Regional Mapping

NECHAKO NATMAP PROJECT - 1997 OVERVIEW

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A Contribution to the Nechako NATMAP Project

KEYWORDS: Nechako plateau, Eocene, extension, Natmap, Babine porphyry belt, Sitlika Assemblage, Nechako map, Fort Fraser map, Endako, plutonism, multidisciplinary, bedrock mapping, surficial mapping, biogeochemistry, till geochemistry, geochronology, conodonts, radiolarian, geophysics.

INTRODUCTION

The Nechako NATMAP project is a joint mapping venture between the GSC, BCGSB, universities and industry (McMillan and Struik; 1996, Struik and McMillan, 1996; Struik and MacIntyre, 1997; MacIntyre and Struik, 1997; Stuik and MacIntyre, 1998). The project encompasses over 30,000 square kilometres in central British Columbia (Figures 1-1, 1-2). Its main focus is to improve the quality and detail of bedrock and surficial maps to help resolve several geological problems. In particular it addresses the following questions: 1) the extent and nature of Tertiary crustal extension, 2) Mesozoic compression and the manner of accretion of exotic terranes, 3) the geological and geophysical definition of the terranes, 4) the sequence of changing Pleistocene glacial ice flow directions, and 5) the character and dispersion of glacial deposits.

In this third field season of the Nechako NATMAP project, bedrock mapping was done in eleven NTS map areas and surficial mapping was done in five (Figure 1-2).The scale of mapping varied from 1:20 000 to regional 1:100 000 scales. In addition, detailed sampling, and stratigraphic studies were undertaken in these map areas. Samples were collected for till, silt, lake, biological and lithological chemistry, paleomagnetic studies and paleontological and radio-isotopic geochronology. Stratigraphic studies concentrated on sections within the Cache Creek Group near Fort St. James and mainly volcanic sequences of the Ootsa Lake and Endako groups. Digital GIS projects included compilation of mapping data from Placer Dome Incorporated, construction and addition to the digital field mapping databases, cartography of geological maps, and the initiation of the internet GIS data sharing (Figure 1-3).

This paper outlines research that in many cases is preliminary. References are given to more in depth summaries in this volume and Current Research of the Geological Survey of Canada. The continuing research will lead to more comprehensive government and journal reports and maps. No analytical data is reported in this paper.

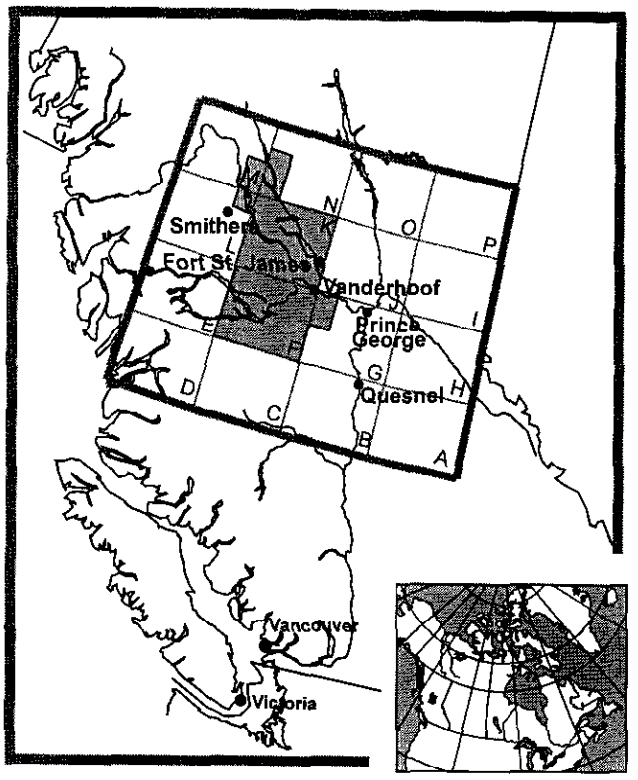

Figure 1-1. Location of the Nechako Natmap project.

BEDROCK MAPPING

Babine Porphyry Belt and Sitlika Studies

Bedrock mapping in the Babine-Takla lakes area built on previous mapping by Don MacIntyre and crew in the 93L/16 and 93M/1 map sheets of the Babine Porphyry belt (MacIntyre *et al.*, 1996; MacIntyre *et al.*, 1997) and Paul Schiarizza and crew in the 93N/12 and 93N/13 maps sheets of the Sitlika belt east of Takla Lake (Schiarizza and Payie, 1997). Don MacIntyre, Paul Schiarizza, and Nick Massey of the BCGSB were the project leaders in 1997. Excellent geological field assistance was provided by summer students Michele Lepitre (UBC), Ryanne Metcalf (UBC), Sheldon Modeland (UVIC), Stephen Munzar (UBC) and Deanne Tackaberry (UVIC). From late June until the end of

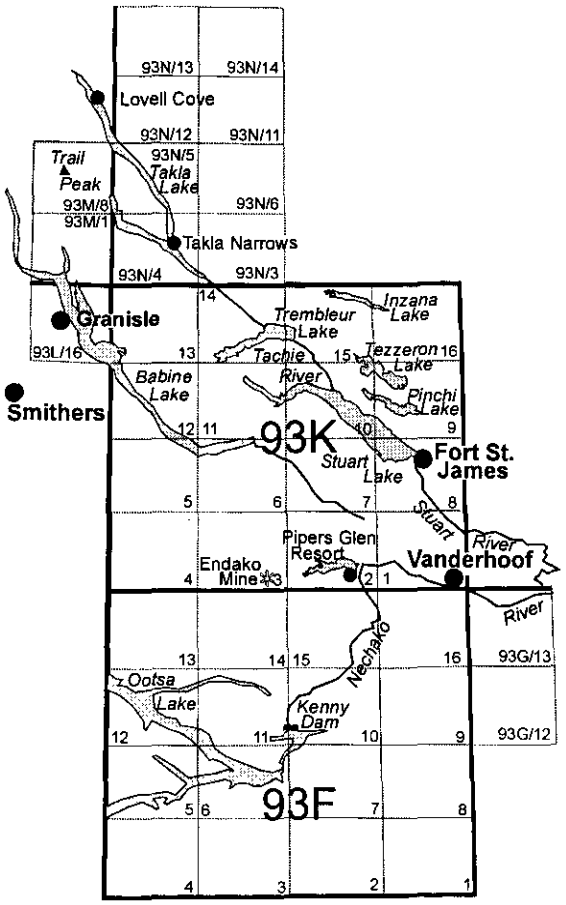

Figure 1-2. Geographic localities referred to in text

August this crew completed bedrock mapping of NTS map sheets 93M/8, 93N/5 and 93K/13 plus most of 93N/4 and parts of 93M/7, 93N/6, 93N/12 and 93N/3 (Figures 1-2,1-3).

Helicopter service was provided by Pacific Western Helicopters from their base at Lovell Cove. Daily set-outs and pickups were used to cover less accessible areas. Other areas were mapped using logging road access. A 17 foot zodiak was used to map extensive rock exposures along the shores of Takla Lake and the B.C. Rail line, which is located along the east shore of Takla Lake. Base camp for the project was at the Takla Rainbow lodge situated at Takla Narrows.

Bedrock mapping in the project area was done at 1:50 000 scale in 93M/8 and 93N/5, and at a more regional 1:100,000 scale in 93N/4 and 93K/13 (MacIntyre, 1998; MacIntyre *et al.*, 1998; Schiarizza *et al.*, 1998). Samples were collected throughout the map area for micro and macro paleontology, isotopic age dating, paleomagnetic determinations, whole rock and trace element geochemistry. All mineralized outcrops were sampled to determine base and precious metal content.

The following are the main highlights of the Babine and Sitlika mapping of 1997:

1. the Trail Peak and Nak porphyry copper deposits, are associated with northwest trending biotite-feldspar porphyry dikes that are part of the Eocene Babine Intrusions. The dikes cut both an earlier granodiorite to quartz diorite phase and hornfelsed Hazelton Group volcanics and sediments. High angle normal faults, which are Eocene or younger, offset the intrusions and surrounding rocks (MacIntyre, 1998).
2. the belt of Lower to Middle Jurassic bimodal volcanics, first recognized in the area west of Granisle in 1995, was traced into the 93M/8 map sheet. However the unit appears to be thinning and contains less felsic volcanics going northward toward the Bowser Basin. This coincides with a general change in the nature of Lower to Middle Jurassic sediments from shallow to deep water facies.
3. an area of hornblende-biotite-feldspar porphyry flows was mapped northwest of Trail Peak. These rocks are tentatively correlated with the Late Cretaceous Kasalka Group. Previous mapping suggested these flows were part of the Tertiary Babine Intrusive suite.
4. a large stock of porphyritic quartz monzonite with a border phase of hornblende diorite was mapped east of Tochcha Lake in the 93K/13 map area. This stock, which does not appear on previous maps, is considered part of the Topley suite; it intrudes volcanics of the Takla Group. Other large plutons north and south of the northwest arm of Takla lake in the 93N/4 map sheet also intrude Takla rocks and have similiar lithologies to the Topley suite with which they are tentatively correlated (MacIntyre *et al.*, 1998).
5. the three lithologic divisions of the Sitlika assemblage were traced southward from 93N/12, through 93N/5 and into the northern part of 93N/4 (MacIntyre *et al.*, 1998). The western clastic unit traces into rocks previously included in the Upper Triassic Takla Group. Because lithologically similar sedimentary rocks are intercalated with typical Takla Group volcanics, it is suspected that the western clastic unit is not Sitlika but might be a fault-bounded sliver of Takla rocks. The Sitlika volcanic unit and overlying eastern clastic unit were traced southwards into volcanic and sedimentary rocks that had previously been mapped as Cache Creek Group.
6. the ultramafic unit that marks the boundary between the Sitlika assemblage and Cache Creek Group in 93N/12 and 13 continues southward through 93N/5 and into 93N/4. This unit is a serpentinite melange in the north, but to the south includes relatively coherent intervals of tectonized harzburgite and dunite, confirming an ophiolitic origin for the ultramafic belt.
7. the contact between the Cache Creek Group and Sitlika asssemblage was observed east of Tsayta Lake (93N/5) where it is a low-angle fault that places the Cache Creek ultramafic unit above Sitlika eastern clastic unit. This fault

contact is truncated by monzogranite of the Mitchell pluton (Schiarizza *et al.*, 1998).

8. Sitlika assemblage in 93N/4 and 5 is separated from the Upper Triassic Takla Group of Stikine Terrane by a system of north to northwest-striking faults of uncertain sense of displacement. This fault system is truncated by the north-striking Takla Fault, which marks the western boundary of the Sitlika assemblage in 93N/12 and 13.

Cache Creek Group Tectono-Stratigraphic Studies in Northeastern Fort Fraser Map Area

Studies in the Cache Creek Group of eastern Fort Fraser map area consisted of bedrock mapping, biostratigraphy, lithogeochemistry, and geochronological sampling. This work was conducted by Bert Struik (GSC), Hiroyoshi Sano (Kyushu University, Japan), Mike Orchard (GSC), Fabrice Cordey (Universite Claude Bernard a Lyon, France), Wayne Bamber (GSC), Henriette LaPierre (Universite Claude Bernard a Lyon, France) and Marc Tardy (Universite de Savoie, France). Excellent geological mapping assistance was provided by students Mike Hrudey (Univ. of Alberta), Crystal Huscroft (UBC), Andrew Blair (Okanogan College), Angelique Justafsen (Camosun College), and Samara Lewis (UBC). Primary access was by forest service roads branching from Fort St. James, and the extensive lake system.

Bedrock mapping of sheets 93K/9, 10, and 15 was completed at 1:100 000 scale (Figure 1-3). That mapping built on recent mapping by Ash *et al.* (1993) in 93K/9, 10 and Nelson *et al.* (1993) in 93K/16. Hiroyoshi Sano spent 3.5 weeks doing detailed biostratigraphic mapping of the Cache Creek Group's Mount Pope formation near Fort St. James. Mike Orchard, Fabrice Cordey and Wayne Bamber joined Hiroyoshi Sano to map and sample Cache Creek Group limestones and cherts for condont, radiolarian and coral assemblages in the context of the sedimentalogical environments interpreted from depositional textures (Orchard *et al.*, 1998; Sano, 1998).. Lithogeochemical sampling of basalts of the Cache Creek and Takla Group was done by Henriette LaPierre and Marc Tardy to constrain the basalt petrogenesis.

The following are the main highlights of the Cache Creek studies of 1997:

1. Upper Triassic and possibly Lower Jurassic basalt tuff, greywacke, siltstone, conglomerate and minor limestone straddle the Pinchi Fault zone along Pinchi and Tezzeron lakes. These rocks formerly mapped as Takla Group are tentatively differentiated as the Tezzeron assemblage. They are interpreted to have been an overlap assemblage onto oceanic assemblages of the Cache Creek Group.
2. the Pinchi Fault probably cuts the former suture between the oceanic Cache Creek Group and the island arc Takla Group. The suture itself is exposed along Pinchi Lake as the blueschist terrane documented by Patterson (1973). Cache Creek Group ultramafic rocks overthrust Tezzeron assemblage tuff and greywacke on either side of the Pinchi Fault.
3. all of the contacts of the Mount Pope formation, which consists of limestone, chert and minor basalt, are probably thrust faults. Where the Mount Pope limestone and underlying units have been dated, the underlying rocks are younger.
4. the limestone of the Cache Creek Group has been constrained to three time intervals: earliest Upper Carboniferous to Early Permian, Late Permian and Early Triassic.
5. Upper Carboniferous to Early Permian Cache Creek Group limestone is generally clastic, formed in shallow to moderately shallow water and thought to have developed on basaltic ocean islands.
6. diorite, and quartz diorite plutons intrude a large area of the Cache Creek Group near Tachie River north of Stuart Lake. These plutons called the McElvey and Tachie plutons are generally unfoliated and cross-cut all structures in the Cache Creek Group including metasediments of the Middle and Upper Triassic Sowchea assemblage (Hrudey and Struik, 1998).
7. new lithochemistry of Cache Creek Group basalts indicate they are mainly ocean island type.

Endako Plutonism and Tectonics

Detailed bedrock mapping of the Endako map area (93K/3) was conducted at 1:50 000 scale using previous Endako Mines mapping (Kimura *et al.* 1980; G. Johnson, personal communication, 1997) as a guide and template. Joe Whalen (GSC) and Bert Struik (GSC) ably assisted by Nancy Grainger (Univ. of Alberta) and the student assistants of the Cache Creek Group-east study. They concentrated on the intrusive and genetic relationships of the Jura-Cretaceous plutonic suites and tectono-stratigraphy of the Tertiary volcanic rocks. Randy Enkin and Judith Baker (GSC) continued Tertiary paleomagnetic tilt studies in the Endako area (Lowe *et al.*, 1998). Carmel Lowe (GSC) interpreted the magnetic signature of the Endako molybdenum camp (Lowe *et al.*, 1998). The area was accessed through forest roads and highways.

Sufficient geological data was gathered to complete a detailed bedrock map of the Endako map area (93K/3)(Whalen *et al.*, 1998). Stratigraphic sequences in the Ootsa Lake and Endako groups were constrained within the limits of the poor exposure. Nancy Grainger and Mike Villeneuve (GSC) sampled igneous suites for U-Pb and Ar-Ar isotopic dating throughout the area concentrating on the Tertiary volcanic units to constrain their stratigraphy and the tectonic events that generated them. Representative samples of each of the Tertiary

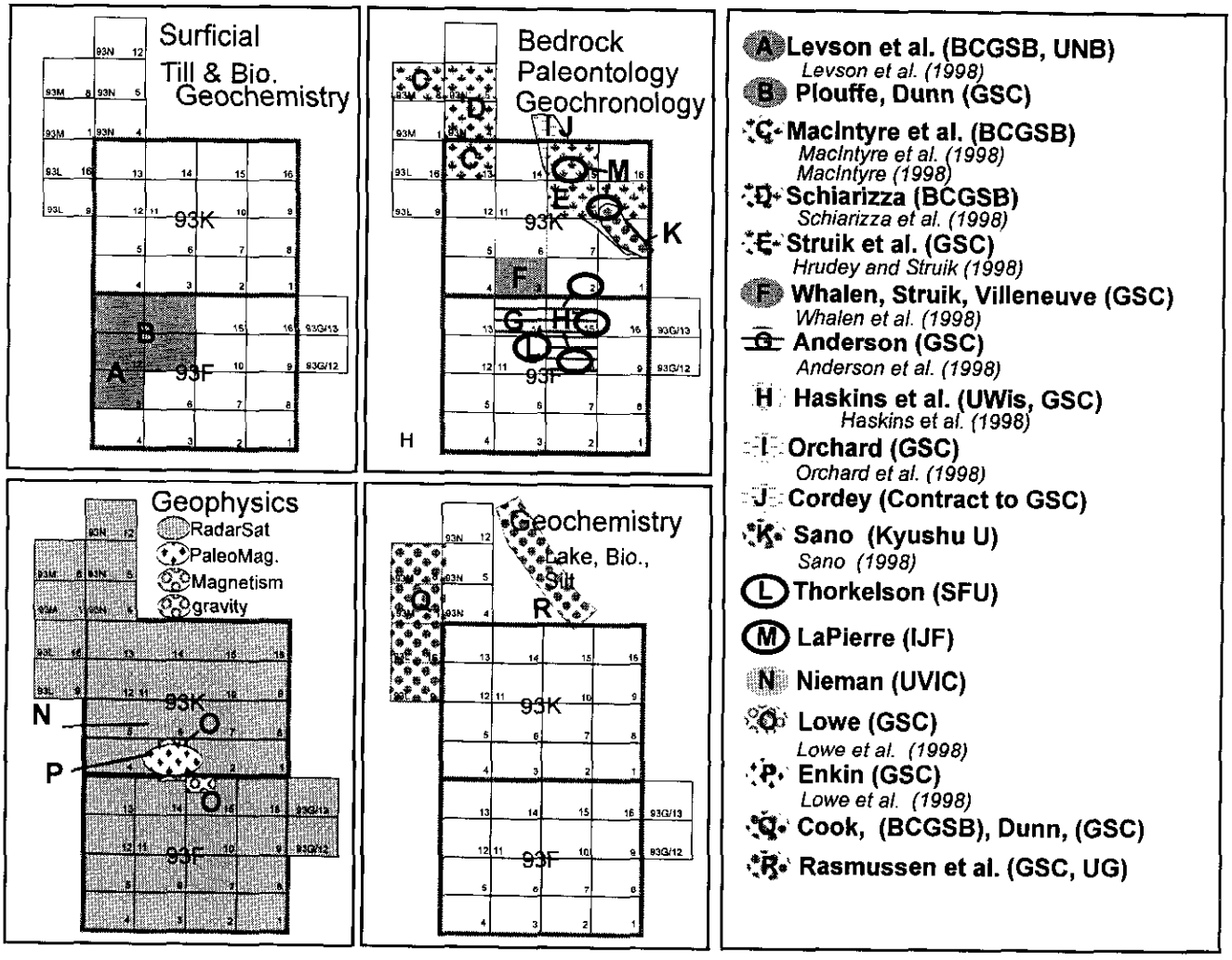

Figure 1-3. Projects active in the Nechako Natmap area in 1997. See text for details.

volcanic units and the Jura-Cretaceous plutonic phases were taken for detailed lithogeochemistry to constrain interpretations of the genetic history of those rocks. Sample were taken by backpack diamond drilling from within the Endako Mine and from Tertiary dikes and flows of the surrounding area for paleomagnetic measurements to quantitatively constrain Tertiary block rotations about horizontal and vertical axes.

The following are the main highlights of the Endako study of 1997:

1. Endako Group basalt occurs in small areas mainly in the southern and central Endako map area. In the central part of the sheet, the basalt forms a thick hyaloclastite breccia overlying andesite and biotite-hornblende-plagioclase dacite of the Ootsa Lake Group (Whalen *et al.*, 1998).
2. The Eocene age Ootsa Lake Group in the Endako area contains transitions from andesite through rhyolite to dacite cyrstal tuffs, conglomerates and basalts. Contacts between mafic to intermediate ash flow and lahar, and rhyodacitic crystal tuffs were observed, and these units were in turn intruded by Eocene quartz-feldspar rhyolite dikes. A chert, andesite, dacite clast conglomerate to sandstone unit was found interlayered with Eocene rhyolite and rhyodacite in the eastern part of the map area.
3. Regional tilting of the Endako and Ootsal Lake Groups as determined from bedding attitudes

has been confirmed by paleomagnetic measurements of Eocene dikes within the Endako Mine. The tilting is controlled by closely spaced extensional faults across which block rotations vary from 10 to 40 degrees (Enkin *et al.*, 1997; Lowe *et al.*, 1998).

4. the Francois Lake and Endako phases of the Late Jurassic Francois Lake plutonic suite appear to be the same age and may be regionally indistinguishable from one another (Whalen *et al.*, 1998). The Endako phase is the host rock for the molybdenum of the Endako Mine.
5. The Francois Lake and Glenannon granodiorite phases each appear to have finely crystalline subphases (Whalen *et al.* 1998). Miarolitic subvolcanic granodiorite east of Endako Mine may be the carapace to the Francois Lake phase.

Nechako River Map Area

Bedrock mapping in the Nechako River (NTS 93F) map area was done by Bob Anderson (GSC) and crew. The crew was comprised of senior mapper Lori Snyder (Univ. of Wisconsin), and junior mappers Jonah Resnick (UBC) and Shireen Wearmouth (Upper Caledonia College, Kamloops) and was reinforced by volunteers Elspeth Barnes (exchange student from University of Glasgow), Michelle Haskin (Univ. of Wisconsin), and Samara Lewis and Shin Yi Siew (exchange students from University of Melbourne). They concentrated on the Hallett Lake (NTS 93F/15), Big Bend (NTS 93F/10) and Knapp Lake (93F/14) map areas (Anderson and Snyder, 1998; Anderson *et al.*, 1998a; Anderson *et al.* 1998b). This work linked with previous mapping in the south (93F/07) by Diakow (1997), to the east (93F/09 and 16) by Wetherup (1997), and to the north in 93K/2 by Struik *et al.* (1997) and in 93K/3 by Whalen *et al.* (1998).

Stratigraphic sections of the Endako Group basalts were measured in detail at Mount Greer (93F/15), Nautley (93K/2), and Kenney Dam (93F/10)(Haskin *et al.*, 1998). These units were also extensively sampled for lithogeochemistry and Ar-Ar age dating. In addition a concerted effort was made to visit all outcrops located by the surficial mapping crew.

Nancy Grainger, Mike Villeneuve and Bob Anderson re-examined some of these contacts as well as the nature and relationships between Ootsa Lake Group and Eocene(?) Copley Lake pluton as part of Nancy Graingers reconnaissance for her 1998 Masters thesis research. Derek Thorkelson (Simon Fraser Univ.) completed a 2 week reconnaissance of Tertiary volcanic rocks in the Cheslatta Lake (93F/10) map area which will be one focus of mapping in 1998.

The following are the main highlights of the Nechako River mapping of 1997:

1. Moderately- to steeply-dipping and deformed volcanic and sedimentary rocks of the undivided Hazelton Group, Naglico Formation, and Bowser Lake Group were extended north from NTS 93F/07 (Diakow *et al.*, 1995a,b, 1997) in the Big Bend Creek map area (Anderson *et al.*, 1998a). A system of Tertiary block faults deform Mesozoic and Tertiary basement rocks as a north-trending graben developed synchronously with eruption of the Endako Group.
2. In Hallett Lake area (Anderson and Snyder, 1998), Tertiary faults have protracted down-to-the-southeast motion predating and synchronous with Ootsa Lake and Endako Group volcanism. These faults apparently localized the distribution of the Tertiary volcanic units and may be an upper plate manifestation of northwesterly-directed ductile extension recorded in the western part of the structurally lower, Eocene Vanderhoof Metamorphic Complex as described by Wetherup (1997).
3. Preliminary mapping in the Knapp Lake area (Anderson et al., 1998b) revealed significant variations in Ootsa Lake Group stratigraphy noted in the Endako map area (93K/03) to the north. The group rests unconformably on Lower and Middle Hazelton Group rocks. Chilcotin Group olivine-phyric and nodule-bearing glassy basalt is widespread in the southern part of Knapp Lake map area and is mineralogically distinct from Eocene Endako Group clinopyroxene-plagioclase-phyric basalt.
4. Detailed studies of Eocene Endako Group basalts in the Nechako River and southern Fort Fraser areas (Haskin et al., 1998) established the rocks as aphyric to plagioclase-, pyroxene-, and rarely olivine-phyric and commonly amygdaloidal. The Kenney Dam (NTS 93F/10) locality provides the thickest section of Endako Group basalt.

SURFICIAL MAPPING

Nechako River Map Area

Surficial mapping concentrated on the northwest quadrant of Nechako River map area and the north half of 93F/05 and provided ground verification of aerial photograph interpretations. That work was done by Alain Plouffe (GSC) and student assistant Jean Bjornson (UO) and in the southwest by Andrew Stumpf (UNB) and Vic Levson (BCGSB) (Levson *et al.*, 1998).

During the 1997 field season, Alain Plouffe and Jean Bjornson (Univ. of Ottawa) completed the surficial geology mapping of the northwestern sector of Nechako River map sheet (93F/11, F/13, and F/14). More than 180 till samples were collected and the extent of glacial lake sediments was mapped in the lowest valleys of this region including the Francois Lake valley. This summer's findings corroborate the observations by Plouffe (1997) that the maximum elevation of continuous glacial lake sediment cover decreases to the west. Sites interpreted to be susceptible to instability

when disturbed were investigated in conjunction with the British Columbia Ministry of Forests.

Abundant striated outcrops in this region reveal a general ice movement to the east and northeast with minor local fluctuations. Very little Quaternary stratigraphy is exposed and no pre-Fraser sediments (pre-late-Wisconsinan) were found.

GEOCHEMICAL STUDIES

Steve Cook (BCGSB) conducted various geochemical studies as followups to previous surveys done in the Nechako NATMAP project area.

RGS Interpretation Studies

As an assessment of the usefulness of element sum ranking in the search for volcanogenic massive sulphide (VMS) deposits in Carboniferous-Jurassic Cache Creek Group and Upper Triassic Kutcho Formation rocks, two Takla Lake area watersheds identified as being in the top five percentiles of the combined Cu-Zn-Pb-Ag data ranking for the western half of the Manson River (NTS 93N) map area were investigated and resampled.

Till Dispersal Studies

Till dispersal studies in cooperation with Vic Levson were carried out in the vicinity of Babine Porphyry Belt copper prospects, The study, initiated in 1996, continued in 1997 near the Dorothy and Hearne Hill prospects. Till and profile sampling was conducted at these sites to document glacial dispersal, and copper concentrations in various soil horizons. Previous work in the Babine Porphyry Belt was conducted near the Nak, Trail Peak and Lennac prospects.

Lake Sediment Orientation Studies: Hill-Tout Lake

Lake sediment orientation studies conducted in 1992 at Hill-Tout Lake, near the Dual porphyry copper prospect, identified wide variations in sediment metal concentrations between the three distinct sub-basins of the lake. An Open File documenting these variations, and their implications for regional geochemical exploration, is currently being prepared. Original water samples collected at the lake were analyzed by ICP-ES methods. Fieldwork this season obtained additional surface and bottom-water samples to be analyzed by ICP-MS methods, which yield superior data for trace elements such as copper.

Biogeochemical Surveys

Colin Dunn (GSC) and Rob Scagel (Pacific Phytometric Consultants, Surrey, BC) conducted a reconnaissance level, lodgepole pine sampling program (late July). The sampling extends 1996 northeastern coverage throughout the northwest quadrant of Nechako River. Samples were the outer bark of lodgepole pine. Samples were collected from 282 sites; 265 at 2 km intervals along all driveable roads and trails, and 17 from sites remote from trails (by Alain Plouffe).

Biogeochemical work with Bob Anderson is testing the possibility of 'fingerprinting' pluton compositions. Vegetation was collected from sites on plutons where samples for lithogeochemical analysis were previously obtained. In particular we will look at rare earth elements (REE) and high field strength elements (HFSE) to determine their patterns. If this technique works, it will provide a quick and economical means to help differentiate underlying rock types (where overburden is thin).

Follow-up sampling was done of last year's reconnaissance biogeochemical survey along the Kluskus forest service road in northeast Nechako River map area (NTS 93F/9, 16). This was to establish the source of Co and Cr enrichment in samples from this area. Enquiries at local forestry offices found that prior to about 1990 parts of the Kluskus road were paved with oxidized volcanic rocks (basaltic) from borrow pits at km 35 and km 36. Samples of the oxidized material and road dust were collected to test for enrichment in Co and Cr. Vegetation was sampled at several sites eastward from the road for a distance of 1 km to ascertain the potential maximum extent of contamination by road dust.

Metals in the Environment (MITE)

As part of the GSC Metals in the Environment (MITE) Initiative, reconnaissance field work was conducted in August 1997 by Colin Dunn, Pat Rasmussen (GSC), and Alain Plouffe in the area of the old Takla Bralorne mercury mine, located approximately 4 km northwest of the confluence of Silver and Kwanika creeks, on the 93N/11 NTS map sheet.

The main purpose of the work undertaken by A. Plouffe was to (1) determine if there is any anthropogenic mercury in the humus horizon; (2) identify the different phases of mercury in soil profiles developed on till and glaciofluvial sediments; (3) establish the mobility of these phases; (4) develop criteria to distinguish between natural and anthropogenic mercury; and (5) provide a framework to measurement of mercury flux to the atmosphere (by Pat Rasmussen). This summer, humus, B-horizon, and, till and/or glaciofluvial sediments were sampled at a total of 13 sites in the Silver Creek and Kwanika Creek valleys, and detailed sampling of soil profiles was done at two sites.

Pat Rasmussen, Colin Dunn and Grant Edwards (Univ. of Guelph, School of Engineering) collected biogeochemical samples at the same sites as Alain Plouffe and at additional sites along the Pinchi fault zone as part of a nation-wide survey of natural mercury emissions to the atmosphere. Results will be used to evaluate the Takla Bralorne site and other areas as potential mercury flux monitoring sites.

INDUSTRIAL MINERALS INVESTIGATIONS

Dani Hora and George Simandl (BCGSB) continued followup on both previously known and newly located industrial mineral and precious stone sites in the Nechako project area. Dimension stone, decomposed lapilli tuffs (for clays), ornamental and landscaping rock (basalts mainly), perlite, vermiculite, opal, and agate were investigated.

GEOGRAPHIC INFORMATION SYSTEMS

Stephen Williams (GSC) and Nicki Hastings (GSC) continued to develop the Nechako Project digital point, line and areal database and query system. Work focussed on digital integration of the bedrock mapping data donated by Placer Dome Ltd, the digitization and cartography of geological maps, and the initiation of an internet GIS data sharing system.

Some of the accomplishments to date include;

1. Creation of a GIS data base of the Placer Dome bedrock geology maps for the Endako Mine and surrounding region has been completed. This database includes half of the field notes gathered during that project. All of this information will be combined with Nechako Project mapping.
2. Several new geological maps are in the process of production as coloured 1:100 000 and 1:50 000 scale bedrock maps.
3. This summer the Nechako Project supported and initiated the acquisition and installation of MapGuide and its appropriate server hardware and software at the Vancouver Office. MapGuide is a collection of software packages (Server, Author and Reader) that provides real-time WEB browser access to maps and their associated databases. MapGuide has been used extensively by the BCGSB to make the Mineral Potential of British Columbia project-data accessible over the World Wide Web. We hope to use MapGuide first to distribute the digital data for the Nechako Project to its participants to facilitate research. Later we hope to be able to use it for broader distribution of the data.

For monthly updates in Nechako NATMAP Project developments, see the Nechako Newsletters posted on the Nechako Project website (ei.gov.bc.ca/natmap.html) during the life of the project.

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We would like to thank all those people who worked hard to make this project a reality and for the support of the GSC, BCGSB and geoscience community. We make a special note of thanks to Glen Johnston of Endako Mines for his hospitality and generosity with his ideas, and Ed Kimura and Sharon Gardner of Placer Dome Inc. for their contribution to Canadian geoscience community through the donation of their geological maps of the Fort Fraser and Nechako River map areas. In addition we thank the many companies working in the Babine Porphyry Belt for their cooperation and generosity in permitting access to their properties and sharing their geological ideas for the area. Lori and Ken Lindenberger of Pipers Glen RV park provided generous support to the GSC crew throughout June to August.

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