Coast Mountains

Terrace to Prince Rupert

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Tidal marshes at Telegraph Point (60 km west of Terrace) grow on sand deposited by the Skeena River as it meets the sea. These vital ecosystems include salmon, waterfowl, and eagles.

R.J.W. Turner, GSC 2007-147

Steep avalanche-prone slopes of granite and gneiss near Telegraph Point rise above cottonwood forests on sand and gravel islands of the lower Skeena River.

R.J.W. Turner, GSC 2007-142

Layered gneiss at Gateway Rapids (near Prince Rupert). Silvery gneiss (left) alternates strongly with dark and pale grey minerals underlies Prince Rupert and nearby region.

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The Coast Mountains are granite country

A great ridge of granite forms the Coast Range from Alaska to Vancouver. This granite and related gneiss are best seen between Terrace and Prince Rupert, in the Nass valley near Gingolx, and on the highway to Skagway.

R.J.W. Turner, GSC 2007-148

Spectacular Nisga'a Highway near Gingolx cuts Coast Mountain granitic and gneissic rocks along the Nass River estuary.

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Nass valley

R.J.W. Turner, GSC 2007-169

The Nisga'a Highway follows the lava flow from near its source to its final limits. Eruption of lava transformed the lush forested valley into a rocky desert landscape.

Stewart area

R.J.W. Turner, GSC 2007-136

R.J.W. Turner, GSC 2007-130

The best roadside view of a glacier in B.C. is at the Salmon Glacier near Stewart. The panoramas include its high ice field, crevassed surface, terminal snout and glacial meltwater river, and evidence for recent shrinkage.

Mountain slopes show evidence for shrinkage of Bear Glacier at Bear River Pass on Highway 37A due to climate change. Less than 150 years ago, the Bear Glacier covered the area of the lake and adjacent highway with more than 50 m of ice.

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Coast Range icefields and glaciers are visible above Highway 37A near Bear River Pass.

Legend

Population

- 50 000 or more
- 10 000–50 000
- 5000–10 000
- 1000–5000
- 500–1000
- 0–500
- First Nations community

- Major roads, paved
- Major roads, unpaved
- Minor roads, paved
- Minor roads, unpaved
- Provincial parks and park boundaries
- Volcano

Mines (producer; past producer or major prospect)

1=Windy Craggy (copper), 2=Engineer (gold), 3=Polaris Taku (gold), 4=Tulsequah Chief (zinc), 5=Golden Bear (gold), 6=Galore Creek (gold), 7=Snip (gold), 8=Johnny Mountain (gold), 9=Eskay Creek (gold, silver), 10=Sulphurets Creek (gold), 11=Granduc (copper), 12=Premier (gold), 13=Porter-Idaho (gold), 14=Glacier Creek (gold), 15=Mount Klappan (coal), 16=Kemess South (gold, copper), 17=Bakker (gold), 18=Lawyers (gold), 19=Red-Chris (copper), 20=Polar Jade (jade), 21=Kutcho Creek (copper), 22=Kutcho Creek Jade (jade), 23=Provencher Lake (jade), 24=Lstain Creek (jade), 25=Wheaton Creek (jade), 26=Seywerd (jade), 27=Table Mountain (gold), 28=Cassiar (asbestos, jade), 29=Tasnua (gold), 30=Fireside (barite), 31=Anyox (copper), 32=Anyox (slag), 33=Kitsault (molybdenum), 34=Red Rose (tungsten), 35=Silver Standard (gold), 36=Ogden Mountain (lade), 37=Glacier Gulch (molybdenum), 38=Outhie (gold), 39=Telkwa (coal), 40=Bell (copper), 41=Granisle (copper), 42=Huckleberry (copper), 43=Equity Silver (silver), 44=Endako (molybdenum), 45=Pinchi (mercury), 46=Mount Milligen (copper), 47=Dahl Lake (limestone), 48=Cariboo Gold (gold), 49=Giscome (limestone), 50=Dome Creek (slate), 51=Willow Creek (coal), 52=Brule (coal), 53=Wolverine (coal), 54=Bullmoose (coal), 55=Quintette (coal).

Gold placer mine areas

1=Pine Creek, 2=Spruce Creek, 3=Dease Creek, 4=Thibert Creek, 5=McDame Creek, 6=Germansen Creek, 7=Manson Creek, 8=Barkerville.

Natural gas plants

1=Fort Nelson, 2=Wildboy, 3=Midwinter, 4=Ekwan, 5=Ladyfern, 6=Aitken Creek, 7=Sikanni, 8=Taylor, 9=Pine River, 10=Kwoen, 11=Noel.

Hot springs

1=Tatlahenshi, 2=Atlin, 3=Sheslay, 4=Elwyn Creek, 5=Taweh Creek, 6=Mess Lake, 7=Mess Creek, 8=Sphaler Creek, 9=Choquette, 10=Hoodoo Mountain, 11=Iskut River, 12=Portage Brule, 13=Liard, 14=Deer River, 15=Lepine Creek, 16=Toad River, 17=Prophet River, 18=Hudson's Hope, 19=Tchenlo Lake, 20=Ajyansh, 21=Burton Creek, 22=Frizzell, 23=Lakelse, 24=Weewanie, 25=Bishop Bay, 26=Klekane Inlet, 27=Chutze Inlet, 28=Shearwater, 29=Brim River, 30=Hotsprings Island.

Location of photograph

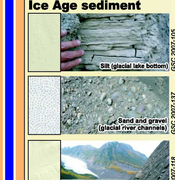
25 0 25 50 kilometres

How do I use this map?

This map sees the land through "geological eyes". The map's many colours represent the different geological materials that underlie this diverse landscape. You can use the map to answers such questions as: Are the Rocky Mountains made of sandstone or limestone or granite? (Go to the Coast Mountains to find granite!) Why is the farmland near Vanderhoof so flat? (You are driving across an old glacial lake floor!) Why are there so few exposures of rock outcrop between Prince George and Smithers? (A thick blanket of Ice Age sediment covers the rocks!) The diagram below uses the example of the Chetwynd area to show how the map's three major types of geological materials (rock, Ice Age sediment, modern sediment) typically underlie the landscape. Rock underlies all parts of northern B.C., but is commonly buried by thick layers of Ice Age sediment in valleys. Today's rivers have cut through this Ice Age sediment and deposited their own modern sand and gravel sediments.

Modern sediment

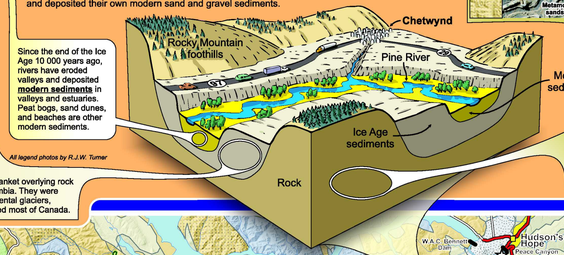
Ice Age sediment



Ice Age sediments form a widespread blanket overlying rock throughout much of northern British Columbia. They were deposited during the Ice Age when continental glaciers, similar to those in Antarctica today, covered most of Canada.

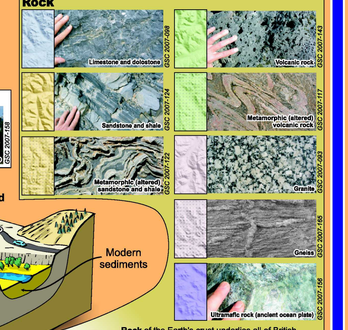
Glaciers

Since the end of the Ice Age 10 000 years ago, rivers have eroded valleys and deposited **modern sediments** in valleys and estuaries. Peat bogs, sand dunes, and beaches are other modern sediments.



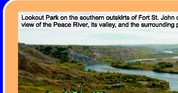
All legend photos by R.J.W. Turner

Rock



Rock of the Earth's crust underlies all of British Columbia. It is widely exposed at surface in mountainous areas, but is commonly buried beneath thick layers of sediments in valleys and on plateaus.

Peace River country



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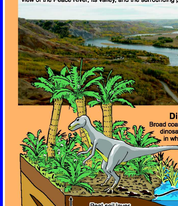
Lookout Park on the southern outskirts of Fort St. John offers a magnificent view of the Peace River, its valley, and the surrounding plains.



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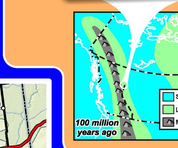

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Courtesy of Tock Dominion Ltd.

The former Bullmoose coal mine in the foothills west of Tumbler Ridge quarried tilted layers of coal from a surface pit.

Several short walks in the Tumbler Ridge area lead to dinosaur foot prints such as this example at Flatbed Creek.

Chetwynd to Hudson's Hope, Dawson Creek, and Tumbler Ridge

Forested foothills and plateaus in Peace River country are replaced eastward by rich agricultural plains. Across this landscape, the Peace River has carved a fertile valley. Foothills between Chetwynd and Tumbler Ridge are underlain by folded layers of sandstone and shale that contain important reserves of coal, as well the footprints and fossils of dinosaurs and other life. The town of Tumbler Ridge was built to support local coal mines.

The Rockies and Rocky Mountain Trench

Jasper to Prince George, and Mackenzie to Chetwynd

From Jasper, Highway 16 follows the headwaters of the Fraser River past Mt. Robson and other high limestone and quartzite peaks of the Rocky Mountains. It then enters the strikingly long and straight Rocky Mountain Trench and continues northward along the broad Fraser River toward Prince George. Highway 97 also crosses the trench near Mackenzie and Williston Lake, and crosses the Rockies at Pine Pass. Here the Rockies are a narrow mountain range composed of limestone, slate, and sandstone.

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R. Campbell, KGS 2274

Queen Charlotte Islands

Queen Charlotte to Masset on Highway 16

The Queen Charlotte Islands has spectacular beaches and coastlines. Highway 16 follows rocky shores near Queen Charlotte and Skidegate and sweeping lowland beaches north to Tlell. The highway then crosses boggy forest lowlands and tea-coloured rivers to the inland sea at Port Clement. Near Masset are magnificent north coast beaches and striking Tow Hill in Naikoon Park. The low coastal plain of northeastern Graham Island reflects soft underlying sandstone and shale that is eroded flat and buried beneath glacial sediment.

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Tow Hill and Agate Beach, Naikoon Park. Tow Hill is a hard lava intrusion that resists erosion. Agate is eroded from widespread volcanic rocks on Graham Island.

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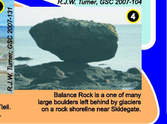
View west along the north shore of Graham Island from the top of Tow Hill.

R.J.W. Turner, GSC 2007-131

Ocean waves have eroded soft glacial sand and till deposits into extensive beaches at Naikoon Park, near Tlell. Coastal winds have blown beach sand into large dunes.



Balance Rock is a one of many large boulders left behind by glaciers on a rock shoreline near Skidegate.

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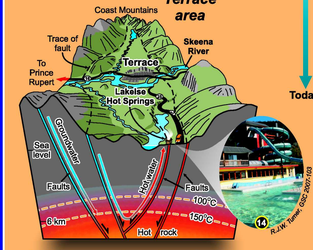
Skeena and Bulkley river valleys

Terrace area



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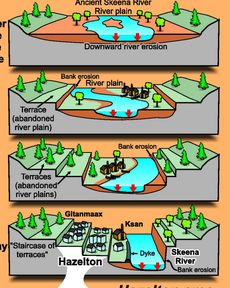
Faults that formed the valley from Kitimat to Terrace are the plumbing system for the Lakelse Hot Springs. Snowmelt and rainwater from surface leak down faults. Warmed by deep, hot rock, heated waters rise up other faults to form Canada's hottest springs.

How the river cuts a staircase of terraces



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Hazelton area

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Smithers area

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Highway 16 from Houston to Terrace, and Highway 37 to Kitimat

The Bulkley River valley near Houston and Smithers is a surprising juxtaposition of pastoral valley and glaciated mountains. Downstream, the communities of Hazelton and Kispiox surround important salmon-fishing sites at the junction of the Bulkley and Skeena rivers. Between Hazelton to Terrace, the Skeena River has carved a deep valley through high mountains. At Terrace, the Skeena River emerges into a broad valley, formed by movement of the Earth on faults.

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Lake Country

R.J.W. Turner, GSC 2007-177

Granite intrusion formed ore deep in Earth (145 million years ago)

Courtesy of Endako Mines, Thompson Creek Mining Ltd.

How the Endako mine formed

Today's Endako mine

Erosion exposed orebody at surface. Prospectors discovered ore and a mine was developed.

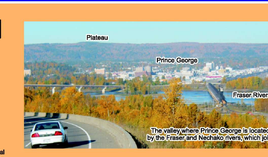
Eutsuk, Ootsa, François, Fraser, Babine, Stuart, and Takla lakes

West of Prince George is Lake Country, a plateau graced with a remarkable fan of finger lakes. These long, thin, and sometimes branching lakes converge eastwards towards Prince George and fill valleys carved by an ancient river system that drained to the Arctic Ocean. Ice Age glaciers left behind glacial debris that dammed rivers to form lakes. Man-made dams have expanded this lake system. The plateau contains widespread volcanic bedrock with granitic intrusions that host molybdenum and copper deposits.

Prince George and Plateau Country

Highway 16 from Vanderhoof to Purden Lake, and Highway 97 from Quesnel to McLeod Lake

Rolling upland plateaus rise gently above broad lowlands in the Prince George region. Many lowlands were once flooded by an Ice Age lake that left behind rich agricultural soils. Other legacies of the Ice Age abound: glacier sculpted hills, widespread glacial debris (till) that covers much of the plateau, and glacial river gravel that is quarried to make roads, concrete, and asphalt.



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R.J.W. Turner, GSC 2007-169

R.J.W. Turner, GSC 2007-138

R.J.W. Turner, GSC 2007-150