

BROWN

Ah

AB

B

Ck

CLIMATE—Semi-arid, characterized by an average annual precipitation of 11 to 13 inches, frequent drought, high evaporation and frequent hot dry winds.

VEGETATION—Short grass prairie.

SOIL PROFILE—In the normal profile the surface horizon (Ah) is about 5 inches deep and brown in color. The B horizon is commonly brownish in color and the lime horizon (Ck) is found at depths averaging 16 inches below the surface. The parent material (C) is found at depths of 14 to 24 inches. In the other zones this horizon occurs at greater depths.

FERTILITY—Moisture is the principal limiting factor in crop production. Soils in this zone are relatively low in nitrogen and phosphorus and under irrigation or in a wet year respond to fertilizers supplying these elements.

LAND USE—Only the most favorable soil types can be considered arable. Most of the area is desirable for ranching. Where farmed, wheat is the principal crop grown. Cropping practices must provide for moisture conservation and control of soil drifting. The long frost-free period makes this zone a desirable area for the development of irrigation.

DARK BROWN

Ah

AB

B

Ck

CLIMATE—The average annual precipitation is 13 to 15 inches, and there are less frequent droughts than in the Brown soil zone. Fairly high evaporation and hot dry winds are added characteristics.

VEGETATION—Chiefly mixed grass prairie. The grass makes a denser cover and taller growth than in the Brown soil zone.

SOIL PROFILE—In the normal profile the surface horizon (Ah) averages about 7 inches in depth and is dark brown in color. The B horizon is brownish in color and the lime horizon (Ck) is found usually at depths of 18 to 24 inches below the surface. In this zone as in other zones, the B horizon, having received some finer materials from the A, is usually somewhat finer textured and more compact than the A horizon.

FERTILITY—Moisture continues to be the principal limiting factor in crop production. Soils in this zone are relatively low in nitrogen, phosphorus and organic matter, but are higher in these constituents than soils of the Brown soil zone. Periodic applications of fertilizer are recommended.

LAND USE—Only the better soil types can be considered arable. The remainder generally is good pasture land. Wheat is grown almost to the exclusion of all other crops. Cropping practices must provide for conservation of moisture and control of soil drifting. Good quality wheat is grown in this and the other grassland zones.

THIN BLACK

Ah

AB

B

Ck

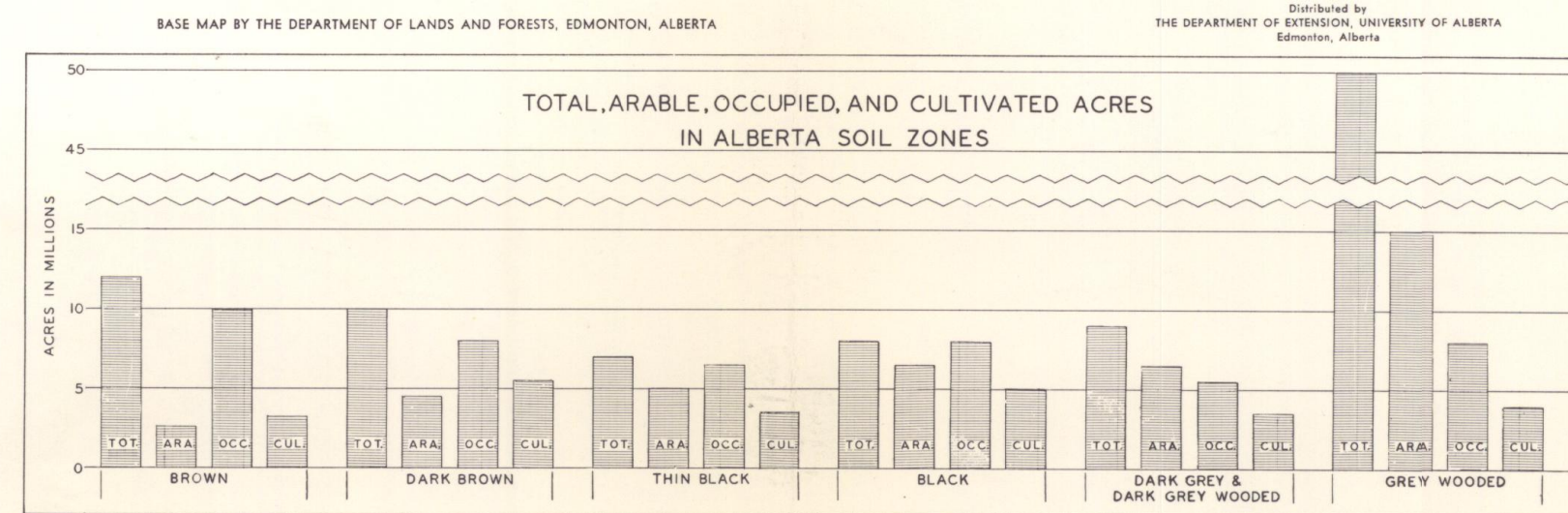
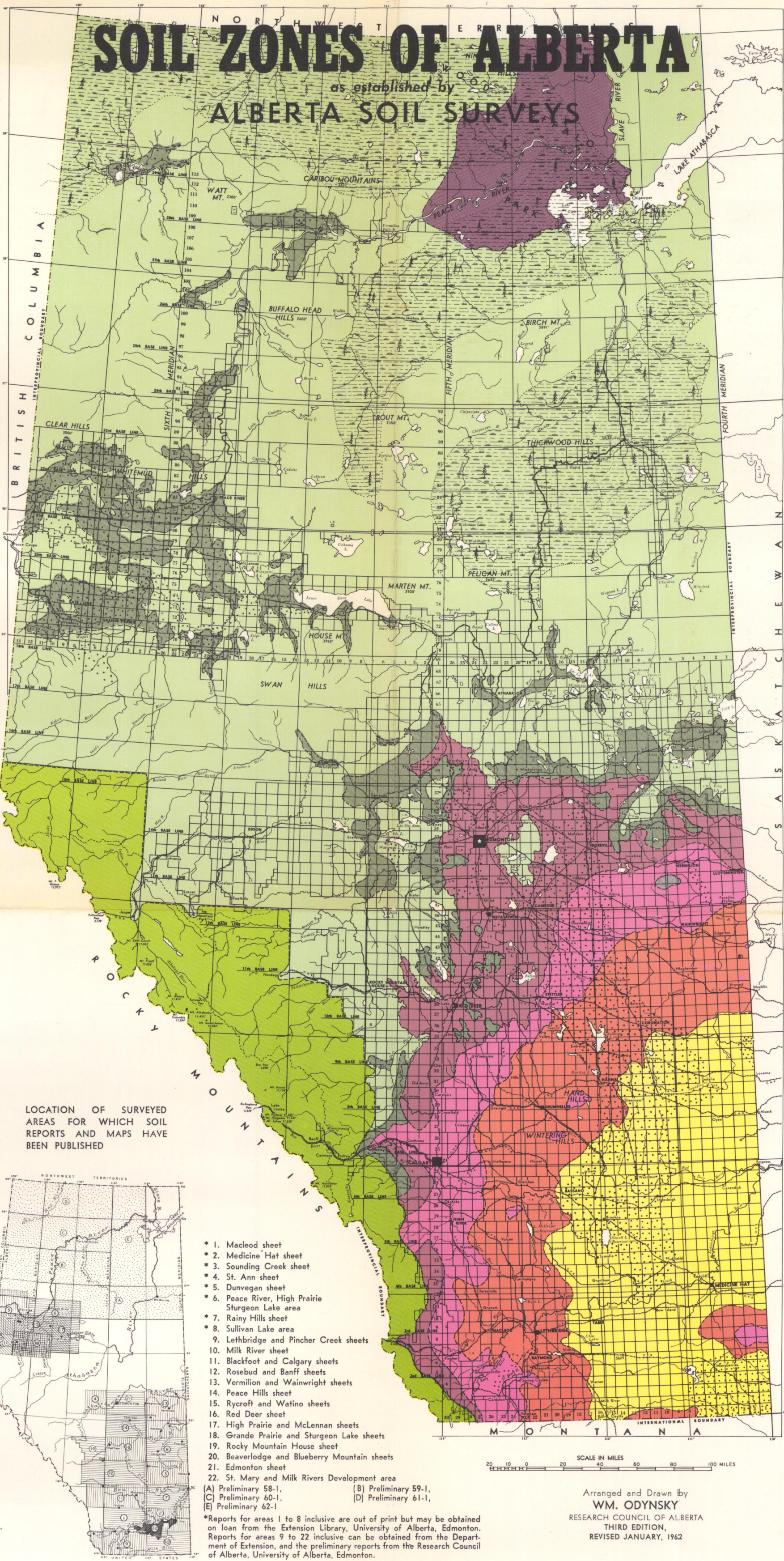
CLIMATE—Annual precipitation averages between 14 and 17 inches. The higher rainfall is in the southern part of the province where there is a correspondingly higher evaporation. Droughts occur only occasionally.

VEGETATION—Grassland in which bluffs of trees are found in places where moisture conditions are more favorable.

SOIL PROFILE—The normal profile has an Ah horizon that averages about 10 inches in depth and which in its upper 3 to 6 inches is black in color. The remainder is usually dark brown. The B horizon is usually brown to dark brown and the lime horizon (Ck) is found at depths of 20 to 30 inches below the surface. Generally the depth to the lime layer is considered as indicative of the efficiency of rain penetration.

FERTILITY—Soils in this zone may be fairly well supplied with nitrogen and organic matter but are usually deficient in phosphorus. In any zone exhaustive cropping depletes the soil's native nutrient supply and fibre. Good soil management, involving crop rotations and the use of fertilizers, is essential for the adequate replacement of depleted plant nutrients and the maintenance of organic matter.

LAND USE—A greater number of soil types can be considered arable than in the Brown soil zone. Wheat is the principal crop grown, but considerably more diversification is possible and should be practised to maintain soil fertility. The non-arable land is generally very good pasture.



DOMINANTLY SOLONETIC SOILS
Clay pan soils developed on saline parent materials.

DOMINANTLY ORGANIC SOILS
Poorly drained soils with a thick accumulation of peat.

BLACK

Ah

AB

B

Ck

CLIMATE—Annual precipitation averages between 17 and 19 inches and droughts are rare. Evaporation is lower and hot winds less frequent than in the previous zones.

VEGETATION—Grassland which has been partially invaded by woodlands (mainly deciduous trees), often referred to as a parkland.

SOIL PROFILE—The normal profile has a black to very dark brown surface horizon (Ah) that averages 12 to 14 inches in depth. The more compact B horizon is brown to dark brown, and the lime horizon (Ck) is usually found at 24 to 40 inches below the surface.

FERTILITY—Soils in this zone are the most fertile in the province and they have, in the surface foot, 3 to 4 times as much nitrogen and organic matter as there is in the average Brown or Grey Wooded soil. Every precaution should be taken to see that they are not allowed to deteriorate. The use of fertilizer to replenish the supply of available nitrogen and phosphorus is usually a good investment.

LAND USE—A high percentage of the zone is arable. Wheat of fairly good quality can be grown, but mixed farming, including the use of crop rotations and fertilizers is desirable from the standpoint of both profit and permanence.

DARK GREY AND DARK GREY WOODED

L-H

Ah

Ahe

Ae

AB

Bt₁

Bt₂

Ck

CLIMATE—Annual precipitation averages from 12 inches in the northern section to about 20 inches in the southern. Evaporation is lower than in the previous zones.

VEGETATION—Mainly woodland in which the tree growth is frequently denser and has more evergreens than in the Black zone.

SOIL PROFILE—Generally variable, ranging from nearly black to grey. The surface horizon consists of a thin layer of semi-decomposed leaf litter (L-H), which may be absent in burned over areas, underlain by a mineral horizon that can usually be divided into two parts. The upper part (Ah) may be black, grey black, or dark brown. The lower part (Ahe or Ae) is frequently somewhat leached of organic matter and considerably greyer than the Ah. The total depth of these surface horizons averages about 10 to 12 inches. The B horizons are generally dark brown in color and lime is found at depths of about 30 to 50 inches.

FERTILITY—These soils are usually not as rich as those of the Black zone. Leaching of the surface horizons has resulted in the loss of some plant nutrients. Nitrogen, phosphorus, and sometimes sulphur may be deficient.

LAND USE—A system of mixed farming that includes legumes and grasses in the crop rotation, supplemented with applications of fertilizer when required, should be practised for best results.

GREY WOODED

L-H

Ae

AB

Bt₁

Bt₂

CLIMATE—Annual precipitation averages from about 12 inches in the northern sections to about 20 inches in the southern. This is accompanied by cooler temperatures, lower evaporation, and shorter growing seasons than those of the previous zones.

VEGETATION—A mixed deciduous and evergreen woodland in which moss bogs (muskegs) and sedge bogs are of common occurrence.

SOIL PROFILE—These soils have developed under humid soil moisture conditions. The surface horizon consists of semi-decomposed leaf litter (L-H) that may be absent if the area has been burned over; a thin (sometimes absent) Ah horizon that may be grey black, brown or grey brown, and a severely leached and platy, greyish Ae horizon, whose depth will average about 6 to 8 inches. The B horizons are finer textured, compact, and often darker in color than the A. The depth to lime is quite variable, often ranging from 30 to 50 inches.

FERTILITY—Soils in this zone are relatively less fertile because of leaching. They are usually deficient in nitrogen, phosphorus, organic matter, and sometimes in sulphur.

LAND USE—Mixed farming in which legumes, hays and coarse grains are the most desirable crops. Rotations including legumes and grasses, supplemented with fertilizers, have given the most satisfactory results.

BROWN WOODED AND ACID BROWN WOODED
(Preliminary outline subject to further study.)

AREA NOT EXPLORED BY SOIL SURVEY
Believed to have Grey Wooded, other Podzolic soils and Organic Soils.