

REPORT ON THE 1961 UNIT SURVEY

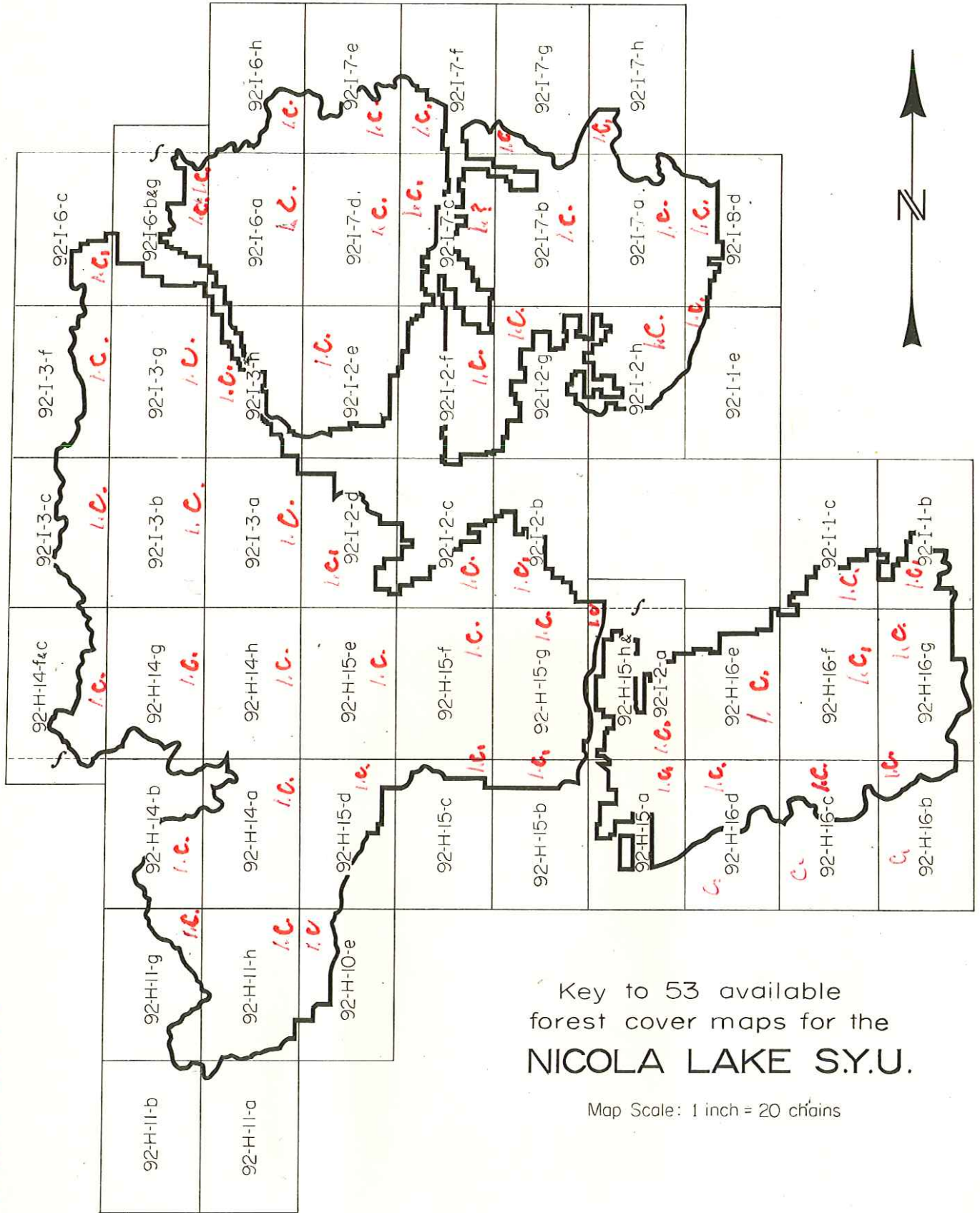
OF THE

NICOLA LAKE S.Y.U.

Forest Surveys and Inventory Division,
E. L. Young, Forester i/c.

September, 1962
File: S.C. 111

*C. = Close (7.1")
I. = Intermediate (11.1")*



Key to 53 available forest cover maps for the NICOLA LAKE S.Y.U.

Map Scale: 1 inch = 20 chains

FOREWORD

This report, which is based on a 1961 unit survey, presents a synopsis by area and volume for the entire Nicola Lake S.Y.U. Alienations, timber sale, and fire history for the area have been incorporated up to September, 1961, the completion date of the field work. This report therefore replaces all previous figures or bulletins on this area.

In addition to this report, detailed map area and map volume statements are available for each of the 53 maps (shown on the key) which cover this unit. In effect, the maps at twenty-chain to one-inch scale, plus the above statements, complete the survey report.

CLASS OF SURVEY

Henceforth this Division will be classifying all surveys as A, B, or C. This is in order that the reader will be able to assess the value of the information supplied. In brief, CLASS A surveys will be those based on close to 100 per cent local information. CLASS B will closely approximate the conditions of A, but some zonal or regional information will be used. CLASS C will be those in which considerable zonal information is used due to inadequate sampling and/or classification.

The Nicola Lake S.Y.U. is a CLASS B survey. We have been able to provide:-

- (1) a detailed area statement, and a map volume statement for each of the 53 maps.
- (2) forest cover maps at a scale of twenty-chains to one-inch.
- (3) twenty-chain air photos. These were flown in 1960 and '61 by the Air Surveys Division, and provide the basis for the air and ground classification. The procedures used were of our latest standard as outlined in this Division's manuals.
- (4) volumes based on 147 half-acre samples, established in mature types during the period of 1953 to '61 inclusive. These local samples account for the volume on 73 per cent of the total productive mature Crown area. The balance of the area is based on Zone 5 average volume per acre estimates, which include local samples not used above. All samples including those prior to the above date, are shown plotted on the maps by number and year. Distribution by forest type of all samples 1953+ is as follows:

Mature - 159

Immature - 92

N.S.R. - 4

Total = 255.

- (5) forest classification incorporating all previous survey data. In addition to ground measurements, observations were recorded with the use of a helicopter.
- (6) a volume estimate for that portion of the area shown in item 4, with a sampling error within ± 6 per cent at a probability of 19 times out of 20. This error was based on net volumes at 11.1" + d.b.h.
- (7) volumes based on the 1962 "Standard Cubic-Foot Volume Tables for the Commercial Tree Species of B. C." To these volumes merchantable volume (utilization) factors and net volume (loss) factors were then applied, the result being a net volume estimate at an intermediate utilization standard (1.5 foot stump and 8 inch top d.i.b.) less decay, waste, and breakage.
- (8) net mean annual increments (M.A.I.'s) for 58 per cent of the total productive immature Crown area, based on 224 immature and mature local samples. Net volumes apply mainly to pure F, B, S, and Pl, and mixtures thereof, and are reported to a close utilization standard (1 foot stump and 4 inch top d.i.b.) with deductions for decay only. For the balance of the immature area (see Table 3), gross volumes are from Zone 4 and 5 data, as per Forest Survey Note #6, and are to a close utilization standard with no deductions.

RESULTS

A. Area Statement:-

The Nicola Lake S.Y.U. contains 843,364 acres of Crown forest and non-forest land, of which the accessible productive (excludes low site) area is 681,443 acres. The 681,443 acres includes:-

- (1) Mature - 328,387 acres
- (2) Immature - 315,825 acres
- (3) N.S.R. - 36,344 acres
- (4) N.C. - 887 acres.

In addition to the total Crown area, a further 46,598 acres, within the unit boundary, is classed as alienated.

B. Volume Statement:-

The net volume estimate in cubic feet for the mature Crown accessible

productive area (11.1" + d.b.h. to an *intermediate utilization standard, less decay, waste, and breakage) is:-

580,022,000 cubic feet (on 328,387 acres).

On the approval of the Chief Forester, additional volume estimates for 5.1"+, 7.1"+, 9.1"+, and 13.1"+ d.b.h. to several utilization standards, can be obtained.

REMARKS

In the following four tables one should realize that:-

(1) the following symbols are used for the recognized species:-

F - Fir	Pl - Lodgepole Pine
C - Cedar	Py - Yellow Pine
H - Hemlock	Cot - Cottonwood
B - Balsam	Bi - Birch
S - Spruce	A - Aspen.
Pw - White Pine	

(2) four site classes are recognized. Productive area includes good, medium, and poor site, and excludes low site. Site index is based on height at 100 years, as per the site index curves, by species, listed in the manual.

(3) the current utilization standards now have a fixed stump height and top d.i.b., as follows:-

CLOSE UTILIZATION	= 1 foot stump and 4 inch top d.i.b.
INTERMEDIATE UTILIZATION	= 1.5 foot stump and 8 inch top d.i.b.
ROUGH UTILIZATION	= 2 foot stump and 12 inch top d.i.b.

* Intermediate Utilization = 1.5 foot stump and 8 inch top d.i.b.

NICOLA LAKE - 1961

TABLE 1

TOTAL FOREST AND NON-FOREST CROWN AREA IN ACRES

		ACCESSIBLE	INACCESSIBLE	TOTAL
*PRODUCTIVE SITES	MATURE	328,387		328,387
	IMMATURE			
	AGE 1- 20	38,628		38,628
	21- 40	11,636		11,636
	41- 60	76,378		76,378
	61- 80	141,765		141,765
	81-100	32,427		32,427
	101-120	14,991	315,825	14,991 315,825
N.S.R.	36,344		36,344	
N.C.	887		887	
TOTAL	681,443		681,443	
LOW SITE	MATURE	6,175		6,175
	IMMATURE AGE 1-120	85,380		85,380
	TOTAL	91,555		91,555
NON-FOREST	Alpine Forest	16,364		16,364
	Alpine	22,226		22,226
	Swamp	7,135		7,135
	Water	5,748		5,748
	Rock	3,246		3,246
	N.P.	2,332		2,332
	Other	13,315		13,315
	TOTAL	70,366		70,366
**GRAND TOTAL CROWN	843,364		843,364	

* PRODUCTIVE - includes Good, Medium, and Poor Sites; excludes Low Site.

** GRAND TOTAL CROWN - in addition to this area, a further 46,598 acres, within the unit boundary, is classed as alienated.

NICOLA LAKE - 1961

TABLE 2

IMMATURE CROWN ACCESSIBLE AREA IN ACRES BY SITE AND AGE CLASS

- PRODUCTIVE SITES ONLY -

FOREST TYPE	GOOD SITE					TOTAL	MEDIUM SITE					TOTAL	POOR SITE					TOTAL	GRAND TOTAL ACRES		
	ACRES BY AGE CLASS						ACRES BY AGE CLASS						ACRES BY AGE CLASS								
	1-20	21-40	41-60	61-80	81-100		101-120	1-20	21-40	41-60	61-80		81-100	101-120	1-20	21-40	41-60			61-80	81-100
F	327	856	1138	1461		3782	498		1195		652	2345	4154	10826	1061			90	16131	22,258	
FS		111	109			220				791		791		333					333	333	1,344
FPI	330	225	1193	18		1766	478		1647	1318		3443	4283	7533	2552			158	14526	19,735	
FPy	591	786	27	128		2102	467			144		611	4419	3553	2869				10841	13,554	
FDec	63					63							582						582	582	645
B	36					36				90		155						191	1237	1,428	
BH										32		32							54	86	
BS	396	42		364		802			212	322		1714		1365	1643			518	3526	6,042	
S	296	5	268	379	218	1166			617	298		915	20						20	2,101	
SF		74	104			178				288		288	776		76				852	1,318	
SB		285	93			378			1002	933		1935	787	317	196				1300	3,613	
SPI	29	72	496	361	1111	2069			1185	320		1505	309	278	198			13	798	4,372	
PI	29955	5076	689	12154		47874			37435			37435		69528					69528	154,837	
PIF	4038	1156	1844	1029	2482	10549			8591	740		9331		9737	2776			2754	15267	35,147	
PLS	832	53	35	5545	8368	14833			3335	1106		4441		10920	897			997	12814	32,088	
PIDec	170	650	265	180		1265			655			655		1308					1308	3,228	
Py	164	1576				1740			4315			4315	1054	2000	240			58	3294	9,349	
CotCon												99			141				199	298	
ACon									68			557	1227	649					2876	3,433	
A,Cot,Bi	18					18			680			680		251					251	949	
TOTALS	35934	9495	4032	23019	13061	88841	1443	1087	55789	6016	6912	71247	1251	1054	16557	118746	13350	4779	155737	315,825	

NICOLA LAKE - 1961

TABLE 3

M.A.I. IN CUBIC FEET PER ACRE BY SITE CLASSES FOR IMMATURE CROWN ACCESSIBLE AREA
 11.1" + D.B.H. *Close Utilization at 150 Years

- PRODUCTIVE SITES ONLY -

FOREST TYPE	GOOD SITE		MEDIUM SITE		POOR SITE		TOTAL ACRES	GRAND TOTAL M.A.I.			
	M.A.I.	Acres	Total M.A.I.	Acres	M.A.I.	Acres			Total M.A.I.		
** F, FS, FPl, FPY	27	7,870	212,490	16	7,190	115,040	8	41,831	334,648	56,891	662,178
FDec, Py	16	1,803	28,848	9	4,315	38,835	6	3,876	23,256	9,994	90,939
** B, BH, BS, S,SF,SB,SP1	41	4,629	189,789	22	6,544	143,968	12	7,787	93,444	18,960	427,201
** Pl, PlDec				9	38,090	342,810	1	70,836	70,836	108,926	413,646
Pl	12	47,874	574,488							47,874	574,488
PlDec	19	1,265	24,035							1,265	24,035
PlF, PlS	24	25,382	609,168	12	13,772	165,264	6	28,081	168,486	67,235	942,918
CotConif, AConif				22	656	14,432	9	3,075	27,675	3,731	42,107
A, Cot, Bi	34	18	612	16	680	10,880	13	251	3,263	949	14,755
GRAND TOTAL		88,841	1,639,430		71,247	831,229		155,737	721,608	315,825	3,192,267

* CLOSE UTILIZATION = 1 foot stump and 4 inch top d.i.b.

** Net M.A.I. apply to these types and sites; others gross.

NICOLA LAKE - 1961

TABLE 4

NET VOLUME IN M.C.F. FOR TOTAL MATURE CROWN ACCESSIBLE AREA

11.1¹³+ D.B.H. *Intermediate Utilization, Less Decay, Waste, and Breakage

-- PRODUCTIVE SITES ONLY --

SPECIES	FOREST TYPE																	GRAND TOTAL
	F FB, FDec	FS	FPI	FPY	B	HB,BH CB	BS	S,SH Pw	SF	SB	SP1	P1	PIF, PIA	PIBS	Py	Cot,A,Bi & Mixtures		
F	173158	114	28782	21976	66634	1455	37	281	36	4547	1162	189	1723	2571	229	14548	21	317,463
C		107			115	598	73	13	50	616	239							1,811
H		19			108	1770	73	298		1547	236							4,051
B	1	1555	24		11120	2494	21229	278	535	20445	2265	148	98	1238				61,430
S	3439	2	5652	337	3459	603	17348	7371	4579	39502	9176	4664	904	6044			29	103,109
Pw			30	18	675		109	74		1384	236			96				2,622
PI	1909		2154	2569	95	1191	91	536	181	683	4499	11248	2401	9839		41		37,437
Py	3232													333	14732			51,327
Cot									6	4						102		112
Bi	9	7		18												19		53
A	73	1		38				1		3		235	4	75		177		607
TOTAL VOLUME	181820	125	38299	24980	99759	18123	5502	39204	8607	9898	65346	16840	18018	6407	17425	29280	389	580,022
TOTAL AREA	81108	198	12602	17248	61549	12474	2090	19633	2836	3290	16328	7198	42580	5424	11790	29046	2993	328,387

* INTERMEDIATE UTILIZATION = 1.5 foot stump and 8 inch top d.i.b.