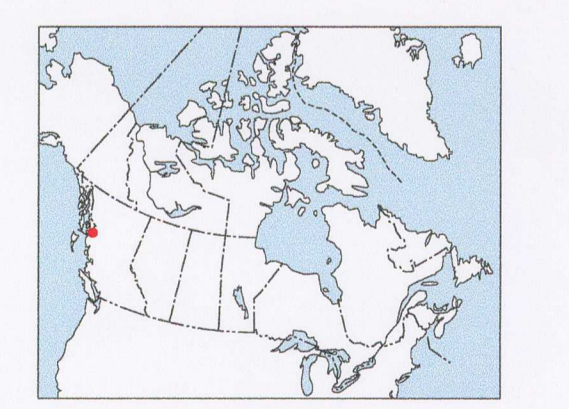


LEGEND

- POST-FRASER GLACIATION
Artificial Deposits: m
Made Land: O
Organic Deposits: O
Colluvial Deposits: Cb, Ca, Cf, Cv, Cu
Marine Deposits: Mb, Mv
FRASER GLACIATION (Wisconsinan)
PROGLACIAL DEPOSITS: Gp, Gd, Gb, Gv, Gu
GLACIAL DEPOSITS: Td, Tv, R

SYMBOLS
Unit Boundary (defined, approximate, assumed)
Avalanche track
Debris flow track
Easement (displacement direction known)
Terrace scarp
Meltwater scoured bedrock (flow direction known)
Meltwater channel (small, large)
Filling
Dune/lin (long dunes shown by two or more symbols)
Moraine
Linear bedrock ridge
Roches moutonnées
Situation (ice flow direction known; unknown; older = 1, younger = 2; no number = age relationship unknown)
Major gravel pit
Steatigraphic section
Dirt road
Glaciers

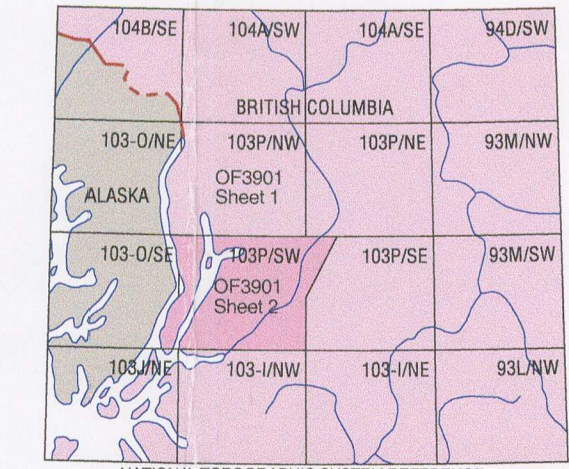
DESCRIPTIVE NOTES
GLACIAL HISTORY OF THE NASS RIVER REGION (Maps 103P/NW and 103P/SW)
Surface geology mapping, where sections, reflection, ground penetrating radar and drilling were used to determine the stratigraphy of the NASS Valley and the glacial history of the NASS River region.
At the height of the last glaciation, ice flowed southwest over the entire region. It deposited a compact till called Keweenaw Till. This till is dominated by Bowen Lake Group metasedimentary rocks which outcrop in the eastern part of the map area. Keweenaw Till deposits can be more than 30 m thick.
As ice thinned during deglaciation, it became confined to valleys and folds. Keweenaw Till is contained in bedrock basins and volcanic material, formed in the northeastern part of the study area at the time of 103P/NW. Keweenaw Till overlies Keweenaw Till and occurs in an area of unroofed terrain.
Sea level rise at the start of deglaciation caused carving and repair of ice of glaciers in local areas. The maximum marine limit was 230 m above present sea level. This sea level is thought to have been achieved around 10 000 years BP, and was followed by rapid deglaciation and rapid sea level fall.
Interbedded gravel, sand and silt were deposited subsequently at this time in ice-proximal glaciomarine environments. These deposits grade distally to massive silt clay. Apparently, there were no attempts, proximal to distal depositional environments, migrated as the ice margins retreated. These silt clay deposits in the NASS Valley can be up to 25 m thick.
Eventually, ice became grounded as valley glaciers retreated and sea level dropped. Extensive meltwater landforms formed in front of the glaciers, terminating in marine water and forming large deltas. These deltas and landforms record sea levels of 185, 150 and 105 m, of which the 185 m highland was the highest level.
In the upper NASS Valley, one such landform formed during the 185 m highland. This was succeeded by an extensive braided plain that formed northeast of the town of New Aamoth when sea level had dropped to 150 m. The meltwater river then moved back to its original location further west when sea level was at 135 m, forming a small braided plain of the 135 m highland. Sea level then fell to its current level. The meltwater river moved into the modern NASS River and assumed its current course, which incises the 185 m and 135 m highlands.
The most complete Quaternary stratigraphic sequence is found in the NASS Valley. Low complete sequences occur elsewhere in the study area. From oldest to youngest, the region's stratigraphic sequence consists of: glaciomarine deposits, glaciomarine delta deposits and glaciomarine braided plain deposits. Holocene peat bogs, colluvium and alluvium overlie all of these units.



Geology by S. McCaig, Geological Survey of Canada and Simon Fraser University, 1999
Digital cartography by S. McCaig and K. Shimamura, Geological Survey of Canada
Any revisions or additional geological information known to the user should be welcomed by the Geological Survey of Canada

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SURFICIAL GEOLOGY
NASS VALLEY
BRITISH COLUMBIA
Scale 1:100 000 / Echelle 1:100 000
Universal Transverse Mercator Projection
North American Datum 1983
© Her Majesty the Queen in Right of Canada, 2003

Digital base map from data compiled by Geomatics Canada, modified by the Terrain Services Division
Mean magnetic declination (2003): 22° 43' E, decreasing 13.3" annually. Readings vary from 22° 37' E in the SW corner to 22° 49' E in the NE corner of the map
Elevations in feet above mean sea level
Contour interval 500 feet



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2003
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