Yukon Regional Geochemical Database 2003- Stream Sediment Analyses

compiled by Danièle Héon

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External Files (also located on CD):

This CD includes previously unreleased stream sediment geochemical data for northern Yukon, as well as the updated digital compilation of all government regional stream geochemical data for the Yukon. It supercedes "Yukon Regional Geochemical Database 2002", released in November 2002.

Data and maps for individual Geological Survey of Canada (GSC) Open File releases are available in paper format, and some in digital format, from the Yukon Geology Program or the GSC. The new database released on this CD is only available in digital format; it is accompanied by the digital documentation files provided by the GSC.

This database is also available to order or to download from the Yukon Geology Program website, at www.geology.gov.yk.ca. It can also be viewed in the Map Gallery of the same website, where geochemical anomaly maps are displayed for a suite of elements.

DOCUMENTATION

This document presents the available digital data for regional stream sediment surveys that have been gathered in the Yukon under the Geological Survey of Canada's National Geochemical Reconnaissance Program. A few early surveys were undertaken solely by the GSC as part of their Uranium Reconnaissance Program, but most were funded primarily by Indian and Northern Affairs Canada and the Yukon Government under cooperative agreements with the GSC. The data have been compiled from digital files provided by the GSC. A list of individual references for each Open File is located in Table 1.

Most of the GSC surveys are published as paper copies in Open File reports; a few individual surveys have been re-released in digital format. Some digital re-releases include new data and supercede earlier Open File reports, and some simply include new data to be appended to the pre-existing data.

New data was collected between 1995 and 2001. Four different stream geochemical surveys were conducted for the purpose of land use planning, have remained confidential up to this date and are released on this CD and incorporated into this digital compilation. One pre-existing survey, GSC O.F. 420 was re-analyzed for a broader suite of elements. The results are labeled EP76 in the database. Three new surveys in northern Yukon were carried out in the Eagle Plains/ Southern Richardson Mountains in 1995 (EP95), in the western Eagle Plains and northern Ogilvie Mountains in 2000 (EP00) and in northeastern Yukon in 2001 (NE01).

The digital compilation was based on an internal digital file provided by the GSC to YGP in 1998 that included all the public data released up to that date. The data compilation consisted of checking the data in this 1998 file, appending and replacing with new data publicly released by the GSC since then, and merging the four confidential surveys for Northern Yukon. Results for GSC Open File 420 were replaced by the more recent analyses of newly released file EP76.

Stephen Maltby, from Maltby Systems Consulting (stephen@maltby.yk.ca), manipulated the data in Microsoft Access 2000, and exported the reconfigured data in Microsoft Excel format.

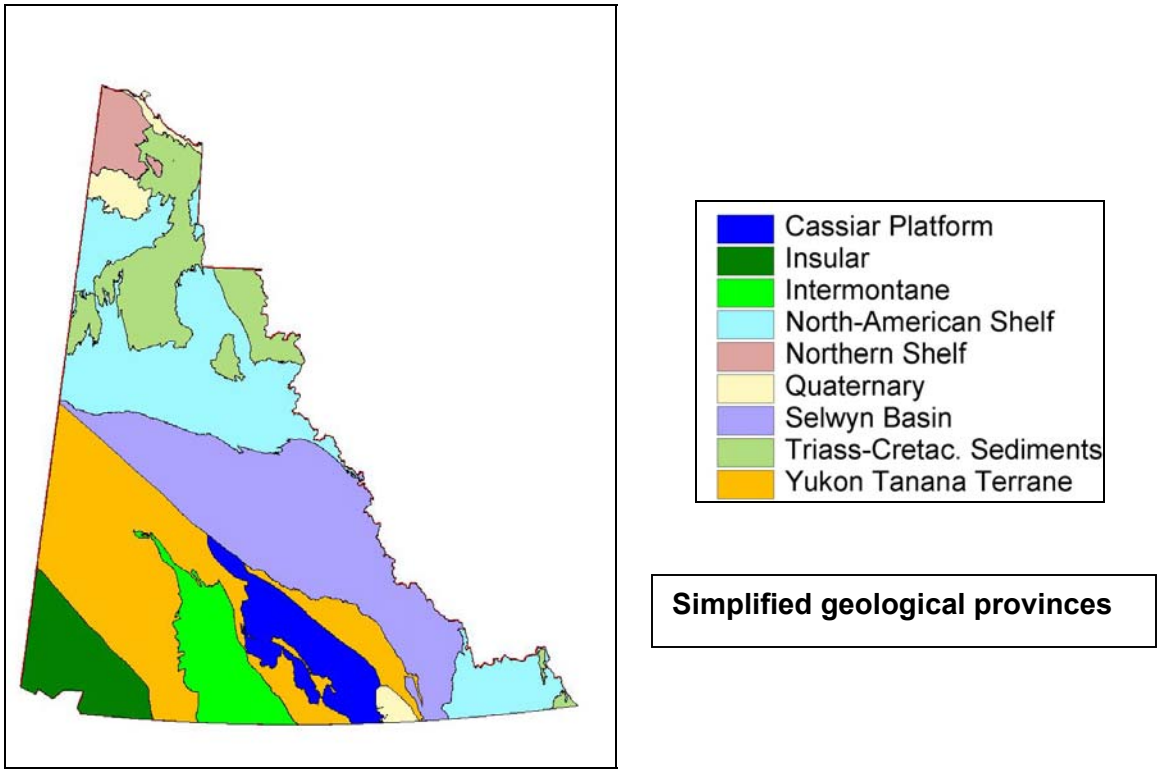
The original files were mostly in Microsoft Excel (.xls) or in .dbf format. Every effort has been made to correct and minimize errors, but the original publications should be referred to for accuracy (see LIMITATION OF LIABLILITY below).

Consistency in formatting and in measurement units was verified in all surveys. Analytical techniques and precision vary with time, and with different surveys. For example, recent Ag analyses are measured in ppb while older (most of) the data for Ag are displayed in ppm's. One survey had Ba listed in % while it was listed in ppms for the rest of the database.

Several discrepancies were noted in the 1998 file and corrected. All fields was formatted consistently. Values less than the detection limits are displayed as half of the value of the detection limit. For example, if the detection limit of an element is 2 ppm, values less than the detection limit will be displayed as 1 ppm. In some open files, the GSC had already made this conversion. Table 2 outlines the analytical technique, detection limit and measurement units for all elements in each open file.

Basic statistics were done on the whole data set. A "province" field was created in the geological database, creating a simplified map of geological provinces of the Yukon. The geochemical database was then treated statistically for each province separately, in order to capture the geochemical signature of a discrete group of rocks. All statistical results are in Table 3.The geology of the Yukon was subdivided into the following simplified geological "provinces": Insular, Intermontane, Yukon-Tanana, Cassiar

Platform, Selwyn Basin, North-American Shelf, Northern Shelf, Triassic-Jurassic-Cretaceous sediments, Quaternary.



Simplified geological provinces

Anomaly maps for a suite of elements were generated for the whole Yukon, as well as for each of these provinces except the Quaternary one, which is not covered by stream sediment surveys. Values are represented as range in percentile values. These can be viewed in the Map Gallery of the Yukon Geology Program Website: www.geology.gov.yk.ca.

Some discrepancies remain in the digital database:

- a few data points are misplotted and appear on the wrong NTS map sheet
- the paper versions show 2 separate columns for Au_INA and for the repeat analyses for that technique (same sample analysed twice) while the digital file contains only one column for Au_INA, where the repeat value replaces the original Au_INA value. In some cases, the repeat value is lower than the original value. This could be corrected in future updates.
- The original paper versions include, at random sample sites (about one in 20), duplicate samples, i.e., more than one sample at the same site. The digital file does not include these duplicate results.

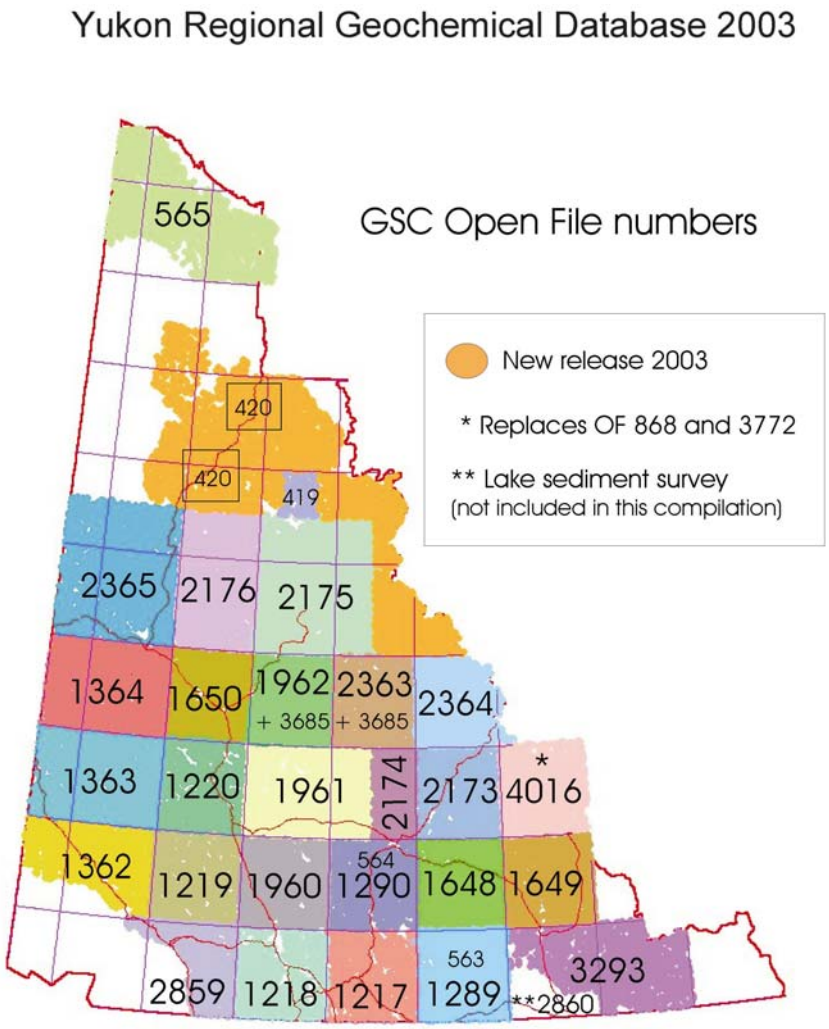
- Stream depth and width in the original digital file were converted to metres from the units indicated in the published paper versions (or digital if available) of the open files. Original units include feet, metres and decimetres. It seems that there are still problems with those surveys where these fields were originally measured in feet and that data should be considered suspect. Even when converted to metres, numbers remain very large. In some cases, the number in the digital file

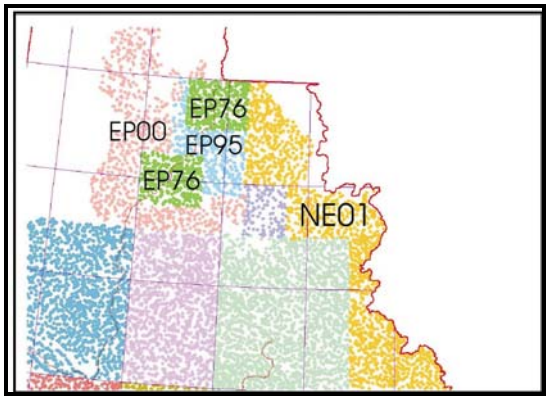
was three times larger than the number in the paper version, yet the legend in the paper version indicates that field to be in feet. Table 2 indicates the original measurement unit of these fields, for each individual Open File release.

LIMITATION OF LIABILITY:

This database is compiled for the purpose aiding those conducting geological research; it is not intended to replace the original published and unpublished sources. As such, neither the compiler nor the publishers verify the accuracy of the data contained within this digital product. Users should verify the accuracy of data reported herein from the original source. In some cases, data and/or sample information has been corrected from erroneous reportings, or modified for consistency, from information provided to the compiler by the authors. The original source is to be cited when data is used. The digital product (this compilation) should be cited only when referring to assemblages of data that are the result of querying the data set.

Data sorted by Open File numbers.

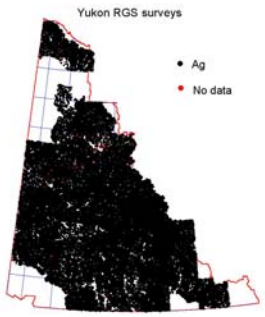
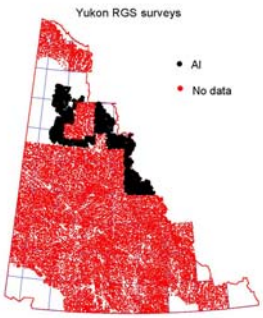
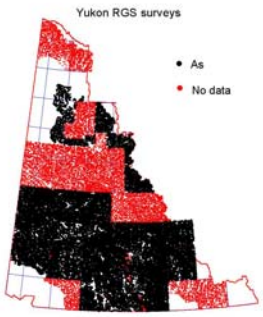
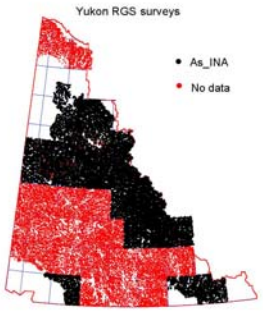
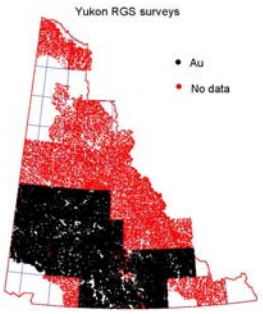
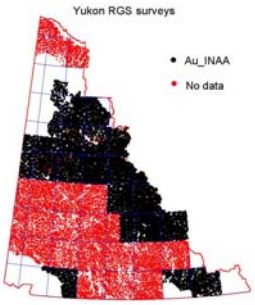
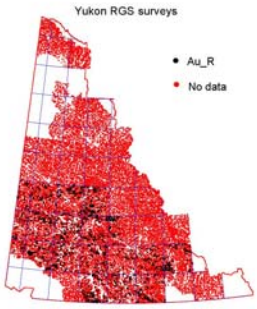
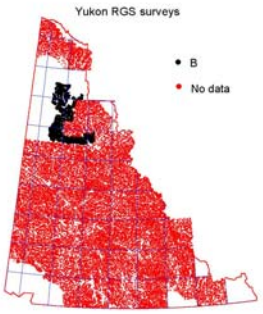
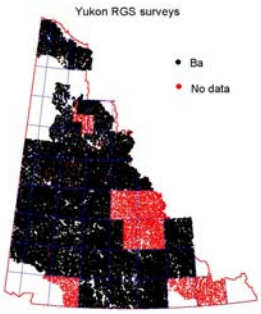
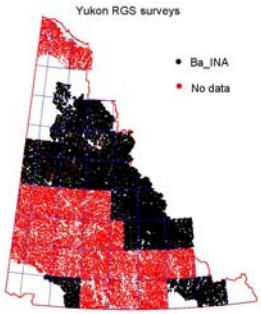
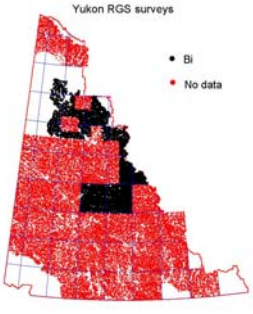
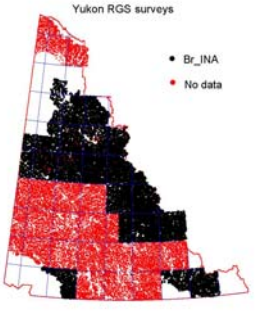




New data release 2003

Map coverage by elements.

Black dot indicates sampled analyzed for that element, red dot indicates no data.

Ag 	**Al** 	**As** 
As_INA 	**Au** 	**Au_INA** 
Au_R 	**B** 	**Ba** 
Ba_INA 	**Bi** 	**Br_INA** 

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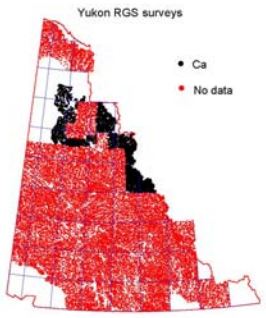	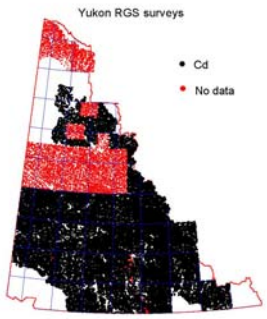	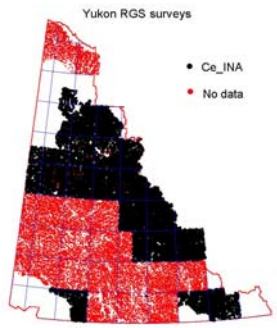
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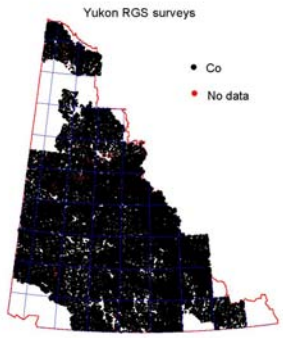	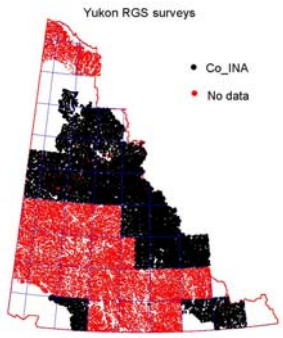	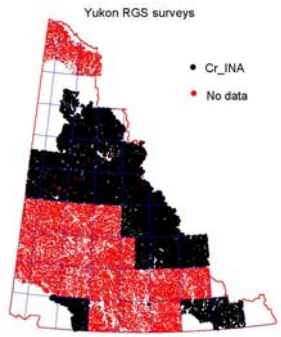
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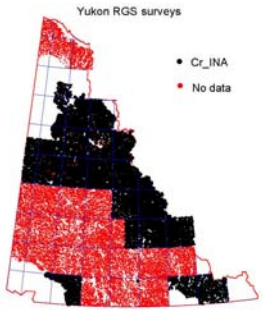	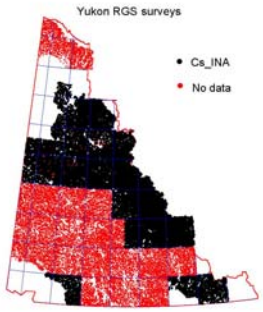	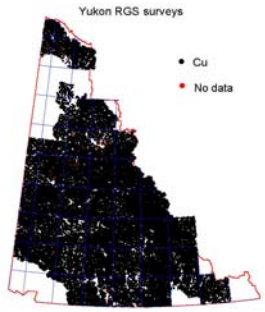
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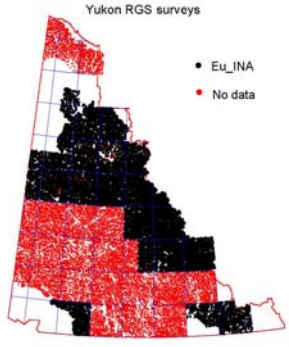	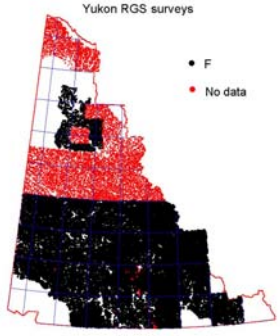	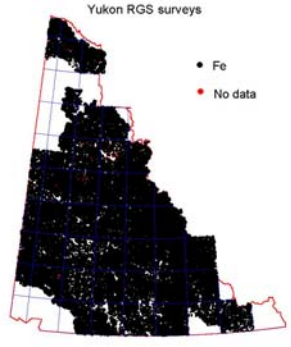

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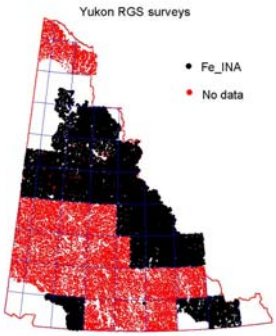	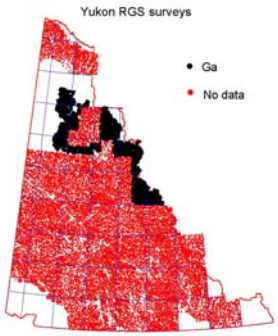	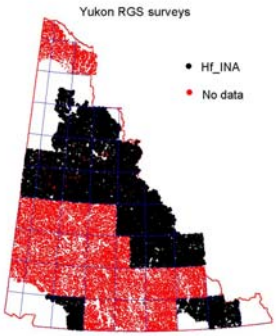
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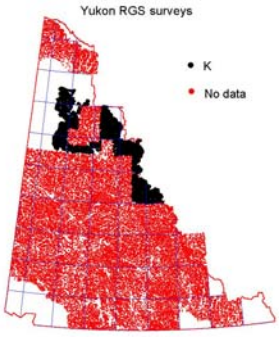	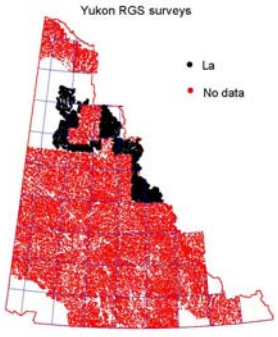	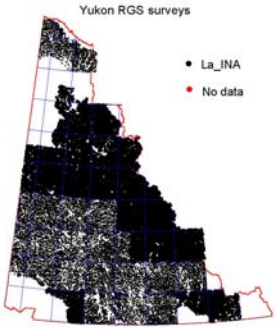
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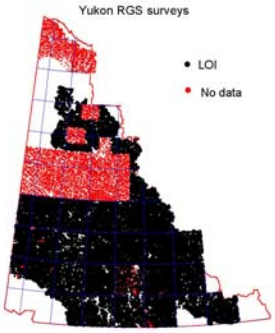	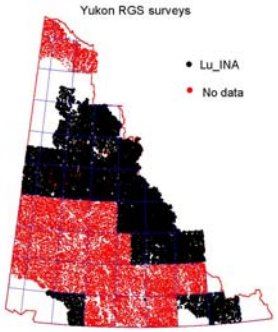	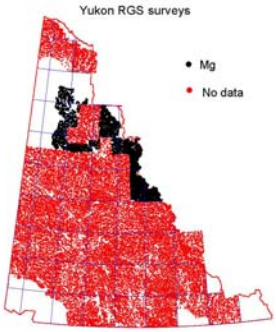
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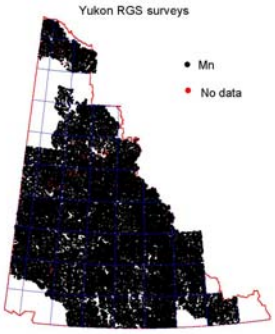	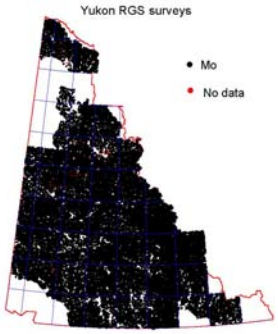	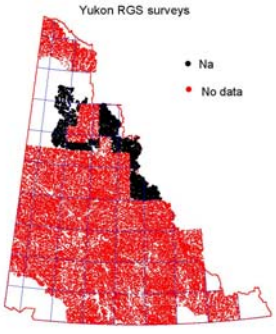

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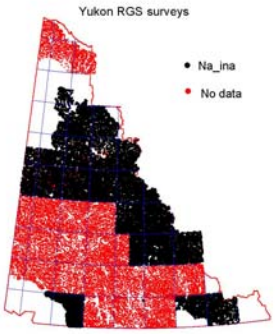	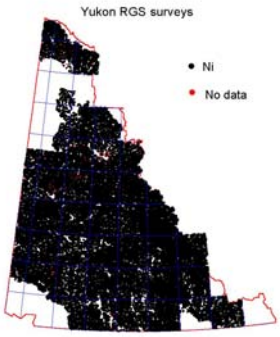	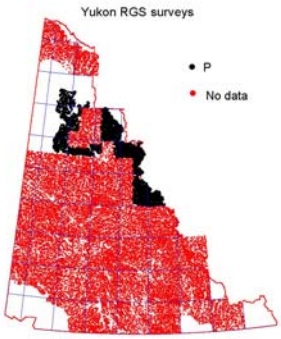
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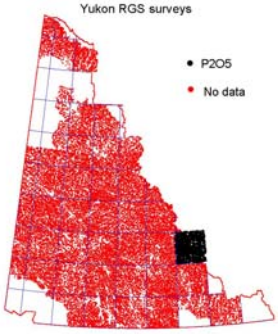	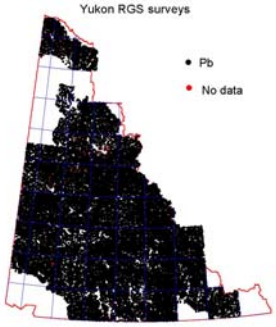	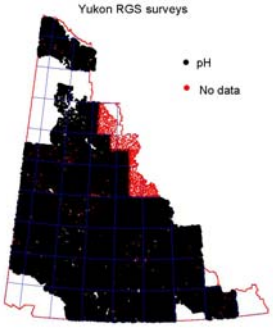
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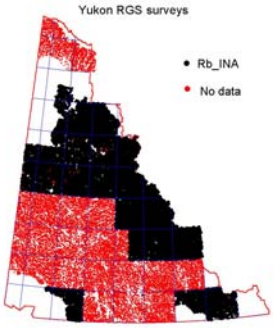	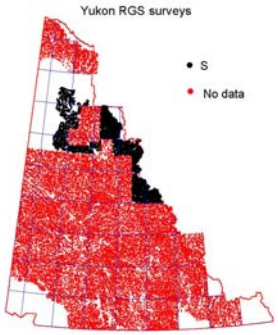	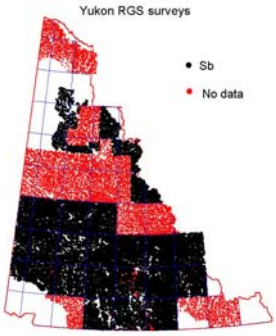
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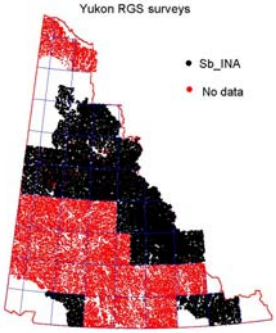
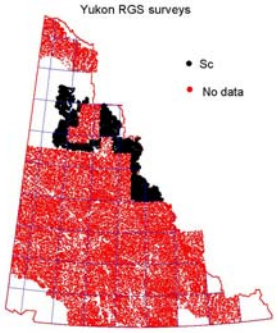
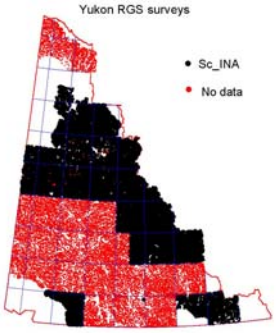
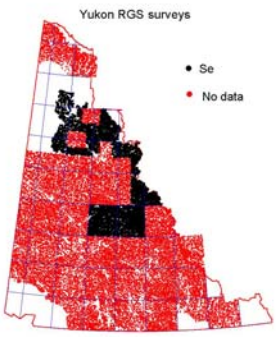
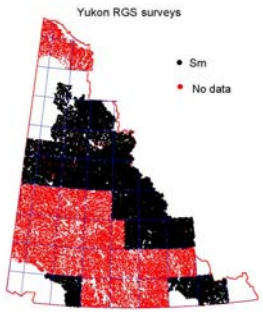
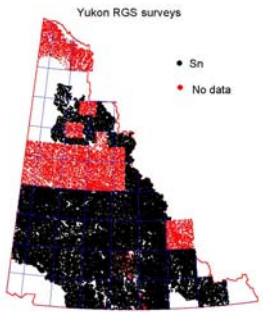
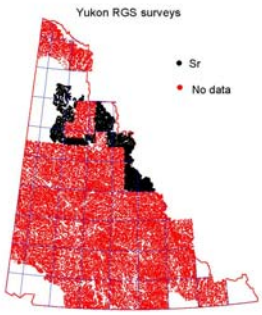
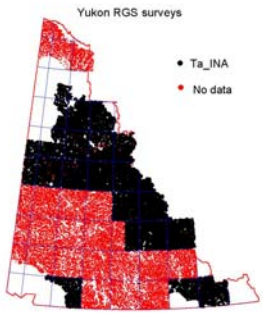
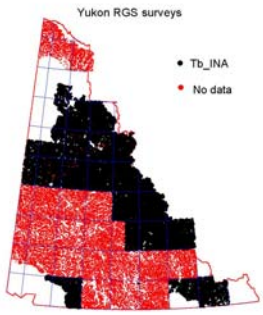
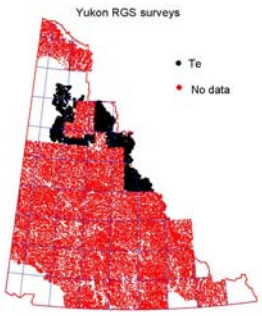
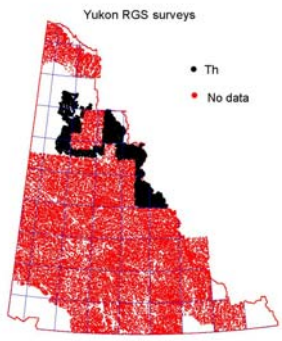
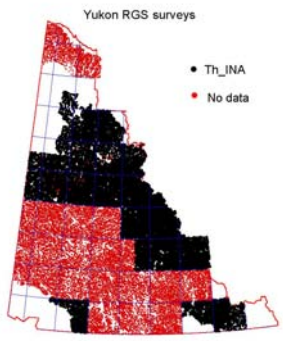
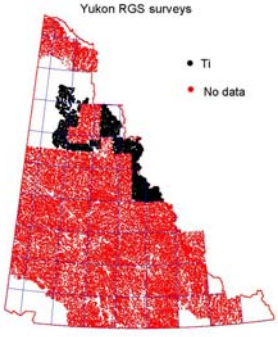
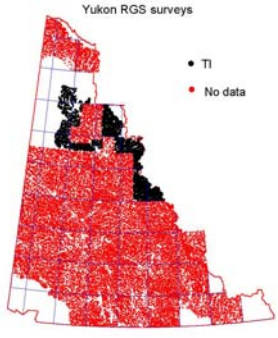
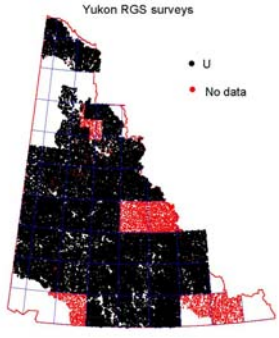
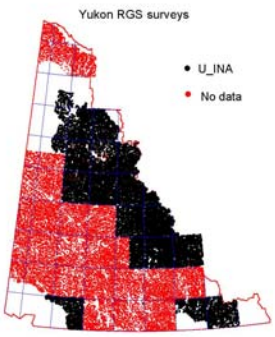
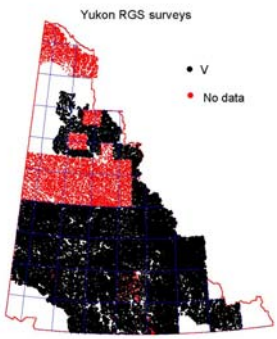
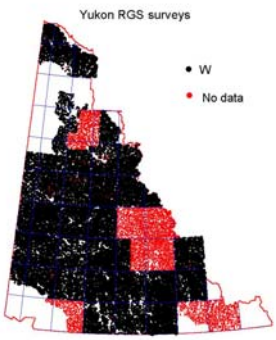
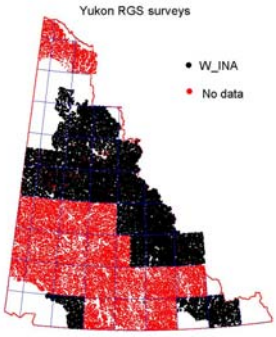
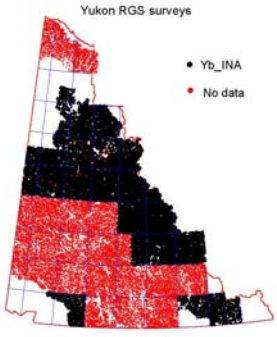
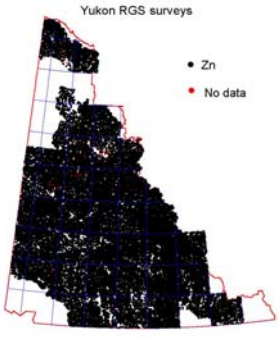
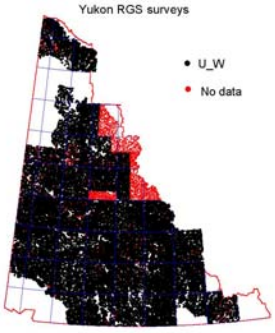
		

Se 	**Sm** 	**Sn** 
Sr 	**Ta_INA** 	**Tb_INA** 
Te 	**Th** 	**Th_INA** 
Ti 	**Tl** 	**U** 

U_INA 	**V** 	**W** 
W_INA 	**Yb** 	**Zn** 
U(w) 	**SO4(w)**