# Riparian Areas Regulation: Assessment Report

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

Date: 2006-07-17

## I. Primary QEP Information

| | | | | |
|---|---|---|---|---|
| First Name | Brooke | Middle Name | Susan | |
| Last Name | Charte | | | |
| Designation | R.P.Bio | Company | Fish R'Us Inc. | |
| Registration # | 12345 | Email | brooke.charte@fishrus.com | |
| Address | 123 Riparian Crescent | | | |
| City | Victoria | Postal/Zip | V8C 6Q7 | Phone # 250-555-8114 |
| Prov/state | BC | Country | CAN | |

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

| | | | |
|---|---|---|---|
| First Name | n/a | Middle Name | |
| Last Name | | | |
| Designation | | Company | |
| Registration # | | Email | |
| Address | | | |
| City | | Postal/Zip | Phone # |
| Prov/state | | Country | |

## III. Developer Information

| | | | |
|---|---|---|---|
| First Name | Irene | Middle Name | May |
| Last Name | Bilder | | |
| Company | WCT Developments Ltd. | | |
| Phone # | 250-987-6543 | Email | imb@universe.ca |
| Address | 38511 Pike Road | | |
| City | Sooke | Postal/Zip | V0S 2MP |
| Prov/state | BC | Country | CAN |

## IV. Development Information

| | | | |
|---|---|---|---|
| Development Type | Subdivision – Six or less single family lots | | |
| Area of Development (ha) | 1.5 | Riparian Length (m) | 153 |
| Lot Area (ha) | 1.5 | Nature of Development | Redevelopment |
| Proposed Start Date | 2006-08-01 | Proposed End Date | 2006-09-30 |

## V. Location of Proposed Development

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Street Address (or nearest town) | 3811 Pakenham Road | | | | | | |
| Local Government | Capital Regional District | | | City | Sooke | | |
| Stream Name | Unnamed tributary of Mill Creek | | | | | | |
| Legal Description (PID) | 012-236-998 | | | Region | 1 | | |
| Stream/River Type | Stream | | | DFO Area | 20-5 | | |
| Watershed Code | 930-027900, 10U, 445526, 5363453 | | | | | | |
| Latitude | 48 | 22 | 38.3 | Longitude | 123 | 49 | 13.8 |

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**

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

### Description of Development Proposal

The proposal is for subdivision of the property at 3811 Pakenham Road (currently zoned R1-Rural) into four parcels (with R3-Urban zoning). The existing parcel contains two single family dwellings. The subdivision, if approved, will result in two vacant parcels and two fully developed parcels. It is expected that CRD will make a decision regarding the subdivision application by the end of August 2006. A small, unnamed tributary of Mill Creek runs along the west property line of the un-subdivided parcel. This unnamed tributary flows into Mill Creek approximately 800 metres south of the south property line of the subject property, via a natural cascade of approximately 2.2 metres.

### Description of Fisheries Resource Values

The subject stream is a small intermittently flowing tributary of Mill Creek, with a length of approximately 1800 metres. A search using the Freshwater Fisheries Society of BC's Fish Wizard[1], interactive online map server did not return any information (name, watershed code, fish species present, etc.) on the unnamed tributary of Mill Creek. A Fish Wizard query for Mill Creek returned observation records for the following fish species: Brown Catfish (formerly Brown Bullhead); Coho Salmon; Cutthroat Trout; Cutthroat Trout (Anadromous); Prickly Sculpin; Pumpkinseed; and Threespine Stickleback. Salmon escapement data from the federal Department of Fisheries and Oceans MAPSTER v2.2[2], interactive online map server, showed that Coho escapement for Mill Creek between 1996 and 2003 ranged from a low of 14(1999) to a high of 244(2001).

At the time of the initial site visit (May 26, 2006) only short sections of the unnamed tributary of Mill Creek adjacent to the subject property contained surface water. The client, who has lived in the southern-most of the two residences at 3811 Pakenham Road for two years, indicated that the unnamed tributary of Mill Creek only contains flowing water during very wet winters. The flow of the unnamed tributary of Mill Creek at the cascade above its confluence with Mill Creek was estimated to be less than ten Litres per minute. The flow of the unnamed tributary is likely seasonal due to the small size of its catchment area. A ridge that runs to the north and west of the subject site at a distance of between 800 and 1000 metres defines the catchment. During the May 26, 2006 site visit, it was noted that there were several deep (~0.8 metres) but isolated pools along unnamed tributary of Mill Creek adjacent to the subject property.

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[1] http://www.fishwizard.com/ [accessed May 30, 2006]
[2] http://www.canbcdw.pac.dfo-mpo.gc.ca/ows/imf.jsp?site=mapster [accessed May 30, 2006]

There was very little woody debris and only one of the pools had a root-anchored overhang that could provide shelter for fish. The segment of the unnamed tributary of Mill Creek adjacent to the subject property, as well as those observable segments up- and down-stream from the subject site, is well shaded. It is expected that this shade-providing vegetation (predominantly big leaf maple, black cottonwood, red cedar, salmonberry, lady fern, and grasses) would also provide adequate litter fall and insect drop for nutrient input.

The Mill Creek Streamkeepers[3] have surveyed the unnamed tributary (they refer to it as Pakenham Creek) and consider it to have a low fisheries value. The reasons given for the low fisheries value designation were: the seasonal nature of its flow (observations of flow in the unnamed tributary at its confluence with Mill Creek have only been recorded for the months of November to April); and the significant barrier, to upstream movement of fish from Mill Creek to the unnamed tributary, that the natural cascade at its confluence with Mill Creek represents. The total drop down the cascade to the high water level of Mill Creek is approximately 2.2 metres (see Photograph 1). The vertical distance from the discharge end of the culvert to the water level in Mill Creek on May 26, 2006 was approximately 2.5 metres.

[3] Pers.comm. Deborah Wilson. May 30, 2006. Mill Creek Streamkeepers, Sooke, BC.

## *Section 2. Results of Simple Riparian Assessment*

Date: 2006-05-26

| | |
|---|---|
| Stream | x |
| Wetland | |
| Lake | |
| Area | |

Potential Riparian Width(m)

| | |
|---|---|
| 1 | 30.0 |
| 2 | 30.0 |
| 3 | 30.0 |
| 4 | 13.5 |
| 5 | 30.0 |
| 6 | 30.0 |
| 7 | 30.0 |
| 8 | 30.0 |
| 9 | 30.0 |
| 10 | 30.0 |
| 11 | 30.0 |
| Average | **28.5** |

I,Brooke Charte, 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 assessment of the development proposal made by the developer WCT Developments Ltd. ;

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.

Existing or Potential Vegetation Category 1

| | Yes | No** |
|---|---|---|
| Fish bearing | | x |

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

**Non Fish-Bearing Status Report**

Three baited Gee traps were left overnight (24 hours) in the only three pools containing enough water (0.6 to 0.8 metres) to cover the traps (at 18, 141 and 149 metres from the south property line of the subject property) on May 26, 2006 and June 11, 2006. The trapped pools were all approximately 1.5 metres wide by 4.0 metres long. On May 26, 2006 water was present in three other pools but in depths insufficient to cover the entrance to the traps and on June 11, 2006 only two of these non-trapped pools still contained surface water. Only the two northern-most trapped pools were connected to each other by surface water. The remainder of the pools were isolated instances of surface water.

Water temperatures in the trapped pools on May 26, 2006 were (from the south to north) 11.3$^{o}$C, 12.2 $^{o}$C , and 11.9 $^{o}$C . Temperatures were not recorded during the June 11, 2006 trap event. The water was lightly turbid during both trap events.

No fish were caught in any of the three pools on either of the sampling dates. As indicated in the Description of Fisheries Resource Values in Section 1, there are two contributors to the low fisheries value in this unnamed tributary of Mill Creek. One is the barrier to migration of fish from Mill Creek to the unnamed tributary represented by the natural cascade on the unnamed tributary at its confluence with Mill Creek. The total vertical drop down the natural cascade to the waters of Mill Creek (at high water) is 2.2 metres and the vertical distance is more typically in the range of 2.4 to 2.6 metres. The second contributor is the seasonal nature of the unnamed tributary. The portion of the unnamed tributary that crosses the subject property was not observed to be flowing on either the May 26 or June 11, 2006 site visits. A very low level of flow at the cascade was observed on May 26, 2006 but it was estimated to be less than 10 Litres per minute. This small amount of flow at the confluence of the unnamed tributary with Mill Creek could have been from subterranean flow or from discharges into the open ditch along the north side of Cox Road (this road runs roughly parallel to Mill Creek in the vicinity of the confluence of the unnamed tributary and Mill Creek) that are directed into the unnamed tributary before it enters the culvert under Cox Road. Observations records kept by the Mill Creek Streamkeepers indicate notable discharges from the unnamed tributary into Mill Creek typically only occur from November to April.

The sum of the evidence (no fish trapped, significant barrier to fish movement, and continuous surface water for less than six months of the year) leads to the conclusion that the unnamed tributary of Mill Creek does not support a fish population.

I, Brooke Charte, 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 WCT Developments Ltd. ;
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* |
|---|---|---|
| | | x |

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

**Determination of Stream Non-permanence**

There was no flow in the reach of the tributary that crosses the subject property on either the May 26 or June 11, 2006 site visits. There was a very low level of flow down the cascade near the confluence of unnamed tributary with Mill Creek on May 26, 2006 but is was estimated to be less than 10 Litres per minute. This small amount of flow at the confluence of the unnamed tributary with Mill Creek could have been from subterranean flow or from discharges into the open ditch along the north side of Cox Road that are directed into the unnamed tributary before it enters the culvert under Cox Road. Observations records kept by the Mill Creek Streamkeepers indicate notable discharges from the unnamed tributary into Mill Creek typically only occur from November to April.

Based on this evidence it is concluded that the unnamed tributary of Mill Creek typically contains continuous surface waters for less than six months a year and can be considered non-permanent.

I, Brooke Charte, 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 WCT Developments Ltd. ;
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.

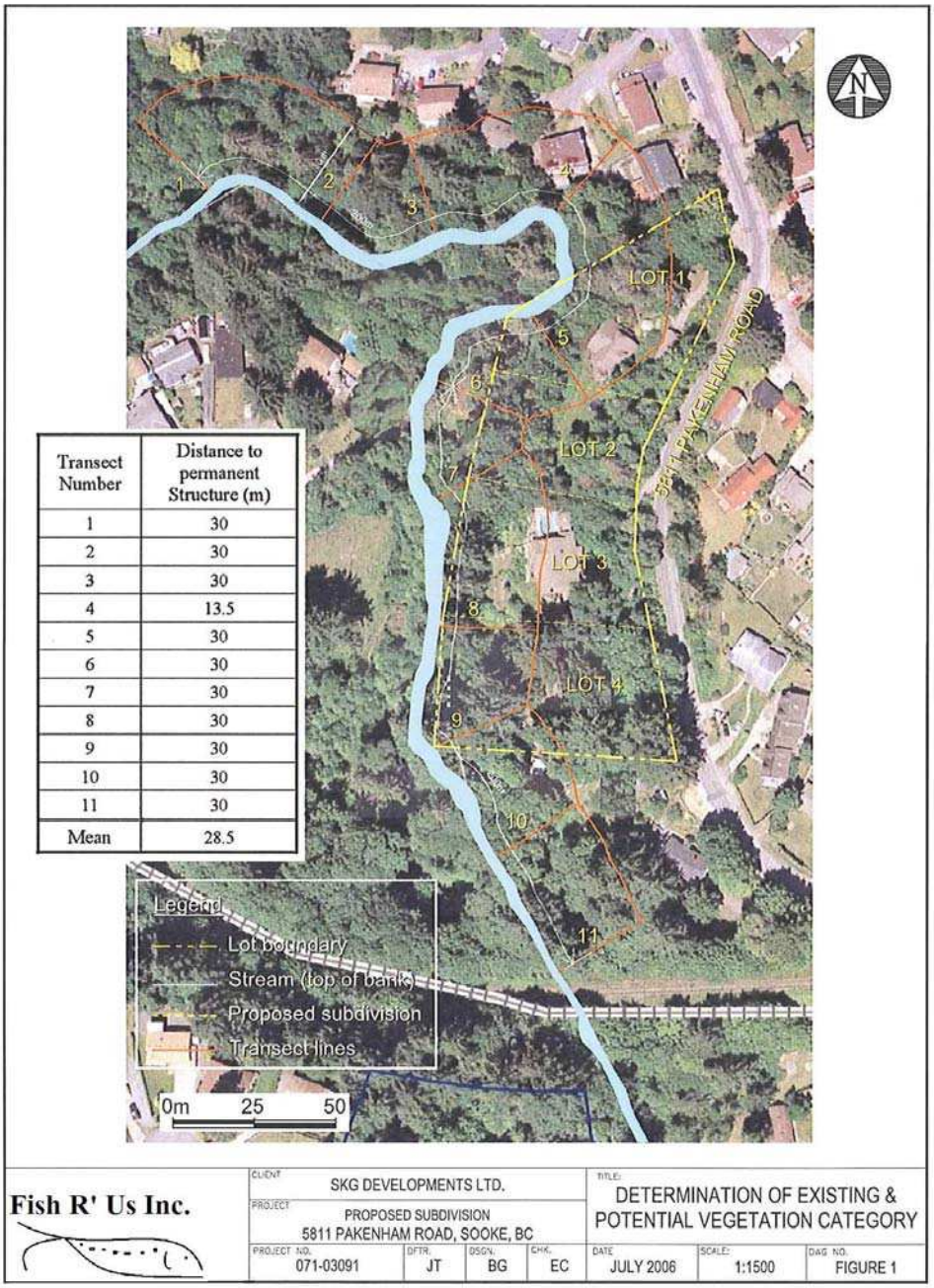
**SPEA Width (m)** 15-30

## *Comments*

The SPEA for each of the daughter lots resulting from the proposed subdivision has been determined as per Figure 2-2 of the current Assessment Methods. From north to south the resulting SPEA widths are:

- 15 metres in the northern-most lot (Lot #1) except in the footprint of the existing single family home, where it is as narrow as 13.3 metres;
- 30 metres in this undeveloped daughter lot (Lot #2);
- 24.3 metres in the third lot (Lot #3), owing to the footprint of the existing single family home; and
- 30 metres in the southern-most and undeveloped daughter lot (Lot #4).

## *Orthophoto showing assessment area*




| Transect Number | Distance to permanent Structure (m) |
|---|---|
| 1 | 30 |
| 2 | 30 |
| 3 | 30 |
| 4 | 13.5 |
| 5 | 30 |
| 6 | 30 |
| 7 | 30 |
| 8 | 30 |
| 9 | 30 |
| 10 | 30 |
| 11 | 30 |
| Mean | 28.5 |

## *Section 3. Site Plan*

## *Section 4. Environmental Monitoring*

This project is currently at the subdivision stage, with few details available regarding subsequent development activities at the site. This limits the degree of detail that can be included in plans for environmental monitoring.

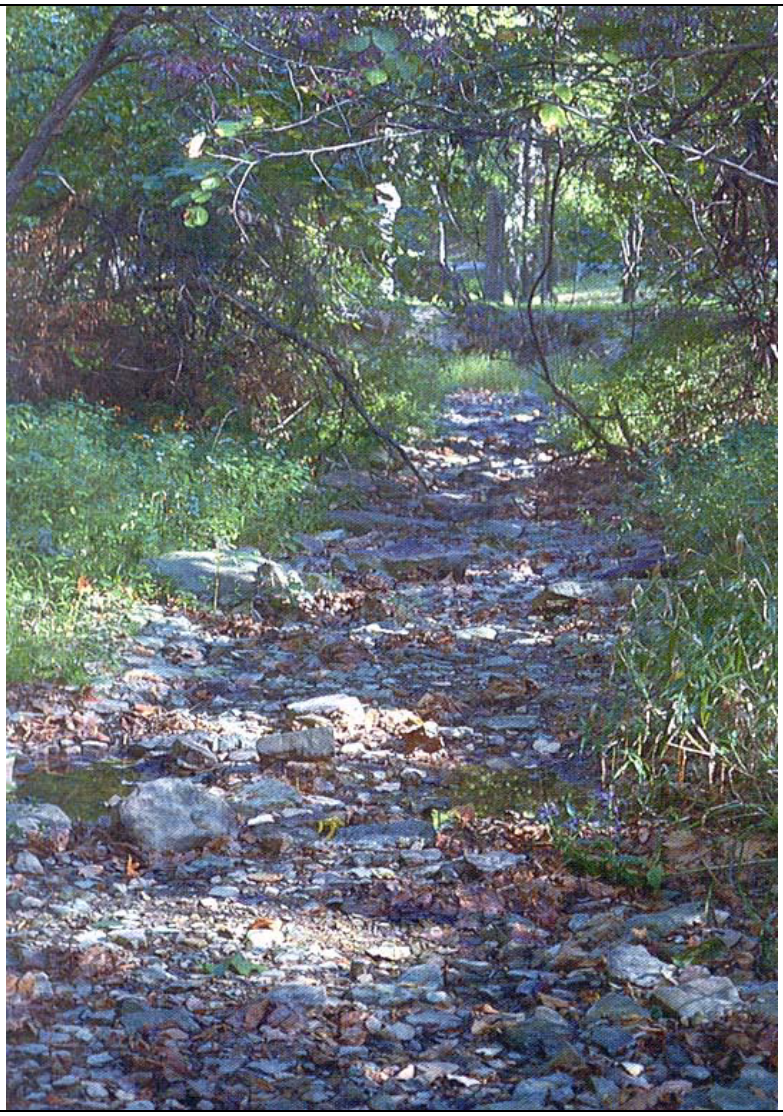
The developer has been informed of their obligation to protect the streamside protection and enhancement areas, and has agreed to obtain the services of the authoring QEP to provide environmental monitoring, should development activities (construction of single-family homes) proceed. Two site visits will be arranged once a construction schedule for Lot #2 and Lot #4 has been determined. One site visit will occur prior to the initial excavation work on and will include a discussion of appropriate protective activities. A second site visit will occur prior to backfilling work around the new foundations and will include a discussion of how final grading will impact the SPEA.

The developer has also been informed of their obligation to submit a post-development report to the RAR Notification System and has agreed to obtain the services of the authoring QEP to complete this task.

## *Section 5. Photographs*

Plate 1 — Confluence of unnamed tributary and Mill Creek, showing drop from discharge end of culvert under Cox Road to water level in Mill Creek; view to southeast.

Plate 2 — Looking upstream along the unnamed tributary from the mid-point of the subject property; view to north. Note discontinuous surface water.

| | |
|---|---|
| Plate 3 | Looking downstream along the unnamed tributary from the mid-point of the subject property; view to south. |
| |  |
| Plate 4 | |
| | |

## *Section 6. Professional Opinion*

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

Date 2006-07-17

1. I Brooke Charte, R.P.Bio hereby certify that:

    a) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
    b) I am/We are qualified to carry out the assessment of the proposal made by the developer WCT Developments Ltd., which proposal is described in section 3 of this Assessment Report (the "development proposal"),
    c) I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and
    d) 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 hereby provide my 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**

    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.]