

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Riparian Areas Regulation: Assessment Report

Please refer to submission instructions and assessment report guidelines when completing this report.

Date 2008-03-12

I. Primary QEP Information

First Name	Adam	Middle Name	
Last Name	Compton		
Designation	R.P.Bio.	Company	Streamline Environmental Consulting Ltd.
Registration #	1605	Email	adam.compton@shaw.ca
Address	Unit B 6451 Portsmouth Road		
City	Nanaimo	Postal/Zip	V9V 1A3 Phone # 250-390-2627
Prov/state	BC	Country	Canada

II. Secondary QEP Information (use Form 2 for other QEPs)

First Name	Graham	Middle Name	
Last Name	Kerr		
Designation	WCB and ISA Certified Tree Risk Assessor / ISA Certified Arborist	Company	Treeworks Tree Services Ltd.
Registration #	5525A / 0033	Email	treeworks@shaw.ca
Address	454 Maquinna Place		
City	Qualicum Beach	Postal/Zip	V9K 1B3 Phone # 250-752-5544
Prov/state	BC	Country	Canada

III. Developer Information

First Name	Ron	Middle Name	
Last Name	Reynolds		
Company	Concise Strata Management Services		
Phone #	250-754-4001	Email	
Address	1823 Stewart Ave.		
City	Nanaimo	Postal/Zip	V9F 4E7
Prov/state	BC	Country	Canada

IV. Development Information

Development Type	Other		
Area of Development (ha)	39	Riparian Length (m)	500
Lot Area (ha)	39	Nature of Development	redevelopment
Proposed Start Date	2008-03-15	Proposed End Date	2008-04-15

V. Location of Proposed Development

Street Address (or nearest town)	Craig Bay Estates		
Local Government	City of Parksville	City	
Stream Name	Craig Creek		
Legal Description (PID)	VIP 70465 Lot C	Region	Vancouver Island
Stream/River Type	Stream/Wetland	DFO Area	South Coast
Watershed Code	920-457100		
Latitude	49	18	04 Longitude 124 14 51

Completion of Database Information includes the Form 2 for the Additional QEPs, if needed. Insert that form immediately after this page.

Table of Contents for Assessment Report

	Page Number
1. Description of Fisheries Resources Values	3
2. Results of Riparian Assessment (SPEA width)	5
3. Site Plan	8
4. Measures to Protect and Maintain the SPEA (detailed methodology only).	
1. Danger Trees	9
2. Windthrow	10
3. Slope Stability	10
4. Protection of Trees	10
5. Encroachment	12
6. Sediment and Erosion Control	12
7. Stormwater Management	12
8. Floodplain	12
5. Environmental Monitoring	13
6. Photos	15
7. Assessment Report Professional Opinion	17

Section 1. Description of Fisheries Resources Values and a Description of the Development proposal

(Provide as a minimum: Species present, type of fish habitat present, description of current riparian vegetation condition, connectivity to downstream habitats, nature of development, specific activities proposed, timelines)

Connectivity to Downstream Habitats:

The subject property is located at Craig Bay Estates in Parksville, BC. Craig Creek flows along the east side of the subject property at the northeast corner and drains into the sea at Craig Bay (Figure 1).

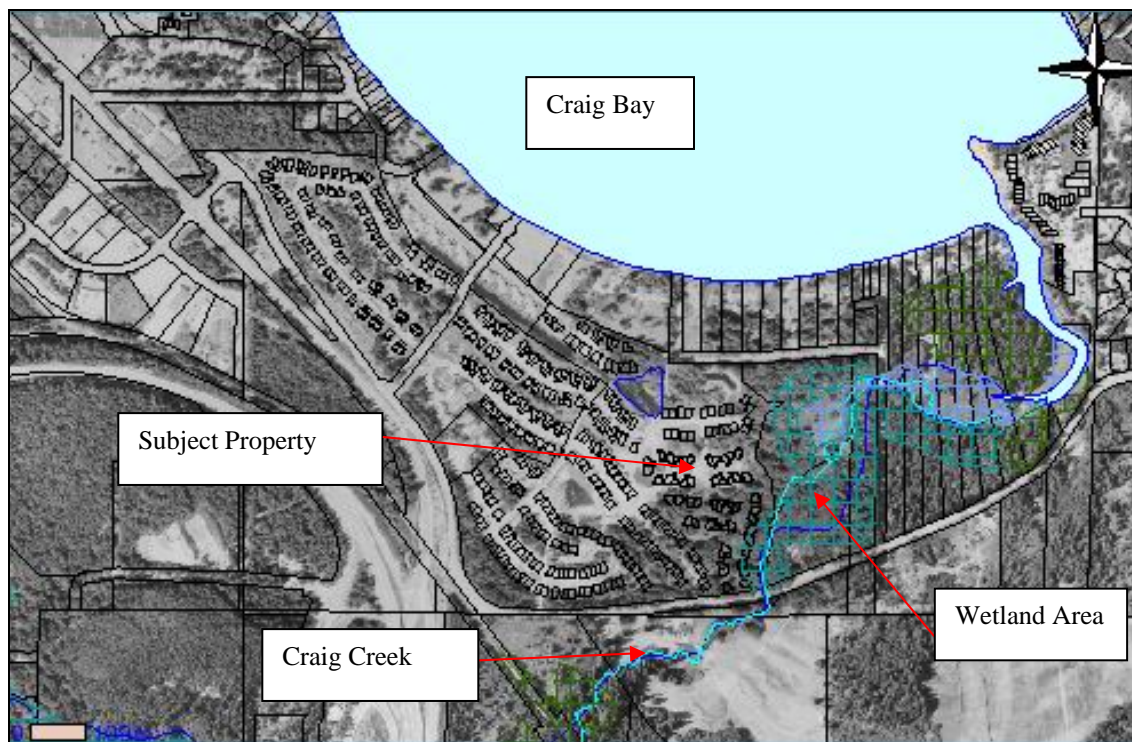


Figure 1. Subject property location relative to Craig Bay, Craig Creek and the wetland area (from RDNMap).

Species Present:

Fish Wizard (www.fishwizard.com) indicates that coho salmon (*Oncorhynchus kisutch*) and anadromous cutthroat trout (*Oncorhynchus clarki clarki*) inhabit Craig Creek (WSC 920-457100). A fish salvage operation conducted in 2001 at Craig Creek identified the following fish species within Craig Creek downstream of the Northwest Bay Road crossing: cutthroat trout, rainbow trout, coho and sculpin (D. L. Bernard Contracting 2001).

Fish sampling was not conducted as part of this assessment. No fish were observed during the assessment but fish presence is assumed throughout the watercourses.

Fish Habitat Present:

Craig Creek has high habitat values for resident and anadromous fish species. Good rearing and spawning opportunities are present throughout this portion of the stream.

Current Riparian Vegetation Condition:

Riparian vegetation consists of mature forest throughout the wetland area with a mix of coniferous and deciduous trees. Many mature red alder are present adjacent to Craig Bay Estates and are nearing the end of their life cycle as indicated by poor health conditions, rot and fallen trees.

The development of Craig Bay Estates has occurred in close proximity to the watercourse features present along the eastern property boundary. A riparian buffer from Craig Creek has been provided and it is estimated that this buffer is at least 15 m from the top of bank of the creek. However, there is a wetland surrounding Craig Creek throughout all but the northernmost extent of the property (here the slope of the land increases and the wetland feature ends). The boundary of the existing development is a rock retaining wall that retains fill upon which the yards and residences are located. Where the wetland is present, this retaining wall is typically right up to the edge of the wetland and little or no riparian buffer from the wetland has been provided.

It is my understanding that when the development was approved, the retaining wall was constructed such that a 15 m setback from the creek and/or the wetland was provided. Where the wetland is absent, the retaining wall appeared to be constructed 15 m from the stream channel, but this was not confirmed by measurement during this assessment. It is possible that the discrepancy of the wetland boundary of this assessment and the wetland boundary from which the retaining wall was constructed is due to the broad definition of a wetland provided by the Riparian Areas Regulation.

Nature of Development:

Potentially dangerous trees were identified within the Riparian Assessment Area of the stream and wetland. These trees are immediately adjacent to the homes along the east side of Craig Bay Estates. The trees have been assessed by a qualified danger tree assessor/arborist (Graham Kerr). Treatment prescriptions have been developed for each of the trees that were deemed dangerous to adjacent residences. The danger tree report prepared by Graham Kerr is attached to this RAR Assessment Report.

In addition to the danger trees, there is a patch of 9 dead western redcedar trees at the northeast corner of Craig Bay Estates (just south of Bay Road). These trees are within the 30 m Riparian Assessment Area of the wetland associated with Craig Creek. These trees are also adjacent to the constructed stormwater detention pond at Craig Bay Estates. It is likely that these trees died in response to soil and groundwater disturbance from construction of the area around the stormwater detention pond. While these trees are not currently dangerous, they will eventually become dangerous to pedestrians along the trail that borders the detention pond. As such, it is proposed that the trees be topped and the branches thinned out. This will reduce future hazard potential, enhance wildlife value (provide enhanced perching sites for birds) and will increase the aesthetics of this area. Conifer seedlings will likely be planted here by Craig Bay Estates, but this is not a requirement as the dead trees are not being removed.

Section 2. Results of Simple Riparian Assessment

Refer to Chapter 2 and Appendix of the Assessment Methods.
Duplicate this form as needed for each assessment report.

Date:

Stream	<input checked="" type="checkbox"/>
Wetland	<input checked="" type="checkbox"/>
Lake	<input type="checkbox"/>
Area	<input type="checkbox"/>

Potential Riparian Width(m)

	I, <u>Adam Compton</u> (<i>name of qualified environmental professional</i>), hereby certify that:
	a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ;
	b) I am qualified to carry out this part of assessment of the development proposal made by the developer <u>Ron Reynolds</u> (<i>name of developer</i>);
	c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
	d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

Average

Existing or Potential Vegetation Category

Fish bearing Yes No**

**If non fish-bearing, insert non-fish bearing status report

	I, <u>Adam Compton</u> (<i>name of qualified environmental professional</i>), hereby certify that:
	a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ;
	b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Reynolds</u> (<i>name of developer</i>);
	c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
	d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

Stream Flow Permanent Non Permanent*

*If non permanent flow, indicate how this was determined?

	I, <u>Adam Compton</u> (<i>name of qualified environmental professional</i>), hereby certify that:
	a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ;
	b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Reynolds</u> (<i>name of developer</i>);
	c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
	d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

SPEA Width (m)

Comments

As shown by the orthophoto, and confirmed in the field, the east side of Craig Bay Estates is generally located up to the edge of the wetland surrounding the creek. There is not a need to

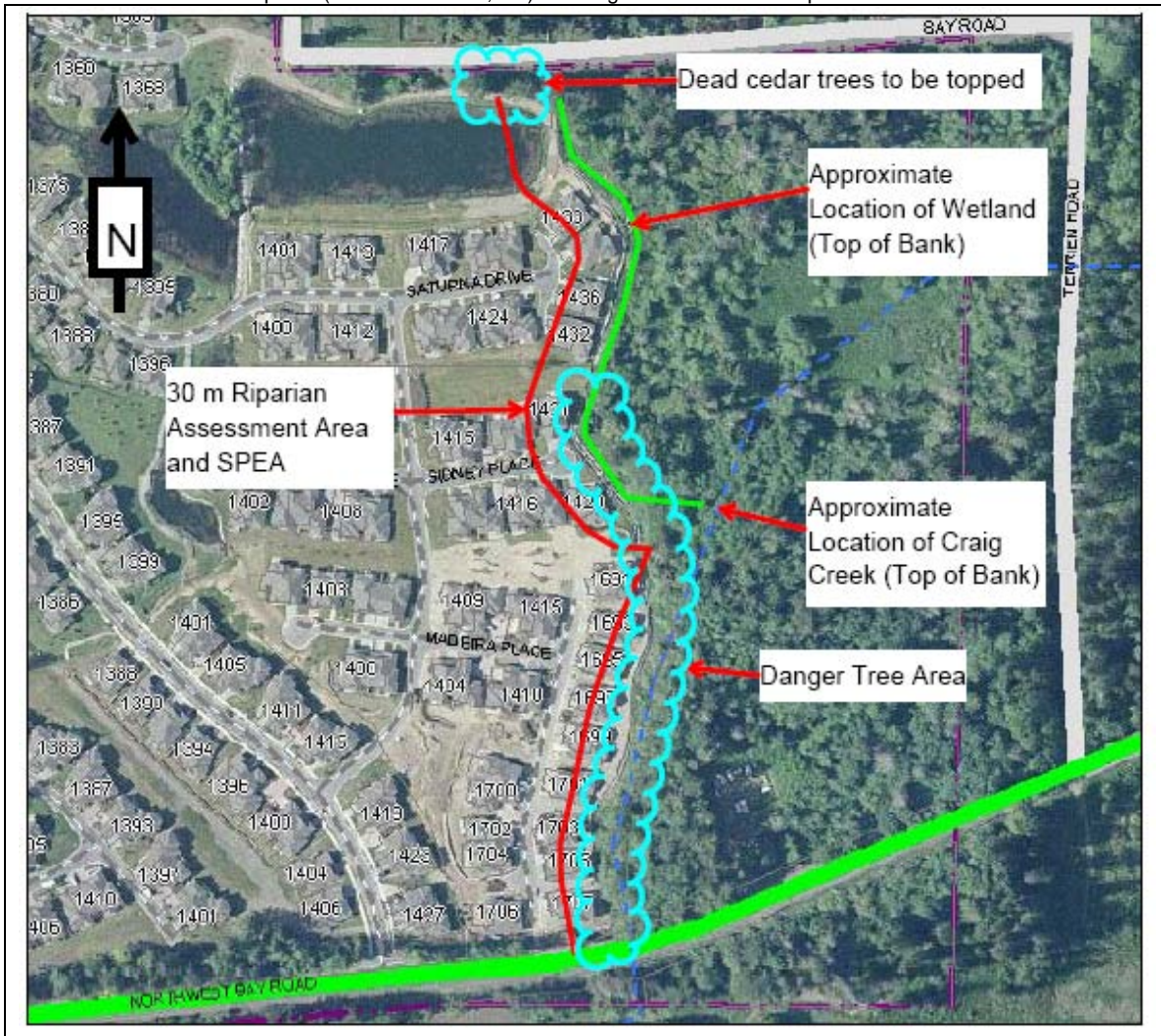
FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

accurately determine the SPEA as the area immediately east of the retaining wall, which contains the dangerous trees is within the outer bounds of the wetland and is within the riparian area of the stream (all work will be well within the SPEA). As such measurements were not made to determine the average potential riparian width and the 30 m default SPEA width has been assumed.

Orthophoto showing assessment area

Attach JPG file of air/orthophoto (scale less than 3,000) outlining the elements in chapter 2 of Assessment Methods.



Section 3. Site Plan

Insert jpg file below

Site Plan

A site plan has not been provided as all relevant information is contained within the orthophoto.

Section 4. Measures to Protect and Maintain the SPEA

A. Danger Trees	<p>This section is for detailed assessments; however a detailed assessment has not been done. This section has been completed as work is being conducted within the SPEA and measures are required to protect and maintain the SPEA.</p> <p>Danger trees were identified within the SPEA and will need to be removed due to safety concerns. Refer to the attached danger tree report for the treatment prescription for each tree deemed dangerous. The following requirements were prepared, in part, to meet the suggestions provided in an email (attached to the end of this document) regarding this project from Alain (Al) Magnan, Fisheries and Oceans Canada to Dave Davies, Fisheries and Oceans Canada (dated Dec. 11, 2007). These requirements shall be adhered to during tree removal by the company conducting the work (Treeworks Tree Services Ltd.):</p> <ul style="list-style-type: none"> • All trees that require falling shall be left as wildlife stumps. The wildlife stumps shall be as high as possible such that the danger is removed and such that the work can be done safely. Girdling the wildlife stumps shall not occur as the stumps of red alder trees will likely result in sucker growth. This growth will provide shade and other important functions while replacement trees become established. • Several trees require removal and a tree replacement plan has been developed (see Section 4 of this report). • All portions of trees felled shall remain on the forest floor as Coarse Woody Debris (CWD) and shall not be removed from the riparian area. • Fall or top all trees to avoid branches and woody debris from entering the stream channel. Any branches or debris that inadvertently fall within the stream channel shall be carefully removed and placed outside of the high water mark of the stream. Care shall be taken to avoid disturbance to the stream channel and stream banks. • Fall trees across the stream only when no other direction is feasible due to safety concerns and/or treatment logistics. Removal of the portions of the felled tree within or across the stream channel must be completed in a manner that does not damage the banks and the bed of the stream. • Fall, top or trim trees such that potential damage to adjacent vegetation is minimized. • Ensure that equipment used for vegetation removal complies with the following best practices for deleterious substance control (as per <i>Specific Standards and Best Practices: Other Types of Instream Work</i> prepared by the Province of BC): <ul style="list-style-type: none"> ➤ Prevent the release of silt, sediment or sediment-laden water, raw concrete or concrete leachate, or any other deleterious substances into any ditch, watercourse, and ravine or storm sewer system. The recommendations for sediment and erosion control outlined in the Land Development Guidelines for the Protection of Aquatic Habitat (Chilibeck et al, 1992) can also be used for reference. ➤ Ensure equipment and machinery is in good operating condition (power washed), free of leaks or excess oil and grease. No equipment refueling or servicing should be undertaken within thirty (30.0) metres of any watercourse or surface water drainage ➤ Ensure all hydraulic machinery to be used instream uses
-----------------	--

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

	<p>environmentally sensitive hydraulic fluids which are non-toxic to aquatic life, and which are readily or inherently bio-degradable</p> <ul style="list-style-type: none"> ➤ Keep a spill containment kit readily accessible on-site in the event of a release of a deleterious substance to the environment. Train on-site staff in its use. Immediately report any spill of a substance toxic to aquatic life of reportable quantities to the Provincial Emergency Program 24 hour phone line at 1-800-663-3456. • All work must be completed prior to the active breeding season for birds (April 15) to prevent the loss of any active nests. If this cannot be accomplished, a nest survey will need to be conducted prior to any of the prescribed treatments.
<p>I, <u>Graham Kerr and Adam Compton (name of qualified environmental professional)</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ron Reynolds (name of developer)</u> ;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
<p>B. Windthrow</p>	
<p>I, <u>(name of qualified environmental professional)</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(name of developer)</u> ;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
<p>C. Slope Stability</p>	
<p>I, <u>(name of qualified environmental professional)</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(name of developer)</u> ;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
<p>D. Protection of Trees</p>	<p>This section is for detailed assessments; however a detailed assessment has not been done. This section has been filled out as work is being conducted within the SPEA and measures are required to protect and maintain the SPEA.</p> <p>The proposed works will result in the loss of mature trees within the SPEA that are dangerous to the adjacent residences. As such, the following is a tree replacement plan that meets the requirements of the Provincial Tree Replacement Criteria (attached to the end of this document) that was suggested by Al Magnan (Fisheries and Oceans Canada):</p> <ul style="list-style-type: none"> • Given the approximate diameter at breast height of each of the trees to be removed, the tree replacement criteria requires a total of 29 trees greater than 2 m in height be planted. As such, 30 trees greater than 2 m in height shall be planted. • The trees shall be a mixture of the following with at least 5 of each species listed: western redcedar, Sitka spruce and Douglas fir. All of these trees were observed in the immediate area and are suitable trees to plant in the area. • Planting of these trees is the responsibility of Craig Bay Estates (Concise

FORM 1

Strata Management Services). It is noted that local stewardship groups may be interested in providing assistance with riparian restoration in this area. It is also noted that in addition to the required planting, additional planting of smaller native trees and shrubs would also be appropriate and is encouraged given the lack of a well developed understory in this impacted area. Species that would be suitable here include, but are not limited to: salmonberry, red-flowering current, elderberry, red-osier dogwood, and pacific ninebark.

- Planting must be supervised by an appropriately qualified professional with experience with this type of work. Microsite selection and tree spacing are important considerations that must be made by the qualified professional. Trees are typically planted no closer than 2 to 3 m apart to allow room for maturation and reduce competition. The three coniferous species have different microsite preferences (exposure, soil moisture, drainage etc.) and this must be considered during site selection.
- Planting must occur in the general area where the dangerous trees are to be removed. The planting area shall allow some flexibility such that open areas with fewer trees are more densely planted in comparison to areas that are naturally well vegetated.
- Planting must be done as soon as possible after dangerous trees have been treated and should be done prior to April 30 to avoid planting immediately prior to a drier period of the year.
- If planting cannot be conducted prior to April 30, it should wait until the fall of 2008 unless Craig Bay Estates can commit resources to prevent losses during the summer dry period.
- The health and survival of planted trees should be monitored and treated accordingly (watering, staking etc. if necessary) by qualified professionals hired by Craig Bay Estates to encourage survival and prevent future replacement requirements (see Section 5. Environmental Monitoring for additional information).
- Any trees that do not survive must be replaced and this is the responsibility of Craig Bay Estates (see Section 5. Environmental Monitoring for additional information) as such, there is incentive to monitor and promote survival.

The treatment of the 9 small, dead cedar trees adjacent to Bay Road does not require a tree replacement plan as these trees are not to be removed. It would not be appropriate to remove these trees unless they were determined to be dangerous at a future date. Planting of western redcedar seedlings or other native trees in this area is encouraged. The trees likely died as a result of development, but they continue to provide some ecological function and a visual barrier between the trail and Bay Road. Planted trees would replace the loss of trees that occurred here and would eventually green up and enhance this visual barrier. In the meantime, treatment of these trees would enhance their value to birds, especially given the proximity to a large constructed wetland.

I, Adam Compton (*name of qualified environmental professional*), hereby certify that:

- a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
- b. I am qualified to carry out this part of the assessment of the development proposal made by the developer Ron Reynolds (*name of developer*);
- c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

E. Encroachment	
<p>I, <u>(name of qualified environmental professional)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the <u>(name of developer)</u> ;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
F. Sediment and Erosion Control	
<p>I, <u>(name of qualified environmental professional)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(name of developer)</u> ;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
G. Stormwater Management	
<p>I, <u>(name of qualified environmental professional)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(name of developer)</u> ;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
H. Floodplain Concerns (highly mobile channel)	
<p>I, <u>(name of qualified environmental professional)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(name of developer)</u> ;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	

Section 5. Environmental Monitoring

As potentially damaging works are being conducted within the SPEA and within close proximity to a fish bearing stream, environmental monitoring will be required. Due to the relatively low risk for environmental impacts to occur within the SPEA during this project, the need for environmental monitoring is likely to be the minimum amount required by the RAR as follows:

Initial Site Visit:

Prior to commencing the danger tree treatments, Streamline must be contacted to conduct a site visit and attend a pre-work meeting with the primary contractor conducting the work. The objective of this initial meeting will be to confirm that all contractors are aware of any relevant measures, conditions and requirements specified in this RAR Assessment Report. Also, a communications plan will be developed during this meeting to deal with any environmental incidents or emergencies that may arise during the course of tree removal activities. At a minimum the communications plan will contain contact numbers for the environmental monitor and appropriate provincial, federal and local contacts for potential environmental emergencies (hydrocarbon spills, water quality etc.). The environmental monitor must be immediately contacted in the event of any such emergency.

Post Construction Site Visit:

The RAR requires that a post-development report be prepared by a QEP to certify that "the conditions set out in assessment reports have been properly implemented". Specifically, the QEP should ensure that all measures to protect the SPEA were properly followed, including the tree replacement plan. The post-development site visit shall be conducted immediately following riparian planting.

Additional Site Visits:

The potential need for additional site visits will be discussed during the pre-work meeting. The communications plan developed at the initial site visit will provide the contact number for the Environmental Monitor who must be contacted in the event of an environmental emergency. The following is a list of potential reasons to contact the environmental monitor and determine whether an additional site visit is required:

- hydrocarbon spills
- generation of sediment laden runoff into Craig Creek
- any damage to existing riparian vegetation

Streamline or an appropriate QEP shall be contacted again three years after the riparian planting has been conducted to assess the survival of the trees planted. Any planted trees that have not survived after this three year period shall be replaced.

The danger tree assessment report describes the need for annual monitoring of one alder tree that could become dangerous. As this tree is to be monitored, alder trees that were treated and left to sucker shall also be monitored annually. In the event that any of the treated alder trees become dangerous and require additional treatment and/or removal, this shall be allowed without the need for tree replacement or the preparation of an additional RAR Assessment Report (as the loss of this tree will have already been compensated for as per this assessment) provided the following:

- The measures to protect and maintain the SPEA (Section 4.) contained in this assessment are adhered to fully.
- Streamline is contacted to provide advice and recommendations, to conduct environmental monitoring during treatment and to prepare an updated post-development report.

The Need for Additional RAR Assessments:

As shown by the orthophoto (Section 2), portions of all residences located along the eastern boundary of the subject property are within the Riparian Assessment Area and SPEA of either the wetland or the stream. As the development of the subject property was approved by the City of Parksville, prior to the RAR coming into effect, the existing use of the portions of the residences and yards that are within the 30 m Riparian Assessment Area is allowed without the requirement of additional RAR Assessments provided that these activities do not include:

- construction or erection of buildings and structures;
- creation of nonstructural impervious or semi-impervious surfaces;
- flood protection works;
- construction of roads, trails, docks, wharves and bridges;
- provision and maintenance of sewer and water services;
- development of drainage systems; and
- development of utility corridors.

If any of the above are proposed at a future date, an RAR Assessment will be required.



Existing uses that are grandfathered and do not require additional RAR Assessments include:

- renovations and maintenance to existing structures (as long as the modifications remain within the existing footprint of the structures); and
- lawn and landscaping maintenance (including removal of vegetation and minor disturbance to soils).

The ability to continue to conduct activities that are in accordance with the existing use of land that is within a Riparian Assessment Area and/or SPEA is described in the *Riparian Areas Regulation Implementation Guidebook* (Page 9):

“Existing permanent structures, roads and other development within riparian protection areas are “grand parented.” Landowners can continue to use their property as they always have even if a streamside protection and enhancement area is designated on it. The Regulation also has no effect on any repair, renovation, or reconstruction of a permanent structure on its existing foundation. Only if the existing foundation is moved or extended into a streamside protection and enhancement area (SPEA) would the Regulation apply.”

Section 6. Photos

Label	Photo 1. Feb. 14, 2008. Looking upstream at Craig Creek just downstream of Northwest Bay Road (Craig Bay Estates on right).
	
Label	Photo 2. Feb. 14, 2008. Looking south at southeast corner of Craig Bay Estates (Craig Creek on left).
	

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Label Photo 3. Feb. 14, 2008. Looking north along eastern boundary of Craig Bay Estates. Dangerous trees are located sporadically along the right. The fallen alder in the photo is indicative of the potential danger in this area. Note the relative lack of coniferous trees and understory in this area.



Label Photo 4. Feb. 14, 2008. Looking north at group of 9 small, dead cedar trees at northeast corner of Craig Bay Estates (constructed wetland on left, natural wetland to the right).



Section 7. Professional Opinion**Assessment Report Professional Opinion on the Development Proposal's riparian area.**Date

1. I/We Adam Compton & Graham Kerr *Please list name(s) of qualified environmental professional(s) and their professional designation that are involved in assessment.*

hereby certify that:

- e) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Regulation made under the *Fish Protection Act*,
- f) I am/We are qualified to carry out the assessment of the proposal made by the developer Ron Reynolds (*name of developer*), which proposal is described in section 3 of this Assessment Report (the "development proposal"),
- g) I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and
- h) In carrying out my/our assessment of the development proposal, I have/We have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation; AND

2. As qualified environmental professional(s), I/we hereby provide my/our professional opinion that:

- a) if the development is implemented as proposed by the development proposal there will be no harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes in the riparian assessment area in which the development is proposed, **OR** (Note: include local government flex letter, DFO Letter of Advice, or description of how DFO local variance protocol is being addressed)
- b) if the streamside protection and enhancement areas identified in this Assessment Report are protected from the development proposed by the development proposal and the measures identified in this Assessment Report as necessary to protect the integrity of those areas from the effects of the development are implemented by the developer, there will be no harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes in the riparian assessment area in which the development is proposed.

[NOTE: "qualified environmental professional" means an applied scientist or technologist, acting alone or together with another qualified environmental professional, if

- (a) the individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association,
- (b) the individual's area of expertise is recognized in the assessment methods as one that is acceptable for the purpose of providing all or part of an assessment report in respect of that development proposal, and
- (c) the individual is acting within that individual's area of expertise.]



GRAHAM KERR
454 MAQUINNA PLACE
QUALICUM BEACH, B.C.
V9K 1B3

CELL ♦ 248-0940
BUS ♦ 752-5544

Page 1

February 15, 2008

Attention: Planning Dept.
City of Parksville
100 East Jensen Ave.,
Parksville, B.C.

Subject:

Removal of hazardous trees at Craig Bay, VIS 5081, located at Northwest Bay Road in Parksville, B.C.

Background:

Mr. Larry Powers, strata property council member at Craig Bay, has contacted Treeworks Tree Services Ltd. to provide this Arborist Report in response to councils concerns on the integrity and stability of trees bordering Craig Creek.

Tree Details:

A site inspection was completed February 14, 2008. The strata council had toured the property and identified the following trees which they were concerned about and asked me for my opinion regarding their current condition. The following trees were evaluated :



GRAHAM KERR
454 MAQUINNA PLACE
QUALICUM BEACH, B.C.
V9K 1B3

CELL ♦ 248-0940
BUS ♦ 752-5544

Page 2



Tree# 1 is a Red Alder (*alnus rubrus*) with some scarring at the root crown. This wound is less than one third of the tree's diameter and beside this defect the tree appears to be relatively healthy. The tree is very excurrent with no lean. This tree should be inspected on an annual basis for any further decline in its health.



Trees # 2,3,4 and 5 are Red Alders leaning towards residences. They are in poor health with dead flaking bark. These trees should be removed.



GRAHAM KERR
454 MAQUINNA PLACE
QUALICUM BEACH, B.C.
V9K 1B3

CELL ♦ 248-0940
BUS ♦ 752-5544

Page 3



Tree # 6 is a Western Red Cedar (*Thuja plicata*) which is the process of failing. It has a swept root crown which has split and has a deep crack in it. The crown is dying and this tree should be removed.



GRAHAM KERR
454 MAQUINNA PLACE
QUALICUM BEACH, B.C.
V9K 1B3

CELL ♦ 248-0940
BUS ♦ 752-5544

Page 4

Trees # 7 and 8 are Douglas Firs (*pseudotsuga menziesii*) which appear to be healthy except for the condition of both root crowns. Tree # 7 has grown beside an old Cedar stump and this old stump has interfered with the firs root development in this quadrant of the root zone. Tree # 8 has had the natural grade of the soil altered during the construction process. The soil has been excavated into the critical root zone and the tree has most probably suffered root damage. This could possibly lead to whole tree failure in both circumstances. Both these Douglas Firs should have their crowns spiral pruned by 25%. This procedure reduces the sail effect of the tree in periods of high wind and helps to reduce the effects of leverage on the root structure.





GRAHAM KERR
454 MAQUINNA PLACE
QUALICUM BEACH, B.C.
V9K 1B3

CELL ♦ 248-0940
BUS ♦ 752-5544

Page 5



Tree # 9 is a Red Alder. This tree had its leader broken off many years ago and now has four tops growing from the old failure point. This crotch will most probably have substantial decay and rot. These new tops will be poorly attached to the main stem and are a hazard. This tree should be removed.



Tree # 10 is also a Red Alder. This tree is in poor condition with dead flaking bark where the tree has a co-dominant stem. There is also a large leader targeting the residence below it. This tree should be removed.



The Red Alders described in this report are all in decline presenting imminent danger to people and their property. These trees are nearing the end of their life cycle and this is why there are decay pockets, dead limbs, and flaking dead bark present. All trees which are to be removed should be left as wildlife stumps as long as it is safe for the contractor and its crew.



GRAHAM KERR
454 MAQUINNA PLACE
QUALICUM BEACH, B.C.
V9K 1B3

CELL ♦ 248-0940
BUS ♦ 752-5544

Page 6

There is also a row of 9 Red Cedars and one Spruce tree along Bay Street which have died. These are small caliper trees averaging 6 to 10 meters in height. There is a footpath next to this row of trees and it would be prudent to remove the tops of these dead trees as well as trimming back the limbs to create perches and wildlife stumps.

Assumptions and Limitations of this assessment

1. It is our company's policy to attach the following clause regarding any limitations. We do this to ensure that developers or owners are clearly aware of what is technically and professionally realistic in retaining trees.

The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These include a visual examination of the above-ground parts of each tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of insect attack, discoloured foliage, the condition of any visible root structures, the degree and direction of lean (if any), the general condition of the tree(s) and the surrounding site, and the proximity of property and people. Except where specifically noted in the report, none of the trees examined were dissected, cored, probed, climbed and detailed root crown examinations involving excavation were not undertaken.

Notwithstanding the recommendations and conclusions made in this report, it must be realized that trees are living organisms, and their health and vigour constantly change over time. They are not immune to changes in site conditions, or seasonal variations in the weather conditions.



GRAHAM KERR
454 MAQUINNA PLACE
QUALICUM BEACH, B.C.
V9K 1B3

CELL ♦ 248-0940
BUS ♦ 752-5544

Page 7

While reasonable efforts have been made to ensure that the trees recommended for retention are healthy, no guarantees are offered, or implied, that these trees, or any parts of them, will remain standing. It is both professionally and practically impossible to predict with absolute certainty the behaviour of any single tree or group of trees or their component parts in all circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential for failure in the event of adverse weather conditions, and the risk can only be eliminated if the tree is removed. Although every effort has been made to ensure that this assessment is reasonably accurate, the trees should be re-assessed periodically. The assessment presented in this report is valid at the time of inspection.

2. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the appraiser / company can neither guarantee nor be responsible for the accuracy of information provided by others.

3. Alteration of any part of this report invalidates the entire report.

Sincerely,

Graham Kerr
ISA Certified Arborist (5525A)
WCB and ISA Certified Tree Risk Assessor (0033)
Treeworks Tree Services Ltd.

Attachment 1. Excerpt of DFO Email Regarding Tree Removal

> -----Original Message-----

> From: Magnan, Alain

> Sent: December 11, 2007 10:08 AM

> To: Davies, Dave (Pacific)

> Subject: RE: Craig Bay Estates, Nanoose

>

> Thanks Dave.

>

> The following is the process I use when I get a request

> to remove danger trees near watercourses:

>

> * If you are proposing to top or remove trees,

> have

> the trees within the riparian area assessed by an appropriately

> qualified professional biologist to determine the presence and status

> of

> bird nests. If trees are suspected of being hazardous, then also have

> them assessed by a qualified professional arborist who is also a

> Wildlife Danger Tree Assessor, to determine the presence and nature of

> the hazard.

>

> * Where topping or

> removing

> the dead limb can remove the danger, opt for doing this rather than

> removing the entire tree.

>

> * Where the entire tree

> must

> be removed then the tree replacement criteria should be applied.

> * Retain large woody debris and

> the

> stubs of large diameter trees where it is safe to do so. These are

> important for preserving fish habitat and wildlife populations.

>

> * Fall or top all trees

> so

> that the branches do not enter the stream channel. If any branches do

> inadvertently end up in the channel, remove them from the site to

> where

> they will not enter the channel during high flows. Removal of limbs

> from

> the channel must be completed in a manner that will not disturb

> aquatic

> organisms.

>

> * Fall the tree across

> the

> stream only when no other method of tree removal is possible because

> of

> safety reasons (e.g., to protect fallers or buildings). Removal of the

> felled tree must be completed in a manner that does not damage the

> banks

> and the bed of the stream. If possible, leave and anchor the trunk,

> letting it remain as large woody debris within the riparian zone.

>

> * Fall the tree away

- > from
- > the channel unless there is an immediate threat to the public, and
- > remove the material within the instream work window.
- >
- > * Ensure that equipment
- > used
- > for vegetation removal complies with this document's listed best
- > practices for deleterious substance control.
- >
- > * Schedule vegetation
- > removal and the management or removal of hazard trees or limbs within
- > the window of least risk for breeding birds and before the instream
- > window, wherever possible. This will help to prevent work delays and
- > allow your works to be scheduled within the instream work window.
- >
- > If trees are to be
- > completely removed, they should replant trees following the ratio
- > identified in this attachment:
- >
- > http://srmwww.gov.bc.ca/sry/csd/downloads/forms/vegetation_riparian/tree
- > repl
- > crit.pdf
- >
- > <http://srmwww.gov.bc.ca/sry/csd/downloads/forms/vegetation_riparian/tre
- > erep
- > lcrit.pdf>
- >
- > Alain (Al) Magnan, R.P.Bio., CPESC
- > Project Assessment Biologist
- > Habitat Management
- > South Coast
- > Fisheries and Oceans Canada
- > 3225 Stephenson Point Road
- > Nanaimo, BC V9T 1K3
- > Tel: (250) 756-7021
- > Cel: (250) 714-9196
- > Fax: (250) 756-7162
- >
- > Biologist, Evalueur de projets
- > Peches et Oceans
- > Gestion de l'habitat
- > Cote sud
- > 3225, chemin Stephenson Point
- > Nanaimo (C.-B.) V9T 1K3

TREE REPLACEMENT CRITERIA:

The criteria below apply to the replacement of trees authorized for removal under the *Fisheries Act*, *Wildlife Act* or *Land Title Act* by BC Environment, Fish, Wildlife and Habitat Protection. Requests for authorization should be accompanied by a tree survey and replacement planting plans completed by a professionally certified environmental consultant and detailing numbers, sizes and species. Species suitable for replacement will be based on site specific conditions.

-
- 0 mm - 151 mm (6") dbh ♦ 2 replacement trees (min height 1.5 m), or, 4 shrubs (for up to 50% of trees being replaced in this range);
 - 152 mm - 304 mm (12") dbh 3 replacement trees (min height 1.5 m);
 - 305 mm - 456 mm (18") dbh 4 replacement trees (min height 2.0 m);
 - 457 mm - 609 mm (24") dbh 6 replacement trees (min height >* 2.0 m);
 - 610 mm - 914 mm (36") dbh 8 replacement trees (min height > 2.0 m).

Trees > 914 mm dbh (36") will require individual approval and replacement criteria prior to removal.

Every effort must be made to retain 20% of trees > 304 mm dbh (12") as wildlife snags at minimum height of 3 m.

- ♦ dbh = diameter breast height
- * > = greater than

For further information, please contact the following:

Ecosystem Planning & Protection
BC Environment, Lower Mainland Region
10470-152nd St.
Surrey BC V3R 0Y3
Phn: (604) 582-5235
Fax: (604) 582-5305
Web-site: <http://www.elp.gov.bc.ca/sry>

THE GOVERNMENT OF BRITISH COLUMBIA IS AN "EMPLOYMENT EQUITY EMPLOYER"