Soil Correlation Area (SCA) Map of Alberta

50 25 0 50 100 Km

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Agriculture and Agri-Food Canada / Agriculture et Agroalimentaire Canada

Alberta Agriculture and Forestry

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The Alberta Soil Inventory Subcommittee established the Soil Series Working Group in 1987 to undertake the development of a standardized soil names catalogue for use in a digital environment. Based upon the recommendations that were submitted, the Working Group identified as necessary products a map that defined the geographic limits of soil names within Alberta, as well as a correlated list of allowable soil names. In 1993, the Alberta Soils Name File (Generation 2) User's Handbook was published, including portions of the soil names file and the initial version of the Soil Correlation Area (SCA) Map of Alberta.

The province of Alberta is subdivided into 24 Soil Correlation Areas (SCA's) based on the following rational:

1. climate affects soil properties; and,
2. many interpretative products developed by applying soil type information also incorporate climate information.

The SCA Map of Alberta reflects the integration of inherent agroclimatic conditions that exist across Alberta with soil development, use and management practices. The SCA boundaries coincide to a large degree with recognized climate zones in Alberta. These boundaries also generally agree with accepted ecoregion boundaries. In the agricultural portion of Alberta, SCA's correlate strongly with soil zone lines with further subdivisions reflecting recognized agroclimate zones.

There are situations where an ecoregion has been divided into two or more SCA's. For example, the Moist Mixed Grassland ecoregion is subdivided into SCA 3 and 4. In this instance, historical precedence is established by existing published soil survey reports, overriding the ecological premise of these recognized areas. This situation is often justified on the basis of agroclimate, and/or thickness of the surface layer (e.g., Thin versus Thick Black).

As part of the compilation process leading to the development of the Agricultural Region of Alberta Soil Information Database (AGRASID) in the late 1990s, the boundaries of the each SCA in the agricultural zone were inherently linked to the 1:100K scale soil landscape polygons. Upon this closer interrogation of the SCA boundaries, minor modifications were made to the original 1993 SCA lines. In addition to these line changes, the decision was made to delete SCA 11 from the 1993 version of the SCA map. The distinction between SCA 10 and 11 was difficult to implement when mapping the distribution of soil names within these two areas. Originally SCA 10 was restricted to the Aspen Parkland ecoregion and SCA 11 to the Boreal Transition ecoregion. Also, SCA 10 had originally been defined as an area where Black Chernozemic soils commonly existed, while Dark Gray Chernozemic and Dark Gray Luvisolic soils were considered to be dominant in SCA 11. However, many exceptions to this general pattern of soils distribution within these two SCA's existed. So much so that during the compilation of AGRASID, the decision was made to join the two SCA's and make a unified list of the soil names identified in each of the two component SCA's. The 1998 version of the Soil Correlation Areas of Alberta map indicates areas that had previously been identified as SCA 10 as SCA 10a and areas previously identified as SCA 11 as SCA 10b. This decision to consider the area as a single SCA did not significantly change the agroclimatic characteristics and corresponding interpretations of the affected soil landscape polygons. When a new version of the SCA map was published in 2002, a single area for SCA 10 was represented on the map with no reference made to the previous area of SCA 11. This version of the SCA Map of Alberta provided the framework for the allocation of soils to SCA's as presented in the Alberta Soil Names File (Generation 3) User's Handbook, released in 2006.

In 2016 a number of additional line changes were made to the SCA map. The modifications came about as a result of meetings held between soil consultants working in northern Alberta and staff of Agriculture and Agri-Food Canada, including the national soil correlation administrator for Alberta. Major changes incorporated into the Soil Correlation Area (SCA) Map of Alberta (2016) include:

1. Enlarging the area of SCA 19 in the Birch Mountains by including the area of the McIvor Upland previously identified as SCA 23 – Ecodistrict 605 and 606 of the National Ecological Framework. This corresponds with an area that includes both Upper and Lower Boreal Subregions of the Natural Regions and Subregions of Alberta.
2. Enlargement of SCA 19 south of Fort McMurray to include most of the Stoney Mountain Upland – Ecodistrict 638 and 639. This corresponds with an area of Lower Boreal Highlands Subregion.
3. Creation of a single area of SCA 19 to include most of the Buffalo Head Hills Upland – Ecodistrict 601, 602 and 603. This corresponds with an area that includes both Upper and Lower Boreal Subregions.
4. Creation of a new area of SCA 13 to include most of the Pelican Mountains – Ecodistrict 614. This corresponds with an area of Lower Foothills Subregion.
5. Enlargement of SCA 17 to include most of the Rainbow Lake Plain and Bassett Hills – Ecodistrict 245. This corresponds with an area of Lower Boreal Subregion.
6. Other additional minor modifications to linework to better reflect underlying landscape and ecological patterns as reflected on more recent imagery and data sources.