

ColombiaMap:

A mineral occurrence data set for Colombia

Instructions for MapInfo and ArcGIS users

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Introduction

ColombiaMap is a GIS data set for mineral occurrences and land status of Colombia. The *Geography* module provides a shaded relief map along with vector files for infrastructure. *Geology* provides a 1:1,000,000-scale geologic map in vector format. *TS Units* provides a tectono-stratigraphic interpretation based on published research by government, industry and academia. The *Prospect* module locates over 2100 metallic mineral mines and prospects, classifies them according to 18 deposit types, and assembles current figures for past production, known resources and reserves. The Prospect module also includes locations and ownership for 13,965 non-metallic mineral occurrences. *Land Status* locates 20,000 metallic and non-metallic mineral concessions and concession applications, 574 proposed strategic mineral reserve areas and 900 national parks, forest reserves, and other areas of restricted mineral entry.

Two supplementary datasets are described at the end of this readme file. A Multielement Geochemical Data Set provides 38-element analytical data for 168,656 rock, soil, pan concentrate, water, and stream sediment samples. A Radiometric Data Set compiles 4500 isotopic (U/Pb, Ar/Ar, Re/Os, etc.) ages.

ColombiaMap is revised and updated as new discoveries are made, as new resources are announced and as production figures are updated. Geologic maps are updated as new publications come available. Land status is updated periodically. Pricing is covered on the final page of this readme file. New users should pay special attention to the “Installation” section.

Geography, Geology and TS Unit Modules

The *Geography* module of the ColombiaMap data set is displayed by opening “CO_Geography.” Vector files for towns and cities, power lines and pipelines, political boundaries, and railroads are plotted on a base map consisting of shaded relief and bathymetry. The *Geology* module is displayed by opening “CO_Geology.” It displays the published (2015) geologic map (1:1,000,000 scale)

and legend. The *TS Units* module contains a tectonostratigraphic map and legend compiled using *Geology* module as a base but colored according to a tectonostratigraphic rock unit assignment (e.g., tholeiitic island arc basalt) rather than location-specific lithologic descriptions (e.g., Quebradagrande basalt). These modules have broad application beyond the mining and exploration industry.

Prospect Module

The *Prospect* module, which includes the *Geography*, *Geology*, and *TS Units* modules described above is displayed by opening “CO_Prospects.” Metallic mineral occurrences are plotted using shapes that correspond to deposit type, a color for each metal, and sizes that reflect gross contained metal value. Each mineral occurrence is attributed with location, source of data, deposit type, owners, partners, past production, current resources, current reserves, status (active mine, inactive mine, resource, prospect), geologic observations, recent deals, and references to the literature along with calculated fields for total size (in tons or ounces) and contained metal value in US dollars.

The Prospect module also contains a field for “geologic observations” that compiles information for each mineral occurrence, metal content (e.g. Au, Cu, Ni, Pt), mineralogy (sulfide, oxide), origin (orogenic, hydrothermal), form (lenticular, vein, stockwork) and host rock.

The *Prospects* module includes a subdirectory for non-metallic mineral occurrences, displayed by opening “CO_Non-metallics.” Selecting a specific non-metallic mineral occurrence with the info tool will call up attached information including concession name, number, owner, status, commodities, location, and location reference.

Land Status Module

The *Land status* module is displayed by running “CO_LandStatus” which plots over 20,000 metallic and non-metallic mineral concessions and 574 proposed strategic mineral reserve areas. Concessions are attributed with relevant information including owner (company or individual), contract date, status (exploration or extraction, contract or application) and expiration date. Only official government records are used to generate the concession map. The map provides a “snapshot” of land status as of the compilation date. For specific areas of interest, a thorough review of current status is always necessary.

The land status data set also shows national parks, forest reserves, paramos, Indian reservations, national monuments and other areas where mineral exploration and development is restricted or prohibited.

Concessions:

Metallic mineral concessions are governed by the mining code of Colombia (Law 685 of 2001). Concessions granted prior to 2001 continue to be governed by the mining law of 1969 (Law 20) or the mining law of 1988 (Law 2655). Law 1382, modifying the 2001 mining code, was passed by congress in February 2010 but was found unconstitutional in May 2011.

Concessions are administered by the National Mining Agency. This agency replaced the former INGEOMINAS in 2012. Metallic mineral exploration and exploitation concessions can measure up to 10,000 hectares in area and are governed by a single 30-year contract that can be extended for an additional 30 years. Concessions are specific to a named metallic mineral or minerals. Separate concessions may be granted, for instance, for gold and for copper.

For exploration licenses governed by the 1988 mining law, concessions are valid for two years with provision for a one-year extension; exploitation licenses are valid for ten years with provision for a ten-year extension.

For up-to-date information on any particular area, the user should consult the official mineral concession records maintained at each of the regional offices of ANM (main office: Bogota). The status of individual concessions can also be reviewed over the internet at: www.mineriaencolombia.anm.gov.co.

Mineral Reserve areas:

In February of 2012, ANM established 574 strategic reserve areas. These areas are off-limits to mineral entry except by a special application process. Applications are not yet being accepted because the courts have found that the declaration of strategic mineral reserve areas was done without prior consultation with local black and indigenous communities.

Areas of restricted mineral entry:

National parks, forest reserves and protected areas are administered by the Ministerio de Ambiente, Vivienda y Desarrollo Territorial. Indian and black communities are administered by the Ministerio del Interior. In Colombia, national parks and some protected areas are entirely off limits to mineral exploration and development. Areas where mineral development is allowed but where special restrictions apply include:

- 1) forest reserves - exploration is permitted, if a discovery is made a petition can be submitted to modify the size of the reserve area.
- 2) Indian and Black communities - local community approval is required.
- 3) protected areas - exploration is permitted except for swamps (cienagas) and paramos, defined as elevations above 3200 meters. Mining requires approval of a petition to modify the reserve area “sustraccion de area de reserva.”

Subdirectories

Concessions subdirectory:

Locations are plotted and ownership and contract dates are provided for over 20,000 metallic and non-metallic mineral concessions and concession applications. Each is attributed with the contract date, name and contact information for the concession holder, and the commodities under concession. Expired concessions are not eliminated until they disappear from the official government concession map. For up-to-date concession information, the user is referred to the National Mining Agency (www.mineriaencolombia.anm.gov.co).

Parks subdirectory:

The Parks subdirectory contains files that identify areas of restricted mineral entry including national parks, forest reserves, areas where a military escort used to be required (prior to the 2016 peace agreement with FARC), areas where local community approval is required to conduct exploration, paramos, and other areas where mining or exploration is subject to restrictions.

Geology subdirectory:

The Geology subdirectory contains the published (2015) 1:1,000,000-scale geologic map of Colombia in vector format. A 1:1,500,000 scale geologic map of Colombia was published by the SGC in 2025 but was judged to be of lower quality than the 2015 map with fewer polygons, considerably less detail on contacts, and very little in the way of updated geology.

Geography and Topo_index subdirectories:

The Geography subdirectory includes borders, cities and towns, roads, and major drainages. The Topo_index subdirectory includes an index to the 1:100,000 scale topographic maps for Colombia.

Prospect subdirectory:

Information pertaining to individual mines and mineral occurrences is stored in a geodatabase (COPros.gdb) for ArcGIS Pro users or an MS Access database (COPros.accdb) for MapInfo users. Only public, non-confidential information is provided. COPros includes the following information for each mineral occurrence: prospect name, alternate names, location, location reference, deposit type, district, owners, partners, deals, total past production, production reference, reserve, reserve reference, resource, resource reference, status (active mine, inactive mine, resource, prospect), geologic observations, overall size (in

ounces or tons) and contained metal value (in US dollars).

Metallic mineral occurrences are classified according to 18 deposit types, listed in the following table. Non-metallic mineral occurrences are stored in the Prospect > Non_Metallic subdirectory.

Metallic Mineral Deposit Classification

Deposit Type	Symbol
Epithermal veins and stockworks (Au, Ag, Cu, Pb, Zn)	1
Epithermal disseminated (Au, Ag, Cu, Zn)	13
Epithermal veins and stockworks of Hg and Sb	8 (Hg), 10 (Sb)
Volcanogenic massive sulfide (VMS) deposits	2
Sediment-hosted (Sedex) deposits	14
Volcanogenic (Seafloor) manganese deposits	9
Sediment-hosted (U, Th, V) deposits	27
Banded iron formation (Au, Fe, Mn) deposits	21
Porphyry (Cu, Mo, Au, Ag) deposits	5
Skarn (Au, Ag, Cu, Pb, Zn) deposits	3
Iron skarn (Fe) deposits	24
Carbonate replacement (Au, Ag, Cu, Pb, Zn) deposits	22
Iron replacement (Fe) deposits	23
Greisen (Sn, W) deposits	17
IOCG (Iron-oxide copper gold) deposits (Au, Ag, Cu, Mo)	16
IOCG (U, REE, Fe) deposits	25
Alkaline Rocks and Carbonatites (U, Th, V)	18
Alkaline Rocks and Carbonatites (Sc, REE)	26
Orogenic (shear-hosted, mesothermal) deposits (Au, Ag)	4
Magmatic segregation (Cr, Pt, Pd) deposits	11
Lateritic (Ni, Co) deposits	6
Bauxite (Al, REE, Sc) deposits	12
Alluvial (Au, Ag, Pt, Pd) deposits	7
Alluvial (U, Th, REE, Sc) deposits	28
Alluvial (Fe, Sn, W) deposits	29
unassigned	99

Shaded Relief and Bathymetry subdirectories:

Shaded relief tiff images are located in the Shaded Relief subdirectory. Elevation data for the shaded relief maps (provided as DEM grd files) is from the Shuttle Radar Topography Mission (SRTM) version 4 (2008) at 3 arc-second (approximately 90-meter) resolution.

Regional bathymetry (as DEM grd files) was downloaded from the Marine Geoscience Data System: Global Multi-resolution Topographic Data portal (MGDS: GMRT) at <http://www.marine-geo.org/portals/gmrt/>. The bathymetric map is created from (shipboard) sonar supplemented, between tracks, by gravity and satellite altimetry data using a process described by Ryan et al., 2009: <http://onlinelibrary.wiley.com/doi/10.1029/2008GC002332/full>. MGDS: GMRT data at 500-meter resolution was re-gridded to produce maps at an approximate resolution of 350m.

Survey Indices subdirectory:

The files in this subdirectory show the location of stream sediment surveys and geophysical surveys conducted by companies, governments and international aid organizations. Stream sediment survey indices record the number of samples collected, area covered, sample density, list of elements run, and the source of the data. Geophysical survey indices show the type of survey (magnetic and/or radiometric), area covered, and the source of the image or data.

Geophysics subdirectory:

Geophysical survey images provided with the ColombiaMap data set include Bouguer and Free Air regional gravity maps as well as Total Field and Reduced to Pole Aeromagnetic maps (all as raster images). Digital geophysical data is not included with the ColombiaMap data set and, as yet, has not been made available by the government.

TS Units subdirectory:

This subdirectory contains files used to create a tectonostratigraphic (TS) map for Colombia. The TS map uses the published geologic map as a base. Then, based on government, industry and academic publications, geologic map polygons are assigned additional attributes and new colors according to their tectonostratigraphic setting. For a basalt, for example, in addition to age and formation name (e.g., Tertiary Coyol basalt), the TS_PGONS file includes attributes for tectonic setting (e.g., MORB, plateau, volcanic arc, or back-arc basin). All of the datasets use the same tectonostratigraphic legend resulting in a

metallogenic map that is directly applicable to mineral exploration.

Titles and legends subdirectory:

Title blocks, legends, grids, labels, and scale bars are stored here.

UTM subdirectory:

A UTM index is provided for Colombia along with grids for each of the five local datums. Grids are provided for the Bogota, East Central, East, West and Western West Zones.

Plots subdirectory:

The Plots subdirectory contains high resolution images for the metallogenic map and the land status map of Colombia.

Ancillary Files subdirectory:

The Ancillary Files subdirectory contains files that modify or supplement the user's GIS software. For ArcGIS Pro users, the subdirectory Default Project Databases contains the home folders for each aprx in the data set. For MapInfo users, this subdirectory includes picklists, "MapInfoW.fnt" with special fonts and the file "add_to_MapInfo_prj_file.txt" with supplemental projections. These files are described in a following section on Installation.

A file called "deposit_size_calculations.xlsx" lists the formulas used in calculating deposit size and gross contained metal value. For instance:

Au and Ag deposit size = past production in ounces + (resource in metric tonnes * resource grade in ppm * 1/31.1034768) + (reserve in metric tonnes * reserve grade in ppm * 1/31.1034768)

Base metal, Aluminum, Nickel, Cobalt and Chromium deposit size = past production in tons + (resource in tonnes * 2204.623 / 2000 * resource grade in percent / 100) + (reserve in tonnes * 2204.623 / 2000 * reserve grade in percent / 100)

Deposit value = deposit size (in ounces for precious metals, in tons for base metals, aluminum, nickel and cobalt) * metal price. Polymetallic deposit values represent the sum of each of the contained metals.

ArcGIS Pro Installation

Install ArcGIS Pro on your computer. If this is an update, backup your previous version before erasing the old COMap directory. Copy the new data set to the root directory of your hard drive (C:\COMap).

ESRI Geodatabase management

All mineral occurrence information is stored in CO_Pros.gdb, a geodatabase located in the Prospects subdirectory. Additions or changes to mineral occurrence information are made directly to the Prospects table in CO_Pros.gdb.

Most users will not need to make changes to the information that is stored in CO_Pros.gdb. However, if changes are made to production, reserves or resources, then deposit size and value fields should also be updated. These updates are made by running the Python script "UpdateProspects.pyt." The following instructions explain how to add "UpdateProspects.pyt" to the Toolbox.

- Copy the file "UpdateProspects.pyt" from C:\COMap\Ancillary_Files\ into the "My Toolboxes" folder (ArcMap) or "CustomTransformations" folder (ArcGIS Pro). The path to this folder is: C:\Users\[your username]\AppData\Roaming\ESRI\ArcGISPro or Desktop10.8
- Start ArcMap or ArcGIS Pro, and click on the Toolbox button
- In the ArcToolbox window, right-click in open space below the list of toolboxes, and select "Add Toolbox"
- Navigate to the "Toolboxes" directory and select UpdateProspects.pyt, click Open.
- Select UpdateDepositSizeandValue > right click in the open space underneath > save settings > to default
- Note that the UpdateProspects.pyt file only needs to be installed once, even if you have more than one data set (e.g., COMap and EMap) installed.

Now that "UpdateProspects.pyt" is installed, follow these instructions to update deposit size and value fields in COPros.gdb:

- Open any ArcGIS mxd or ArcGIS Pro aprx file.
- In the Toolbox window, if the UpdateDepositSizeandValue toolbox is not present, right click on open space and load settings > from default.
- In the Toolbox window, double-click the UpdateDepositSizeAndValue toolbox. A list of update scripts will be displayed.
- Double-click the script appropriate for the database table you have installed (e.g. if you have installed COMap, double-click on COProsUpdate). A window will appear.
- Click OK to begin running the script. Calculations may take some time ... a couple of minutes for a thousand prospect records is typical. For more records, a proportionately longer time period is needed.
- Save the mxd or the aprx.

Source File Connections

If the ColombiaMap data set is copied to a location other than the root directory, some project files may open with broken links. Deposit types appear as event layers; each event layer has a distinct definition query. To repair a broken link: select (click on) the “list by source” icon. Right click on the file that is not opening properly, select properties > source > “set data source,” and browse to the source location, for example: C:\COMap\Prospect\CO_Pro.s.gdb.

MapInfo Installation

Start by checking that Microsoft Access and MapInfo Pro are installed on your computer. If this is an update, backup your previous version before erasing the old data set. Copy the new data set to the root directory (C:\). Rename the folder COMap-MI (C:\COMap-MI).

Fonts

ColombiaMap map uses several customized fonts that are not delivered with standard MapInfo software. Follow these steps to replace your “MapInfo 3.0 Compatible font” with a customized version provided in the Ancillary_Files subdirectory.

- Exit MapInfo if it is running.
- Be sure that you are displaying hidden files and folders.
 - On a machine that is running Windows 11, open Windows Explorer. Select the “View” tab. Then, under “Show” select the option for “hidden items.”
- Locate the file MAPINFOW.FNT on your computer.
 - On a machine that is running Windows 11, it is found in:
C:\Users\YOURUSERNAME\AppData\Roaming\MapInfo\MapInfo\Professional\2300
(for MapInfo Pro version 23)
- Rename MAPINFOW.FNT; call it MAPINFOW_FNT.OLD
- Copy "MAPINFOW.FNT" from the Ancillary_Files subdirectory into the folder where "MAPINFOW_FNT.OLD" is located.

Datums

ColombiaMap map uses several local datums that are not delivered with standard MapInfo software. Although the data set will continue to function without making changes, it is preferable to add the custom datums to the MapInfo projection file. To do so, use any text editor to open “MapInfow.prj” from: C:\Program Files\MapInfo\Professional. This file contains all of the projections that ship with your MapInfo software. From the Ancillary_Files subdirectory, copy the text contained in the file named “add_to_mapinfow_prj_file.txt” and paste it

into MapInfow.prj (at the end of the file will work just fine). MapInfow.prj will now provide all local datums called by ColombiaMap.

Picklists

ColombiaMap map uses MapInfo Discover picklists to assign colors to tectono-stratigraphic units, parks and concessions. Although neither Discover nor the picklists are required to run ColombiaMap, users who want to edit the picklists (to change colors or add categories) will need to copy the .xml files from the Ancillary_Files subdirectory and paste them to the subdirectory:

C:\Users\username\AppData\Roaming\Encom\Discover\Picklists

Microsoft Access Database

Mineral occurrence information for MapInfo users is stored in a Microsoft Access database, CO_Proc.accdb, located in the Prospect subdirectory. Prospects, a table in the Access database, compiles relevant information for each mineral occurrence including: location, deposit type, owners, partners, past production, current resources, current reserves, published sources for past production, resource and reserve figures, status (active mine, inactive mine, prospect), geologic observations, ownership, terms of recent sales and joint ventures, and references to the literature. Calculated fields show the total precious metal content in ounces, base metal content in tons, and total contained metal value in US dollars.

New mineral occurrences can be added and changes can be made to existing mineral occurrence information by using MSAccess to modify CO_Proc.accdb. CO_Proc.accdb also contains a series of tables linked to queries that sort records according to deposit type (e.g., porphyry copper, epithermal gold, etc.)

A form in CO_Proc.accdb, "Update Deposit Size and Value" should be used to update gross contained metal values whenever changes are made to production, resources or reserves. This form can also be used to change the metal prices used in the calculation of gross contained metal value.

When adding records to the MSAccess database (CO_Proc.accdb), any nulls (empty fields) should be replaced with zeros (0's) in the entries for production, resource and grade since the calculation of deposit size and value draws numeric values from those fields.

Open Database Connectivity - ODBC Issues

MapInfo connects to the Prospects database (CO_Proc.accdb) via a dsn file (COPros.dsn) which resides in the Prospect subdirectory. All changes made to the database in MapInfo automatically flow through to the Access database when the MapInfo table COPros.tab is saved. (MapInfo may ask you to browse to the

location of the MSAccess database.) Once changes have been saved to the MSAccess database, MapInfo will give you the option to “refresh” the linked MapInfo table. Answer “yes.” If inconsistencies arise between the data in the Access database and the data in the MapInfo tables, MapInfo will issue a warning message that prompts the user to resolve the conflict.

It is best to refresh the linked MapInfo tables, including CO_Proc.tab, whenever changes are made to the mineral occurrence information whether from within MapInfo or from within Microsoft Access. After refreshing the MapInfo linked tables, close any open DBMS connections using the “File > Close > Close DBMS button.

MapInfo cannot read MSAccess queries. For this reason, deposit type selections are saved not only as queries in the MSAccess database but also as linked MapInfo tables in the Prospects subdirectory.

You are now ready to run ColombiaMap. Open the prospects data set and metallogenic map by opening CO_Proc. Open the land status data set and concession map by opening CO_LandStatus. You can also create your own workspaces (MapInfo) or project files (ArcGIS).

Ordering information, copyright and disclaimer

The ColombiaMap GIS data set, including the *Geography*, *Geology*, *TS Units*, *Prospect* and *Land Status* modules (in MapInfo or in ArcGIS format or both) is available for purchase through Recursos del Caribe, S.A. To order the data set or for any questions, write to Carl Nelson at: carlericnelson@gmail.com.

Information on pricing is provided below. Updates are free for the first year and charged at half price for four additional years. Prospective clients are invited to “test drive” the data sets via a screen sharing session before making a purchase. Examples of the maps that can be generated using the data set are displayed on the web site at www.CBMap.net.

ColombiaMap is the property of Carl E Nelson and Recursos del Caribe, S.A. It is intended for the sole use of the purchaser. The data set cannot be copied, sold, transferred, or distributed without express written permission from Carl E. Nelson.

Reasonable efforts are made to ensure that the information contained in the ColombiaMap data set is accurate and, with the exception of concessions, is updated regularly. Carl Nelson and Recursos del Caribe, S.A. do not warrant the accuracy of information in the ColombiaMap data set.

Pricing

ColombiaMap: a GIS data set for the *Geography, Geology, TS Units, Prospects, Land Status* of Colombia. Available as a package

in **either** MapInfo **or** ArcGIS format for: US\$30,000

in **both** ArcGIS **and** MapInfo format for: US\$37,500

ColombiaMap is also available in stand-alone modules as follows:

Geography (digital elevation models and shaded relief): \$ 5,000

Geology (*Geography* plus vector geology): \$10,000

TS Units (*Geography* and *Geology* plus a regional tectono-stratigraphic interpretation): \$20,000

Prospects (*TS Units* plus metallic mineral mines and prospects): \$30,000

Land status (*Geography* plus metallic mineral concessions, mineral reserve areas, national parks, forest reserves, paramos, indigenous communities, and other protected areas) \$10,000

Plots (high resolution tiff images of the metallogenic map): \$ 5,000

Descriptions of the Colombia Multielement Geochemical Data Set and the Colombia Radiometric Data Set appear, with pricing, on the following pages.

Colombia multielement geochemical data set

March 2026

Recursos del Caribe, S.A. (www.cbmap.net)

Carl E. Nelson (carlericnelson@gmail.com)

The Colombia Multielement Geochemical Data Set, a compilation of analytical data originally published by the Servicio Geológico Colombiano (SGC-2010) and the Mineral Deposits Research Unit (MDRU-2016), provides access to and displays the published geochemical data for Colombia.

Recursos del Caribe (RdC-2025):

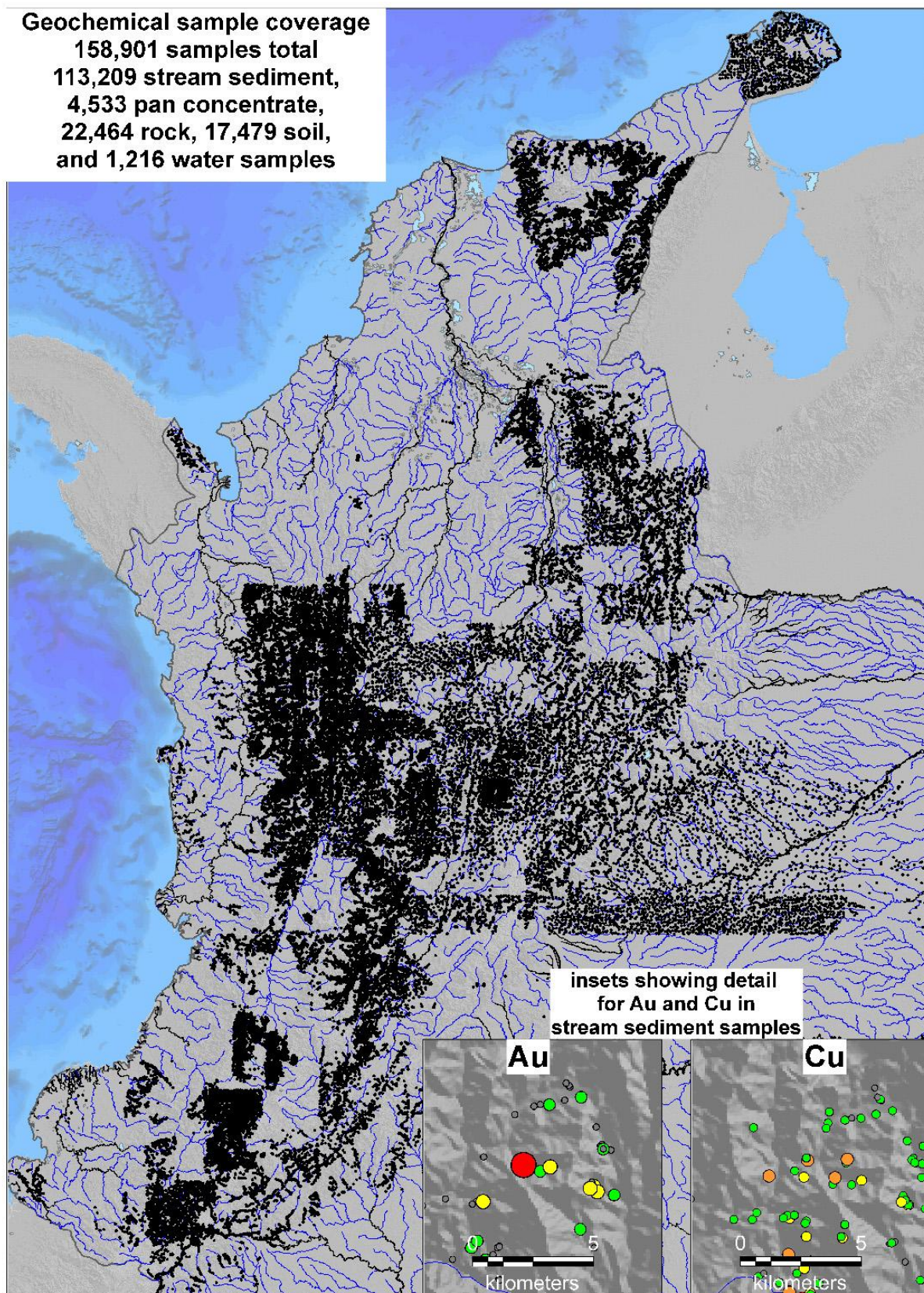
Using the SGC-2010 data set as a starting point (168,656 samples), RdC converted geochemical data (recorded as text) to numeric fields, eliminated 772 duplicate entries, corrected 542 data entry errors, entered 54,553 missing locations, eliminated 65,513 empty records (samples with no data), and eliminated three records that contained electron microprobe analyses of a single mineral. RdC then added the MDRU-2016 data (76,092 samples) and eliminated 4692 empty records.

The RdC-2025 Colombia Multielement Geochemical Data Set provides published geochemical data in an easy-to-read format that can be confidently applied to exploration. The RdC-2025 data set replaces the RdC-2020 data set and is designed to work either on a stand-alone basis or with ColombiaMap, a GIS data set for geology, mines and mineral occurrences, and land status (www.cbmap.net).

Sample types and elements analyzed are listed below; sample locations are displayed on the following page.

Sample Type	Number	Elements analyzed
Pan Concentrate	4,533	Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, Mg, Mn, Mo, N, Na, Nb, Ni, P, Pb, Pd, Pt, S, Sb, Sc, Se, Sn, Sr, Th, Ti, Tl, U, V, W, Y, Zn, Zr
Rock	22,464	Ag, Al, As, Au, B, Ba, Be, Bi, Br, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, N, Na, Nb, Ni, P, Pb, Pd, Pr, Pt, Rb, S, Sb, Sc, Se, Si, Sm, Sr, Ta, Tb, Te, Th, Ti, Tl, U, V, W, Y, Yb, Zn
Soil	17,479	Ag, Al, As, Au, B, Ba, Be, Bi, Br, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, I, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, N, Na, Nb, Nd, Ni, Os, P, Pb, Pd, Pr, Pt, Rb, Re, Ru, S, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn, Zr
Stream Sediment	113,209	Ag, Al, As, Au, B, Ba, Be, Bi, Br, Ca, Cd, Ce, Cl, Co, Cr, Cs, Cu, Dy, Er, Eu, F, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, N, Na, Nb, Nd, Ni, P, Pb, Pd, Pr, Pt, Rb, Re, Ru, S, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, U, V, W, Y, Yb, Zn, Zr
Water	1,216	Ag, Al, As, Au, B, Ba, Be, Bi, Br, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, Pb, Pd, Pr, Pt, Rb, Re, Ru, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, U, V, W, Y, Yb, Zn, Zr

Geochemical sample coverage
158,901 samples total
113,209 stream sediment,
4,533 pan concentrate,
22,464 rock, 17,479 soil,
and 1,216 water samples



The Colombia Multielement Geochemical Data Set includes the following subdirectories: RdC-2025, SGC-2009, SGC-2010, and MDRU-2016. The SGC and MDRU subdirectories contain published geochemical data from which the RdC-2025 data set was constructed. Edits, conversions, and corrections made during construction of the RdC-2025 data set are described below and are recorded in an MSAccess database (CO_Geochem_2020.accdb).

Servicio Geológico Colombiano (SGC-2009):

The SGC published a geochemical anomaly map of Colombia (Prieto et al., 2009) that displays anomalous areas for a variety of element combinations. The raw data used to plot the anomalous areas was not published. Recursos del Caribe (RdC) captured the anomalous areas as polygons and plotted the anomalies on a shaded relief base map.

Servicio Geológico Colombiano (SGC-2010):

The SGC released multielement geochemical data for 168,656 samples in 2015, including 72,536 stream sediment samples, representing a compilation of data from 150 surveys conducted through 2010. The SGC-2010 data set includes geochemical data for 103,143 samples; 65,513 records contain sample descriptions but no analytical data. The SGC data (in MS Access format) was available for several years as a free download (no license required) from the SGC website at: <http://geoportal.sgc.gov.co/geoportalsgc/catalog/quicklink/basesDatosPublicacion.page>. This link is no longer active and the SGC-2010 data set is no longer posted on the website.

Mineral Deposits Research Unit (MDRU-2016):

In 2016, the MDRU, in conjunction with the SGC, published an atlas that displays 56-element geochemical data for 76,092 stream sediment samples. The MDRU-2016 data set of 56 shapefiles, one for each element, was available for several years as a free download on the SGC website.

RdC consolidated the 56 separate MDRU-2016 shapefiles into a single file that contains all of the geochemical data for all of the samples. This format allows the user to review (and process) of all of the MDRU stream sediment data without opening multiple files.

Pricing

The Colombia Multielement Geochemical Data Set eliminates the time and cost involved in making the conversions and corrections that are needed to put the published data sets in a format that can be reliably applied to exploration.

Prospective clients are invited to “test drive” the data set before purchase.

Colombia Multielement Geochemical Data Set: US\$ 36,000.00

Colombia Radiometric GIS Data Set

Recursos del Caribe, S.A.

www.cbmap.net

Carl E. Nelson, president

email: carlericnelson@gmail.com

The Radiometric GIS Data Set compiles over 4500 isotopic ages (e.g., U/Pb, Ar/Ar, Re/Os) along with sample number, sample location, sample description, analytical method, mineral dated, analytical error, and reference publication (data source). Two additional fields record the original and the current interpretation for each radiometric date, e.g., age of intrusion/crystallization, inherited age, age of volcanism/crystallization, age of metamorphism, age of exhumation, age of hydrothermal alteration, and age of sedimentation. Cost is US\$10,000.

