

South Nechako Basin and Cariboo Basin Lake Sediment

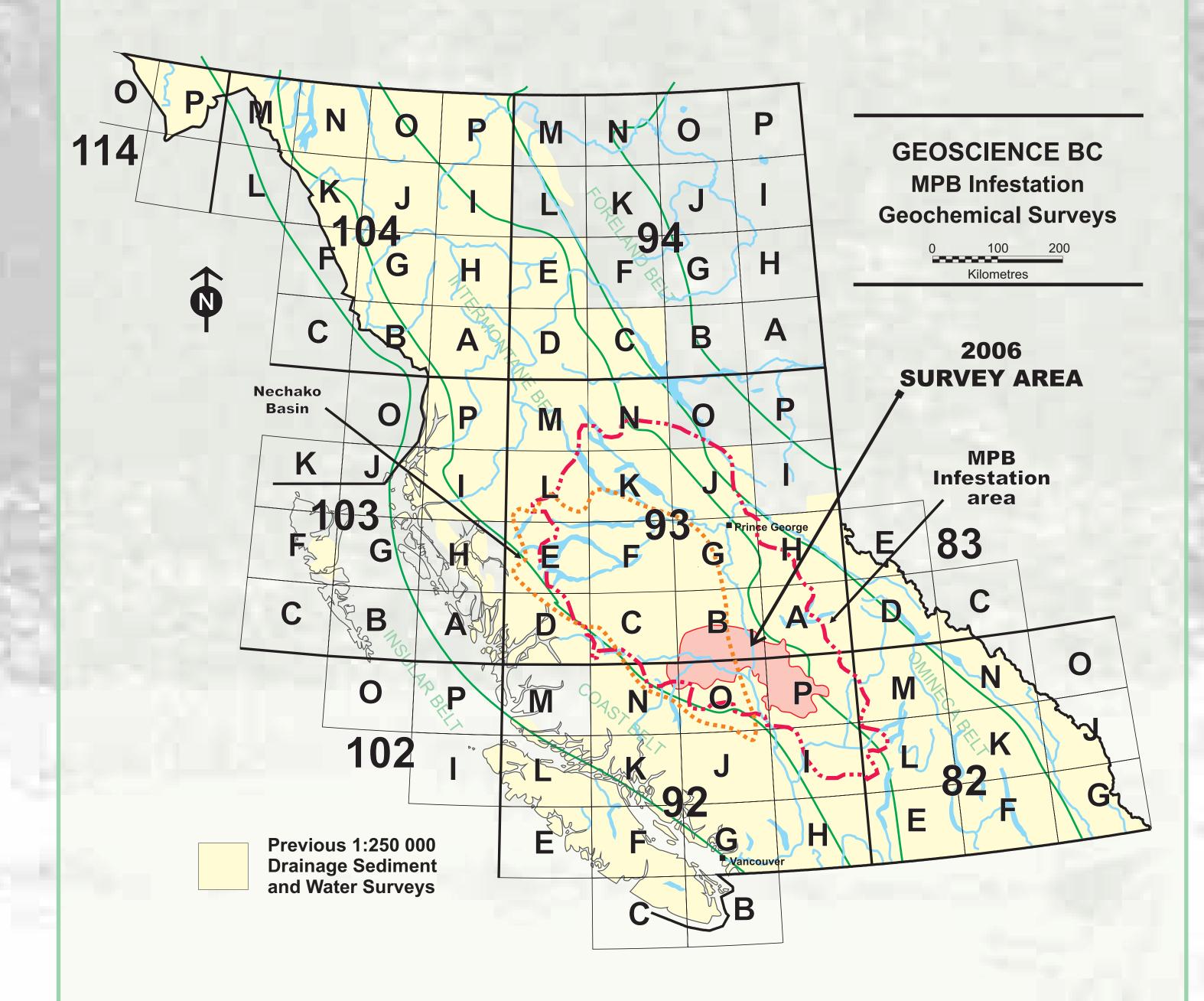
Geochemical Survey (parts of NTS Mapsheets 92N, O, P, 93A & B)

Geoscience BC contribution GBC030

INTRODUCTION ...

Tithin the mountain pine beetle (MPB) infestation area of central BC there was a significant gap in regional geochemical survey coverage. Although this 18,000 square kilometre region was included in previous government funded RGS/NGR stream sediment programs, subdued topography and poor drainage limited the availability of suitable stream sample sites. In fact, large parts of the surveyed areas had not been sampled. To expand first level sample density of this region, a total of 1370 lakes were sampled as part of the Geoscience BC funded 2006 south Nechako Basin and Cariboo Basin lake sediment and water geochemical survey.

elicopter-supported sample collection was carried out in August 2006, during which 1,445 lake sediment and water samples were systematically collected from 1,370 sites. Combined with previous sampling, the average sample site density is now one site per 10 square kilometres over the 18,000 square kilometres survey area.



his survey will provide access to new regional lake sediment and water geochemical information in an underexplored and geologically poorly understood region of the MPB infestation area. Survey results will enhance existing geochemical information, and complement other ongoing geoscience initiatives and future projects. Data will help outline regional geochemical trends, identify new exploration targets, and profile previously discovered mineral properties. The work also provided immediate economic opportunities to local service providers and potential long-term benefits from increased mineral and oil and gas exploration.

econnaissance-scale drainage sediment and water surveys are recognized as important exploration tools in the Canadian Cordillera. These types of programs produce high quality, publicly available, grassroots information that has been directly responsible for follow-up mineral exploration valued in the millions of dollars and has been credited with the discovery of numerous mineral prospects.

REGIONAL SUMMARY ...

Tithin the MPB infestation zone, the 2006 survey covers approximately 18,000 square kilometres of the Nechako Basin, the Fraser River Basin and the Cariboo Basin. Straddling highways 20 and 97, the project area extends southeast from Puntzi Lake to 70 Mile House and includes the larger communities of Williams Lake and 100 Mile House. The relatively subdued topography varies from exposed grasslands to rolling hills covered with pine and spruce forests. Opportunely, the upland surfaces of the plateau are dotted with over 11,000 lakes and ponds.







SURVEY DESIGN ...

ethods and specifications are based on standard lake sediment geochemical survey strategies and techniques used elsewhere in Canada for the National Geochemical Reconnaissance (NGR) program (Friske, 1991), as well as prior orientation studies and regional lake sediment surveys completed in BC (Cook, 1997; Jackaman, 2006). Previous work has demostrated that lake sediment surveys are an effective tool for delineating regional geochemical patterns and anomalous metal concentrations related to mineral deposits.





LAKE GEOCHEMISTRY of the **SOUTH NECHAKO BASIN** and CARIBOO BASIN SURVEY AREA SUMMARY

Northeast of Williams Lake.

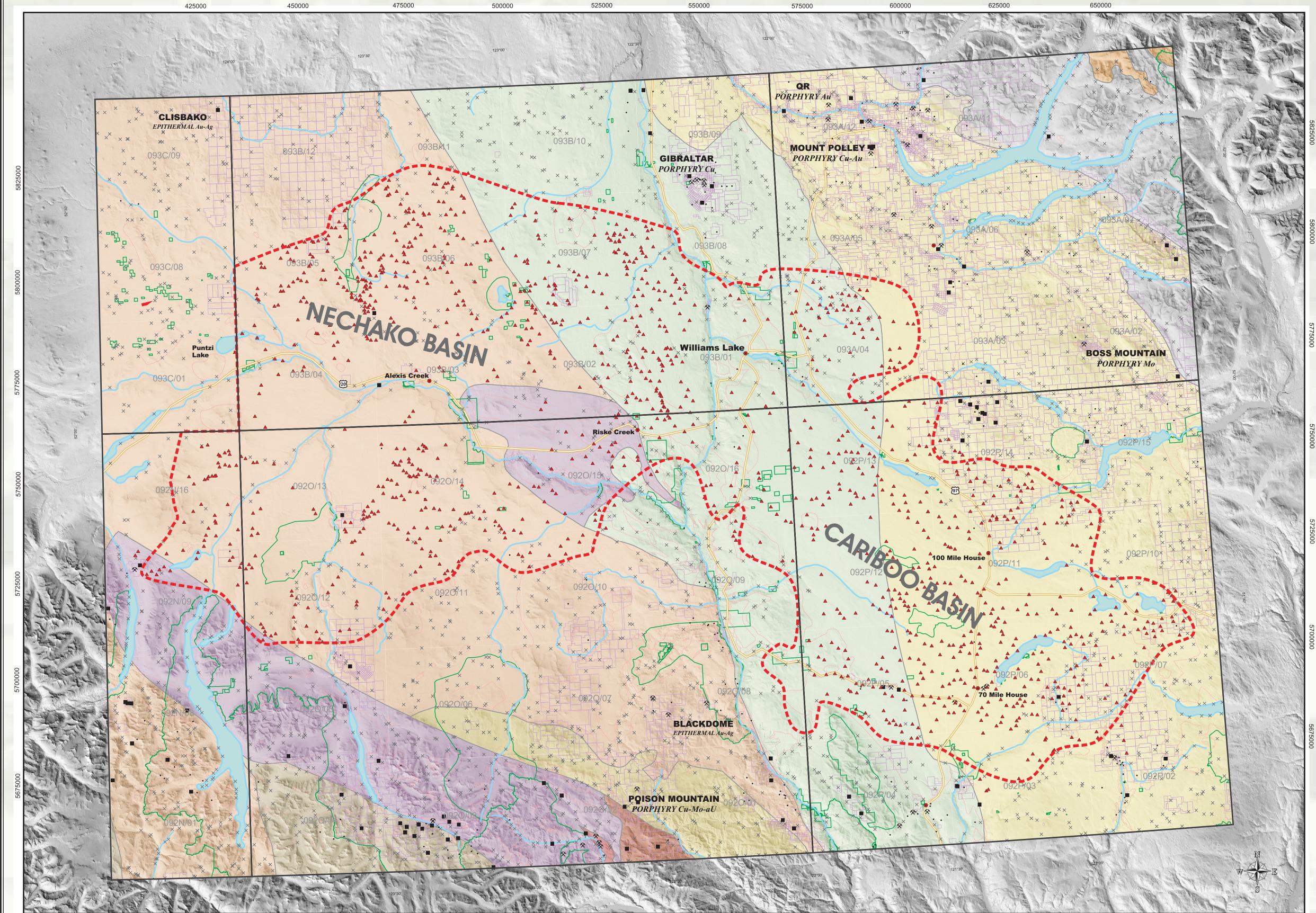
---- 2006 PROJECT BOUNDARY 2006 LAKE SAMPLE SITES PREVIOUS STREAM/LAKE SITES PARK BOUNDARY

CACHE CREEK COAST COMPLEX METHOW QUESNELLIA

BRIDGE RIVER

☆ PRODUCER/PAST PRODUCER PROSPECT/DEVELOPED PROSPECT





Sample collection.

SAMPLE ANALYSIS ...

ediment samples are being analyzed for base and precious metals, pathfinder elements and rare earths by instrumental neutron activation analysis (INAA) and inductively coupled plasma mass spectrometry (ICP-MS). Loss-on-ignition and fluorine are also being determined for sediment material. Fluoride, conductivity and pH have been determined for the water samples.

INAA S	Sediments						
Aluminum Antimony Arsenic Barium Bismuth Cadmium Calcium Chromium Cobalt	0.01 % 0.02 ppm 0.1 ppm 0.5 ppm 0.02 ppm 0.01 ppm 0.01 % 0.5 ppm 0.1 ppm	Copper Gallium Iron Lanthanum Lead Magnesium Manganese Mercury Molybdenum	0.01 ppm 0.2 ppm 0.01 % 0.5 ppm 0.01 ppm 0.01 % 1 ppm 5 ppb 0.01 ppm	Nickel Phosphorus Potassium Scandium Selenium Silver Sodium Strontium Sulphur	0.1 ppm 0.001% 0.01 % 0.1 ppm 0.1 ppm 2 ppb 0.001% 0.5 ppm 0.02 %	Tellurium Thallium Thorium Titanium Tungsten Uranium Vanadium Zinc	0.02 ppm 0.02 ppm 0.1 ppm 0.001% 0.1 ppm 0.1 ppm 2 ppm 0.1 ppm
ICP-MS	Sediments	•••				OTHER	•••
Antimony Arsenic Barium Bromine Cerium Cesium Chromium	0.1 ppm 0.5 ppm 50 ppm 0.5 ppm 5 ppm 5 ppm 20 ppm 5 ppm	Europium Gold Hafnium Iron Lanthanum Lutetium Rubidium Samarium	1 ppm 2 ppb 1 ppm 0.2 % 2 ppm 0.2 ppm 5 ppm 0.1 ppm	Scandium Sodium Tantalum Terbium Thorium Tungsten Uranium Ytterbium	0.2 ppm 0.02 % 0.5 ppm 0.5 ppm 0.2 ppm 1 ppm 0.2 ppm 2 ppm	Sediments Fluorine Loss on Ignition Natural Wat pH Uranium Conductivity	10 ppm 0.1 %

DATA RELEASE ...

urvey results will be compiled into a traditional RGS-style data package that will include survey descriptions and details regarding methods; analytical and field data listings; summary statistics; sample location maps; and maps for individual elements. The publication will be released on a CD as PDF files and will include all raw digital data files used in the production process. The package and MapPlace digital data will be made available to the public in the spring of 2007.

Data Release: SPRING 2007

ACKNOWLEDGMENTS ...

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