

DESCRIPTION OF TERRAIN UNIT TYPES, SYMBOLS, AND MAPPING METHODS

This map is based on landform analysis by air photo interpretation of color infrared aerial photography. Landforms are elements of the landscape formed by a single geologic process or a combination of associated processes. Landforms have identifiable visual characteristics that include topography, vegetation, permafrost indicators, and drainage patterns. Each landform also has characteristic constituent materials with a recurrent range of geotechnical properties. Landforms were mapped from the ground surface to a depth of about 10 m (30 ft). Each landform is labeled with a 1 to 4 letter code. The upper case letter indicates the genesis of the deposit, for example F for Fluvial (stream or river) deposits; the lower case letters indicate specific landforms in each genetic group, for example Ft for Fluvial terrace deposits and Fpm for Fluvial meander flood-plain deposits.

Terrain units may be composed of one or more landforms. Several different kinds of terrain units are possible, depending on the spatial arrangement of these landforms. All of the following types occur within the project area. Simple terrain units consist of only one landform (e.g. meander flood-plain deposits, Fpm). Layered terrain units consist of one landform overlying another (e.g. basin colluvium and slope wash deposits overlying frost rived and weathered bedrock, Cbs/Bx-w). Mosaic terrain units consist of two or more landforms each of which comprises more than 20 percent of the area. However, because of complex distribution patterns or mapping resolution, the landforms cannot be separated. A plus "+" symbol is used with the dominant landform listed first (e.g. abandoned flood-plain deposits plus fluvial terrace deposits, Fpa + Ft). Complex terrain units consist of three or more landforms in various arrangements indicating both layered and mosaic aspects (e.g. basin colluvium and slope wash deposits plus gelisolfiuction deposits overlying frost rived and weather bedrock, Cbs + Cgs/Bx-w; or gelisolfiuction deposits overlying a veneer of older glacial till deposits which in turn overlies frost rived and weathered bedrock, Cgs/Gto-v/Bx-w).

DESCRIPTION OF MAP TERRAIN UNITS

BEDROCK

Bx

Bedrock, undifferentiated. Includes "in-place" igneous, metamorphic and sedimentary rock lithologies. Bedrock may be exposed as outcrops or covered by soil and other unconsolidated surficial materials.

Bx-w

Bedrock, frost rived, and weathered. Includes frost-riven, weathered, and decomposed rock lithologies mentioned above. Bedrock usually underlies mineral soil or other unconsolidated surficial materials.

FLUVIAL DEPOSITS

These are sedimentary deposits consisting of unconsolidated, sorted, and stratified clay, silt, sand, gravel, pebble, cobble, and boulder size clasts that have been transported by, suspended in, or laid down by a stream or river.

Fp

Flood-plain deposits. Sand, gravel, and minor silt and clay alluvium deposited by high (flooding) stream or river water that was spread out over a flood-plain. These deposits are usually thickest and coarsest near the stream or river banks, and thinner and finer away from the banks. When the precise flood-plain type is not apparent due to mapping scale and resolution, and the relative size of the flood-plain is in question, then this terrain unit is used.

Fpa

Abandoned flood-plain deposits. Includes braided and meandering flood-plain silt, sand, and gravel deposits that are overlain by silt mixed with organic matter and peat. Deposits are covered by swampy bogs and grass, musky tussocks, or low deciduous and coniferous vegetation. These deposits are characteristic of mature flood-plains and are no longer part of the active flood-plain. An abandoned flood-plain would be flooded very infrequently.

COLLUVIAL/MASS WASTING DEPOSITS

Cbs

Basin colluvium and slope wash deposits. Loose, mixed, heterogeneous and incoherent mass of fine to coarse soil material, alluvium, and/or rock fragments. Can include retransported glacial deposits, terrace alluvium, eolian and lacustrine deposits, and fines winnowed from coarse material on upper slopes. Sand and silt-size material mixed with organic matters occurs along low gradient piedmont slopes, at the base of gentle slopes or hillsides, and valley bottoms. Sediments are moved downslope by both gravity and unconcentrated surface runoff. Deposits are derived from slow, continuous downslope creep and flow of saturated silt and fine sand, plus rainwash, sheet and rill wash, and spring sapping. Deposits are usually perennially frozen.

Cc

Coarse colluvial deposits. Loose, heterogeneous, fine-to-coarse soil material that is mixed with angular frost-riven rock fragments. Colluvium occurs on steep upper slopes and on relatively flat upland surfaces. Colluvium on slopes usually has undergone significant downslope transport by creep and is usually coarser due to sapping and winnowing of fine-grained interstitial silt and sand. Colluvium on upland surfaces usually shows little or no downslope movement, thus the material ranges from fine to coarse depending upon the underlying bedrock lithology, intensity of frost action, and other weathering processes.

EOLIAN DEPOSITS

E1

Loess deposits. Wind deposited silt. Loess is a homogeneous, unstratified, loose deposit consisting primarily of silt. Deposits frequently display well-developed parting. Deposits blanket almost the entire project area. Loess is wind blown dust derived from unconsolidated glaciofluvial deposits.

MARINE DEPOSITS

Mp

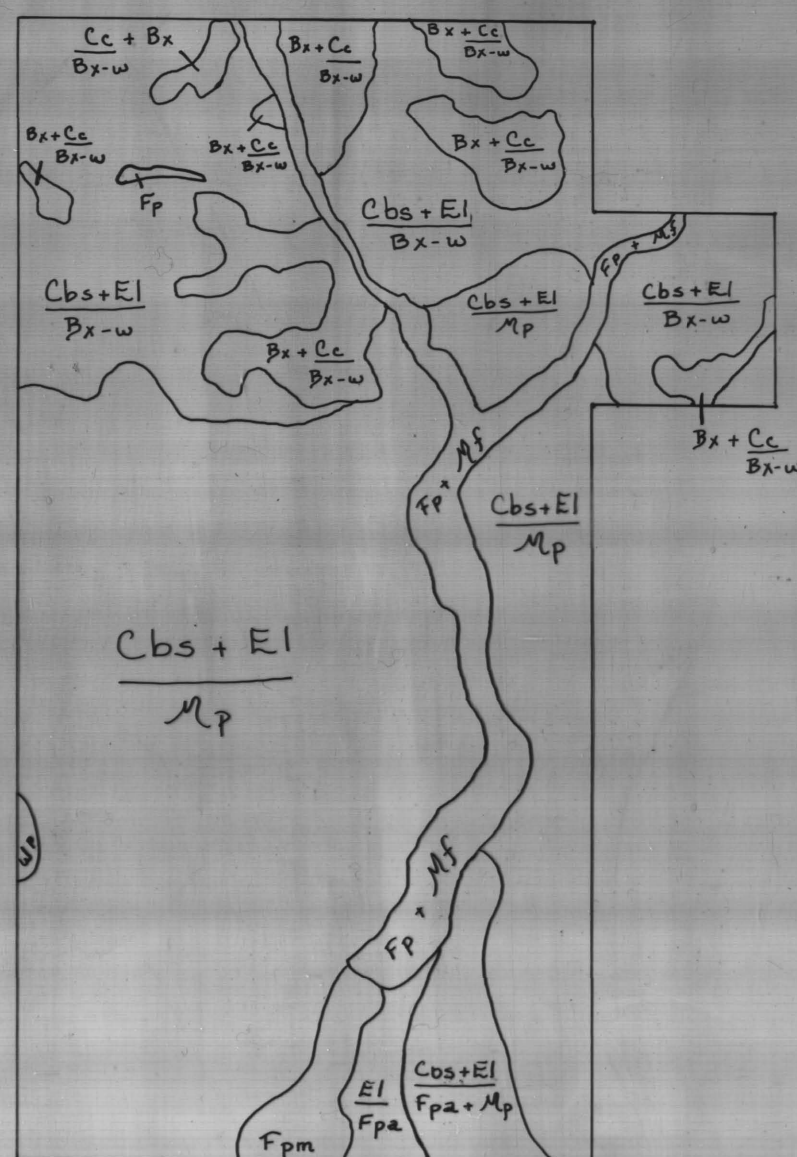
Coastal plain deposits. Unconsolidated, well-sorted marine, fossiliferous silt, sand, and gravel beach sediments deposited along a strip of recently prograded or emerged coastline. The coastal plain is a wave-cut, low, generally broad surface bordering the coast and extending inland to the foothills. Stratified deposits are near horizontal or slope very gently towards the shoreline.

Mf

Man-made fill deposits. Man-made deposits of natural earth materials (e.g., rock, soil, gravel) and waste materials (e.g., mining dredge tailings). Fill is used to insulate and prevent thawing of underlying permafrost for road, building, and airport construction, as well as to raise the surface of low-lying land, such as an embankment to fill a hollow or ravine in road construction.

Wp

Water, pond/lake.

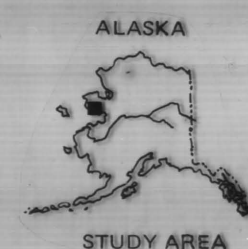


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ENGINEERING

SOLOMON (C-5) QUADRANGLE ENGINEERING GEOLOGY

by
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1985



SOLOMON (C-5), ALASKA

This report is a preliminary publication of DGGS. The author is solely responsible for its content and will appreciate candid comments on the accuracy of the data as well as suggestions to improve the report.