Schedule L

Stream, Wetland, and Lake Riparian Buffers

Table 1 - General Stewardship Measures

Stream Class	RMA	Column 1 RRZ	Column 2 RMZ	Management Strategies
S1 (>20 m)	70	50	20	Protect the integrity of the RRZ.
S2 (≥ 5 - ≤ 20 m)	50	30	20	Protect the integrity of the RRZ.
S3 (≥ 1.5 - < 5.0 m)	40	20	20	Protect the integrity of the RRZ.
S4 (< 1.5 m)	20	10	10	Protect the integrity of the RRZ.
S5 (> 3.0 m & non-fish)	30	10	20	Protect the integrity of the RRZ. See Riparian Area Guidance for considerations in a reserve zone.
S6 (>1.5 - ≤ 3.0 m and is directly connected within 100 meters to a fish stream)	20	10	10	Protect the integrity of the RRZ.
S6	20	0	20	Prioritize for high stump and fall and yard away as stand conditions, falling method, soils and terrain permit considering stream significance.

Wetland Class	RMA	Column 1 RRZ	Column 2 RMZ	Management Strategies
W1 (> 5.0 ha.)	50	10	40	Protect the integrity of the RRZ.
W2 (≥ 1.0 ha. <5.0 ha. CDF, CWH xm, dm, ds)	30	10	20	Protect the integrity of the RRZ.
W3 *(≥ 1.0 ha. <5.0 ha.)* *and* *W4 (≥0.5 ha <1.0 ha. CDF, CWH xm, dm, ds)*	30	5	25	Maintain a 5.0 m machine-free zone adjacent to the wetland. Fall and yard away from the wetland. Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation.
W5	50	10	40	Protect the integrity of the RRZ.
Non-classified wetlands (≥0.1 ha) *(Determine probability of breeding using the "Small Wetland & Amphibian Assessment Field Card")*	5	0	5	**Low probability of breeding:** Maintain a 5.0 m machine-free zone adjacent to the wetland. Fall and yard away from the wetland. Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation in the RMZ.
	13	3	10	**Medium probability of breeding:** Where possible retain a windfirm buffer. Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation in the RMZ.
	15	5	10	**High probability of breeding:** Retain a 5 – 15-meter windfirm buffer. Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation in the RMZ.

Lake Class	RMA	Column 1 RRZ	Column 2 RMZ	Management Strategies
L1B (> 5.0 ha < 1,000 ha)	40	10	30	Protect the integrity of the RRZ.
L2 & L3 (>1.0 ha ≤ 5.0 ha)	30	10	20	Protect the integrity of the RRZ.
L4 (≥0.5 ha ≤1.0 ha.)	30	0	30	Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation in the RMZ.
Non-classified Lakes (≥0.1 ha <0.5)	20	0	20	Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation in the RMZ.

Table 2 - Identified Watersheds

Stream Class	RMA	Column 1 RRZ	Column 2 RMZ	Management Strategies
S1 (> 20 m)	100	70	30	Protect the integrity of the RRZ.
S2 (≥ 5.0 - ≤ 20 m)	60	40	20	Protect the integrity of the RRZ.
S3, NS3 (≥ 1.5 - < 5.0 m)	40	20	20	Protect the integrity of the RRZ. See Riparian Area Guidance for considerations in a reserve zone.
S4 (< 1.5 m)	30	10	20	Protect the integrity of the RRZ.
NS4 (< 1.5 m)	30	0	30	Prioritize for high stump and fall and yard away as stand conditions, falling method, soils and terrain permit considering stream significance. Retain buffer or leave non-merch standing where direct connection to fish or drinking water intake.

Wetland Class	RMA	Column 1 RRZ	Column 2 RMZ	Management Strategies
W1 (> 5.0 ha.)	50	10	40	Protect the integrity of the RRZ.
W2 (≥ 1.0 ha. <5.0 ha. CDF, CWH xm, dm, ds)	30	10	20	Protect the integrity of the RRZ.
W3 *(≥ 1.0 ha. <5.0 ha.)* *and* *W4 (≥0.5 ha <1.0 ha. CDF, CWH xm, dm, ds)*	30	5	25	Maintain a 5.0 m machine-free zone adjacent to the wetland. Fall and yard away from the wetland. Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation.
W5	50	10	40	Protect the integrity of the RRZ.
Non-classified wetlands (≥0.1 ha) *(Determine probability of breeding using the "Small Wetland & Amphibian Assessment Field Card")*	5	0	5	**Low probability of breeding:** Maintain a 5.0 m machine-free zone adjacent to the wetland. Fall and yard away from the wetland. Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation in the RMZ.
	13	3	10	**Medium probability of breeding:** Where possible retain a windfirm buffer. Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation in the RMZ.
	15	5	10	**High probability of breeding:** Retain a 5 – 15-meter windfirm buffer. Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation in the RMZ.

Lake Class	RMA	Column 1 RRZ	Column 2 RMZ	Management Strategies
L1B (> 5.0 ha < 1,000 ha)	50	20	30	Protect the integrity of the RRZ.
L2 (>1.0 ha ≤ 5.0 ha CDF, CWH xm, dm, ds)	40	20	20	Protect the integrity of the RRZ.
L3 (≥ 1.0 ha ≤ 5.0 ha)	30	10	20	Protect the integrity of the RRZ.
L4 (≥0.5 ha ≤1.0 ha.)	30	10	20	Protect the integrity of the RRZ.
Non-classified Lakes	20	0	20	Retain snags, coarse woody debris, immature trees, shrubs, and herbaceous vegetation in the RMZ.

Riparian Area Guidance

Table 1 and 2 serve as a default buffer ruleset. The characteristics of aquatic habitat and associated values are varied and may warrant management that is better suited to a particular site or value. The following considerations represent a set of management factors that may deviate or add to the default buffer rules. These management considerations represent some of the common variables that a Qualified Professional may consider in a site, watershed, or landscape level plan where a process of engagement and approval will occur with the Tla'amin Stewardship Team.

1. Variable Buffers

Consider implementing a variable buffer where additional retention may be placed in a more sensitive or higher value reach of a watercourse. For example, retention or management strategies may include partial harvesting and a basal area approach or may be more effective on one side of the watercourse. Emphasis may be considered at junctions, areas of higher erodibility, in lower gradients, and where alluvial channels are present. For headwater streams, a groundwater discharge approach may be suitable as described in Figure 1.

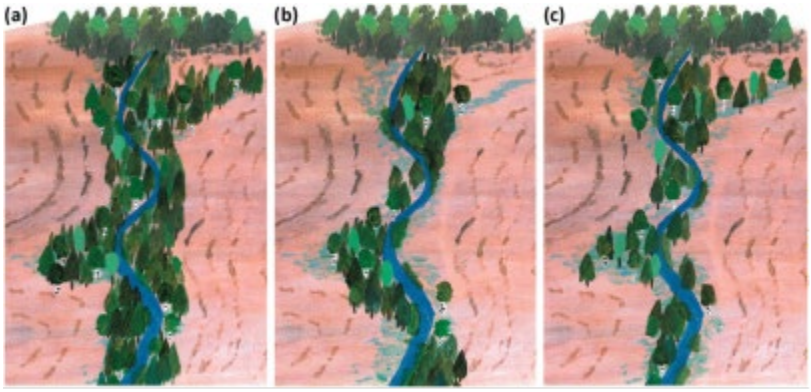

Figure 1: Different riparian buffer designs around a headwater stream in a clear-cut catchment. A hydrologically adapted buffer (HAB) is shown in (a) where buffer width is extended at groundwater discharge hotspots. A buffer which emulates natural disturbance (END) is displayed in (b) where the riparian forest was partially removed all the way to the waters edge. The combination of the two approaches (HAB + END) is shown in (c), where wider buffers (with partial tree removal) are established on groundwater discharge hotspots, and buffers are narrower, partially harvested or cut to the waters edge on less ecologically sensitive areas. (Kuglerová et al., 2016).

2. Management Emphasis

Consider modifying the reserve zone or adding additional reserve in a management zone according to the following emphasis categories:

Higher-emphasis (conservative approaches recommended)

- Fish present or direct connection to fish or drinking water
- Perennial flow
- Temperature sensitive
- Alluvial or semi-alluvial streams
- Multiple streams channels or stream complexes
- Erosion sensitive (low boulder presence and non-bedrock controlled)

Lower-emphasis (less conservative approach allowed as determined by a Qualified Professional)

- No fish present and large distance to fish or drinking water
- Flows directly into the ocean or larger lake with no immediate downstream values
- Intermittent or ephemeral flow
- Non-alluvial streams.
- Intermittent or ephemeral streams found on steeper slopes on thin soils where a reserve may be detrimental to water quality
- Erosion resilient (boulders present or bedrock controlled)

3. Windthrow Management

Consideration to managing windthrow for a riparian reserve and management zone is critical to protecting a watercourse. To protect the integrity of the reserve zone, consider the following:

- Implement windthrow treatments such as topping and pruning. In general, it is recommended to leave a management zone where windthrow is a concern in addition to a windthrow treatment; however, tree crown modification is acceptable in a reserve zone as a general strategy, especially where a smaller buffer is present and the reserve is directly adjacent to the watercourse.
- Implement partial harvesting techniques along the management zone retention edge or leave non-merchantable trees next to the reserve zone.
- In areas of high windthrow risk, design buffers and additional retention using best management practices for windthrow. This may include partial harvesting, tree crown modification, increasing buffer size, and designing stand-level retention around watercourses that are more resilient to windthrow.
- Decrease the fetch length by engineering strategically placed second pass leave areas.