



NEWSLETTER

October 2014 Issue: 14

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Dear OneGeology users,

It has been quite a while since our last communication, during which time there have been many changes, including some fundamental changes to the structure and governance of OneGeology.

At the last meeting of the OneGeology Steering Group in 2012, it was agreed that the OneGeology initiative (which previously ran on 'in kind' contributions) should change and create a new consortium that would sign up to an agreement. This was thought to be a necessary step for the long term sustainability of the One Geology initiative. A subsequent meeting was held in Paris in October 2013 ([read meeting summary here](#)) where structure for the Consortium was established. At the meeting, Dr Marko Komac was elected as Managing Director, along with representatives from 7 [global regions](#) to sit on the newly formed OneGeology [Board](#). Dr Chris Pigram was elected as Chair of the Board.

Although the foundation of OneGeology remains the same, the future focus will be to develop the global provision of open geological data. This will facilitate the increase in openness and richness of data from individual countries, to create a multi-thematic global data resource.

Currently we have 15 organisations that are [principal members](#) of OneGeology. The Managing Director will work together with the OneGeology Admin team and the Board, to strengthen the membership and sponsorship of OneGeology to bring in revenue to support the valuable work we are carrying out.

We hope you enjoy this Newsletter and we look forward to working with you all in the future. We welcome all feedback, so please feel free to [contact us](#) with any views or ideas you have in support of OneGeology, or if you have any interesting articles you would like including in the next edition of the OneGeology Newsletter.

We encourage you to join the OneGeology Consortium!! For more information please contact the admin team at the BGS onegeology@bgs.ac.uk

Prepared by: Dr Marko Komac – Managing Director of OneGeology and Dr Chris Pigram OneGeology Board - Chair





OneGeology – the Background

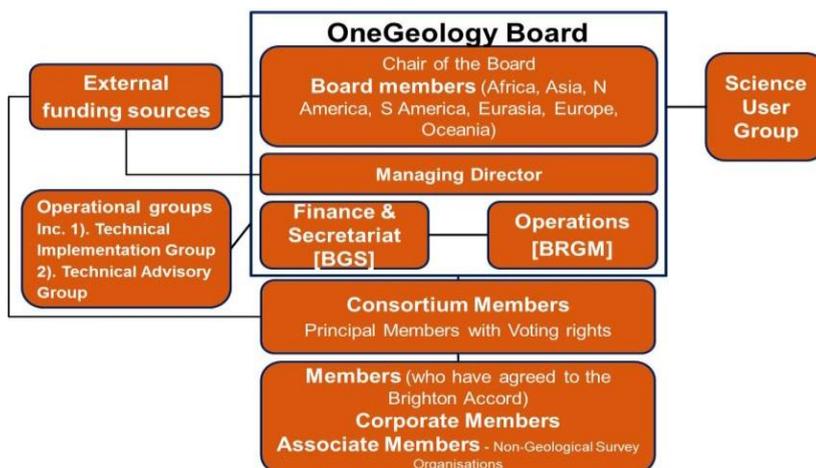
OneGeology is a global initiative to improve the accessibility of fundamental geoscience datasets. With the creation of OneGeology Consortium it will over the coming years expand to include all digital geoscience data including 3-dimensional datasets. It is improving the discovery, access, and interoperability of that data and accelerating the transfer and exchange of ‘know-how’ and experience to achieve these things through state-of-the-art digital technologies including Web services. Since its inception in 2006, OneGeology has evolved considerably. One hundred and thirty eight (138) organisations from 119 nations are now participating, serving more than 300 datasets to a dynamic Web map portal. The number of datasets is increasing steadily in extent, resolution and theme. OneGeology’s websites are used by researchers, government, teachers, industry, and the public.

OneGeology is the major initiative of the geological surveys across the world and is a flagship project of the International Union of Geological Sciences (IUGS). It is actively supported by UNESCO and the Commission for the Geological Map of the World (CGMW). It is regarded as an exemplar project in the domain of science and spatial data infrastructures by the International Council for Scientific Unions (ICSU), by the Global Earth Observation initiative (GEO), by the European Commission, and by the Open Geospatial Consortium.

OneGeology Consortium formation and Structure

Since 2007 the Lead Parties (BGS and BRGM) have provided secretariat services and technical maintenance of OneGeology and its services. They have undertaken to continue to do so, but seek through the new legal consortium status, the financial support of others who participate in and benefit from OneGeology namely; Members and Sponsors from the wider geological community.

Consequently, on 23rd October 2013, based on the consensus of the participants of the Paris meeting, OneGeology transformed itself into an international Consortium with an official membership status. The new structure and redefined objectives, seeks to improve coordination, governance and financial position.



The [Objectives](#) for which the Consortium is established are those of OneGeology;

- To be the provider of geoscience data globally;
- To ensure and exchange know-how and skills so all can participate;
- Use of the global profile of 1G to increase awareness of the geosciences and their relevance.



OneGeology Membership Introduced

With formation of OneGeology Consortium Membership types have been introduced to distinguish between members financially supporting OneGeology, international body members, geological and non-geological survey organisations, and industry stake-holders.

Any organisation that signed the OneGeology [Accord in Brighton 2007](#) is deemed a Member of OneGeology. They have the same rights and responsibilities as Principal Members, but may not vote for members of the Board unless they become Principal Members and pay the appropriate fees, but they are eligible to participate in working groups and committees. Members are actively encouraged to pay the appropriate fees and become Principal Members.

An organisation that signed the Brighton Accord in 2007, but not yet signed the Consortium Agreement is deemed a OneGeology **Member**. They may not vote for members of the Board, but they are eligible to participate in working groups and committees.

Members who pay the membership fees become **Principal Members**. In addition to the rights provided to all Members, Principal Members vote on governance and financial issues and may access a number of free or reduced cost registrations to OneGeology conferences and meetings, as determined by the Board.

Non-profit, academic, or governments organizations that support the objectives of OneGeology may become **Associate Members**. Associate members may provide data but are not mandated to do so. Associate Members will be eligible to receive all OneGeology correspondence and participate in OneGeology activities within the limits of the OneGeology Brighton Accord (http://www.onegeology.org/what_is/accord.html) and terms of reference for operation.

Commercial entities may become **Corporate Members**, eligible to receive all OneGeology correspondence and participate in OneGeology activities within the limits of the OneGeology Accord and terms of reference for operation. Corporate Members can participate at annual technical and strategic review of emerging technologies and deployments in the OneGeology consortium.

Commercial entities may also become Sponsors where they simply support the idea and concept of OneGeology without getting actively involved.

Organisations that join the OneGeology Consortium ensure the sustainability of OneGeology.

For more information or a copy of the Consortium Agreement please contact us; onegeology@bgs.ac.uk



Current OneGeology Principal Members

In six years, from its beginnings in 2007 until October 2013, OneGeology has been joined by 119 members that either actively contributed to OneGeology or expressed their interest to participate.

At the end of September 2014, OneGeology has two Lead Parties – BGS (UK) and BRGM (FR) plus 20 Organisations that have signed up to the Consortium Agreement 15 having paid their relevant fees; with 5 still to pay.

Denmark	Geological Survey of Denmark and Greenland	GEUS
Ireland	Geological Survey of Ireland	GSI
Japan	Geological Survey of Japan	AIST
Luxembourg	Geological Survey of Luxembourg	SGL
Netherlands	Geological Survey of the Netherlands (TNO B&O)	TNO
New Zealand	GNS Science	GNS
Poland	Polish Geological Institute	PGI
Russia	A.P. Karpinsky Russian Geological Survey	FGUP VSEGEI
Slovenia	Geological Survey of Slovenia	GeoZS
Sweden	Geological Survey of Sweden	SGU
Switzerland	Swiss Geological Survey	Swisstopo
Australia	Geoscience Australia	GA
Germany	International Institute of Geological Surveys	IUGS
USA	American Association of State Geologists	AASG
Belgium	Geological Survey of Belgium	GSB

As a Sponsor, ESRI is enabling all 119 OneGeology Members to take the advantage of ESRI's Grant Offer. With this Grant Offer ESRI supports participants of OneGeology with the technical backbone of this infrastructure by offering each Member one copy of the ArcGIS system – the offer was recently enhanced and full details can be found on the OneGeology webpages at http://www.onegeology.org/technical_progress/esriGrantOffer.html.

USGS (US), Council for Geoscience (SA), KIGAM, (KR), Global Earthquake Model (DEM), and ESRI are in the process of joining OneGeology Consortium as different types of members, according to their legal status.





Recent and forthcoming events

Rio South America Meeting, October 2014 - in collaboration with the Companhia de Pesquisa de Recursos Minerais – CPRM, public company with authority of Geological Survey of Brazil, and Asociación de Servicios de Geología y Minería Iberoamericanos – ASGMI, OneGeology is organising “OneGeology South America Meeting: Rio-2014”. The event will be hosted by the Geological Survey of Brazil, held in CPRM, in Rio de Janeiro, on 24th October 2014, and will be attend by the representatives of the Geological Survey of South America and selected invitees.

This year's Annual General Meeting is organized following the initiative of CPRM and OneGeology (<http://www.onegeology.org> and <http://portal.onegeology.org>) with the focus on South America to help boost active OneGeology participation on the continent.

The one day meeting purpose is to provide an opportunity for the South America Geosciences community to exchange overviews of progress implementing OneGeology contributions and deploying associated international geoscience data exchanges and vocabularies, and also to discuss the related harmonization and integration of the geological data for the Geological Map of South America, at scales 1:1M and 1:5M. These maps are in being developed by the national geological surveys under the aegis of ASGMI and CGMW.

Ian Jackson receives the GSA Geoinformatics Division Award

Ian Jackson, former Managing Director of OneGeology, has been awarded the Outstanding Contributions in Geoinformatics Award, by the Geological Society of America, for his outstanding work and contribution to the development of OneGeology and international promotion of digital geological standards. Ian will collect his award at the GSA annual meeting in Vancouver, in October. We would like to take this opportunity to congratulate Ian for this excellent achievement!!



Representatives of OneGeology have recently actively participated at the following international events;

- ❖ Earth Science Europe Second Town Meeting (Paris, April 2014)
- ❖ EGU (Vienna, April 2014)
- ❖ XVI Serbian Geological Congress (Donji Milanovac, May 2014)
- ❖ INSPIRE 2014 (Aalborg, June 2014)
- ❖ GIS Forum MENA (Abu Dhabi, September 2014)
- ❖ International Conference on Modern Information Technologies in Earth Sciences (Petropavlovsk on Kamchatka, September 2014)
- ❖ 6th International UNESCO Conference on Global Geoparks (Saint John, September 2014).



Board meetings – an overview

OneGeology was addressed at the 5th and last meeting of the OneGeology Steering Group that took place on 4th August 2012 in Brisbane Australia. At this meeting it was decided to transform OneGeology initiative into a legal body. Following this decision a meeting was organised in Paris on 22nd and 23rd October where the future organisation and development of OneGeology was discussed and where the OneGeology Consortium was established. Participants also elected new Board, consisting of six regional representatives;

- ❖ Dr Eikichi Tsukuda of the Geological Survey of Japan - representing Asia
- ❖ Dr Oleg Petrov of VSEGEI, Russia - representing Eurasia
- ❖ Dr Andrzej Przybcin of the Geological Survey of Poland - representing Europe
- ❖ Dr Chris Pigram of Geoscience Australia elected as the Board Chair - representing Oceania
- ❖ Dr Lee Allison of the Geological Survey of Arizona, US - representing North America and Central America
- ❖ Mr Matthew Harrison as the representative for the British Geological Survey
- ❖ Mr François Robida as the representative for the French Geological Survey, BRGM

In summer 2014 additional member joined the Board – Dr. Maria Glicia da Nobrega Coutinho (CPRM, Brazil) representing South America.

Board Meeting #1:

Was a face to face meeting, held January 2014 in Tucson Arizona where details on governance, internal rules, funding and operational issues were discussed.

Board Meeting #2: In

May 2014, was the first telephone conference, during which activities and technical development updates were presented, a budget for 2014, meeting in South America was agreed, and IPR rights were discussed.

Board Meeting #3:

Again a telephone conference on 6th October 2014 has been held. The financial situation of OneGeology was discussed, together with the budget for 2015, industry engagement, and reports on activities.

Board Meeting #4:

The next OneGeology Board meeting will take place in January 2015 in Canberra, Australia.

Minutes and actions from all of the meetings can be found on the [OneGeology Website](#).

A small group of board members have been tasked to propose possible new business models to achieve sustainability of OneGeology. The group will present potential models to the Board for a decision in the January meeting.

Technical implementation group meetings – an overview

The 8th OneGeology Technical Working Group meeting was held on 15th August 2012 at GNS Science, New Zealand, and the 9th meeting of this group was held on 5th June 2013 at the A. P. Karpinsky Russian Geological Research Institute (FGUP "VSEGEI") in St Petersburg, Russia. And finally latest 10th meeting now renamed the Technical Implementation Group (TIG) took place on 1st July 2014 hosted by the Arizona Geological Survey in Tucson, USA. All minutes and results of this work are published on the [OneGeology Website](#) web pages.

The very latest technical developments, interoperability enhancements, and tools are described in annex A.



Annex A:

OneGeology interoperability enhancements, and tools 2014

All improvements and enhancements to the web services that OneGeology members are encouraged to serve and use of those services in the portal <http://portal.onegeology.org> are described in continuously updated web documentation in the http://www.onegeology.org/technical_progress/technical.html pages and <http://www.onegeology.org/misc/downloads.html> cookbook section (updated cookbooks 1,4 and 5) of www.onegeology.org. Three recent major improvements are worth bringing to your attention: Multiple-Projection Support, thematic analysis, and a statistics tool.

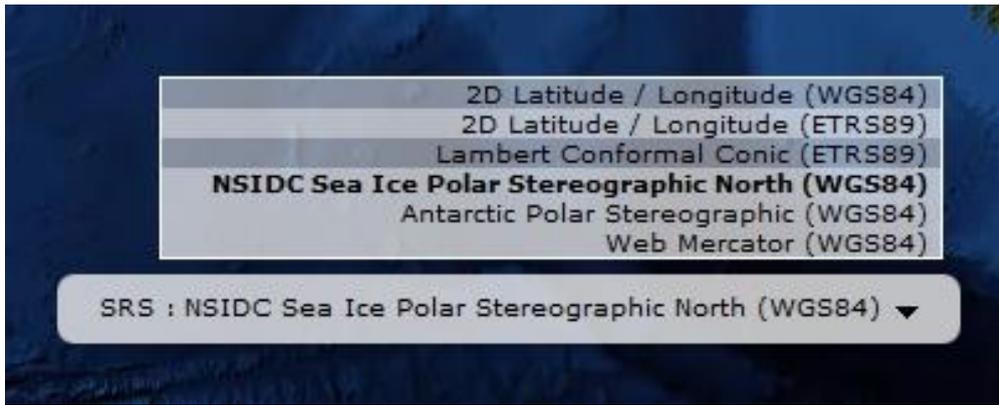
Viewing layers in different projections

New global and regional projection systems are now supported in the OneGeology portal to fit with user demand and in particular to enhance portrayal of web maps in the Arctic and Antarctic areas. The portal allows users to select from the supported projections listed in Table one for viewing in the OneGeology portal.

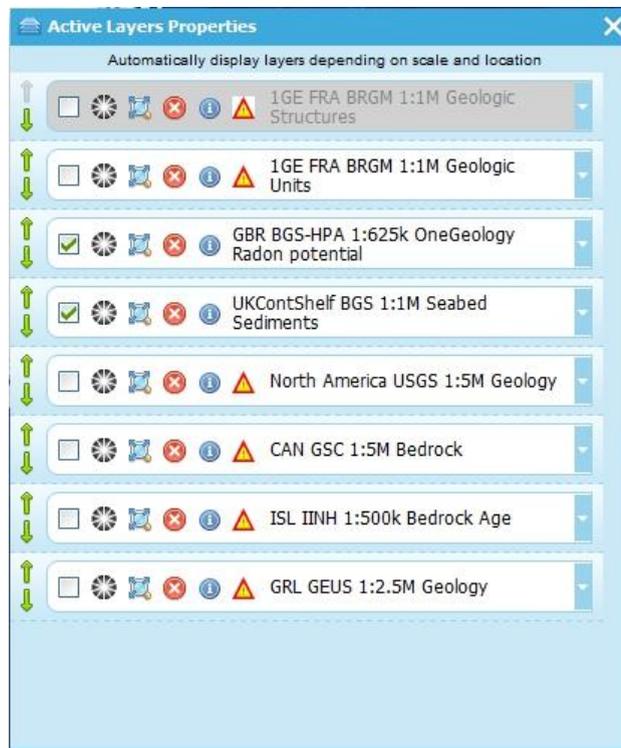
Table 1. Supported projections for display in OneGeology Portal.

ID	Name	URI
EPSG:303 1	Antarctic Polar Stereographic (WGS84)	http://spatialreference.org/ref/epsg/3031/
EPSG:303 4	Lambert Conformal Conic (ETRS89)	http://spatialreference.org/ref/epsg/3034/
EPSG:341 3	NSIDC Sea Ice Polar Stereographic North (WGS84)	http://www.spatialreference.org/ref/epsg/3413/
EPSG:385 7	Web Mercator (WGS84)	http://spatialreference.org/ref/sr-org/7483/
EPSG:425 8	2D Latitude / Longitude (ETRS89)	http://www.spatialreference.org/ref/epsg/4258/
EPSG:432 6	2D Latitude / Longitude (WGS84)	http://spatialreference.org/ref/epsg/4326/

The default projection to view layers in the portal is, and has always been, 2D Latitude / Longitude (WGS84) which is equivalent to EPSG:4326. All layers in the portal must support this projection as part of their service. To select another projection, users must use the list at the bottom of the main portal window. The current projection is shown in bold in the list, so for example in the below figure the active projection at the time of clicking the list was NSIDC Sea Ice Polar Stereographic North (WGS84).



Whilst all layers in the portal must support 2D Latitude / Longitude (WGS84), other projections are optional. If the users choose to change to any projection other the default, it should be expected that some layers will not support the newly selected projection; layers that do not support the selected projection are deselected (so the portal will not make any requests to them for map layers) and shown in the active layers properties window with a yellow warning triangle.

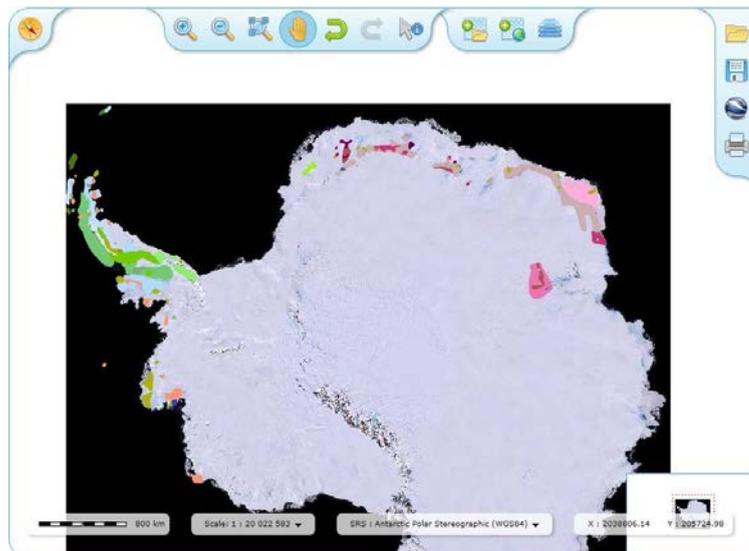


In many cases viewing the OneGeology layers in the default projection is sufficient, but in some cases, for example when dealing with layers in Polar Regions, a different projection is essential. An example is given below comparing the two images below showing map layers for Antarctica and surrounding regions. In the first example the default projection is used that shows Antarctica as a distorted strip of land at the bottom of the flattened globe.



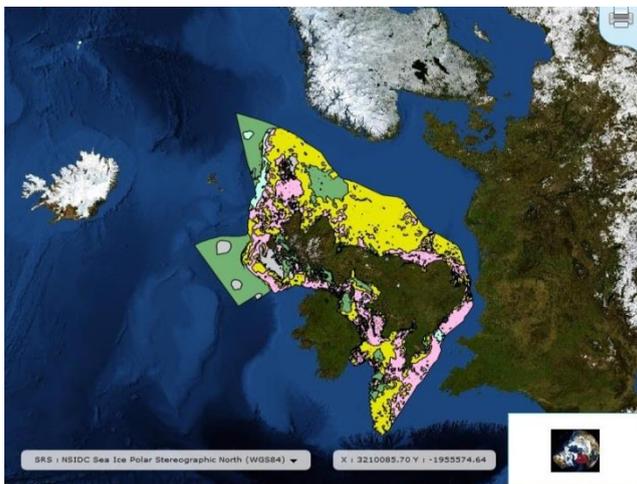


In the second example, the same map layers are shown in the Antarctic Polar Stereographic (WGS84) projection that displays Antarctica as it should be, as a single land mass. Note that the portal uses the Landsat Image Mosaic of Antarctica (LIMA) as basemap for this projection, which is different from the basemap used for the default projection. The LIMA basemap does not extend much further than the Antarctica land mass, map layers that support this projection other than Antarctica, for example the Falkland Islands (Malvinas) layers, will have no basemap if displayed using this projection.



Examples of other map layers in other projections are shown below:

NSIDC Sea Ice Polar Stereographic North (WGS84):



Web Mercator (WGS84)

2D Latitude / Longitude (ETRS89):



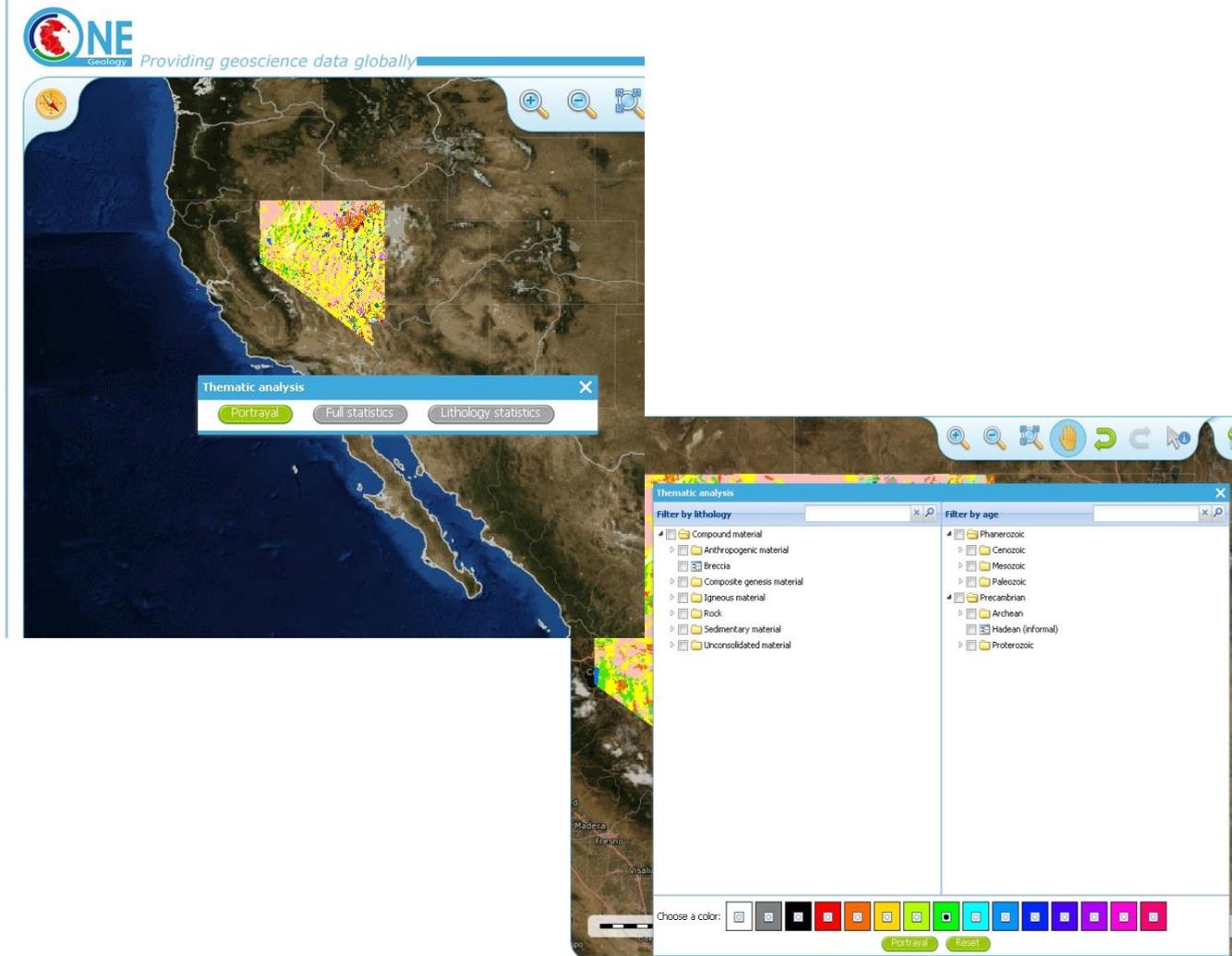
Portal thematic analysis tools to query and re-display GeoSciML_portrayal compliant WMS services

The OneGeology WMS cookbook (chapter 7 and appendices K and L) describes how to set up a specialised and more interoperable 3 star OneGeology Web Map Service called a *GeoSciML_portrayal WMS*. This service is based on data that utilises standard CGI vocabularies, enabling Open Geospatial Consortium (OGC) WMS Styled Layer Descriptor (SLD) portrayal for visual interoperability of maps from different services and user-customized legend schemes through the OneGeology Portal. The GeoSciML_portrayal service provide an entry level on the path to full GeoSciML data interoperability. These services can be accessed, queried and re-displayed in response to SLD legends in the manner described below.

With the 'Active Layers Properties' tool, OneGeology Portal users can obtain further information about any of the active layers in a map session. The tool gets an information dialogue that indicates various resources associated with the layer. If the layer is available for 'Thematic Analysis', it will be indicated by a link as shown below.



By clicking on the 'Thematic Analysis' link the options available for the layer are shown. Currently two functions are implemented. The first is an analysis of map features available in an associated GeoSciML v3.2 WFS. The second function is the ability to apply an external SLD to a layer which has GeoSciML-Portrayal v2.0 attribution. Special keywords in the layer metadata from the host web map service inform the OneGeology Portal which of these capabilities should be enabled. For example the Nevada service layer, US-NV NBMG 1:500k Geology, is a WMS portrayal service only, so only the Portrayal functionality is available (green button, see figure below), the other functionality buttons are not available (greyed out)



GeoSciML-Portrayal

The analysis window offers the users two ways to filter the polygons that will be displayed in the map, either by lithology or by age. The initial view in the lithology filter window is simply the 'Compound material' option, and in the age filter window the initial view shows the 'Phanerozoic' and 'Precambrian' options. These options reflect the structure of the underlying controlled vocabularies.

The values for the lithology filter options are taken from the CGI Simple Lithology controlled vocabulary, for a definition of terms one should refer to:

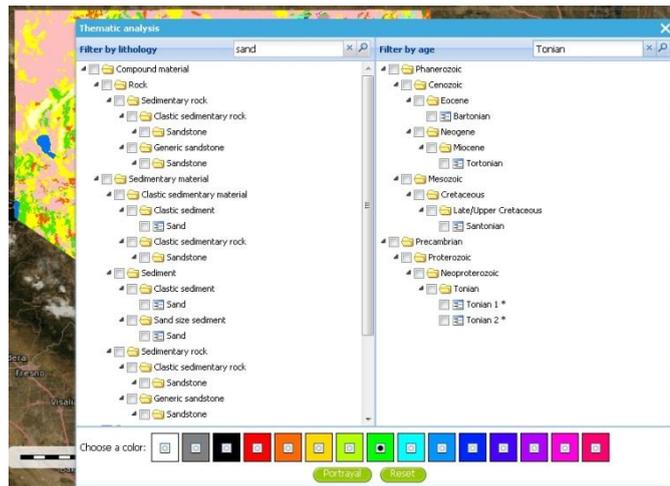
<http://resource.geosciml.org/static/vocabulary/cgi/201211/simplelithology.html>.

The values for the age filter options come from the ICS 2009 Geologic timescale vocabularies, for further information on these terms see:

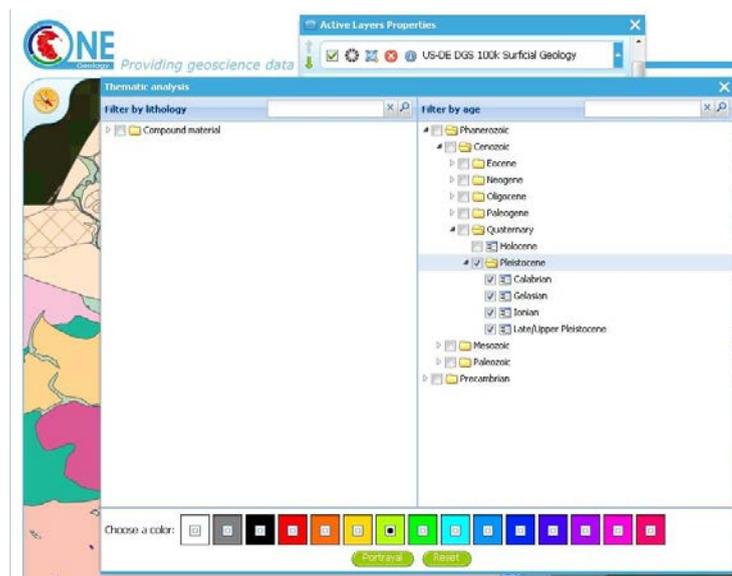
<http://resource.geosciml.org/classifier/ics/ischart/Phanerozoic> and

<http://resource.geosciml.org/classifier/ics/ischart/Precambrian>

In any window one can refine the selection by drilling down into the hierarchy, and then clicking on an option box to confirm the filter selection. In the above figure example, the expanded lithology view options are possible by first clicking on the white arrow next to the 'Compound material' option (the arrow turns black on such a selection). Similarly, the age filter options are possible by first selecting the 'Phanerozoic' then 'Paleozoic'. No selection on the filter content has been made yet, but instead just exploring the available options by which one could filter are shown.



As well as drilling down through the hierarchy progressively to find the term one wish to filter by, also search for terms directly by entering the search term in the box at the top of the respective Age and Lithology windows is possible. For example in the above example a search in the Lithology vocabulary for ‘Sand’ and the Age vocabularies for the term ‘Tonian’ is shown. To search for another term one simply uses the X icon to clear the old search term, or just start typing a new term in the search window. Note that even though there are exact matches for both terms the search shows partial matches as well. Again, at this stage no selection on the filter content has been made yet.



In this (above) example the selection of the Delaware WMS service ‘US-DE DGS 100k Surficial Geology’ layer, which has GeoSciML-Portrayal v2.0 attribution is shown. The user decides to filter by age, looking to view only those geology polygons that are attributed as belonging to the Pleistocene (by ticking the options window to the left of the term). Then one selects a colour with which to apply to all the polygons that match the age criteria, the tool generates an external SLD file like the one below:

```
<slid:StyledLayerDescriptor
  version="1.0.0"
  xmlns="http://www.opengis.net/ogc"
  xmlns:sld="http://www.opengis.net/sld"
  xmlns:ogc="http://www.opengis.net/ogc"
  xmlns:gml="http://www.opengis.net/gml"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.opengis.net/sld
    http://schemas.opengis.net/sld/1.0.0/StyledLayerDescriptor.xsd">
  <slid:NamedLayer>
    <slid:Name>US-DE_DGS_100k_Surficial_Geology</slid:Name>
```



```

<sld:UserStyle>
  <sld:FeatureTypeStyle>
    <sld:Rule>
      <ogc:Filter>
        <ogc:Or>
          <ogc:PropertyIsEqualTo>
            <ogc:PropertyName>representativeAge_uri</ogc:PropertyName>
            <ogc:Literal>
              http://resource.geosciml.org/classifier/ics/ischart/Pleistocene
            </ogc:Literal>
          </ogc:PropertyIsEqualTo>
          <ogc:PropertyIsEqualTo>
            <ogc:PropertyName>representativeAge_uri</ogc:PropertyName>
            <ogc:Literal>
              http://resource.geosciml.org/classifier/ics/ischart/Calabrian
            </ogc:Literal>
          </ogc:PropertyIsEqualTo>
          <ogc:PropertyIsEqualTo>
            <ogc:PropertyName>representativeAge_uri</ogc:PropertyName>
            <ogc:Literal>
              http://resource.geosciml.org/classifier/ics/ischart/Gelasian
            </ogc:Literal>
          </ogc:PropertyIsEqualTo>
          <ogc:PropertyIsEqualTo>
            <ogc:PropertyName>representativeAge_uri</ogc:PropertyName>
            <ogc:Literal>
              http://resource.geosciml.org/classifier/ics/ischart/Ionian
            </ogc:Literal>
          </ogc:PropertyIsEqualTo>
          <ogc:PropertyIsEqualTo>
            <ogc:PropertyName>representativeAge_uri</ogc:PropertyName>
            <ogc:Literal>
              http://resource.geosciml.org/classifier/ics/ischart/UpperPleistocene
            </ogc:Literal>
          </ogc:PropertyIsEqualTo>
        </ogc:Or>
      </ogc:Filter>
      <sld:PolygonSymbolizer>
        <sld:Fill>
          <sld:CssParameter name="fill">#3366FF</sld:CssParameter>
        </sld:Fill>
      </sld:PolygonSymbolizer>
    </sld:Rule>
  </sld:FeatureTypeStyle>
</sld:UserStyle>
</sld:NamedLayer>
</sld:StyledLayerDescriptor>

```

When this external customized SLD file has been generated for the age filter selection, the OneGeology Portal then makes a new [GetMap request referencing this SLD](#) for the area of selection like:

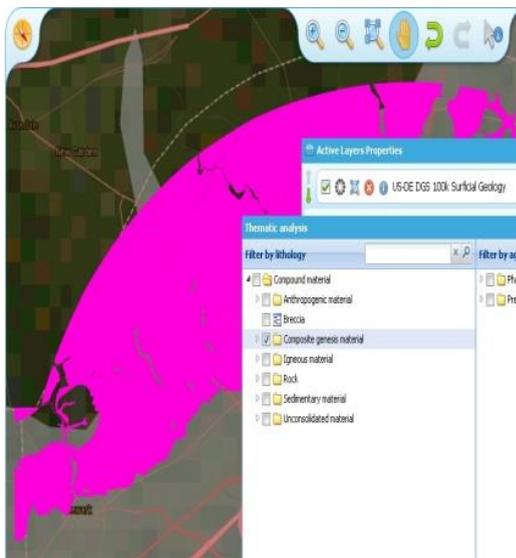
```

http://maps.dgs.udel.edu/geoserver/DGS_Surficial_and_Contact_Geology/wms?
SERVICE=WMS&
TRANSPARENT=TRUE&
VERSION=1.3.0&
REQUEST=GetMap&
STYLES=&
EXCEPTIONS=INIMAGE&
FORMAT=image/png&
CRS=EPSG%3A4326&
SLD=http://portal.onegeology.org/slds/20130628_1372432351566_OpenLayers.Layer.WMS_991.sld&
SAVEDLAYERS=US-DE_DGS_100k_Surficial_Geology&
BBOX=39.57931760121924,-75.79289049774037,39.784397224903465,-75.45691470533502&
WIDTH=1250&
HEIGHT=763&

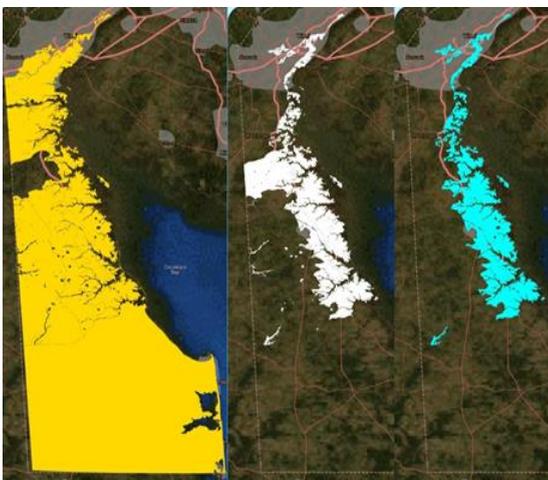
```



The resultant custom map (with the GeoSciML-Portrayal filter for Pleistocene polygons applied)



GeoSciML-Portrayal attribution in the map, such as the following lithology filter on 'Composite genesis material'.



Finally, it is possible to filter by both Age and Lithology, for example in the below image it can be seen first the result for 'Sand', then the search results for 'Upper Pleistocene', and then the results for a combined search for 'Sand' and 'Upper Pleistocene'.

The generated external SLD will be available on the OneGeology portal server for a least one day, but no longer than one week. In the age filter example above a copy of the generated SLD was taken and put on the BGS WMS server for long term reference.

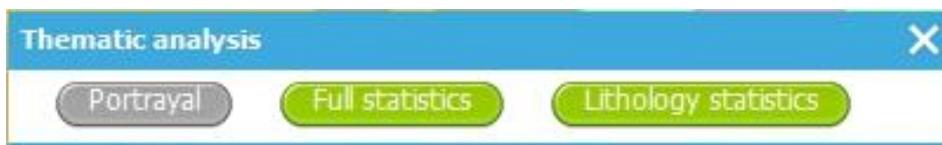
- Using the thematic analysis Tools for GeoSciML 3.2 Web Feature Services (5 star OneGeology services).

In 2014 OneGeology published cookbooks and guidance to allow data web service providers to set up and publish fully interoperable GeoSciML 3.2 Web Feature services using free and open source (Geoserver) WFS software. Geological surveys working in Europe can provide OneGeology and at the same time INSPIRE-valid data and services following the guidance in the OneGeology cookbooks (and at http://www.geosciml.org/geosciml/3.2/documentation/cookbook/INSPIRE_GeoSciML_Cookbook%20_1.0.pdf). The tool described below, available on the Portal, uses the GeoSciML 3.2 schema to query the web-served data from each service. Services that work with this tool will be suitable to receive the highest 5 star accreditation that OneGeology currently can award.

Statistics tool

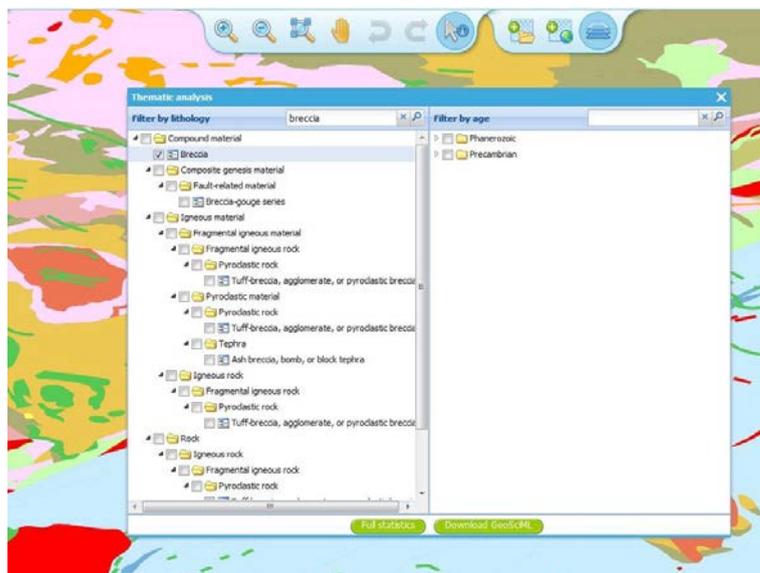
The statistics functionality (Full statistics and Lithology statistics) of the Thematic analysis tools utilize a GeoSciML v3.2 service coupled with a WMS Layer. The availability of the coupled WFS that will work with the statistics tool is indicated by a special keyword (GeoSciML32_wfs_age_or_litho_queryable) in the layer metadata.

If the OneGeology Portal detects that a layer selected by the user has an associated GeoSciML v3.2 WFS, then when the user opens the Thematic analysis window and she/he will see the Full statistics, and Lithology statistics buttons will be highlighted in green (see figure, below), if not the buttons will be greyed out and the user will not be able to use these analyses tools.



Full statistics

One should make a filter selection, by age or lithology, in the same way as described for the GeoSciML-Portrayal section. In the below example first the 'Full statistics' option button is selected, then searched for the Lithology term 'Breccia', selecting the broad term as the filter keyword. Two options are possible, either to opt to 'Download the GeoSciML', or





If the user selects the 'Download the GeoSciML' button, the portal will generate a WFS filter query that covers the selected area and the query term and send that query to the WFS server. It then retrieves the result and the user should get the option (depending on your browser settings) of either downloading the resultant GeoSciML, or viewing in her/his browser.

[Example GeoSciML download request for Breccia in a region of Scotland.](#)

The full request query is shown below in a fragmented style for easier reading (showing both CGI and exactmatch INSPIRE URI's handled by the query):

<http://portal.onegeology.org/ProxyWFSTools.jsp?>

```
request=gsmllbbox&
bbox=55.80026612447937,-4.2893274201620555,56.19973387552063,-3.7106725798379445&
srs=EPSG:4326&
url=http%3A//ogc.bgs.ac.uk/digmap625k_gsmll32_insp_gs/wfs%3F&
typename=gsmll32MappedFeature&
version=2.0.0&
filter=
  %3Cfes%3AOr%3E
    %3Cfes%3APropertyIsGreaterThanOrEqualTo%3E
      %3Cfes%3AValueReference%3E
        gsmll%3ASpecification/
        gsmllgu%3AGeologicUnit/
        gsmllgu%3AComposition/
        gsmllgu%3ACompositionPart%5Bgsmllgu%3AMaterial/
        gsmllm%3ARockMaterial/
        gsmllm%3ALithology/
        @xlink%3Ahref%20%3D%20%27%2F%27%5D/
        gsmllgu%3AProportion/
        gsmllm%3AGSML_QuantityRange/
      %3Cfes%3AValueReference%3E
        gsmll%3ALowerValue
      %3Cfes%3AValueReference%3E
        %3Cfes%3ALiteral%3E
          5
        %3Cfes%3ALiteral%3E
      %3Cfes%3APropertyIsGreaterThanOrEqualTo%3E
    %3Cfes%3APropertyIsGreaterThanOrEqualTo%3E
      %3Cfes%3AValueReference%3E
        gsmll%3ASpecification/
        gsmllgu%3AGeologicUnit/
        gsmllgu%3AComposition/
        gsmllgu%3ACompositionPart%5Bgsmllgu%3AMaterial/
        gsmllm%3ARockMaterial/
        gsmllm%3ALithology/
        @xlink%3Ahref%20%3D%20%27http%3A//inspire.ec.europa.eu/
        codelist/
        LithologyValue/
        coal%27%5D/
        gsmllgu%3AProportion/
        gsmllm%3AGSML_QuantityRange/
        gsmllm%3ALowerValue
      %3Cfes%3AValueReference%3E
    %3Cfes%3ALiteral%3E
      5
    %3Cfes%3ALiteral%3E
  %3Cfes%3APropertyIsGreaterThanOrEqualTo%3E
%3Cfes%3AOr%3E
```



Alternatively, one may choose the 'Full statistics' option button. With this option the filter query is sent to the WFS server and the results are then tabulated in the page. By default the table shows the description of features matching the query, as in the top part of the below image. However one may use the dropdown box at the top of the form to display other fields returned in the results such as EventProcess, CompositionPart, OlderNamedAge, and (not shown in the image below) YoungerNamedAge.

Statistics on BBOX			
Please choose a field: Description			
name	translation	count	pcaera
STEWARTRY GROUP - SANDSTONE,...	STEWARTRY GROUP - SANDSTONE,...	1	100.0 %

Statistics on BBOX			
Please choose a field: EventProcess			
name	translation	count	pcaera
mechanical deposition	mechanical deposition	1	100.0 %

Statistics on BBOX			
Please choose a field: CompositionPart			
lithology	titology	count	pcaera
Breccia	Breccia	1	33.33 %
Sandstone	Sandstone	1	33.33 %
Conglomerate	Conglomerate	1	33.33 %

Statistics on BBOX			
Please choose a field: OlderNamedAge			
name	translation	count	pcaera
Cisuralian	Cisuralian	1	100.0 %

Lithology statistics

Instead of selecting the 'Full statistics' option the user can instead choose the 'Lithology statistics' option. Unlike the 'Full statistics' option, where one can select multiple ages and lithologies (in particular by selecting a category and all sub-classes at the same time), with the 'Lithology statistics' query the user can only select one lithology term exactly and sub-classes will not be returned. For example in the below query a selection of an area near Glasgow (Longitude -4, Latitude 56 at a scale of 1:150,000) has been made including the filtering of features that have a proportion of coal greater than or equal to 5%.



Just like the 'Full statistics' option one can chose to 'Download the GeoSciML' result of the query, or one can view the results in forms in a portal results window, by selecting the 'Lithology statistics' button.

Statistics on BBOX

Please choose a field:

name	translation	count	pcarea
STRATHCLYDE...	STRATHCLYDE GROUP - SEDIMENTARY ROCK CYCLES, STRATHCLYDE GROUP TYPE	1	30.55 %
CLACKMANNAN...	CLACKMANNAN GROUP - SEDIMENTARY ROCK CYCLES, CLACKMANNAN GROUP TYPE	1	46.76 %
SCOTTISH COA...	SCOTTISH COAL MEASURES GROUP - MUDSTONE, SILTSTONE, SANDSTONE, COAL, IRONSTONE AND FE...	1	22.67 %

Statistics on BBOX

Please choose a field:

name	translation	count	pcarea
Visean	Visean	1	30.55 %
Moscovian	Moscovian	1	22.67 %
Bashkirian	Bashkirian	1	46.76 %

Statistics on BBOX

Please choose a field:

lithology	tiithology	count	pcarea
Coal	Coal	3	19.99 %
Iron rich sedimentary rock	Iron rich sedimentary rock	1	4.53 %
Limestone	Limestone	2	15.46 %
Siltstone	Siltstone	3	19.99 %
Mudstone	Mudstone	3	19.99 %
Sandstone	Sandstone	3	19.99 %

Statistics on BBOX

Please choose a field:

name	translation	count	pcarea
Visean	Visean	2	77.32 %
Bashkirian	Bashkirian	1	22.67 %

[Example GeoSciML download request for 5% coal in formations near Glasgow](#)

The full request query is shown below in a fragmented style for easier reading:

[http://portal.onegeology.org/ProxyWFSTools.jsp?](http://portal.onegeology.org/ProxyWFSTools.jsp)

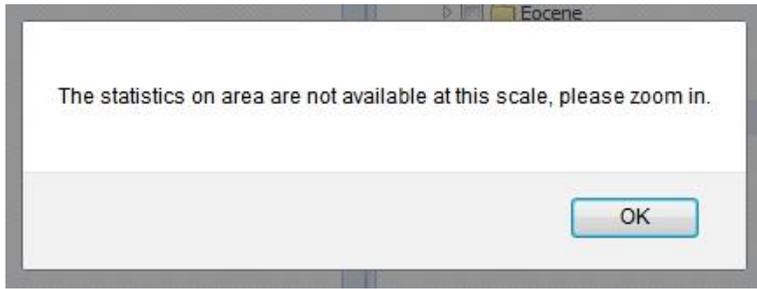
```
request=gsmllbbox&
bbox=55.80026612447937,-4.2893274201620555,56.19973387552063,-3.7106725798379445&
srs=EPSG:4326&
url=http://ogc.bgs.ac.uk/digmap625k_gsmll32_insp_gs/wfs?&
typename=gsmll:MappedFeature&
version=2.0.0&
filter=
<fes:PropertyIsGreaterThanOrEqualTo>
  <fes:ValueReference>
    gsmll:specification/
    gsmllgu:GeologicUnit/
    gsmllgu:composition/
    gsmllgu:CompositionPart/
  gsmllgu:material/
    gsmllm:RockMaterial/
    gsmllm:lithology/
    @xlink:href = 'http://resource.geosciml.org/classifier/cgi/lithology/coal'
    gsmllgu:proportion/
    gsmll:GSML_QuantityRange/
    gsmll:lowerValue
  </fes:ValueReference>
  <fes:Literal>
    5
  </fes:Literal>
</fes:PropertyIsGreaterThanOrEqualTo>
```

Alternatively you can view the statistics in a form version sorted by field, by selecting the 'Lithology statistics' button.



Caveat

The statistics function is only able to work when zoomed in to quite small areas; precisely this is when the spatial resolution is less than 0.0015 (e.g. a pixel shows less than 0.0015 degrees latitude of the ground surface). When viewing the map if one is not zoomed in far enough following error will appear.



When getting this error one must close the results ('Statistics on BBOX') window, to be able to access the zoom tools, and then zoom in further.