



SURVEYING ROCKS FOR RESOURCES

Using geoscience to encourage energy exploration

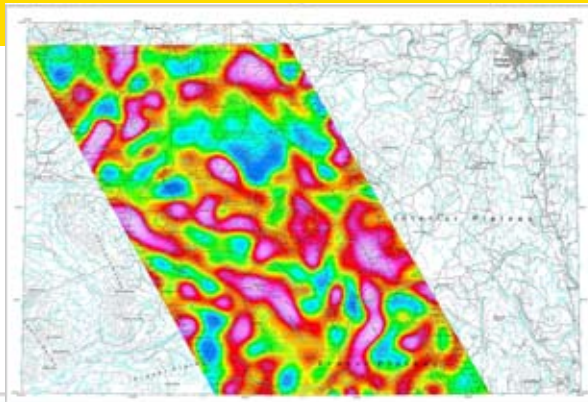
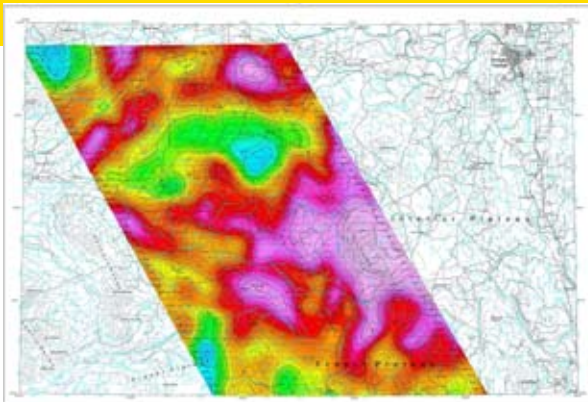
Flying an aircraft 150 metres above ground over a 20 thousand square kilometre area has helped Natural Resources Canada scientists produce maps and data indicating areas prospective for oil and gas in the Nechako Basin.

Data collected from these surveys increase our knowledge of the geology of the area and could help stimulate new economic activity.

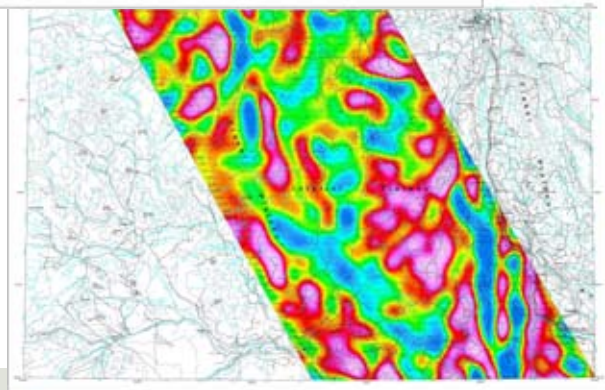
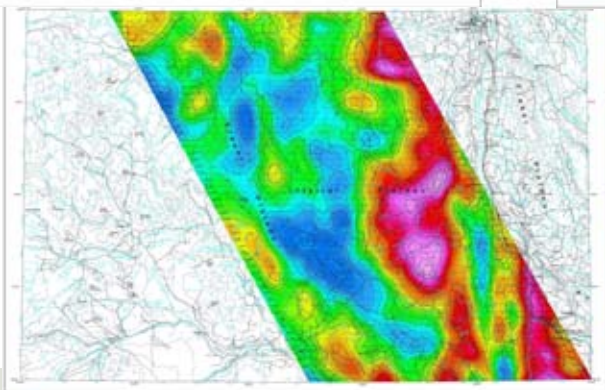
These maps and data are free. The information can be used by communities and First Nations making land use decisions and by industry to lower exploration risks and develop exploration programs.



The airborne gravity survey in the Nechako Basin is one of seven geoscience projects funded by the Government of Canada, through Natural Resources Canada's Mountain Pine Beetle Program. Mineral and energy exploration could help diversify the economy in areas recovering from mountain pine beetle infestation.

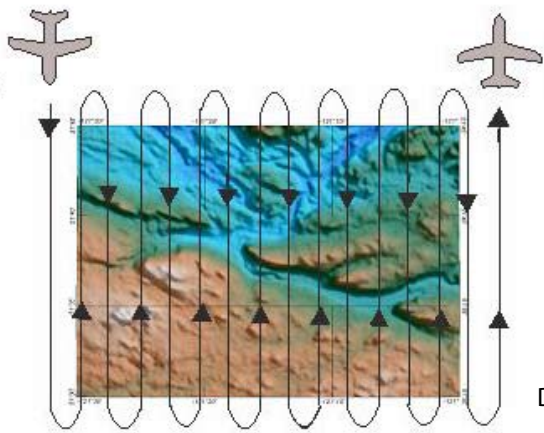


Upper and lower areas of the Nechako Basin were surveyed in March 2008



The images on the left are Bouguer gravity anomalies. These anomalies represent variations in rock density in the horizontal direction in the upper mantle and crust of the Earth. Variations in rock density may be prospective for oil and gas. The images on the right represent the first vertical derivative of Bouguer gravity anomalies. This derivative has been produced by Natural Resources Canada scientists to show greater detail of prospective rock near the surface of the Earth.





HOW AIRBORNE GRAVITY SURVEYS WORK:

An aircraft flies in a regular pattern over land using a gravimeter to measure changes in the Earth's gravitational field.

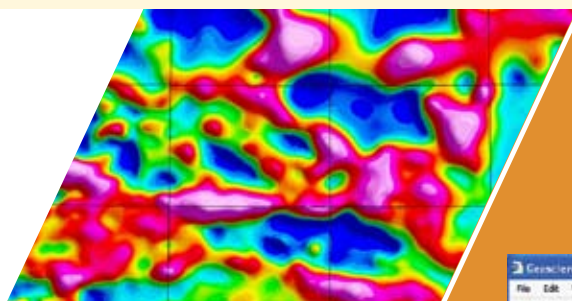
By measuring changes in the gravitational field, geologists are able to determine the density, location and geometry of rocks buried deep in the ground.

Gravity data can detect horizontal variations in rock density. Areas of thicker, less dense sedimentary rock may be prospective for oil and gas deposits.

Data are analysed, processed and plotted on a map.

In the Nechako Basin prospective rocks are buried under glacial sediment and volcanic rock. Because volcanic rock has a different density than sedimentary rock, airborne gravity surveys are an effective way to detect potential oil and gas deposits.

Natural Resources Canada's geoscience surveys funded through the Mountain Pine Beetle Program complement other public geoscience work being done in the region by the British Columbia Ministry of Energy, Mines and Petroleum Resources and by Geoscience BC.

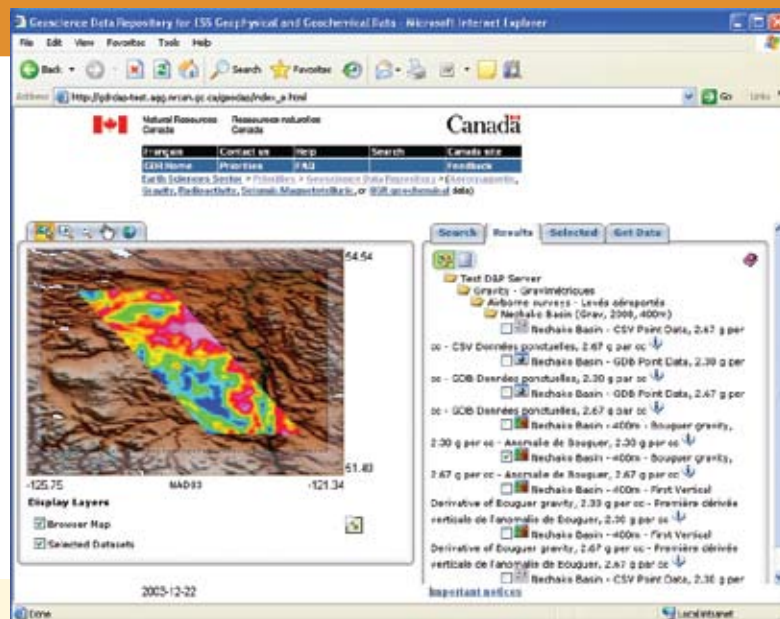


The gravity field is strong where the map is red or pink. These areas have rocks with higher density like volcanic rocks and are usually rich in iron and magnesium. The gravity field is weakest where the map is blue. The areas over rocks with lower density, like granites and sedimentary rock, are usually rich in aluminum and silicon.

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GRAVITY DATA:

Maps and data are available free: <http://gdr.nrcan.gc.ca/gravity>

Geoscience Data Repository: <http://gdr.nrcan.gc.ca>

More information on the Mountain Pine Beetle Program is available at forest.forward.nrcan.gc.ca