COASTAL SLASH ASSESSMENT GUIDE

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INTRODUCTION

This photo guide is presented as an aid in assessing slash loading. It is intended that this guide be used in conjunction with other aids, such as the Guidance for Fire Hazard Assessment, the Prescribed Fire Predictor, and the Vancouver Region Prescribed Burning Manual, in determining slash disposal requirements.

The guide is segregated into the following species:

(A) Cedar

(B) Hemlock/Balsam

(C) Mature Douglas Fir

(D) Immature Douglas Fir

(E) Deciduous

Each species has been further broken down to illustrate light, moderate, and heavy rated areas.

The data supplied with the photos is intended to coincide broadly with Table 2 – Fire Hazard Assessment Guide – post harvesting which in turn is fed as input into the Prescribed Fire Predictor. Specifically, that part of the data which is pertinent to Table 2, is fuel size, fuel depth, and continuity (see Appendix 3). Fuel size is further segregated by size class and weight per hectare to give an indication of fine material present.

OBJECTIVE

The objective of this photo guide is to represent bench mark slash conditions representative of light, moderate, and heavy fuel rating with sufficient information to relate to Table 2 – Fire Hazard Assessment Guide – post harvesting.

DATA

Surveys have been conducted on each photo area to determine slash loading using the Line Intersect Method as outlined in MacRae et al (1979) (C.F.S. Info. Rep. 0-X-287) and with advise and assistance from B.D. Lawson and B.C. Hawkes of the Pacific Forest Research Centre.

A very abbreviated description of the Line Intersect Method and included slash material is as follows:

(1) Sample lines in the form of an equilateral triangle with sides of 30 meters are established for each photo area.

(2) All slash material, including rotted material lying above the duff layer and that would intersect the sample line, is tallied.

(3) The measured slash is segregated by size class as follows:

0.0 – 0.49 cm., 05 – 099.cm.,

1.0 – 2.99 cm., 3.0 – 4.99 cm.,

5.0 – 6.99 cm., 7.0 cm. and greater.

(4) Undisturbed stumps and dead stems or branches still attached to a standing tree are not counted.

(5) Slash depth is measured every 5 meters.

(6) Foliage is assessed and added as a segment of the total fuel loading.

(7) All survey information is computed to arrive at the total fuel loading in tons per hectare.

For a full description of the Line Intersect Method refer to the ‘The Line Intersect Method’ MacRae et al (1979) (C.F.S. Info. Rep. 0-X-287).

DATA – (Continued)

The information that has been included with each photo includes:

- Pre-harvesting stand data as to timber type, age, height, cull factor
- Fuel rating expressed as light, moderate, heavy
- Fuel loading expressed in tons per hectare
- Fuel depth (in cm)
- Diameter – this is the average diameter for all material 7.0 cm. and greater
- Continuity
- Fuel loading by diameter class expressed in tons per hectare

PHOTO DESIGN

Each photo series is designed to show a general view of the slash continuity and loading with two progressive close-ups to indicate depth.

The numbered marker included in most photos is marked in 30 cm., progressions (i.e. 0 to 1 is 30 cm., 0 to 2 is 60 cm., and so on).

SLASH ASSESSMENT

WESTERN RED CEDAR (Thuja Plicata)

FUEL RATING – LIGHT

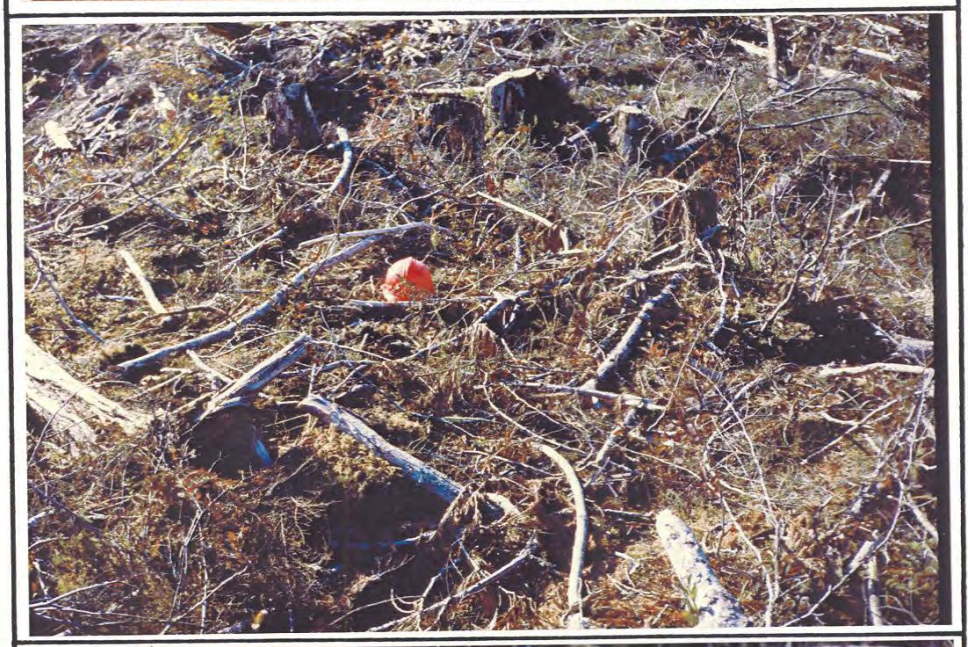
STAND DATA

Timber Type: Cw(Hw)

Age: 110 years

Height: 35 meters

Cull Factor: 18%



FUEL RATING – LIGHT

FUEL LOADING – 65 tons

FUEL DEPTH – 20 cm.

DIAMETER – 16 cm.

CONTINUITY – Fuel free areas smaller than fuel areas.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	5.4
0.5 – 0.99	2.0
1.0 – 2.99	3.2
3.0 – 4.99	6.2
5.0 – 6.99	7.3
7.0+	41.0

FUEL RATING – MODERATE

STAND DATA

Timber Type: Cw(Hw)

Age: 130 years

Height: 30 meters

Cull Factor: 26%

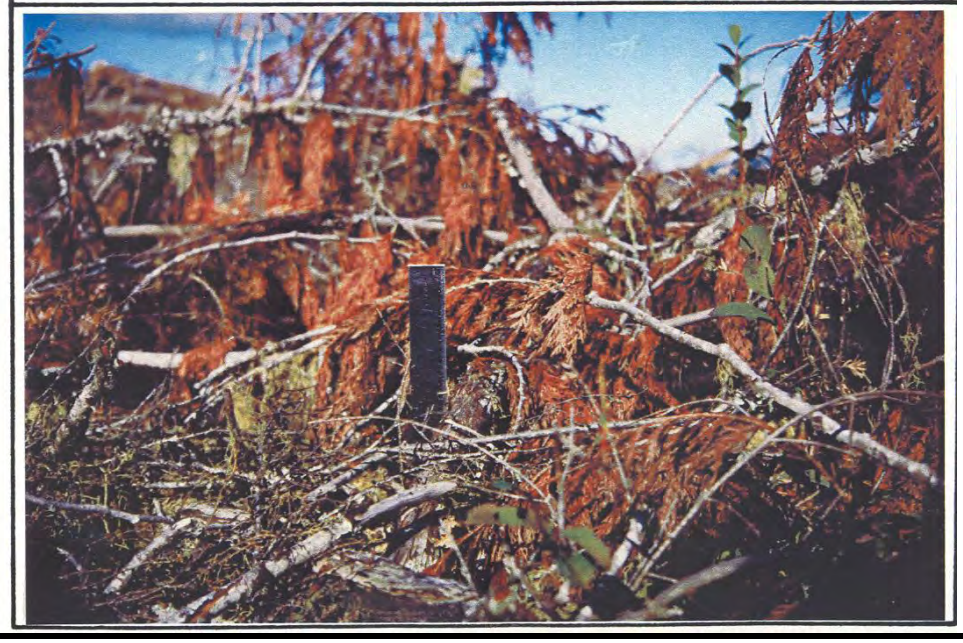
FUEL RATING – MODERATE

FUEL LOADING – 165 tons

FUEL DEPTH – 48 cm.

DIAMETER – 20 cm.

CONTINUITY – Fuel is continuous over 95% of the area.



FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	6.5
0.5 – 0.99	4.0
1.0 – 2.99	6.2
3.0 – 4.99	13.2
5.0 – 6.99	14.3
7.0+	121.0

FUEL RATING – HEAVY

STAND DATA

Timber Type: Cw(Ba)

Age: 180 years

Height: 30 meters

Cull Factor: 41%

FUEL RATING – HEAVY

FUEL LOADING – 240 tons per hectare

FUEL DEPTH – 60 cm.

DIAMETER – 20 cm.

CONTINUITY – Continuous, broken only by roads.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	8.1
0.5 – 0.99	9.0
1.0 – 2.99	10.6
3.0 – 4.99	30.1
5.0 – 6.99	28.9
7.0+	163.3

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SLASH·ASSESSMENT¶

WESTERN·HEMLOCK·–·AMABILIS·FIR¶

(Tsuga·heterophylla·–·Abies·amabilis)¶

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FUEL RATING – LIGHT

STAND DATA

Timber Type: HwBa

Age: 180 years

Height: 35 meters

Cull Factor: 20%

FUEL RATING – LIGHT

FUEL LOADING – 50 tons per hectare

FUEL DEPTH – 15 cm.

DIAMETER – 14 cm.

CONTINUITY – Fuel free areas larger than fuel areas.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	4.2
0.5 – 0.99	2.7
1.0 – 2.99	4.1
3.0 – 4.99	7.7
5.0 – 6.99	10.8
7.0+	20.5

FUEL RATING – MODERATE

STAND DATA

Timber Type: Hw(Ba)

Age: 250+ years

Height: 35 meters

Cull Factor: 30%

FUEL RATING – MODERATE

FUEL LOADING – 150 tons per hectare

FUEL DEPTH – 50 cm.

DIAMETER – 18 cm.

CONTINUITY – Fuel is continuous over 90% of the area.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	4.8
0.5 – 0.99	5.3
1.0 – 2.99	8.1
3.0 – 4.99	16.2
5.0 – 6.99	15.2
7.0+	100.4

FUEL RATING – HEAVY

STAND DATA

Timber Type: Hw(Ba)

Age: 250+ years

Height: 40 meters

Cull Factor: 40%

FUEL RATING – HEAVY

FUEL LOADING – 250 tons per hectare

FUEL DEPTH – 70 cm.

DIAMETER – 20 cm.

CONTINUITY – Fuel is continuous broken only by roads.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	6.3
0.5 – 0.99	8.7
1.0 – 2.99	20.5
3.0 – 4.99	40.5
5.0 – 6.99	43.0
7.0+	131.0

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SLASH·ASSESSMENT¶

MATURE·DOUGLAS·FIR·(Pseudotsuga·menziesii)¶

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FUEL RATING – LIGHT

STAND DATA

Timber Type: F(Hw)

Age: 250+ years

Height: 40 meters

Cull Factor: 20%

FUEL RATING – LIGHT

FUEL LOADING – 40 tons per hectare

FUEL DEPTH – 20 cm.

DIAMETER – 12 cm.

CONTINUITY – Fuel free areas smaller than fuel areas.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	1.5
0.5 – 0.99	2.4
1.0 – 2.99	3.6
3.0 – 4.99	5.6
5.0 – 6.99	9.1
7.0+	17.8

FUEL RATING – MODERATE

STAND DATA

Timber Type: F(Hw)

Age: 250+ years

Height: 40 meters

Cull Factor: 28%

FUEL RATING – MODERATE

FUEL LOADING – 180 tons per hectare

FUEL DEPTH – 40 cm.

DIAMETER – 15 cm.

CONTINUITY – Fuel is continuous over 90% of area.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	6.4
0.5 – 0.99	7.0
1.0 – 2.99	5.7
3.0 – 4.99	14.3
5.0 – 6.99	30.0
7.0+	116.6

FUEL RATING – HEAVY

STAND DATA

Timber Type: F(HwCw)

Age: 250+ years

Height: 40 meters

Cull Factor: 35%

FUEL RATING – HEAVY

FUEL LOADING – 230 tons per hectare

FUEL DEPTH – 60 cm.

DIAMETER – 15 cm.

CONTINUITY – Slash is continuous over 95% of area.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	4.5
0.5 – 0.99	3.3
1.0 – 2.99	6.1
3.0 – 4.99	15.6
5.0 – 6.99	17.1
7.0+	183.4

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SLASH·ASSESSMENT¶

IMMATURE·DOUGLAS·FIR·(Pseudotsuga·menziesii)¶

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FUEL RATING – LIGHT

STAND DATA

Timber Type: F(Ba)

Age: 90 years

Height: 25 meters

Cull Factor: 15%

FUEL RATING – LIGHT

FUEL LOADING – 25 tons per hectare

FUEL DEPTH – 15 cm.

DIAMETER – 10 cm.

CONTINUITY – Fuel free areas are larger than fuel areas.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	1.0
0.5 – 0.99	1.2
1.0 – 2.99	2.4
3.0 – 4.99	2.7
5.0 – 6.99	3.4
7.0+	14.3

FUEL RATING – MODERATE

STAND DATA

Timber Type: F(Hw)

Age: 80 years

Height: 30 meters

Cull Factor: 15%

FUEL RATING – MODERATE

FUEL LOADING – 40 tons per hectare

FUEL DEPTH – 30 cm.

DIAMETER – 13 cm.

CONTINUITY – Continuous fuel area, broken only by roads.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	3.5
0.5 – 0.99	3.4
1.0 – 2.99	3.6
3.0 – 4.99	5.6
5.0 – 6.99	6.3
7.0+	17.6

FUEL RATING – HEAVY

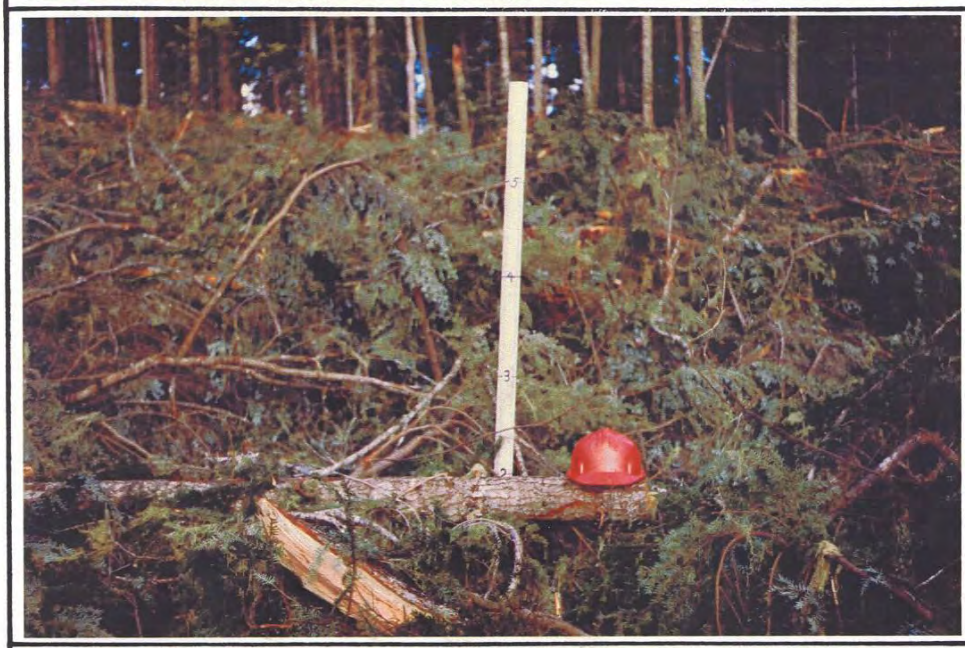
STAND DATA

Timber Type: F(Hw)

Age: 80 to 100 years

Height: 30 meters

Cull Factor: 20%



FUEL RATING – HEAVY

FUEL LOADING – 120 tons per hectare

FUEL DEPTH – 45 cm.

DIAMETER – 15 cm.

CONTINUITY – Continuous over 95% of area.

FUEL LOADING BY DIAMETER CLASS

Size Class (cms.)	Tons / hectare
0.0 – 0.49	7.1
0.5 – 0.99	5.6
1.0 – 2.99	7.8
3.0 – 4.99	9.4
5.0 – 6.99	9.8
7.0+	80.3

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SLASH·ASSESSMENT¶

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FUEL RATING – LIGHT

STAND DATA

Timber Type: Alder (F)

Age: 20 years

Height: 10 meters

FUEL RATING – LIGHT

FUEL LOADING – 60 tons per hectare

FUEL DEPTH – 15 cm.

DIAMETER – 10 cm.

CONTINUITY – Fuel free areas are larger than fuel areas.

FUEL LOADING BY DIAMETER CLASS

Size Class / (cms.)	Tons / hectare
0.0 – 0.49	1.2
0.5 – 0.99	2.0
1.0 – 2.99	3.5
3.0 – 4.99	3.0
5.0 – 6.99	14.2
7.0+	36.1

FUEL RATING – MODERATE

STAND DATA

Timber Type: Alder

Age: 20 years

Height: 10 meters

FUEL RATING – MODERATE

FUEL LOADING – 180 tons per hectare

FUEL DEPTH – 45 cm.

DIAMETER – 20 cm.

CONTINUITY – Fuel free areas smaller than fuel areas.

FUEL LOADING BY DIAMETER CLASS

Size Class / (cms.)	Tons / hectare
0.0 – 0.49	1.9
0.5 – 0.99	2.4
1.0 – 2.99	5.8
3.0 – 4.99	9.6
5.0 – 6.99	21.0

FUEL RATING – HEAVY

STAND DATA

Timber Type: Alder

Age: 30 years

Height: 15 meters

FUEL RATING – HEAVY

FUEL LOADING – 240 tons per hectare

FUEL DEPTH – to 50 cm.

DIAMETER – 30 cm.

CONTINUITY – Fuel continuous over entire area.

FUEL LOADING BY DIAMETER CLASS

Size Class / (cms.)	Tons / hectare
0.0 – 0.49	3.5
0.5 – 0.99	4.0
1.0 – 2.99	16.0
3.0 – 4.99	18.9
5.0 – 6.99	21.5
7.0+	196.1