

GENERAL DESCRIPTION OF THE SELKIRK MAP SHEET AREA, 62 I

The area covered by the Selkirk map sheet is just north of Winnipeg, Manitoba, between 50° and 51° north latitude and 96° and 98° west longitude. The chief centers in this 5885 square mile area are Selkirk, Gimli, Beausejour, Stonewall, and Pine Falls, which have populations of 9157, 2262, 2214, 1577, and 1233, respectively (1966 census).

A broad expanse of Lake Winnipeg occupies 903 square miles in the eastern part of the area, whereas western lands are largely comprised of the Manitoba Interlake, the land between lakes Manitoba and Winnipeg. The Red River enters Lake Winnipeg from the south through Netley Marsh. The Winnipeg River, joined by the Whitemouth River, enters the lake at Traverse Bay. Other prominent features include North, East, and West Shoal lakes, the southeastern tip of Lake Manitoba and the Assiniboine and Brokenhead rivers.

The two main physiographic divisions of the area are the Manitoba Lowland, which lies west and south of Lake Winnipeg, and the Precambrian Shield, east of the lake.

The Manitoba Lowland may be subdivided into several sections on the basis of surficial deposits and topography. The north-central section comprises the lacustrine deposits of the Fisher River Plain and Icelandic River Lowland. The Interlake Till Plain (land above the 800-foot contour), which consists of ground moraine, occupies most of the western part of the area. Directly south of the Interlake Till Plain is the Central Lowland, which comprises the Woodlands-Stonewall Lake Terrace, composed of lacustrine and outwash sediments over calcareous till; the Red River Plain composed of lacustrine clays, alluvial and fluviatile deposits, and the Selkirk-Beausejour plain, composed of glaciolacustrine and glaciofluvial deposits.

The Lake Winnipeg Terrace of the Manitoba Lowland is a glacial drift plain above the 800-foot contour that extends irregularly from Traverse Bay around the south and west shores of Lake Winnipeg. This terrain varies from level lacustrine sediments around Libau to hilly topography in the vicinity of Grand Beach and Jackfish Lake. East of the Lake Winnipeg Terrace, the Red River Plain juts north to Traverse Bay. In the southeast, above the 800-foot contour, is the Southeastern Lake Terrace with its glacial till, glaciofluvial outwash, and lacustrine surface deposits.

The Precambrian Shield is found north of the Winnipeg River and east of Lake Winnipeg. Surface materials here are predominantly granitic rock outcrop, bog, and localized clay.

The topography in the area varies from flat Manitoba Lowland to rugged Precambrian Shield. The Interlake Till Plain in the west has gentle, northwest to southeast ridge and swale microrelief, whereas the Red River Plain is flat to very gently undulating. In the west, the Manitoba Lowland varies from a central ridge of 900 feet above sea level to 814 feet at Lake Manitoba. The eastern part of the area has greater relief with undulating to hilly topography. Precambrian terrain descends from 900 feet in the east to 714 feet at Lake Winnipeg.

Precambrian granite underlies the entire area, but west of the Shield sedimentary deposits overlie the granite. These deposits consist mainly of limestone, dolostone, sandstone, gypsum, and shale.

The soils of the area fall into four broad groupings. In the west, high-lime soils comprise the Interlake Till Plain. A high moisture regime and heavy tree cover have degraded these calcareous soils in the north-central part of the area. Southwestern and south-central lands have developed black grassland soils. The Lake Winnipeg Terrace has gray-black soils, which are transitional between grassland and forest. East of the Manitoba Lowland, luvisols and organic soils have developed under boreal forest on the Precambrian Shield.

The area is entirely in the Nelson River watershed and all main streams drain into Lake Winnipeg. The Icelandic River drains the north-central part of the area, whereas the south-central part is drained by the Red, Assiniboine, and Brokenhead rivers. Streams flowing from the Precambrian Shield into Lake Winnipeg include the Winnipeg, Whitemouth, O'Hanly, Black, and Sandy rivers.

CLIMATE

The area has a continental climate, slightly modified by the presence of Lake Winnipeg. Near the lake, spring and summer temperatures are lower and autumn temperatures higher than in the interior. Cloud cover and fog are common over the lake in spring and autumn as warm and cold air masses meet.

The mean annual temperature at Gimli is 34.5° F and at Great Falls is 35.6° F. Frost-free periods for Gimli, Seven Sisters Falls, and Great Falls are 90 to 100, 111 to 127, and 127 days, respectively. The lengths of these frost-free periods reflect the warmer local climate in the eastern part of the area.

The mean annual precipitation is 19 to 20 inches in the Manitoba Interlake and 20 to 21 inches in the eastern part of the area. In the Interlake region, 75 percent of the annual precipitation falls as rain from April to October and 25 percent as snow from November to March. The eastern region around Lac du Bonnet receives slightly more of its precipitation (30 percent) as snow. Near Warren, Beausejour, and the O'Hanly River delta, the median snow depths for February are 8.8, 19.2, and 20.3 inches, respectively.

ECOLOGY

The vegetation is wooded and sparsely wooded grassland in the southwestern and south-central parts of the area, broadleaf forest and mixed woods in the north-central and southeastern parts, and coniferous forest north of the Winnipeg River.

The wooded grasslands, broadleaf forest, and mixed woods are transitional between tall grass prairie to the south and boreal forest to the north. The wooded grasslands are characterized by isolated and, where conditions are favorable, continuous tracts of trembling aspen (*Populus tremuloides*). Interspersed with the aspen stands are stretches of wet meadows. During the nineteenth century much more of these grasslands was tall grass prairie, but land tillage and the elimination of prairie wildfires has allowed aspen to encroach. The Red River Plain, for example, would today be tall grass prairie but for the extensive cultivation and drainage that accompanied twentieth century agriculture. On much of the land between Lake Manitoba and Lake Winnipeg, the aspen-ringed pothole pattern of southwestern Manitoba has given way to a ridge and swale landscape. Till ridges, eskers, and sand deposits throughout the Interlake Till Plain are generally forested with un-thrifty trembling aspen, bur oak (*Quercus macrocarpa*), and occasionally, jack pine (*Pinus banksiana*). The understory on these ridges often consists of shrubby cinquefoil (*Potentilla fruticosa*), bearberry (*Arctostaphylos uva-ursi*), roses (*Rosa spp.*), red choke cherry (*Prunus virginiana*), willows (*Salix spp.*), and creeping juniper (*Juniperus horizontalis*). At the foot of these ridges and on the intervening swales grow meadow grasses, sedges (*Carex spp.*), red-osier dogwood (*Cornus stolonifera*), dwarf birch (*Betula glandulosa*), and willows.

The aspen forests at the northern edge of the broadleaf zone, for example, west and north of the Shoal lakes, are nearly continuous. Open grassland is still evident in the Balmoral, Shoal lakes, and St. Laurent districts. These grasslands have saline soils, which inhibit tree invasion. Common grasses on better-drained sites are big bluestem (*Andropogon gerardii*), little bluestem (*A. scoparius*), nodding wild rye (*Elymus canadensis*), and wheat grasses (*Agropyron spp.*). Invasion of disturbed sites by cultivated grasses, such as smooth brome (*Bromus inermis*), is common.

Wetlands, such as Netley Marsh, the Lake Francis marshes, and the marshes east of Balmoral and Stonewall, are prominent in the area. These marshes are grassy, with little peat and much standing or slowly moving, neutral or alkaline water. Cattails (*Scirpus spp.*) and common reed grass (*Phragmites communis*) are abundant. Sedge and grass sods are often interspersed with open water.

The northeastern Interlake and the land east of the Red River is dominated by mixed forest. Trembling aspen is the dominant forest species, but white spruce (*Picea glauca*), black spruce (*P. mariana*), jack pine, balsam fir (*Abies balsamea*), and white birch (*Betula papyrifera*) are also common. Extensive stands of white spruce occupied much of the original mixed forest, but current forest cover on these sites is mainly unthrifty aspen, especially where fire has destroyed the organic forest mat.

A vigorous growth of mixed forest is present on the better-drained lacustrine deposits that border Lake Winnipeg and parts of the Winnipeg River. The species composition of these stands depends upon the maturity of the forest. Early succession is characterized by trembling aspen, white birch, and balsam poplar, whereas older stands include white spruce and balsam fir. White elm (*Ulmus americana*) and green ash (*Fraxinus pennsylvanica* var. *lanceolata*) are sometimes present on the richer clay soils. Sphagnum mosses (*Sphagnum spp.*), black spruce, tamarack (*Larix laricina*), willows, and dwarf birch are dominant in the extensive peat-filled bogs south and west of Pine Falls.

The mixed woods of the area have lush floodplain vegetation along stream borders. Here, alluvial soils support robust stands of hardwoods such as white elm, green ash, black ash (*Fraxinus nigra*), Manitoba maple (*Acer negundo*), and balsam poplar.

Coniferous forest covers most of the Precambrian terrain north of the Winnipeg River. Black spruce dominates on both thin-soiled uplands, where it is associated with jack pine, and on poorly drained lowlands, where it is associated with tamarack. Fires have favored the spread of jack pine and white birch on many sites. Hazelnuts (*Corylus spp.*), willows, red-osier dogwood, dwarf birch, and saskatoon (*Amelanchier alnifolia*) are common shrubs in the coniferous forests of the area. Rich lacustrine soils and a favorable microclimate have produced a thrifty mixed forest along the banks of the O'Hanly, Black, and Sandy rivers. Shrub growth is also luxuriant on these sites.

Wild ungulates found in the area are white-tailed deer (*Odocoileus virginianus*), moose (*Alces alces*), and woodland caribou (*Rangifer tarandus*). In the past, bison (*Bison bison*), North American elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), and possibly pronghorn antelope (*Antilocapra americana*) existed in this region.

Woodland caribou were once common in the coniferous forests of the area, but now they are found only north of the Winnipeg River. Moose formerly ranged over much of the Manitoba Interlake and Red River lowlands, but today this ungulate is largely restricted to the northeastern quarter of the area. Bison roamed the southwest until the early 1900s. The last wild bison was seen near Winnipeg in 1819. This region, now aspen parkland was in 1858 tall grass prairie. Pronghorn antelope were formerly found as far east as the Red River lowlands and north to the junction of the Assiniboine and Red rivers. In 1800, Alexander Henry recorded elk in the vicinity of Cooks Creek and Netley Marsh, where they inhabited open grasslands in large herds. Mule deer also ranged over southwestern Manitoba and southeast into the mixed woods zone. Mule deer probably disappeared from the area before 1925. White-tailed deer moved in from the south in the late nineteenth century and are the most abundant wild ungulate in the area today.

LAND CLASSIFICATION FOR UNGULATES

High-capability land for wild ungulates (Class 3 or better) constitutes 28 percent of the area. Class 4, 5, and 6 lands comprise 21, 12, and 21 percent of the area, respectively. There are no Class 7 lands. Water bodies comprise about 18 percent of the area.

White-tailed deer is the primary indicator species over 72 percent of the land classified. Much of the high-quality deer habitat occurs on the better-drained terrain in the Manitoba Interlake region. Twenty percent of the area is rated principally for moose, with the best habitat occurring on alluvial deposits bordering streams. The best habitat for woodland caribou, the main species in 8 percent of the area classified, is located north of the Winnipeg River. Elk habitat is found in the extreme northwestern part of the area.

Excessive or deficient soil moisture (M) is the chief limitation for 43 percent of the area. Lack of topographic relief (T) is a limiting factor for 34 percent of the area, and poor interspersion of landforms (G) for 20 percent. These limitations reflect the poorly drained and monotypic Interlake landscape.

Winnipeg, with a population of about one-half million, lies just outside the area. Much of the area has only fair to good ungulate capability, but large tracts of land remain undeveloped and are open to public use of the wildlife resource. For these reasons, many of the lands in the area have high priority for wildlife.

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DESCRIPTION DU TERRITOIRE DE LA FEUILLE DE SELKIRK – 62 I

Le territoire représenté sur la feuille de Selkirk est situé au nord de Winnipeg, Manitoba, entre 50° et 51° de latitude nord et 96° et 98° de longitude ouest. Les principales agglomérations de ces 5 885 milles carrés sont Selkirk, Gimli, Beausejour, Stonewall et Pine Falls, aux populations respectives de 9 157, 2 214, 1 577 et 1 233 habitants (recensement de 1966).

Une grande partie du lac Winnipeg occupe 903 milles carrés dans l'est du territoire, alors que les terres de la partie ouest appartiennent surtout au Manitoba Interlake, région située entre les lacs Manitoba et Winnipeg. La rivière Rouge se déverse dans le lac Winnipeg, au sud, à travers le marais Netley. Les rivières Winnipeg et Whitemouth, se jetant dans le lac par la baie Traverse. Les lacs Shoal Est, Ouest et Nord, l'extrémité sud-est du lac Manitoba, et les rivières Assiniboine et Brokenhead constituent d'autres caractéristiques importantes.

Les deux principales régions physiographiques sont les basses terres du Manitoba, situées à l'ouest et au sud du lac Winnipeg et, le Précambrien, situé à l'est du lac.

Les basses terres du Manitoba se subdivisent en plusieurs sections selon les dépôts de surface et la topographie. La section nord-centre comprend les dépôts lacustres de la plaine de la rivière Fisher et de la basse plaine de la rivière Icelandic. La plaine alluviale Interlake (terres dépassant la cote de 800 pi) consiste en une moraine de fond et occupe la majorité de la partie occidentale. Au sud de la plaine Interlake, se trouve la basse plaine centrale, qui comprend la terrasse Woodlands-lac Stonewall faite de sédiments lacustres et de dépôts grossiers procligiaires sur till calcaire. La plaine Interlake comprend aussi la plaine de la rivière Rouge, faite d'argiles lacustres et de dépôts alluviaux et fluviaux, ainsi que la plaine Selkirk-Beausejour, composée de dépôts glacio-lacustres et fluvioglaciaires.

La terrasse du lac Winnipeg, dans les basses terres du Manitoba, est une plaine de tills glaciaires, siége au-dessus de la cote de 800 pi. Elle s'étend de façon irrégulière de la baie Traverse aux rives sud et ouest du lac Winnipeg. Sa topographie varie de sédiments lacustres plats aux environs de Libeau à un relief montueux près de Grand Beach et du lac Jackfish. A l'est de la terrasse, la plaine de la rivière Rouge fait une pointe en direction nord vers la baie Traverse. Dans le sud-est, au-dessus de la cote de 800 pi, se trouve la terrasse du sud-est du lac, faite de till glaciaire, d'alluvions fluvioglaciaires et de dépôts lacustres de surface.

Le Précambrien se rencontre au nord de la rivière Winnipeg et à l'est du lac du même nom. Ici, les matériaux de surface sont surtout des affleurements de rocs granitiques, des fondrières et des argiles intermittentes.

La topographie du territoire varie des plates basses terres du Manitoba à l'anfractuosité du bouclier canadien. La partie ouest de la plaine alluviale Interlake, présente un micrelief d'arêtes peu élevées et de légères dépressions marécageuses. Le relief de la plaine de la rivière Rouge va de plat à très légèrement ondulé. A l'ouest, les basses terres du Manitoba varient de 900 pi sur l'arête centrale à 814 sur le lac Manitoba. L'est du territoire montre un relief plus accidenté, variant d'ondulé à montueux. Les terres du bouclier, elles, se situent entre 900 pi à l'est et 714 au lac Manitoba.

Un granite précambrien sous-tend tout le territoire mais, à l'ouest du bouclier, des dépôts sédimentaires recouvrent ce granite. Ces dépôts consistent surtout en calcaires, dolomites, grès gypses et schistes argileux.

Les sols se divisent en quatre grandes catégories. A l'ouest, la plaine Interlake, au sol à forte teneur calcaire. Le degré élevé d'humidité et la densité du couvert forestier ont dégradé ces sols calcaires dans la partie nord-centre du territoire. Les sols noirs des prairies caractérisent les terres du sud-ouest et du centre-sud. La terrasse du lac Winnipeg montre des sols gris-noirs, intermédiaires entre la prairie et la forêt. A l'est des basses terres du Manitoba, des luviosols et des sols organiques, se sont développés sous la forêt boréale du bouclier canadien.

Tout le territoire appartient à l'aire d'alimentation du fleuve Nelson, et ses principaux cours d'eau se déversent dans le lac Winnipeg. La rivière Icelandic draine la partie nord-centre, alors que les rivières Rouge, Assiniboine et Brokenhead égouttent le centre-sud. Parmi les cours d'eau qui viennent du bouclier canadien se déverser dans le lac Winnipeg, on peut citer les rivières Winnipeg, Whitemouth, O'Hanly, Black et Sandy.

CLIMAT

Le climat est continental, légèrement modifié par la présence du lac Winnipeg. Près du lac, les températures sont plus basses au printemps et en été, et plus élevées à l'automne, qu'à l'intérieur des terres. Au printemps et à l'automne, lorsque des masses d'air chaud et d'air froid se rencontrent, il se forme beaucoup de nuages et de brume sur le lac.

La température annuelle moyenne est de 34.5° F à Gimli et de 35.6° F à Great Falls. On compte de 90 à 110 jours sans gel à Gimli, de 111 à 127 à Seven Sisters Falls et 127 à Great Falls. L'étendue de ces périodes reflète le climat local plus chaud de la partie est.

Les précipitations annuelles moyennes se chiffrent à 19 ou 20 po dans le Manitoba Interlake et à 20 ou 21 dans l'est du territoire. Dans la région Interlake, 75% des précipitations tombent sous forme de pluie entre avril et octobre; 25% tombent sous forme de neige entre novembre et mars. Dans la région est, près du lac du Bonnet, la proportion de neige augmente à 30%. Près de Warren, de Beausejour et du delta de la rivière O'Hanly, l'épaisseur moyenne de la neige en février est de 8.8, 19.2 et 20.3 po. respectivement.

ÉCOLOGIE

La végétation consiste en prairies boisées et clairsemées dans le sud-ouest et le centre-sud, en forêts décidues et peuplements mixtes dans le nord-centre et le sud-est et en forêts de conifères au nord de la rivière Winnipeg.

Les prairies boisées, la forêt décidue et les peuplements mixtes sont transitoires et situées entre les prairies de hautes herbes au sud et la forêt boréale au nord. Des peuplements isolés ou continus de peuplier faux-tremble (*Populus tremuloides*) caractérisent les prairies boisées. Entremêlées à ces peuplements de peuplier se trouvent des étendues marécageuses. Au cours du XIX^e siècle, une plus grande partie de ces prairies étaient recouvertes de hautes herbes, mais la culture et l'élimination des incendies ont permis au peuplier d'empêtrer sur ces terrains. La plaine de la rivière Rouge, par exemple, serait encore aujourd'hui une prairies de hautes herbes, n'eût été de la grande culture et du drainage, procédés agricoles du XX^e siècle. Sur une grande partie des terres situées entre les lacs Manitoba et Winnipeg, les marmites entourées de peupliers (typiques du sud-ouest manitobain) ont fait place à un paysage d'arêtes et de dépressions marécageuses. Sur les gills, les eskers et les dépôts de sable dispersés dans la plaine alluviale Interlake croissent des peuplements malvenus de peuplier faux-tremble, de chêne à gros fruits (*Quercus macrocarpa*) et parfois de pin gris