FINAL REPORT

Nelson River
Level 1 Riparian Assessment

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1.0 RIPARIAN ASSESSMENT

1.1 Objectives

Objectives:

- To determine the overall level of impairment of riparian function along Nelson River.
- To determine the nature, location and extent of forest harvest impacts on riparian habitat through RVT delineation and mapping,
- To collect field data which describes the ecological attributes of selected riparian polygons and provides information for assessment of ecological function and restoration potential,
- To develop conceptual prescriptions for RVTs with impaired functioning that will achieve a significant reduction in the ra te of recovery of riparian function, compared to recovery without intervention,
- To develop a map base of riparian ecosystems that can be used to map a number of attributes of riparian ecosystems including RVT, site series, and prioritization for Level 2 visitation and possible sampling and prescription development.

1.2 Overview of Riparian Ecosystems on Nelson River

Riparian ecosystems along Nelson River are located entirely within the CWHws1 biogeoclimatic variant. Riparian ecosystems along lower Nelson River form a complex floodplain-delta mosaic that begins where the River turns north about 3 km from the mouth of the River (Reach 1 - Photos 92036/121 and 92036/119), and ends where it empties into Kitsumkalum Lake. High bench floodplain sites (CWHws1/09) in this area supported very large Old Forest stands of Sitka spruce, western hemlock and western redcedar, which were clearcut harvested to the streambank beginning in the 1960s, and into the 1970s. Floodplain riparian stands along this stretch of Nelson River have regenerated to a mixture of Pole Sapling and Young Forest stands dominated by black cottonwood and red alder, mixed stands that feature these deciduous species with western hemlock, western redcedar and Sitka spruce, and some predominately conifer plantations.

The post-harvesting change from Old Forest to Young Forest and Pole Sapling stands represents a drastic loss of riparian function along this lower reach of Nelson River. Old Forest stands with very large Sitka spruce and western redcedar would have had massive root systems that provided considerable stability to laterally-eroding river banks. When these large trees did get undercut and fall into the River they were very difficult to move and gravel bars and alluvial islands would have developed in association with the fallen trees. Large wood also would have altered

channel flows and widened the stream, diversifying channel morphology (waterfalls and pools), and creating important fish habitat components The Old Forests that occupied the lower reaches of Nelson River before harvesting also provided large habitat structures for grizzly and black bears, as well as necessary habitat for other Old Forest species.

On active low bench ecosystems along this reach of Nelson River, Shrub Herb and Pole Sapling black cottonwood-red alder stands have regenerated. These stands generally have dense shrub and herb communities under the deciduous canopies, along with scattered Sitka spruce, western redcedar and western hemlock. Sparsely vegetated gravel bars also occur along these lower reaches of the River, and are maintained at this structural stage by repeated scouring and deposition.

Proceeding upstream along Reaches 2 and 3, Nelson River downcuts through a glaciofluvial terrace to the Kitsumkalum valley floor, and features a much steeper gradient with some waterfalls. This reach has almost no floodplain adjacent to the channel, and riparian ecosystems are primarily upland site series (CWHws1/06 and 01) on moderate to steep slopes down to the River. Riparian forests along the east side of the river have been recently harvested, and are presently dominated by Shrub Herb and Pole Sapling plantations. Stands on the south side of this reach are Pole Sapling stands regenerated after harvesting in the 1960s. Riparian sites along this reach would have been dominated by Old Forest stands of western hemlock and western redcedar before harvesting. Although not as large as floodplain riparian Old Forest stands below, these ecosystems would also have been comprised of large trees that provided similar aquatic and wildlife ecological functions that are largely lost at this time. In addition, slope stability and filtering functions are almost completely lost on the east side of the gully.

Above this downcut, steep reach, Nelson River crosses a broad glaciofluvial plain and meanders across post-glacial fluvial deposits presently dominated by sedge and shrub fens, interspersed with a few islands of harvested alluvial Old Forest stands (Reach 4). Harvested stands are presently in a Shrub Herb stage with variable conifer stocking. Although there has been some harvesting to the River boundary, riparian function is relatively unaffected by the harvesting, as most riparian vegetation was originally non-forested wetland ecosystems.

In the upper reaches of Nelson River (Reaches 5 and 6) the gradient increases slightly and the River meanders across a narrow floodplain between a series of fans that enter the valley from both the north and south slopes. Many of these fans are unharvested, as the natural stocking of mature trees (mostly Sitka spruce) is low, with the majority of the fans' area dominated by a productive Sitka alder and herb ecosystem. Where there was sufficient stocking the large conifers have been harvested, and cut-over areas are presently dominated by Sitka alder-herb

ecosystems. This removal of the large trees has the potential to destabilize fan landforms, and this has happened on a large fan on the north side of Nelson River in Reach 5 Riparian function is overall only moderately affected by harvesting along these reaches because only a short portion of streambank has been harvested. Large wood is still delivered downslope across the fans to the River, although, as upslope harvesting continues, this large wood will become less abundant.

This overview suggests that the principal area of loss of riparian function is along the lowest reaches of Nelson River, and this area provided the focus for the field sampling. A few sites were also visited above this reach to check plantation stocking.

2.0 METHODS OF ASSESSMENT

2.1 Riparian Ecosystem Delineation, Attributing and Mapping

Colour air photos at a scale of 1:15,000 taken in 1992 were used to assess the present condition of riparian ecosystems. Riparian ecosystem polygons were delineated following the methods of Terrestrial Ecosystem Mapping (RIC 1998). Polygon delineation included what we interpreted to be the active floodplain, or was carried out in a strip about 200 m in width (400m total), where riparian ecosystems were not floodplain ecosystems.

Following an overview flight and field visitation the following attributes were assigned to each map polygon - forest cover mapsheet, forest cover polygon, site series, structural stage, time since harvest, and RVT. Up to 3 ecosystem-structural stage-RVT ecosystems may be recorded in each map polygon.

Map polygons on the air photos were transferred to a digital format using a monorestitution process and then transferred to ArcView™ by Triathlon Mapping Ltd. of Victoria. Ecosystem attributes were linked to map polygons to develop thematic maps for the riparian ecosystem mapping. RVT maps are shown in Appendix 1. Other thematic maps can be generated from the data base, including site series, structural stage, and time since harvesting. The data contained in the attribute files also can provide the basis for developing wildlife habitat suitability models.

2.1.1 Field Procedures

As discussed above, based on the overview flight it was determined that stands in the lowest reaches of Nelson River on the floor of the valley of the Kitsumkalum River had the highest

priority for field visitation. Air photos with polygons delineated were used to plan the sampling and locate the field plots.

In each polygon the RAPP (Koning 2000) Form 2 field form was used to assess and record polygon attributes and riparian ecosystem function observations. Broad classes of the data recorded were Preliminary Information, tree tallies by diameter class, understory data, disturbance indicators, soil descriptions, snags data, and riparian function assessments. Field Form 2 cards completed for the project are included in Appendix 2. Notes were also recorded on potential riparian prescription approaches, wildlife use, flooding and geomorphic observations. Plot locations were pin pricked on the air photo to record the location.

2.1.2 Riparian Vegetation Type (RVT) Delineation

RVTs are delineated in harvested areas to provide an overview of riparian function loss as a result of forest harvesting of riparian ecosystems. The objective in RVT classification is to group riparian ecosystems with roughly the same loss or riparian function, and where similar restoration prescriptions can be developed and applied. The RVTs thus form a basis for assessing overall loss of riparian function in a watershed, and for prioritizing field visitation, detailed data collection, and restoration prescription development. RVT classifications generally follow the structural stage classification described in RIC (1998) for TEM, with additional consideration for distinguishing natural stands from plantations. More information on RVT classification is provided in McLennan and Johnson (1998) and Koning (2000).

3.0 RESULTS: RVT DESCRIPTIONS, LEVEL OF FUNCTIONING, AND PRIORITIES FOR RIPARIAN RESTORATION

3.1 Description of Riparian Vegetation Type (RVT) Classes

Twenty RVT classes have been identified in the Nelson River drainage. Nine were visited and had a full Level 1 Riparian Assessment carried out (see Appendix 5). Two of the RVT classes were identified by ground checks, the remaining 9 RVT classes were identified by air photo interpretation.

missing App. 5

3.1.1 RVT 0

RVT 0 represents road surfaces and ponds. Riparian function classification and restoration opportunities do not apply.

3.1.2 RVT 1

RVT 1 describes gravel bars in the initial stages of succession that have been recently scoured or deposited by continuous flooding. Vegetative cover is less than 5% and the ground surface consists of gravels, cobbles, and coarse sands. Many of the naturally occurring low fluvial benches are highly unstable and maintain annual flooding. Although riparian function has been completely lost, sites continue to experience scouring or deposition by high velocity flows, therefore there is no opportunity for restoration.

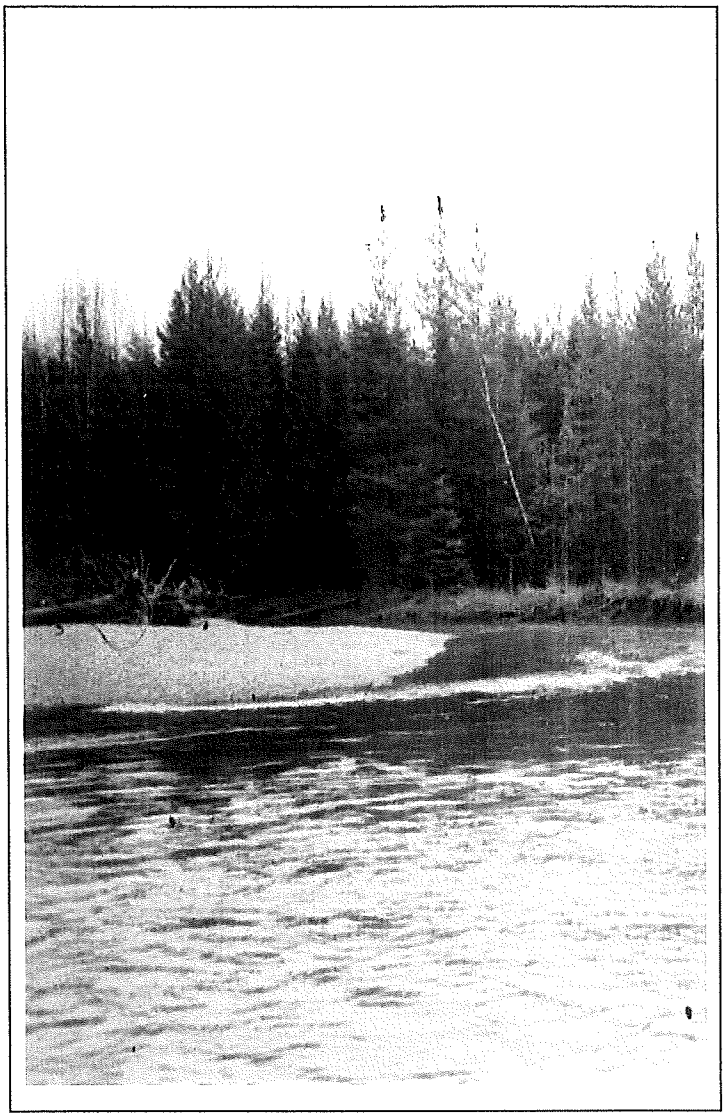


Figure 1: RVT 1 (INIT) – gravel bar 17/11/01; Reach 1

3.1.3 RVT 2

RVT 2 represents natural sedge fen wetlands and cultivated fields. Both of these sites maintain herbaceous ground cover, and riparian function classification and restoration opportunities do not apply.

3.1.4 RVT 3

RVT 3 is a post harvest conifer plantation that is < 20 years old and < 10 m tall, and is generally well stocked. Riparian functions in these sites are highly impaired, and the restoration opportunity is high. Although the stand may be stocked with conifer seedlings, it is essential to maintain a vigorous brushing regime in order to suppress competing vegetation and manage for LWD and high biodiversity values. It may be an option to implement a nurse tree shelterwood silvicultural system by maintaining a brushing regime to include deciduous component within the plantation.

3.1.5 RVT 4

RVT 4 is a Shrub-herb stand of black cottonwood and red alder, with variable stocking of conifer seedlings. This class may occur on post harvest fluvial benches, or hydro right of ways. Riparian function of these stands is highly impaired. Hydro right-of-ways will be maintained as such, and restoration opportunities do not apply. Natural or post harvest shrub/herb communities that occur on higher benches and having stable site conditions will have a high priority for restoration, and should be further evaluated in the field.

3.1.6 RVT 5

RVT 5 is a disclimax Shrub/herb community of red alder and ladyfern. It is found on inundated sites, and avalanche or seepage tracks that intercept the riparian area. These generally are natural occurring sites due to the high water table and constant seepage, and are not considered for restoration. In the upper reaches of the river however, the frequency and/or size of these sites have been increased due to road failures associated with harvesting on the upper slopes of the watershed. Restoration of these communities could not be considered unless the road failures are repaired and hydrological function of the slope is restored.

Figure 2: RVT 5 (SHd3) - Dr/ladyfern 17/11/01; Plot 6b

3.1.7 RVT 6

RVT 6 is a Shrub/herb community dominated by black cottonwood, Sitka alder, and willows. Soils are of the Regosolic order and consist of sand, gravels, and cobbles. As a natural low fluvial bench, these sites will experience frequent over bank flooding and erosion. Riparian function is naturally low; however, there is no opportunity for restoration due to the unstable nature of the site.

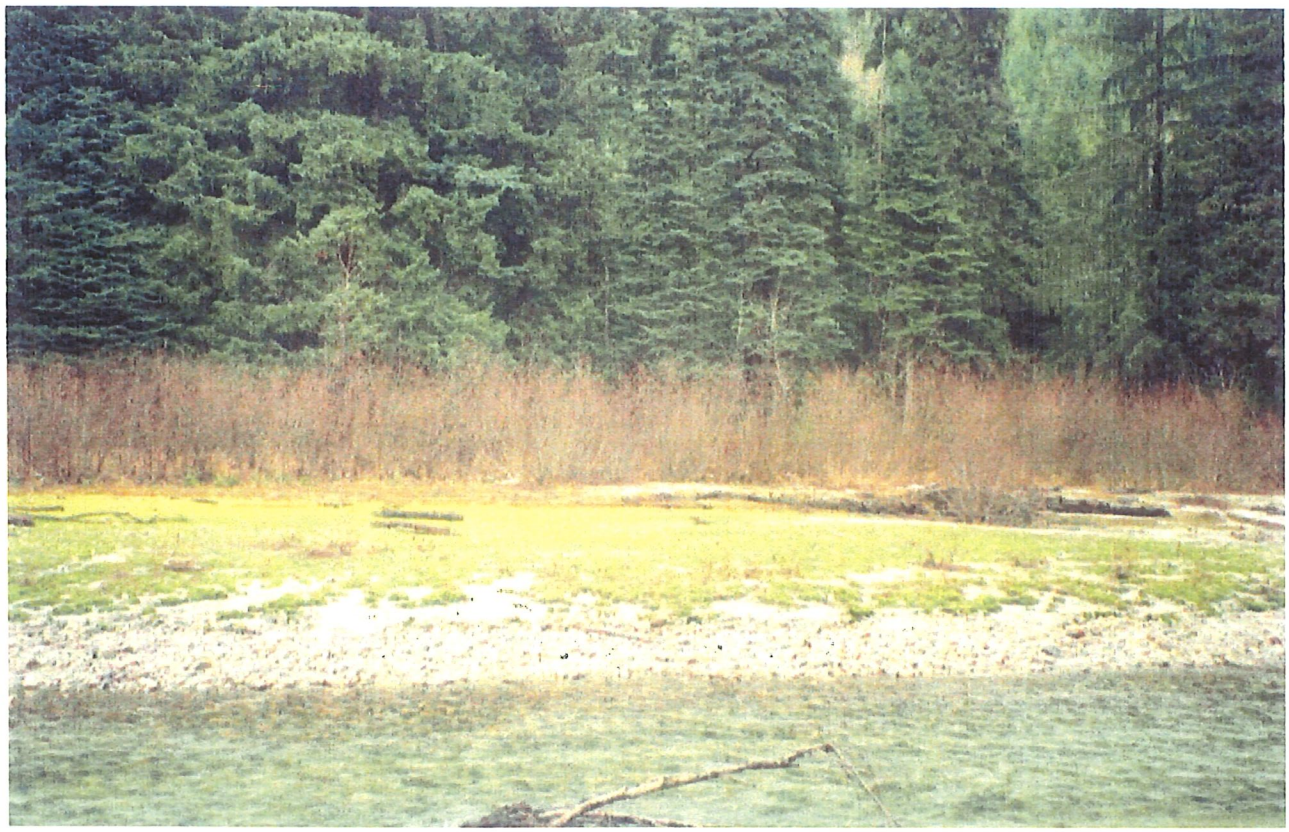


Figure 3: RVT 6 (SHd3) – Natural low fluvial bench 17/11/01; opposite bank of Plot 5

3.1.8 RVT 7

RVT 7 describes a densely stocked post harvest Pole Sapling stand of conifer trees. They are found on upper fluvial benches with sandy soil textures of the Regosolic or Brunisolic soil order. Thinning these stands would shorten the period of LWD development; therefore the opportunity for restoration is high.

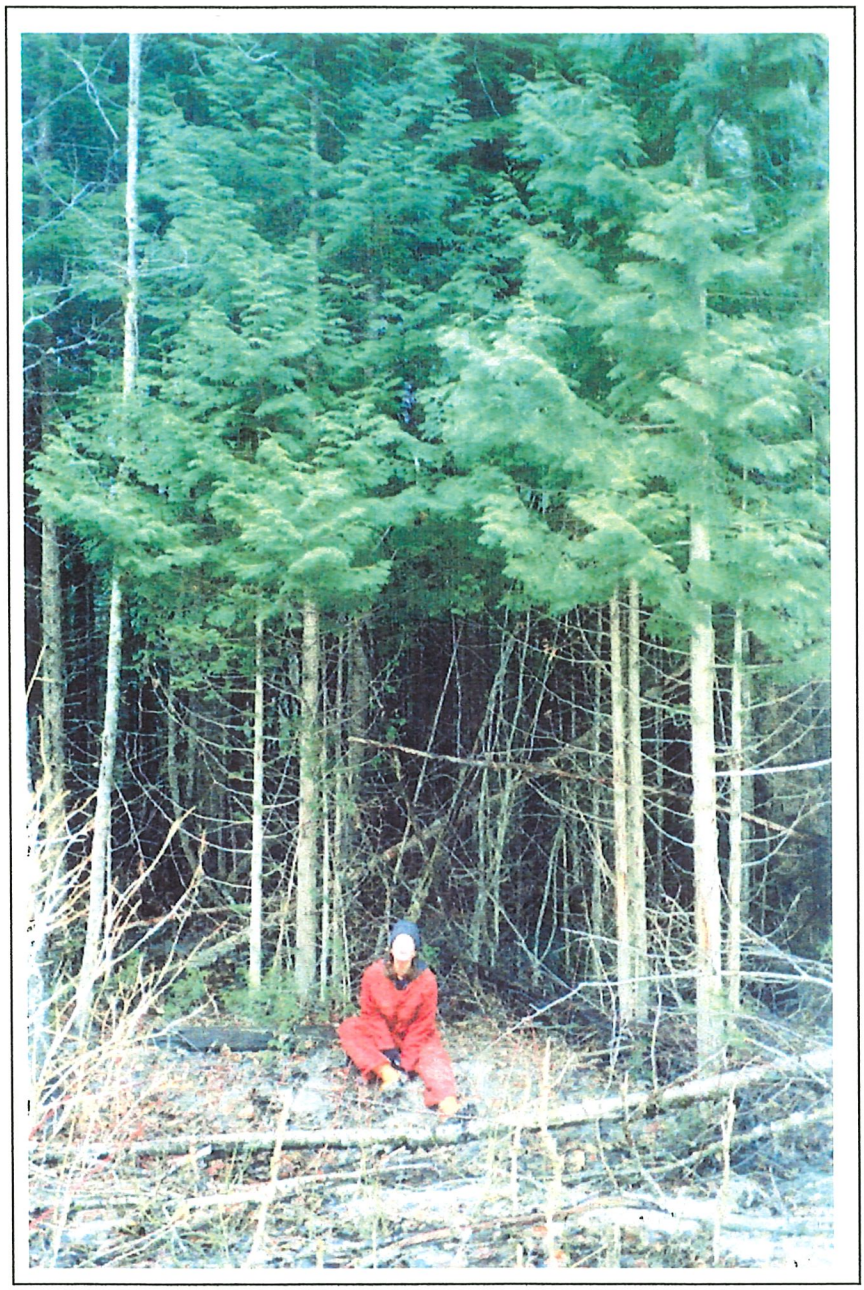


Figure 4: RVT 7 (PSc) – Pole Sapling conifer stand 17/11/01; Plot 7

3.1.9 RVT 8

RVT 8 is a post harvest Pole Sapling stand with patches of dense 20–40 year old conifer trees and open areas that have been recently fill planted with conifer seedlings. At the present time there is a low to moderate level of riparian function, however the fill plant that was carried out in the year 2000 has been successful with little seedling mortality, and is of adequate stocking density. The patches of older conifer trees are of a very high density and thinning these patches would increase the development of LWD sooner, although the benefits of thinning versus the cost and difficult access make these stands a moderate priority for restoration.

Figure 5: RVT 8 (PS(t)c) – Two storied Pole Sapling conifer stand 17/11/01: Plot 5

3.1.10 RVT 9

RVT 9 is a post harvest, mixed deciduous and conifer pole sapling stand. The canopy is dominated by black cottonwood, western hemlock, Sitka spruce and red alder. These stands are often well stocked with conifer and deciduous species in the, however thinning stands for

selected species will have the potential to shorten the period over which LWD is regenerated. These stands have a high opportunity for restoration.

3.1.11 RVT 10

RVT 10 is a Pole Sapling deciduous stand of black cottonwood and red alder, which may occur on bare mineral soil or on very moist and rich sites. This stand type occurs as a natural low fluvial bench where flooding events can be expected. Due to the unstable nature of the site, there is no opportunity for restoration.

3.1.12 RVT 11

RVT 11 is a post harvest Pole Sapling deciduous stand occurring on rich moist sites, that may have variable densities of conifers in the understory. Riparian function is recovering, but is still considered highly impaired. A thinning program to release conifers in the understory, or create openings for cluster plantings of conifer seedlings could increase the regeneration of LWD. These sites have a high restoration opportunity.

3.1.13 RVT 12

RVT 12 represents Young Forest coniferous stands on high fluvial benches. These stands are typically well stocked, and may have areas of higher densities. Stands generally have well expressed dominance of the overstory conifer species. There is an option to juvenile space in areas of higher densities, however the cost of implementing the treatment must be weighed against the benefits gained. The restoration opportunity for these stands is generally moderate.

Figure 6: RVT 12 (YFc) – Young Forest coniferous stand 17/11/01; Plot 6a

3.1.14 RVT 13

RVT 13 is a mixed Young Forest stand where riparian functioning is recovering and the overall impairment is considered moderate. Some areas in these stands are overstocked or contain higher densities of red alder; a thinning program to release conifer trees would accelerate the rate of LWD development. Restoration opportunity for these stands is high.

3.1.15 RVT 14

RVT 14 is a naturally regenerating Young Forest deciduous stand occurring on low and middle benches. These sites are exposed to frequent flooding, and are generally unstable. In most cases there is no opportunity for restoration.

3.1.16 RVT 15

RVT 15 is a post harvest Young Forest deciduous stand that is dominated by black cottonwood and red alder with variable conifer stocking in the understory. Riparian functions are impaired but they are recovering, and the overall impairment is considered moderate. These stands are 25 to 40 years old and would benefit from a thinning program, and/or planting regime that would increase conifer stocking dominance and provide future LWD. Restoration opportunity is considered high in these stands.

3.1.17 RVT 16

RVT 16 represents a mature conifer forest where riparian functions are almost fully recovered, and the overall impairment is low. There is no opportunity for restoration in the stands.

3.1.18 RVT 17

RVT 17 is a mixed deciduous and conifer Mature Forest that may occur as a post harvest stand or a natural community. Riparian functions are nearly restored however, some areas in these stands have higher conifer densities, or conifer trees in the understory of a dominant deciduous canopy. There is a potential to thin and release the conifer trees and increase the rate of LWD development. The opportunity for restoration is considered moderate.

3.1.19 RVT 18

RVT 18 describes a mature deciduous forest of cottonwood and red alder with variable densities of conifer trees in the understory. The riparian function of the stand is recovering, but the rate at which LWD is produced could be increase by thinning to release the conifers in the understory or by group thinning and planting conifers in clusters. There is generally a high opportunity for restoration in these stands.

Figure 7: RVT 18 (MFd) – Mature Forest deciduous stand. 17/11/01; Plot 6a

3.1.20 RVT 19

RVT 19 is an old forest conifer stand that has not been harvested and naturally maintains a high level of riparian function. Restoration opportunity does not apply.

3.1.21 RVT 20

RVT 20 represents mixed deciduous and coniferous old forest stands that have not been harvested and riparian function is unaffected, and restoration opportunity does not apply.

Figure 8: RVT 20 (OFm) – Old Forest mixed stand
17/11/01; Plot 6a

The following table provides a summary description of the RVT classes, the level of riparian function related to large woody debris (LWD), shade, small organic debris (SOD), surface sediment filtering, and bank stability, and a rating of the opportunity for restoration.

Table 1: Total lengths of RVTs by RVT. Degree of overall impairment is also included from Table 2 to provide and assessment of overall riparian impairment.

RVT Class	Total Length (m)	Total Length (km)	% of Streambank Length	Overall Riparian Impairment
RVT0 N/A	0.00	0.00	0.0	N/A
RVT1 INIT	2899.75	2.90	6.4	N/A
RVT2 H2B	1215.83	1.22	2.7	N/A
RVT3 SHc	0.00	0.00	0.0	H
RVT4 SHd1	1516.55	1.52	3.3	H
RVT5 SHd2	13455.65	13.46	29.5	N/A
RVT6 SHd3	1069.39	1.07	2.3	N/A
RVT7 PSc	2838.48	2.84	6.2	M
RVT8 PS(t)c	1688.31	1.69	3.7	M
RVT9 PSm	614.38	0.61	1.3	M
RVT10 PSd1	1547.29	1.55	3.4	N/A
RVT11 PSd2	827.29	0.83	1.8	M
RVT12 YFc	3909.21	3.91	8.6	M
RVT13 YFm	4312.16	4.31	9.5	M
RVT14 YFd1	114.07	0.11	0.3	N/A
RVT15 YFd2	0	0.00	0.0	M
RVT16 MFc	0	0.00	0.0	L
RVT17 MFm	1942.47	1.94	4.3	L
RVT18 MFd	1375.44	1.38	3.0	M
RVT19 OFc	4119.02	4.12	9.0	N/A
RVT20 OFm	2143.34	2.14	4.7	N/A

RVTs 0, 3, 15, and 16 did not occur directly adjacent to the channel.

3.2 Classification and Description of RVTs

A total of 21 RVTs were distinguished along Nelson River (Table 1). For each RVT listed in Table 1 the site series on which it is usually found, a brief description of each RVT, and a summary of riparian function is provided. Overall restoration opportunity is also listed for each RVT. The relative length of each RVT class along Nelson River is noted in Figure 9. The distributions of RVT classes along Nelson River are also shown in Map 1.

Harvested RVTs are included in Young Forest, Pole Sapling or Shrub Herb structural stages because the oldest harvested stands are around 40 years old. All Mature Forest (except MF deciduous stands, which are younger than 40 years) and Old Forest stands along the River are regenerating following natural disturbance, and are thus not included in the assessment of function loss for the River, or for restoration activities. Similarly, naturally regenerated stands younger than the Mature Forest structural stage (RVTs 1, 3, 5, and 13) are not considered impaired. All naturally regenerated stands are in green type in Table 2.

3.3 Impairment of Riparian Function

Although considerable harvesting has taken place over the years in riparian areas along Nelson River, most of the streambank that we surveyed is presently in an unimpaired condition (Figures 9 and 10). The greatest length of impaired streambank is in the Moderate impairment class, and is comprised of coniferous and mixed pole-sapling and young forest stands that have regenerated following harvesting between 1960 and 1970. The stands fully occupy the sites and many functions such as SOD inputs, filtering, and bank stability have partially recovered since harvest. Probably the main impairment in these stands is their inability to produce functional LWD, relatively small root systems for bank stability, and the lack of old growth structures for wildlife habitat. Less than 10% of streambank ecosystems fall into a High impairment class, and these include coniferous and mixed shrub herb plantations where most riparian ecosystem functions have only just begun to recover following harvesting. Low impairment class ecosystems account for less than 5% of streambank length and include mature coniferous and mixed mature forest stands where many functions have totally recovered.

Table 2: Summary of RVT classes, codes, descriptions, level of riparian function (L = low, M = medium, H = high), and rehabilitation opportunity.

RVT No.	Code	CWHws1 Site Series	% of streambank length	Description	Level of Riparian Function					Overall Impairment	Restoration Opportunity
					LWD	Shade	SOD	Filtering	Stability		
0	N/A	RP,PD	0.0	road surface, pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	INIT	09	6.4	recently scoured or deposited gravel bars where vegetation cover is less than 5%.	L	L	L	L	L	N/A	N/A
2	H2b	32, CF	2.7	sedge fens and cultivated fields	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	SHc/HwSsCw(Ba)	07, 01, 06	0.0	Stocked Shrub-herb conifer plantations <20 years old and <10m tall.	L	L	L	L	L	High	***High***
4	SHd1/ActDr/HwSsCw	06, 07 (08)	3.3	Post harvest Shrub-herb stand of black cottonwood and red alder, with variable stocking of conifer seedlings in the understory. May occur on floodplains or Hydro right-of-ways.	L	L	L	L	L	High	***High***
5 (plot4b; poly 27; plot 9; poly 37)	SHd2/Dr/ladyfern	00 (AL)	29.5	Disclimax Shrub-herb red alder stands in backchannel, inundated sites, also at the base of avalanche chutes.	L	L	L	L	L	N/A	N/A
6	SHd3/ActDrWillow	09	2.3	Natural Shrub-herb low fluvial benches dominated Cottonwood, willows, and alders.	L	L	L	L	L	N/A	N/A
7 (plot 7; poly 33)	PSc/Hw(EpDr)	07 (01, 06)	6.2	Stocked, Pole Sapling conifer plantations; 20-40yrs.; dominated by western hemlock, with minor (<25%) components of paper birch and red alder	L	L	M	H	M	Moderate	***High***
8 (plot5; poly 40)	PS(t)c/Hw(SsBa)/ HwSs	07	3.7	Two storied, clustered, Pole Sapling conifer stands of western hemlock, a minor component of Sitka spruce and amabilis fir. Some stands have been fill planted Hw and Ss.	L	L	M	M-H	M	Moderate	***Moderate***

Table 2 (cont.): Summary of RVT classes, codes, descriptions, level of riparian function (L = low, M = medium, H = high), and rehabilitation opportunity.

RVT Class	Code	CWHws1 Site Series	% of streambank length	Description	Level of Riparian Function					Overall Impairment	Restoration Opportunity
					LWD	Shade	SOD	Filtering	Stability		
9	PSm/ActHwSsDr (CwBa)	07 (06)	1.3	Pole Sapling mixed plantations dominated by black cottonwood , western hemlock, Sitka spruce and red alder, with minor components of western redcedar and amabilis fir	L	L	M	M	M	Moderate	*High*
10	PSd1/ActDr	09 (08)	3.4	Naturally regenerated, Pole Sapling deciduous stands of black cottonwood and red alder. scattered understory conifer stocking	L	L	M	M-L	M	N/A	N/A
11	PSd2/ActDr	07 (06)	1.8	Harvest blocks dominated by Pole Sapling deciduous stands of black cottonwood and red alder; variable subcanopy conifer stocking.	L	L	M	M-L	M	Moderate	*High*
12 (plot3; poly 3) (plot6a; poly 30)	YFc/HwSsPl (CwBaEpAct)	07 (06, 01)	8.6	Stocked, Young Forest conifer stands; 40-50 yrs.; dominated by western hemlock Sitka spruce, and lodgepole pine, with minor components of western redcedar, Amabilis fir, Paper birch, and black cottonwood.	L	L	M	M	M	Moderate	*Moderate*
13 (plot2; poly 2)	YFm/ActSsDr(Cw Ba)	07 (06)	9.5	Harvest blocks dominated by Young Forest mixed stands with black cottonwood Sitka spruce, minor Western redcedar and Amabilis fir.	M	M	H	H	M	Moderate	*High*
14 (plot1; poly 1)	YFd1/ActDr	09 (08)	0.3	naturally regenerated, Young Forest deciduous stands of black cottonwood and red alder; scattered understory conifer stocking.	L	L	M	M	M	N/A	N/A
15	YFd2/ActDr/SsCw	07 (06)	0.0	Post harvest Young Forest deciduous stands; 25-40 yrs; dominated by black cottonwood and red alder; variable understory conifer stocking.	L	L	M	M	M	Moderate	*High*

Table 2 (cont.): Summary of RVT classes, codes, descriptions, level of riparian function (L = low, M = medium, H = high), and rehabilitation opportunity.

RVT Class	Code	% of streambank length	Description	Level of Riparian Function					Overall Impairment	Restoration Opportunity
				LWD	Shade	SOD	Filtering	Stability		
16	MFc	0.0	A Mature Forest coniferous stand, 100-250 years old, dominated by Sitka spruce, western hemlock, western red cedar, and a minor component of Amabalis fir; > 75 % conifer.	M	M	M	H	H	Low	N/A
17	MFm/SsActHw(CwBa)/ CwDr	4.3	A Mature Forest mixed stand dominated by Sitka spruce, cottonwood, western hemlock, minor Western redcedar, and Amabilis fir . The understory is comprised of western red cedar and red alder.	M	M	H	H	H	Low	Moderate
18 (plot6c; poly29; plot8; poly35)	MFd/Act(DrCw)/CwDrSs (Hw)	3.0	Harvest blocks dominated by Mature Forest deciduous stands of black cottonwood with minor red alder and Western redcedar. The understory is comprised of Western redcedar, red alder, with minor western hemlock.	M	M	H	M-H	M-H	Moderate	Moderate
19	OFc/SsHwCw(Ba)	9.0	Old Forest conifer stands of Sitka spruce, Western hemlock, Western red cedar, with minor Amabilis fir.	H	H	H	H	H	N/A	N/A
20 (plot4a; poly22)	OFm/ActBaSs/Hw	4.7	Old Forest mixed stands dominated by Amabilis fir, Sitka spruce, and Black cottonwood, with an understory of Western hemlock and Western red cedar.	H	H	H	H	H	N/A	N/A

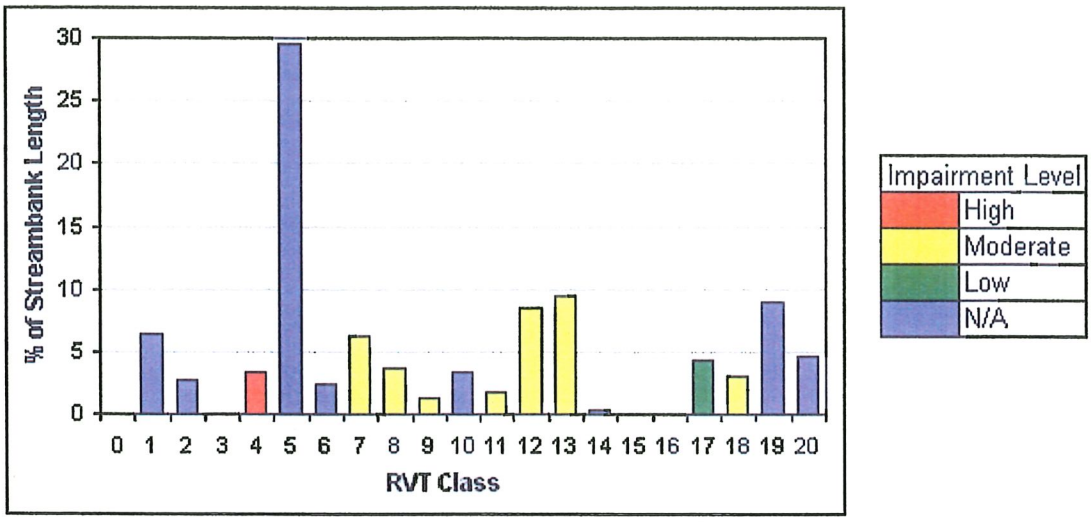


Figure 9: Relative lengths (% of total riparian length) of fourteen RVT classes. For a description of RVTs see Table 2.

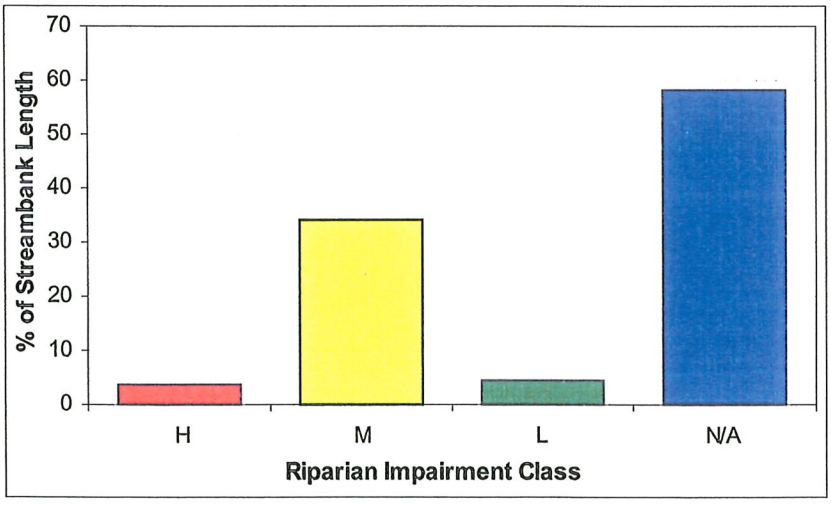


Figure 10: Relative lengths (% of total riparian area) of overall impairment impact classes (N/A is not impacted), as listed in Table 3.

Table 3: Rehabilitation action and objectives for those RVT classes that may require treatment

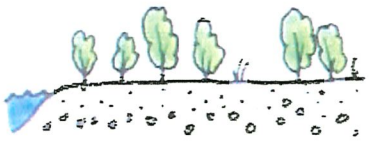
RVT	Scenario	Function impaired	Rehabilitation action/objective	Treatment	Desired Future Condition
 RVT 3: SHc/HwSsCw(Ba)	a post harvest conifer plantation with varying stocking densities	large wood, shade, small organic debris, sediment filtering, bank stability, & structural diversity	fill plant if stocking is exceedingly low. Maintain a vigorous brushing/spacing regime to promote the rapid regeneration of LWD & increase biodiversity values		
 RVT 4: SHd1/ActDr/HwSsCw	post harvest deciduous stand of varying density that has invaded a conifer plantation	large wood, shade, small organic debris, sediment filtering and bank stability	fill or cluster plant with conifers if site is stable; maintain a brushing regime to include deciduous component within the plantation		
 RVT 7: PSc/Hw(EpDr)	densely stocked pole sapling conifer stand on high fluvial bench	large wood, shade, structural diversity, forage for wildlife	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand structural and understory biodiversity		

Table 3 (cont.): Rehabilitation action and objectives for those RVT classes that may require treatment

RVT	Scenario	Function impaired	Rehabilitation action/objective	Treatment	Desired Future Condition
 RVT 8: PS(t)c/Hw(SsBa)/HwSs	dense clusters of 25 yr. old conifers intermixed with fill planted conifer seedlings	large wood, shade, bank stability	juvenile space dense clusters to promote tree growth, the production of large woody debris and larger root mass for bank stability		
 RVT 9:PSm/ActHwSsDr(CwBa)	a post harvest conifer plantation often with high deciduous stocking densities	large wood, shade	juvenile space to focus growth on fewer trees, greater conifer density, production of large woody debris, and increase stand biodiversity		
 RVT 11: PSd2/ActDr	a post harvest plantation overgrown by deciduous species	large wood, shade	juvenile space in groups, cluster plant with conifers and maintain a brushing program to produce large woody debris, and increase stand biodiversity		

Table 3 (cont.): Rehabilitation action and objectives for those RVT classes that may require treatment

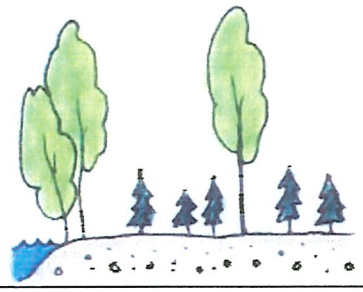
RVT	Scenario	Function impaired	Rehabilitation action/objective	Treatment	Desired Future Condition
 RVT 12: YFc/HwSsPl(CwBaAct)	a well stocked young conifer stand with few areas having higher densities	large wood, shade	higher density areas could be juvenile spaced to promote the production of large woody debris		
 RVT 13: YFm/ActSsDr(CwBa)	an evenly spaced mixed stand with dense stocking of red alder	large wood, shade	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings		
 RVT 15: YFd2/ActDr/SsCw	a young, post-harvest deciduous stand with few or no conifers in the understory	large wood, shade	thin deciduous around conifer trees, and/or juvenile space in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris		

Table 3 (cont.): Rehabilitation action and objectives for those RVT classes that may require treatment

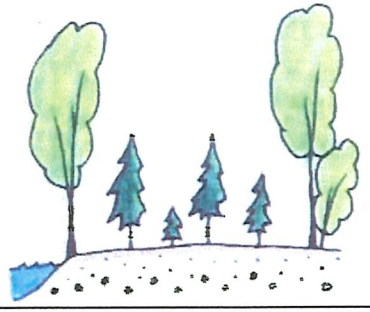
RVT	Scenario	Function impaired	Rehabilitation action/objective	Treatment	Desired Future Condition
 RVT 17: MFm/SsActHw(CwBa)/CwDr	a mixed mature stand with conifer trees in the under story/or high density clusters	large wood, shade	thin clusters of conifer trees to promote growth and development of large woody debris		
 RVT 18: MFd/Act(DrCw)/CwDrSs (Hw)	a mature deciduous stand with conifer trees in understory	large wood	thin deciduous trees to release the conifer species in the under story and/or thin in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris		

Table 5: Priorities for RVT visitation for Level 2 surveys.

Visitation Priority	RVT No.	Code	% of streambank length	Description	Overall Impairment	Restoration Opportunity
1	4	SHd1/ActDr/HwSsCw	3.3	Post harvest Shrub-herb stand of black cottonwood and red alder, with variable stocking of conifer seedlings in the understory. May occur on floodplains or Hydro right-of-ways.	High	***High***
2	3	SHc/HwSsCw(Ba)	0.0	Stocked Shrub-herb conifer plantations <20 years old and <10m tall.	High	***High***
3	11	PSd2/ActDr	1.8	Harvest blocks dominated by Pole Sapling deciduous stands of black cottonwood and red alder; variable subcanopy conifer stocking.	Moderate	***High***
4	9	PSm/ActHwSsDr (CwBa)	1.3	Pole Sapling mixed plantations dominated by black cottonwood , western hemlock, Sitka spruce and red alder, with minor components of western redcedar and amabilis fir	Moderate	***High***
5	7 (plot 7; poly 33)	PSc/Hw(EpDr)	6.2	Stocked, Pole Sapling conifer plantations; 20-40yrs.; dominated by western hemlock, with minor (<25%) components of paper birch and red alder	Moderate	***High***
6	15	YFd2/ActDr/SsCw	0.0	Post harvest Young Forest deciduous stands; 25-40 yrs; dominated by black cottonwood and red alder; variable understory conifer stocking.	Moderate	***High***
7	13 (plot2; poly 2)	YFm/ActSsDr(Cw Ba)	9.5	Harvest blocks dominated by Young Forest mixed stands with black cottonwood Sitka spruce, minor Western redcedar and Amabilis fir.	Moderate	***High***
8	8 (plot5; poly 40)	PS(t)c/Hw(SsBa)/ HwSs	3.7	Two storied, clustered, Pole Sapling conifer stands of western hemlock, a minor component of Sitka spruce and amabilis fir. Some stands have been fill planted Hw and Ss.	Moderate	***Moderate***
9	12 (plot3; poly 3) (plot6a; poly 30)	YFc/HwSsPl (CwBaEpAct)	8.6	Stocked, Young Forest conifer stands; 40-50 yrs.; dominated by western hemlock Sitka spruce, and lodgepole pine, with minor components of western redcedar, Amabilis fir, Paper birch, and black cottonwood.	Moderate	***Moderate***
10	18 (plot6c; poly29; plot8; poly35)	MFd/Act(DrCw)/CwD rSs (Hw)	3.0	Harvest blocks dominated by Mature Forest deciduous stands of black cottonwood with minor red alder and Western redcedar. The understory is comprised of Western redcedar, red alder, with minor western hemlock.	Moderate	***Moderate***

At the Level 2 stage of sampling, stand stocking is determined from a series of plots established in the stand using a systematic random approach. Overstory and understory trees, saplings, and seedlings are counted in diameter classes in 3.99m radius circular plots and averaged over the stand. Details for this sampling are given in Koning (1999). In general, this type of survey should be reserved for those stands where a walk-through has determined that it may be desirable to develop a riparian restoration prescription, i.e. where the stand is on a suitable site series (CWHws1/06, 07), and where it is determined that there will be an important LWD deficit at some time in the future if these measures are not taken. Thinning may also be prescribed to accelerate the rate of recovery of habitat function for species requiring old growth structures, e.g., large trees for nesting and cavity building, such as spotted owl or marbled murrelet. Using this approach areas of the stand with sufficient understory stocking can have release treatments prescribed, and those areas without stocking can be recommended for cluster planting, to achieve a desirable conifer stocking for the stand.

Conifer release treatments under deciduous canopies should strive to remove as few overstory trees as possible and still effectively release suppressed conifers in the understory. As a general rule overtopping deciduous trees should be girdled or felled if they are rooted within 1.5 m of the conifer. In most cases these decisions need to be made in the field and vary with the height of the deciduous crown in relation to the height of the understory trees.

To establish new conifers in unstocked stands it must be borne in mind that the planted trees are being introduced into a very hostile environment, so that successful establishment will require a serious commitment to their regeneration. Subcanopy trees are planted in clusters in gaps created in the deciduous overstory. A general rule is for gaps to have a diameter the same as the mean height of the overstory. The ground is prepared by grub hoe so that the rooting zone is freed of roots, the seedling is planted, and a brush mat is placed over the tree and tacked into place. In many cases seedlings will have to be protected from browsing. Trees per cluster will depend on the opening size and 2 m inter-tree spacing is recommended. Survival surveys and spot checks need to be done at least twice the first year and any overtopping shrubs or herbs manually removed. Browse protection and brush mats should be re-secured as required. Seedlings dying the first year should be replanted at the onset of the second year, and a similar tending regime followed.

3.4.2 Well-Stocked Conifer and Mixed Stands

It is a well-established principle in silviculture that the more growing space a tree has, in particular the larger the crown of the tree, the more rapidly stem diameter will increase. In density control regimes designed to produce lumber, a balance is struck between maximizing

diameter growth, fully occupying the site, and optimizing wood value by preventing the excessive growth of lateral branches. For the objectives of producing LWD on a site as soon as possible, wood quality and complete site occupancy are not required. The objective for thinning regimes for riparian stands is to produce a sufficient number of the largest diameter trees in the shortest time, so thinning regimes reduce stand density more and sooner, compared to density control systems to produce lumber. The production of large lateral branches ('wolf trees') at these low densities is not considered detrimental. In fact, the low densities serve a second purpose of improving the productivity of understory shrubs and herbs and thus improving forage values. On these nutrient rich sites, shrubs produce more berries at the higher light levels that result from wider spacings.

Density control treatments in riparian stands will be the same as juvenile spacing in Shrub Herb stands, pre-commercial thinning in Pole Sapling stands, and a mixture of pre-commercial and commercial thinning in Young Forest stands. The most desirable thinning regimes are best determined using a forest growth and yield model such as TASS (MOF 1989). This permits calibration of the thinning treatment to the age, species composition, and site productivity of the stands targeted for treatment. To use the TASS model effectively it is important to select a mean stand diameter target that will provide functional LWD. For example, on the lower reaches of Nelson River a piece of LWD would need to be at least 100cm in diameter to be functional given the width and transport capacity of the river. A desired target may be 150cm with a minimum diameter of 100cm. On smaller streams a smaller diameter target may produce functional LWD piece size. A series of sample plots similar to those described above for deciduous stands will have to be established in the stand so that a stand table can be constructed, and this data is used to run the TASS simulations. Table 4 shows the results of TASS simulations of different thinning regimes compared to untreated stands, to produce stands with a mean diameter of 75cm (minimum target for spotted owl habitat). The simulations suggest that, for these species on these sites, the thinned stands attain the DBH target 80-150 years before untreated stands. This kind of simulation can help decide whether or not the cost of the treatments is justified in terms of the results achieved, and whether or not a desirable time frame for producing functional LWD can be attained.

Table 4: Results of TASS runs for three treatment scenarios for Polygon 84 (stand 1). Stand age data compares the number of years to reach a target mean diameter of 75 cm.

Spotted Owl Habitat Type	Scenario	UNTREATED	THIN1	THIN2
	TREATMENT DESCRIPTION	• no treatment	• thin now to 250 stems/ha	• thin now to 250 stems/ha; thin again to 125 stems/ha once the Type 2 habitat DBH target (50 cm) has been reached
Type A	Stand Age	280 yrs	200 yrs	130 yrs
	MDLB[1]	6.79 cm	no data	7.82 cm
	CC[2]	100%	100%	88%
Type B	Stand Age	100 yrs	80 yrs	80 yrs
	MDLB	5.63 cm	no data	6.61 cm
	CC	99%	94%	91%

[1] MDLB = mean diameter of the largest branch (cm) [2] CC = % canopy closure

Although larger mean tree diameters can be reached more quickly by drastic thinning operations, caution must be used to ensure that treated stands are not left susceptible to windthrow. Also, with fewer trees on the site the potential for insects or disease to significantly affect stand health is higher. Strive to maximize stand tree diversity while favouring those species that make the best LWD, i.e., western redcedar, and Sitka spruce. Despite the risk of the white pine leader weevil, leave some Sitka spruce. Deciduous species should be retained whenever possible for wildlife values, for soil amelioration, and to maximize tree diversity. A mosaic of patches of variable density within the stand will ensure stand structural diversity.

3.4.3 Priorities for Level 2 Surveys

RVTs to be visited to conduct Level 2 field sampling (Koning 1999, McLennan and Johnson 1998) are listed in order of priority in Table 5. Priorities combine level of impairment with restoration opportunity to identify those stands where riparian restoration will be most effective. For example, stands with a High overall impairment and High restoration opportunity have the highest visitation priority. Within RVTs with the same overall impairment and restoration opportunity priorities are ordered by deciduous-dominated stands ahead of mixed and coniferous stands, and younger structural stages over older structural stages.

The rationale for prioritizing deciduous over coniferous stands assumes that long-term, conifer LWD production is potentially further delayed on deciduous stands, if riparian restoration is not carried out. Younger stands are prioritized over older stands because riparian restoration

activities that reduce stand densities are more effective in younger stands, i.e., desirable old forest functions are replaced over a shorter time period. Also, treatments in Shrub Herb stands are cheaper, so this may help to justify treating these stands first. It could also be argued that older stands (PS and YF) will reach target LWD size sooner, because stand dominants are already larger at the present time. Also, there is potential to create wildlife habitat structures while treating PS and YF stands. These include tree wounding and fungi injections to create snags, piling CWD to create ground habitat structures, and conducting thinning in patchwork of different densities to increase stand structural heterogeneity.

Given this discussion, a relatively equal priority can be assigned to Classes 1 to 7 in Table 5. Other factors will also be important such as access, risk of flooding or erosion, soil trafficability, and general watershed treatment priorities.

3.4.4 Special Management Areas

Special Management Areas (SMAs) have been delineated on Maps 1-3 to identify locations outside the limits of the floodplain boundary that may represent a significant contribution to the downslope loss of riparian function. In general, these boundaries outline abandoned roads through harvested areas on upslope fans, where the roads have caused significant failures and/or changes in the hydrological integrity of the slope. Although technically an upslope issue, the road building has the effect of impacting riparian areas below, and so are included with riparian restoration.

SMA 1 is located in Reach 4, begins in the northwest corner of Map 1, and continues on the northeast corner of Map 2. The boundary follows an abandoned road north of the river at the base of a steep gullied slope. In some areas this has resulted in channeling of upslope flows and consequent erosion of mineral materials to the toe of the slope, and possibly into the channel.

SMA 2 is found on the south side of the river in Reach 5, on the southwest corner of Map 2, and the southeast corner of Map 3. This site includes a major debris flow channel that has breached two upslope, abandoned roads, the lowest of which makes up the management boundary. The sediment erosion and debris flows have been channeled into riparian wetland sites and possibly the stream channel. In general a restoration prescription should target reduced stand densities to increase the rate of landform restabilization.

SMA 3 is located along Reach 5 south of Nelson River on Map 3. As for the other SMAs, road building across a fan has caused the formation of new channels that lead directly to the riparian zone, and possibly into the channel. Restoration efforts should target reduced stand densities to increase the rate of landform restabilization.

SMA 4 is located along Reaches 5 and 6, north of Nelson River, on Map 3. This area is similar to SMA 1, where a road across a fan has caused the formation of new channels that lead directly to the riparian zone, and possibly into the channel. Restoration efforts should target reduced stand densities to increase the rate of landform restabilization.

Appendix 1: RVT maps.

Kitsumkalum Watershed Restoration Program
Nelson River Riparian Assessment

LEGEND

- Plot Locations
- Special Management Area
- Floodplain Boundary
- River Boundary

Visitation Priority

- High
- Moderate
- Low

RVT Class - RVT Code

- 0 - N/A
- 1 - INIT
- 2 - H2b
- 3 - SHc
- 4 - SHd1
- 5 - SHd2
- 6 - SHd3
- 7 - PSc
- 8 - PS(t)c
- 9 - PSm
- 10 - PSd1
- 11 - PSd2
- 12 - YFc
- 13 - YFm
- 14 - YFd1
- 15 - YFd2
- 16 - MFc
- 17 - MFm
- 18 - MFd
- 19 - OFc
- 20 - OFm
- Roads

Natural Riparian Ecosystems are listed in green.

N

March 1, 2002

UTM Projection
NAD83 Datum
UTM Zone 9
TRIM 103I.076/77

508500 509000 509500 510000 510500 511000 511500 512000 512500 513000 513500

6065500 6065000 6064500 6064000 6063500 6063000 6062500

Page 2/3
Page 1/3

West Kalum FSR

1:15000

300 0 300 600 900 1200 1500 1800 2100 Meters

Appendix B6. Riparian Map, page 1/3.

Digital Mapping by
Hydroglyphic Terrain Analysts

Kitsumkalum Watershed Restoration Program
Nelson River Riparian Assessment

LEGEND

- Plot Locations
- Special Management Area
- Floodplain Boundary
- River Boundary

Visitation Priority
- High
- Moderate
- Low

RVT Class - RVT Code
- 0 - N/A
- 1 - INIT
- 2 - H2b
- 3 - SHc
- 4 - SHd1
- 5 - SHd2
- 6 - SHd3
- 7 - PSc
- 8 - PS(t)c
- 9 - PSm
- 10 - PSd1
- 11 - PSd2
- 12 - YFc
- 13 - YFm
- 14 - YFd1
- 15 - YFd2
- 16 - MFc
- 17 - MFm
- 18 - MFd
- 19 - OFc
- 20 - OFm
- Roads

Natural Riparian Ecosystems are listed in green.

N

March 1, 2002

UTM Projection
NAD83 Datum
UTM Zone 9
TRIM 103I.076/77

504000 504500 505000 505500 506000 506500 507000 507500 508000 508500 509000 509500

6066500 6066000 6065500 6065000 6064500 6064000 6063500

Page 3/3
Page 2/3
Page 2/3
Page 1/3

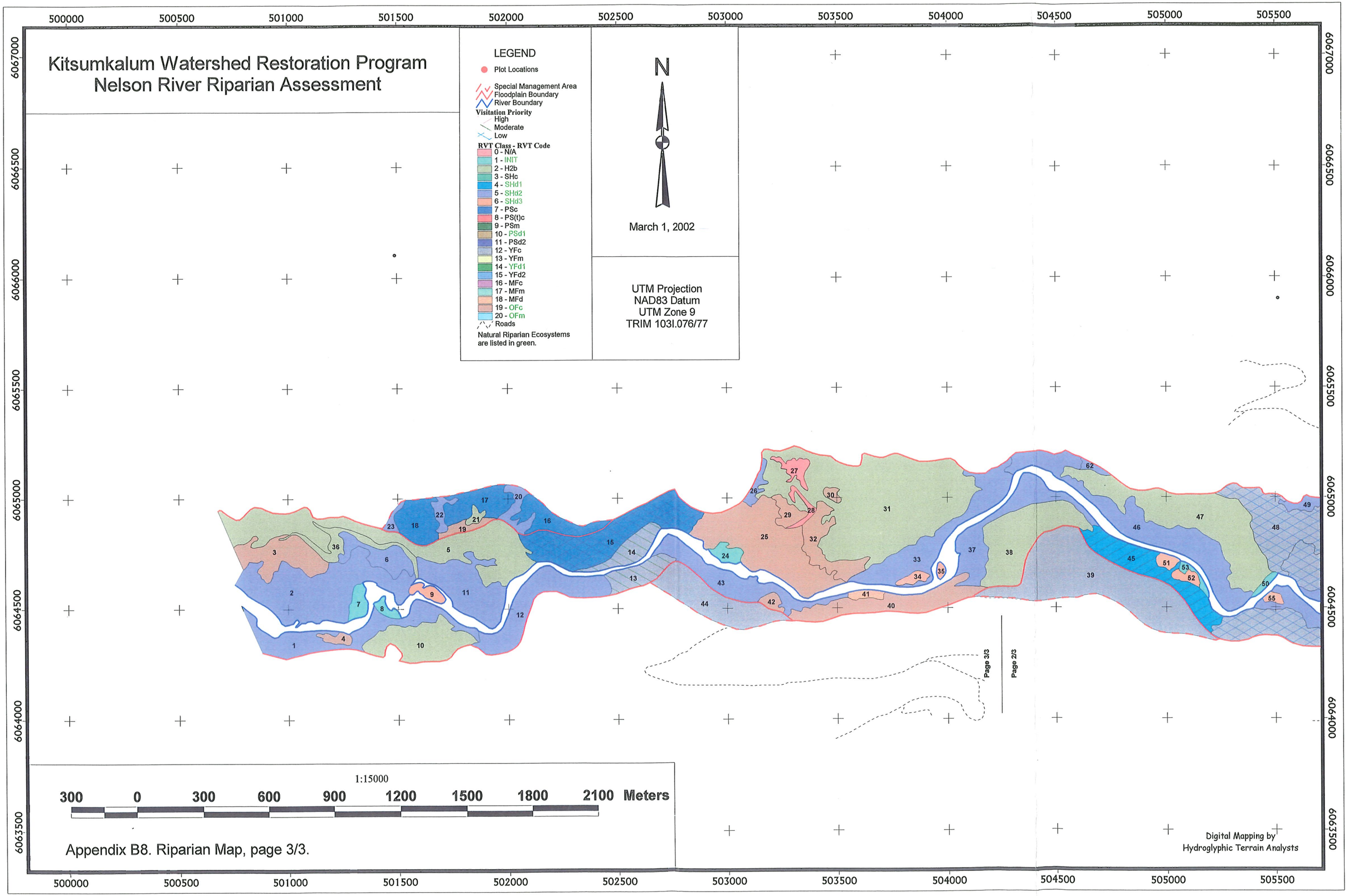
1:15000

300 0 300 600 900 1200 1500 1800 2100 Meters

Digital Mapping by
Hydroglyphic Terrain Analysts

Appendix B7. Riparian Map, page 2/3.

Kitsumkalum Watershed Restoration Program
Nelson River Riparian Assessment



Appendix B8. Riparian Map, page 3/3.

Appendix 2: Field Form 2 cards.

→ Level 1

Form 2. Riparian Assessment Field Form (p1)

POLYGON #:	**1. PRELIMINARY INFORMATION**				
PLOT #:	SS: YFm	CREEK NAME: NELSON R.		REACH #:	
LOCATION: NELSON R. BRIDGE		CREEK ASPECT: VAR.		BEC ZONE: (WHws)	
AIR PHOTO: 92036-119		RVT SLOPE: 0 %		STREAM GRADIENT: 1 %	
MAP #: 103I.076	UTM:	PLOT RADIUS/MULT: 3.99 m/200x (11.28 m/25x)			
Wb: +20 m	CODE STREAM CLASS: S1	RRZ: 50 m	RMZ: 20 m	RMA: 70 m	
DATE: NOV. 1.01	TIME: 13:20	CREW: DM/JF/CH	YR OF HARVEST/REPLANT:		

2. OVERSTOREY

LAYER (DBH)	Tree species stem tally: Sg	Act	Dr	Cw			Total SPH: Conif.	Decid.	Dom. species: HGT (m)	DBH (cm)
1a >22 cm		2						200	Act 26m	32
1b 12.6 – 21.9 cm	3		1	1			100		Ss 10m	15
2 7.5 – 12.5 cm			12					1200	Dr 12	10
3 0.1 – 7.4 cm			3					300	Dr 5	7
4 <1.3 m Height										

COMMENTS: 11.28 1/4 = 11.28

- Could fall Dr. around conifers

Form 2. Riparian Assessment Field Form (p 2)

3. UNDERSTOREY MEAN HEIGHT OF DOMINANT LAYER: 2m m

LAYER	% C	SPECIES	HGT	% C	SPECIES	HGT	% C	SPECIES	HGT
TALL SHRUB (>2 m)	1	CORN STO	2.2	15	VIBE EDU	2.2			
SHORT SHRUB	45	VIBE EDU	1.5	8	RUBU PAR	.75m	1	RIBE LAC	1m
HERB	7	ELYM GLA		15	EQUI ARV		2t	PYRO ASA	
MOSS									

CORN STO 5% @ 1[illegible]

4. PLOT SUMMARY

	TOTAL % C	TOTAL SPH
OVERSTOREY (1a, 1b)	20	300
* UNDERSTOREY	85	

5. SNAGS (>5 m high)

TOTAL/PLOT 0		DBH RANGE —	
SPECIES —	% LWD 5	TTU/ha 0	

6. DISTURBANCE INDICATORS

	Y	N	C		Y	N	C
Beaver activity	✓		2	Flooding	✓		1
Blow down		✓		Fire		✓	
Surface erosion		✓		Slide		✓	
Slope failure		✓		Road		✓	
Bridge/Culvert		✓		Grazing		✓	
Insects/Disease	✓		3	Other			4

7. SOIL HORIZONS

HORIZON	DEPTH	TEXTURE	%CF
C I	0-2	2 (LS lenses)	0
C II	2-40	3	0

8. LEVEL OF FUNCTIONING

LWD:	(L,M,H)	L
SHADE:	(L,M,H)	L
SOD:	(L,M,H)	H
SURF. SED. FILTER:	(L,M,H)	H
CHANNEL STAB:	(L,M,H)	H
BANK STAB:	(L,M,H)	H

1b but [illegible] large river

? ~ L

9. PHOTOS Roll: 3 Frame #s: 1, 2

COMMENTS:

C1: Overbank flooding this year, 2 cm deposit ; Cu. R

C4 Heavily Browsed Dogwood

C2 Beavers have cut Act = LWD 8 trees on ground Act 5% cover, 1a : 1b

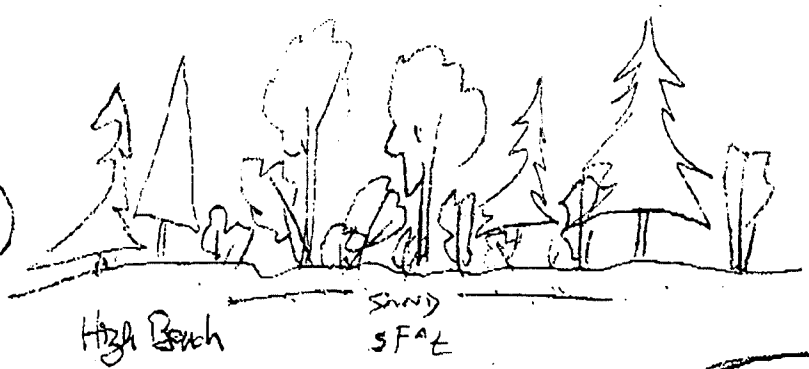
C3 Spruce leader weevils (? [illegible])

- POINT BAR INSIDE OXBOW BEND
- BANK is AGGRADING (opposite side degrading)
- VARIABLE

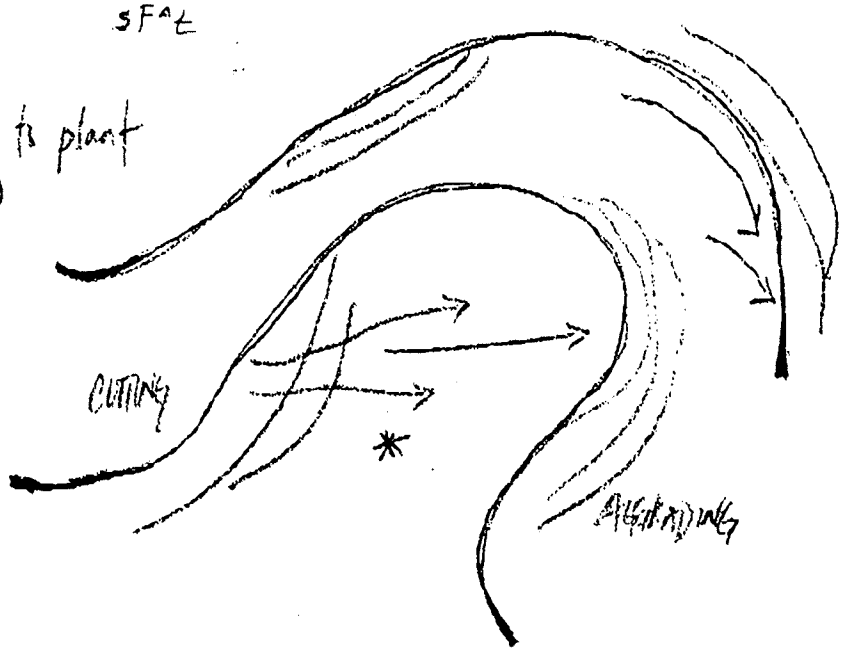
PLOT 1

Even spacing of Conifers

~~MF decid~~
YFmixed
(Act, Dr, Ss, Cw, Bn)



* Sediment deposits too high to plant conifer (low stalking)



* Could fall Dr. around conifers

Level I

Form 2. Riparian Assessment Field Form (p1)

POLYGON #:	1. PRELIMINARY INFORMATION		
PLOT #: 2	SSt: MF	CREEK NAME: NELSON R.	REACH #:
LOCATION: NELSON CR BRIDGE	CREEK ASPECT: 315	BEC ZONE: CWHws1	
AIR PHOTO: 92036-119	RVT SLOPE: 0 %	STREAM GRADIENT: 1 %	
MAP #: 103I.076	UTM:	PLOT RADIUS/MULT: 3.99 m/200x (11.28 m/25x)	
Wb: +20 m	CODE STREAM CLASS: S1	RRZ: 50 m	RMZ: 20 m / RMA: 70 m
DATE: NOV 6 01	TIME: 1400	CREW: DM FCM	YR OF HARVEST/REPLANT:

2. OVERSTOREY

LAYER (DBH)	Ss	Act	Hw	Cw	Dr	Ba	TOTAL SPH Conif.	TOTAL SPH Decid.	DOM. SPECIES HGT (m)	DOM. SPECIES DBH (cm)
1a >22 cm total plot	5	7	2	1		1	250	200	Ss 14	30
1b 12.6 – 21.9 cm 1/4	4			1		1	600		Ss 10	20
2 7.5 – 12.5 cm 1/4	1				3		100	300	Ss 9	12
3 0.1 – 7.4 cm 1/4	1			1	10		200	1000	Dr 9	7
4 <1.3 m Height				[illegible]			1100			

COMMENTS:

– Cw <1.3 m are seriously browsed by moose

Form 2. Riparian Assessment Field Form (p 2)

3. UNDERSTOREY

MEAN HEIGHT OF DOMINANT LAYER: m

LAYER	% C	SPECIES	HGT	% C	SPECIES	HGT	% C	SPECIES	HGT
TALL SHRUB (>2 m)	2	VIBE EDU					2	CRAT DOU	
SHORT SHRUB	15	CORN STO		1	RIBE LAC		3	RUBU PAR	
HERB	10	CORN CAN							
MOSS									

4. PLOT SUMMARY

	TOTAL % C	TOTAL SPH
OVERSTOREY (1a, 1b)	75	1050
UNDERSTOREY	20	

5. SNAGS (>3 m height)

TOTAL/PLOT 1	DBH RANGE 19
SPECIES Conifer	% LWD .5 / TTU/ha 4

6. DISTURBANCE INDICATORS

	Y	N	C		Y	N	C
Beaver activity	✓			Flooding	✓		2
Blow down		✓		Fire		✓	
Surface erosion		✓		Slide		✓	
Slope failure		✓		Road		✓	
Bridge/Culvert		✓		Grazing		✓	
Insects/Disease		✓		Other	✓		1

7. SOIL HORIZONS

HORIZON	DEPTH	TEXTURE	%CF
C I	0-6	SL	0
C II	6-40	LS	0
C III	40+	LS	0

8. LEVEL OF FUNCTIONING

LWD:	(L,M,H)	L
SHADE:	(L,M,H)	L
SOD:	(L,M,H)	M
SURF. SED. FILTER:	(L,M,H)	H
CHANNEL STAB:	(L,M,H)	M
BANK STAB:	(L,M,H)	M

ERODING SIDE

9. PHOTOS: Roll: 3 Frame #s: 4,5,6

COMMENTS:

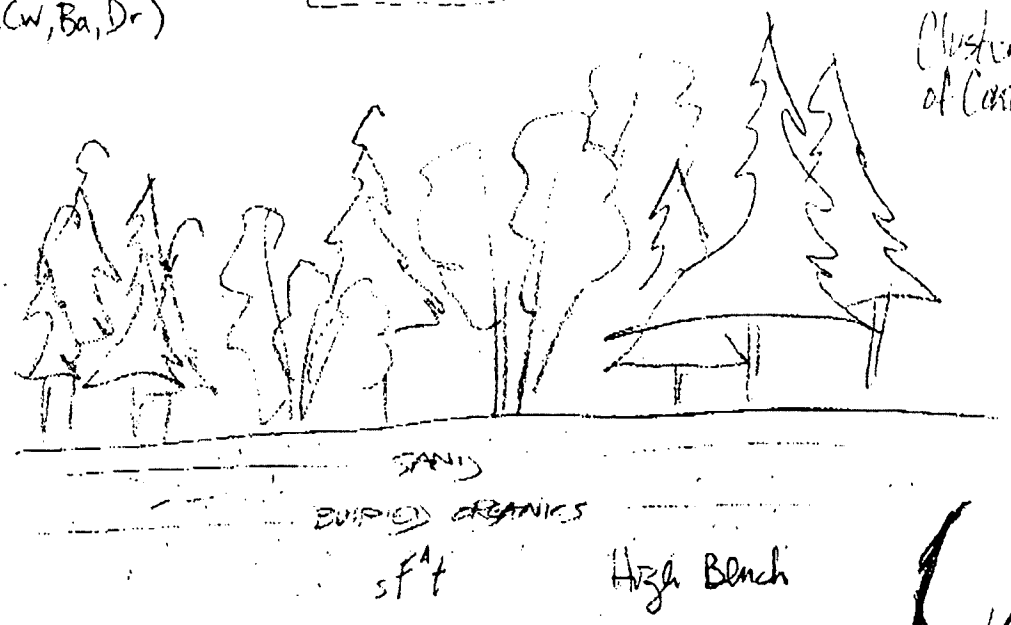
C1: Harvested – Scattered large cottonwood 32m height 40cm diam

C2: Cw R

BROWSED HEAVILY BY MOOSE

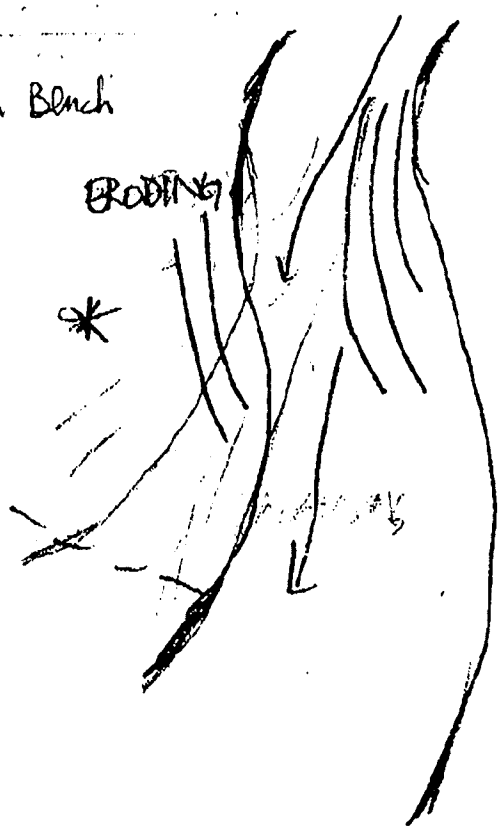
Plot 2

MF mixed
(Ss, Act, Hw, Cw, Ba, Dr)



sFA t

High Bench



* could thin conifer cluster and release to create LWD source

- existence of Hi Water level in stand on tree trunk

→ Level 1

Form 2. Riparian Assessment Field Form (p1)

POLYGON #:	1. PRELIMINARY INFORMATION		
PLOT #: 3	SSt: YF	CREEK NAME: NELSON BRIDGE	REACH #:
LOCATION: NELSON R. BRIDGE	CREEK ASPECT: 45°	BEC ZONE: CWHws1	
AIR PHOTO: 92036 -119	RVT SLOPE: 0 %	STREAM GRADIENT: 1 %	
MAP #: 103I.176	UTM:	PLOT RADIUS/MULT: 3.99 m/200x	11.28 m/25x (circled)
Wb: 20+ m	CODE STREAM CLASS: S1	RRZ: 50 m	RMZ: 20 m — RMA: 70 m
DATE: NOV 16 '01	TIME: 14:30	CREW: DM JE CH	YR OF HARVEST/REPLANT: L64

2. OVERSTOREY

LAYER (DBH)	Hw	Ba	Ss	Cw	Pl	Act	TOTAL SPH Conif.	TOTAL SPH Decid.	DOM. SPECIES HGT (m)	DOM. SPECIES DBH (cm)
1a >22 cm 1/4	3	1	1	1	1	1	700	100	13 Hw	28
1b 12.6 – 21.9 cm 1/4	1				2		300		8 Hw	19
2 7.5 – 12.5 cm 1/4			1				100		6 Ss	11
3 0.1 – 7.4 cm 1/4	1		2				300		4 Ss	7
4 <1.3 m Height 1/4	3		4	1			800			

COMMENTS:

- 1 Birch in 1a layer outside plot

Form 2. Riparian Assessment Field Form (p 2)

3. UNDERSTOREY — MEAN HEIGHT OF DOMINANT LAYER: m

LAYER	% C	SPECIES	HGT	% C	SPECIES	HGT	% C	SPECIES	HGT
TALL SHRUB (>2 m)	1	ALNE ALN							
SHORT SHRUB	1	VACC ALA		9	ALNE ALN		12	RUBU PAR	
HERB	15	LINN BOR		4	CORN CAN		2	PYRO GRA	
MOSS	15	RHYT TRI		12	HYLO SPL				

4. PLOT SUMMARY	TOTAL % C	TOTAL SPH
OVERSTOREY (1a, 1b)	65	1100
UNDERSTOREY	20	X

5. SNAGS (>3 m height)

TOTAL/PLOT	/	DBH RANGE	/
SPECIES	/	% LWD /	TTL/ha /

6. DISTURBANCE INDICATORS

	Y	N	C		Y	N	C
Beaver activity		✓		Flooding		✓	
Blow down		✓		Fire	✓	1	2
Surface erosion		✓		Slide			
Slope failure		✓		Road		✓	
Bridge/Culvert		✓		Grazing		✓	
Insects/Disease		✓		Other			1

7. SOIL HORIZONS

HORIZON	DEPTH	TEXTURE	%CF
Ae	0-5	SL	0
Bm	5-40	FSL	0

8. LEVEL OF FUNCTIONING

LWD:	(L,M,H)	L
SHADE:	(L,M,H)	L
SOD:	(L,M,H)	M
SURF. SED. FILTER:	(L,M,H)	H
CHANNEL STAB:	(L,M,H)	M
BANK STAB:	(L,M,H)	M

Geologic Influence

9. PHOTOS: Roll: 3 Frame #s: 7-8

COMMENTS:

C1 - Harvested — No overbank flooding — D. DYB

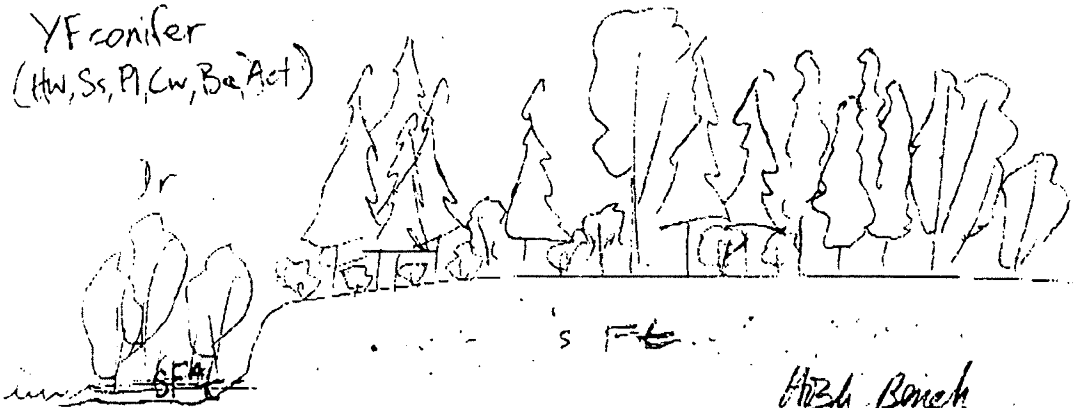
C2 - Slash burned — Fluvial terrace

BROWSED BY MOOSE

PLOT 3

Shimbrus
Thinning to 250 - 125 final thinned stand
~5 trees in 1-11.28 poly

YF conifer
(Hw, Ss, Pl, Cw, Ba, Act)



High Bench

4-5m
at widest Low Bench

Straight Channel

Thinning Risks

- Windthrow, prevailing winds → higher risk / lower risk
- Desired species remaining?
- Leaving enough trees to resist Desease/mortality
- How much acceleration of growth would you gain?
  thin 40 yr old stand - gain ~~100 years target 75 cm~~ drawn
- Well expressed dominance / full crown

* this stand Well expressed dominance

conceptual perception in immature stands SHAHALIS

Level I

Form 2. Riparian Assessment Field Form (p1)

POLYGON #:	1. PRELIMINARY INFORMATION			
PLOT #: 4a	SSI: OF in	CREEK NAME: NELSON RIVER	REACH #:	
LOCATION: NELSON MAIN 8km	CREEK ASPECT: NE + SE		BEC ZONE: CWHws1	
AIR PHOTO: 92037-156	RVT SLOPE: 0 %		STREAM GRADIENT: 1 %	
MAP #: 1031.176	UTM:	PLOT RADIUS/MULT: 3.99 m/200x	(1.28 m/25x)	
Wb: 20+ m	CODE STREAM CLASS: S1	RRZ: 50 m	RMZ: 20 m	RMA: 70 m
DATE: NOV 17 01	TIME: 1100	CREW: JF SJ CM	YR OF HARVEST/REPLANT:	

2. OVERSTOREY

LAYER (DBH)	TREE SPECIES STEM TALLY						TOTAL SPH		DOM. SPECIES	
	Act	Ss	Ba	Hw			Conif.	Decid.	HGT (m)	DBH (cm)
1a >22 cm Total	6	2	4				150	150	Act 32	75
1b 12.6 – 21.9 cm "			3				75			
2 7.5 – 12.5 cm "				1			25			
3 0.1 – 7.4 cm "		2	1	4			175			
4 <1.3 m Height "		1		1			50			

COMMENTS:

Form 2. Riparian Assessment Field Form (p 2)

3. UNDERSTOREY

MEAN HEIGHT OF DOMINANT LAYER: m

LAYER	% C	SPECIES	HGT	% C	SPECIES	HGT	% C	SPECIES	HGT
TALL SHRUB (>2 m)									
SHORT SHRUB	80	OPLO HOR		25	RUBI SPE		3	CORN STO	
HERB	2	ATHY FIL		2	PYRO GRA		3	TIAR UNI	
MOSS	5	MNIU SPI		7	PLAG HED		1	BRAC SP.	

4. PLOT SUMMARY

	TOTAL % C	TOTAL SPH
OVERSTOREY (1a, 1b)	45	375
UNDERSTOREY	95	

5. SNAGS (≥ 5 m height)

TOTAL/PLOT 5 DBH RANGE 15-25

SPECIES Ba, Act % LWD 3 TTL/ha 125

6. DISTURBANCE INDICATORS

	Y	N	C		Y	N	C
Beaver activity	✓			Flooding	✓		1
Blow down	✓			Fire		✓	
Surface erosion		✓		Slide		✓	
Slope failure		✓		Road		✓	
Bridge/Culvert		✓		Grazing		✓	
Insects/Disease	✓		C2	Other		✓	

7. SOIL HORIZONS

HORIZON	DEPTH	TEXTURE	%CF
Ah	03	SL	0
HORIZON	DEPTH	TEXTURE	%CF
C1*	3-18	SSL	0
HORIZON	DEPTH	TEXTURE	%CF
CII	18+	S	20 (gravel)

8. LEVELS OF FUNCTIONING

LWD:	(L,M,H)	M
SHADE:	(L,M,H)	M
SOD:	(L,M,H)	H
SURF. SED. FILTER:	(L,M,H)	H
CHANNEL STAB:	(L,M,H)	H
BANK STAB:	(L,M,H)	H

9. PHOTOS

Roll: Steve Frame #s: 4, 5

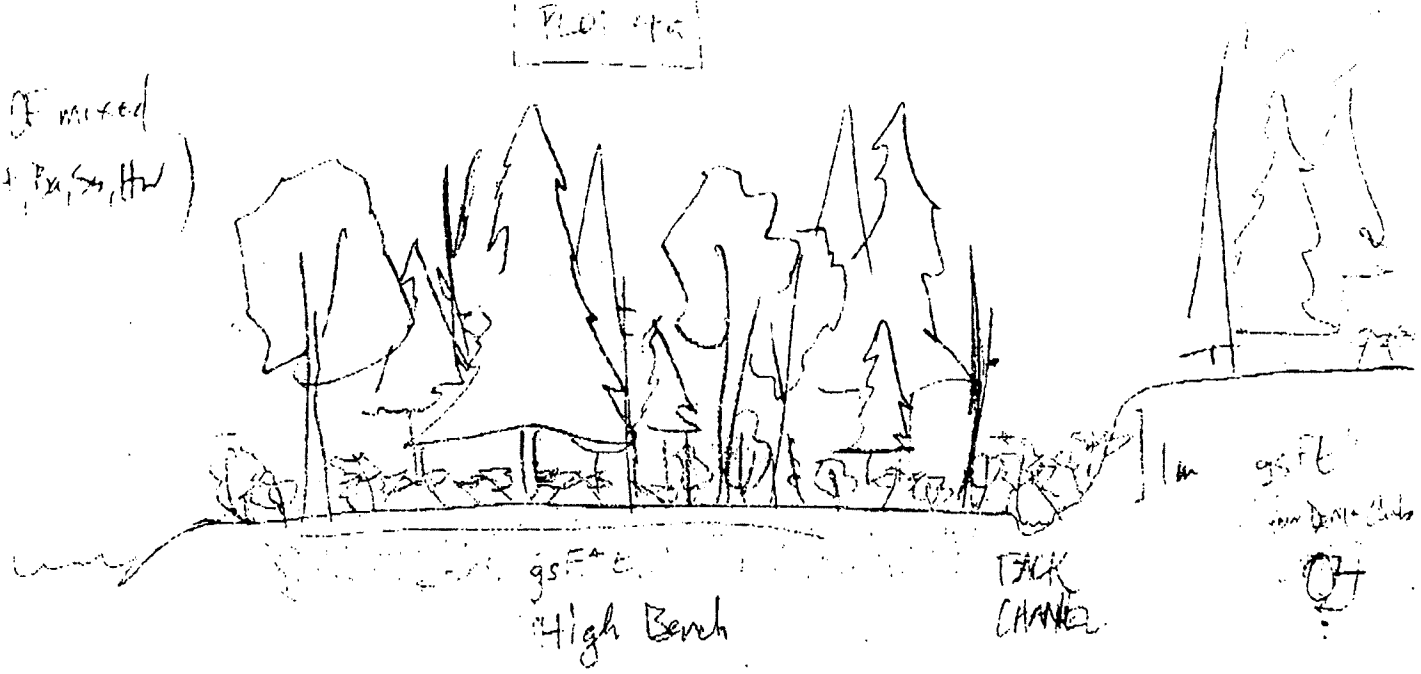
COMMENTS:

C1 - Buried Ah * C1 + buried Ah layers - Cu:R

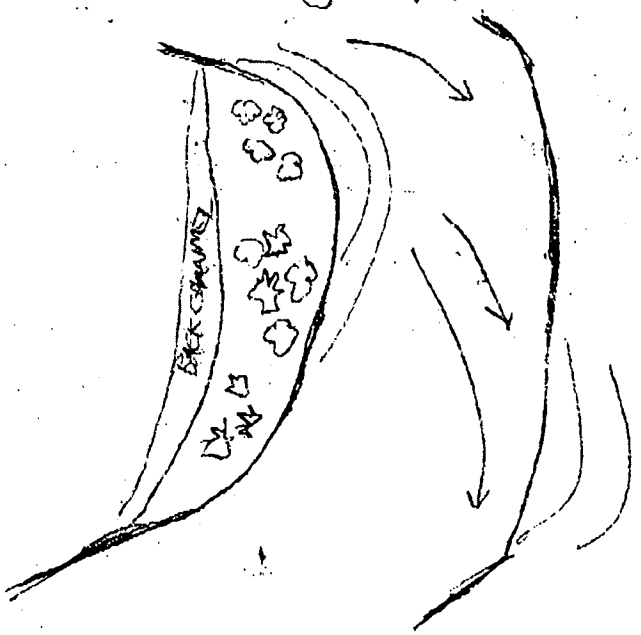
C2 - Possible (dead top)

LIMBER ED(

Plot #16



- North of Plot more decid.
- S of Plot more conifer



* No Pressing required

46 - Alder Lacey-fern inundated

Level 1

Form 2. Riparian Assessment Field Form (p1)

POLYGON #:	1. PRELIMINARY INFORMATION			
PLOT #: 5	SS: P5 1	CREEK NAME: NELSON RIVER		REACH #:
LOCATION: NELSON		CREEK ASPECT: E to SE		BEC ZONE: CWHws 1
AIR PHOTO: 92-037 - 156		RVT SLOPE: 0 %		STREAM GRADIENT: 1 %
MAP #: 1031.176	UTM:		PLOT RADIUS/MULT: 3.99 m/200x	11.28 m/25x
Wb: 20+ m	CODE STREAM CLASS: S1	RRZ: 50 m	RMZ: 20 m	RMA: 70 m
DATE: NOV 17 01	TIME: 1200	CREW: JF, SJ, CM	YR OF HARVEST/REPLANT: H 73 P 79-80, 2000	R: Replant

2. OVERSTOREY

LAYER (DBH)	TREE SPECIES STEM TALLY						TOTAL SPH		DOM. SPECIES	
	Hw	SS	Ba				Conif.	Decid.	HGT (m)	DBH (cm)
1a >22 cm TOTAL	6						125		Hw 20	25
1b 12.6 – 21.9 cm	3		2				125		Hw 18	20
2 7.5 – 12.5 cm	7	2					225		Hw 15	12
3 0.1 – 7.4 cm	9	4					325		Hw 5	7
4 <1.3 m Height	25	3					650		Hw	

COMMENTS:

Form 2. Riparian Assessment Field Form (p 2)

3. UNDERSTOREY

MEAN HEIGHT OF DOMINANT LAYER: m

LAYER	% C	SPECIES	HGT	% C	SPECIES	HGT	% C	SPECIES	HGT
TALL SHRUB (>2 m)									
SHORT SHRUB	2	VIBE EDU		2	RUBU IDEA		4	OPLO HOR	
HERB	5	GEUM MAC		70	CALA CAN		1	DRYO ASS	
MOSS									

2 LONI IN
5 ETIL AN

4. PLOT SUMMARY

	TOTAL % C	TOTAL SPH
OVERSTOREY (1a, 1b)	7	250
UNDERSTOREY	10	

5. SNAGS (≥ 3 m height)

TOTAL/PLOT	DBH RANGE
SPECIES	% LWD / TTL/ha

6. DISTURBANCE INDICATORS

	Y	N	C		Y	N	C
Beaver activity	✓			Flooding	✓		C2
Blow down		✓		Fire		✓	
Surface erosion		✓		Slide		✓	
Slope failure		✓		Road		✓	
Bridge/Culvert		✓		Grazing		✓	
Insects/Disease		✓		Other	✓		C1

7. SOIL HORIZONS

HORIZON	DEPTH	TEXTURE	%CF
Ah	0-1	Si	0
Bm*	1-21	Si	0
Bg	21+	Si	0

8. LEVEL OF FUNCTIONING

LWD:	(L,M,H)	L
SHADE:	(L,M,H)	L
SOD:	(L,M,H)	L
SURF. SED. FILTER:	(L,M,H)	H
CHANNEL STAB:	(L,M,H)	L-M**
BANK STAB:	(L,M,H)	L

slump & Active ero

9. PHOTOS

Roll: Steve A Frame #s: 23 - 25

COMMENTS:

Steve 1: 6-18 river bank

C1: HARVEST in Winter

A: Bm has Buried Ah horizon @ 5cm - 20cm

C2: Cal. Gleysol - strong mottles, slight gley

* Large Source of Sediment

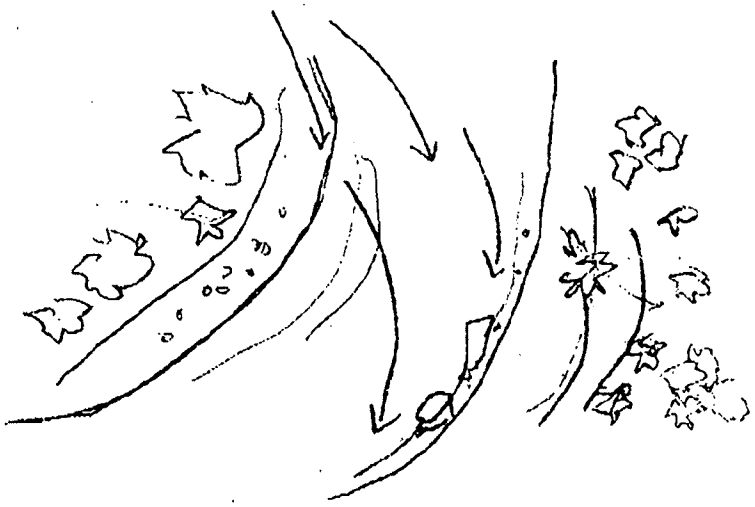
PLOT 5

PSP ~~gaps planted~~

(Hw, Ss, Ba)

Cluster of Hw/Ss

* Stand has been fill planted, could be thinned in clusters.



Level 2

Form 2. Riparian Assessment Field Form (p1)

POLYGON #:	1. PRELIMINARY INFORMATION				
PLOT #: 6a	SSI: YF	CREEK NAME: NELSON RIVER		REACH #:	
LOCATION: NELSON BRIDGE N.		CREEK ASPECT: E to NE		BEC ZONE: CWH wm	
AIR PHOTO: 92036 - 119		RVT SLOPE: 0 %		STREAM GRADIENT: 1 %	
MAP #: 1037.1 76	UTM:	PLOT RADIUS/MULT: 3.99 m/200x		11.28 m/25x	
Wb: 20+ m	CODE STREAM CLASS: S1	RRZ: 50 m	RMZ: 200 m	RMA: 70 m	
DATE: NOV 17 01	TIME: 1430	CREW: JES/CM	YR OF HARVEST/REPLANT: L63		

2. OVERSTOREY

LAYER (DBH) 1/4	TREE SPECIES STEM TALLY						TOTAL SPH		DOM. SPECIES	
	Ep	Cw	Pl	Ss	Hw	Ba	Conif.	Decid.	HGT (m)	DBH (cm)
1a >22 cm	2		5		2		700	200	Pl 20	25
1b 12.6 – 21.9 cm	2	4	4	3	3	3	1700	200	Ep 16	20
2 7.5 – 12.5 cm		1		3			400		Ss 9	12
3 0.1 – 7.4 cm	2			2	2	2	600	200	Hw 6	5
4 <1.3 m Height										

COMMENTS:

Form 2. Riparian Assessment Field Form (p 2)

3. UNDERSTOREY

MEAN HEIGHT OF DOMINANT LAYER: m

LAYER	% C	SPECIES	HGT	% C	SPECIES	HGT	% C	SPECIES	HGT
TALL SHRUB (>2 m)									
SHORT SHRUB	60	Rubus par		1	Huckleberry				
HERB	20	Bracken Fern		3	Cornus can		1	LYCO Pine	
MOSS									

4. PLOT SUMMARY

	TOTAL % C	TOTAL SPH
OVERSTOREY (1a, 1b)	85	2800
UNDERSTOREY	60	

5. SNAGS (≥ 10 cm dbh)

TOTAL/PLOT 2 DBH RANGE 12-20

SPECIES Act % LWD 2 TTT/ha 50

6. DISTURBANCE INDICATORS

	Y	N	C		Y	N	C
Beaver activity	✓		1	Flooding	✓		2
Blow down		✓		Fire		✓	
Surface erosion	*	✓	3	Slide		✓	
Slope failure		✓		Road		✓	
Bridge/Culvert		✓		Grazing		✓	
Insects/Disease		✓		Other	✓		3

7. SOIL HORIZONS

HORIZON	DEPTH	TEXTURE	%CF
C1	0-3	SiL	0
HORIZON	DEPTH	TEXTURE	%CF
Fmb	3-4	O	
HORIZON	DEPTH	TEXTURE	%CF
Bm	4+	FSL	0

8. LEVEL OF FUNCTIONING

LWD:	(L,M,H)	M
SHADE:	(L,M,H)	ML
SOD:	(L,M,H)	M
SURF. SED. FILTER:	(L,M,H)	H (M)
CHANNEL STAB:	(L,M,H)	M
BANK STAB:	(L,M,H)	M

9. PHOTOS

Roll: Steve B Frame #s. 3, 4, 5, 6, 7

COMMENTS:

C1 - Beaver thinning larger Act

C2 - 3 m water line evidence on trees. Flood this year

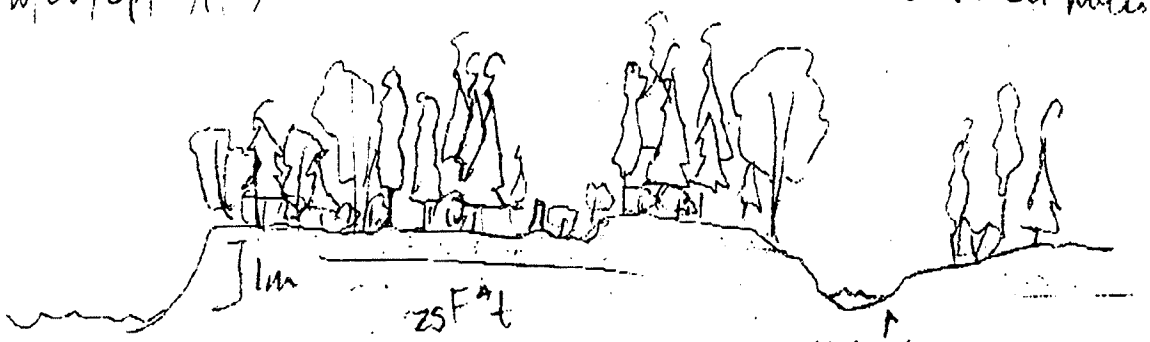
C3 - numerous channels flowing through polygon - eroding laterally

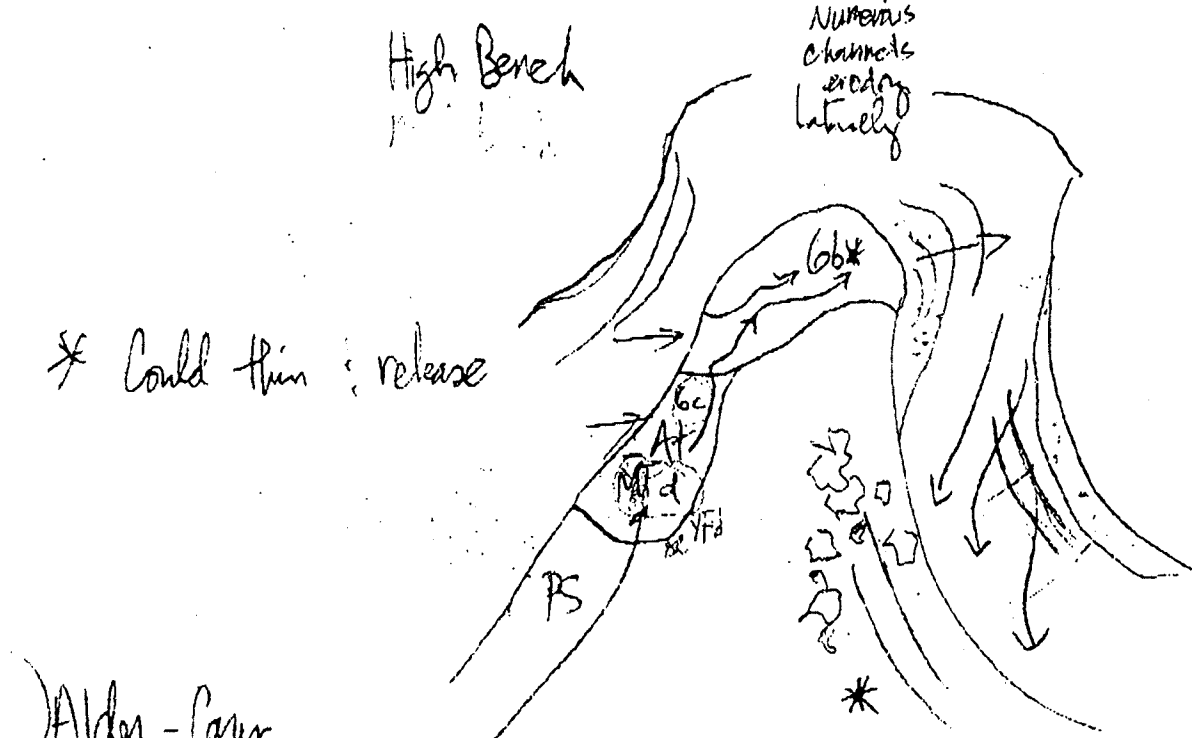
Plot 6a

– Patches of Dense

– Trees & Stumps on raised microsites

YFc
(Hw, Cw, Ep, Ss, Pl)





* Could thin ; release

6b. Alder - Carex Cross flow

ac. YFd (6c.

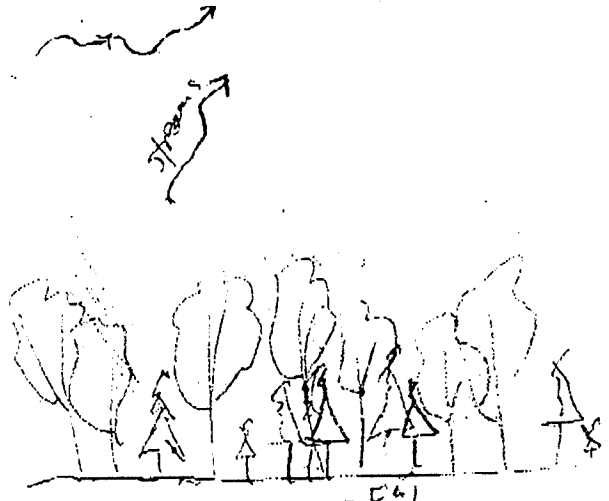
(MFd w/ Conifer understory

Few Conifer in understory

over bank Flow Photo 15 Steve B.

* thin for Conifer Release ; (increase diam. of Act)

– Overbank Flooding 1 foot mark on trees



Level 1

Form 2. Riparian Assessment Field Form (p1)

or YFd

See plot 6 for more notes on back

POLYGON #:	1. PRELIMINARY INFORMATION				
PLOT #: 6	SSt: YFd	CREEK NAME: NELSON RIVER		REACH #:	
LOCATION: NELSON BRIDGE N.		CREEK ASPECT: NNE		BEC ZONE: CWHws1	
AIR PHOTO: 12036		RVT SLOPE: 0 %		STREAM GRADIENT: 1 %	
MAP #: 103F.176	UTM:		PLOT RADIUS/MULT: 3.99 m/200x		1 (28 m/25x)
Wt: 20 m	CODE STREAM CLASS: S1		RRZ: 50 m	RMZ: 20 m	RMA: 70 m
DATE: Nov 7 01	TIME: 15:30	CREW: JF, SJ, CM	YR OF HARVEST/REPLANT: L63		

2. OVERSTOREY

LAYER (DBH) (1/4)	TREE SPECIES STEM TALLY						TOTAL SPH		DOM. SPECIES	
	Act	Dr	Cw	Ss			Conif.	Decid.	HGT (m)	DBH (cm)
1a >22 cm	5							500	Act 30	22
1b 12.6 – 21.9 cm	2	2	1				100	700	Act 15	18
2 7.5 – 12.5 cm	3	3	1				100	600	Dr	10
3 0.1 – 7.4 cm	3	2	2	2			400	500	Dr	7
4 <1.3 m Height			8	1			900			

COMMENTS:

Form 2. Riparian Assessment Field Form (p 2)

3. UNDERSTOREY

LAYER	% C	SPECIES	HGT	% C	SPECIES	HGT	% C	SPECIES	HGT
TALL SHRUB (>2 m)									
SHORT SHRUB									
HERB									
MOSS									

MEAN HEIGHT OF DOMINANT LAYER: m

4. PLOT SUMMARY

	TOTAL % C	TOTAL SPH
OVERSTOREY (1a, 1b)	75	1300
UNDERSTOREY	20	

5. SNAGS (>5m height)

TOTAL/PLOT	DBH RANGE
SPECIES	% LWD TTU/ha

6. DISTURBANCE INDICATORS

	Y	N	C		Y	N	C
Beaver activity	✓			Flooding	✓		
Blow down		✓		Fire		✓	
Surface erosion	✓			Slide		✓	
Slope failure		✓		Road		✓	
Bridge/Culvert		✓		Grazing		✓	
Insects/Disease		✓		Other		✓	

7. SOIL HORIZONS

HORIZON	DEPTH	TEXTURE	%CF
C 1	1-40	B	
HORIZON	DEPTH	TEXTURE	%CF
HORIZON	DEPTH	TEXTURE	%CF

8. LEVEL OF FUNCTIONING

LWD:	(L,M,H)	M
SHADE:	(L,M,H)	M
SOD:	(L,M,H)	H
SURF. SED. FILTER:	(L,M,H)	H
CHANNEL STAB:	(L,M,H)	L
BANK STAB:	(L,M,H)	L

9. PHOTOS Roll: Steve B. Frame #s: 15

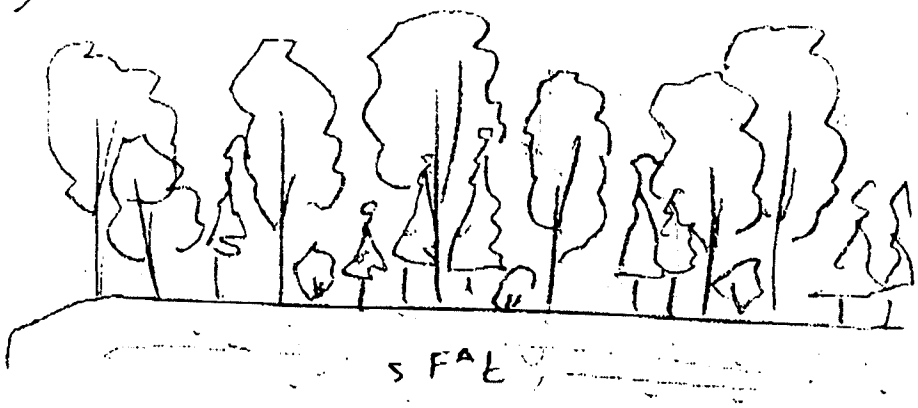
COMMENTS:

Cw, Reg

YF-MEd
(Act, Dr, Cw, Ss)

Not to scale

few conifer in understory



High bench

* thin for conifer release
(↑ increase diameter of Act)

- OK bank flooding
1 foot mark on trees

→ Level I

Form 2. Riparian Assessment Field Form (p1)

POLYGON #:	1. PRELIMINARY INFORMATION				
PLOT #: 7	SSt: PSc	CREEK NAME: NELSON RIVER		REACH #:	
LOCATION: NELSON BRIDGE N		CREEK ASPECT: NW		BEC ZONE: CWHWS 1	
AIR PHOTO: 92036-119		RVT SLOPE: 0 %		STREAM GRADIENT: 1 %	
MAP #: 103I.076	UTM:		PLOT RADIUS/MULT: 3.99 m/200x 11.28 m/25x		
Wb: 20+ m	CODE STREAM CLASS: S1		RRZ: 50 m	RMZ: 20 m	RMA: 70 m
DATE: NOV17/01	TIME: 1630	CREW: JF, SJ, CM	YR OF HARVEST/REPLANT: L63		

2. OVERSTOREY

LAYER (DBH) 1/4	Ep	Hw	Cw	Ba	Dr	Act	TOTAL SPH Conif.	TOTAL SPH Decid.	DOM. SPECIES HGT (m)	DOM. SPECIES DBH (cm)
1a >22 cm	3	3			1		300	400	Dr 28	32
1b 12.6 – 21.9 cm	1	4					400	100	Hw 20	15
2 7.5 – 12.5 cm	1	5					500	100	Hw 7	10
3 0.1 – 7.4 cm		2					200		Hw 5	5
4 <1.3 m Height			1				100		Cw 1	2

(Tree species stem tally columns: Ep, Hw, Cw, Ba, Dr, Act)

EP 25 6 90cm

COMMENTS:

Initial stages of Young forest (some section of poly is more PSc) – Still thinning

Form 2. Riparian Assessment Field Form (p 2)

3. UNDERSTOREY — MEAN HEIGHT OF DOMINANT LAYER: m

LAYER	% C	SPECIES	HGT	% C	SPECIES	HGT	% C	SPECIES	HGT
TALL SHRUB (>2 m)									
SHORT SHRUB									
HERB									
MOSS									

4. PLOT SUMMARY

	TOTAL % C	TOTAL SPH
OVERSTOREY (1a, 1b)	80	1200
UNDERSTOREY	10	

5. SNAGS (>5 m height)

TOTAL/PLOT —	DBH RANGE —		
SPECIES —	% LWD —	TTL/ha —	

6. DISTURBANCE INDICATORS

	Y	N	C		Y	N	C
Beaver activity	✓			Flooding	✓		
Blow down		✓		Fire		✓	
Surface erosion	✓		|	Slide		✓	
Slope failure		✓		Road		✓	
Bridge/Culvert		✓		Grazing		✓	
Insects/Disease		✓		Other		✓	

7. SOIL HORIZONS

HORIZON	DEPTH	TEXTURE	%CF
Cg	40+	S	0

8. LEVEL OF FUNCTIONING

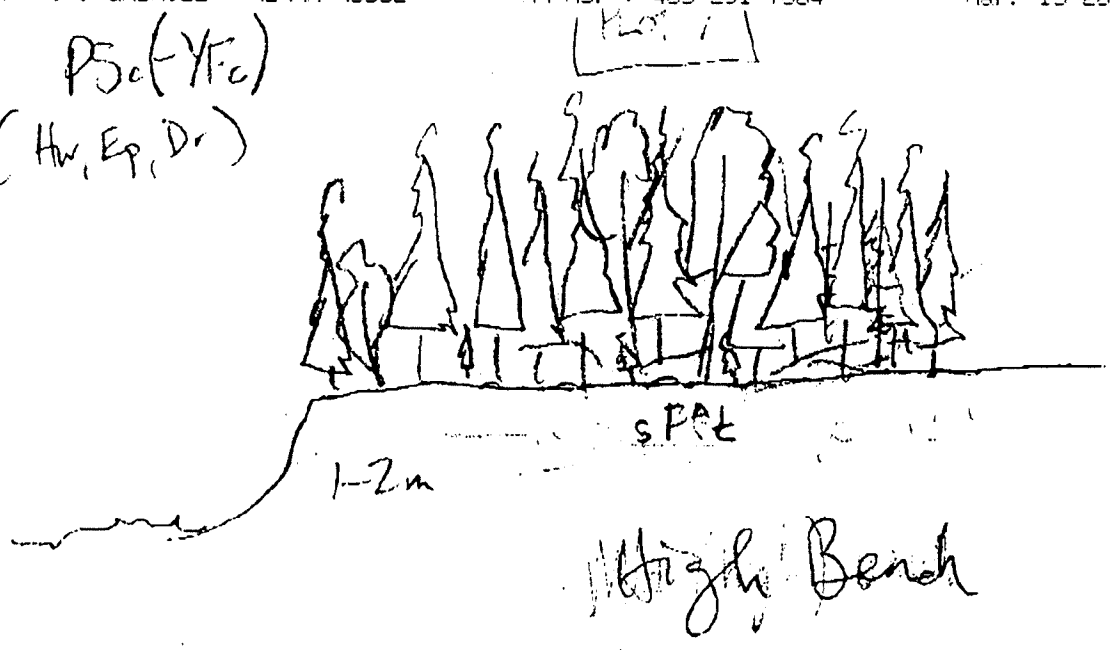
LWD:	(L,M,H)	L
SHADE:	(L,M,H)	L – M
SOD:	(L,M,H)	M
SURF. SED. FILTER:	(L,M,H)	H
CHANNEL STAB:	(L,M,H)	L
BANK STAB:	(L,M,H)	L

9. PHOTOS: Roll: Frame #s:

COMMENTS:

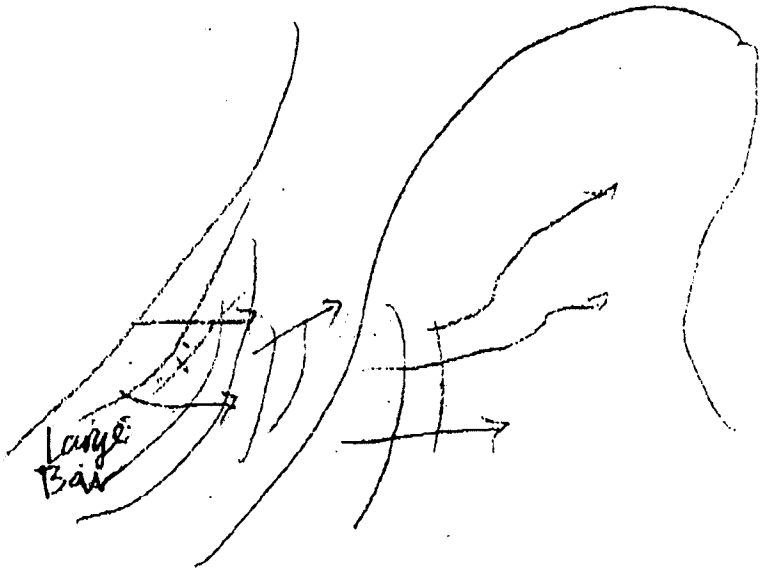
Cl – Small channels running through plot

PSc(-YFc)
(Hw, Ep, Dr)



High Bench

* Thin



See lo... But Moister

Level 1

Form 2. Riparian Assessment Field Form (p1)

OR YFd ?

1. PRELIMINARY INFORMATION

POLYGON #:			
PLOT #: 8	SS#: MFd	CREEK NAME: NELSON RIVER	REACH #:
LOCATION: NELSON BRIDGE N	CREEK ASPECT: N to W		BEC ZONE: CWHws1
AIR PHOTO: 92036 - 119	RVT SLOPE: 0 %		STREAM GRADIENT: 1 %
MAP #: 103I.076	UTM:	PLOT RADIUS/MULT: 3.99 m/200x	11.28 m/25x
Wb: 20± m	CODE STREAM CLASS: S1	RRZ: 50 m	RMZ: 20 m / RMA: 70 m
DATE: NOV 17 '01	TIME: 12:00	CREW: JF SJ CM	YR OF HARVEST/REPLANT: ~58

2. OVERSTOREY

LAYER (DBH)	Act	Ep	Cw	Ss	Dr	Ba	TOTAL SPH Conif.	TOTAL SPH Decid.	DOM. SPECIES HGT (m)	DOM. SPECIES DBH (cm)
1a >22 cm	2							200	30 Act	35
1b 12.6 – 21.9 cm		1	1		2		100	300	15 Cw	17
2 7.5 – 12.5 cm			2		3		200	300	9 Cw	10
3 0.1 – 7.4 cm			3	1		1	500		4 Cw	3
4 <1.3 m Height			3				300			

COMMENTS:

Cedar < 3 m are dying
Balsam Class 3 are dying
Some alder self thinning
Act - Height to Ø ratio is poor compared to 40 m high Act @ 70 Ø

Form 2. Riparian Assessment Field Form (p 2)

3. UNDERSTOREY — MEAN HEIGHT OF DOMINANT LAYER: m

LAYER	% C	SPECIES	HGT	% C	SPECIES	HGT	% C	SPECIES	HGT
TALL SHRUB (>2 m)	2	SAMBRAC							
SHORT SHRUB	25	OPLOHOR		30	CORNSTO		10	LONIINV	
HERB									
MOSS									

Rubus Par

4. PLOT SUMMARY

	TOTAL % C	TOTAL SPH
OVERSTOREY (1a, 1b)	80	600
UNDERSTOREY	70	

5. SNAGS (>3 m height)

TOTAL/PLOT 2	DBH RANGE 20-25	
SPECIES Act	% LWD 2	TTL/ha 50

6. DISTURBANCE INDICATORS

	Y	N	C		Y	N	C
Beaver activity	✓			Flooding	✓		
Blow down		✓		Fire		✓	
Surface erosion	✓			Slide		–	
Slope failure		✓		Road		✓	
Bridge/Culvert		✓		Grazing		✓	
Insects/Disease		✓		Other	✓		4

7. SOIL HORIZONS

HORIZON	DEPTH	TEXTURE	%CF
C1	0-20+	S	0

8. LEVEL OF FUNCTIONING

LWD:	(L,M,H)	L-M
SHADE:	(L,M,H)	L
SOD:	(L,M,H)	H
SURF. SED. FILTER:	(L,M,H)	M
CHANNEL STAB:	(L,M,H)	VAR
BANK STAB:	(L,M,H)	"

ERODI L-M ... " Depos...

9. PHOTOS: Roll: Steve R. Frame #s: 19-23

COMMENTS:

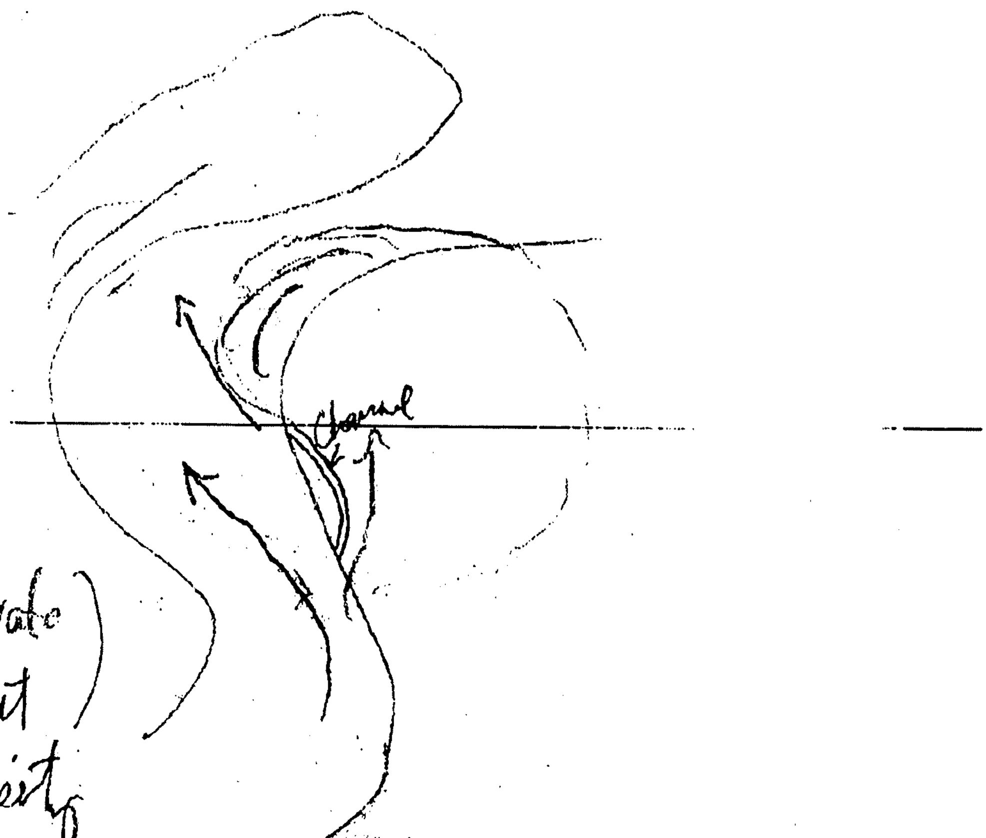
C1 Moose Browse

* ALDER ... Fern — @ Bridge: unvegetated

SAME AS PLOT 6c
MFd(A-T(Pr)Cw)/CwDrSs(Hw)
BUT MOISTER

PLOT 8

Conifer in clusters small or single V. wide spd



* Thin Decid?
(to Release & Accelerate Act Dim on it)
* an adequate density
— Over bank flooding

Plot 9 - Alder-ladyfern inundated

Appendix 3: Table B-1.

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
6	1	SHd2	5	S1	nil	avalanche,inundation	N/A		75803.79	7.58	N/A - Natural ecosystem
6	2	SHd2	5	S1	nil	avalanche,inundation	N/A		141281.01	14.13	N/A - Natural ecosystem
6	4	OFc	19	S1	nil	inundation	N/A		6129.33	0.61	N/A - Natural ecosystem
6	5	H2b	2	S1	nil	inundation	N/A		163111.96	16.31	N/A - Natural ecosystem
6	7	INIT	1	S1	nil	inundation	N/A	regular inundation and scouring	10376.75	1.04	N/A - Natural ecosystem
6	8	INIT	1	S1	nil	inundation	N/A	regular inundation and scouring	5513.34	0.55	N/A - Natural ecosystem
6	9	SHd3	6	S1	nil	inundation	N/A	regular inundation and scouring	8140.16	0.81	N/A - Natural ecosystem
6	11	SHd2	5	S1	nil	avalanche,inundation	N/A		72555.39	7.26	N/A - Natural ecosystem
5,6	12	SHd2	5	S1	nil	avalanche,inundation	N/A		72333.14	7.23	N/A - Natural ecosystem
5	13	YFc	12	S1	L58-61	fan	moderate		27591.44	2.76	higher density areas could be juvenile spaced to promote the production of large woody debris
5	14	YFc	12	S1	L58-61	fan	moderate		26585.77	2.66	higher density areas could be juvenile spaced to promote the production of large woody debris
5	15	PSc	7	S1	L59		low		109358.59	10.94	
5	24	INIT	1	S1	nil	inundation	N/A	regular inundation and scouring	9709.45	0.97	N/A - Natural ecosystem
5	25	OFc	19	S1	nil	inundation	N/A		136205.51	13.62	N/A - Natural ecosystem

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
5	32	OFc	19	S1	nil	inundation	N/A	permanent inundation	37853.01	3.79	N/A - Natural ecosystem
5	33	SHd2	5	S1	nil	inundation	N/A		87176.87	8.72	N/A - Natural ecosystem
5	35	SHd3	6	S1	nil	inundation	N/A	regular inundation and scouring	2477.44	0.25	N/A - Natural ecosystem
5	36	H2b	2	S1	nil	inundation	N/A		24407.37	2.44	N/A - Natural ecosystem
5	37	SHd2	5	S1	nil	inundation	N/A		66309.05	6.63	N/A - Natural ecosystem
5	40	OFc	19	S1	nil		N/A		66657.70	6.67	N/A - Natural ecosystem
5	41	MFd	18	S1	nil	inundation	N/A		6000.59	0.60	thin deciduous trees to release the conifer species in the under story and/or thin in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris
5	43	SHd2	5	S1	nil	inundation	N/A		64923.33	6.49	N/A - Natural ecosystem
5	45	SHd1	4	S1	L58		high		67381.09	6.74	fill or cluster plant with conifers if site is stable; maintain a brushing regime to include deciduous component within the plantation.
5	46	SHd2	5	S1	nil	inundation	N/A		127478.44	12.75	N/A - Natural ecosystem
5	48	YFc	12	S1	L57-59/P63	fan	low		91241.64	9.12	higher density areas could be juvenile spaced to promote the production of large woody debris
5	50	INIT	1	S1	nil	inundation	N/A	regular inundation and scouring	3985.96	0.40	N/A - Natural ecosystem
5	51	MFd	18	S1	nil	inundation	N/A		5625.19	0.56	thin deciduous trees to release the conifer species in the under story and/or thin in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
5	53	INIT	1	S1	nil	inundation	N/A	regular inundation and scouring	4686.88	0.47	N/A - Natural ecosystem
5	54	YFc	12	S1	L58/P67	fan	low		108638.07	10.86	higher density areas could be juvenile spaced to promote the production of large woody debris
5	55	MFd	18	S1	nil	inundation	N/A		3620.37	0.36	thin deciduous trees to release the conifer species in the under story and/or thin in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris
5	56	SHd2	5	S1	nil	inundation	N/A		50441.69	5.04	N/A - Natural ecosystem
5	57	SHd2	5	S1	nil	inundation	N/A		16923.98	1.69	N/A - Natural ecosystem
5	58	SHd2	5	S1	nil	inundation	N/A		14812.43	1.48	N/A - Natural ecosystem
5	59	YFc	12	S1	L57-59/P63	fan	low		71232.73	7.12	higher density areas could be juvenile spaced to promote the production of large woody debris
5	60	OFc	19	S1	L57-59/P63	fan	low	20% partially logged	11051.04	1.11	N/A - Natural ecosystem
4	63	YFc	12	S1	L57-59	fan	moderate	high stocking	36996.16	3.70	higher density areas could be juvenile spaced to promote the production of large woody debris
4	64	SHd2	5	S1	nil	inundation	N/A		3272.27	0.33	N/A - Natural ecosystem
4	65	YFc	12	S1	L57-59	fan & floodplain	moderate	higher priority b/c of location on unstable fan	48224.75	4.82	higher density areas could be juvenile spaced to promote the production of large woody debris
4	66	OFc	19	S1	nil	inundation	N/A		4646.19	0.46	N/A - Natural ecosystem
4	67	SHd2	5	S1	nil	inundation	N/A		63828.71	6.38	N/A - Natural ecosystem
4	69	SHd2	5	S1	nil	fan	N/A		9628.28	0.96	N/A - Natural ecosystem
4	71	PSc	7	S1	L57-59	fan	moderate	higher priority b/c of location on unstable fan	9641.73	0.96	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
4	72	SHd2	5	S1	nil	inundation	N/A		12178.10	1.22	N/A - Natural ecosystem

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
4	73	SHd2	5	S1	nil	avalanche	N/A		3230.84	0.32	N/A - Natural ecosystem
4	74	YFc	12	S1	L56-57	fan	low		36431.06	3.64	higher density areas could be juvenile spaced to promote the production of large woody debris
4	77	H2b	2	S1	nil	inundation	N/A		26626.62	2.66	N/A - Natural ecosystem
4	78	SHd2	5	S1	nil	inundation	N/A		7084.03	0.71	N/A - Natural ecosystem
4	79	SHd2	5	S1	nil	fan	N/A		14797.83	1.48	N/A - Natural ecosystem
4	81	YFc	12	S1	L57-59	fan	low	high stocking	43558.23	4.36	higher density areas could be juvenile spaced to promote the production of large woody debris
4	82	YFc	12	S1	L57-59	fan	low	high stocking	9948.55	0.99	higher density areas could be juvenile spaced to promote the production of large woody debris
4	83	MFd	18	S1	nil	inundation	N/A		7726.60	0.77	thin deciduous trees to release the conifer species in the under story and/or thin in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris
4	87	SHd2	5	S1	nil	inundated	N/A		35762.34	3.58	N/A - Natural ecosystem
4	89	OFm	20	S1	nil	beaver activity, blowdown, overbank flooding, possible leader weevil	N/A		23112.83	2.31	N/A - Natural ecosystem
4	90	YFc	12	S1	L57-59	fan	low		34095.54	3.41	higher density areas could be juvenile spaced to promote the production of large woody debris
4	91	SHd2	5	S1	nil	avalanche	N/A		35344.65	3.53	N/A - Natural ecosystem
4	99	PS(t)c	8	S1	L73/ P79-80/fillP00	beaver activity, subsurface flooding	moderate	slump and active bank erosion, channel runoff	42112.91	4.21	juvenile space dense clusters to promote tree growth, the production of large woody debris and larger root mass for bank stability

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
4	100	H2b	2	S1	nil	inundation	N/A		22508.23	2.25	N/A - Natural ecosystem
4	109	PS(t)c	8	S1	L73/P79-80/fillP00	beaver activity, floodplain	moderate	fill-planted, slump/active bank erosion, channel runoff	213635.29	21.36	juvenile space dense clusters to promote tree growth, the production of large woody debris and larger root mass for bank stability
4	111	SHd1	4	S1	L73/P79-80	floodplain	high		185985.09	18.60	fill or cluster plant with conifers if site is stable; maintain a brushing regime to include deciduous component within the plantation.
4	112	OFc	19	S1	nil	floodplain	N/A		13503.02	1.35	N/A - Natural ecosystem
4	113	SHd2	5	S1	nil	inundation	N/A		7134.05	0.71	N/A - Natural ecosystem
4	114	OFc	19	S1	nil	inundation	N/A	beaverdam flooded, many dead trees	40690.38	4.07	N/A - Natural ecosystem
4	115	H2b	2	S1	nil	inundation	N/A		27761.60	2.78	N/A - Natural ecosystem
4	124	PSc	7	S1	L61	fan	low		16993.18	1.70	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
4	129	SHd2	5	S1	nil	inundation	N/A		2336.88	0.23	N/A - Natural ecosystem
4	131	YFd1	14	S1	nil	floodplain	N/A		7571.30	0.76	N/A - Natural ecosystem
4	132	SHd2	5	S1	nil	inundation	N/A		106152.76	10.62	N/A - Natural ecosystem
4	137	OFm	20	S1	nil	floodplain	N/A		31539.09	3.15	N/A - Natural ecosystem
4	138	OFm	20	S1	nil	floodplain	N/A		22867.56	2.29	N/A - Natural ecosystem
4	139	PSc	7	S1	L61		N/A		28711.35	2.87	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
4	140	INIT	1	S1	nil	floodplain	N/A	regular inundation and scouring	7443.85	0.74	N/A - Natural ecosystem
4	141	OFm	20	S1	nil	floodplain	N/A		1110.12	0.11	N/A - Natural ecosystem
4	142	OFm	20	S1	nil	floodplain	N/A		53529.10	5.35	N/A - Natural ecosystem
4	143	OFc	19	S1	nil	inundation	N/A	permanent inundation	70379.65	7.04	N/A - Natural ecosystem

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
4	147	SHd2	5	S1	nil	inundation	N/A		27158.81	2.72	N/A - Natural ecosystem
4	149	PS(t)c	8	S1	L73	floodplain	moderate		101808.75	10.18	juvenile space dense clusters to promote tree growth, the production of large woody debris and larger root mass for bank stability
4	150	SHd3	6	S1	nil	floodplain	N/A	regular inundation and scouring	8797.15	0.88	N/A - Natural ecosystem
4	151	SHd3	6	S1	nil	floodplain	N/A	regular inundation and scouring	6439.46	0.64	N/A - Natural ecosystem
4	152	H2b	2	S1	nil	floodplain	N/A	regular inundation and scouring	4836.05	0.48	N/A - Natural ecosystem
4	153	H2b	2	S1	nil	inundation	N/A	floodplain	6374.12	0.64	N/A - Natural ecosystem
4	154	INIT	1	S1	nil	floodplain	N/A	regular inundation and scouring	7925.21	0.79	N/A - Natural ecosystem
4	155	SHd2	5	S1	nil	inundation	N/A		3526.48	0.35	N/A - Natural ecosystem
4	158	INIT	1	S1	nil	floodplain	N/A	regular inundation and scouring	7428.70	0.74	N/A - Natural ecosystem
4	159	YFc	12	S1	L55-62	floodplain	low	not on river	52924.26	5.29	higher density areas could be juvenile spaced to promote the production of large woody debris
4	162	H2b	2	S1	nil	inundation	N/A	floodplain	4764.51	0.48	N/A - Natural ecosystem
4	163	INIT	1	S1	nil	floodplain	N/A	regular inundation and scouring	2130.04	0.21	N/A - Natural ecosystem
4	164	PS(t)c	8	S1	L73	floodplain	moderate		38702.94	3.87	juvenile space dense clusters to promote tree growth, the production of large woody debris and larger root mass for bank stability

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
4	166	H2b	2	S1	nil	inundation	N/A	floodplain	130083.09	13.01	N/A - Natural ecosystem
4	167	MFm	17	S1	nil		N/A	NPBr	17746.62	1.77	thin clusters of conifer trees to promote growth and development of large woody debris
4	168	OFm	20	S1	nil	floodplain	N/A		14092.73	1.41	N/A - Natural ecosystem
4	176	MFm	17	S1	nil	floodplain	N/A		7575.74	0.76	thin clusters of conifer trees to promote growth and development of large woody debris
4	178	OFm	20	S1	nil	floodplain	N/A		36357.44	3.64	N/A - Natural ecosystem
4	179	OFc	19	S1	nil	floodplain	N/A		5179.60	0.52	N/A - Natural ecosystem
4	184	SHd1	4	S1	L73/P79-80	floodplain	high		42467.24	4.25	fill or cluster plant with conifers if site is stable; maintain a brushing regime to include deciduous component within the plantation.
4	185	PSd2	11	S1	L73/P79-80	floodplain	high		5749.62	0.57	juvenile space in groups, cluster plant with conifers and maintain a brushing program to produce large woody debris, and increase stand biodiversity
4	186	PSd2	11	S1	L73/P79-80	floodplain	high		2975.69	0.30	juvenile space in groups, cluster plant with conifers and maintain a brushing program to produce large woody debris, and increase stand biodiversity
1	191	PSd2	11	S1	nil	old road	N/A		5351.28	0.54	juvenile space in groups, cluster plant with conifers and maintain a brushing program to produce large woody debris, and increase stand biodiversity
4	197	OFc	19	S1	nil	floodplain	N/A		9734.31	0.97	N/A - Natural ecosystem
3	202	PSc	7	S1	L54-65		low		61819.83	6.18	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
3	205	OFc	19	S1	nil		N/A		16892.94	1.69	N/A - Natural ecosystem
3	207	OFc	19	S1	nil		N/A		4733.47	0.47	N/A - Natural ecosystem

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
2,3	208	PSc	7	S1	L74		low		41821.42	4.18	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
2,3	209	PSd2	11	S1	L74		high		11031.44	1.10	juvenile space in groups, cluster plant with conifers and maintain a brushing program to produce large woody debris, and increase stand biodiversity
2	210	PSc	7	S1	L74		low		25316.69	2.53	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
2	212	OFc	19	S1	nil		N/A	nice low elevation OF stand on floodplain	15344.58	1.53	N/A - Natural ecosystem
2,3	214	PSc	7	S1	L54-65		high		26869.25	2.69	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
2	215	PSd2	11	S1	L54-65		N/A	streambank; some remnant OF	9474.64	0.95	juvenile space in groups, cluster plant with conifers and maintain a brushing program to produce large woody debris, and increase stand biodiversity
2	217	PSc	7	S1	L54-65/P68		low		12893.91	1.29	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
2	218	OFc	19	S1	nil		N/A	nice low elevation OF stand on floodplain	19997.61	2.00	N/A - Natural ecosystem
2	219	PSc	7	S1	L62		low		67749.23	6.77	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
2	221	PSc	7	S1	L65		low		25807.18	2.58	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
2,1	224	YFm	13	S1	L??		high		26119.32	2.61	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
2,1	225	YFm	13	S1	nil		N/A	nice low elevation OF stand on floodplain	17637.85	1.76	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
2	227	PSc	7	S1	L68		low	v low stocking; some deciduous	16896.01	1.69	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
2	228	PSc	7	S1	L68/L74		low	v low stocking; some deciduous	23156.74	2.32	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
2	229	PSm	9	S1	L74		N/A		44641.81	4.46	juvenile space to focus growth on fewer trees, greater conifer density, production of large woody debris, and increase stand biodiversity
1	231	YFm	13	S1	L60s		high		7557.12	0.76	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	232	YFc	12	S1	L60s		moderate		8795.09	0.88	higher density areas could be juvenile spaced to promote the production of large woody debris
1	233	YFm	13	S1	L60s		high		6978.79	0.70	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	234	YFc	12	S1	L60s		moderate		18573.70	1.86	higher density areas could be juvenile spaced to promote the production of large woody debris

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
1	236	YFm	13	S1	L60s		high	pole sapling - young forest stand, high conifer component	24006.24	2.40	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	237	YFm	13	S1	L60s		high	high-density stand	38720.21	3.87	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	238	MFm	17	S1	nil		N/A		15823.48	1.58	thin clusters of conifer trees to promote growth and development of large woody debris
1	239	YFm	13	S1	L60s		high		8323.06	0.83	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	240	INIT	1	S1	nil	flooding, scouring	N/A	unstable site	6301.21	0.63	N/A - Natural ecosystem
1	241	MFm	17	S1	nil		N/A		4034.09	0.40	thin clusters of conifer trees to promote growth and development of large woody debris
1	242	YFc	12	S1	L60s		moderate	small deciduous component at riparian edge	101395.47	10.14	higher density areas could be juvenile spaced to promote the production of large woody debris
1	245	MFm	17	S1	nil		N/A		20817.31	2.08	thin clusters of conifer trees to promote growth and development of large woody debris
1	246	INIT	1	S1	nil	flooding, scouring	N/A	unstable site	11389.16	1.14	N/A - Natural ecosystem
1	247	YFm	13	S1	L67		high		25286.12	2.53	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
1	248	YFm	13	S1	L67	flooding	high	numerous cross channel surrounding poly	16185.43	1.62	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	249	INIT	1	S1	nil	flooding/scouring	N/A	unstable site	1220.95	0.12	N/A - Natural ecosystem
1	250	MFm	17	S1	L67	flooding	moderate	numerous cross channel surrounding poly	4350.61	0.44	thin clusters of conifer trees to promote growth and development of large woody debris
1	251	YFm	13	S1	L67		high		48043.13	4.80	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	252	MFm	17	S1	Lpre60s	overbank flooding, heavily browsed, beaver activity	moderate		91853.89	9.19	thin clusters of conifer trees to promote growth and development of large woody debris
1	254	YFm	13	S1	B58	flooding	high		4381.66	0.44	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	255	YFm	13	S1	nil	flooding	moderate	unstable site on point bar	5837.04	0.58	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	256	YFm	13	S1	B58	flooding	moderate	back channel flows through Poly	11885.08	1.19	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	257	MFm	17	S1	B58		moderate		24465.98	2.45	thin clusters of conifer trees to promote growth and development of large woody debris

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
1	258	YFm	13	S1	nil	flooding	N/A	unstable site, numerous channels	10933.94	1.09	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	259	PSd1	10	S1	nil	flooding	N/A	unstable site, numerous channels	7214.86	0.72	N/A - Natural ecosystem
1	266	INIT	1	S1	nil	flooding	N/A		11279.10	1.13	N/A - Natural ecosystem
1	268	YFm	13	S1	nil	flooding	N/A	unstable site, numerous channels	18167.84	1.82	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	273	MFd	18	S1	nil	flooding	N/A		36722.39	3.67	thin deciduous trees to release the conifer species in the under story and/or thin in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris
1	278	PSd1	10	S1	nil	flooding	N/A	unstable site, numerous channels	38194.24	3.82	N/A - Natural ecosystem
1	279	MFd	18	S1	nil	flooding	low	at mouth of river mainly on adjacent channel	57132.68	5.71	thin deciduous trees to release the conifer species in the under story and/or thin in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris
1	281	PSd1	10	S1	nil	flooding	N/A	unstable site, numerous channels	6908.54	0.69	N/A - Natural ecosystem
1	282	PSd1	10	S1	nil	flooding	N/A	unstable site, numerous channels	11252.47	1.13	N/A - Natural ecosystem
1	283	SHd3	6	S1	nil	inundated	N/A		9553.61	0.96	N/A - Natural ecosystem

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
1	291	YFm	13	S1	L70s	flooding	high	flooding in north end of poly	17890.12	1.79	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	292	SHd3	6	S1	nil	flooding	N/A		9991.88	1.00	N/A - Natural ecosystem
1	293	PSd1	10	S1	nil	flooding	N/A	unstable site, numerous channels	12350.04	1.24	N/A - Natural ecosystem
1	294	YFc	12	S1	L63	beaver activity, overbank flooding, surface erosion	high	numerous channels flowing through Poly eroding laterally	63632.36	6.36	higher density areas could be juvenile spaced to promote the production of large woody debris
1	295	SHd2	5	S1	nil	inundated	N/A	alder-Lady Fern carex with cross flow channels of	5022.39	0.50	N/A - Natural ecosystem
1	296	MFd	18	S1	L63	beaver activity, overbank flooding, surface erosion	high		1748.54	0.17	thin deciduous trees to release the conifer species in the under story and/or thin in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris
1	297	PSc	7	S1	L63	burned, beaver activity, overbank flooding, surface erosion	high	small channels running through Poly, areas of young forest	23146.69	2.31	juvenile space to focus growth on fewer trees, production of large woody debris, and increase stand biodiversity
1	300	YFm	13	S1	L60s		N/A	not on main channel	31962.68	3.20	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	336	YFc	12	S1	L64	burned, browsed	moderate	well expressed conifer dominance	50175.03	5.02	higher density areas could be juvenile spaced to promote the production of large woody debris

Reach No.	Riparian Segment	Tentative RVT	RVT Class	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments	Area of polygon (sq. m)	Area of Polygon (ha)	Rehabilitation Objectives
1	338	MFm	17	S1	L pre 60s	overbank flooding, heavily browsed, beaver activity	moderate		77738.55	7.77	thin clusters of conifer trees to promote growth and development of large woody debris
1	339	YFm	13	S1	nil	Beaver, heavily browsed, overbank flooding, spruce leader weevil	moderate	point bar	12920.99	1.29	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	340	SHd2	5	S1	L pre 60s	inundated, beaver activity	N/A		4636.20	0.46	N/A - Natural ecosystem
1	341	MFd	18	S1	L58	beaver activity, flooding/surface erosion, moose browse	high	conifer density variable, young-mature deciduous stand	12921.71	1.29	thin deciduous trees to release the conifer species in the under story and/or thin in groups, cluster plant with conifers and maintain a brushing program to promote large woody debris
1	1000	YFm	13	S1	L60s		high		20488.81	2.05	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings
1	1001	INIT	1	S1	nil	flooding, scouring	N/A	unstable site	2727.36	0.27	N/A - Natural ecosystem
1	1002	MFm	17	S1	nil		N/A		4056.39	0.41	thin clusters of conifer trees to promote growth and development of large woody debris
1	1003	YFm	13	S1	L60s		moderate	conifers expressing dominance	5105.63	0.51	thin red alder around conifer trees to promote tree growth and development of large woody debris, may fill plant with conifer seedlings

Appendix 4: Database

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
6	1	103I.076	92038	82	1	AL	SHd2	5	1152.65	S1	nil	avalanche,inundation	N/A	
6	2	103I.076	92038	82	2	AL	SHd2	5	996.8	S1	nil	avalanche,inundation	N/A	
6		103I.076	92038	82	3	07	OFc	19	0	S1	nil	inundation	N/A	
6	4	103I.076	92038	82	4	07	OFc	19	47.18	S1	nil	inundation	N/A	
6	5	103I.076	92038	82	5	32	H2b	2	177.29	S1	nil	inundation	N/A	
6		103I.076	92038	82	6	AL	SHd2	5	0	S1	nil	inundation	N/A	severely inundated recently
6	7	103I.076	92038	82	7	09	INIT	1	243.32	S1	nil	inundation	N/A	regular inundation and scouring
6	8	103I.076	92038	82	8	09	INIT	1	228.83	S1	nil	inundation	N/A	regular inundation and scouring
6	9	103I.076	92038	82	9	09	SHd3	6	413.08	S1	nil	inundation	N/A	regular inundation and scouring
6		103I.076	92038	82	10	32	H2b	2	0	S1	nil	inundation	N/A	
6	11	103I.076	92038	82	11	AL	SHd2	5	636.77	S1	nil	avalanche,inundation	N/A	
5,6	12	103I.076	92038	82	12	AL	SHd2	5	754.46	S1	nil	avalanche,inundation	N/A	
5	13	103I.076	92038	82	13	06	YFc	12	228.21	S1	L58-61	fan	moderate	
5	14	103I.076	92038	82	14	07	YFc	12	492.64	S1	L58-61	fan	moderate	
5	15	103I.076	92038	82	15	06	PSc	7	301.93	S1	L59		low	
5		103I.076	92038	82	16	06	PSc	7	0	S1	L59		N/A	
5		103I.076	92038	82	17	06	PSc	7	0	S1	L59		N/A	
5		103I.076	92038	82	18	06	PSc	7	0	S1	L59		N/A	
5		103I.076	92038	82	19	06	OFc	19	0	S1	nil	inundation	N/A	
5		103I.076	92038	82	20	AL	SHd2	5	0	S1	nil	avalanche	N/A	
5		103I.076	92038	82	21	32	H2b	2	0	S1	nil	inundation	N/A	
5		103I.076	92038	82	22	AL	SHd2	5	0	S1	nil	avalanche	N/A	
6		103I.076	92038	82	23	AL	SHd2	5	0	S1	nil	avalanche	N/A	
5	24	103I.076	92038	64	24	09	INIT	1	176.78	S1	nil	inundation	N/A	regular inundation and scouring
5	25	103I.076	92038	64	25	07	OFc	19	689.09	S1	nil	inundation	N/A	
5		103I.076	92038	64	26	AL	SHd2	5	0	S1	nil	inundation	N/A	
5		103I.076	92038	64	27	PD	N/A	0	0	S1	nil		N/A	
5		103I.076	92038	64	28	PD	N/A	0	0	S1	nil		N/A	
5		103I.076	92038	64	29	11	OFc	19	0	S1	nil	inundation	N/A	permanent inundation
5		103I.076	92038	64	30	11	OFc	19	0	S1	nil	inundation	N/A	permanent inundation
5		103I.076	92038	64	31	32	H2b	2	0	S1	nil	inundation	N/A	
5	32	103I.076	92038	64	32	11	OFc	19	5.7	S1	nil	inundation	N/A	permanent inundation

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
5	33	103I.076	92038	64	33	AL	SHd2	5	1041.5	S1	nil	inundation	N/A	
5		103I.076	92038	64	34	07	MFd	18	0	S1	nil	inundation	N/A	
5	35	103I.076	92038	64	35	09	SHd3	6	193.51	S1	nil	inundation	N/A	regular inundation and scouring
5	36	103I.076	92038	64	36	32	H2b	2	11.68	S1	nil	inundation	N/A	
5	37	103I.076	92038	64	37	AL	SHd2	5	1097.91	S1	nil	inundation	N/A	
5		103I.076	92038	64	38	32	H2b	2	0	S1	nil	inundation	N/A	
5		103I.076	92038	64	39	06	YFc	12	0	S1	L58/P67	fan	N/A	
5	40	103I.076	92038	64	40	06	OFc	19	323.41	S1	nil		N/A	
5	41	103I.076	92038	64	41	07	MFd	18	168.76	S1	nil	inundation	N/A	
5		103I.076	92038	64	42	07	OFc	19	0	S1	nil	inundation	N/A	
5	43	103I.076	92038	64	43	AL	SHd2	5	1091.11	S1	nil	inundation	N/A	
5		103I.076	92038	64	44	06	YFc	12	0	S1	L58-61	fan	N/A	
5	45	103I.076	92038	22	45	06	SHd1	4	301.38	S1	L58		high	
5	46	103I.076	92038	22	46	AL	SHd2	5	1379.62	S1	nil	inundation	N/A	
5		103I.076	92038	22	47	32	H2b	2	0	S1	nil	inundation	N/A	
5	48	103I.076	92038	22	48	06	YFc	12	50.29	S1	L57-59/P63	fan	low	
5		103I.076	92038	22	49	AL	SHd2	5	0	S1	nil	avalanche	N/A	
5	50	103I.076	92038	22	50	09	INIT	1	171.04	S1	nil	inundation	N/A	regular inundation and scouring
5	51	103I.076	92038	22	51	07	MFd	18	100.5	S1	nil	inundation	N/A	
5		103I.076	92038	22	52	09	SHd3	6	0	S1	nil	inundation	N/A	regular inundation and scouring
5	53	103I.076	92038	22	53	09	INIT	1	227.48	S1	nil	inundation	N/A	regular inundation and scouring
5	54	103I.076	92038	22	54	06	YFc	12	166.61	S1	L58/P67	fan	low	
5	55	103I.076	92038	22	55	07	MFd	18	50.47	S1	nil	inundation	N/A	
5	56	103I.076	92038	22	56	AL	SHd2	5	662.13	S1	nil	inundation	N/A	
5	57	103I.076	92038	22	57	AL	SHd2	5	608.3	S1	nil	inundation	N/A	
5	58	103I.076	92038	22	58	AL	SHd2	5	497.9	S1	nil	inundation	N/A	
5	59	103I.076	92038	22	59	06	YFc	12	69.13	S1	L57-59/P63	fan	low	
5	60	103I.076	92038	22	60	06	OFc	19	85.44	S1	L57-59/P63	fan	low	20% partially logged
5		103I.076	92038	22	61	AL	SHd2	5	0	S1	nil	avalanche	N/A	
5		103I.076	92038	22	62	AL	SHd2	5	0	S1	nil	avalanche	N/A	
4	63	103I.076	92037	156	63	06	YFc	12	177.44	S1	L57-59	fan	moderate	high stocking
4	64	103I.076	92037	156	64	AL	SHd2	5	109.58	S1	nil	inundation	N/A	

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
4	65	103I.076	92037	156	65	06	YFc	12	392.21	S1	L57-59	fan & floodplain	moderate	higher priority b/c of location on unstable fan
4	66	103I.076	92037	156	66	07	OFc	19	60.4	S1	nil	inundation	N/A	
4	67	103I.076	92037	156	67	AL	SHd2	5	735.51	S1	nil	inundation	N/A	
4		103I.076	92037	156	68	32	H2b	2	0	S1	nil	inundation	N/A	
4	69	103I.076	92037	156	69	AL	SHd2	5	114.45	S1	nil	fan	N/A	
4		103I.076	92037	156	70	06	MFc	16	0	S1	L57-59	fan	N/A	lower priority b/c older
4	71	103I.076	92037	156	71	07	PSc	7	138.69	S1	L57-59	fan	moderate	higher priority b/c of location on unstable fan
4	72	103I.076	92037	156	72	AL	SHd2	5	269.07	S1	nil	inundation	N/A	
4	73	103I.076	92037	156	73	AL	SHd2	5	29.97	S1	nil	avalanche	N/A	
4	74	103I.076	92037	156	74	06	YFc	12	77.38	S1	L56-57	fan	low	
4		103I.076	92037	156	75	06	YFc	12	0	S1	L56-57	fan	N/A	low stocking
4		103I.076	92037	156	76	07	MFd	18	0	S1	nil	inundation	N/A	
4	77	103I.076	92037	156	77	32	H2b	2	372.09	S1	nil	inundation	N/A	
4	78	103I.076	92037	156	78	AL	SHd2	5	208.19	S1	nil	inundation	N/A	
4	79	103I.076	92037	156	79	AL	SHd2	5	428.11	S1	nil	fan	N/A	
4		103I.076	92037	156	80	06	MFc	16	0	S1	L57-59	fan	N/A	stocking low in fan blowout zone
4	81	103I.076	92037	156	81	06	YFc	12	98.72	S1	L57-59	fan	low	high stocking
4	82	103I.076	92037	156	82	06	YFc	12	46.09	S1	L57-59	fan	low	high stocking
4	83	103I.076	92037	156	83	07	MFd	18	43.86	S1	nil	inundation	N/A	
4		103I.076	92037	156	84	32	H2b	2	0	S1	nil	inundation	N/A	
4		103I.076	92037	156	85	11	OFc	19	0	S1	nil	inundation	N/A	permanent inundation
4		103I.076	92037	156	86	32	H2b	2	0	S1	nil	inundation	N/A	
4	87	103I.076	92037	156	87	AL	SHd2	5	248.89	S1	nil	inundated	N/A	
4		103I.076	92037	156	88	07	OFc	19	0	S1	nil	floodplain	N/A	
4	89	103I.076	92037	156	89	07	OFm	20	361.99	S1	nil	beaver activity, blowdown, overbank flooding, possible leader weevil	N/A	
4	90	103I.076	92037	156	90	06	YFc	12	183.97	S1	L57-59	fan	low	
4	91	103I.076	92037	156	91	AL	SHd2	5	670.15	S1	nil	avalanche	N/A	
4		103I.076	92037	156	92	AL	SHd2	5	0	S1	nil	avalanche	N/A	
4		103I.076	92037	156	93	06	OFc	19	0	S1	nil	fan	N/A	
4		103I.076	92037	156	94	06	PSc	7	0	S1	L61	fan	N/A	

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
4		103I.076	92037	156	95	06	PSc	7	0	S1	L61	fan	N/A	
4		103I.076	92037	156	96	32	H2b	2	0	S1	nil	inundation	N/A	
4		103I.076	92037	156	97	06	PSc	7	0	S1	L61	fan	N/A	
4		103I.076	92037	156	98	07	OFc	19	0	S1	nil	floodplain	N/A	
4	99	103I.076	92037	156	99	07	PS(t)c	8	345.74	S1	L73/ P79-80/fillP00	beaver activity, subsurface flooding	moderate	slump and active bank erosion, channel runoff
4	100	103I.076	92037	156	100	32	H2b	2	16.99	S1	nil	inundation	N/A	
4		103I.076	92037	156	101	32	H2b	2	0	S1	nil	inundation	N/A	
4		103I.076	92037	156	102	07	PS(t)c	8	0	S1	L73/P79-80/fillP00	beaver activity, floodplain	N/A	fill-planted
4		103I.076	92037	156	103	PD	N/A	0	0	S1	nil		N/A	old channel
4		103I.076	92037	156	104	07	PS(t)c	8	0	S1	L73/P79-80/fillP00	beaver activity, floodplain	N/A	fill-planted
4		103I.076	92037	105	105	07	OFc	19	0	S1	nil	beaver activity, floodplain	N/A	permanent inundation; all trees dead; beaverdam
4		103I.076	92037	156	106	06	PSc	7	0	S1	L73	fan	N/A	
4		103I.076	92037	156	107	06	PSc	7	0	S1	L73	fan	N/A	
4		103I.076	92037	105	108	07	PS(t)c	8	0	S1	L73/P79-80/fillP00	beaver activity, floodplain	N/A	fill-planted
4	109	103I.076	92037	156	109	07	PS(t)c	8	279.42	S1	L73/P79-80/fillP00	beaver activity, floodplain	moderate	fill-planted, slump/active bank erosion, channel runoff
4		103I.076	92037	156	110	07	PSc	7	0	S1	L73/P79-80	floodplain	N/A	
4	111	103I.076	92037	156	111	07	SHd1	4	904.9	S1	L73/P79-80	floodplain	high	
4	112	103I.076	92037	156	112	07	OFc	19	236.67	S1	nil	floodplain	N/A	
4	113	103I.076	92037	156	113	AL	SHd2	5	32.71	S1	nil	inundation	N/A	
4	114	103I.076	92037	156	114	11	OFc	19	393.72	S1	nil	inundation	N/A	beaverdam flooded, many dead trees
4	115	103I.076	92037	156	115	32	H2b	2	322.84	S1	nil	inundation	N/A	
4		103I.076	92037	156	116	06	PSc	7	0	S1	L61	fan	N/A	
4		103I.076	92037	156	117	AL	SHd2	5	0	S1	nil	avalanche	N/A	
4		103I.076	92037	156	118	06	PSc	7	0	S1	L61	fan	N/A	
4		103I.076	92037	156	119	06	PSc	7	0	S1	L61	fan	N/A	
4		103I.076	92037	156	120	11	OFc	19	0	S1	nil	inundation	N/A	permanent inundation; all trees dead; beaverdam
4		103I.076	92037	156	121	06	PSc	7	0	S1	L61	fan	N/A	
4		103I.076	92037	105	122	32	H2b	2	0	S1	nil	inundation	N/A	
4		103I.076	92037	156	123	AL	SHd2	5	0	S1	nil	inundation	N/A	
4	124	103I.076	92037	156	124	06	PSc	7	24.94	S1	L61	fan	low	

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
4		103I.076	92037	156	125	06	PSc	7	0	S1	L61	fan	N/A	
4		103I.076	92037	156	126	06	PSc	7	0	S1	L61	fan	N/A	
4		103I.076	92037	105	127	06	OFc	19	0	S1	nil	fan	N/A	
4		103I.076	92037	156	128	PD	N/A	0	0	S1	nil		N/A	
4	129	103I.076	92037	156	129	AL	SHd2	5	45.82	S1	nil	inundation	N/A	
1		103I.076	92036	119	130	09	SHd3	6	0	S1	nil	flooding	N/A	
4	131	103I.076	92037	105	131	07	YFd1	14	114.07	S1	nil	floodplain	N/A	
4	132	103I.076	92037	105	132	AL	SHd2	5	146.41	S1	nil	inundation	N/A	
4		103I.076	92037	105	133	11	OFc	19	0	S1	nil	inundation	N/A	permanent inundation
4		103I.076	92037	105	134	06	PSc	7	0	S1	L61		N/A	
4		103I.076	92037	105	135	06	OFc	19	0	S1	*	fan	N/A	*partially logged1961
4		103I.076	92037	105	136	11	OFc	19	0	S1	nil	inundation	N/A	permanent inundation
4	137	103I.076	92037	105	137	07	OFm	20	693.86	S1	nil	floodplain	N/A	
4	138	103I.076	92037	105	138	07	OFm	20	286.86	S1	nil	floodplain	N/A	
4	139	103I.076	92037	105	139	06	PSc	7	97.62	S1	L61		N/A	
4	140	103I.076	92037	105	140	09	INIT	1	258.96	S1	nil	floodplain	N/A	regular inundation and scouring
4	141	103I.076	92037	105	141	07	OFm	20	146.7	S1	nil	floodplain	N/A	
4	142	103I.076	92037	105	142	07	OFm	20	249.16	S1	nil	floodplain	N/A	
4	143	103I.076	92037	105	143	11	OFc	19	323.41	S1	nil	inundation	N/A	permanent inundation
4		103I.076	92037	105	144	09	SHd3	6	0	S1	nil	floodplain	N/A	regular inundation and scouring
4		103I.076	92037	105	145	07	OFm	20	0	S1	nil	floodplain	N/A	
4		103I.076	92037	105	146	07	OFm	20	0	S1	nil	floodplain	N/A	
4	147	103I.076	92037	105	147	AL	SHd2	5	254.44	S1	nil	inundation	N/A	
4		103I.076	92037	105	148	07	OFm	20	0	S1	nil	floodplain	N/A	
4	149	103I.076	92037	105	149	07	PS(t)c	8	966.26	S1	L73	floodplain	moderate	
4	150	103I.076	92037	105	150	09	SHd3	6	85.38	S1	nil	floodplain	N/A	regular inundation and scouring
4	151	103I.076	92037	105	151	09	SHd3	6	41.94	S1	nil	floodplain	N/A	regular inundation and scouring
4	152	103I.076	92037	105	152	09	H2b	2	27.51	S1	nil	floodplain	N/A	regular inundation and scouring
4	153	103I.076	92037	105	153	32	H2b	2	33.63	S1	nil	inundation	N/A	floodplain
4	154	103I.076	92037	105	154	09	INIT	1	205.54	S1	nil	floodplain	N/A	regular inundation and scouring
4	155	103I.076	92037	105	155	AL	SHd2	5	28.2	S1	nil	inundation	N/A	
4		103I.076	92037	105	156	06	PSc	7	0	S1	L56-61	fan	N/A	

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
4		103I.076	92037	105	157	07	OFc	19	0	S1	nil	floodplain	N/A	
4	158	103I.076	92037	105	158	09	INIT	1	225.79	S1	nil	floodplain	N/A	regular inundation and scouring
4	159	103I.076	92037	105	159	07	YFc	12	425.96	S1	L55-62	floodplain	low	not on river
4		103I.076	92037	105	160	09	SHd3	6	0	S1	nil	floodplain	N/A	regular inundation and scouring
4		103I.076	92037	105	161	07	YFc	12	0	S1	L55-62	floodplain	N/A	not on river
4	162	103I.076	92037	105	162	32	H2b	2	34.65	S1	nil	inundation	N/A	floodplain
4	163	103I.076	92037	105	163	09	INIT	1	152.47	S1	nil	floodplain	N/A	regular inundation and scouring
4	164	103I.076	92037	105	164	07	PS(t)c	8	96.89	S1	L73	floodplain	moderate	
4		103I.076	92037	105	165	06	PSc	7	0	S1	L56-61	fan	N/A	
4	166	103I.076	92037	105	166	32	H2b	2	219.15	S1	nil	inundation	N/A	floodplain
4	167	103I.076	92037	105	167	07	MFm	17	133.65	S1	nil		N/A	NPBr
4	168	103I.076	92037	105	168	07	OFm	20	122.36	S1	nil	floodplain	N/A	
4		103I.076	92037	105	169	07	OFm	20	0	S1	nil	floodplain	N/A	
4		103I.076	92037	105	170	07	SHd1	4	0	S1	L73/P79-80	floodplain	N/A	
4		103I.076	92037	105	171	32	H2b	2	0	S1	nil	inundation	N/A	
4		103I.076	92037	105	172	07	OFm	20	0	S1	nil	floodplain	N/A	
4		103I.076	92037	105	173	07	OFm	20	0	S1	nil	floodplain	N/A	
4		103I.076	92037	105	174	11	OFc	19	0	S1	nil	inundation	N/A	permanent inundation
4		103I.076	92037	105	175	07	OFm	20	0	S1	nil	floodplain	N/A	
4	176	103I.076	92037	105	176	07	MFm	17	142.47	S1	nil	floodplain	N/A	
4		103I.076	92037	105	177	11	OFc	19	0	S1	nil	inundation	N/A	permanent inundation; high tree mortality
4	178	103I.076	92037	105	178	07	OFm	20	282.41	S1	nil	floodplain	N/A	
4	179	103I.076	92037	105	179	08	OFc	19	202.95	S1	nil	floodplain	N/A	
4		103I.076	92037	105	180	07	OFm	20	0	S1	nil	floodplain	N/A	
4		103I.076	92037	105	181	07	OFc	19	0	S1	nil	beaver activity, floodplain	N/A	permanent inundation; all trees dead; beaverdam
4		103I.076	92037	105	182	PD	N/A	0	0	S1	nil		N/A	
4		103I.076	92037	105	183	32	H2b	2	0	S1	nil	inundation	N/A	
4	184	103I.076	92037	105	184	07	SHd1	4	310.27	S1	L73/P79-80	floodplain	high	
4	185	103I.076	92037	105	185	07	PSd2	11	101.54	S1	L73/P79-80	floodplain	high	
4	186	103I.076	92037	105	186	07	PSd2	11	31.6	S1	L73/P79-80	floodplain	high	
4		103I.076	92037	105	187	32	H2b	2	0	S1	nil	inundation	N/A	
4		103I.076	92037	105	188	32	H2b	2	0	S1	nil	floodplain	N/A	

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
4		103I.076	92037	105	189	07	PS(t)c	8	0	S1	L73/P79-80/fillP00	beaver activity, floodplain	N/A	fill-planted
4		103I.076	92037	105	190	32	H2b	2	0	S1	nil	floodplain	N/A	
1	191	103I.076	92036	119	191	07	PSd2	11	15.21	S1	nil	old road	N/A	
4		103I.076	92037	105	192	07	PS(t)c	8	0	S1	L73/P79-80/fillP00	beaver activity, floodplain	N/A	fill-planted
4		103I.076	92037	105	193	32	H2b	2	0	S1	nil	floodplain	N/A	
1		103I.077	92036	119	194	05	PSc	7	0	S1	L67		N/A	
4		103I.076	92037	105	195	32	H2b	2	0	S1	nil	floodplain	N/A	
4		103I.076	92037	105	196	32	H2b	2	0	S1	nil	floodplain	N/A	
4	197	103I.076	92037	156	197	07	OFc	19	189.07	S1	nil	floodplain	N/A	
4		103I.076	92037	156	198	32	H2b	2	0	S1	nil	inundation	N/A	
4		103I.076	92037	156	199	32	H2b	2	0	S1	nil	inundation	N/A	
4		103I.076	92037	156	200	RP	N/A	0	0	S1	nil		N/A	
3		103I.076	92037	23	201	RP	N/A	0	0	S1	nil		N/A	
3	202	103I.076	92037	23	202	01	PSc	7	616.82	S1	L54-65		low	
4		103I.076	92037	23	203	03	PSc	7	0	S1	nil		N/A	NCBr
3		103I.076	92037	23	204	01	PSc	7	0	S1	nil		N/A	NCBr
3	205	103I.076	92037	23	205	06	OFc	19	261.85	S1	nil		N/A	
3		103I.076	92037	23	206	01	PSc	7	0	S1	L74		N/A	
3	207	103I.076	92037	23	207	06	OFc	19	274.76	S1	nil		N/A	
2,3	208	103I.076	92037	23	208	03	PSc	7	80.68	S1	L74		low	
2,3	209	103I.076	92037	23	209	04	PSd2	11	302.92	S1	L74		high	
2	210	103I.076	92037	23	210	03	PSc	7	117.51	S1	L74		low	
2		103I.076	92037	23	211	PD	N/A	0	0	S1	nil		N/A	
2	212	103I.076	92037	23	212	07	OFc	19	385.91	S1	nil		N/A	nice low elevation OF stand on floodplain
2		103I.076	92037	23	213	01	PSc	7	0	S1	L54-65		N/A	
2,3	214	103I.076	92037	23	214	04	PSc	7	130.99	S1	L54-65		high	
2	215	103I.076	92037	23	215	07	PSd2	11	376.02	S1	L54-65		N/A	streambank; some remnant OF
2		103I.076	92037	23	216	03	PSc	7	0	S1	L54-65/P68		N/A	
2	217	103I.076	92037	23	217	04	PSc	7	56.94	S1	L54-65/P68		low	
2	218	103I.076	92037	23	218	06	OFc	19	639.46	S1	nil		N/A	nice low elevation OF stand on floodplain
2	219	103I.076	92037	23	219	01	PSc	7	23.95	S1	L62		low	
2		103I.076	92037	23	220	01	SHd1	4	0	S1		RoW	N/A	hydro RoW - anthropogenic disclimax

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2	221	103I.076	92037	23	221	04	PSc	7	491.51	S1	L65		low	
2		103I.076	92037	23	222	01	SHc	3	0	S1	L65		N/A	
2		103I.076	92037	23	223	07	OFc	19	0	S1	nil		N/A	nice low elevation OF stand on floodplain
1,2	224	103I.076	92037	23	224	07	YFm	13	216.02	S1	L??		high	
1,2	225	103I.076	92037	23	225	01	YFm	13	523.34	S1	nil		N/A	nice low elevation OF stand on floodplain
2		103I.076	92037	23	226	01	PSc	7	0	S1	L68		N/A	
2	227	103I.076	92037	23	227	03	PSc	7	114.38	S1	L68		low	v low stocking; some deciduous
2	228	103I.076	92037	23	228	01	PSc	7	383.6	S1	L68/L74		low	v low stocking; some deciduous
2	229	103I.076	92037	23	229	01	PSm	9	614.38	S1	L74		N/A	
1		103I.076	92036	121	230	07	YFm	13	0	S1	L60s		N/A	
1	231	103I.076	92036	121	231	07	YFm	13	188.63	S1	L60s		high	
1	232	103I.076	92036	121	232	01	YFc	12	34.39	S1	L60s		moderate	
1	233	103I.076	92036	121	233	04	YFm	13	36.53	S1	L60s		high	
1	234	103I.076	92036	121	234	01	YFc	12	272.38	S1	L60s		moderate	
1		103I.077	92036	121	235	07	PSd2	11	0	S1	L60s		N/A	
1	236	103I.076	92036	121	236	07	YFm	13	62	S1	L60s		high	pole sapling - young forest stand, high conifer component
1	237	103I.076	92036	121	237	07	YFm	13	253.69	S1	L60s		high	high-density stand
1	238	103I.076	92036	121	238	07	MFm	17	287.29	S1	nil		N/A	
1	239	103I.076	92036	121	239	07	YFm	13	129.08	S1	L60s		high	
1	240	103I.076	92036	121	240	09	INIT	1	284.18	S1	nil	flooding, scouring	N/A	unstable site
1	241	103I.076	92036	121	241	07	MFm	17	123.28	S1	nil		N/A	
1	242	103I.076	92036	121	242	07	YFc	12	543.07	S1	L60s		moderate	small deciduous component at riparian edge
1	245	103I.076	92036	121	245	07	MFm	17	215.02	S1	nil		N/A	
1	246	103I.076	92036	121	246	09	INIT	1	362.85	S1	nil	flooding, scouring	N/A	unstable site
1	247	103I.076	92036	119	247	07	YFm	13	397.12	S1	L67		high	

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1	248	103I.076	92036	119	248	07	YFm	13	376.98	S1	L67	flooding	high	numerous cross channel surrounding poly
1	249	103I.076	92036	119	249	09	INIT	1	7.1	S1	nil	flooding/scouring	N/A	unstable site
1	250	103I.076	92036	119	250	07	MFm	17	12.57	S1	L67	flooding	moderate	numerous cross channel surrounding poly
1	251	103I.076	92036	119	251	07	YFm	13	176.52	S1	L67		high	
1	252	103I.076	92036	119	252	07	MFm	17	515.26	S1	Lpre60s	overbank flooding, heavily browsed, beaver activity	moderate	
1		103I.076	92036	119	253	AL	SHd2	5	0	S1	nil	inundated	N/A	30 percent young forest deciduous
1	254	103I.076	92036	119	254	07	YFm	13	138.82	S1	B58	flooding	high	
1	255	103I.076	92036	119	255	07	YFm	13	284.87	S1	nil	flooding	moderate	unstable site on point bar
1	256	103I.076	92036	119	256	07	YFm	13	52.33	S1	B58	flooding	moderate	back channel flows through Poly
1	257	103I.076	92036	119	257	07	MFm	17	82.8	S1	B58		moderate	
1	258	103I.076	92036	119	258	08	YFm	13	244.43	S1	nil	flooding	N/A	unstable site, numerous channels
1	259	103I.076	92036	119	259	09	PSd1	10	299.86	S1	nil	flooding	N/A	unstable site, numerous channels
1		103I.076	92036	119	260	05	PSc	7	0	S1	B58		N/A	
1		103I.076	92036	119	261	07	YFm	13	0	S1	B58	flooding	N/A	
1		103I.076	92036	119	262	01	PSc	7	0	S1	B58		moderate	
1		103I.076	92036	119	263	01	PSc	7	0	S1	B58		moderate	
1		103I.076	92036	119	264	09	SHd3	6	0	S1	nil	flooding	N/A	
1		103I.076	92036	119	265	07	MFm	17	0	S1	B58	flooding	moderate	overbank flooding
1	266	103I.076	92036	119	266	09	INIT	1	186.54	S1	nil	flooding	N/A	
1		103I.076	92036	119	267	07	MFm	17	0	S1	nil	flooding	N/A	high tree mortality due to flooding

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
1	268	103I.076	92036	119	268	07	YFm	13	248.43	S1	nil	flooding	N/A	unstable site, numerous channels
1		103I.077	92036	119	269	09	SHd3	6	0	S1	nil	flooding	N/A	
1		103I.077	92036	119	270	07	PSd1	10	0	S1	nil	flooding	N/A	
1		103I.077	92036	119	271	09	INIT	1	0	S1	nil	flooding	N/A	
1		103I.076	92036	119	272	07	YFd1	14	0	S1	nil	flooding	low	unstable site, numerous channels, at mouth of river
1	273	103I.077	92036	119	273	08	MFd	18	93.71	S1	nil	flooding	N/A	
1		103I.077	92036	119	274	09	SHd3	6	0	S1	nil	inundated	N/A	on lake edge at mouth of river
1		103I.076	92036	119	275	09	PSd1	10	0	S1	nil	flooding	N/A	unstable site at mouth of river
1		103I.077	92036	119	276	08	MFd	18	0	S1	nil	flooding	N/A	
1		103I.077	92036	119	277	09	PSd1	10	0	S1	nil	flooding	N/A	unstable site
1	278	103I.076	92036	119	278	09	PSd1	10	583.74	S1	nil	flooding	N/A	unstable site, numerous channels
1	279	103I.077	92036	119	279	08	MFd	18	644.39	S1	nil	flooding	low	at mouth of river mainly on adjacent channel
1		103I.077	92036	119	280	08	MFd	18	0	S1	nil	flooding	N/A	
1	281	103I.076	92036	119	281	09	PSd1	10	20.75	S1	nil	flooding	N/A	unstable site, numerous channels
1	282	103I.076	92036	119	282	09	PSd1	10	315.49	S1	nil	flooding	N/A	unstable site, numerous channels
1	283	103I.077	92036	119	283	09	SHd3	6	188.36	S1	nil	inundated	N/A	
1		103I.077	92036	119	284	09	SHd3	6	0	S1	nil	inundated	N/A	numerous snags, high tree mortality due to flooding
1		103I.077	92036	119	285	07	YFm	13	0	S1	L60s		N/A	not on main channel
1		103I.077	92036	119	286	07	PSm	9	0	S1	nil	flooding	N/A	

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1		103I.077	92036	119	287	09	SHd3	6	0	S1	nil	inundated	N/A	
1		103I.077	92036	119	288	07	PSc	7	0	S1	L60s		N/A	
1		103I.077	92036	119	289	09	SHd3	6	0	S1	nil	inundated	N/A	
1		103I.077	92036	119	290	07	PSc	7	0	S1	L60s		N/A	
1	291	103I.077	92036	119	291	07	YFm	13	366.68	S1	L70s	flooding	high	flooding in north end of poly
1	292	103I.076	92036	119	292	09	SHd3	6	147.12	S1	nil	flooding	N/A	
1	293	103I.076	92036	119	293	09	PSd1	10	327.45	S1	nil	flooding	N/A	unstable site, numerous channels
1	294	103I.076	92036	119	294	07	YFc	12	319.56	S1	L63	beaver activity, overbank flooding, surface erosion	high	numerous channels flowing through Poly eroding laterally
1	295	103I.076	92036	119	295	AL	SHd2	5	144.73	S1	nil	inundated	N/A	alder-Lady Fern carex with cross flow channels of
1	296	103I.076	92036	119	296	07	MFd	18	50.45	S1	L63	beaver activity, overbank flooding, surface erosion	high	
1	297	103I.076	92036	119	297	01	PSc	7	258.92	S1	L63	burned, beaver activity, overbank flooding, surface erosion	high	small channels running through Poly, areas of young forest
1		103I.077	92036	119	298	07	YFm	13	0	S1	L60s		N/A	
1		103I.077	92036	119	299	07	YFm	13	0	S1	L60s	flooding	N/A	
1	300	103I.077	92036	119	300	07	YFm	13	17.13	S1	L60s		N/A	not on main channel
1		103I.077	92036	119	301	07	PSm	9	0	S1	nil	inundated	N/A	
1		103I.077	92036	119	302	09	SHd3	6	0	S1	nil	inundated	N/A	numerous snags, high tree mortality due to flooding
1		103I.077	92036	119	303	07	YFm	13	0	S1	L60s	inundated	N/A	
1		103I.077	92036	119	304	08	YFd1	14	0	S1	nil	flooding	N/A	
1		103I.077	92036	119	305	07	YFd2	15	0	S1	L60s		N/A	
1		103I.077	92036	119	306	07	YFd2	15	0	S1	L60s		N/A	

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
1		103I.077	92036	119	307	07	YFm	13	0	S1	L60s		N/A	
1		103I.077	92036	119	308	01	YFc	12	0	S1	L60s		N/A	
1		103I.076	92036	119	309	CF	H2b	2	0	S1	L60s	land clearing	N/A	cultivated field
1		103I.076	92036	119	310	01	PSc	7	0	S1	L67		N/A	
1		103I.076	92036	119	311	05	PSc	7	0	S1	L67		N/A	
1		103I.077	92036	119	312	11	MFm	17	0	S1	nil	inundated	N/A	small component of Alder-lady fern
1		103I.077	92036	119	313	07	YFm	13	0	S1	L60s		N/A	
1		103I.077	92036	119	314	09	SHd3	6	0	S1	nil	inundated	N/A	few mature cottonwoods
1		103I.077	92036	119	315	01	PSc	7	0	S1	L60s	inundated	N/A	high tree mortality due to flooding on East end
1		103I.077	92036	119	316	RP	N/A	0	0	S1	nil	flooding, scouring	N/A	few mature conifers
1		103I.077	92036	119	317	01	PSc	7	0	S1	L60s	inundated	N/A	
1		103I.077	92036	119	319	07	OFc	19	0	S1	nil		N/A	
1		103I.077	92036	119	320	07	YFm	13	0	S1	L60s		N/A	
1		103I.077	92036	119	322	07	PSc	7	0	S1	L60s	inundated	N/A	small component of deciduous on western end
1		103I.077	92036	119	323	AL	SHd2	5	0	S1	nil	inundated, beaver activity	N/A	very high water table
1		103I.077	92036	119	324	05	PSc	7	0	S1	L67		N/A	
1		103I.077	92036	119	325	07	YFm	13	0	S1	L60s		N/A	
1		103I.077	92036	119	326	11	PSm	9	0	S1	L60s	inundated	N/A	
1		103I.077	92036	119	327	11	MFm	17	0	S1	nil	inundated	N/A	small component of Alder-lady fern
1		103I.077	92036	119	328	05	YFc	12	0	S1	L67		N/A	
1		103I.077	92036	121	329	07	YFm	13	0	S1	L60s		N/A	
1		103I.077	92036	119	330	05	YFc	12	0	S1	L67		N/A	

Reach No.	Riparian Segment	Forest cover mapsheet No.	Flight line	Air photo #	Poly #	Site series	Tentative RVT	RVT Class	Length of riparian segment (m)	Stream class	Harvesting / Restocking History	Other Disturbances	Priority for Level 1	Comments
1		103I.077	92036	121	331	11	YFm	13	0	S1	L60s		N/A	very high brush cover in understory
1		103I.077	92036	121	332	07	YFm	13	0	S1	L60s		N/A	
1		103I.077	92036	119	333	05	YFm	13	0	S1	L60s		N/A	
1		103I.076	92036	119	334	RP	N/A	0	0	S1	nil	road surface	N/A	
1		103I.076	92036	119	335	07	YFm	13	0	S1	L64		N/A	
1	336	103I.076	92036	119	336	07	YFc	12	331.16	S1	L64	burned, browsed	moderate	well expressed conifer dominance
1		103I.076	92036	119	337	07	PS(t)c	8	0	S1	L64		N/A	
1	338	103I.076	92036	119	338	07	MFm	17	369.95	S1	L pre 60s	overbank flooding, heavily browsed, beaver activity	moderate	
1	339	103I.076	92036	119	339	07	YFm	13	292.23	S1	nil	Beaver, heavily browsed, overbank flooding, spruce leader weevil	moderate	point bar
1	340	103I.076	92036	119	340	AL	SHd2	5	70.27	S1	L pre 60s	inundated, beaver activity	N/A	
1	341	103I.076	92036	119	341	07	MFd	18	223.3	S1	L58	beaver activity, flooding/surface erosion, moose browse	high	conifer density variable, young-mature deciduous stand
1		103I.077	92036	119	342	09	PSd1	10	0	S1	nil	flooding	N/A	unstable site
1	1000	103I.076	92036	121	1000	07	YFm	13	191.38	S1	L60s		high	
1	1001	103I.076	92036	121	1001	09	INIT	1	168.87	S1	nil	flooding, scouring	N/A	unstable site
1	1002	103I.076	92036	121	1002	07	MFm	17	60.18	S1	nil		N/A	
1	1003	103I.076	92036	121	2003	07	YFm	13	115.95	S1	L60s		moderate	conifers expressing dominance