CANADA

DEPARTMENT OF ENERGY, MINES AND RESOURCES

Geological Survey of Canada

NATIONAL GEOCHEMICAL RECONNAISSANCE

1:2,000,000 Coloured Compilation Map Series

OPEN FILE 734

Prince Rupert Area, British Columbia

(103I,P and parts of 103J,O)

Resource Geochemistry Subdivision
Resource Geophysics and Geochemistry Division
Geological Survey of Canada
Ottawa, Ontario, Canada

Source data acquired by
the British Columbia Ministry of Energy, Mines and Petroleum Resources.

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PREPARED JANUARY 1981

Introduction

The National Geochemical Reconnaissance 1:2,000,000 Coloured Compilation Map Series is a product of the continuing interpretation of the National Geochemical Reconnaissance (NGR) data. Variables have been computer contoured and plotted utilizing an Applicon colour plotter. Xerox colour copies of these maps are available in a series of 20 Open Files.

In the course of NGR surveys (1975-1979), sediment and water samples were collected from more than 23,000 streams and 41,000 lakes in Canada. The surveys were carried out under the auspices of the Uranium Reconnaissance Program (URP) and Provincial Geochemical Reconnaissance Surveys. Sediments from all areas were analyzed for U, Zn, Cu, Pb, Ni, Co, Mn, Fe, Mo and those from some areas for Hg, Ag, As, V, F, W, Sn and Ba. When collected, waters were analyzed for one or more of U, F and pH.

National Geochemical Reconnaissance - Uranium Reconnaissance Program

Part of the data for the NGR 1:2,000,000 Coloured Compilation Map Series was obtained from NGR - URP surveys (1975-1978) in the provinces. These surveys were jointly planned and funded under the terms of the following agreements:

British Columbia: Canada - British Columbia Uranium Reconnaissance Agreement.

Saskatchewan: Canada - Saskatchewan Mineral Exploration and Development Program, Project 6-1, 1974, Reconnaissance Geoscience Surveys (lake sediment survey).

Saskatchewan:	Canada - Saskatchewan Agreement on a Uranium Reconnaissance Program.
Manitoba:	Canada - Manitoba Subsidiary Agreement on Mineral Exploration and Development; Schedule A, 3(b)(ii).
Ontario:	Canada - Ontario Agreement on a Uranium Reconnaissance Program.
Newfoundland:	Canada - Newfoundland Agreement on a Uranium Reconnaissance Program.

Other data were obtained from NGR-URP surveys (1975-1978) in the Yukon and Northwest Territories. These surveys were totally funded and directed by the Resource Geochemistry Subdivision, Geological Survey of Canada.

Provincial Geochemical Reconnaissance Surveys

Additional data used in the preparation of the NGR 1:2,000,000 Coloured Compilation Map Series have been provided through geochemical reconnaissance surveys in British Columbia (1978 and 1979) and in Ontario (1979). These surveys were totally funded by the provinces. The geochemical data from these surveys have been incorporated into the NGR archives.

Preparation of the NGR 1:2,000,000 Coloured Compilation Map Series

The maps and annotative material have been prepared directly from digital data by a computer mapping package (APPMAP) being developed in the Resource Geochemistry Subdivision, Geological Survey of Canada. This package makes use of an Applicon colour plotter and Applicon library software resident on a CDC Cyber 74 computer at the Computer Science Centre of the Department of Energy, Mines and Resources. The legend, border and annotative material were entered through APPMAP directives; the geochemical survey data were accessed from archival data files. APPMAP interpolates from the irregularly spaced reconnaissance data to a regular grid, which, for these data, is 3,200 m^2. The interpolation is in the form of a moving average where weighting is by an inverse distance function ($1/d^3$) using the nearest five data points. The effect of this moving average is to filter out the minor irregularities in the spatial data and emphasize the broader scale and regional features. Data percentiles were used for contour interval selection.

The NGR 1:2,000,000 Coloured Compilation Map Series has been prepared by members of the Resource Geochemistry Subdivision:

Project Co-ordinators

W.B. Coker and D.J. Ellwood

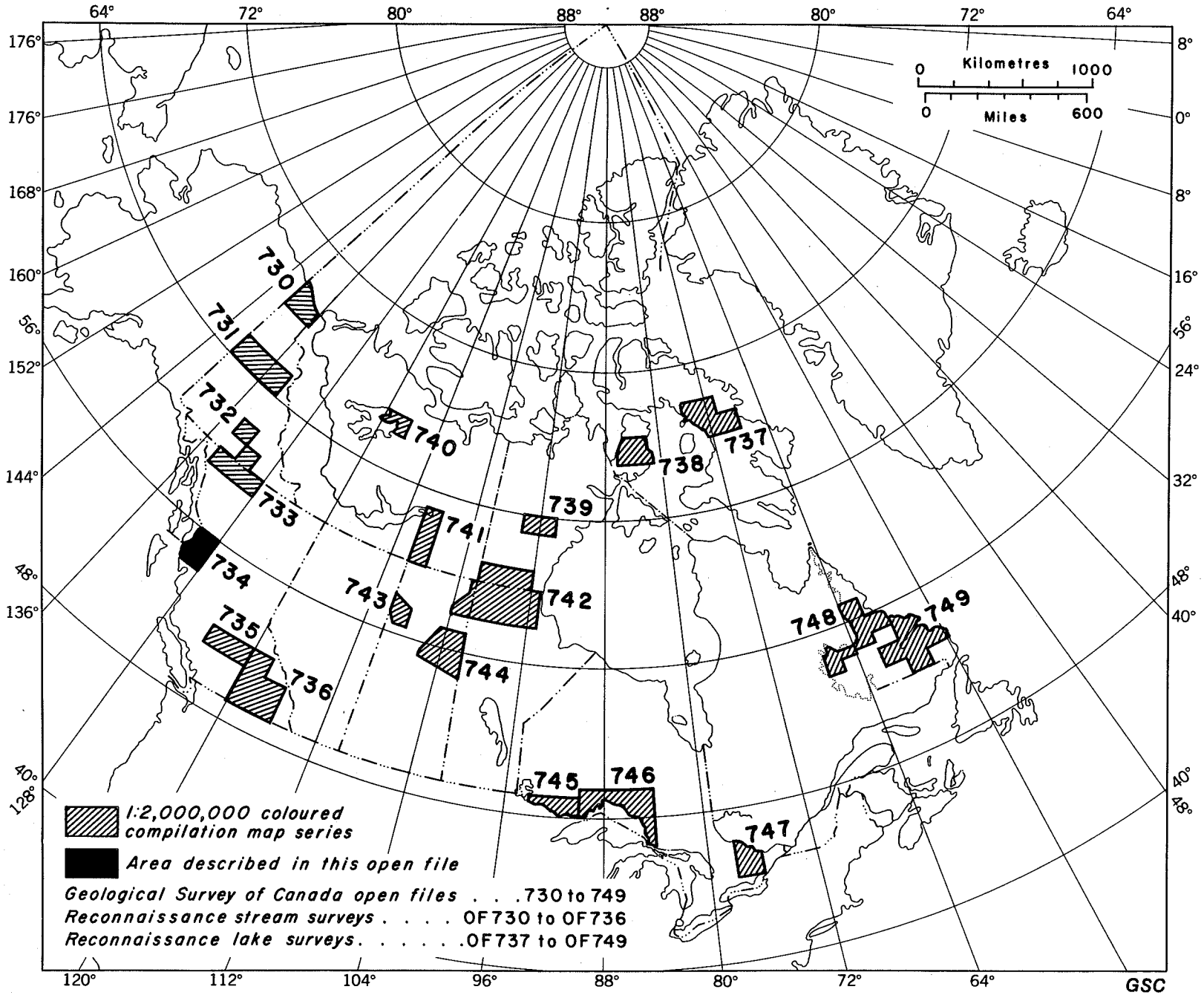
Computer Mapping Package (APPMAP)

D.J. Ellwood

Base Map Digitizing and Contour Interval Selection

Open File 730	Northern Yukon and Northwest Territories (117A and parts of 117B,C,D)	W.D. Goodfellow
Open File 731	Central Yukon Territory (106D, 116A,B and parts of 106C,E,F, and 116C,F,G and H)	W.D. Goodfellow
Open File 732	Quiet Lake, Southern Yukon Territory (105F)	W.D. Goodfellow
Open File 733	Southern Yukon Territory and Northern British Columbia (104N,O,P; and 105B)	S.B. Ballantyne
Open File 734	Prince Rupert Area, British Columbia (103I,P and parts of 103J,O)	S.B. Ballantyne
Open File 735	Taseko Lakes and Bonaparte Lake Area, British Columbia (92O and 92P)	S.B. Ballantyne
Open File 736	Southeastern British Columbia (82E,F,K,L and M)	S.B. Ballantyne
Open File 737	Baffin Island, Northwest Territories (27B and part of C; 37A,D)	Y.T. Maurice
Open File 738	Melville Peninsula, Northwest Territories (46N,O,P; 47A(S½) and 47B(S½))	E.M. Cameron
Open File 739	Baker Lake, Northwest Territories (55M, 65P)	Y.T. Maurice

Open File 740	Great Bear Lake, Northwest Territories (86K,L and part of 96I)	Y.T. Maurice
Open File 741	Nonacho Lake, Northwest Territories (75C,F, and K)	Y.T. Maurice
Open File 742	Northern Manitoba, Southeastern Northwest Territories and Northeastern Saskatchewan (54L,M; 64I,J,K,N,O,P and parts of 64L,M; 65A,B,C)	W.B. Coker
Open File 743	West-Central Saskatchewan (74F and 74C(N½))	W.B. Coker
Open File 744	East-Central Saskatchewan (63M, 64D and parts of 63K,L,N and 73I,O,P and 74A)	E.H.W. Hornbrook
Open File 745	Southwestern Ontario (52B,C)	W.B. Coker
Open File 746	Lake Superior, Ontario (52A, 52H(S½), 42D, 42E(S½), 42C, 42F(S½), 41N, 41K(N½))	W.B. Coker
Open File 747	Southeastern Ontario (31C(N½), 31F)	W.B. Coker
Open File 748	Northern Labrador (23G(NE¼), 23H(N½), 23I, 23J(E½), 14D, 13N, 13M, 13L(N½)).	D.R. Boyle
Open File 749	Eastern Labrador (13B,F,G,H,I,J and O; 3E)	D.R. Boyle



NATIONAL GEOCHEMICAL RECONNAISSANCE 1:2,000,000 COLOURED COMPILATION MAP SERIES

Open File 734: Prince Rupert Area, British Columbia (103I,P and parts of 103J,O)

The data compiled on these maps were acquired by the British Columbia Ministry of Energy, Mines and Petroleum Resources and previously published:

References

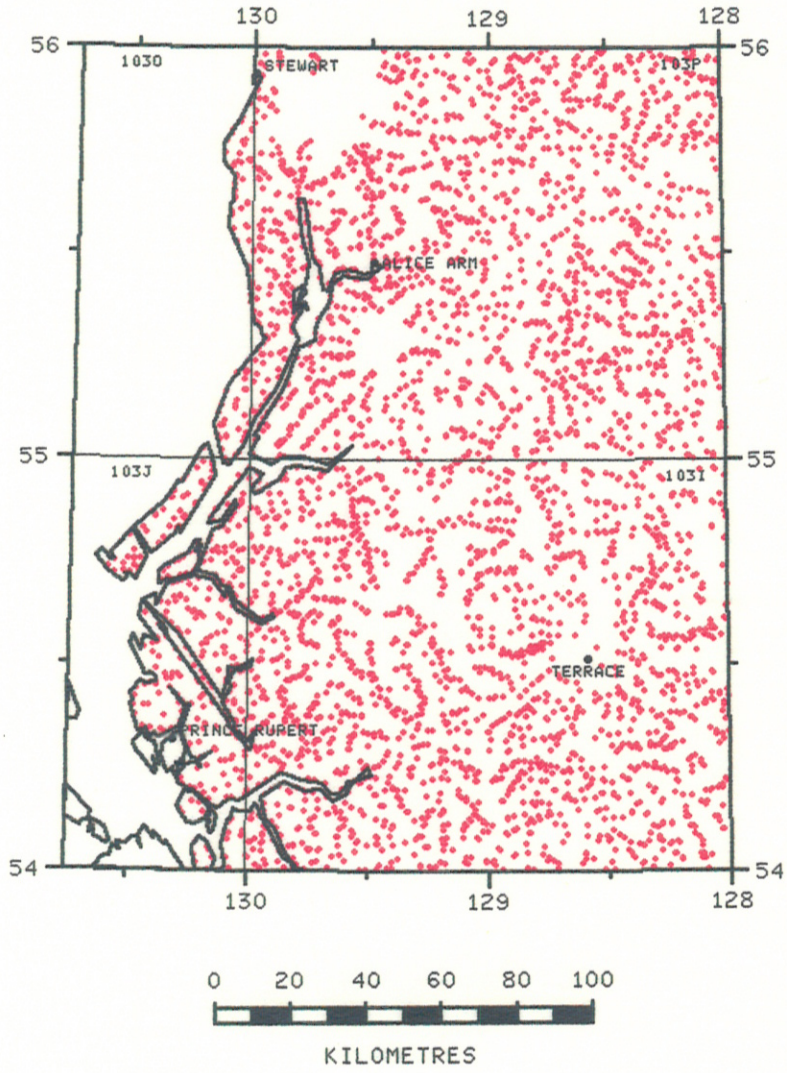
British Columbia Ministry of Energy, Mines and Petroleum Resources

1979a: Regional stream sediment and water accelerated geochemical survey, British Columbia (NTS 103I and part of 103J); British Columbia Ministry of Energy, Mines and Petroleum Resources, Release R.G.S.-1-1978.

1979b: Regional stream sediment and water accelerated geochemical survey British Columbia (NTS 103P and part of 1030); British Columbia Ministry of Energy, Mines and Petroleum Resources, Release R.G.S.-2-1978.

1:2,000,000 Coloured Compilations Maps

1. Sample Location
2. Uranium in Stream Sediments
3. Zinc in Stream Sediments
4. Copper in Stream Sediments
5. Lead in Stream Sediments
6. Nickel in Stream Sediments
7. Cobalt in Stream Sediments
8. Manganese in Stream Sediments
9. Iron in Stream Sediments
10. Molybdenum in Stream Sediments
11. Mercury in Stream Sediments
12. Silver in Stream Sediments
13. Arsenic in Stream Sediments
14. Tungsten in Stream Sediments
15. Uranium in Stream Waters
16. Fluorine in Stream Waters
17. pH in Stream Waters



NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 1030

SAMPLE

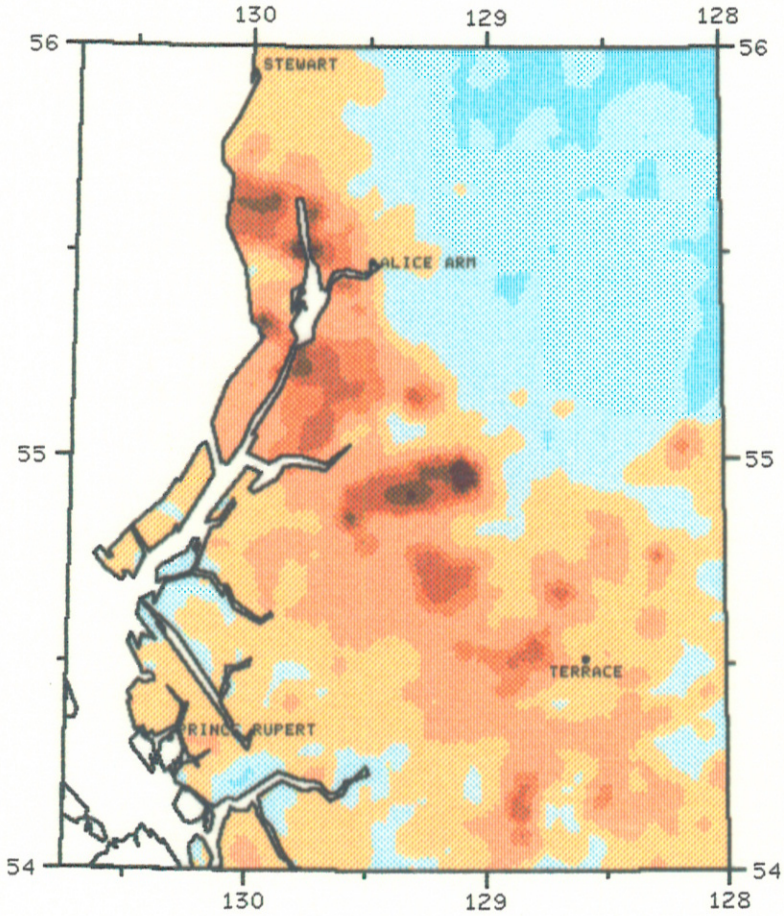
LOCATION MAP

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

URANIUM IN STREAM SEDIMENTS

PPM	%TILE
125.0	MAX
28.0	99
21.0	98
13.0	95
9.0	90
4.4	75
2.0	50
1.0	30
0.5	MIN

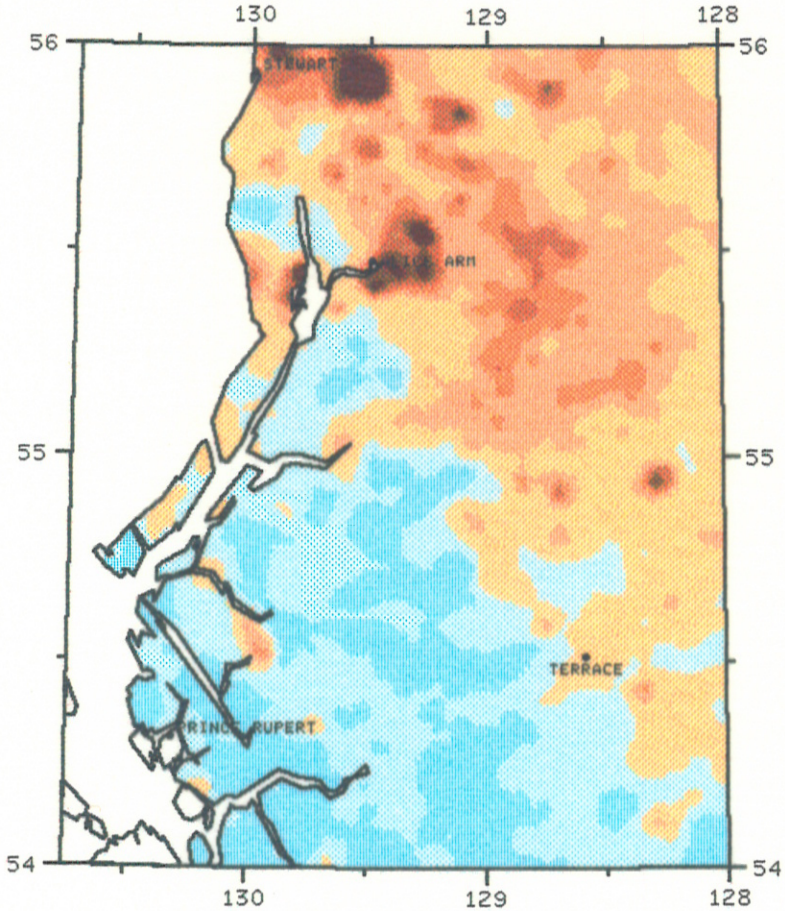
3891 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

ZINC
IN
STREAM SEDIMENTS

PPM	%TILE
1550	MAX
300	99
245	98
182	95
152	90
116	75
70	50
40	25
4	MIN

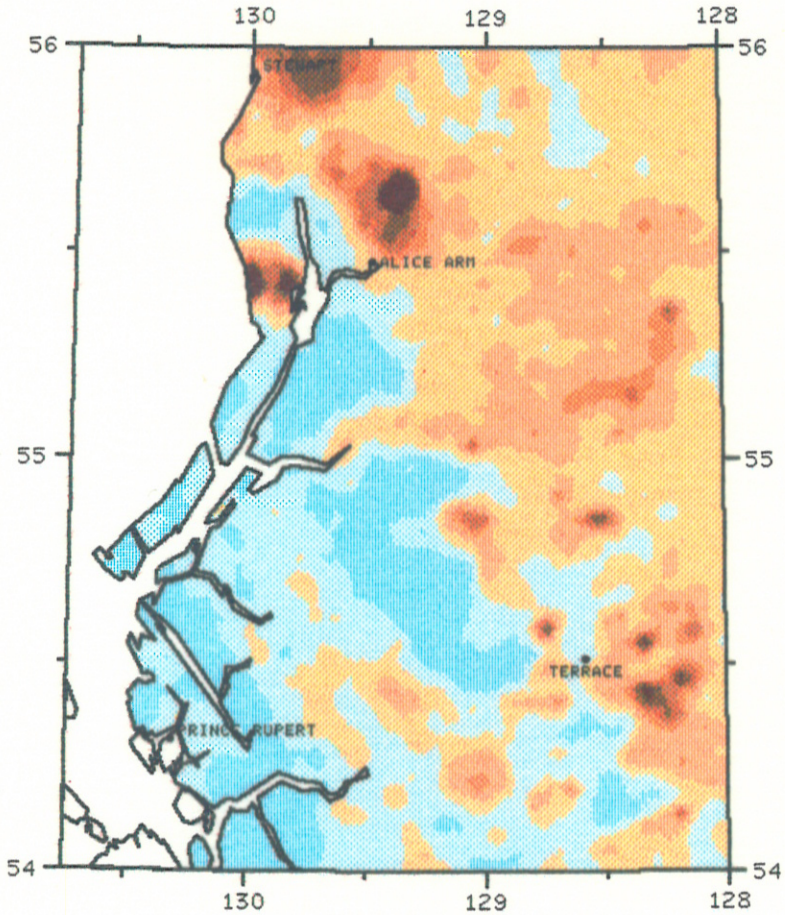
3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

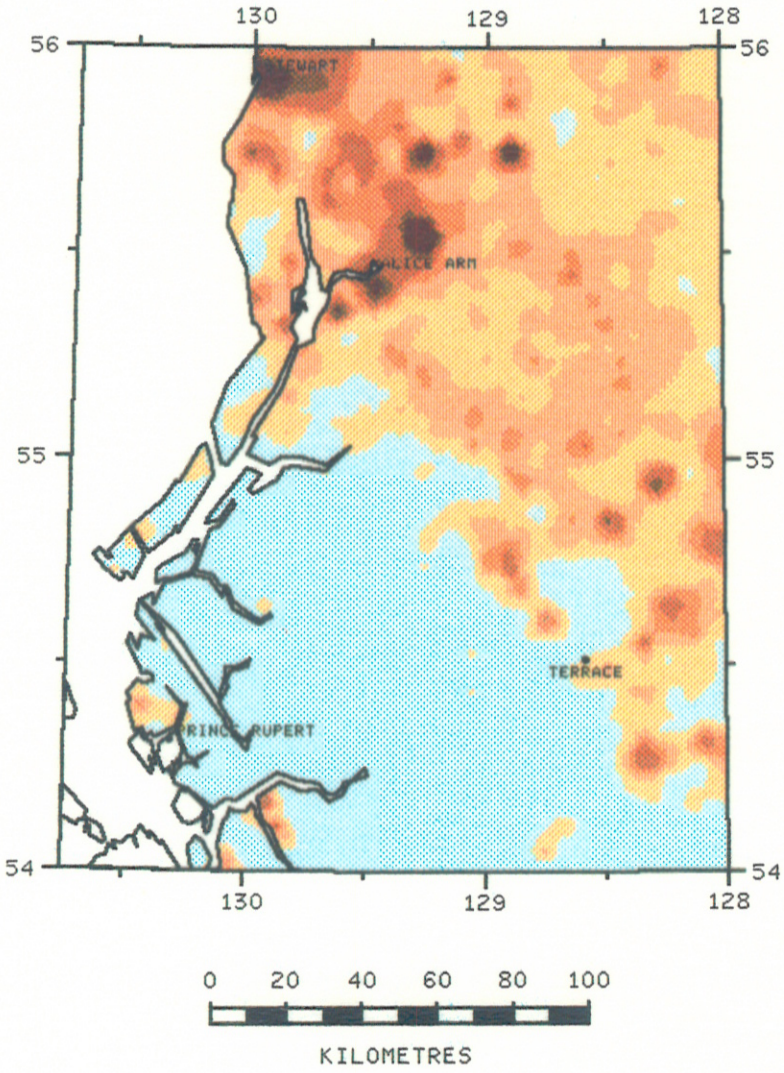
KILOMETRES

COPPER IN STREAM SEDIMENTS

PPM	%TILE
1950	MAX
128	99
104	98
80	95
66	90
46	75
30	50
14	25
1	MIN

3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA



0 20 40 60 80 100

KILOMETRES

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O

LEAD IN STREAM SEDIMENTS

PPM	%TILE
340	MAX
46	99
31	98
17	95
12	90
8	75
4	50
1	MIN

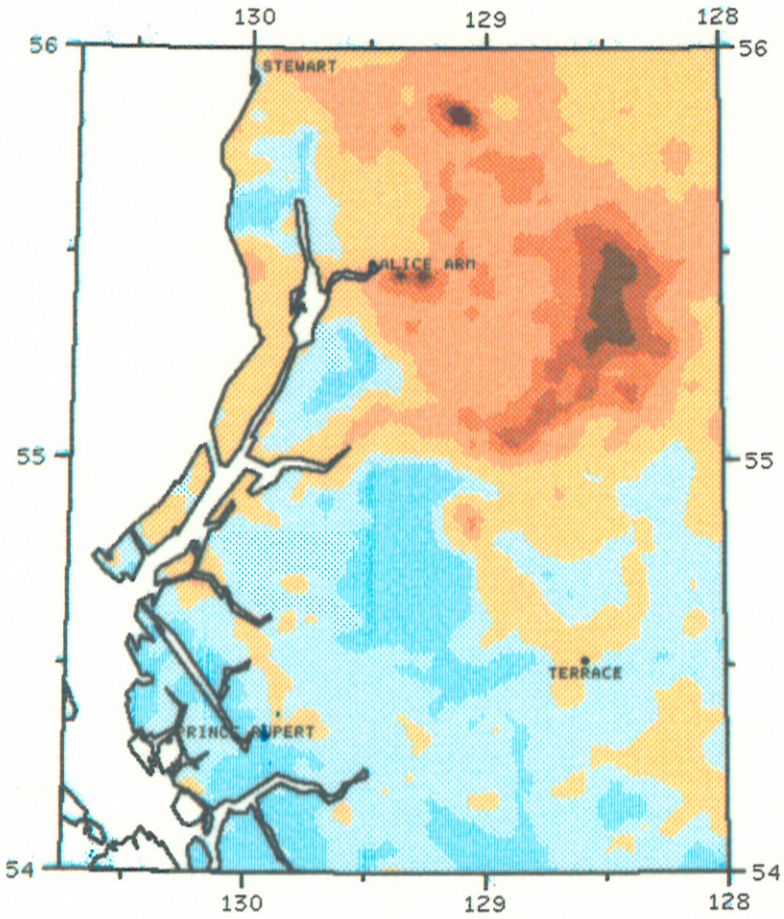
3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P. PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

NICKEL IN STREAM SEDIMENTS

PPM	%TILE
365	MAX
146	99
134	98
106	95
76	90
40	75
14	50
6	25
1	MIN

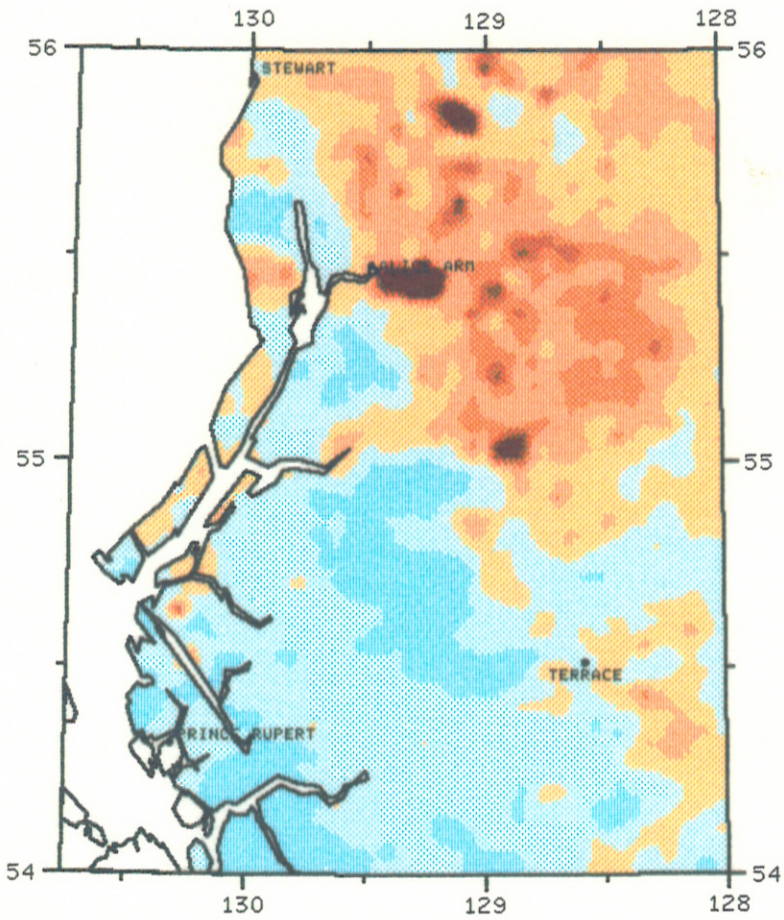
3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

COBALT IN STREAM SEDIMENTS

PPM	%TILE
355	MAX
38	99
32	98
26	95
22	90
17	75
12	50
6	25
1	MIN

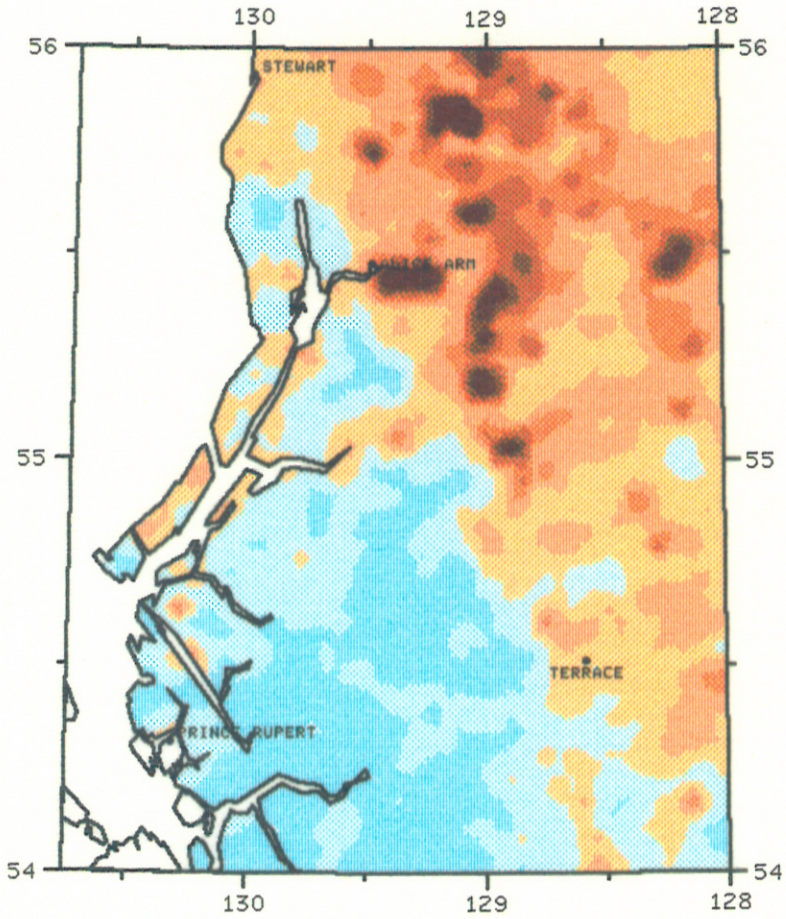
3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

MANGANESE IN STREAM SEDIMENTS

PPM	%TILE
62500	MAX
5700	99
3700	98
2200	95
1550	90
990	75
580	50
280	25
20	MIN

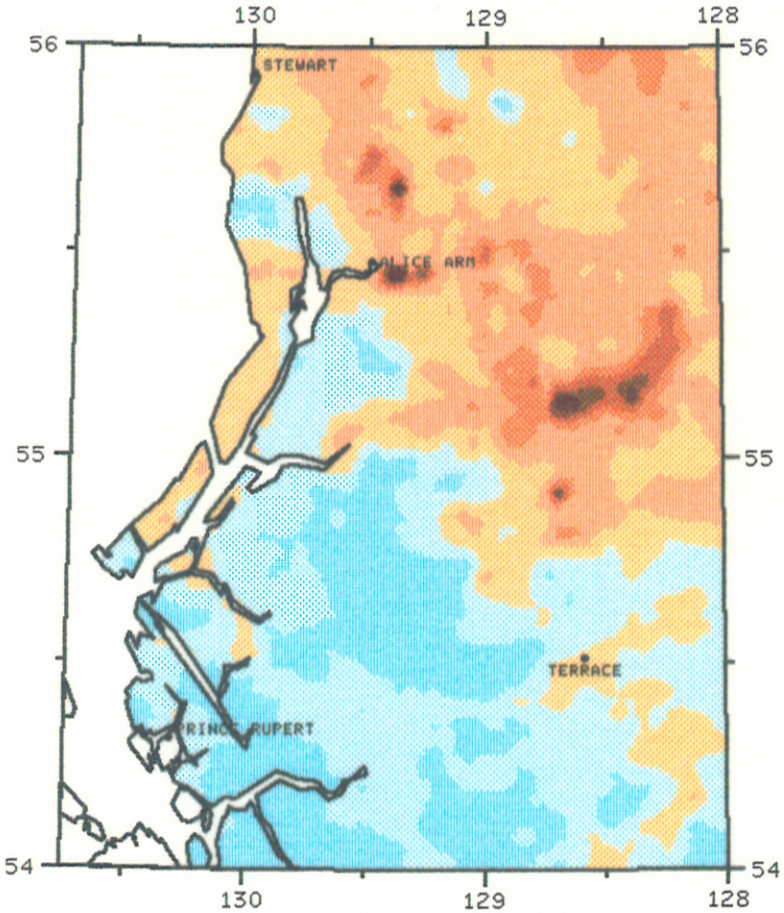
3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

IRON IN STREAM SEDIMENTS

PCT	%TILE
11.50	MAX
5.70	99
5.30	98
4.80	95
4.40	90
3.70	75
2.65	50
1.75	25
0.20	MIN

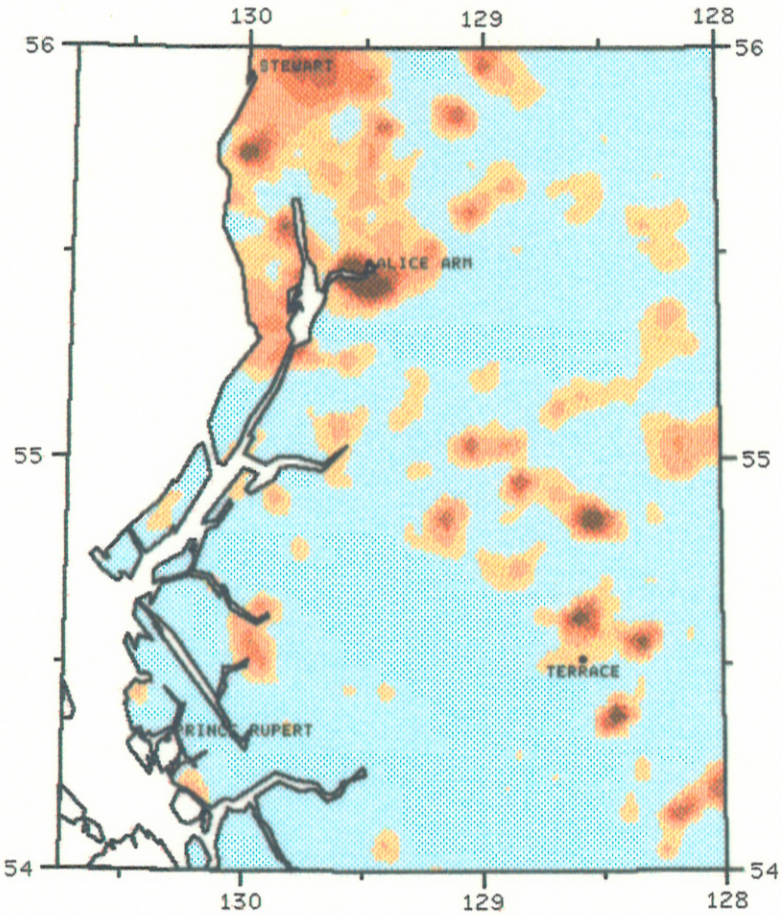
3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

MOLYBDENUM IN STREAM SEDIMENTS

PPM	%TILE
270	MAX
12	99
7	98
5	95
3	90
2	80
1	MIN

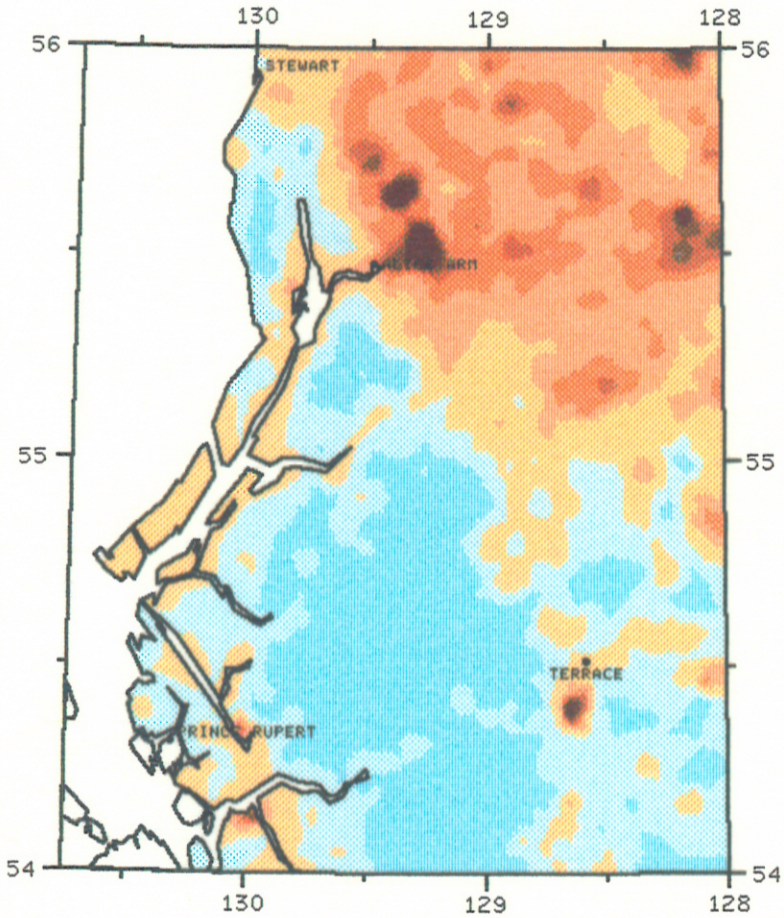
3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

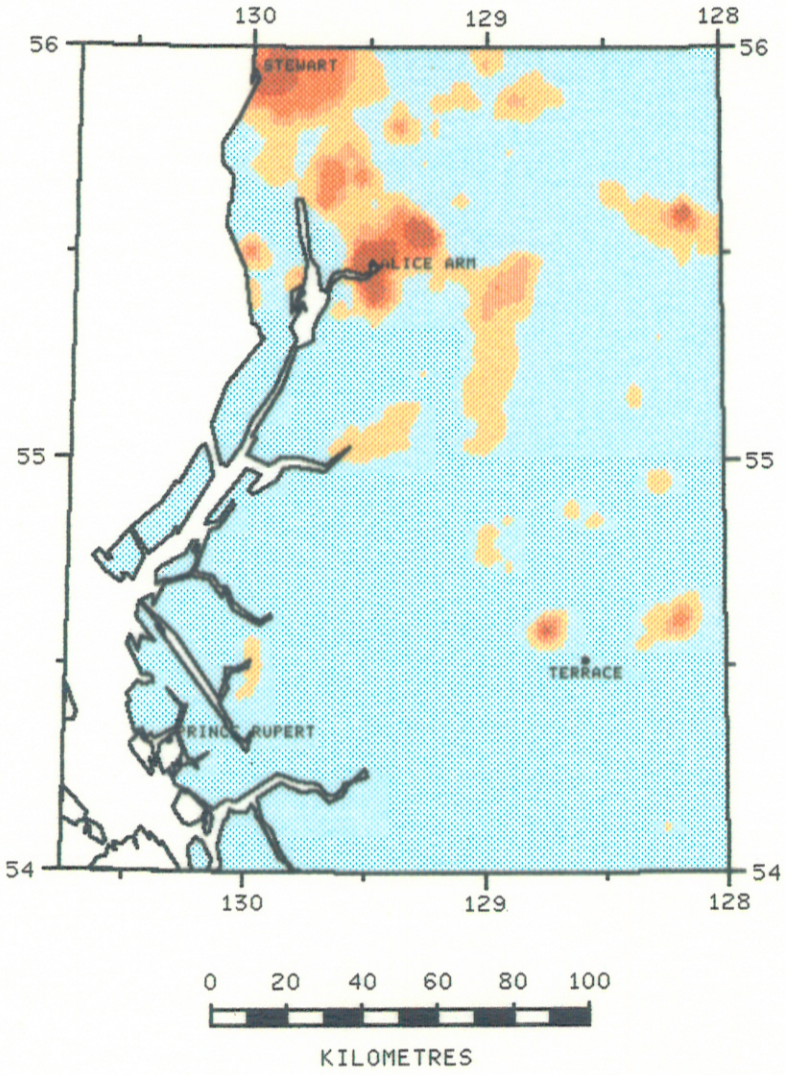
KILOMETRES

MERCURY IN STREAM SEDIMENTS

PPB	%TILE
1600	MAX
260	99
210	98
160	95
120	90
80	75
40	50
20	30
5	MIN

3900 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA



0 20 40 60 80 100

KILOMETRES

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

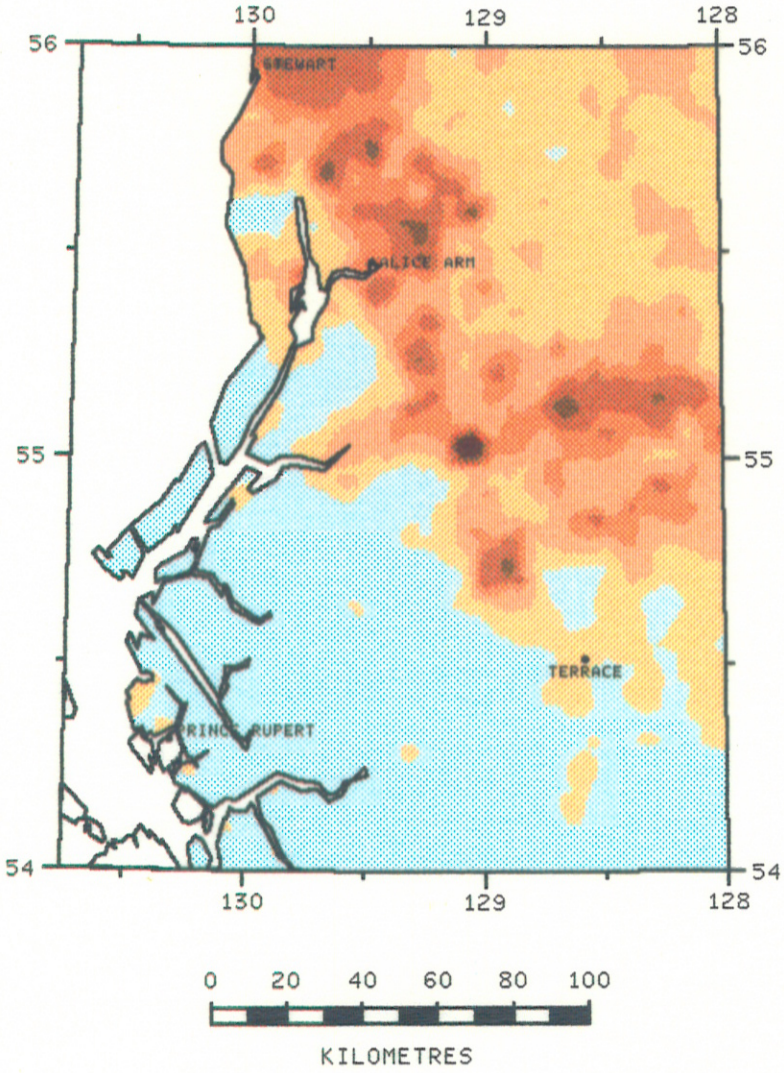
NTS 103I AND 103P, PART OF NTS 103J AND 103O

SILVER IN STREAM SEDIMENTS

PPM	%TILE
39.0	MAX
1.0	99
0.6	98
0.4	95
0.2	90
0.1	MIN

3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA



0 20 40 60 80 100

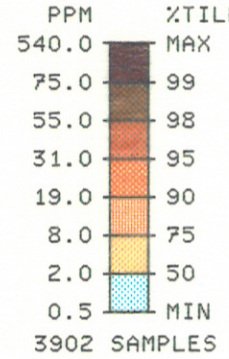
KILOMETRES

NATIONAL GEOCHEMICAL RECONNAISSANCE

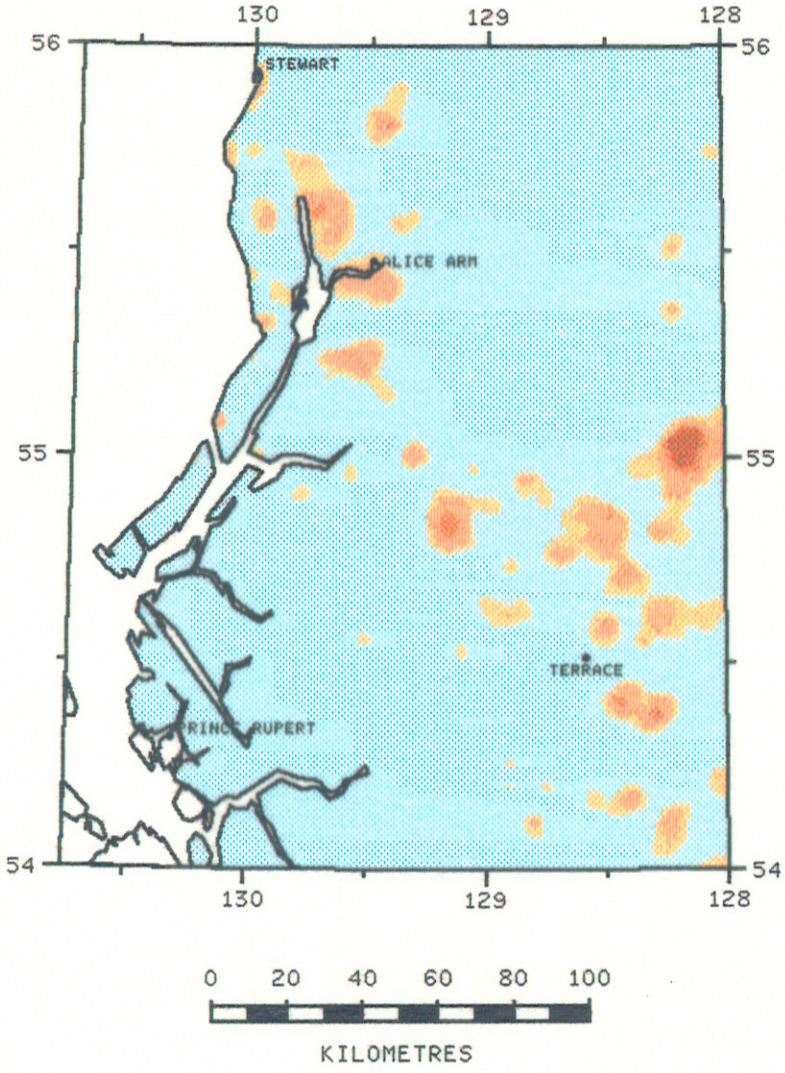
PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O

ARSENIC IN STREAM SEDIMENTS



RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA



NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O

TUNGSTEN IN STREAM SEDIMENTS

PPM	%TILE
120	MAX
20	99
14	98
6	95
4	90
2	MIN

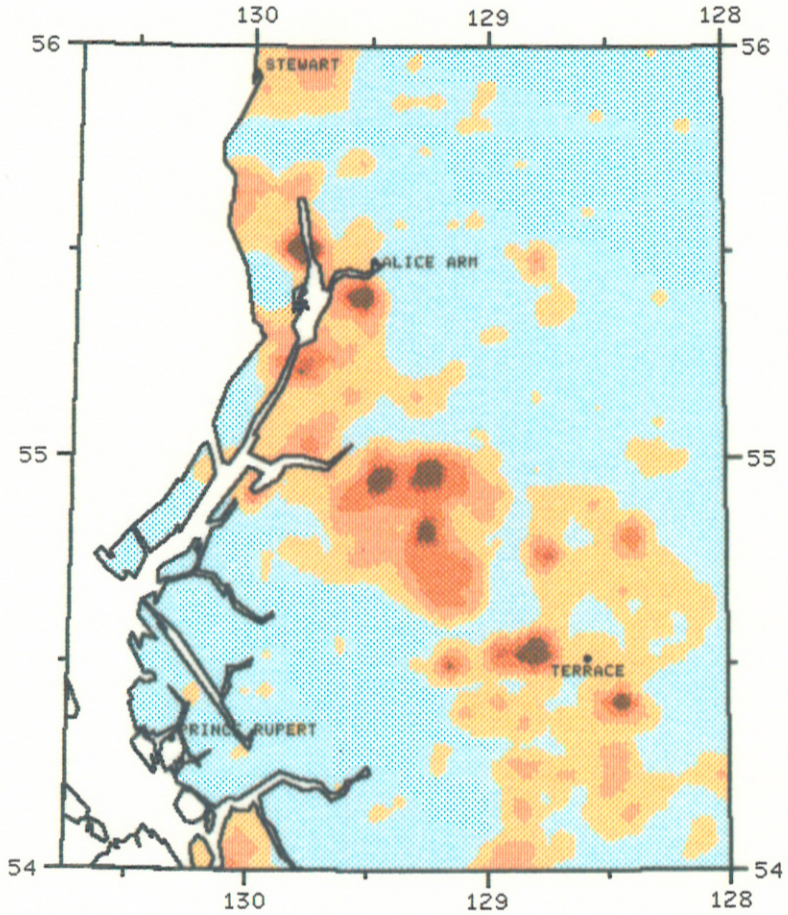
3902 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

URANIUM IN STREAM WATERS

PPB	%TILE
7.50	MAX
0.70	99
0.56	98
0.30	95
0.14	90
0.05	75
0.02	MIN

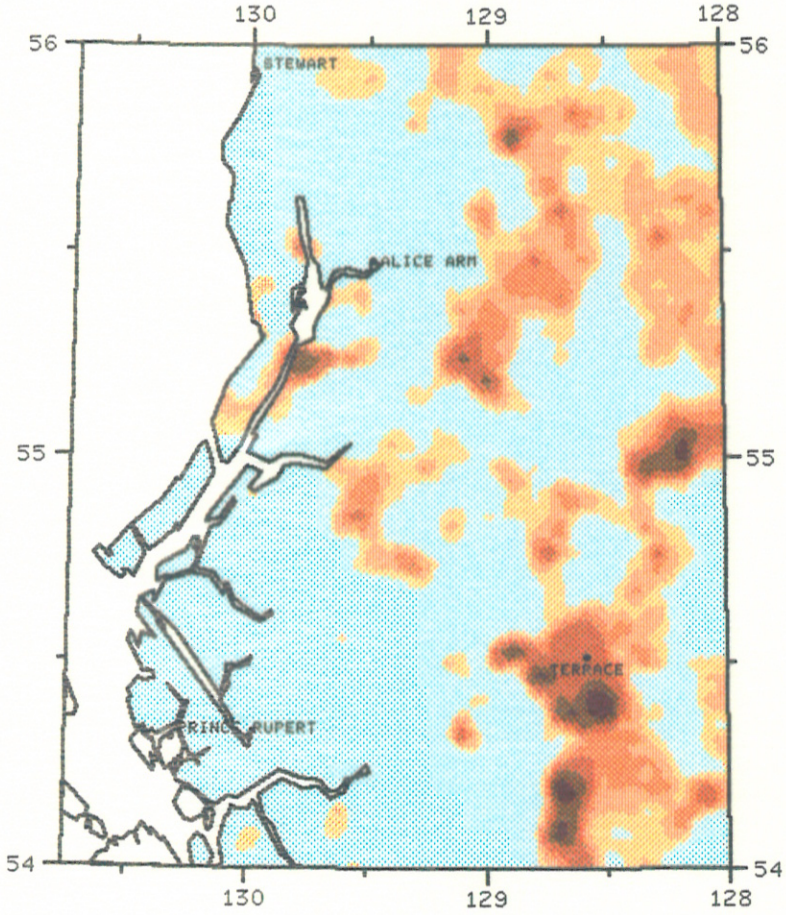
3871 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

FLUORINE IN STREAM WATERS

PPB	%TILE
500	MAX
160	99
100	98
58	95
42	90
30	80
22	70
10	MIN

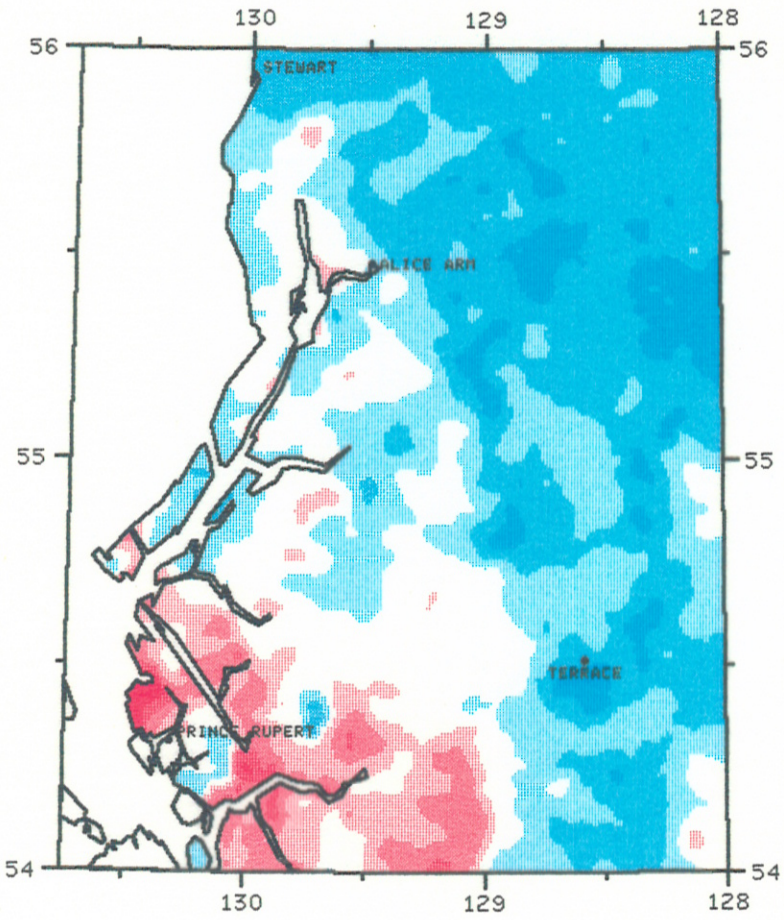
3872 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA

NATIONAL GEOCHEMICAL RECONNAISSANCE

PRINCE RUPERT AREA, BRITISH COLUMBIA

NTS 103I AND 103P, PART OF NTS 103J AND 103O



0 20 40 60 80 100

KILOMETRES

PH
IN
STREAM WATERS

PH	%TILE
8.8	MAX
8.4	98
8.0	90
7.6	60
7.2	35
6.8	17
6.4	8
6.0	3
5.6	1
4.1	MIN

3872 SAMPLES

RESOURCE GEOCHEMISTRY SUBDIVISION
GEOLOGICAL SURVEY OF CANADA