

A Brief Guide to the Use of Land Surveyors' Notebooks in the Lower Fraser Valley, B.C., 1859-1890

M. NORTH, D. HOLDSWORTH AND J. TEVERSHAM

The Land Surveyors' Notebooks have recently been used as a source of detailed point-specific information on the early vegetation cover in the Lower Fraser Valley in an attempt to reconstruct the pre-White contact physical landscape of the area.¹ The first Land Surveyors were instructed to survey in the boundary lines and mark the corners of land subdivisions prior to sale, and to note soil conditions, type of vegetation, presence of water, and any other information of potential use to settlers who might be purchasing land sight-unseen. While using these books it was realized that they contained a considerable quantity of non-botanical information which may be of potential use to other researchers interested in this period of B.C. history. For example, it is possible to work out the configuration and extent of sloughs, many no longer in existence, and to get some idea of the drainage conditions confronting early pioneer farmers. In addition, the logistics of land surveying, in terms of Indian labour, provisions, expenses, and the speed of work, can be assessed by reading the Notebooks in conjunction with reports tabled in the Sessional Papers for that period.²

Most of the Lower Fraser Valley was surveyed for settlement between 1859 and 1890. The problems encountered in using the Surveyors' Notebooks as a reference source have as much to do with the history of land surveying as with the interpretation of the records of field observations made over 100 years ago.

In 1858 a survey section arrived with the advance party of Royal Engineers. The Commander of the Royal Engineers, Colonel Moody, was also Chief Commissioner of Land and Works under Governor Douglas; to him fell the responsibility of surveying the lands of the Crown Colony

¹ North, M. and J. Teversham. "The Pre-White Settlement Vegetation of the Lower Fraser Valley Floodplain," forthcoming publication of Department of Environment, Fisheries and Marine Service Technical Report.

² See for example the reports of McLure's Survey Party in *B.C. Sessional Papers*, Report of Public Works, 1873.

of British Columbia. With few survey models to consult, Moody looked south to the practices of American surveyors.

Addressing a letter to James E. Tilton, Esq., Surveyor General, Olympia, he wrote:

It has been determined to survey the rural lands of B. Columbia on the System adopted in the United States Land Districts of Oregon and Washington.

I shall esteem it an act of great courtesy if you would have the kindness to forward me a few copies of the Books of Instructions to Deputy Surveyors, which will be invaluable to me in carrying out the details of the Survey.³

The U.S. system is described by Taylor as follows. "The system is a 36-section, 6-mile-square Township and Range System with a base line set at right angles to a principal meridian and the Townships numbered all North, and Ranges numbered east and west of the Central Meridian. The Sections are numbered with 1 in the NE Corner and west then east on the second tier south, etc."⁴ (see Fig. 1).

During the thirty-year period in which most of the Lower Fraser valley was surveyed a number of different survey systems were employed. The cadastral system in the valley varies from place to place depending on the time of survey. However, all surveys were modelled on the U.S. Land Survey System: the lack of uniformity in the Lower Fraser Valley mainly relates to the size of section and the order of numbering of the sections.

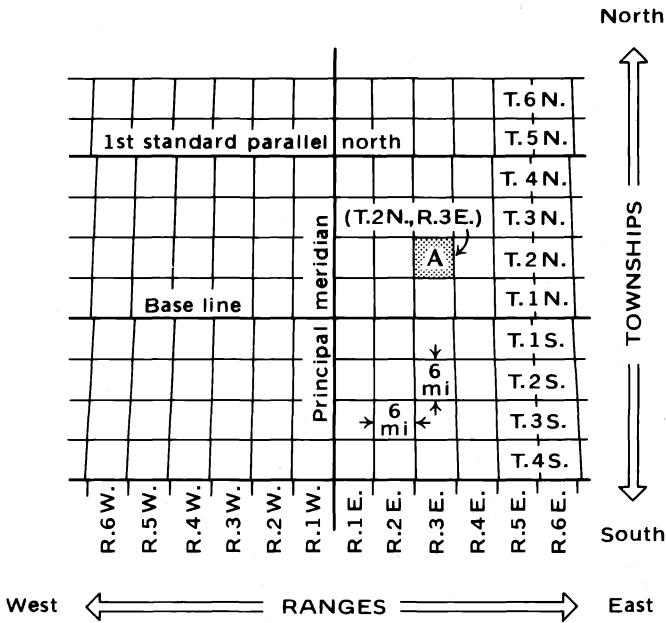
All surveyors kept their notebooks according to a standard format. Each page was titled with the proper designation of the block being surveyed. The number and location (ex. NW Corner) of the section of quarter section posts were entered in the left-hand column with the compass bearing and distance to the next post's location. Distances along the surveyed lines were noted where changes occurred in vegetation or soil types, or where a slough or trail intersected the line. Notes on physical and man-made features (such as barns or fences) crossed by the surveyed line were written in the right-hand column of the notebook, opposite the distances recorded (see Fig. 2). Thus the information recorded is specific to a particular point on the line being surveyed, and to its linear extent along that line. Occasionally the extent of a vegetation type, water body,

³ This letter, dated 18 March 1859, is quoted in W. A. Taylor, *Survey Systems Within the Crown Domain: Colonies to Confederation*, Surveys and Mapping Branch, Department of Lands, Forests, and Water Resources, Victoria, B.C., 1975. Much of the information on the origins of the various survey systems is derived from this pamphlet.

⁴ *Ibid.*, p. 8.

FIGURE 1

The United States Land Survey System (Strahler, A. N., *Physical Geography*, 4th edition, John Wiley & Sons, N.Y., 1975, p. 56).



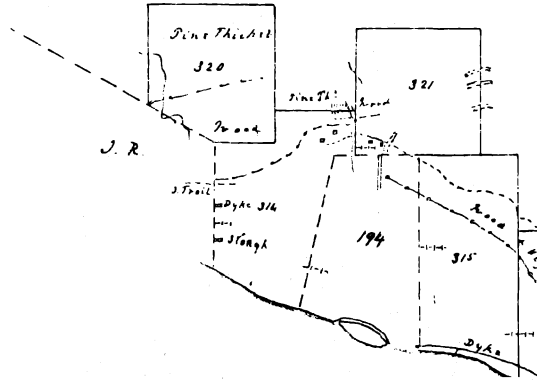
R. 3 E.

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

T. 2 N.

FIGURE 2

Copy of a page from a surveyor's notebook with accompanying map. (Legal Surveyors' Notebook reference New Westminster District Group 1, 15/76.)



June 15th 1876

Start at a Post marked
Lot 194 Group 1. North East
Post Lot 194.

S. 67. 30. W

- | | |
|------------------|---|
| 0.58 | Logging road turning S.W. - NE |
| 1.87 | Trail turning N.E. & S.W. |
| 3.80 | Commencement of steep bank to S |
| 5.46 | Centre of a small swamp |
| 7.00 | Large Cedar |
| 10.00 | End of road |
| 10.67 | Logging road running to near S. Slough |
| - | Offset to nearest house 253 links N |
| 10.87 | Logging road & bank to Slough |
| 11.28 | bank of Slough turning to slough |
| 13.69 | End of dyke 94 links N |
| 13.69 | Offset to garden fence ^{186 links} 22 links N |
| 14.00 | Offset wagon road 186 links N |
| 16.37 | wagon road to Town |
| 20.00 | |
| 20.80 | Commencement small plantation |
| 21.00 | Offset to small building 197 links N |

or trail, away from the survey line is indicated by a written direction or by a small sketch.

Frequently a written summary of the section was given. The following description from the Surveyors' Notebook for Township number 1, Section 35 West of the Coast Meridian is typical.

Land prairie, soil alluvial bottom, section 35 is good land. There are about 60 acres timbered on the south side of the river. The prairie has clusters of crabapple through it: the NW quarter is peaty and mossy and contains cranberries.⁵

Many of the notebooks include a cadastral map showing the surveyed area and the section numbers, with reference to the page on which the details of the field survey are given (Fig. 3). This gives a quick reference to a precise location in each notebook. Some notebooks also include sketch maps indicating the pattern of vegetation, water bodies, and occasionally existing settlements, trails, field crops and the names of landowners.

There were five distinct surveys:⁶ (i) those begun in 1858 by Colonel Moody, (ii) the Royal Engineers' Town Surveys, (iii) the Provincial Surveys which began in 1873, (iv) the Dominion Surveys and (v) the Surveys of Indian Lands. Each has a distinct set of references and each is filed separately.

i) The Surveys of the Mainland Colony of British Columbia were begun under Colonel Moody in 1858 and continued until 1863. Surveyors' notebooks from this period are referred to by the number of the Survey and the last two digits of the year, e.g. 10/59.

The critical organizational template for the entire area is provided in Moody's initial instructions for this first survey of the Mainland. From the intersection of the International Boundary (the forty-ninth parallel) with the ocean at Semiahmoo Bay ($122^{\circ}45'W$) the Coast Meridian was established running northwards. Twelve miles north of the boundary a first standard parallel (sometimes referred to as the first correction line) was surveyed running east-west, approximately along the line of the Fraser River. Using this standard parallel as a baseline, the area was subdivided into thirty-six sections measuring forty chains square or 160 acres. (This section is equivalent of a quarter section in the U.S. Land Survey.) Section numbering starts from the northeast corner, working west then

⁵ Legal Surveyors' Notebook reference, New Westminster District Group 2, 6/59.

⁶ The broader context of these surveys has been discussed in Cail, R. E., *Land, Man and the Law: the disposal of crown-lands in British Columbia, 1871-1913*, Vancouver, UBC Press, 1974.

FIGURE 3

Copy of the frontspiece cadastral map which accompanies the Surveyor's Notebook titled "Field Notes of the Exterior Lines and Subdivisions of Block 4 North of Range 6 West of the Coast Meridian." The larger two digit numbers from 47 to 79 were superimposed on the original map at a later date, and are the reference numbers to the pages in the notebook referring to those particular lines. (Legal Surveyors' Notebook reference New Westminster District Group 2, 6/59.)



south for six tiers of six sections, as in the U.S. system, but only Lulu and Sea Islands and the Surrey and Coquitlam shores of the Fraser were surveyed in this manner (see Fig. 4).

ii) At the same time, the Royal Engineers were laying out Town lots of irregular size throughout the Valley. The largest concentration were the suburban lots flanking New Westminster (in Burnaby and Coquitlam). Smaller clusters were on the south side of the Fraser opposite New Westminster (Lots 15 to 18, and Lot 26, near Ladner), and further upstream at Mission (Lots 1-4, 66-69, etc.), Langley, Chilliwack and Yale.⁷ Their notebooks are referred to as Royal Engineers (R.E.) Volumes 1, 2, 3 *et. seq.*

iii) Following the granting of provincial status in 1871, and in anticipation of growth fostered by the promised railway, new surveying was undertaken in the Valley. Most of the Valley east of the Coast Meridian, and the Delta area south of the River were surveyed between 1873 and 1877, on a Township system. Each township was six miles square, subdivided into thirty-six sections of one mile square. The townships were oriented to the Coast Meridian, numbered east and west from it, and the sections were numbered in successive tiers of six from the southeast corner (see Fig. 4). In the Provincial Surveys all lands north of the North Arm and the main Fraser River were listed as New Westminster District Group One Surveys. Those south of the River, and the North Arm, are listed as New Westminster District Group Two (NWD Grp. 2.). The Provincial surveyors' notebooks assumed the same numbering system as the Mainland Colony Surveys, e.g. 32/74, and they are also filed according to their Group.

iv) The Dominion Surveys were associated with the Railway Belt lands, and in places overlapped the provincial jurisdiction and surveys from the 1873 date. Many of the townships surveyed by the Province fell into the Railway Belt, and when transfer of the land was made to the Dominion they took over all copies of notes and plans and changed their reference numbers. The Dominion surveys are listed by four-digit reference numbers, e.g. 4326, the actual date of each survey being recorded in the notebook. The lands surveyed are found mainly along the north shore of the Fraser upstream from Chilliwack.

v) The Indian Lands were surveyed by band territories. These lands were often islands and the surveyors went around the edges of the islands

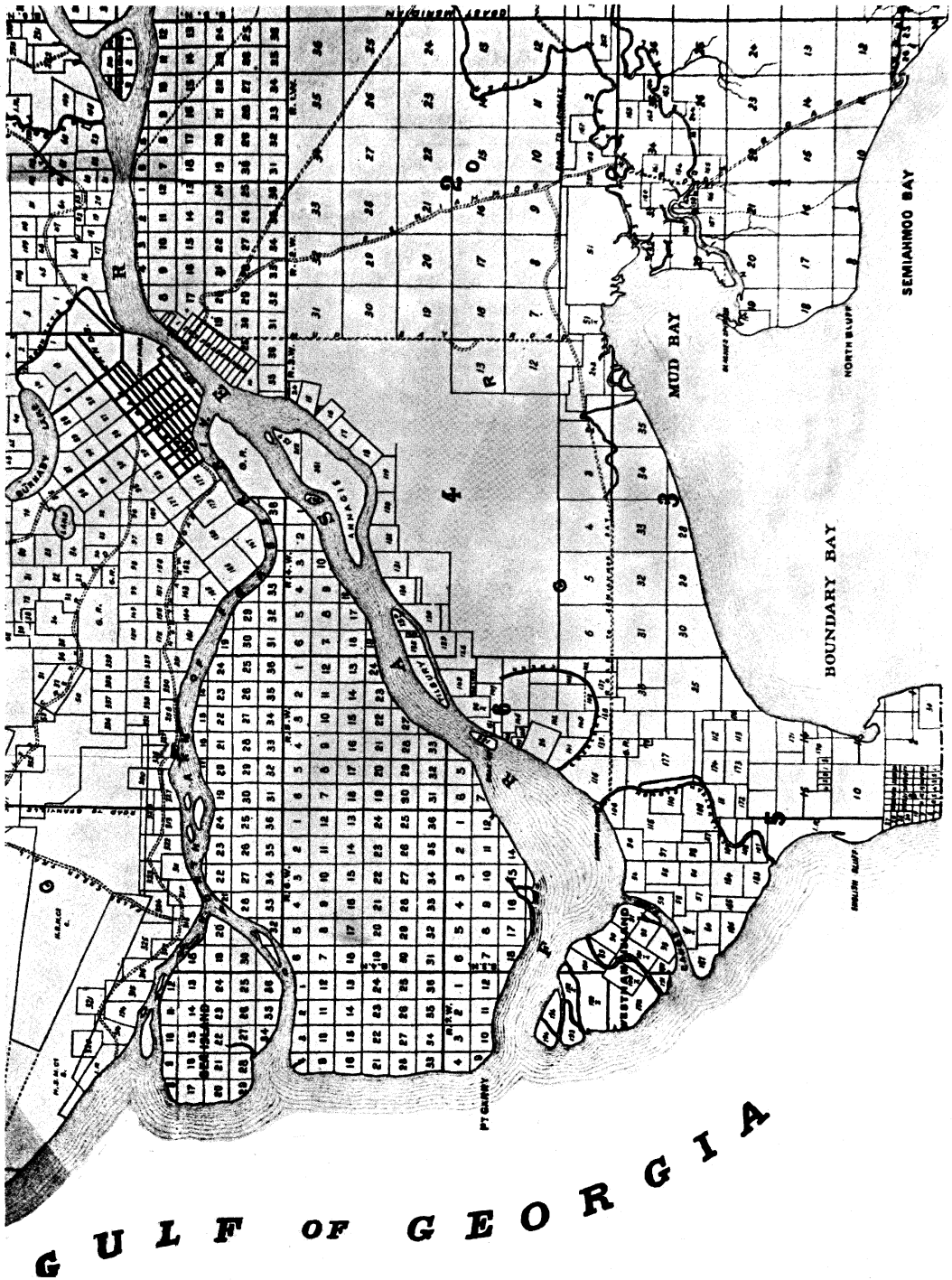
⁷ An account of the town plans used by Moody is given in Oberlander, P. "Early Planning in British Columbia," *Journal, Royal Architectural Institute of Canada*, 1958, pp. 110-13.

and occasionally traversed them. The notebooks are referred to by the band name and number of the reserve, e.g. Chamil 7.

This article has drawn attention to the Land Surveyors' Notebooks as an archival source,⁸ and explains some of the complexities encountered in referring to this material. The following figures 4, 5, 6 and 7, relate the notebooks to a series of cadastral maps of the Lower Fraser Valley. From these maps the researcher can locate the area of interest and then check the tabulated bibliography opposite the map to find which of the various survey notebooks pertain to that area. There does not always appear to be a spatial sequence to the surveys; indeed several notebooks over a period of years were consulted before the relevant information for certain areas could be accumulated. In the case of land that was already pre-empted for settlement, only boundaries were surveyed and corners marked. The only information recorded about this land was the name of the settler and the presence of buildings and crops.

⁸ The notebooks are currently housed in the archives of the Provincial Land Surveyors at 101 Harbour Towers, 345 Quebec Street, Victoria, B.C.

FIGURE 4
Fraser Delta and Valley Lands West of the Coast Meridian.

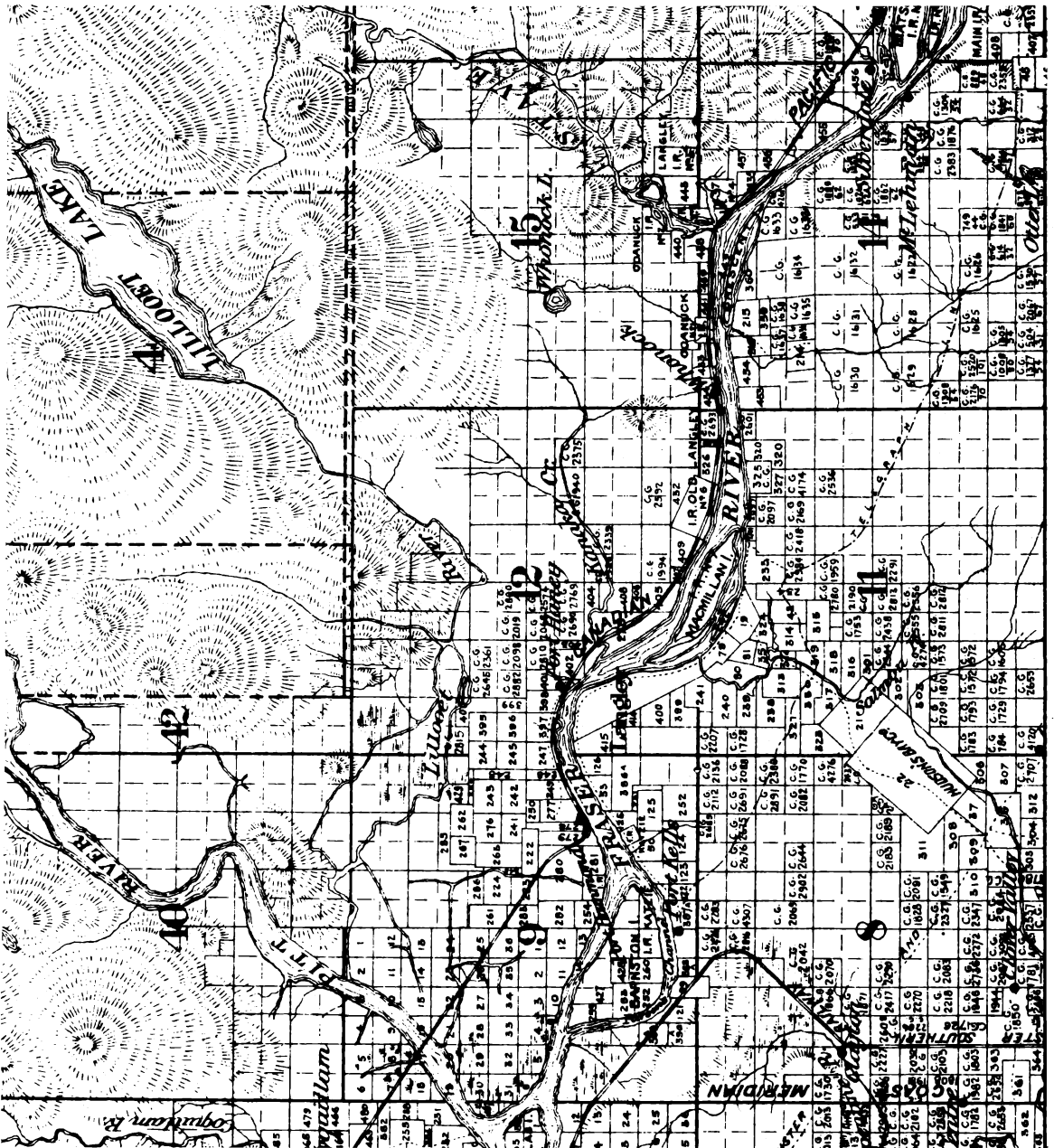


SOURCE: B.C. Sessional Papers, Report of Public Works, 1877.
SCALE: 1 inch represents approximately 3.3 miles.

Sources for Information West of the Coast Meridian (Fig. 4)

<i>General Area</i>	<i>Specific Details of Area</i>	<i>Surveyors' Notebook Reference Number</i>	
<i>New Westminster District Group Two, South of North Arm</i>			
Township 1	Mouth of the Nicomekl	6/59	7/73
Township 2	Exterior Lines	5/73	
Township 2	Interior Lines	32/74	3/75
Township 3	South of Burns Bog	3/73	4/73
Township 4	Lots of S. Shore of S. Arm	33/74	
Township 4	Lots 15-18 on S. Shore of S. Arm	R.E.	
Township 4	Sections 1-6 along Ladner Trunk Rd.	34/74	
Township 4	Lot 243 in Section 1	45/75	
Township 4	Annacis Island Lot 351	34/83	
Township 4	Annacis Island Lot 312	12/74	
Township 5	Lots 1, 2, 10, 11, 14, 15, 112, 113, 172, 173, 174, 176, 177	33/74	
Township 5	107, 108, 109, 111	41/72	
Township 5	183, 184, 185, 186	33/74	
Township 5	96, 97, 98	11/71	
Township 5	115, 117	2/72	
Township 5	150	4/72	
Township 5	54, 55, 56, 57, 58, 59, 60	10/70	
Township 5	61a	28/77	
Township 5	Westham Island, plus lot 187	34/74	
Township 6	Lot 26	R.E.	
Township 6	Lots 102, 103, 105, 106, 116, 137, 138, 140, 141, 142	3/73	
Township 6	Lot 130	36/74	
Township 6	Lots 96a, 133, 143, 144, 145, 146, 147, 148, 149, 150, 151	33/74	
Township 6	Tilbury Island	34/74	
Range 1 W, Block 5 N	Surrey Uplands	10/59	
Ranges 2 and 3 W, Block 5 N	Surrey Uplands	9/59	
Ranges 4, 5, 6, 7 W, Block 5 N	Sea and N. Lulu Island	7/59	
Ranges 7 W, Blocks 3 and 4 N.	Front end of Lulu Island	10/59	
Range 6 W, Block 4 N.	Lulu Island	6/59	
Range 6 W, Block 3 N.	South Lulu Island	40/74	
Ranges 5 W, Blocks 3 and 4 N	South Eastern Lulu Island	11/59	
<i>New Westminster District Group One, North of North Arm.</i>			
North of N. Arm of Fraser	All lots east from Musqueam Reserve to Boundary Rd., except . . .	15/76	
	Lot 311	11/76	
	Musqueam Indian Reserve	R. E. Vol 10	
Township 38 West of Coast Meridian	East of Coquitlam River	8/59	46/75
New Westminster	West of the Coquitlam River		
	Lots 1-5, 16-23, 45-48, 61-67	R. E. Vol 1	
	Lots 351-360	21/77	
West of New Westminster	Lots 96-99, 149, 150, 155-164, 166, 167, 171-173, 175, 185	R. E. Vol 7	

FIGURE 5
Fraser Valley Lands East of the Coast Meridian.



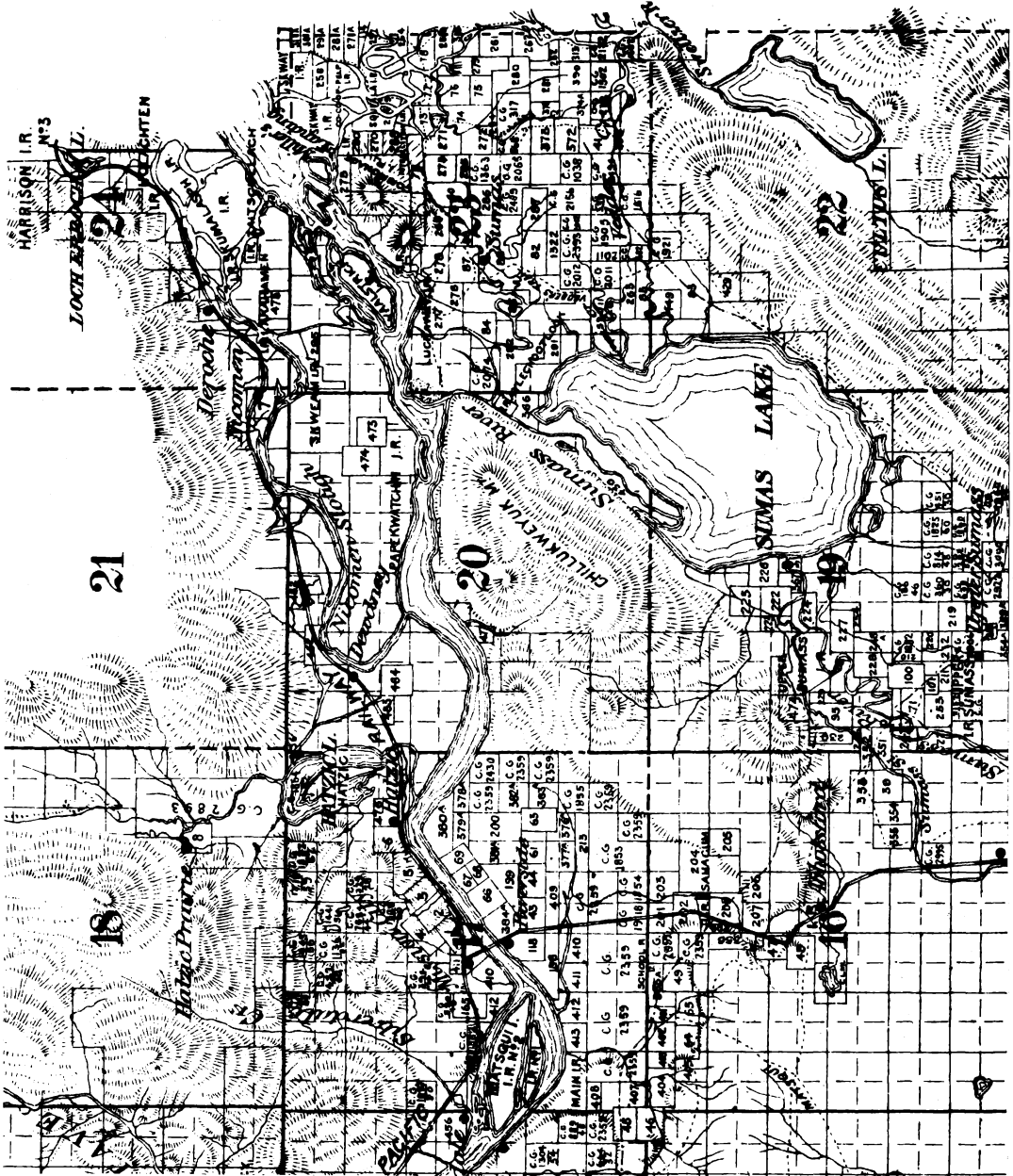
SOURCE: B.C. Canada Sectional Map # 10, 1913. Port Moody Sheet.
SCALE: 1 inch represents approximately 3 miles.

Sources for Information East of the Coast Meridian (Fig. 5)

<i>General Area</i>	<i>Specific Details of Area</i>	<i>Surveyors' Notebooks Reference Number</i>		
Township 8		27/74	29/74	31/74
Township 9 (Group Two)	South Shore of Fraser		36/74	
Township 9 (Group One)	Lower Pitt Meadows	8/59	36/74	47/75
Township 11 (Group Two)			31/74	
Township 11	Lot 233		19/77	
Township 11	Lot 234	6/73	24/74	31/74
Township 11 (Group One)			28/78	
Township 12	Western Boundary	47/75	25/77	
Township 14	Sections 1-2, 10-15, 22, 23		53/75	
Township 14	Sections 3-9, 16-18		41/74	
Township 14	Sections north of river		28/78	
Township 14	Crescent Island		28/78	
Township 15		4451,	4477,	4549

FIGURE 6

Fraser Valley Lands East of the Coast Meridian (continued from Fig. 5).



SOURCE: B.C. Canada Sectional Map # 10, 1913. Port Moody Sheet.

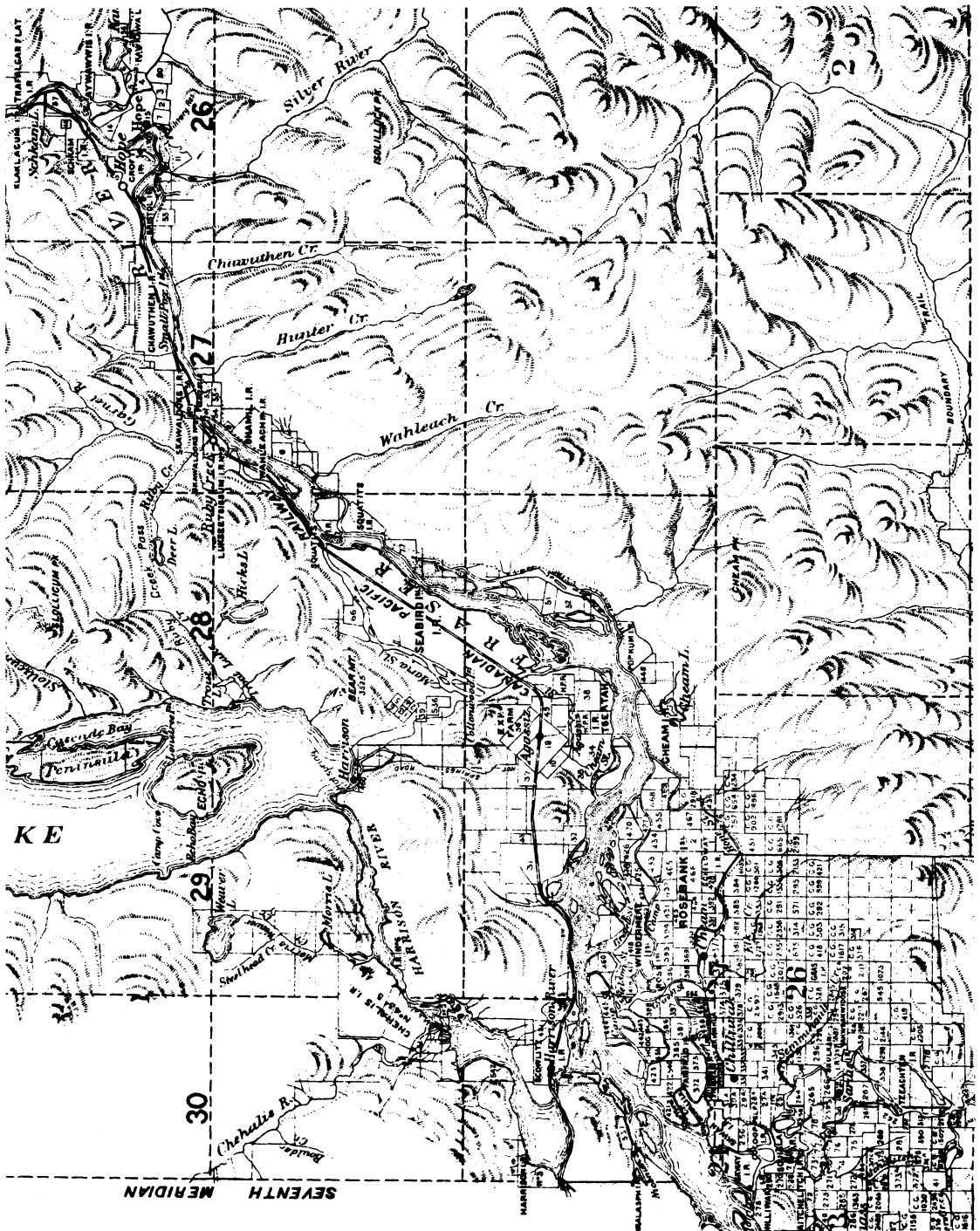
SCALE: 1 inch represents approximately 3 miles.

Sources for Information East of the Coast Meridian (Fig. 6)

<i>General Area</i>	<i>Specific Details of Area</i>	<i>Surveyors' Notebook Reference Number</i>	
Township 16	Sections 1-18, 21, 22, 28, 31-33	44/75	
Township 16	Sections 19, 20, 23-25, 29, 30	28/77	
Township 16	Sections 26, 27, 34, 35	48/75	
Township 16	Southern Boundary	27/74	
Township 16		4448,	4596
Township 17	Lots 67-69, Lot 213	R.E. Vol 11	35/74
Township 17	Lots 1-4	R.E. Vol 8	
Township 17	Lots 43, 44, 199, 376a, 377, 379a, 380a, 381a, 384a, 409	28/77	
Township 17	Remainder of area	22/74, 44/75, 50/75, 53/75	
Township 17		4522	4455
Township 17	North of Fraser near Hatzic Lake	33/74	
Township 19	Sumas Prairie Sections 3-11, 14-20	48/75	
Township 19	Southern Boundary	27/74	
Township 20		2/72, 33/83, 36/83, 37/83	
Township 21		4453,	44/75
Township 21	Lots 473, 474	33/83	
Township 21	Lots 477, 484	36/83	
Township 21	Lots 482, 483, 462	37/83	
Township 23		27/74,	39/74 R.E. Vol 10
Township 23	Sections 1, 2, 11, 12	4444	
Township 23		4474,	5338, 5576
Township 23	Lot 273	53/75	
Township 23	Lot 268	107/90	
Township 23	Lot 278	17/76	
Township 24		4454,	4474
Township 24		4552,	4695 5016
Township 24		5062	5537

FIGURE 7

Fraser Valley Lands East of the Coast Meridian (continued from Fig. 6).



SOURCE: B.C. Sectional Map # 11, 1921. Yale Sheet.
SCALE: 1 inch represents approximately 4 miles.

Sources for Information East of the Coast Meridian (Fig. 7)

<i>General Area</i>	<i>Specific Details of Area</i>	<i>Surveyors' Notebook Reference Number</i>
Township 26	Sections 7, 8, 16-36	19/76
Township 26	Section 1-12	4443, 4454, 4597, 5524, 5776
Township 27		19/76, 4574, 4645, 5054
Township 29, 30		18/76, 28/77, 30/77, 19/79, 32/82
Township 29, 30		4547, 4552, 4695, 5015, 5016, 5089 5090
Township 28		24/78 38/82 25/86
Township 28		4630, 5090, 5122, 6082, 6274
Township 28	Seabird Island	47/87 48/85 R.E. Vol 31
Township 28		142/91 335/92 4546
Township 28		4631, 5258, 5459, 5884
Township 28		5515, 5564, 5602, 6275
Township 5 Range 26 (west of the 6th meridian)	Hope	5/70, 47/87, 201/95 4656, 5458, 5692, 5884

*Indian Reserves**

Reserves listed below appear on Figures 5 or 6 or 7.

Chamil 7	Skawahlook
Chawuthen 8/9	Skumalaspā
Langley 14	Skumalaspā 22
Matsqui 15	Skwah
Paperlewatchin 8/19	Soowahlie 26
Pitt Lake	Wahleach 7
Popkum 22	Whonock 14
Skawalook	

*This list includes only those books used for compiling the vegetation information, and does not constitute a complete list of all the Indian Reserve notebooks. The same is true for all other areas examined.