

634.909711/BCMF SIL/SX 821
THOMPSON, C.F.
ROOT EGRESS FROM PLUGS
PLANTED IN FINE TEXTURED
CDCI c. 1 ma Main.....

CDCI
634.909711
BCMF
SIL
SX 82111N
1983

SX 82111 N

INTERIM REPORT

Root Egress From Plugs Planted in Fine
Textured Soils

C.F. Thompson

LIBRARY
MINISTRY OF FORESTS
1450 GOVERNMENT ST.
VICTORIA, B.C.
V8W 3E7

**SILVICULTURE
BRANCH**

634.909711
BCMF SIL
SX 82111N
1983
c. 1 ma

REPORT SX 82111 N

INTERIM

FINAL

DATE 83 12 15

TITLE Root Egress From Plugs Planted In Fine Textured Soils

Report prepared by: C.F. Thompson (Signature)

C.F. Thompson (Typed)

Report & Distribution approved by: H. Nyst (Signature) (for Regions -
Silviculture Officer)

H. Nyst (Typed)

- (a) Wide Distribution
- (b) Limited
- (i) Internal - Branch only
- (ii) External - Designated
- (iii) Ministry only

COPIES TO

Silviculture Branch
Nelson Region
Invermere District

Approved:

Manager - D.L. Oswald (Signature) (for Regions - Forestry Manager)

D.L. Oswald (Typed)

SX82111N
ROOT EGRESS FROM PLUGS PLANTED IN FINE TEXTURED SOILS
INTERIM REPORT

This trial was established on June 9, 1982 on a site selected for its fine textured soil by the White River (Appendices 1 and 2) - Map BGCZ classⁿ.

Four hundred seedlings of lodgepole pine (SL4276) from Harrop were planted. Of these, 200 had been grown in copper coated containers, and 200 were conventional PSB 313s. Half of each seedlot was fertilized with 30 g of ozmocote spread over a 10 cm radius round the tree.

Measures

All trees were measured for total height at the time of planting. A second assessment on October 19, 1982 measured height and condition. At that assessment, five seedlings from each line were carefully excavated for dry weight measures.

Results

Condition and growth after one growing season are shown in table 1, and dry weight measures in table 2.

There was no significant difference in growth due to stock types, but the unfertilized trees grew significantly more (in height) than the fertilized seedlings.

Although the copper coated plugs were significantly shorter than the conventional plugs at the time of planting, only the unfertilized plugs had a significantly less dry weight of top after one growing season. Unfortunately no dry weights were assessed at the time of planting.

The average root mass dry weight of the conventional plugs were significantly greater than that of the copper coated plugs, but the copper coated plugs were rather underdeveloped at the time of planting. Fertilization had no effect on the dry weight of the root mass.

There was no significant difference in root egress between the two plug types, however, fertilization caused a significantly greater root egress when compared with unfertilized root systems.

Comments

Due to the significant effects of fertilization, these seedlings will be reassessed in fall 1983.

TABLE 1 - GROWTH MEASURES (cm) AND CONDITION AFTER ONE GROWING SEASON

Treatment	Fertilizer ?	BLOCKS											
		1			2			3			4		
		Planting Height	Leader Growth	Cond.	Planting Height	Leader Growth	Cond.	Planting Height	Leader Growth	Cond.	Planting Height	Leader Growth	Cond.
Control	No Fertilizer	8.16	8.74	2.96	10.68	6.30	2.92	9.92	8.23	2.84	11.76	8.06	2.76
Control	Fertilizer	12.20	7.86	3.00	10.04	7.21	2.88	10.68	6.90	2.88	10.23	6.42	2.88
Cuc	No Fertilizer	6.84	8.84	2.92	7.88	8.80	3.00	6.40	6.24	2.80	7.72	6.76	2.72
Cuc	Fertilizer	8.20	8.13	2.88	6.76	7.20	2.76	7.64	5.22	2.68	6.68	7.95	2.92
Average		8.85 ^a	8.39 ^a	2.94 ^a	8.84 ^a	7.38 ^b	2.89 ^a	8.66 ^a	6.66 ^b	2.80 ^a	9.12 ^a	7.29 ^b	2.82 ^a

Average Planting Height Leader Growth Condition	Cuc		Control		Fertilizer		No Fertilizer	
	7.27 ^a	7.46 ^a	10.47 ^b	7.41 ^b	9.07 ^a	7.12 ^a	8.67 ^b	7.74 ^b
	2.89 ^a	2.84 ^a	2.84 ^a	2.86 ^a	2.87 ^a	2.87 ^a	2.87 ^a	2.87 ^a

TABLE 2 - DRY WEIGHT MEASURES OF ROOT SYSTEM - GRAMS

	Treatments			
	Fertilizer		Stock Type	
	No Fert.	Fert.	Control	Copper Coated
Root Egress	0.051 ^a	0.076 ^b	0.067 ^a	0.059 ^a
Root Mass	0.964 ^a	1.165 ^a	1.182 ^a	0.947 ^b

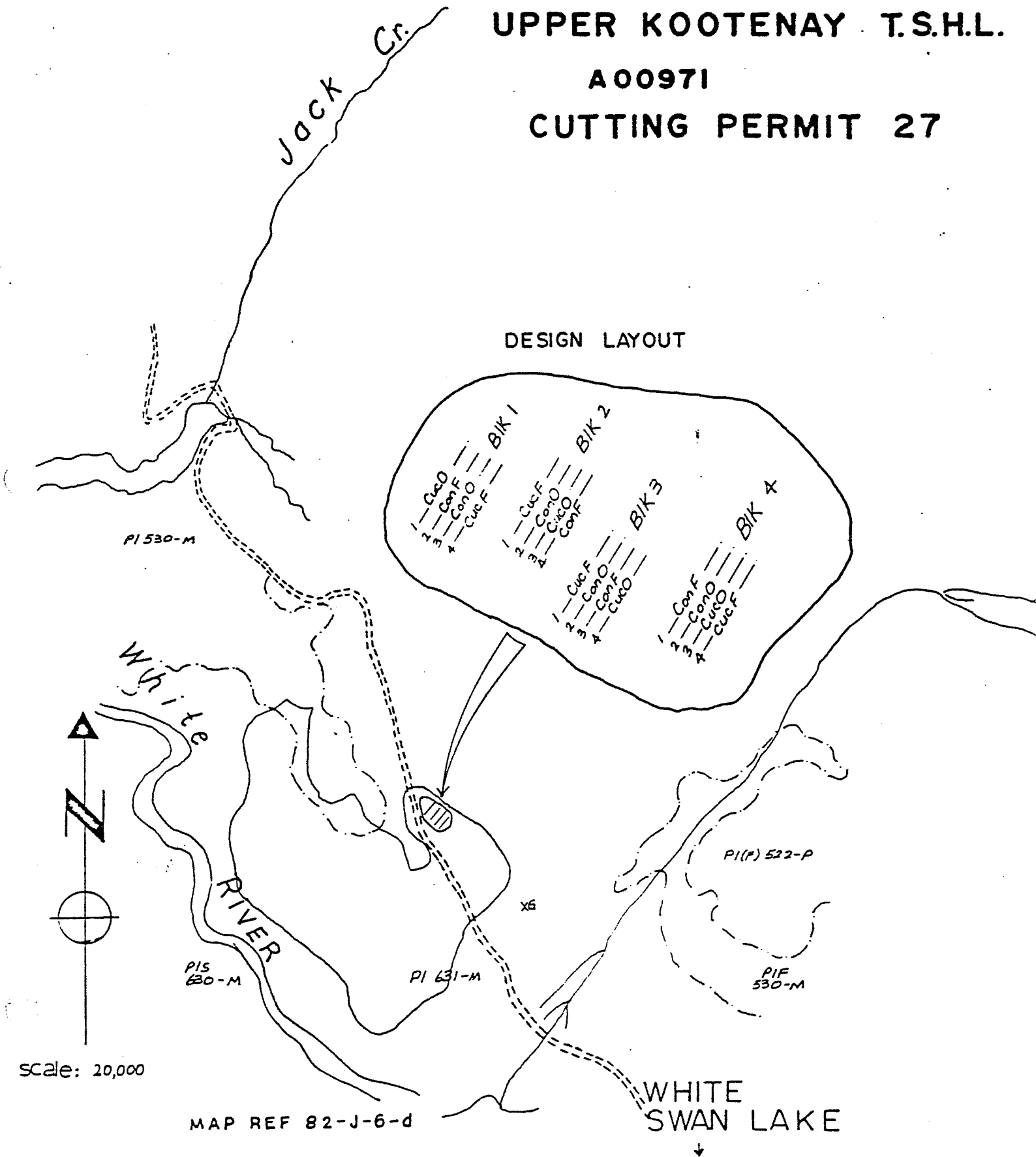
Means with the same letter following are not significantly different at 95% confidence level.

UPPER KOOTENAY T.S.H.L.

A00971

CUTTING PERMIT 27

DESIGN LAYOUT

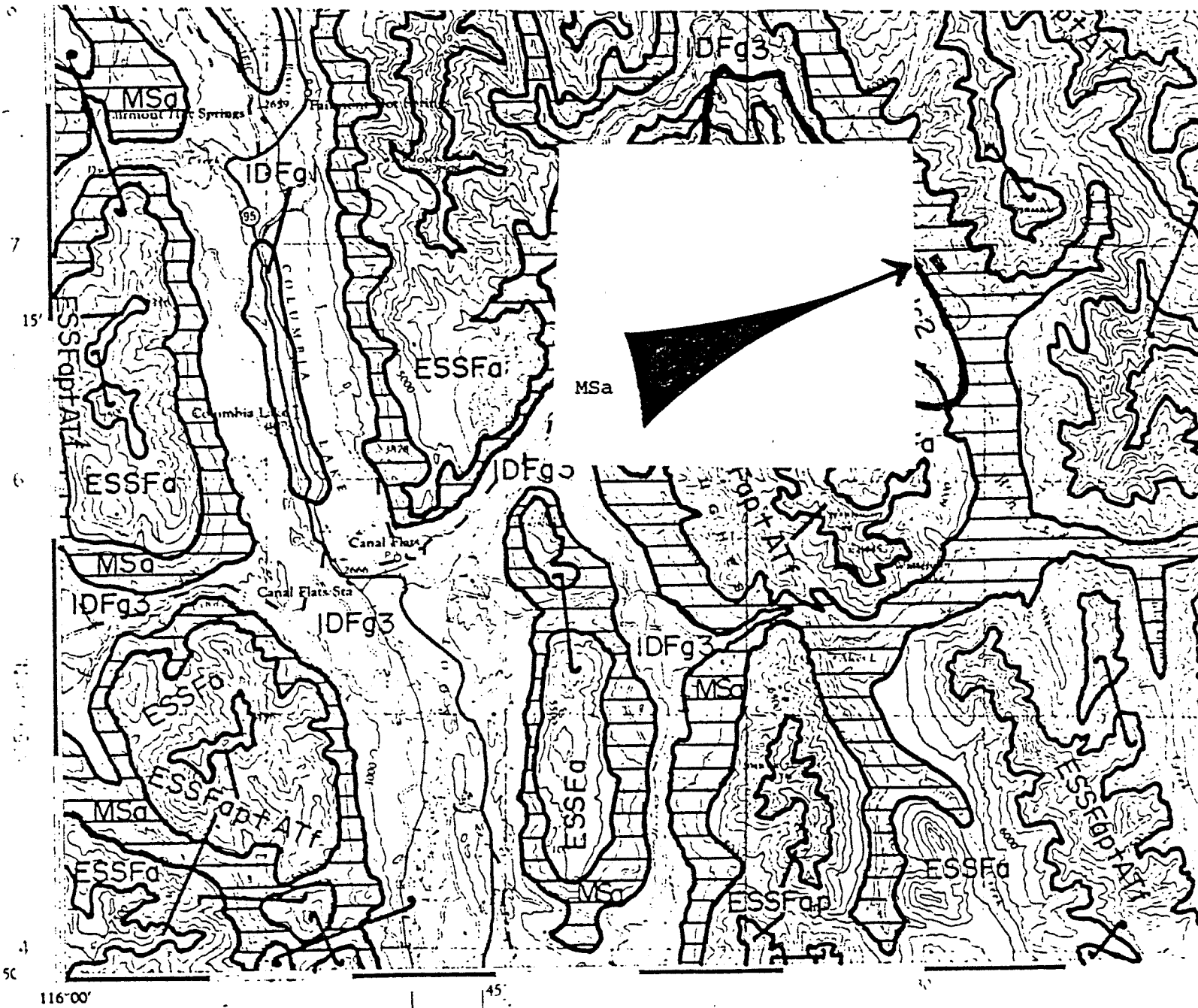


APPENDIX - 2

SX82111N

LOCATION 1

WHITE RIVER



ROOT EGRESS FROM PLUGS PLANTED
IN FINE TEXTURED SOILS.

SPECIES
SEEDLOT / NURSERY
STOCKTYPE
BGCZ
EA
PLANTING DATE
1st ASSESSMENT
FALL ASSESSMENT

LOCATION 1 = WHITE RIVER

Lodgepole Pine
4276 / Harrop
PSB 313 1+0
MSa
3D
June 9, 1982
June 9, 1982
October 19, 1982

STOCK CONDITION

CONTROL

COPPER-TREATED

Good

Good

% SURVIVAL

NO FERT.

FERT

NO FERT.

FERT

98.0

99.0

100.0

95.0

CONDITION

E%

G%

F%

P%

D%

-

-

91.0

94.0

89.0

91.0

7.0

4.0

8.0

4.0

-

1.0

3.0

-

2.0

1.0

-

5.0

GROWTH MEAN (1982) cm.

7.8

7.1

7.7

7.2

* Unfertilized growth significantly greater than Fertilized growth.

WEATHER AT PLANTING

Hot during planting - followed by light ppt.

SITE DESCRIPTION

Aspect= 246°

Slope = 17%

Soil = Silty Clay

Coarse Fragments = 0% ; LFH = 2-4 cm

Lower slope -- even terrain

Vegetation - light-medium -- continuous
- mainly grasses, Calamagrostis rubescens.
- Shepherdia Canadensis,
Fragaria virginiana.