

T H E S I S
on
LIVESTOCK PRODUCING RESOURCES OF BRITISH
COLUMBIA, WASHINGTON AND OREGON.

Submitted to the
O R E G O N A G R I C U L T U R A L C O L L E G E
In Partial Fulfillment of the Requirements
For the Degree of
MASTER OF SCIENCE

by
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May 18, 1925.

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ACKNOWLEDGEMENTS

To Professor E. L. Potter the writer is especially indebted for his keen interest in the work attempted. He has given many valuable suggestions, and spent a great deal of time and thought in lending assistance. To the other members of the department of Animal Husbandry thanks are due for help given during the many and varied quests for information.

H. M. King.

May 12, 1925.

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Part I

The Areas Compared and Analysed

The Province of British Columbia and the States of Washington and Oregon providing the basis for this study and investigation have shown many points of similarity as in topography, precipitation and agricultural endeavor. Many bases for comparison of the three areas have presented themselves, and those comparisons constitute a considerable part of the compilations. The International Boundary Line which runs through the area studied does not affect agricultural production nor the movements of agricultural products toward consuming centers to the same extent as do some of the more natural barriers as ranges of mountains or wide, swift rivers which are common to each of the three sections.

Population:

The population of Washington is about equal to that of Oregon and British Columbia combined, the actual figures taken from the latest census report being: Oregon 783,389, British Columbia 524,582 and Washington 1,356,621. Our chief interest lies in the distribution of population, however, and in Chart I the rural and urban populations are shown. The percentages of rural populations are: British Columbia 52.8, Oregon 50.1 and Washington 44.8. The desirability of the large cities of the State of Washington as marketing centers for the areas on either side is at once apparent.

POPULATIONS BY AREAS IN THOUSANDS

RURAL

URBAN

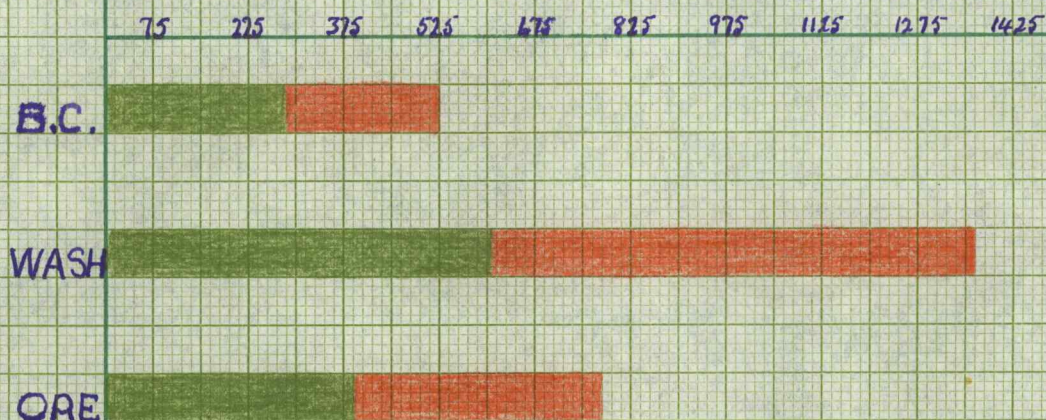


CHART I

TOTAL LAND AREAS TENS OF MILLIONS OF ACRES

IN FARMS

NOT IN FARMS

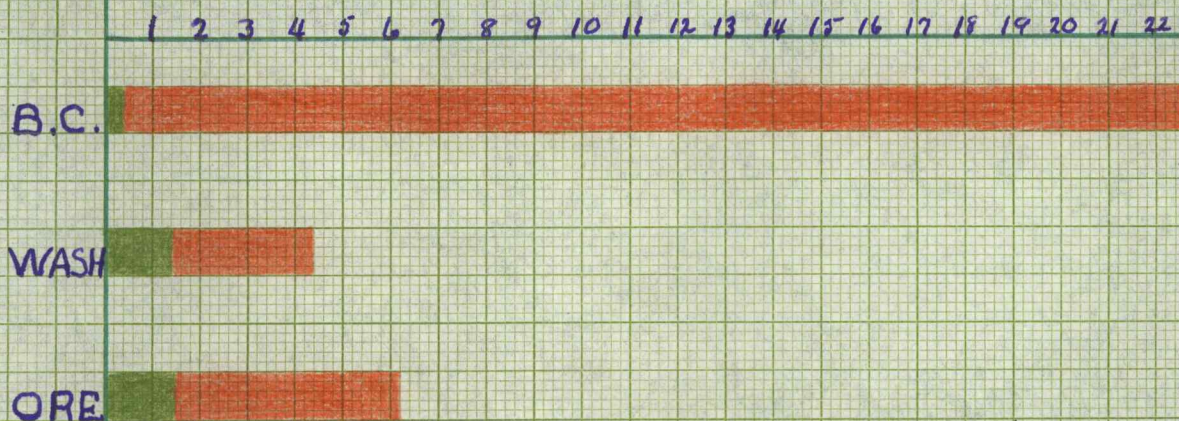


CHART II

Land Area:

The Province of British Columbia is an extensive area compared with the States of Washington and Oregon, the area being more than twice as great as the combined area of the other two. In terms of millions of acres the areas are: Washington 43, Oregon 61, and British Columbia 226. The land area of British Columbia is 5.4 times as great as that of Washington and 3.7 times that of Oregon. Chart II shows this relationship and also the relative areas which have been taken up and are being farmed. Oregon leads under the latter classification, the figures in millions of acres being: Oregon 1.35, Washington 1.33, and British Columbia .285.

Numbers of Farms:

Washington leads in numbers of farms with 66,288, Oregon having 50,206 and British Columbia 21,973. Chart III.

Areas per Farm

While Oregon has not so many farms as Washington they are of greater acreage having an average size of 270 acres, Washington's farm average 200 acres, and British Columbia's 130 acres.

Chart IV, however, shows that the acreage of improved land per farm is greatest in Washington where the average is 108 acres or fifty-four per cent of the area of each farm. Oregon shows ninety-eight acres of improved land per

NUMBERS OF FARMS IN THOUSANDS

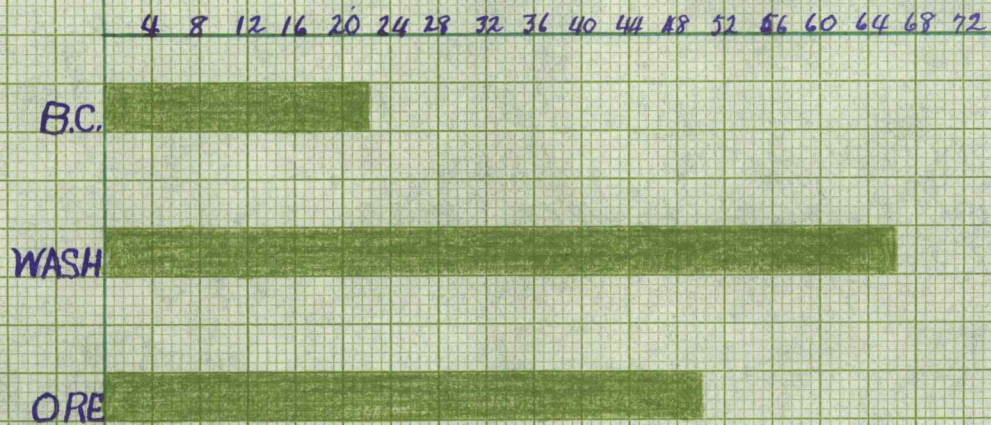


CHART III

AREAS PER FARM IN ACRES

IMPROVED NOT IMPROVED

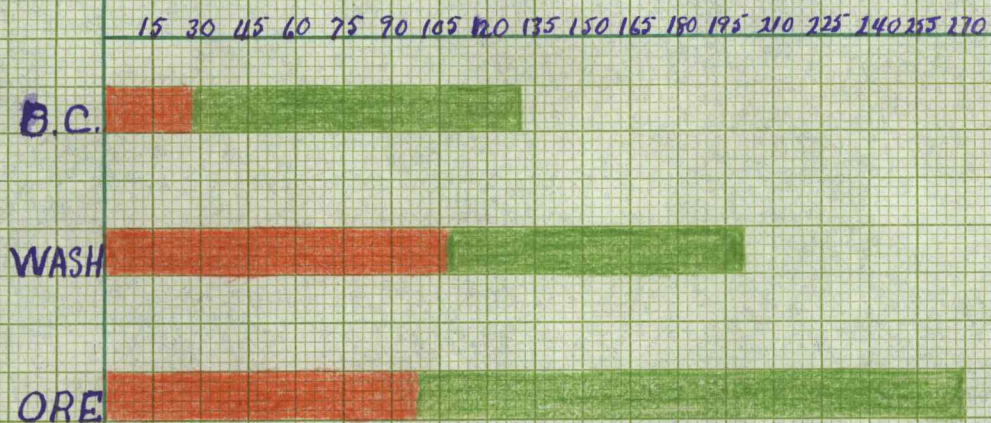


CHART IV

farm or thirty-six per cent of each farm. Farms in British Columbia are not only small, but the percentage of acreage improved is small as well. Improved land per farm averages twenty-five acres which represents nineteen per cent of the farm area. Dairying is a relatively important industry in this area. Land is high in price and the most satisfactory operator-incomes, as revealed by farm surveys, are being obtained where the dairy farm is from forty to fifty-five acres in extent.

Farm property Values:

To indicate the values of farm property on a per acre basis, and to show relative amounts of capital investment in the areas studied, Chart V has been prepared. The figures include investment not only in land, but in buildings, implements and machinery, and livestock. On this basis Oregon shows the lowest investment with 60.4 dollars per care, followed by British Columbia with 70.4 dollars and Washington with 79.8 dollars, or in nearest round numbers 60, 70 and 80 dollars respectively.

Values of Farm Livestock:

The largest investment in livestock per farm is found in Oregon and also this represents the largest percentage of total investment. British Columbia has a smaller investment in livestock per farm than Washington but it represents a high percentage of the total.

FARM PROPERTY VALUES

DOLLARS PER ACRE

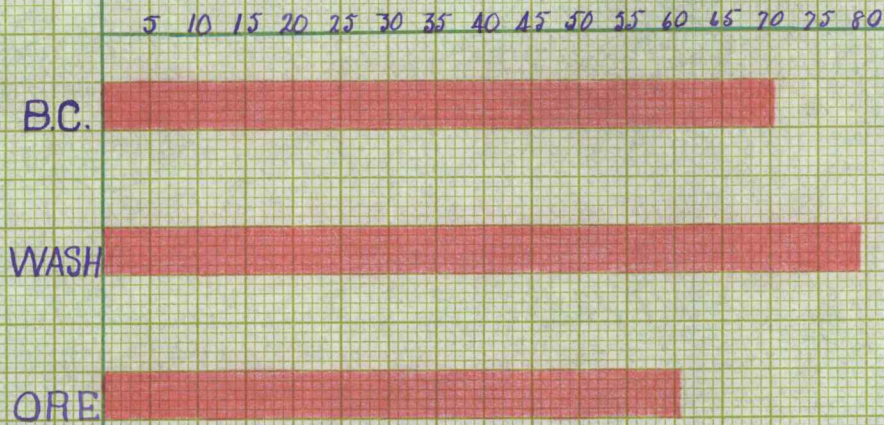


CHART V

LIVESTOCK VALUES

DOLLARS PER FARM IN HUNDREDS

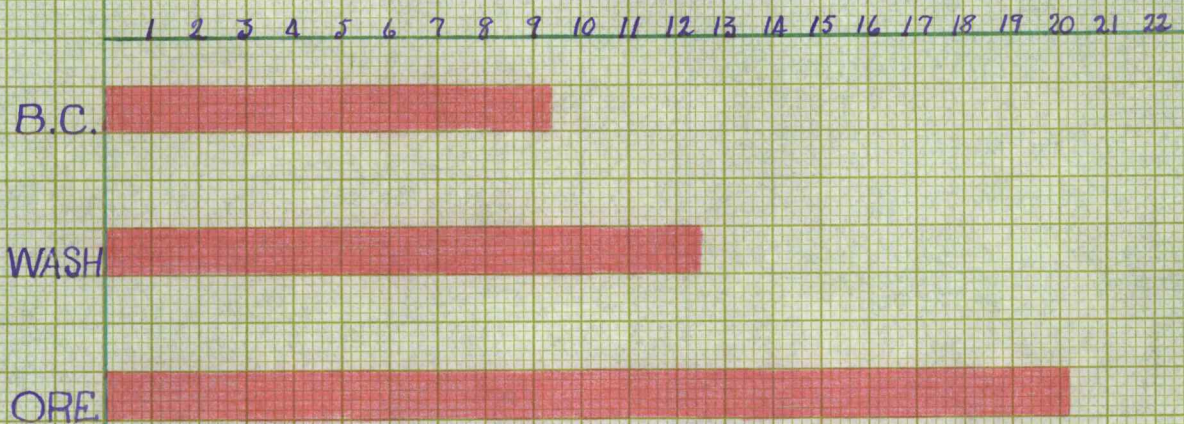


CHART VI

The figures as shown in Chart VI are:

	British Columbia	Washington	Oregon
Values of Livestock per farm	\$930.82	\$1,242.00	\$2,2027.00
Per cent of Total Investment Represented by Livestock	10%	8%	12%

Horses and Mules:

Mule breeding is not an extensive industry in any of the areas. There are practically no mules used in British Columbia in agricultural work. Washington shows the largest number, but in percentage of the total Oregon leads.

The horses in British Columbia are mostly in the Central and Lower Interior. Over one-third of the total are in Cariboo District.

Chart VII indicates the relationship in extent of horse and mule breeding:

	British Columbia	Washington	Oregon
Total Horses	69,020	314,740	282,134
Total mules	304	24,348	14,899

Cattle:

The beef cattle industry of Oregon is comparatively large, the State possessing a greater number of this class

TOTAL NUMBERS HORSES AND MULES 0,000 OMITTED

HORSES

MULES

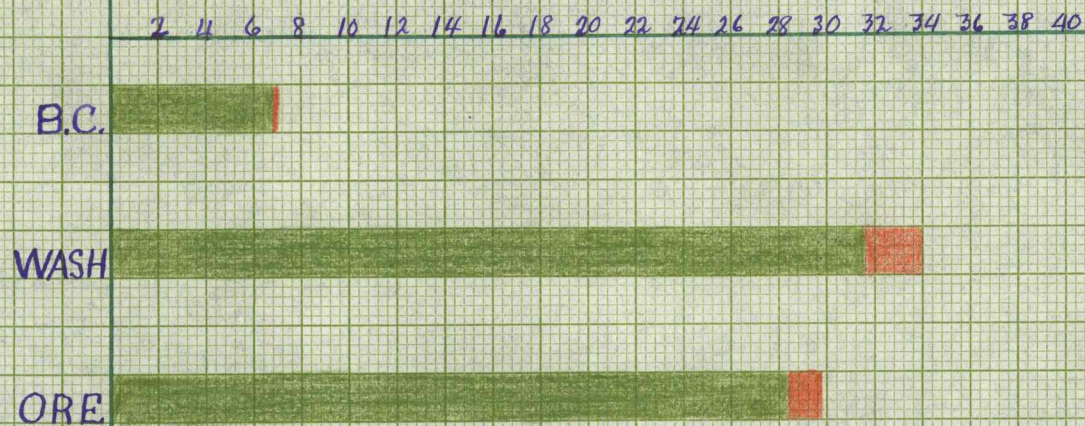


CHART VII

TOTAL NUMBERS CATTLE 0,000 OMITTED

DAIRY

BEEF

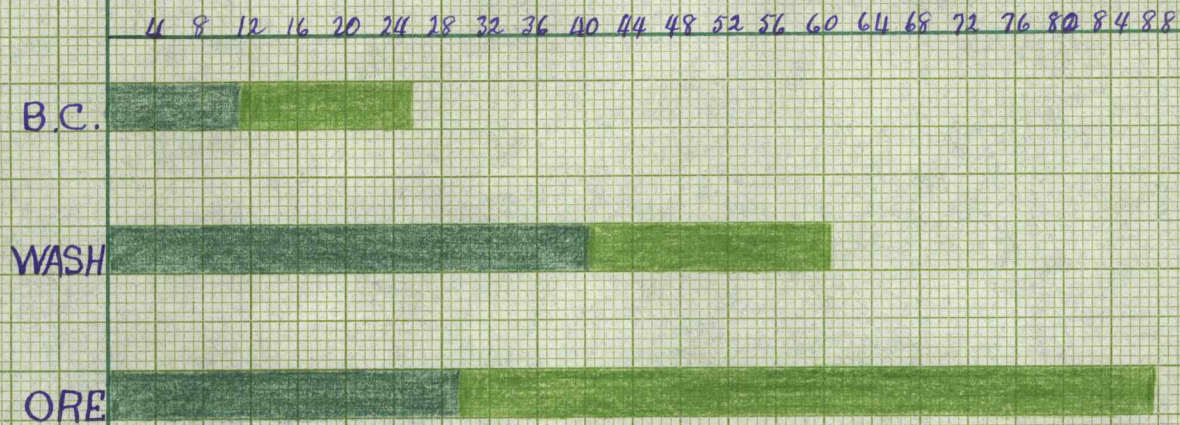


CHART VIII

of stock than Washington and British Columbia combined. Washington on the other hand has practically as many dairy cattle as Oregon and British Columbia combined.

These numbers are shown relatively in Chart VIII:

Numbers	British Columbia	Washington	Oregon
Beef Cattle	142,000	202,497	575,279
Dairy Cattle	<u>117,000</u>	<u>403,056</u>	<u>297,179</u>
Total Cattle	259,000	605,553	872,458

Sheep and Goats:

Oregon is notable in the extent of the sheep and goat industry in that State, standing sixth among the States of the Union on the basis of total numbers. The goats in Oregon are mostly angoras, those in Washington composed of both angoras and milk goats while the few in British Columbia are almost totally milk goats and are maintained near the large cities of the coast where a special market is found for the milk produced.

Chart IX was prepared from the below data:

	British Columbia	Washington	Oregon
Total Sheep	61,344	648,285	2,013,569
Total Goats	9,100	7,640	135,165

TOTAL NUMBERS SHEEP AND GOATS 00,000 OMITTED

SHEEP ■ GOATS ■

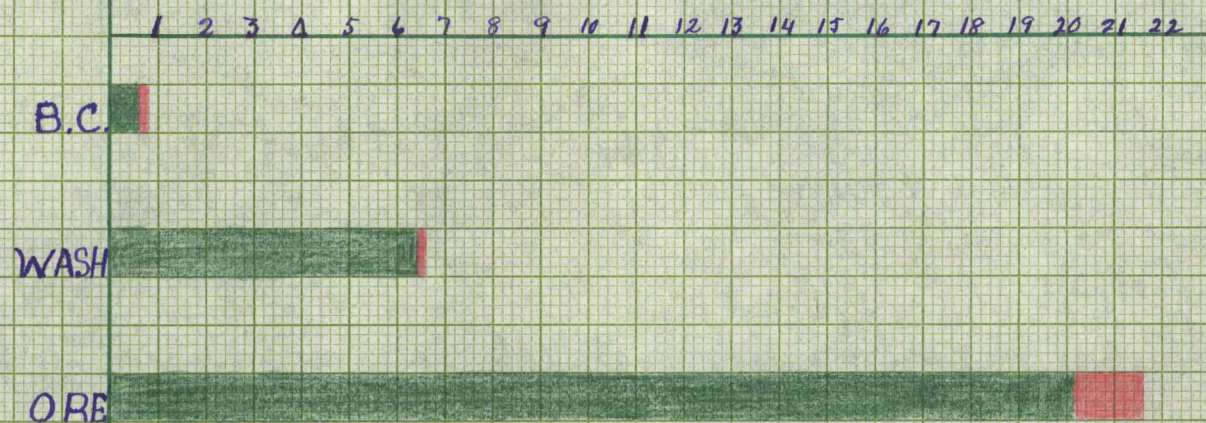


CHART IX

TOTAL NUMBERS SWINE 0,000 OMITTED

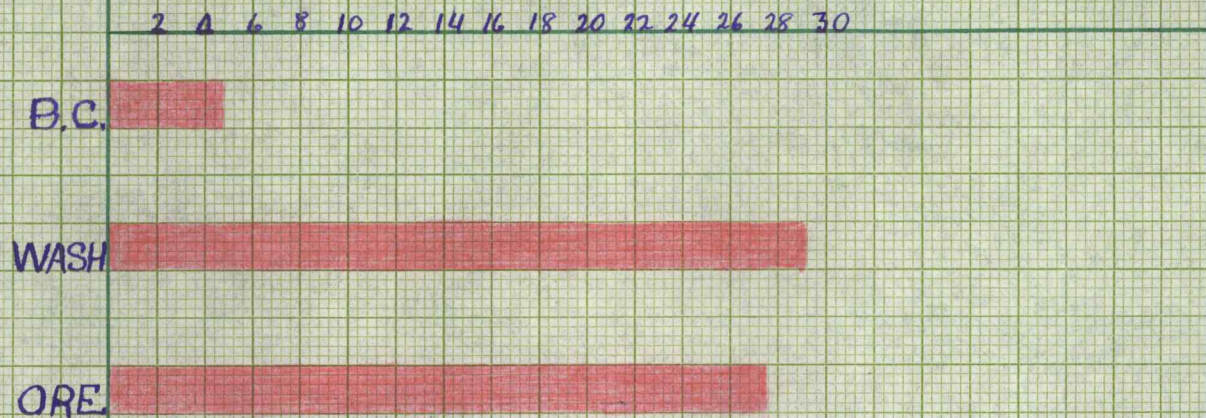


CHART X

Swine:

The States of Washington and Oregon are much more nearly self-supporting in regard to swine production than is British Columbia, where barely thirty per cent of the pork consumed is home produced. Chart X reveals the comparative numbers to be: Oregon 273,000, Washington 283,000, British Columbia 46,000. On a per capita basis Oregon is very much in the lead.

Poultry:

To make possible a comparison of the areas studied on an animal unit basis chart XI was made. The poultry industry of each section is fairly extensive, Washington and British Columbia leading Oregon. Poultry compete with other livestock for forage use; hence this inclusion here.

Animal Units per Capita:

The "animal unit" is employed to reduce the different kinds of livestock to one class in so far as their relation to the consumption of feed is concerned. It is roughly estimated that the amount of forage required to maintain one adult cow for one year would be sufficient to maintain for the same period of time the number of other kinds of livestock indicated below:

1 Cow equal to 1 horse

1 " " " 1 mule

TOTAL NUMBERS POULTRY

00,000 OMITTED

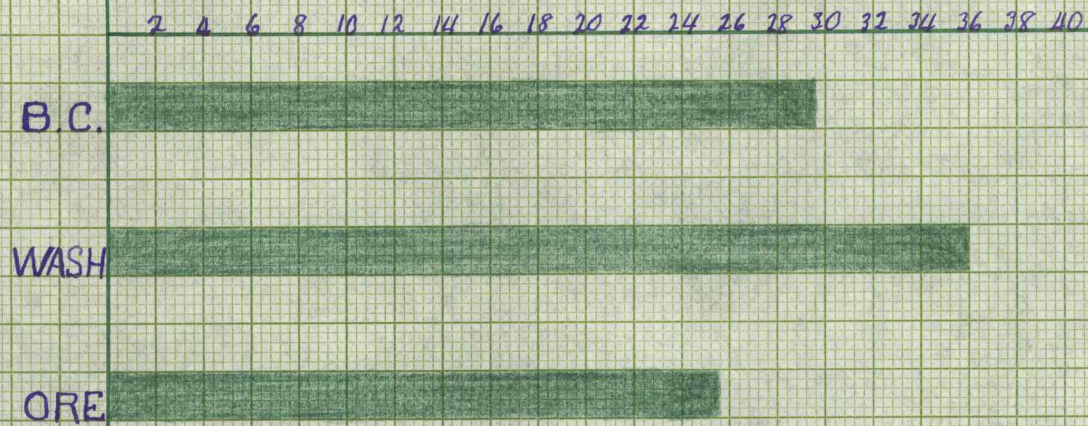


CHART XI

ANIMAL UNITS PER CAPITA

ONE UNIT = ONE INCH

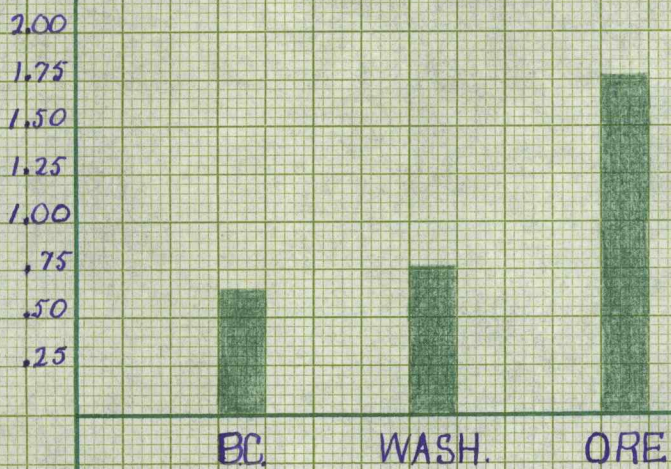


CHART XII

1	Cow	equal	to	1	steer
1	"	"	"	5	hogs
1	"	"	"	7	sheep
1	"	"	"	7	goats
1	"	"	"	100	poultry

(See U.S.D.A. Year Book 1923 Page 321)

Using this as a basis for compilation Chart XII has been prepared showing that while both British Columbia and Washington have much less than one animal per capita Oregon has nearly two units per capita. This sheds much light on livestock import and export movements in each of the three areas.

Hay and Forage Production:

There is noted a close relationship between the hay and forage production and the extent of the general livestock industry. This is of course only natural. Chart XIII gives in graphic form both the acreage and tonnage. Yields per acre are highest in British Columbia, but the total acreage is small being approximately only one-fifth that of Oregon.

Forage per Animal Unit:

There is produced in Oregon just a trifle more than one and one-half tons of forage per animal unit, while both Washington and British Columbia produce about two tons of forage for each animal unit maintained. The reason for this difference is apparent when the length of the winter

HAY AND FORAGE PRODUCTION

ACRES ■ TONS ■
00.000 OMITTED

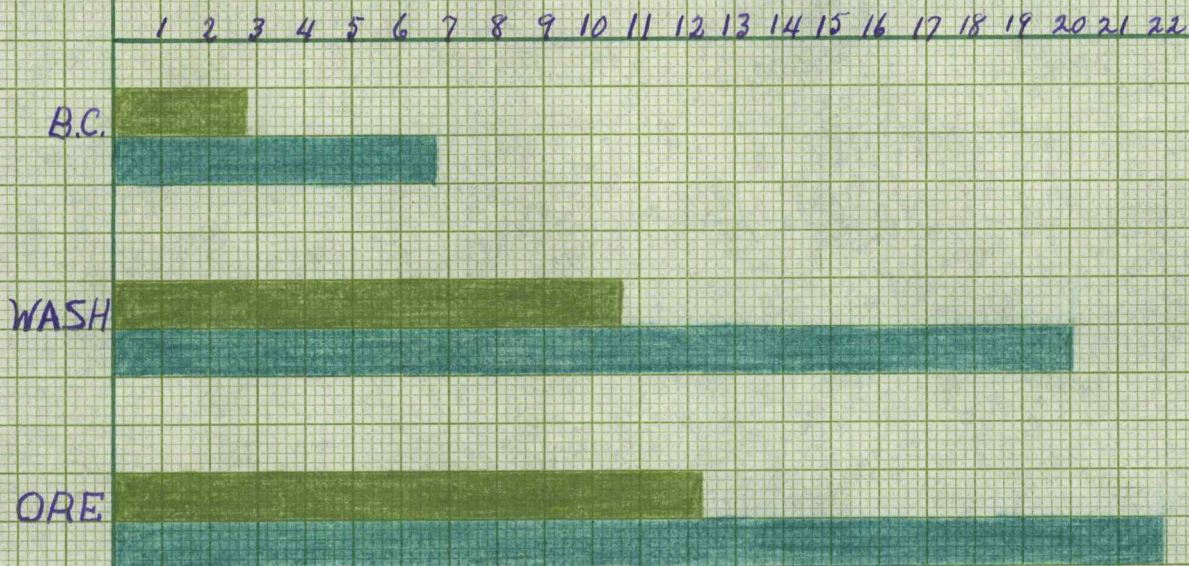


CHART XIII

TONS OF FORAGE PER ANIMAL UNIT

ONE INCH = ONE TON



CHART XIV

feeding season is considered. In fact, this likely very largely explains the relationship which is found to exist between these two phases of agricultural production. Chart XIV is based on the following data:

	British Columbia	Washington	Oregon
Hay and Forage Acres	272,290	1,064,130	1,229,404
Hay and Forage Tons	671,556	2,013,913	2,197,619
Total Animal Units	335,732	1,031,032	1,394,432
Tons of Forage per Animal Unit	2.00	1.95	1.58

Grain Production:

British Columbia cannot successfully compete with the Canadian prairie provinces in cheap grain production. It is altogether likely that she will for a long time continue to be a heavy importer of feed grains. There has developed during the past three years a strong westward movement of prairie grains destined for export chiefly to Great Britain. Grain produced in these areas, Alberta and Western Saskatchewan, in former years moved eastward passing through Winnipeg, and from there either through Minneapolis or through Fort William or Port Arthur at the head of the Great Lakes. The lowering of ocean freight rates at the time rail freight rates were soaring largely accounts for the change in movement of Canadian grains, chiefly wheat, toward the big world markets.

GRAIN PRODUCTION

MILLIONS OF BUSHELS

WHEAT



OATS



BARLEY

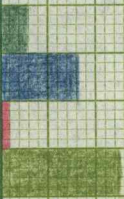


ALL GRAINS

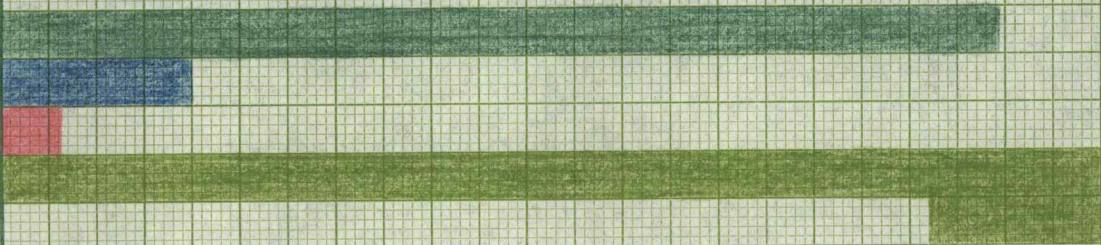


2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46

B.C.



WASH



ORE

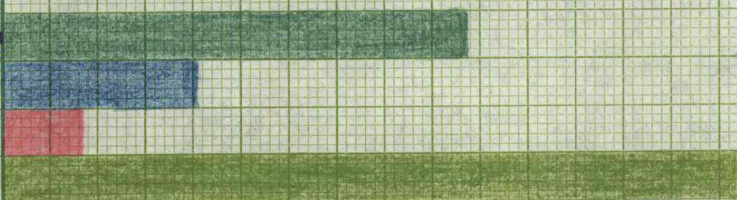


CHART XV

With this new westward movement of wheat, mainly through the Port of Vancouver, there has been a development of the milling industry, a very pronounced increase in elevator storage and equipment, and naturally such feeds as screenings, bran'shorts, and red-dog flour are much more generally available at attractive prices. At the beginning of the movement practically all of the screenings were exported, mostly to Seattle, in barges specially fitted for the service. At the present time, however, they are mostly fed to cattle near the elevators, the former large Seattle importer having constructed feeding yards in British Columbia. A few thousands of sheep and lambs are fattened annually as well.

The wheat production of Washington State is notable. Counties like Whitman and Adams are very largely given over to this phase of production. Barley growing is not so extensive as one would expect in Pacific Coast areas. Chart XV shows the relative amounts of wheat, oats, barley and total grains produced by regions. It is based on the figures given below:

	British Columbia	Washington	Oregon
Wheat in Bushels	1,178,689	41,837,909	19,526,765
Oats in Bushels	3,143,972	8,073,481	8,357,406
Barley in Bushels	222,708	2,249,856	1,429,073
Total Grains in Bushels	4,925,027	53,390,502	30,850,683

BRITISH COLUMBIA
 AGRICULTURAL PRODUCTION ———
 DO. IMPORTS ———
 1909-1923 IN MILLIONS OF DOLLARS
 POPULATION ———
 IN TENS OF THOUSANDS

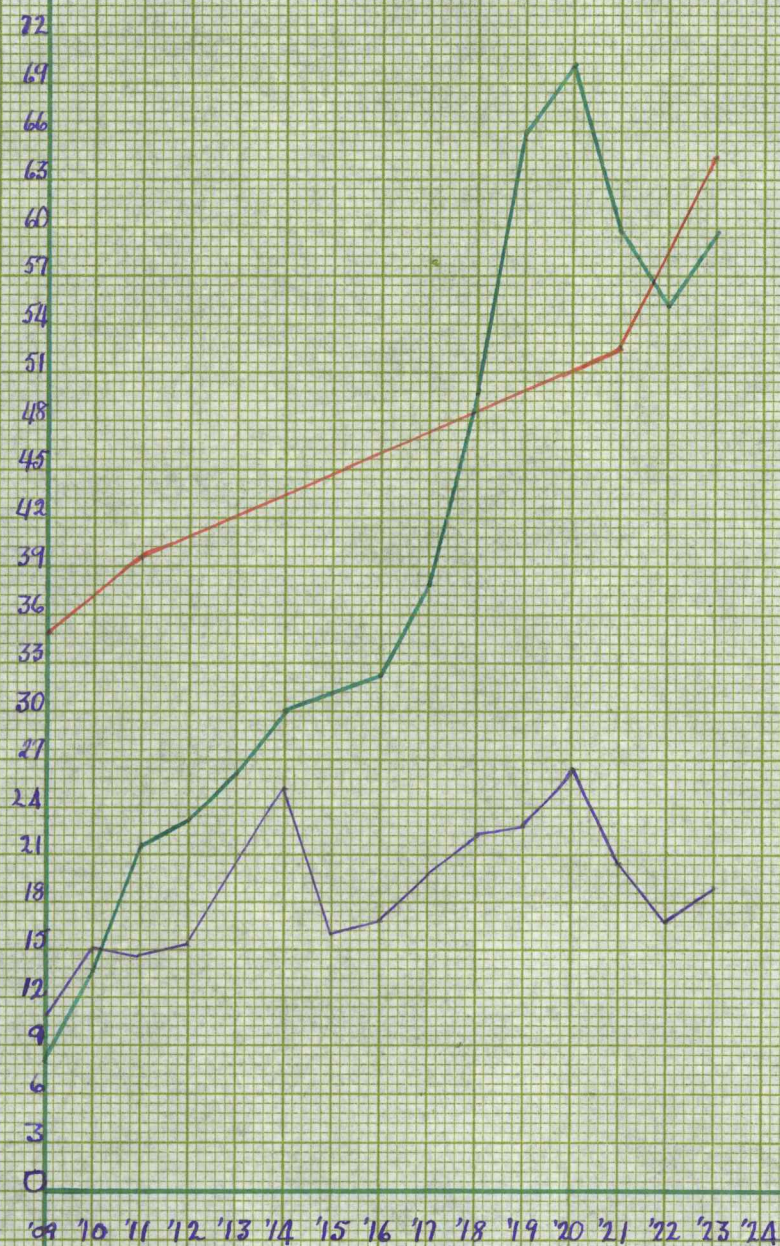


CHART XVI

Part II

British Columbia

Agricultural Production and Imports

The trend of agricultural production in British Columbia 1909 to 1923 inclusive is shown clearly by the graph lines in Chart XVI. There has been a continuous steady increase in the value of her production except for the two years 1921 and 1922, a period of exceptional lowering of prices of agricultural products.

In 1909 and 1910 the value of imported agricultural produce exceeded the value of the home production. Since then the reverse has been true, and in 1923 the imported goods represented in value only about twenty-five per cent of the total required and used.

To give added value to the chart a line showing population increase has been included. The 1922 and 1923 figures, following the census figure of 1921, are estimations, but are likely not subject to much correction.

British Columbia Livestock Production

The province is supplying today practically eighty per cent of her needs in livestock products. Chart XVIII gives the relationship between home production and imports and between foreign and domestic imports. The foreign imports are very small, being less than one-third of one per cent of the total. This small amount represents chiefly mutton and lamb

from New Zealand--and some pork product from the United States.

An analysis of Chart XVIII is given in Chart XVII with some additional material.

British Columbia importations of beef and veal are practically all from the neighboring Province of Alberta, a section where many beef cattle are maintained on extensive ranges. The livestock markets of Calgary and Edmonton, both in Western Alberta, are well organized, and both served by transcontinental railways. The cattle from Calgary move westward over the Canadian Pacific lines, while those from Edmonton are transported on the Canadian Government line with its better mountain grades giving it the advantage over the older route. A large percentage of the bulls of beef type used on the ranges of British Columbia are produced by Alberta breeders.

Only twenty-eight per cent of the pork consumption is home produced product. The importations of live hogs are almost exclusively from Calgary and Edmonton in Alberta Province. These are mostly hogs of thick smooth type, that is they do not quite meet the requirements of the government grading system specifications for "Selects" or hogs that will make "Wiltshire Sides" suitable for export to Great Britain.

Alberta again provides what is needed in sheep and lamb supplies outside of the imports of dressed chilled lamb from New Zealand.

In horse and dairy cattle production the Province is

BRITISH COLUMBIA LIVESTOCK

PRODUCTION

IMPORTS: CANADIAN

FOREIGN

MILLIONS OF DOLLARS

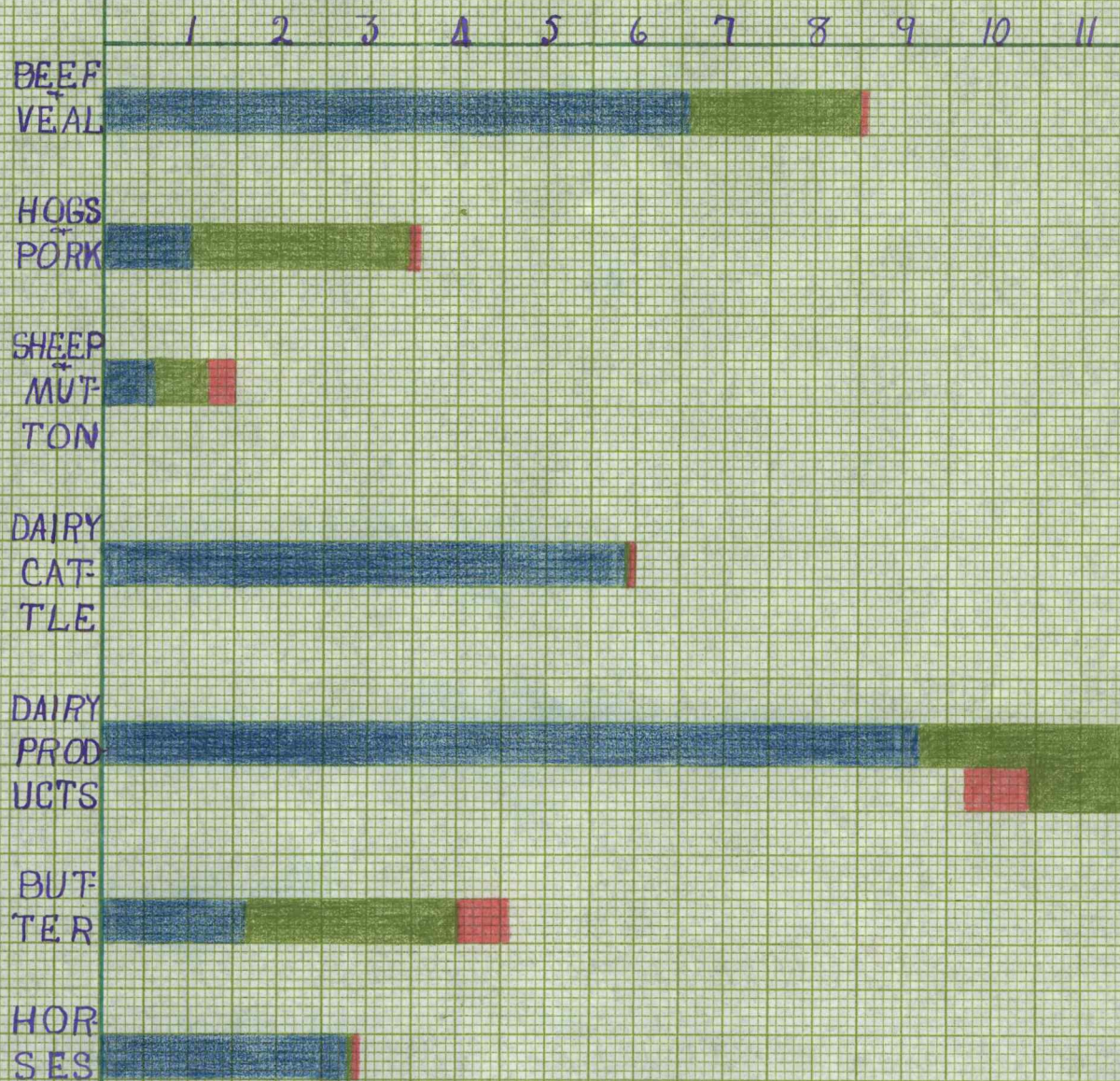


CHART XVII

nearly self-sufficing. The dairy cattle foreign imports are mostly from the Western States of Washington and Oregon.

Imports of dairy cattle from the rest of Canada are practically nil. In fact a reverse movement exists and dairymen of the three prairie Provinces are buying a good share of their breeding foundation in dairy cattle from British Columbia.

The imports in dairy products are fairly heavy, especially in butter. Alberta and New Zealand compete for favor, with Alberta supplying over fifty per cent of the total consumption, New Zealand about ten per cent, while about thirty-seven per cent is home produced.

The charts are based on the following information taken from the statistical report of the Province for 1923, Dominion market reports and other sources:

	British Columbia Production	Domestic	Imports Foreign
Total Livestock	\$15,920,000	\$4,314,000	\$ 67,000
Beef Cattle	5,586,000	1,688,000	very small
Dairy Cattle	5,857,000	Practically none	very small
Horses	2,817,000	22,000	22,000
Sheep	533,000	558,000	33,000
Swine	857,000	2,046,000	Practically none
Meats { Beef & veal	987,000	86,000	5,000
Meats { Pork & lard	128,000	359,000	297,000
Meats { Mutton	73,000	28,000	238,000
Meats { Canned meats	-----	129,000	51,000

Butter {	Total meats	1,188,000	602,000	586,000
		1,629,000	2,483,000	620,000
Total Dairy Products		9,235,000	3,429,000	686,000

Forage and Feed Grain

Production and Imports

Very little fodder is imported into British Columbia, the Province supplying ninety-six per cent of what is used. The bulk of the imports are chiefly of Washington--alfalfa imported for dairymen in the coast region. Some Alberta alfalfa and prairie hay are also brought in. Chart XIX shows the relationship between home production and imports both domestic and foreign.

A good deal of the feed grain needed is imported, chiefly from Alberta. Nearly all of the grain produced is utilized in livestock production, the wheat being soft and not comparable with the prairie-grown wheats in milling quality. This statement does not apply to the Peace River section of the Province where excellent milling wheat is produced, but as yet only in small quantity.

A large percentage of the bran, shorts, middlings, screenings, barley, oats and flax used as feeds are from Alberta. The feed grain importation is practically limited to this one Province. The figures used are for 1923.

	British Columbia	Imports	
		Domestic	Foreign
Total Forage in dollars	12,313,000	205,000	309,000
Feed Grains	3,967,000	6,591,000	426,000

BRITISH COLUMBIA LIVESTOCK PRODUCTION AND IMPORTS MILLIONS OF DOLLARS

B.C.



IMPORTS-CANADIAN
-FOREIGN

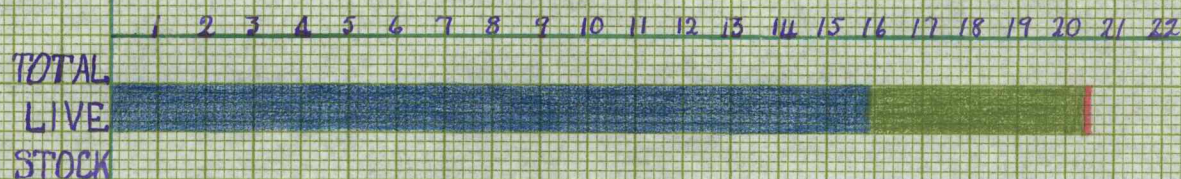


CHART XVIII

BRITISH COLUMBIA FORAGE AND FEED GRAIN PRODUCTION IMPORTS

MILLIONS OF DOLLARS

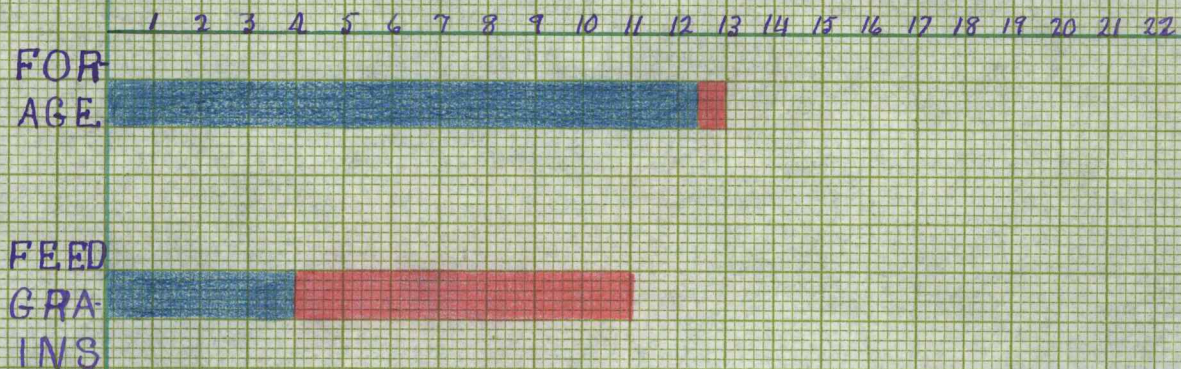


CHART XIX

Hay and Forage Production and Distribution

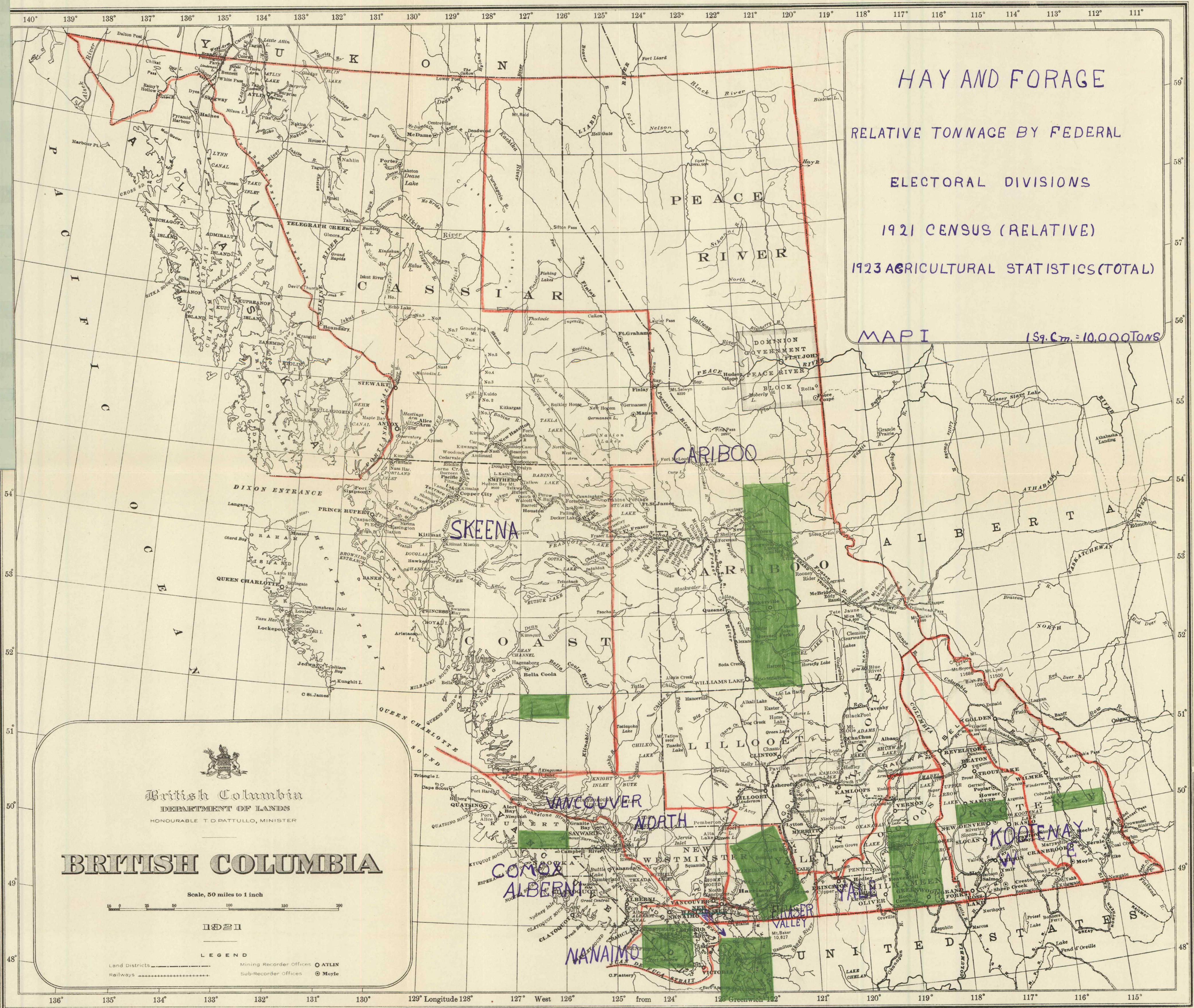
The distribution of hay and forage production in British Columbia is given in Map I. The divisions are the federal electoral divisions. The very limited production in such an extensive area as Skeena is to be noted. Over thirty-five per cent of the total is produced in Cariboo District.

Hay and Forage Production by Federal Electoral Divisions:

Total: as from Agricultural Statistics 1923.

Distribution: as from census 1921.

<u>Area</u>	<u>Tons</u>
Burrard	60
Cariboo	251,000
Comox-Alberni	21,000
Fraser Valley	101,000
Kootenay East	20,000
Kootenay West	22,000
Nanaimo	50,000
New Westminster	77,000
Skeena	26,000
Vancouver South	1,000
Victoria	-----
Yale	103,000
Total Province	672,000



HAY AND FORAGE

RELATIVE TONNAGE BY FEDERAL

ELECTORAL DIVISIONS

1921 CENSUS (RELATIVE)

1923 AGRICULTURAL STATISTICS (TOTAL)

MAP I

1 Sq. Cm. = 10,000 Tons

British Columbia
DEPARTMENT OF LANDS
HONOURABLE T. D. PATULLO, MINISTER

BRITISH COLUMBIA

Scale, 50 miles to 1 inch

1921

LEGEND

Land Districts ———— Mining Recorder Offices ○ ATLIN
Railways ++++++ Sub-Recorder Offices ○ MOYLE

Grassland in British Columbia

Map II, showing the open grassland in British Columbia gives an idea of the areas devoted to cattle ranching in particular. Sheep ranging is carried on in the areas indicated too, but more than half the sheep population of the Province is in the farming regions of the coast territory.

The grass land that is being most fully utilized today is that portion in the lower central part. The grass lands of the Peace River are being used in only a very small way.

Ranging is also carried on in the forest reserve areas. These are scattered over a large part of the Province, but are of greatest importance in the Kootenays, along the valleys of the Fraser, Nechako, and Bulkley rivers, and in the Francois Lake region.

In British Columbia there are no forest reserves as they exist in the States of the Union. All of the public lands of the Province are under the administration of the Forest Branch whether they are timbered land or not, so that the public lands really constitute one large reserve or provincial forest. It is true that within the boundaries of the Province and scattered throughout the forested and grazing lands there are numerous reserves for various purposes, that is to say bodies of land reserved for watershed purposes, for the protection of timber, sources of water supply, holding grounds for stock, spring and fall ranges, etc, but they are too numerous to be clearly shown on a



general map of the Province.

Most of the grazing country is divided into districts which are under the jurisdiction of the twenty-five or more Livestock Associations which co-operate with the Government in range and stock management work on the Crown lands.

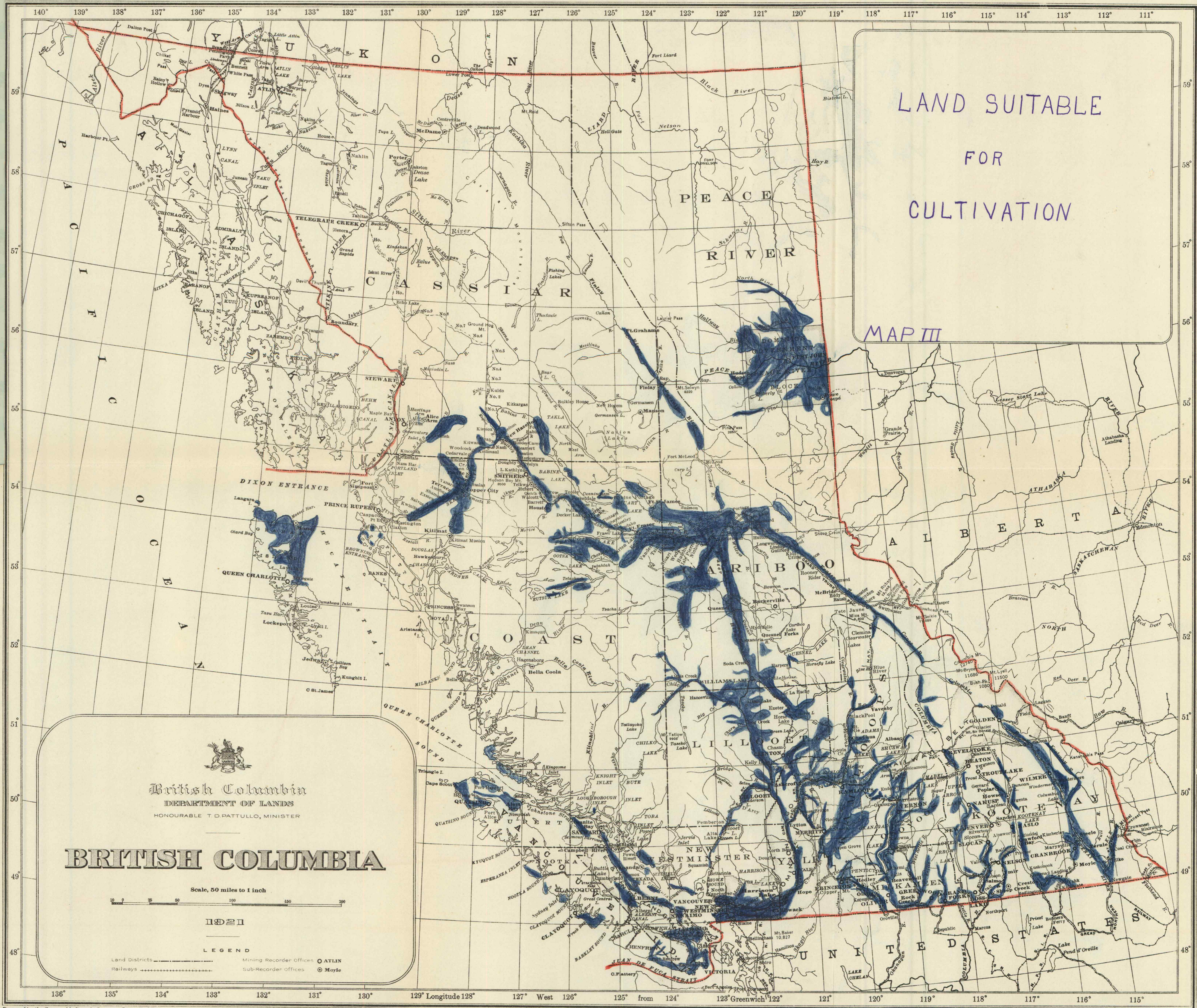
The boundaries of the districts are not yet definitely established for as knowledge of the range increases changes in boundary lines between the various associations are being constantly made. All of the public lands within easy distance of all settlements and ranches of the interior area are designated cattle ranges over which the cattle turned out from these settlements and ranches are grazed under permit.

There are a few small flocks of sheep grazed out in such manner and in such cases the owner of the flock is given a small range allotment within the boundaries of which he must confine the sheep. The allotment is ordinarily large enough to offset any drift of cattle onto the allotment which ordinarily is not fenced.

Grazing fees in the Province are low, particularly on the Crown lands. They are actually only about one-quarter of the fees charged for the use of the National Forest range of the Coast States. One-third of all fees collected each year is used in various range improvement projects.

British Columbia Land Suitable for Cultivation

Of the total land area of the Province which is roughly 226 million acres, about ten per cent is classified as_



suitable for agricultural production. The estimate in acres is 22,618,000. More than half of this is north of fifty-two degrees, but that lying south of this dividing line has been developed to a much greater extent than the other.

As shown in Map III the bulk of the southern area lies in valleys between the Coast, Cascade, Selkirk and Rocky Mountain ranges.

Near the coast the largest area in one tract is the Fraser Valley. In this fertile valley many land types are encountered, and this so affects industry that a special Map number IV has been prepared to illustrate the area and extent of these.

Vancouver Island, and the eastern part of Graham Island in the Queen Charlotte group are other important coast areas. The latter area is the scene of a colonization scheme at the present time, most of the settlers being Hebrideans.

The range lands of the interior portion of the Province are mostly at an elevation of 3,500 feet or more. Where irrigation is possible fruit and alfalfa are grown. The prairie Provinces rely on British Columbia to supply a large percentage of their needs in fruits.

Much has been written about the Peace River country. It is a vast country by itself, but has been as yet developed in a very small way. Very meagre railway facilities are as yet provided. Milling wheats of unexcelled quality are grown in this area, and an estimate of the wheat producing capacity of the territory by the special railway commission

delegation sent in in 1923 was six hundred million bushels. This is ⁱⁿ excess of Canada's present wheat production, and in excess of the May first estimate of the Department of Agriculture of the wheat production of the United States for 1925. While the potentialities of the Peace River country may be great it is as yet largely an undeveloped territory.

May III is based on the report of the Commission of Conservation for 1918. Much of the detail of the map has been checked by personal observation, and conference with district agriculturists and others with especial knowledge of certain parts.

Land Types in Lower Fraser Valley

An area devoted largely to dairying and small-fruit production, and producing quite a percentage of the agricultural wealth of the Province it was considered profitable to indicate in Map IV how the lands have been built up.


The delta and raised delta types have been laid down from sediment carried in the waters of the Fraser River. Dyking, to keep off excess water, is necessary with the delta lands. In the case of the raised-delta type dyking is required only to keep off flood water at times of high water chiefly when the river is swollen by the melting of snow in the mountains of the interior.

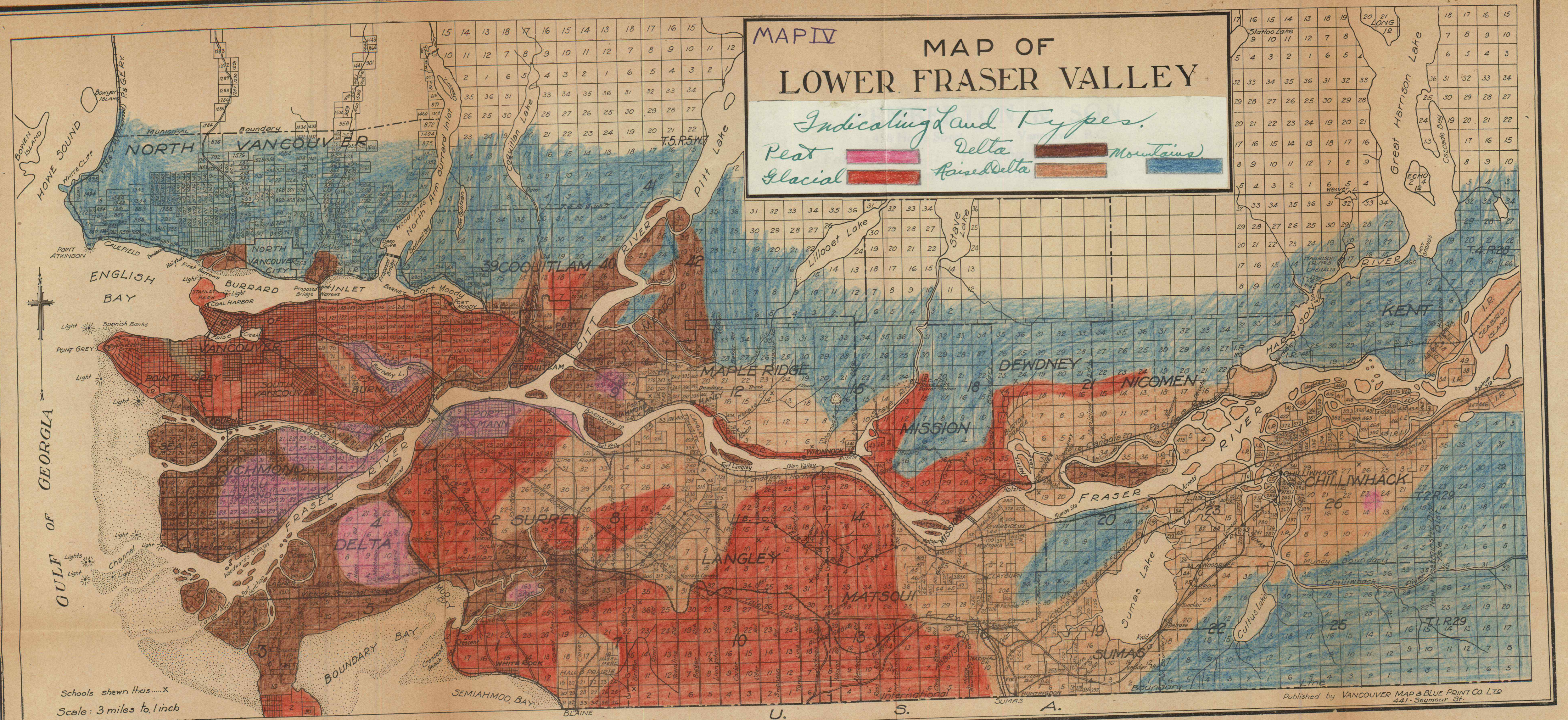
The peat areas are not so productive, although when properly handled some very exceptional farms have been made on this type of soil. The glacial soils are more rolling

MAP IV

MAP OF LOWER FRASER VALLEY

Indicating Land Types.

Peat  Delta  Mountains 
Glacial  Aired Delta 



Schools shown thus.....x
Scale: 3 miles to 1 inch

Published by VANCOUVER MAP & BLUE PRINT CO. LTD.
441 Seymour St.

upland region. This soil is lighter, but productive when fertilized.

The area noted on the map as "Sumas Lake" has been reclaimed by a provincial dyking scheme costing in excess of two million dollars. It affects, however, over thirty-two thousand acres and the project now completed, will add to the agricultural production of the valley very materially.

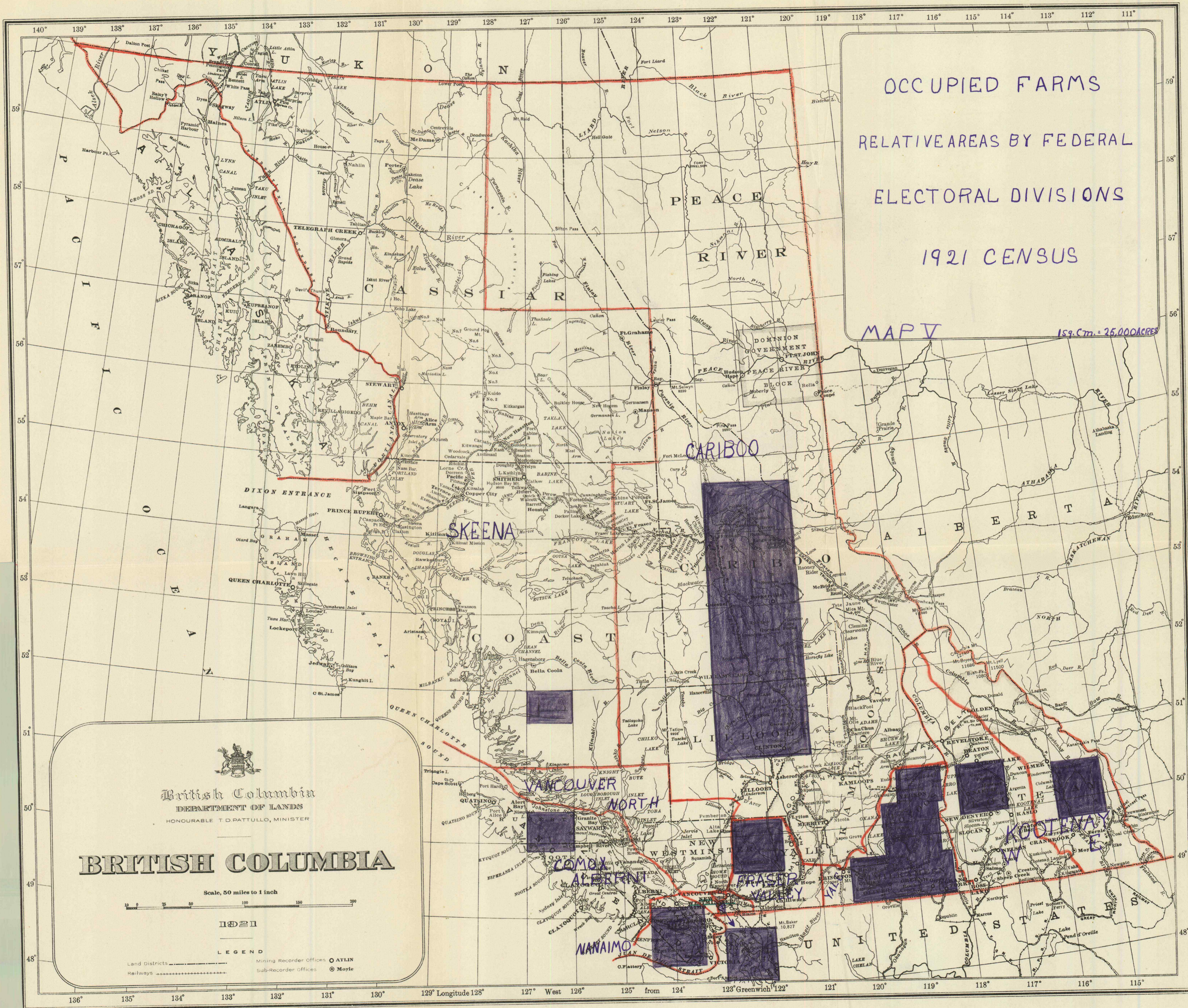
Soil maps of the area are not available, the outlines of the various land types being determined by field men working on dairy farm survey projects.

Occupied Farms in British Columbia

As Map V shows fifty per cent of the area in occupied farms is in Cariboo District. This is a region of cheap land, much of the land is in grazing and the territory is extensive. Some of the land taken up is in the Peace River Country. The southern part of the Province, however, is much more heavily settled and supports most of the population.

Area of Occupied Farms by Federal Electoral Divisions Census 1921

<u>District</u>	<u>Acres</u>
Burrard	621
Cariboo	1,439,060
Comox Alberni	96,590
Fraser Valley	153,734
Kootenay East	151,184
Kootenay West	118,999
Nanaimo	156,541
New Westminster	132,480
Skeena	89,607
Vancouver South	2,852
Victoria	153
Yale	518,772
Total: Province	2,860,593



OCCUPIED FARMS
RELATIVE AREAS BY FEDERAL
ELECTORAL DIVISIONS
1921 CENSUS

MAP V 1 Sq. Cm. = 25,000 ACRES

Distribution of Livestock

Map VI shows the distribution of dairy cattle in British Columbia. While dairying is more or less general throughout the valleys of the interior part of the Province the industry is largely centered in the Lower Coastal region particularly the lower valley of the Fraser River. Whole milk production and the breeding of pure bred-cattle are specialties in this area. This part has been declared a tuberculosis free area, the regulation enforcement being in the hands of the Federal Government.

Map VII gives the distribution of beef cattle in British Columbia. Except for pure bred herds; most of the beef-cattle are found in the range sections of the interior more particularly in Cariboo and Yale Districts. Kamloops, a town in the lower central part is looked on as the center of the beef-cattle ranching industry.

It is to be noted from Map VIII that the goats, which are practically all of milking type are confined to the lower coast areas. The goat industry is rapidly expanding.

Mules are not used for farm work. Horses are naturally widely spread over the Province: Map IX. Strong efforts are being made to conserve resources by ridding the country of wild horses, and the advent of fox farms where horse meat is used is helping to accomplish this objective.

The sheep industry is about equally divided between the coastal areas, and the ranges of the interior section: Map VIII.





BEEF CATTLE
DISTRIBUTION BY FEDERAL
ELECTORAL DIVISIONS
ONE DOT = 1000 HEAD
TOTAL = 141,000

MAP VII

British Columbia
DEPARTMENT OF LANDS
HONOURABLE T. D. PATULLO, MINISTER

BRITISH COLUMBIA

Scale, 50 miles to 1 inch

1921

LEGEND
Land Districts
Mining Recorder Offices
Sub-Recorder Offices
Railways
ATLIN
MOYLE



Coyote and cougar ravages tend to curtail operations in the newer parts.

Swine are not kept in large numbers, the most of them being in the dairying and alfalfa producing sections: Map X. The industry is being much encouraged, and while the numbers are steadily increasing the per capita ratio remains about the same. Hogs produced on cheap grains in Alberta form strong competition for the markets. The Province will not for a long time, and probably never be an exporter of pork.

Distribution of Livestock by Federal Electoral Divisions in
Thousands.

Division	Beef Cattle	Dairy Cattle	Horses	Swine	Sheep	Goats
Cariboo	80	20	29	11	20	
Comox Alberni	3	8	1	2	6	1
Fraser Valley	10	27	5	5	3	
Kootenay East	5	7	4	1	5	
Kootenay West	5	7	2	3	1	
Nanaimo	5	12	3	5	17	2
New Westminster	8	17	4	7	3	2
Skeena	4	2	2	1	1	
Yale	23	17	12	7	6	
Vancouver North	-	-	-	-	-	2
Vancouver South	-	-	-	1	-	2
Province	142	117	62	42	61	9

Data from 1921 Census





Part III

Washington

Farm Land in Washington

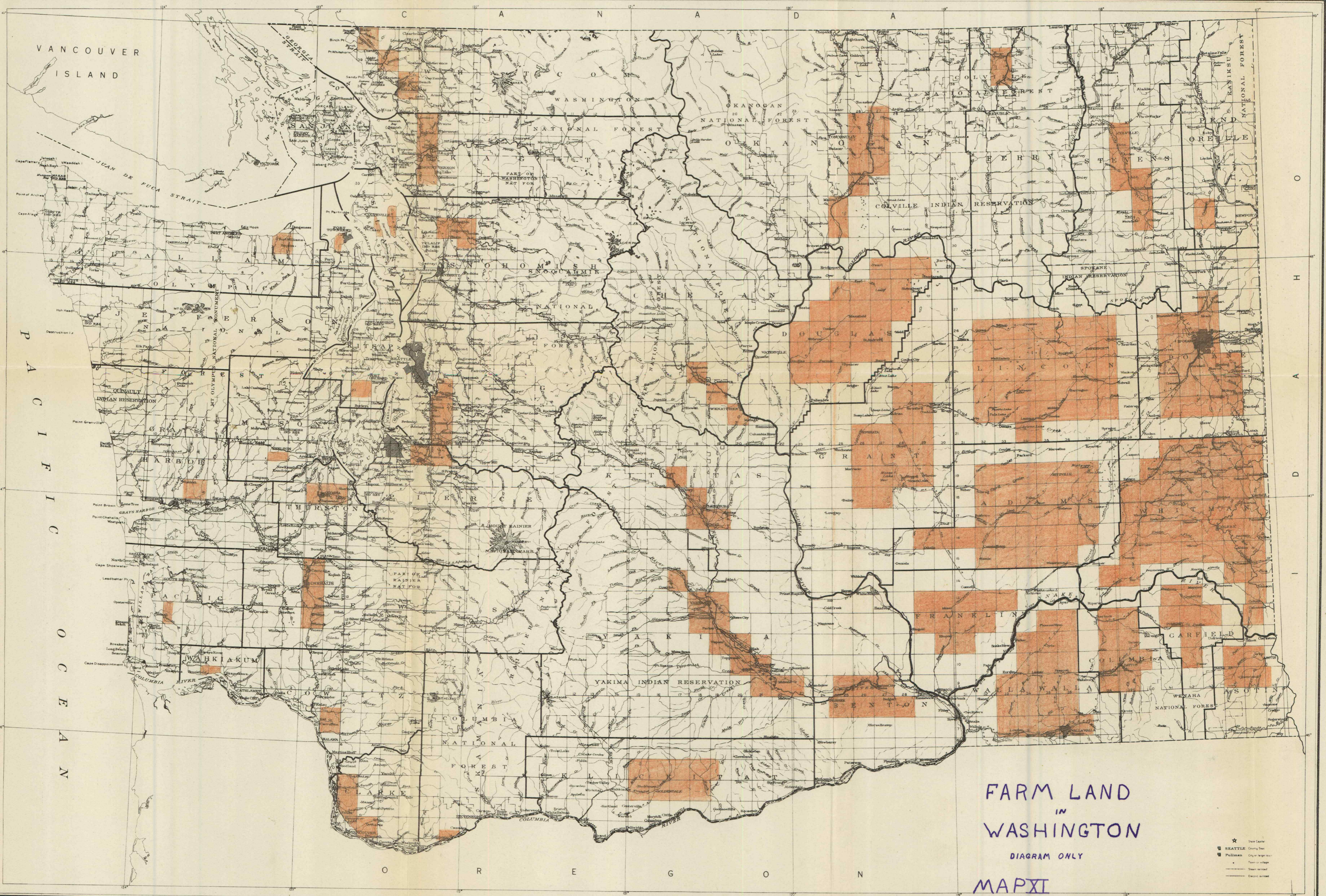
The diagrammatic map, Number XI, shows the area of actual farm land in each county. The blocks are drawn to scale but are not maps. "Farm land" includes the land indicated by the 1920 census as "land regularly tilled or mowed, land in pasture which has been cleared or tilled, land lying fallow, land in gardens, orchards, vineyards and nurseries, and land occupied by farm buildings." The total farm land is 7,129,343 acres or seventeen per cent of the total area of the State.

Map XII gives the extent and location of the farm lands. This map has been very carefully prepared, and as carefully checked as possible to ensure accuracy. The county agents of the State were each forwarded a map of their particular county with a request to indicate the land actually being farmed. One hundred per cent replies were received which facilitated the work greatly. A notable feature is existence of the narrow strips of dairy and fruit lands near the Coast, and at the same time practically no land at the Coast which is being farmed. A large share of these valleys are in the Puget Sound section. Other distinct features are the narrow irrigated fruit growing valleys of the North-central part, the extensive irrigated alfalfa growing section of the

DEPARTMENT OF THE INTERIOR
FRANKLIN K. LANE, SECRETARY
U. S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

STATE OF WASHINGTON
ERNEST LISTER, GOVERNOR
HENRY LANDES, STATE GEOLOGIST

WASHINGTON

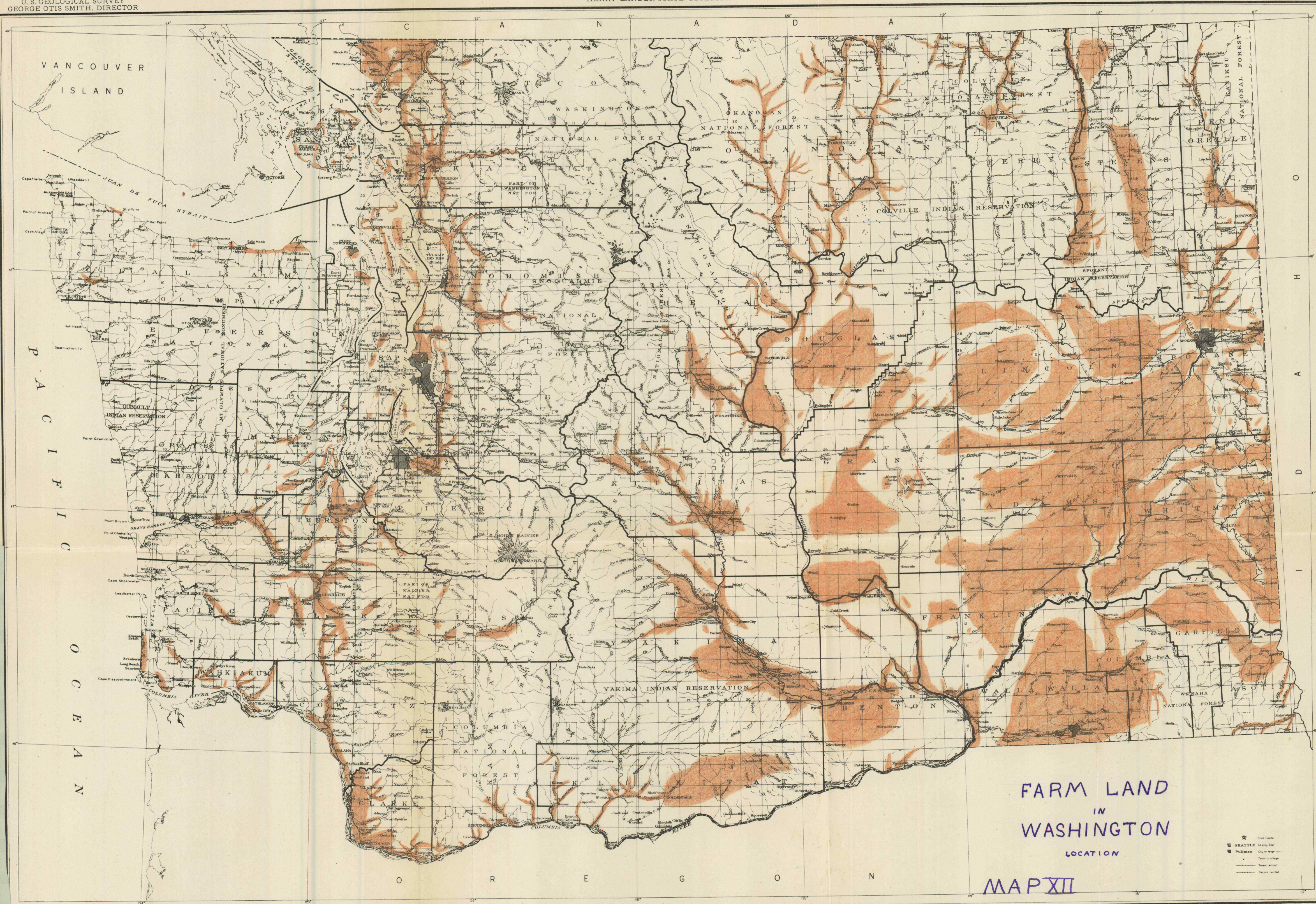


R. B. Marshall, Chief Geographer
A. F. Hassan, Cartographer
COMPILED IN 1914 IN COOPERATION WITH THE STATE OF WASHINGTON

Scale 1:500,000
0 10 20 30 40 Miles
0 10 20 30 40 Kilometers

★ State Capital
SEATTLE County Seat
Pullman City or large town
• Town or village
— Steam railroad
--- Electric railroad

Reprinted 1919



South-central part and the expanse of territory devoted to wheat production in the Southeastern portion of the State.

Maps XIII and XIV show the irrigated lands of Washington diagrammatically by counties and by location respectively. The total irrigated area is 529,899 acres. This constitutes 7.4% of the improved land in farms. Twenty per cent of the total number of farms are irrigated. Of the total irrigated area 43.4 per cent is in Yakima County. The six counties of Yakima, Kittitas, Benton, Chelan, Okanogan and Walla Walla contain eighty-five per cent of the total irrigated lands.

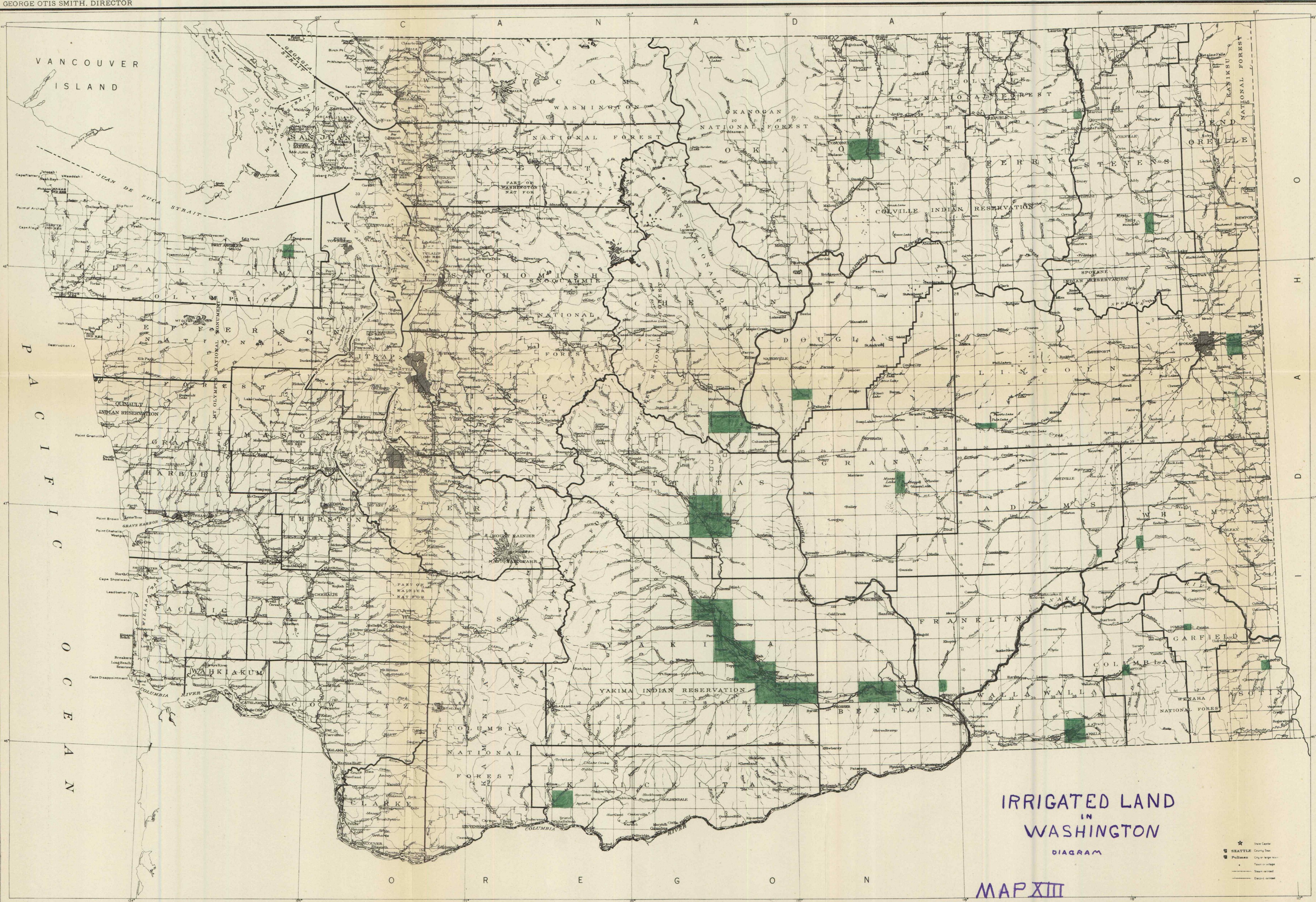
Livestock Distribution

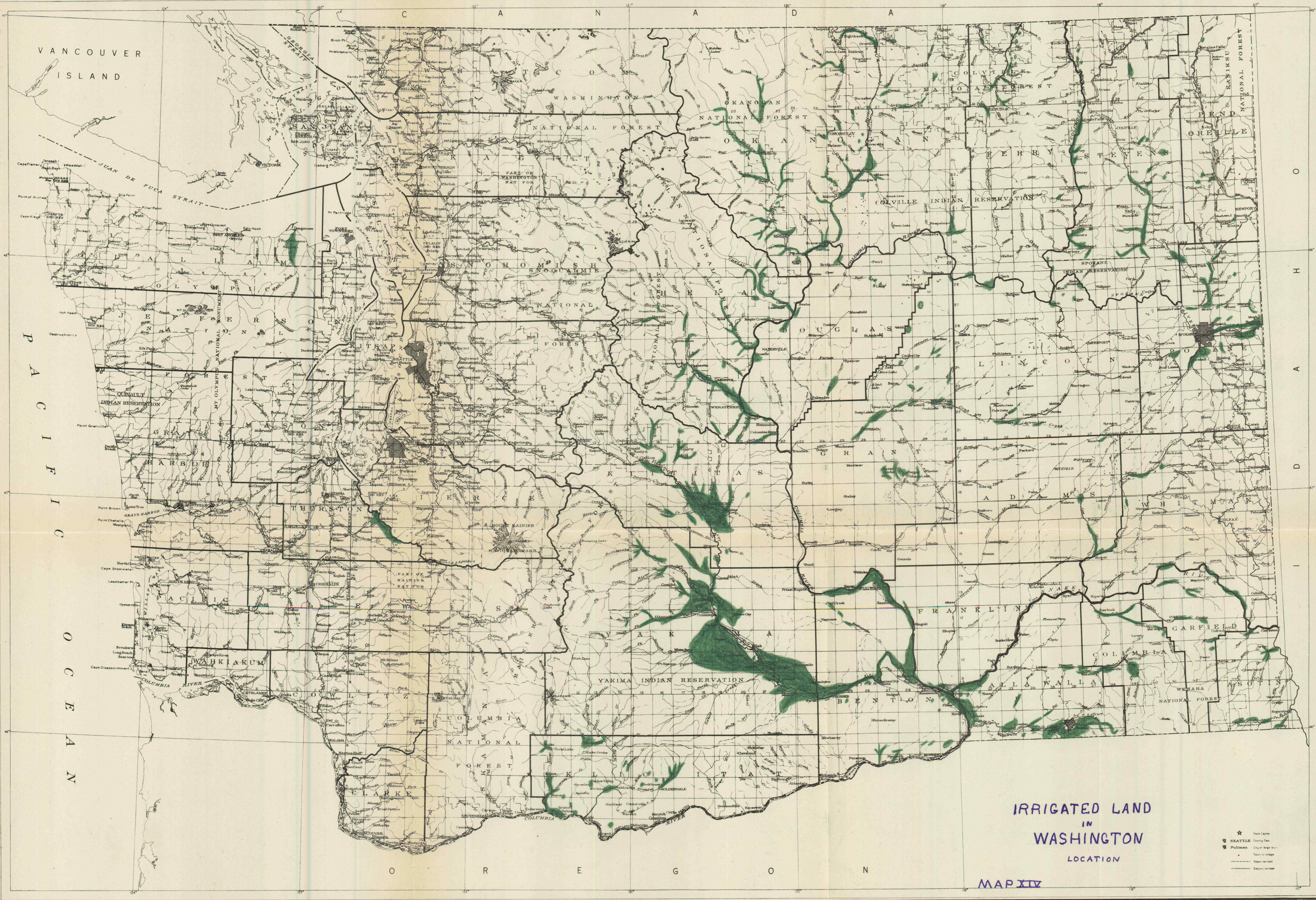
The beef-cattle of Washington are mostly in the eastern half of the State. Eighty-five per cent of the total are listed as being in the counties east of the Cascades.

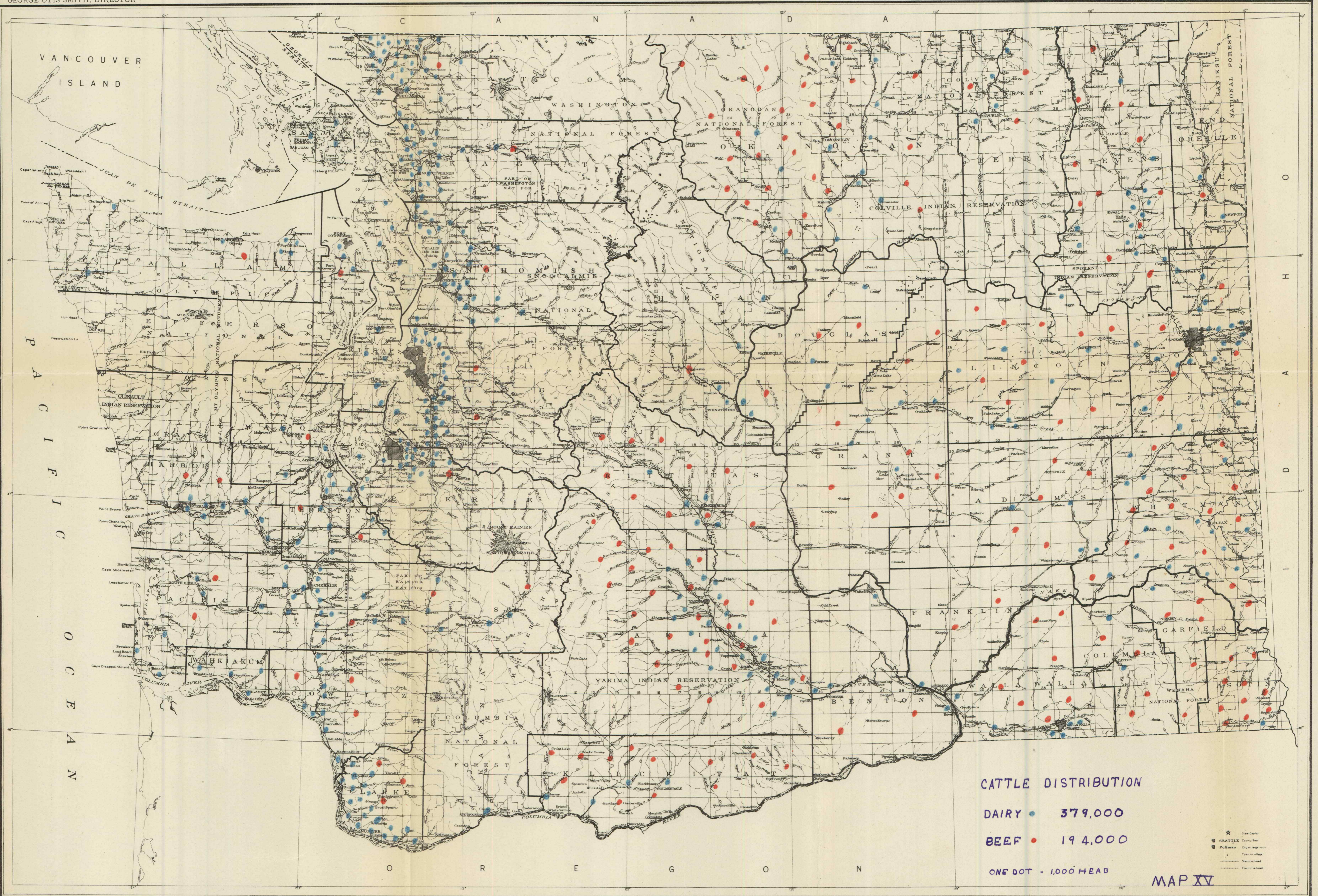
The dairy cattle industry on the contrary has its greatest development in the Puget Sound territory and extends through narrow valleys from Blaine and Sumas on the International Border to Vancouver on the Columbia River. Sixty-two per cent of the total number of dairy cattle are west of the Cascades and mostly in the area described.

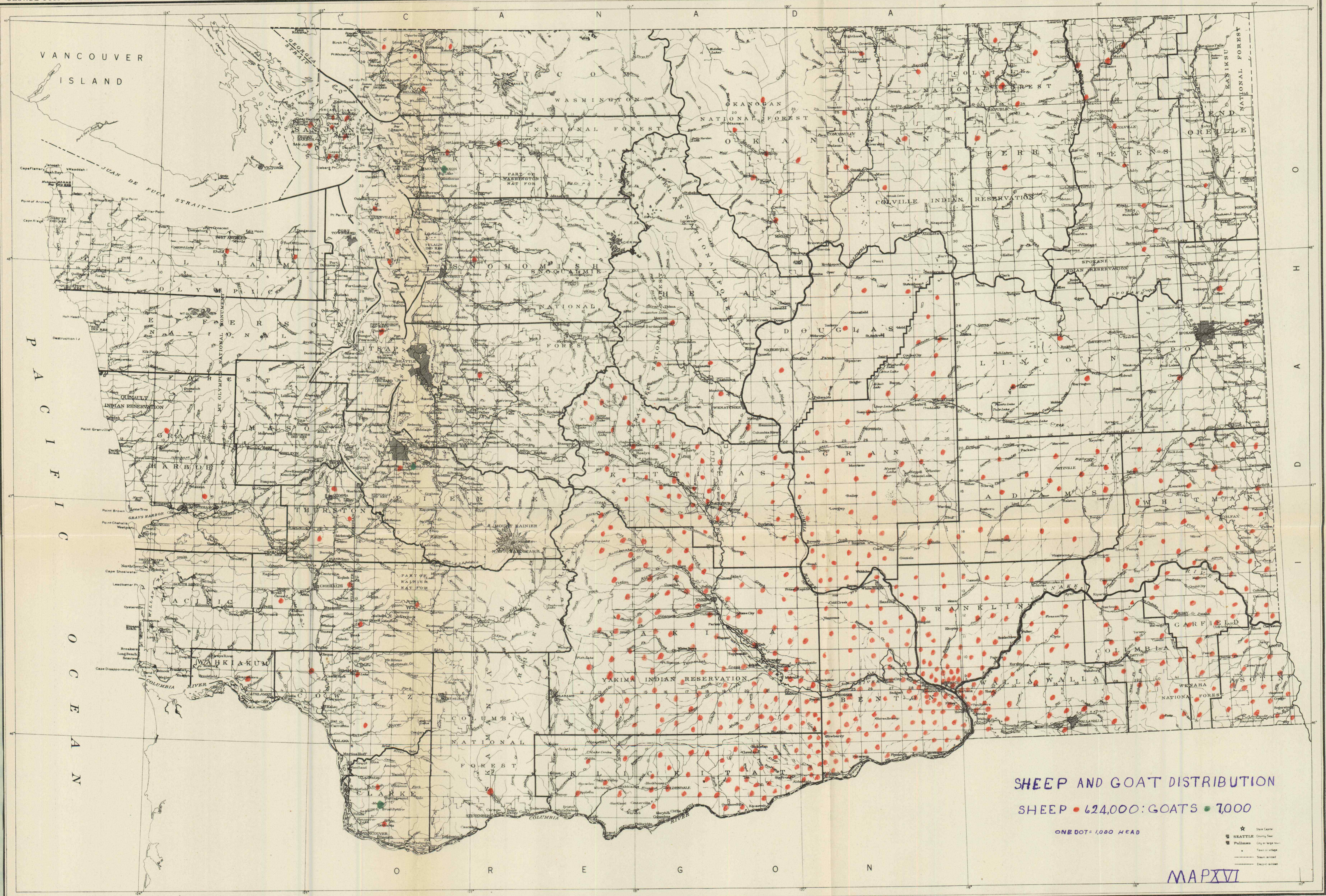
Of the sheep ninety-three per cent are listed for the country east of the Cascades. The goats industry is small, only three counties, Pierce, Skagit and Clarke having in excess of five hundred head. Both angoras and milk goats are found.

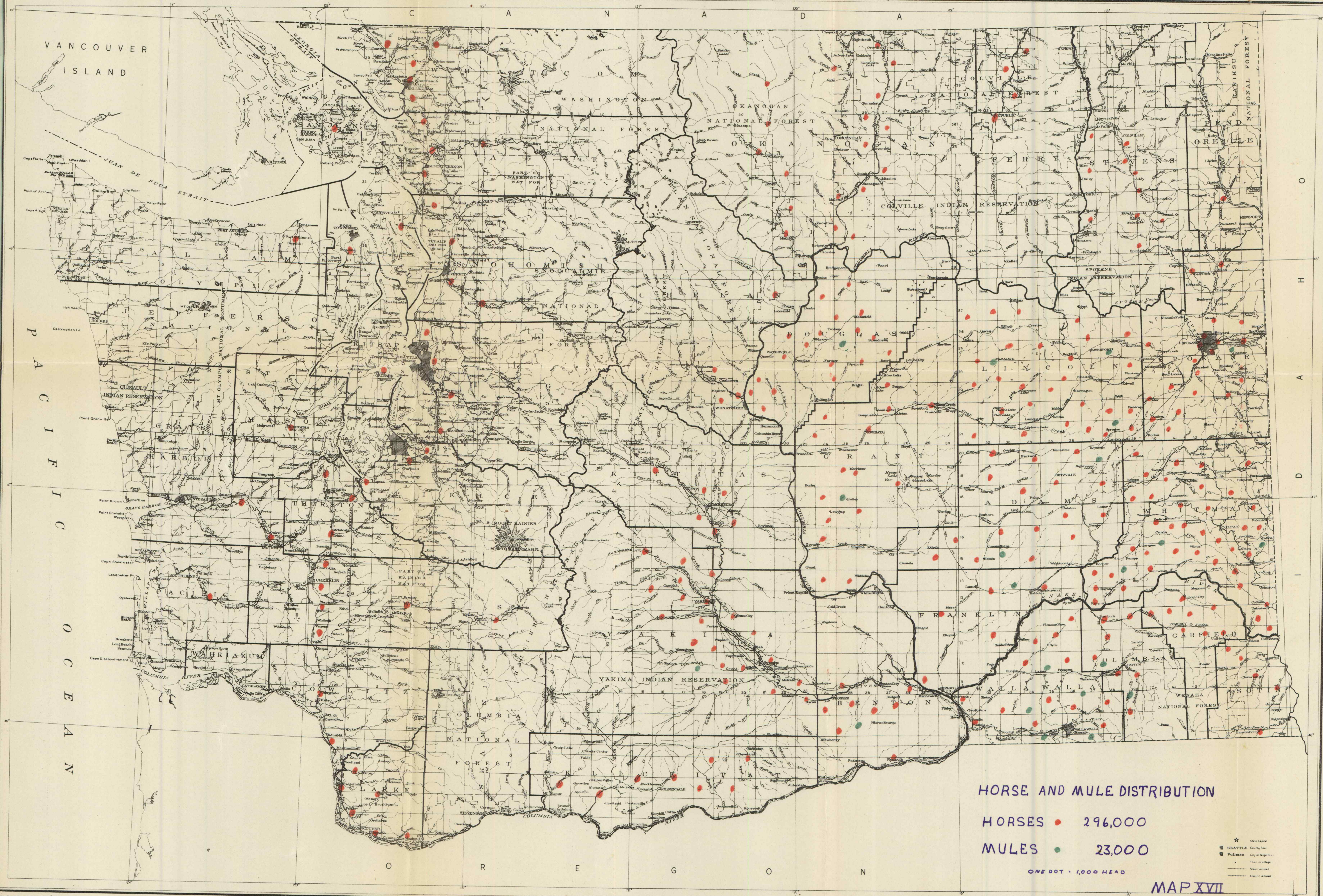
While the number of horses is remaining about stationary,

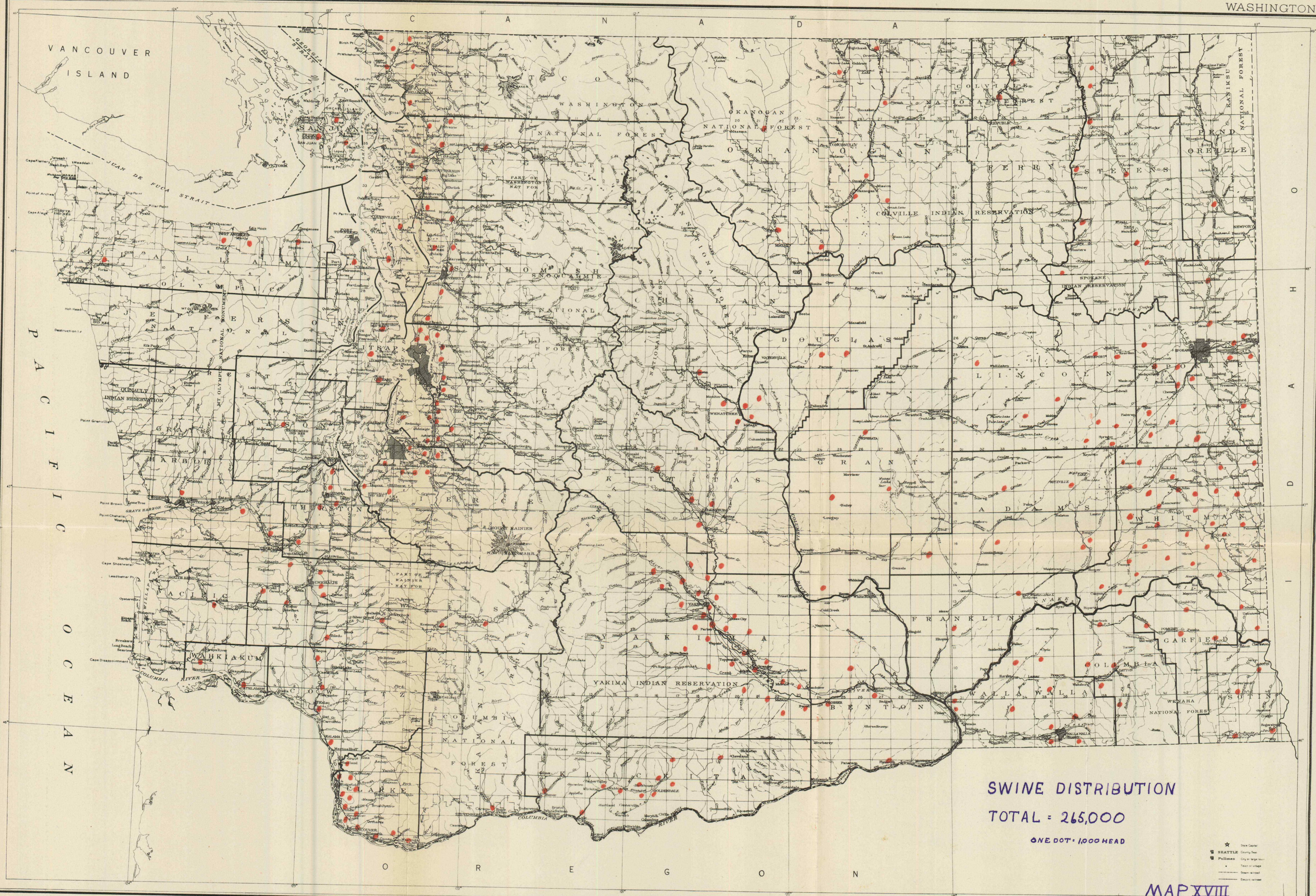












SWINE DISTRIBUTION

TOTAL = 265,000

ONE DOT = 1,000 HEAD

MAP XVIII

- ★ State Capital
- SEATTLE County Seat
- City or town
- Town or village
- State boundary
- County boundary

Scale 1:100,000
0 10 20 30 40 Miles
0 10 20 30 40 Kilometers

the number of mules is increasing, and now constitutes about ten per cent of the total. The mules are most popular in the wheat growing sections of the Southeastern part of the State.

The swine industry is widely spread, but in general the bulk of the hogs are in the dairying, wheat-growing and alfalfa-producing areas.

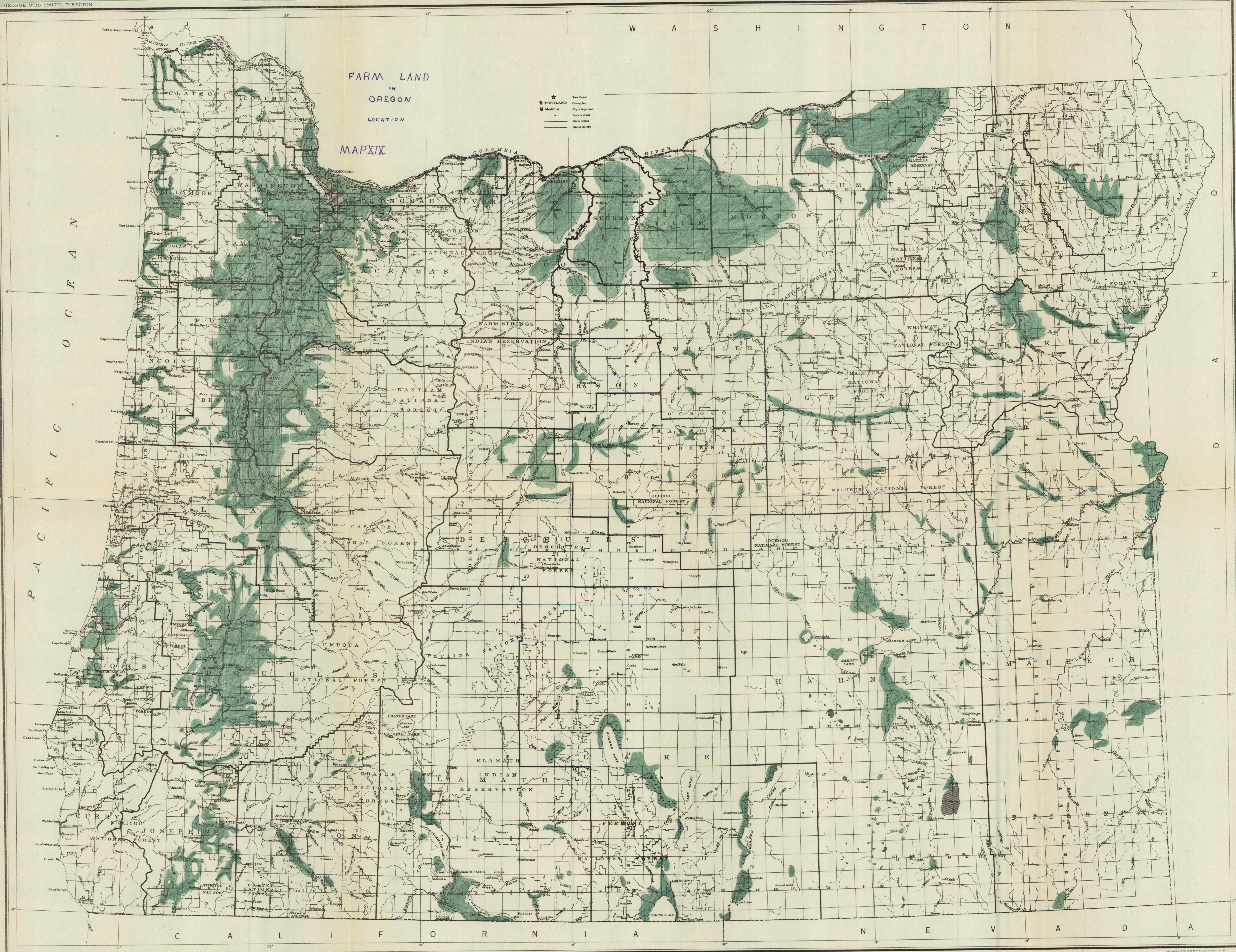
Maps XV, XVI, XVII and XVIII show clearly the livestock distribution. The location is correct as to county, but subject to some correction as to location within the county boundaries. Data from the 1920 census were used as the bases for the maps.

Part IV

Oregon

Farm Land

The areas indicated as farm land in Map XIX include the wheat lands of the North-central part, the irrigated lands spread widely over the territory east of the Cascade Mountains, and the valley lands west of the Cascades. While the land shown in the eastern part is almost exclusively improved farm land, that shown for the valleys nearer the coast includes foothill pasture. These foothills carry mostly scattering patches of timber, and of farming land, but are largely utilized for grazing purposes. The proportion of grazing land increases from north to south.



The irrigated area represents approximately one million acres or about 1.6 per cent of the total land area of the State. Of the total farm lands 7.3 per cent are irrigated. Of the improved land twenty per cent is irrigated, as compared with 7.4 per cent in Washington. Eighteen per cent of the total number of farms are irrigated.

Summary

The agricultural problems of Oregon, Washington and British Columbia are similar in a great many respects. The wide expanse of territory in British Columbia makes the marketing problem difficult of solution. The markets of Washington are attractive to the agricultural producers of the other two areas, particularly Oregon.

Oregon's farms, while not as numerous as those of Washington, are larger and more heavily stocked. The limited area of good agricultural land in British Columbia makes the per acre value high.

Beef-cattle are a more important factor in agricultural production in Oregon than they are in Washington or in British Columbia. During the past few years the numbers of dairy cattle have increased more rapidly than the numbers of beef-cattle. If the very fullest use of the forage produced is to be made, and the home markets catered to, it is not likely that this tendency will be so strongly evidenced during the next few years. A study of the history of the development of the two phases of the cattle industry in other older areas supports the preceeding statement.

Mules are not extensively used outside of the wheat growing areas but are increasing steadily in numbers. Goats are relatively unimportant except the angora industry in Oregon. The milk goat industry of British Columbia and Washington is likely to have considerable expansion. None

of the areas will likely ever be exporters of swine or pork. Washington and British Columbia swine production is likely to markedly increase.

Oregon is much more nearly self-supporting in animal products than Washington or British Columbia. Likewise, her whole animal industry is better balanced to meet the needs of her people than is the case with the other two areas particularly British Columbia.

There is a direct relationship between forage production and livestock production. The most efficient use of forage is noted in the State of Oregon. Comparatively, the forage of British Columbia is not efficiently utilized.

There is not the same relationship existing between grain production and livestock production as was noted between forage production and livestock production. When wheat production is excluded a more direct relationship is observed. The reasons are obvious.

The agricultural production of British Columbia is keeping pace with her increase in population. Her imports of livestock and their products are largely of Canadian origin. Among her heaviest importations are those of feed-grains.

Irrigation projects are numerous in each of the areas studied. The increased production of forage by irrigation fosters practically all phases of livestock production. It was found to be the most vital factor in controlling the availability or lack of winter forage which in turn, to a

large degree, determines the extent of livestock operations especially with beef-cattle and sheep.

Grazing areas are more definitely controlled, and more fully utilized in Oregon and Washington than in British Columbia. The grazing lands of British Columbia, while not extensive, are of superior quality, and have not been so heavily over grazed as those of Washington and Oregon.

Conclusion

The work outlined in this thesis represents an attempt at a survey of the present and potential livestock producing resources of Oregon, Washington and British Columbia. Grazing resources and the feed requirements of the various classes of livestock have been emphasized. To aid in accuracy of interpretation the writer has during the past year traveled over a large part of each of the three sections studied. Particular attention has been paid to studying the livestock producing resources of British Columbia, largely because of the lack of previous information regarding this area. Likewise, more is given regarding Washington than regarding Oregon. The wealth of information dealing with livestock resources of Oregon has, however, served as a basis for the study of, and comparison with, the other two areas. The incompleteness of the work and the lack of finality in interpretation are fully appreciated. Possibly, however, it may serve, at a later time, as a basis for fuller and more complete investigation and conclusion.