Geography in GRIN-Global

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This guide provides details on geography, as used in GRIN-Global. The Appendix contains change notes pertaining to this document.

Comments/Suggestions/Questions:
Please contact marty.reisinger@usda.gov or mar@rrginc.com with any suggestions or questions related to this document. This and other GRIN-Global–related documentation can be downloaded from the GRIN-Global documentation site – see https://www.grin-global.org/userdocs.htm.

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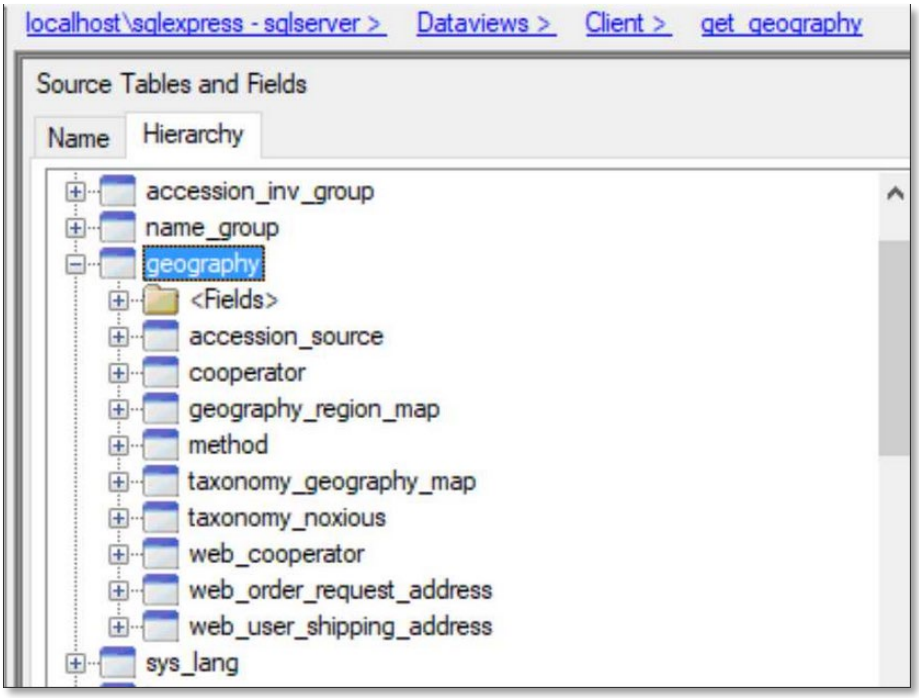
Geography Overview

Many tables are dependent on the **Geography** Table including **accession_source**, **cooperator**, and **method**, taxonomy, among others.

The following screen is taken from the GRIN-Global (GG) Admin Tool (used exclusively by the GG administrators/DBAs). It shows the tables dependent on the **Geography** table.



The **Geography** table is used primarily to ensure the user chooses from a preset standard list of countries and states. This helps eliminate data entry errors on spelling country or state names since the user is selecting from a list rather than typing each time. This means that it is important that the organization installing GG needs to get the geography table data initially correct. The typical Curator Tool (CT) user won't be able to choose a countries and states unless these are in the geography table.

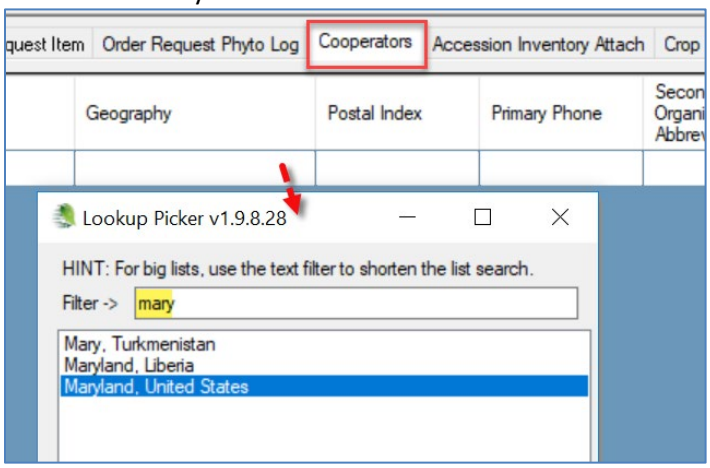
The geography table is designed so that only country is required. Additional levels of administrative divisions, such as states and provinces, are optional. Since a geography link is used in all the address fields, it is ideal to have all the **adm1** state data loaded so proper information can be entered for mailing addresses.

The geography table also includes **adm2** and fields for subdivisions, but in the USA, NPGS has not used these.

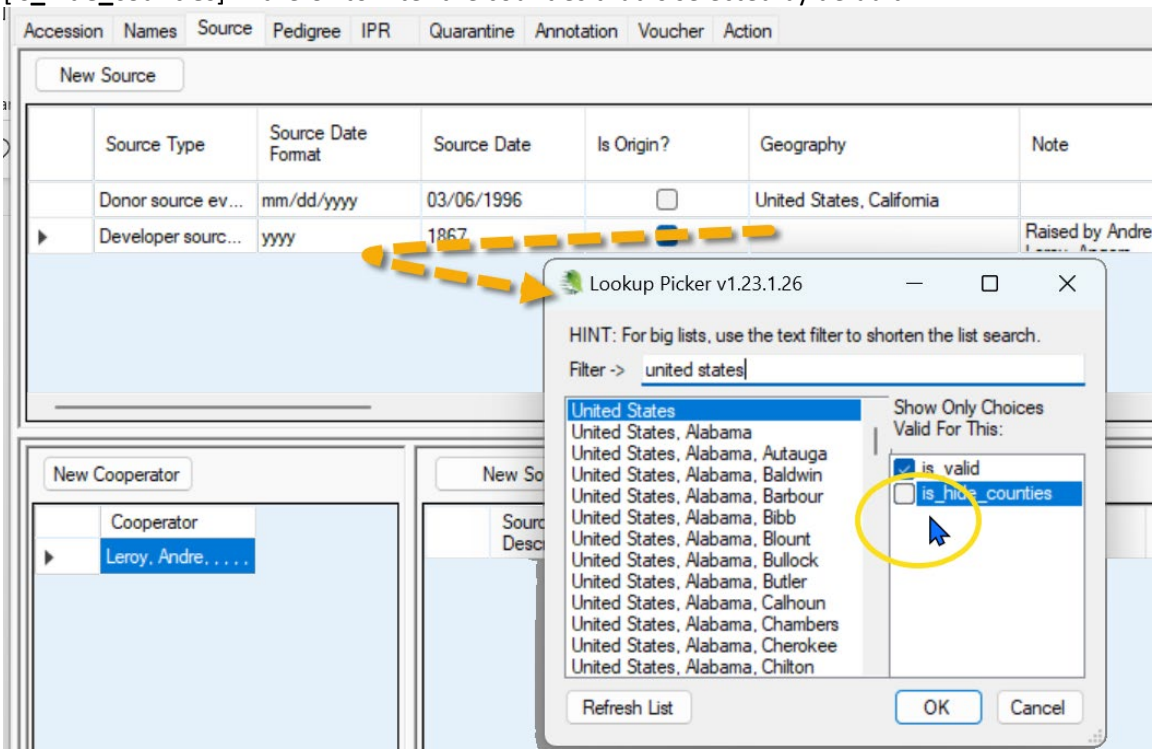
When an organization installs GG, the administrator can optionally load the **Geography** table which has the same data as used by the NPGS.

Where does the geography information appear?

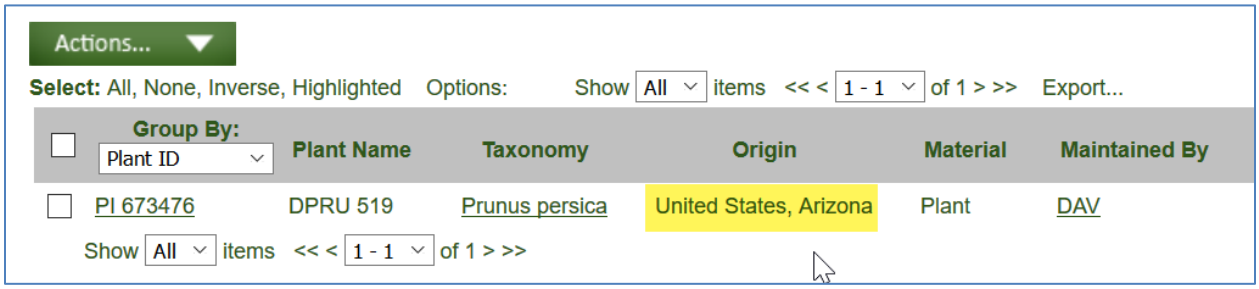
When entering data in the Curator Tool, the geography information displays as a list. For example, in the accession source dataview, the **Geography** field uses the lookup picker to select which country/state is wanted. It may look like this:



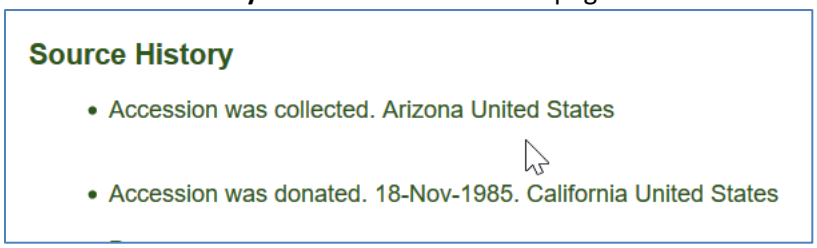
In the **Accession Source** dataview, the user sees multiple geography records for the country United States, each with a different state in the **Adm1** field. For the USA counties, there is a new checkbox [**is_hide_counties**] in the CT to filter the counties that is selected by default .



The output of the public web pages will show United States, Arizona for an accession with that as the source.



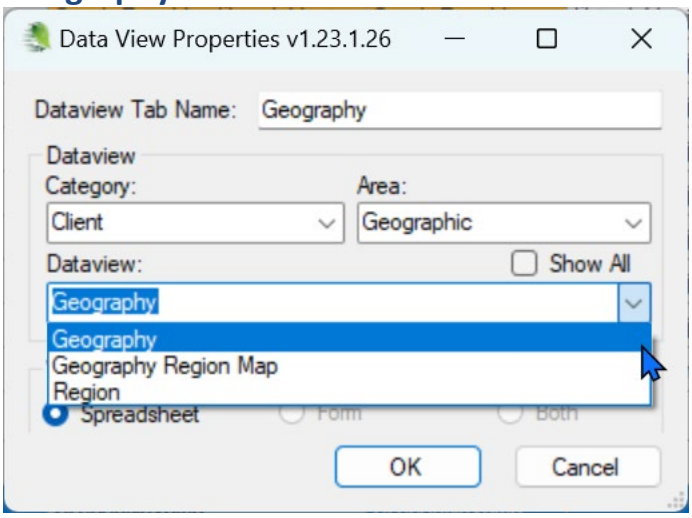
In this **Source History** section from the details page on the Public Website, the format is Adm1, Country:



The geography table was initially with data from an ISO data set of standard country spellings, etc. However, the table also includes older, now "invalid" geography records that are marked in the table with the **is_valid?** field = N.

Example: Czech Republic is country code "CZE" and the invalid Czechoslovakia is country code 163. (In GG, a numeric country code is another way to recognize invalid countries.)

Geography Dataviews Overview



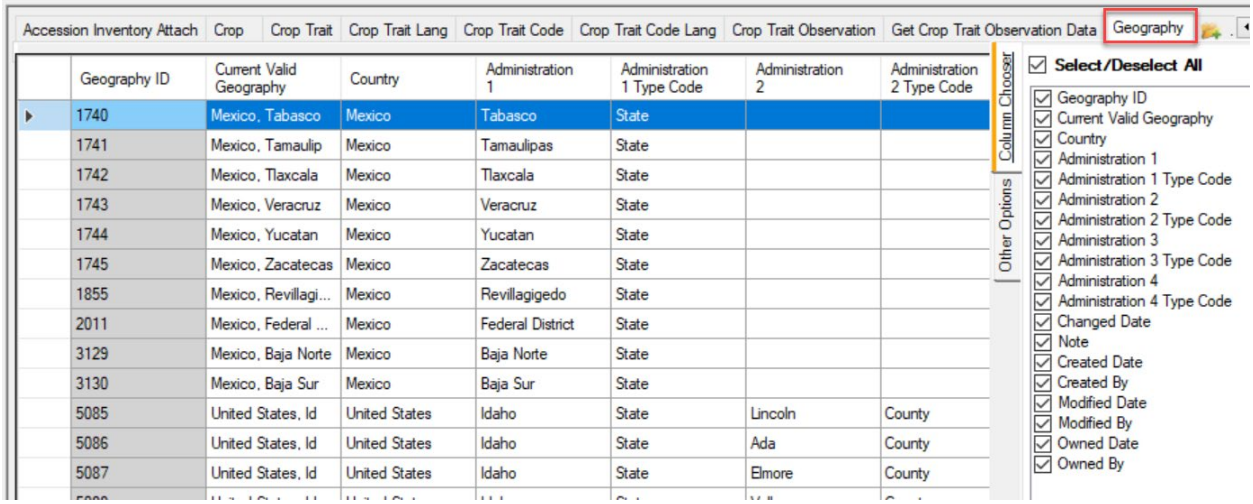
Keep in mind that a dataview and a table are not equivalent. A dataview can be used to display all of a table's fields, but often a dataview displays fields from more than one table. In the Curator Tool, in Edit Mode, dataviews will allow editing from only one table at a time; the fields from related tables that are displayed with a gray color cannot be edited in that particular dataview.

Geography Dataviews

- Geography
- Region
- Geography Region Map

Geography Dataview

Shown below is part of the Geography table used by the US NPGS. Note that many of the records only have a **Country** field. In this example, at least one state has its county data completed.



Geography ID	Current Valid Geography	Country	Administration 1	Administration 1 Type Code	Administration 2	Administration 2 Type Code
1740	Mexico, Tabasco	Mexico	Tabasco	State		
1741	Mexico, Tamaulip	Mexico	Tamaulipas	State		
1742	Mexico, Tlaxcala	Mexico	Tlaxcala	State		
1743	Mexico, Veracruz	Mexico	Veracruz	State		
1744	Mexico, Yucatan	Mexico	Yucatan	State		
1745	Mexico, Zacatecas	Mexico	Zacatecas	State		
1855	Mexico, Revillagi...	Mexico	Revillagigedo	State		
2011	Mexico, Federal ...	Mexico	Federal District	State		
3129	Mexico, Baja Norte	Mexico	Baja Norte	State		
3130	Mexico, Baja Sur	Mexico	Baja Sur	State		
5085	United States, Id	United States	Idaho	State	Lincoln	County
5086	United States, Id	United States	Idaho	State	Ada	County
5087	United States, Id	United States	Idaho	State	Elmore	County

ISO 3166-2 (state) codes were added to the Geography table in server release 1.10.4 in March, 2109. Also added was an **Is_Valid**(ISO 3166 Compliant) flag field to the dataview.

In this release, several changes were made:

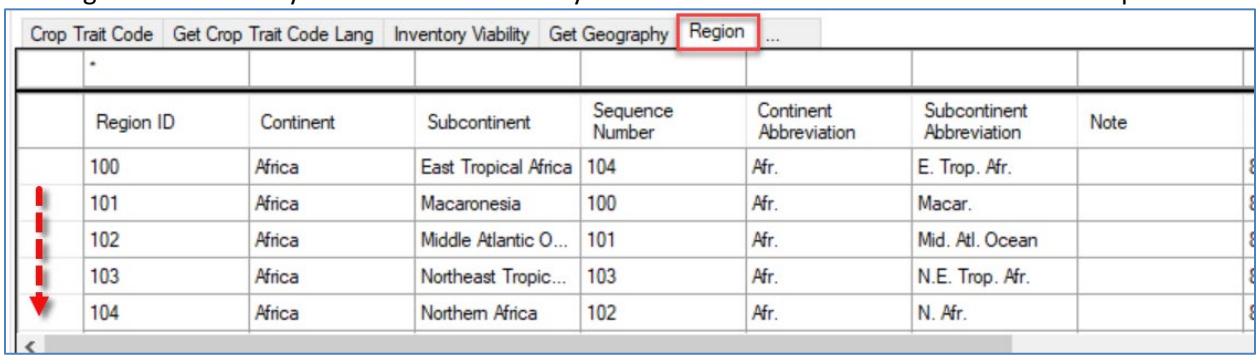
Six US entities (Puerto Rico etc.) were removed to USA outlying areas and removed from the separate country entries.

For China three main country entries (Taiwan, Macao, Hong Kong) were left as countries, but also left in the new "state of China" version. If you look at the state version under China for Taiwan and the others it says "'Taiwan Sheng (see also country entry under Taiwan)" leaving both options available.

Region Dataview

Most GG genebanks using GG can leave the **Region** table as is, but records can be added as needed. Of course the GG DBA / administrator should be the only person to do so.

The Region table used by the NPGS contains only 63 records. Several are shown here as examples:



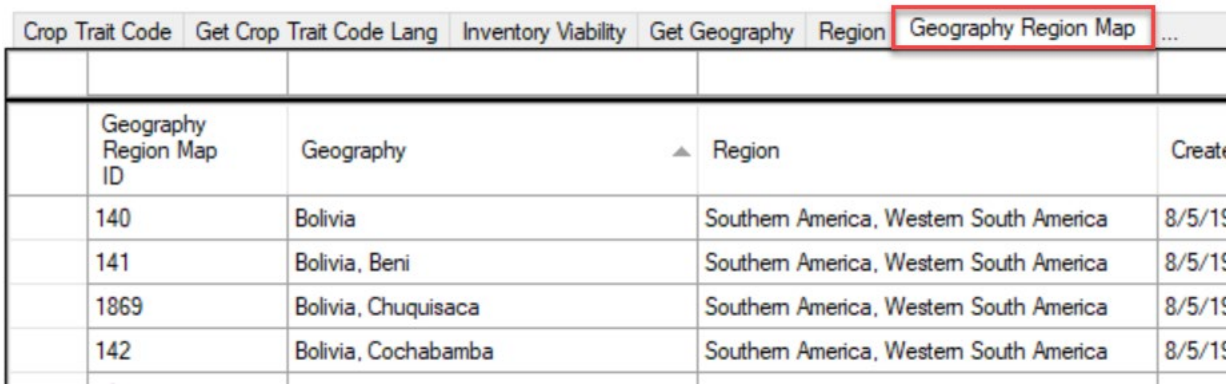
Region ID	Continent	Subcontinent	Sequence Number	Continent Abbreviation	Subcontinent Abbreviation	Note
100	Africa	East Tropical Africa	104	Afr.	E. Trop. Afr.	
101	Africa	Macaronesia	100	Afr.	Macar.	
102	Africa	Middle Atlantic O...	101	Afr.	Mid. Atl. Ocean	
103	Africa	Northeast Tropic...	103	Afr.	N.E. Trop. Afr.	
104	Africa	Northern Africa	102	Afr.	N. Afr.	

This dataview accesses the Region table, which includes world regions and continent information. The region table is used by the geography_map table to group countries into regions.

Geography Region Map

This dataview accesses the geography_region_map table. (Map tables accommodate many-to-many relationships; in this case, regions with geography.)

Dataview Name	Order	Table Name	Field Name	Title	Description
get_geography_region_map	0	geography_region_map	geography_region_map_id	Geography Region Map ID	geography_region_map_id -- The geography region map key field auto-generated by GRIN-Global; cannot be edited)
get_geography_region_map	1	geography_region_map	geography_id	Geography	geography_id -- The geography key field links to the geography table records
get_geography_region_map	2	geography_region_map	region_id	Region	region_id -- The region key field that links to the region table



Geography Lookups

When reviewing geography information in lookup pickers, it may be obvious that the data is formatted two different ways. The format displayed by the lookup picker is determined by the lookup dataviews. GG uses two different geography lookups.

In the case of the **Source** dataview, the **geography_lookup** is used.

In the case of the **Cooperator** dataview, the **mailing_geography_lookup** is used. This was done so the geography could be presented differently for address purposes where generally state is listed first, then country.

SQL Code Behind the Formatting

For the regular geography_lookup, the order is country name then adm1 and adm2.

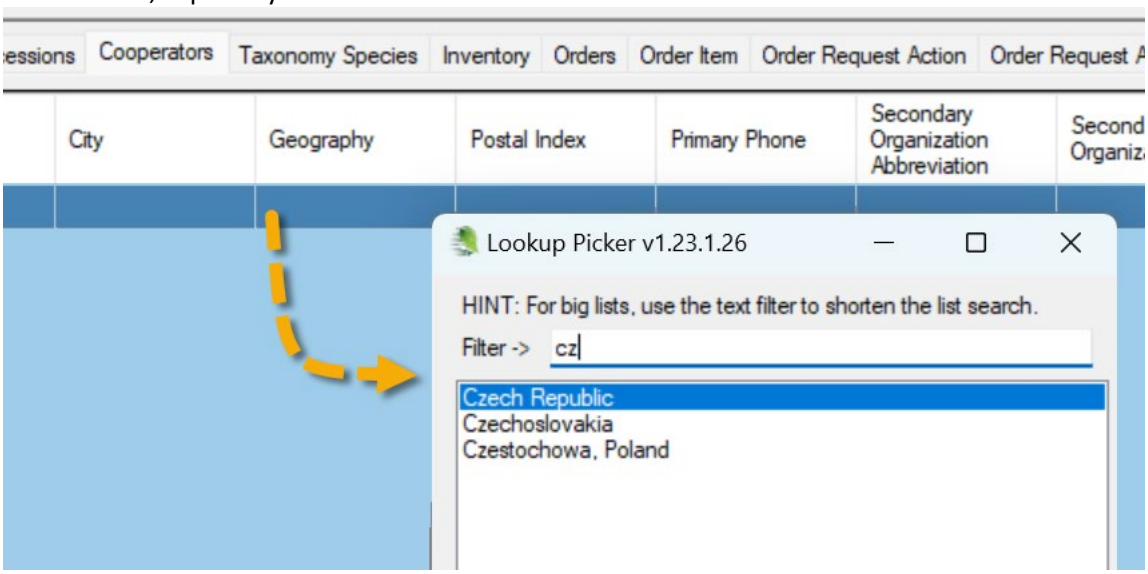
```
LTRIM(RTRIM(COALESCE(cvl.title, g.country_code) +
        CASE COALESCE(CONVERT(NVARCHAR, g.adm1), '') WHEN '' THEN '' ELSE ', ' + g.adm1 END +
        CASE COALESCE(CONVERT(NVARCHAR, g.adm2), '') WHEN '' THEN '' ELSE ', ' + g.adm2 END)) AS
display_member,
```

For the mailing_geography_lookup it is adm1, then country, no adm2 (county) since this seems irrelevant on an address.

```
COALESCE(g.adm1 + ', ', '') + COALESCE(cvl.title, g.country_code) AS display_member
```

Geography Codes

Three Geography-related Code Groups exits. Code_Groups provide the items for dropdowns within GRIN-Global, especially the CT.



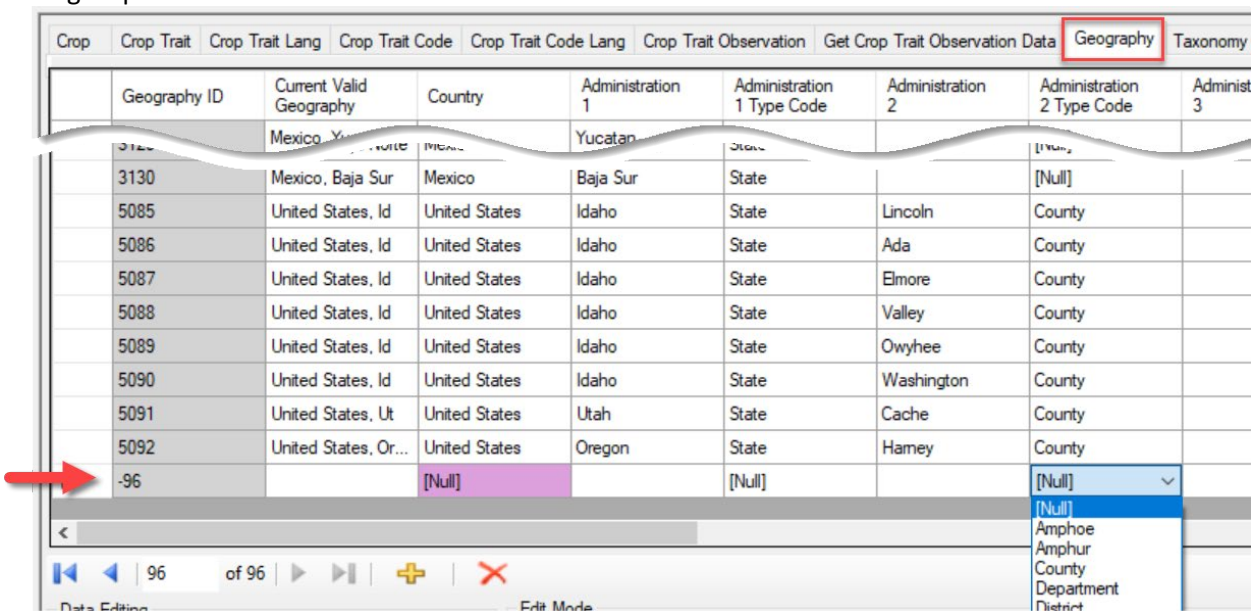
GEOGRAPHY_ADMIN1_TYPE and GEOGRAPHY_ADMIN2_TYPE

The two type code groups are used to indicate what the respective ADM division is.

Group_Name	Value	Title	Description
GEOGRAPHY_ADMIN1_TYPE	18	Oblast	
GEOGRAPHY_ADMIN1_TYPE	19	Prefecture	
GEOGRAPHY_ADMIN1_TYPE	20	Province	
GEOGRAPHY_ADMIN1_TYPE	21	Region	
GEOGRAPHY_ADMIN1_TYPE	23	State	
GEOGRAPHY_ADMIN1_TYPE	24	Territorio Federal	
GEOGRAPHY_ADMIN1_TYPE	25	Territory	
GEOGRAPHY_ADMIN1_TYPE	26	City	geography_admin1_type -- City
GEOGRAPHY_ADMIN2_TYPE	1	Amphoe	
GEOGRAPHY_ADMIN2_TYPE	2	Amphur	
GEOGRAPHY_ADMIN2_TYPE	3	County	
GEOGRAPHY_ADMIN2_TYPE	4	Department	
GEOGRAPHY_ADMIN2_TYPE	5	District	

In the Curator Tool, when adding a new Geography record to the database, when indicating the ADM levels 1 or 2, you select a code from the dropdown. These codes are coming from the two respective

code groups.



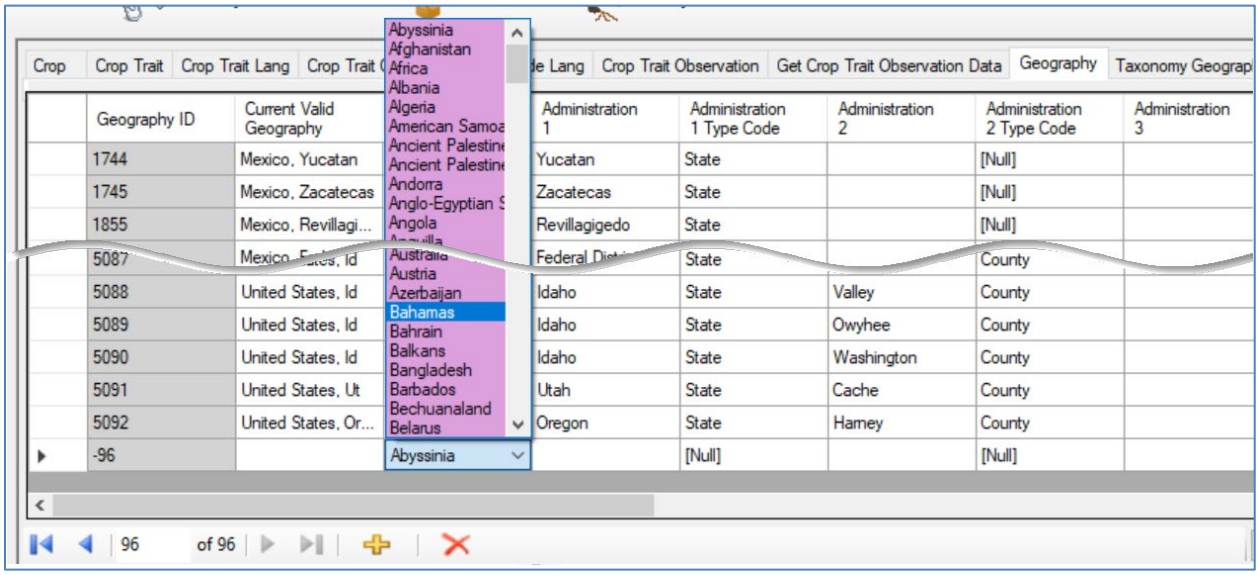
GEOGRAPHY_COUNTRY_CODE

The Code Group GEOGRAPHY_COUNTRY_CODE is used to keep historic country names as well as current ones. When the default data stored in this group is examined, note that the entries with numeric Values are used for historic names, whereas the three letter Values represent current country names.

Note: organizations may find the historic references handy since some of their accessions may have historic source information reflecting historic country names.

Group_Name	Value	Title	Description
GEOGRAPHY_COUNTRY_CODE	160	China-Northeast China	
GEOGRAPHY_COUNTRY_CODE	161	Former Yugoslavia	
GEOGRAPHY_COUNTRY_CODE	162	Ancient Palestine-Jenin	
GEOGRAPHY_COUNTRY_CODE	163	Czechoslovakia	Was CSK
GEOGRAPHY_COUNTRY_CODE	164	Former Serbia and Montenegro	Serbia and Montenegro 2006-2009 obsolete
GEOGRAPHY_COUNTRY_CODE	ABW	Aruba	ABW
GEOGRAPHY_COUNTRY_CODE	AFG	Afghanistan	AFG
GEOGRAPHY_COUNTRY_CODE	AGO	Angola	AGO
GEOGRAPHY_COUNTRY_CODE	AIA	Anguilla	AIA
GEOGRAPHY_COUNTRY_CODE	ALB	Albania	ALB

When new Geography records are created, the dropdown for the country field comes from the Title in the code record.

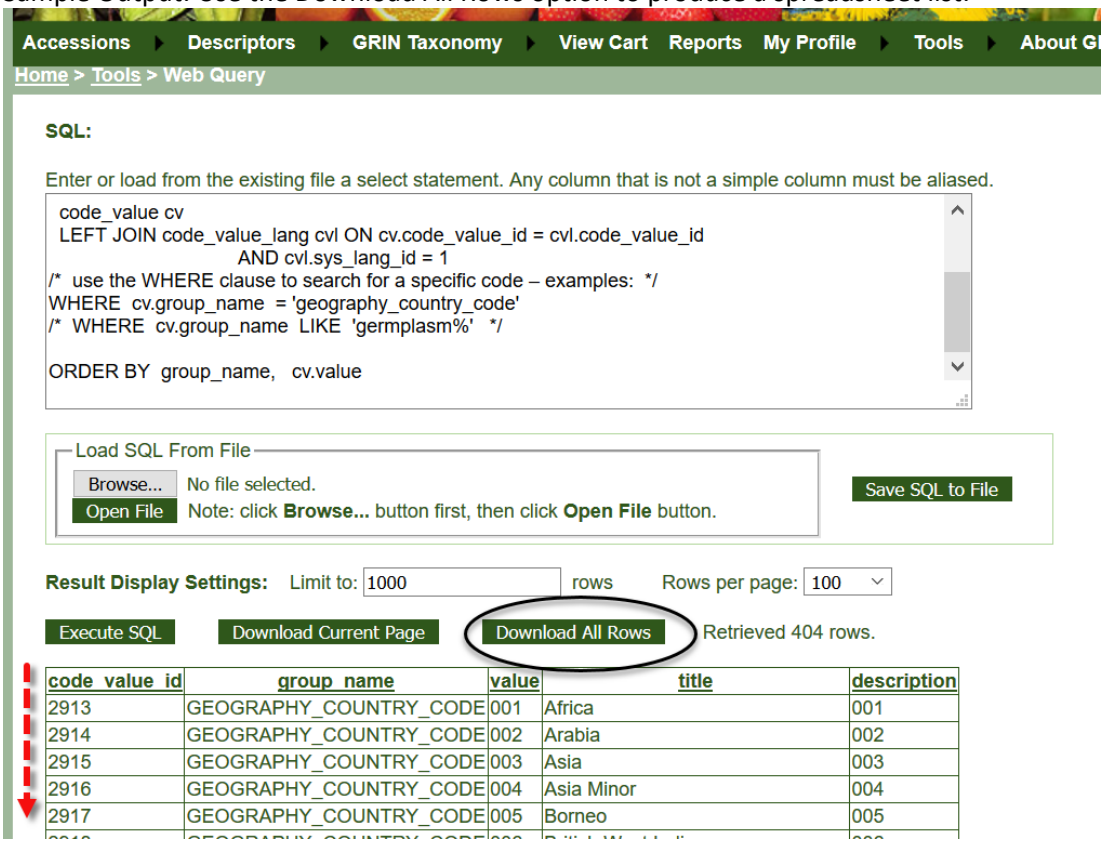


Public Website SQL Query to Display Country Codes

Use the following SQL in the Public Website to get a listing of the codes:

```
SELECT
  cv.code_value_id,
  cv.group_name as group_name,
  cv.value,  cvl.title, cvl.description
FROM
  code_value cv
LEFT JOIN code_value_lang cvl ON cv.code_value_id = cvl.code_value_id
                        AND cvl.sys_lang_id = 1
/*  use the WHERE clause to search for a specific code – examples:  */
WHERE  cv.group_name  = 'geography_country_code'
/*  WHERE  cv.group_name  LIKE  'germplasm%'   */
ORDER BY  group_name,   cv.value
```

Sample Output: Use the Download All Rows option to produce a spreadsheet list:



code_value_id	group_name	value	title	description
2913	GEOGRAPHY_COUNTRY_CODE	001	Africa	001
2914	GEOGRAPHY_COUNTRY_CODE	002	Arabia	002
2915	GEOGRAPHY_COUNTRY_CODE	003	Asia	003
2916	GEOGRAPHY_COUNTRY_CODE	004	Asia Minor	004
2917	GEOGRAPHY_COUNTRY_CODE	005	Borneo	005

Appendix: Document Change Notes

– October 18, 2024

- Edited for clarity / wording changes
- Included additional screen examples

– June 7, 2019

- Included changes from Release 1.10.4 when the ISO standards were incorporated into GG

– October 17, 2018

- Document completely rewritten/edited

– September 7, 2016

- new document