P.O. Box 646
Port McNeill, BC
V0N 2R0

STREAM CLASSIFICATION

In accordance with

ISLAND TIMBERLANDS LIMITED PARTNERSHIP
PRIVATE FOREST LAND MANAGEMENT

TUMBLEWATER CREEK

BUCKLEY BAY

ISLAND TIMBERLANDS LIMITED PARTNERSHIP

Prepared by

FishFor Contracting Ltd

September 2006

Erika L. Anderson, B.Sc.
FishFor Contracting Ltd

Reviewed by: _____
Cindy Hannah, R.P. Bio.
FishFor Contracting Ltd

Port McNeill
phone 250-956-3939
email fishfor@island.net

Campbell River
phone 250-926-6692
email fishfor@telus.net

Island Timberlands Limited Partnership
Buckley Bay
Tumblewater Creek

SUMMARY

On September 21, 2006, assessments were carried out on a stream located adjacent to the proposed Block 46503. This assessment was done downstream of the proposed Block to determine fish usage of the drainage.

The purpose of the survey was to determine the appropriate riparian classifications to comply with Island Timberlands Limited Partnership Private Forest Land Standard Operating Procedures.

The assessments were carried out using accepted stream survey methods. The assessments and conclusions are consistent with the accepted Stream Classification Procedures for Private Forest Lands as submitted by Cindy Hannah, R.P.Bio., to the Ministry of Water Land and Air Protection, on March 11, 2004.

Sample conditions were considered excellent as flows were low and turbidity was clear.

The fieldwork was conducted by Erika Anderson and Trina de Monye of FishFor Contracting Ltd.

Tumblewater Creek was assessed. A barrier to all fish was located and no fish were located upstream.

No fish were sampled upstream of the located barrier. Rainbow trout were sampled near the confluence with the Tsable River.

Stream classifications with the descriptions of upstream fish limits and stream characteristics are included in this report. Habitat data and maps delineating classifications are enclosed.

1.0 INTRODUCTION

Tumblewater Creek is within the Tsable River drainage (*watershed code: 920-527600*). Fisheries Information Summary System (FISS) data indicates that Tsable River is utilized by pacific salmon, cutthroat and rainbow trout. Tsable Lake, in the headwaters of the Tsable River, has been stocked with rainbow trout and as a result there are rainbow trout throughout the Tsable River.

An assessment by D.R. Clough Consulting sampled a headwater lake on the North Fork of Tumblewater Lake and did not locate any fish. They determined that it was very unlikely that this lake contained fish.

The proposed Block is located ~10kms west of Buckley Bay.

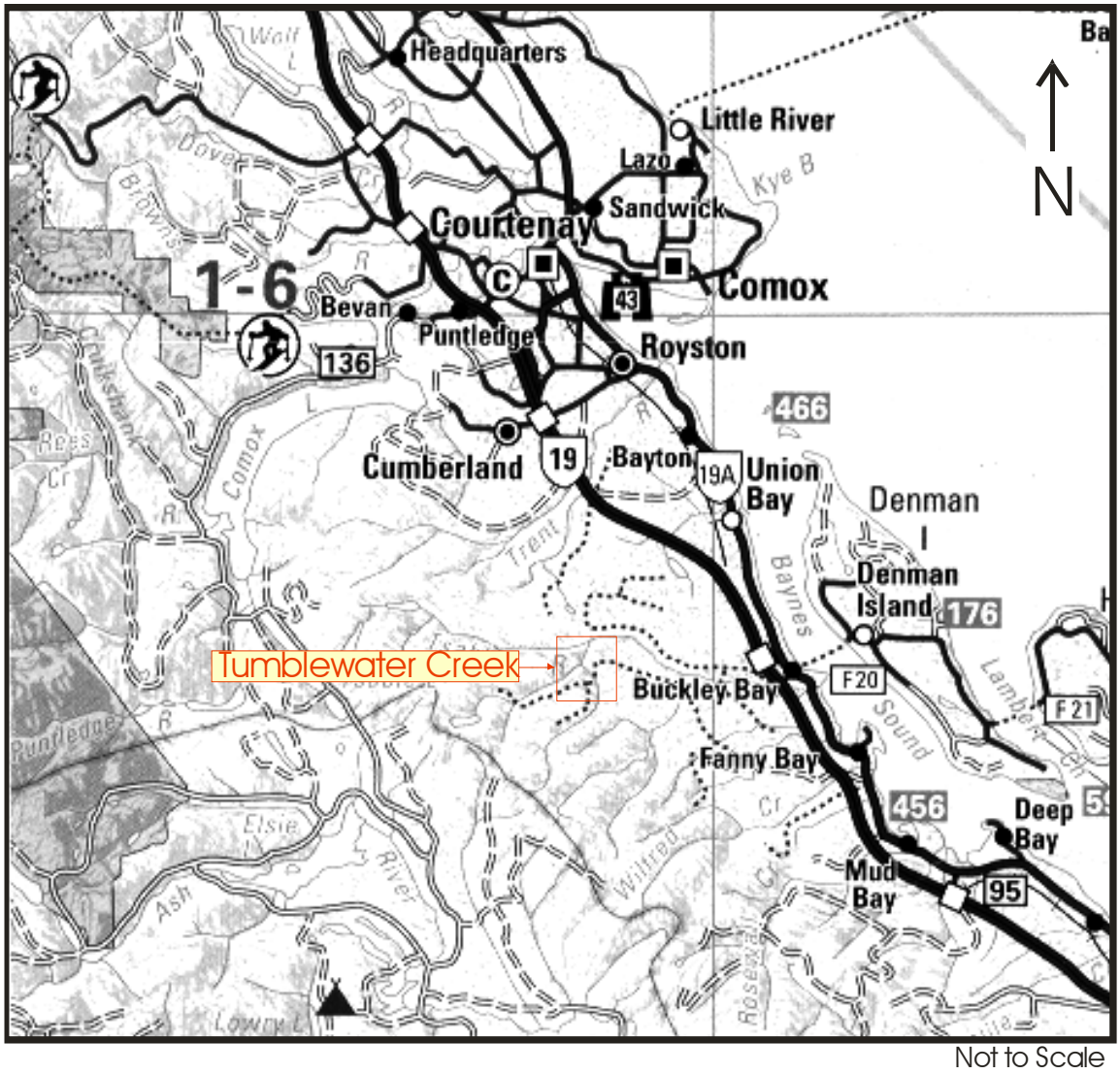


Figure: Area map showing the general location of the proposed Block

1.1 Limitation

Conclusions are based upon an inspection of the waterways mentioned in this report and on the conditions observed September 21, 2006. Conclusions and recommendations in this report have been made in a manner consistent with the level of care and skill normally applied by environmental professionals practicing under similar conditions to those encountered at the time of the assessment. Geological and/or morphological changes can occur in waterways. Any change in conditions from those observed on the above date has the potential to invalidate the conclusions in this report. This report has been prepared for use and distribution by Island Timberlands Limited Partnership. Copies of all reports, as per permit requirements, must be submitted by FishFor Contracting Ltd to Fisheries & Oceans Canada and the Ministry of the Environment (MoE) at the end of the calendar year.

2.0 METHODOLOGY

The assessments and conclusions are consistent with the accepted Stream Classification Procedures for Private Forest Lands as submitted by Cindy Hannah, R.P.Bio., to the Ministry of Water Land and Air Protection, on March 11, 2004, and with Island Timberlands Limited Partnership Private Forest Land Standard Operating Procedures.

Methods and materials used in the assessment include:

- The necessary permits, available historical data, and local knowledge were obtained.
- The area was accessed by truck and the individual streams were located on foot.
- Field sampling methods consisted of electrofishing, and reconnaissance walking.
- Electrofishing was undertaken using a Smith-Root backpack electrofisher.
- Gradient measurements were taken using a clinometer.
- Stream widths were measured using a laser range finder.
- Ground distances were measured with a hip-chain and are expressed as slope distance.

Waterways flowing to non-fish classified streams are considered non-fish bearing

Photo Documentation and a 1:5000 Scale Block Map are attached as Appendices A and B.

3.0 RESULTS/OBSERVATIONS

Assessments were conducted September 21, 2006. The weather was clear. At the time of the assessment, creek flows were low. Sampling conditions were considered excellent. The water temperature at the time of the survey was 8°C.

Table: Riparian Stream Classification Summary

Waterway ID	Reach ID	Riparian Class	Stream Width	Reach Gradient (range)	Morphology	Fish Access Potential	Anadromous Access	Fish Species Captured	Barrier
Tumblewater Creek	Tsable River conf to 420m upstream	F1	21m	<5%	RP	Y	Unk	RB	
Tumblewater Creek	420m u/s to falls u/s spur road	Unk				Unk	Unk		
Tumblewater Creek	u/s falls located u/s spur road	NF1	20m	<6%	RP	N	N		Falls
Tribs to NF1-NF3		Non Fish							

u/s = Upstream, d/s = Downstream, Conf = Confluence, Str = Stream,	FL= Falling Line, RL=Road Location, ML=Main Line
NCD = Non-Classified Drainage, FSZ = Fisheries Sensitive Zone	Morphology: RP = Riffle-Pool, CP = Cascade-Pool, SP = Step-Pool, R = Riffle
Species: CT = Cutthroat Trout, DV = Dolly Varden Char, RB = Rainbow Trout, CO = Coho, PK = Pink, CM = Chum, CH = Chinook, SK = Sockeye,	
Y=Yes, N=No, Unk=Unknown	

- The access potential is the probability of fish to access an assessed reach based on the field observations and conclusions of the field crew.
- Fish species captured is the actual fish that were identified within the sampled reach.
- The access of anadromous fish species is determined by the identified presence of a downstream barrier that is of sufficient magnitude to deny anadromous fish access (falls, cascades, gradients that are above the accepted range for anadromous access or usage).

Tumblewater Creek **F1/Unknown/NF1 (Sampled Reaches)**

Upstream of Tsable River
POC= 000m, Tsable River confluence **POT=** 420m upstream, canyon

Upstream of the confluence with the Tsable River the stream is 21m wide and has a cobble/bedrock substrate. It has a riffle-pool morphology. The gradient is 4%.

Upstream 420m, the stream is within a canyon (Photo 1).

Canyon
Between the sampled reaches there is a section of stream that is within a canyon. This section lacks safe access and walking through it is not possible due to large deep pools that extend the full width of the canyon. Adjacent to a spur road off of Tsable Main, on the west side of Tumblewater Creek, +10m high falls were observed (Photo 2). It is unknown if there are additional falls downstream.

Downstream of Tsable Main
POC= 000m, Tsable Main road crossing **POT=** 910m downstream

Downstream of Tsable Main, Tumblewater Creek averages 20m wide with a cobble/boulder substrate. The stream is confined within steep side slopes. The gradient is 6% (Photo 3).

Downstream 250m, the substrate has a large component of bedrock.

Downstream 320m, there is an old bridge across the stream. The gradient reduces to 4%.

Downstream 350m, there is a log jam in the stream.

Downstream 880m, there is a 30m long, 20% gradient cascade. The cascade has numerous small drops. Downstream of 910m, the stream is entrenched within a canyon and could not be accessed.

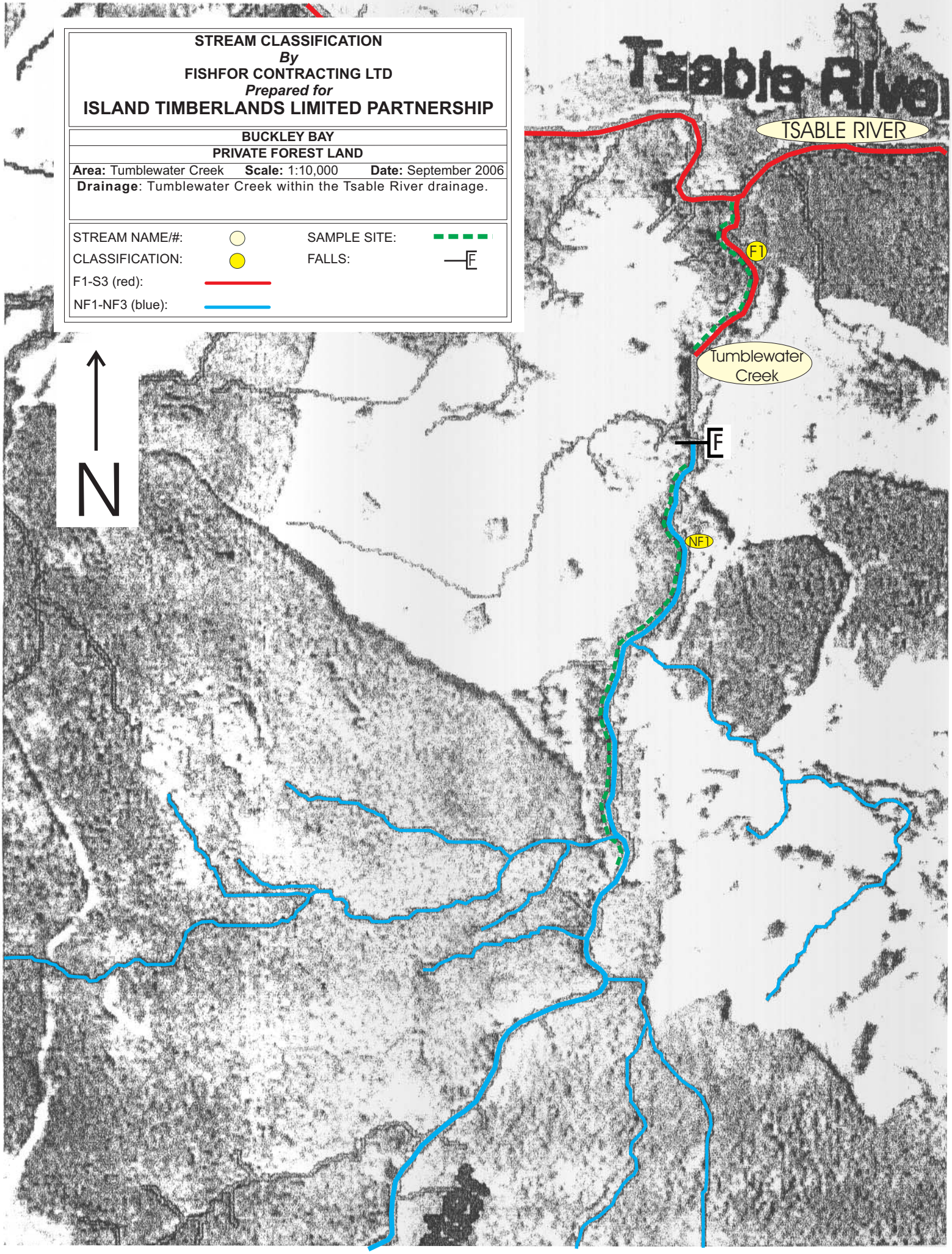
Conclusions
Electrofishing for 880m (1820 electrofishing seconds) did not locate any fish in the reach upstream of the canyon. Sampling conditions were excellent as visibility was good and flows were low to moderate. Rainbow trout were readily located at the confluence with the Tsable River indicating that the electrofisher is a suitable assessment tool for this drainage. Falls near the spur road adjacent to Tumblewater Creek (see map) are a definable barrier to upstream fish passage. Sampling of a headwater lake on the North Fork of Tumblewater Creek by D.R. Clough in 2004 did not locate any fish.

Upstream of the falls located near the spur road, Tumblewater Creek is classified NF1. From the Tsable River confluence to 420m upstream has been classified F1. Between 420m upstream and the located falls, is defaulted to fish-bearing pending confirmation of a definable barrier to fish passage downstream of the located falls.

Photo 1 - Upstream 420m from the confluence with the Tsable River, the stream is within a canyon. Due to the steep canyon walls and the deep pools, the stream could not be walked upstream from this point.

Photo 2 - Adjacent to a spur road off of Tsable Main, on the west side of Tumblewater Creek, +10m high falls were observed. These falls are a definable barrier to upstream fish passage.

Photo 3 – Within the sampled reaches, Tumblewater Creek averages 20m wide with a cobble/boulder substrate. The stream is confined within steep side slopes.


STREAM CLASSIFICATION
By
FISHFOR CONTRACTING LTD
Prepared for
ISLAND TIMBERLANDS LIMITED PARTNERSHIP
BUCKLEY BAY
PRIVATE FOREST LAND
Area: Tumblewater Creek Scale: 1:10,000 Date: September 2006
Drainage: Tumblewater Creek within the Tsable River drainage.
STREAM NAME/#:
CLASSIFICATION:
F1-S3 (red):
NF1-NF3 (blue):
SAMPLE SITE:
FALLS:
N
Tsable River
TSABLE RIVER
F1
Tumblewater Creek
F
NF1