

Acknowledgements

This document has been prepared and endorsed by the North Island – Central Coast Forest Management Leadership Team (FMLT). The FMLT is comprised of licensees, BC Timber Sales (BCTS) and Forests Lands and Natural Resource Operations who work in a professional team environment to resolve local forest sector issues, to communicate direction and guidance, and to provide a forum to voice local issues and to raise them. The document is intended to provide local level guidance for professionals to consider as they operate within a framework of professional accountability and a culture of professional reliance.

Introduction

As described in the **Multiple Resource Value Assessment (MRVA) Ecosystem Based Management (EBM) Area Within the North Island-Central Coast Natural Resource District February 2014**, riparian management was a topic of great interest to the FMLT group. Additional information and presentations were requested by the FMLT membership following the published MRVA report (2014) which led to a detailed look at the riparian data for small streams. As the *Forest Planning and Practices Regulation* (FPPR) for small streams do not specify practices or reserves under *FRPA*, the District Manager as co-chair indicated this is likely a topic for the FMLT to investigate further including the development of guidance on small streams management.

The purpose of this guidance document is to focus on S6 and S5 stream management where reserves are not required under the legislation. The guidance has been developed in conjunction with leading riparian specialists in the Pacific Northwest by analysing the data from recent riparian harvesting trends on the coast by major licensees. From this work, the management emphasis as observed in the field is reflected in the table below. The purpose of this FMLT document is to share these good trends, by providing a guidance update for continued success under professional reliance and *FRPA*. It is further recognized however these outcomes may not be achievable in all situations and circumstances which is why this is presented as “professional guidance” in lieu of an “expectation”.

The S6 streams are ecologically important within a watershed because they conservatively represent 50-85% of the stream length (wetted area) within an entire watershed. They are also highly variable in terms of stream width, volume of flow (L/s), and flow duration (ephemeral, seasonal, perennial). Overall importance may vary according to the connectivity of an S6 or S5 stream to aquatic (fish) environments downstream, transport potential, within a Karst ecosystem, or presence of wildlife (amphibians) within the reach itself may elevate the management emphasis.

In consideration of endorsed work practices in the riparian management area consider the following:

1. The data reviewed indicated the wider the stream the higher the management emphasis was in most cases. This coincides well considering that wider streams increased the potential for erosion and transport of stream bank and stream bed sediments by S6 and S5 streams.
2. The management emphasis is also recognized for streams with debris transport potential or that flow for longer periods of time. It is practical to define perennial streams as streams that flow >90% of the year, seasonal streams flow 20-90% of the year, while ephemeral streams flow <20% of the year.

Non Fish Stream Riparian Management Emphasis				
Flow Character	Stream Width (m)			
	0.1-1.0	1.1-2.0	2.1-3.0	>3.1
Ephemeral	Low	Low	Moderate	Moderate
Seasonal	Low	Moderate	Moderate / High	High
Perennial	Low / Moderate	Moderate	High	High

➤ **Low Management Emphasis**

- Clear-cutting to stream edge will be common practice.
- Falling and yarding away or spanning the channel where practicable.
- Maintaining designated stream crossings.
- Machine-free zones 5 meters wide.
- For all streams, avoid sediment source introductions and CWD inputs into the streams channel. Consider high stumping if necessary to identify the reach during harvesting operations.



Photo 1: Low management emphasis implemented on an ephemeral S6 stream 1.3 meters wide within a draw that is free of significant introduced coarse woody debris inputs during harvesting (downhill yarding) or sediment sources. Some logs retained are spanning the channel. Depending on harvest system and slopes the low management emphasis can be the most challenging.

➤ **Moderate Management Emphasis**

- Increased retention of non-merchantable conifers and deciduous trees **if** present, including shrubs and vegetation layers within 5 meters or greater from the stream bank.
- Maintenance of the machine-free zone 5 meters wide.
- There should be a continued emphasis to minimize or eliminate sediment sources and CWD inputs into the stream channel by falling and yarding/forwarding away or spanning the channel where practicable.
- Prescribing of high stumping along stream bank is recognized as current practice to identify the reach during harvesting.
- Streams with a moderate management emphasis and 2 meters or wider may have debris transport potential that needs to be considered further by a qualified professional.



Photo 2: Moderate management emphasis on a seasonal S6 reach stream 2.3 meters wide with vegetation, short (safe) snags, and non-merchantable stems retained. Post-harvest the stream is free of significant coarse woody debris inputs during conventional harvesting or sediment sources. Management context is this S6 is a direct tributary to a fish bearing S3 stream. Note the high stumping of trees on the right side.

➤ **High Management Emphasis**

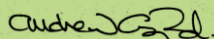
- Mature tree retention is prescribed ranging from low levels of dispersed trees to full buffers of 100% retention within portions of the RMA.
- For **in-block streams** within the NAR the CWD inputs/blockages and sediment introductions are minimized on wider streams or those with debris transport potential by establishing dispersed tree retention along the stream reach (≥ 10 trees per 100 meters) or as prescribed by a professional (i.e.: 30% basal area removal within 10 meters of the stream bank RMA).
- Vegetation and trees retained along the stream bank need to be wind-firm to the degree possible to achieve riparian objectives.
- Falling and yarding/forwarding away or spanning the channel where practicable.
- Prescribing high stumping along stream bank is also recognized as a current practice for in block harvesting.
- For **streams outside** the block NAR 100% mature tree is prescribed within the portions or all of the RMA.
- The management decision is to buffer and locate the stream adjacent or outside of harvest area boundary. Often the stream is co-located within a WTR or retention reserve on the coast.



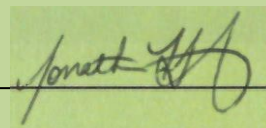
Photo 3: High management emphasis on a seasonal S6 stream 2.1 meters wide located within a WTR reserve designated by the licence holder.



Photo 4: High management emphasis on a perennial S5 stream 6.7 meters wide with debris transport potential and mature retention retained. Management context is the S5 is an in-block stream. The licence holder retained 90% high retention within the RMA on both sides. This stream also contained coastal tailed frogs. The level of management emphasis observed by the licence holder is high.



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