

GENERAL DESCRIPTION OF THE HUDSON BAY MAP SHEET AREA, 63D

The area covered by the Hudson Bay map sheet comprises about 5850 square miles in northeastern settled Saskatchewan, close to the Manitoba boundary. The area lies between 52° and 53° north latitude and 102° and 104° west longitude, and about one-third of it lies within provincial forest reserves. The Porcupine Forest reserve extends across the south-central section, eastward from Greenwater Lake Provincial Park to the Porcupine Hills. A second reserve, part of the Northern Provincial Forest, occupies part of the northern border and, west of the town of Hudson Bay, extends southward almost to the Porcupine Forest. Settlement is concentrated mainly in the south and west but a northeasterly extension, through Hudson Bay, lies between the two forest reserves. The population distribution corresponds fairly well with the main physiographic units. The forests are more or less coincident with rolling morainic uplands and very poorly drained sections, whereas the agricultural lands are located on glaciolacustrine and till plains.

Most of the area lies within the Saskatchewan Plain physiographic region, or Second Prairie Level. The northeast corner is a low-lying plain that is part of the First Prairie Level or Manitoba Lowland physiographic region. Erwood marks the center of this region and the Red Deer River, with its oxbow lakes and meander scars, has cut into lacustrine and alluvial deposits. This boundary, at about 1150 feet, is also marked by some of the upper level, relict sand and gravel beaches. To the south and in the north between the Porcupine and Pasquia hills, the change to the Saskatchewan Plain physiographic region is more abrupt. These hills are segments of the dissected, generally northeast-facing Manitoba Escarpment, which separates the First and Second Prairie levels.

The northern slopes of the Porcupine Hills rise steeply for more than 1000 feet above the lowland, to 2200 feet above sea level. Above 2000 feet, the terrain is characterized by a series of stepped tablelands. Shale bedrock exposures occur, but most of this region is thinly covered by glacial till as in the north, or by thick hummocky moraine. To the west of the steep slopes, a gently to strongly rolling morainic upland, 1800 feet to more than 2100 feet in elevation, extends to the western boundary of the area. Glacial landforms, ice-disintegration features such as kame and kettle topography, locally high relief up to 50 feet, many lakes and sloughs, and poorly drained basins characterize the terrain of the uplands. The glacial deposits, mainly hummocky moraine, were laid down over till during a time of glacial stagnation. Glacial meltwater channels are also prominent in the upland; a deep, 50 mile long, flat-bottomed channel containing the Piwei River, Piwei Lakes, and Eldridge and McBride lakes, occurs along the northern border. At right angles to this trough are two deeply etched north-south channels. One of these channels runs parallel to the western foot of the Porcupine Hills and is occupied by the Swan River. The other channel is farther west and contains the south-flowing Lilian River and the north-flowing Etomami River. West of Greenwater Lake are poorly defined meltwater channels, one of which contains the Barrier River and Barrier Lake.

To the west, the Second Prairie Level rises very gradually from the small part of the Manitoba Lowland. The boundary between the two regions is marked by a slight change of slope where the Red Deer River has cut into the lacustrine deposits of glacial Lake Agassiz, and re-sorted and spread the alluvial deposits. This boundary, at about 1150 feet, is also marked by some of the upper level, relict sand and gravel beaches. To the south and in the north between the Porcupine and Pasquia hills, the change to the Saskatchewan Plain physiographic region is more abrupt. These hills are segments of the dissected, generally northeast-facing Manitoba Escarpment, which separates the First and Second Prairie levels.

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The southern lower slopes of the Pasquia Hills occupy part of the northern border of the area, but the escarpment is well marked as it rises steeply from 1500 to 1900 feet. The slopes are dissected by many streams that have breached the Agassiz beach ridges as they flow to join the Red Deer River. The Red Deer River also cuts through a large relict beach south of Hudson Bay. Extensive swamps and bogs occur behind the discontinuous beach barriers.

Between the Pasquia escarpment and the southern uplands are gently undulating to gently rolling plains, 1200 to 1700 feet in elevation, formed on glacial till lake-modified till, lacustrine silts and clays, and alluvial and glaciolacustrine deposits. A prominent deposit is the esker located east of Porcupine Plain. Surface drainage is dominantly eastward to the Red Deer River but streams to the northwest flow to the Carrot River. These plains are mainly cleared but some sections are poorly drained and remain in bush. Glacial ponding also occurred in the southeast of the area where deposits include lake-modified till, till, and coarse outwash. Here the Swan River meanders along a flat-bottomed glacial meltwater channel whose valley walls are more than 200 feet high.

CLIMATE

The climate of the area is subhumid continental, characterized by moderately light precipitation, long cold winters, and short, fairly warm summers. The temperature regime is cold frost (cool summer) (*Köppen*) and the moisture regime is dry subhumid (*Thornwaite*).

The total annual precipitation is 15 to 18 inches, about two-thirds of which falls during the growing season. Precipitation is highest in the uplands, which receive more than 50 inches of snow. In January, the mean temperature is lowest in the uplands at -5°F, or colder, and only slightly higher, -3° to -4°F, in the rest of the area. The lowest temperature recorded was -55°F. In July, the mean temperature is highest in the south and west, at 64°F, and it decreases with elevation to 60°F in the Pasquia and Porcupine hills. Absolute maximum temperatures in July have reached 100° to 105°F. The frost-free period is similar, 80 to 90 days in the south and west, 70 to 80 days in the northeast, and less than 70 days in the higher parts of the uplands. In the uplands, the growing season (mean daily temperature above 42°F) is 150 to 160 days, and in the south and west, it is 160 to 170 days.

FISH AND WILDLIFE

The many wetlands include bogs and fens, wet meadows, marshes at the edge of rivers and lakes, beaver ponds, kettle ponds, sloughs, and permanent lakes of more than five square miles in area. A southern morainic upland, mainly in the Porcupine Forest, has the greatest number and variety of wetlands. In the southwest, many of the water bodies are typical prairie sloughs and hold water only temporarily during the spring runoff. Ponass Lake, the largest in the area, is an intermittent lake with marshy shores. Because of the diversity in wetland habitat, migratory waterfowl comprise a large part of the wildlife. Shallow marshes, such as on Bjork Lake in the northwest and Ponass Lake, are preferred habitats for dabbling ducks including the Mallard and Pintail. Near deeper lakes and marshes, the Mallards and diving ducks such as the Canvasback, Redhead, and Scaup are more common. In addition to these breeding grounds, the chief migratory stopping sites are the shorelands and waters of the large shallow lakes.

Upland game birds also are widespread and include the Sharp-tailed Grouse, Hungarian Partridge, Ruffed Grouse, and Spruce Grouse. The Sharp-tailed Grouse and Hungarian Partridge are most common in the agricultural areas, particularly in the south and west. Ruffed Grouse increase in importance on the forest fringe and inhabit the forested region with Spruce Grouse. The Spruce Grouse prefers conifers located near bogs or slow-moving streams.

Despite the many lakes and ponds the area is not outstanding for its sport fishing because many of the lakes are intermittent, shallow, or saline, as in the southwest. Most lakes and many streams support pike, pickerel, and perch, and some of them, such as Greenwater and Ruby lakes, provide good to excellent angling. Some of the streams in the east have been stocked with trout.

The intercession of farmlands, woodlands, wetlands, and forest preserves provides suitable habitats for many wildlife species. Wild fur production mainly in the uplands is based on beaver, mink, muskrat, squirrel, and lynx; the black bear is also common. White-tailed deer, some mule deer, and moose are found throughout the area. Moose also occur in moderately high to high densities in the northeast.

SETTLEMENT AND LAND USE

One of the oldest trails in the area dates back from before 1800 and was used by settlers well into the present century. This trail, the Fort Pelly - Piwei Trail, led northward from Fort Pelly, which is south of the area, to the Piwei Lakes and then to Nut Lake. Other old trails include one from Nut Lake to Fort Touchwood, which is southwest of the area, and another from Nut Lake to Red Deer River and eastward. Nut Lake and Fort Rivière à la Biche were sites of early fur trading posts. The ruins of Fort Rivière à la Biche were discovered near the junction of the Etomami and Red Deer rivers and the site is now protected within a small park south of the town of Hudson Bay. It is not certain whether this was an outpost established by French Canadian fur traders in the late 1700s or a post of the North West Company that was built later in the eighteenth century.

European settlement was initiated in the last decade of the nineteenth century. Settlers moved into the southeast from the Swan River Colony Reserve, later called the North Colony. A Doukhobor settlement was established in 1889 in the Swan River Valley, which lies adjacent to the boundary of the area. The first railway spur to enter the area was the Canadian National Railway, which reached Erwood in 1902. In 1904 the Canadian Northern Railway extended the line through Hudson Bay Junction, which is now the town of Hudson Bay, and westward toward Prince Albert; at the same time, another railway was built from the south to Hudson Bay. Despite these links, only a few townships in the south, west, and near Hudson Bay had population densities of more than 4 persons per square mile in 1911. Lumbering was more significant as an industry than farming at that time. Further land alienation in the same parts of the area occurred in the next decade. From 1919 to the middle 1920s, homestead lands were provided for returning soldiers. Other railway lines were built but significant farm occupation was deferred until the 1930s when a large number of people came from the drought-ridden south of the province.

The uplands are rated among the more productive forest lands in the province. Lumbering, based especially on the selective cutting and overcutting of white spruce, began in the first decade of the century. Today, Hudson Bay is the center of protected and significantly large wood-using industries. Sawtimber, particle board, plywood poles, and posts are produced in the area and pulpwood is sent to a mill at Prince Albert. The chief species include trembling aspen, black poplar, white birch, and some Manitoba maple and white ash, together with softwoods such as white pine, jack pine, black spruce, and balsam fir.

Climate, relief, soils, local surface drainage problems, and lateness of occupancy have affected the type and distribution of farming. Agriculture has been practiced longest and is best developed on the Black and Dark Gray grassland soils of the south and west. In other locations, including the settlements from Hudson Bay to Erwood, poorer soils, poor surface drainage, and treed bogs have restricted the expansion of farm operations, separated the farmed lands, and caused some land abandonment. Except in the west and south, climatic hazards, particularly late spring and early fall frosts, and occasional extensive spring flooding, have led to similar results.

Despite the poor quality of the soils in the area, there is a large concentration on wheat, which accounts for at least half the total of all cropped land and up to two-thirds in the west and south. Summerfallow occupies up to one-third of the arable acreage on most farms and is part of a two- or three-year grain rotation system. Coarse grains are next in importance, accounting for 25 percent or more of the cropped land in the south and west and more than 35 percent elsewhere. The other main crops are oilseeds, especially rapeseed, alfalfa, and clover, much of which is grown for seed. Small herds of beef cattle are associated with many farms and in the south, some milk production for cream is common. Much farm abandonment and farm consolidation has occurred and is still occurring, but most of the farms are still about 400 acres in size.

Hudson Bay and Kelvington, which have populations of 2000 and 1050 respectively, are the chief retail centers in the area. Tisdale to the west and Wadena and Canora to the south also serve the area.

RECREATION CAPABILITY

The area does not have sufficient physical capabilities to support many outdoor recreational activities. The common occurrence of subclasses E, O, Q, W, V, M, and P indicates that features such as special vegetational characteristics, upland wildlife, variety in topographic patterns, wetland wildlife, vantage point for viewing, frequent small water bodies, and landscape patterns of interest are capable of some recreational capability. But over most of the area, these subclasses are associated with capability Class 5 sites and with some lower-rated lands.

The rivers have limited capability for supporting recreation. Except east of Hudson Bay, the Red Deer River is generally too shallow for canoeing. The Etomami River is better for canoeing but it is not an especially interesting stream, except in its upper reaches where it flows through a deep-cut glacial meltwater channel. In the southeast, the Swan River is suitable for canoeing and the steep wooded and gullied walls of the glacial spillway make this an attractive corridor. Here, there is potential for walking, viewing, hunting, and camping, and the varied habitats of the sheltered valley offer a wide range of wildlife. The upper valley of the Etomami is similar in this respect.

Few lakes have shorelands that rate moderately high in capability. Many are too shallow for use in boating or swimming but some of the larger lakes, such as Ponass and Bjork, provide excellent waterfowl habitat. Most lakes that are capable of supporting water-oriented recreation have special physical characteristics and similar capabilities. In the east, McBride and Eldridge lakes occur in an old glacial meltwater channel and have Class 4 shorelines; they are capable of supporting boating and angling, but they lack foreshore and have fairly steep offshore slopes. Ruby Lake, north of Hudson Bay, has been developed to suit local needs for boating and fishing. Barrier Lake in the west is another elongated lake set in a meltwater channel; as at Nut and Little Nut lakes, the foreshore is composed of boulders and till. Backshores on all three lakes are well drained and parts of the shores are well wooded. Both Nut and Little Nut lakes are important waterfowl habitat.

Greenwater Lake Provincial Park, a forested area in which Greenwater and Marean lakes are located, is the best part of the area for intensive water-oriented activities. Both lakes have well-drained backshores with an excellent cover of poplar, trembling aspen, and some spruce. Class 3 beaches occur on Greenwater and Marean lakes, and boating and angling capabilities are good. In these and other lakes, pike and pickerel are the main sport fish.

The provincial forest reserves occupy a large part of the area and have a variety of recreational attractions including small lakes, such as Round, Klogie, Piwei, and Big Valley, and hundreds of pothole ponds and beaver ponds. Much of the area is inaccessible except by trail or resource road. Apart from their direct use in the lumber industry, these reserves act as a refuge for a wide range of wildlife.

Capability classification by J. H. Richards, Department of Geography, University of Saskatchewan, Saskatoon, Saskatchewan, 1973.

DESCRIPTION DU TERRITOIRE DE LA FEUILLE DE HUDSON BAY 63D

Le territoire représenté sur la feuille de Hudson Bay occupe environ 5 850 milles carrés dans le nord-est de la partie habitée de la Saskatchewan, non loin de la frontière du Manitoba. Le territoire se situe entre 52° et 53° de latitude nord et 102 et 104 de longitude ouest; les forêts provinciales occupent environ le tiers de cette superficie. La réserve forestière de Porcupine occupe la section centre-est du parc provincial du lac Greenwater et des collines Porcupine à l'est. Une autre réserve qui fait partie de la forêt provinciale du Nord, occupe une partie de la bordure septentrionale et, à l'ouest, de la ville de Hudson Bay, rejoignant presque la forêt de Porcupine. Les deux réserves forestières, une bande de terres passant par Hudson Bay et s'étendant vers le nord-est est également occupée. La répartition de la population correspond à peu près aux grandes divisions structurales. Les forêts correspondent plus ou moins aux bas-plateaux morainiques et aux sections très mal drainées; les terres agricoles se confondent avec les plaines et les sections très mal drainées; les terres lacustres et les sections très étendues.

La majeure partie du territoire appartient à la région structurale de la plaine de la Saskatchewan ou second palier de la prairie. Le coin nord-est est une plaine basse appartenant à la région structurale des basses terres du Manitoba ou premier palier de la prairie. Erwood est au centre de cette région et la rivière Red Deer, avec ses lacs-croisillons et ses concavités de méandres entaille les dépôts lacustres ou alluviaux et coule lentement à travers la plaine mal drainée. L'altitude varie de 1 150 pi. Les anciennes lignes de rivage qui forment des plages de sable et de gravier dans le voisinage de Erwood et de Hudson Bay marquent les limites occidentales du lac glaciaire Agassiz.

À l'ouest, l'élevation graduelle du terrain marque le passage des basses terres du Manitoba au second palier de la prairie. Un léger changement de pente là où la rivière Red Deer a entaillé les dépôts lacustres du lac glaciaire Agassiz et remanié les dépôts d'alluvions indique la limite entre les deux régions. Certaines des plus hautes plages reliques formées de sable et de gravier indiquent aussi cette limite, située à environ 1 150 pieds. Au sud et au nord, entre les collines Porcupine et Pasquia, le passage à la région structurale de la plaine de la Saskatchewan est plus brusque. Ces collines sont des segments de l'escarpement du Manitoba qui sépare le premier et le second palier de la prairie; cet escarpement est accidenté et, dans l'ensemble, exposé au nord-est.

Les versants septentrionaux des collines Porcupine s'élèvent brusquement et les collines, qui se dressent à plus de 1 000 pi au-dessus des basses terres atteignent une altitude de 2 200 pi. Au-delà de 2 000 pi une série de plateaux étagés marque le terrain. Il arrive que les shales formant les assises rocheuses affluent mais la majeure partie de cette région est couverte d'une mince couche de till glaciaire, comme les régions situées au nord, ou d'une épaisse moraine à creux et à bosses. À l'ouest des versants abrupts, un bas-plateau morainique légèrement ou fortement vallonné et d'une altitude variant de 1 800 à plus de 2 100 pi s'étend jusqu'à la limite occidentale du territoire. Des éléments de relief glaciaires, des accidents de terrain liés à la fusion des glaciers comme les kames et les dépressions de fusion, des dénivellations pouvant atteindre 50 pi, un grand nombre de faces et de fondrières et des bassins mal drainés caractérisent les bas-plateaux. Les dépôts glaciaires et, plus particulièrement, la moraine à creux et à bosses furent mis en place sur la "pente" pendant une phase de stagnation glaciaire. Les chenaux de fusion glaciaire sont un autre élément de relief important sur les bas-plateaux; un chenal à fond plat, d'une longueur de 50 milles, longe la bordure septentrionale du territoire et renferme la rivière Piwei, les lacs Piwei et les lacs Eldridge et McBride.

Le bas des versants méridionaux des collines Pasquia forment une partie de la bordure septentrionale du territoire; l'escarpement est bien marqué, l'altitude passant brusquement de 1 500 à 1 900 pi. Un grand nombre de cours d'eau qui ont entaillé les levées de plage du lac Agassiz pour rejoindre la rivière Red Deer dissèquent les versants. La rivière Red Deer entaille également une ancienne plage, de grandes dimensions, au sud de Hudson Bay. Des marais et des marécages très étendus apparaissent derrière les levées de plage discontinues.

Entre l'escarpement des collines Pasquia et les bas-plateaux méridionaux, s'étendent des plaines dont la topographie varie de légèrement ondulée à légèrement vallonnée, dont l'altitude passe de 1 200 à 1 700 pi, du till glaciaire, du till remanié par des eaux de lac, des argiles et des limons lacustres, des alluvions et des dépôts fluvioglaciaires forment ces plaines. À l'est de la plaine de Porcupine, il y a un gros esker. Le drainage superficiel se fait surtout vers l'est, jusqu'à la rivière Red Deer, mais dans le nord-ouest, il y a des cours d'eau qui se jettent dans la rivière Carrot. Ces plaines sont en grande partie défrichées mais certains secteurs mal drainés sont encore couverts de buissons. À l'époque glaciaire, l'eau de fusion a été retenue derrière des barrages de glace dans le sud-est du territoire où les dépôts comprennent du till remanié par des eaux de lac, du till et des épandages grossiers. Ici, la rivière Swan meandre dans un chenal de fusion glaciaire à fond plat et à parois latérales atteignant jusqu'à 200 pi de hauteur.

CLIMAT

Le climat du territoire est un climat continental subhumide: précipitation modérément faible, longs hivers froids, étés courts et assez chauds. Le régime thermique est un régime forestier froid (été frais) (*Köppen*) et le régime hygrométrique est un régime subhumide (*Thornwaite*).

La précipitation annuelle totale varie de 15 à 18 po dont les deux tiers tombent pendant la saison végétative. La précipitation est plus élevée sur les bas-plateaux qui reçoivent plus de 50 po de neige. En janvier, la température moyenne est plus basse dans la région des bas-plateaux où elle atteint -5°F ou moins; elle est un peu plus élevée dans le reste du territoire où elle varie de 3 à -4. La température la plus basse jamais enregistrée fut de -55. En juillet, la température moyenne est plus élevée dans le sud et dans l'ouest où elle atteint 64 et elle passe à 60 dans les collines Pasquia et Porcupine. En juillet, les températures maximales absolues ont atteint de 100 à 105. La période sans gel dure de 80 à 90 jours dans le sud et dans l'ouest, de 70 à 80 dans le nord-est et moins de 70 dans les secteurs les plus hauts des bas-plateaux. Sur les bas-plateaux, la saison végétative (température quotidienne moyenne supérieure à 42°F) dure de 150 à 160 jours et, dans le sud et dans l'ouest, de 160 à 170.

POISSON ET GIBIER

Les zones humides sont nombreuses et comprennent des marais, des tourbières, des prairies humides, des marécages, les bords de rivières et de lacs, des étangs de castors, des étangs occupant des dépressions de fusion des fondrières et des lacs temporaires qui recouvrent de plus de 50 po de neige. Dans le sud, en majorité dans la réserve forestière de Porcupine, qui comprend le plus grand nombre et la plus grande variété de zones humides. Dans le sud-ouest, beaucoup de nappes d'eau sont des fondrières typiques de la prairie qui ne renferment de l'eau qu'à l'époque du ruissellement printanier. Le lac Ponass, le plus grand lac du territoire, est un lac intermittent aux rives marécageuses. Comme les zones humides offrent des conditions d'habitation fort variées, les oiseaux migrateurs représentent un fort pourcentage des animaux sauvages. Les marais peu profonds comme ceux qui renferment le lac Bjork dans le nord-ouest et le lac Ponass, sont les habitats préférés des canards de surface comme le canard malard et le canard plié. Près des lacs et des marais plus profonds, le canard malard et des canards plongeurs comme le morillon à dos blanc, le morillon à tête rouge et