shrubs 1/m<sup>2</sup>.

Area A: Remove invasive species and plant 25 sword fern in place of spurge laurel patches.

# Sample: Area B Plant Clustering



Snowberry



Dull Oregon grape



Saskatoonberry



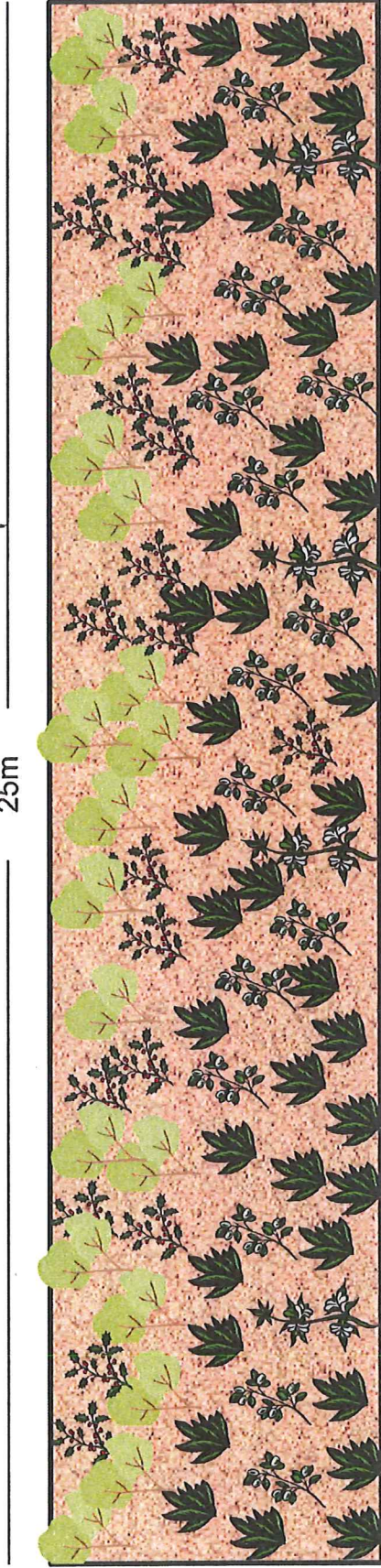
Salal



Indian plum

N

25m



5m

APPENDIX A  
SPURGE LAUREL FACT SHEET



503 COMOX ROAD, NANAIMO, BC V9R 3J2  
SARAH BONAR 250-714-8446 CHRIS ZAMORA 250-714-8864



## Severe skin irritation from Spurge Laurel (*Daphne laureola*)

### What is Spurge Laurel, and where is it found?

Spurge Laurel (scientific name: *Daphne laureola*), also known as Daphne Laurel, is an evergreen shrub that thrives on the shady forest floor throughout south Vancouver Island; it may also be present in other areas of southwest British Columbia. It is not native to B.C. and was originally imported from Southern Europe, North Africa, or West Asia. These plants are commonly sold in nurseries and are popular due to their attractive foliage and fragrant tubular, yellow flowers. The flowers appear in the early spring, followed by small, black berries. However, most of the year, no flowers or berries may be visible. Spurge Laurel can grow to one metre in height and usually forms large clumps.



*Spurge Laurel*

### Which parts of the plant are poisonous?

The toxins are concentrated in the bark, sap, and berries. Spurge Laurel is listed as a poisonous plant with the Canadian Poisonous Plants Information System.

### What happens if I touch or accidentally eat parts of the plant?

You can be poisoned through skin contact with the sap or by eating the berries. Symptoms include a burning in the mouth and swelling of the tongue and lips (if the berries are eaten), followed by thirst, difficulty swallowing, nausea, vomiting, bloody diarrhea, weakness, and coma. A child died in Nova Scotia after eating the berries. Severe skin irritation and blistering can occur on contact with the leaves or sap (these symptoms usually disappear after a couple of days).



*Spurge Laurel leaves and berry (black)*

## How can I protect myself?

Wear gloves when handling the plants. Remember to dispose of the gloves after use, or launder them to prevent a buildup of irritant sap.

Wear coveralls or clothing that leaves no skin exposed, when in contact with the plants (e.g., when brushing against the plants). Launder the clothing after use.

Wear goggles when disturbing or removing the plants, as small droplets of sap may be released into the air.

Use caution when transporting plants, plant cuttings, or waste containing the plants, as airborne sap droplets may cause eye and throat irritation.



*Spurge Laurel "bush" growing under a tree*

## How do I apply first aid?

After skin contact with sap, flush with copious amounts of water. If a persistent rash develops, consult a physician. Application of an anti-inflammatory cream (e.g., antihistamine cream, or a 0.5% hydrocortisone cream) may reduce skin irritation. These creams are available in most pharmacy stores.

If the sap gets into the eyes, flush with copious amounts of water and consult a physician.

If sap gets into the mouth, flush with copious amounts of water and consult a physician (drinking milk or eating ice cream may relieve symptoms). If eaten, induce vomiting and consult a physician.



*Wear coveralls and gloves (and goggles) when handling the plants.*

**WORK SAFE BC**

WORKING TO MAKE A DIFFERENCE

[worksafebc.com](http://worksafebc.com)