

IUGS COMMISSION ON GLOBAL GEOCHEMICAL BASELINES

TERMS OF REFERENCE

Proposed for approval at the 4th Ordinary Session of the IUGS-IGC Council,
Cape Town, August 31 – September 1, 2016

Background

The IUGS Commission on Global Geochemical Baselines builds on the previous work of the IUGS Task Group on Global Geochemical Baselines (TGGGB) (1997 – 2016).

The long-term mission of the Commission is:

- (i) to standardise global-scale geochemical baselines methods,
- (ii) to prepare a global geochemical baselines database, and its representation in map form,
- (iii) to document the concentration and distribution of chemical elements and species in the Earth's near-surface environment.

This database is urgently needed by environmental and resource managers in all countries. While tremendous strides were made during the term of the TGGGB with continental-scale geochemical surveys being completed in Europe, Australia, China, India, Mexico, and the United States, there is still about 80% of the Earth's land surface without standardised, consistent geochemical data. The new IUGS Commission will work with countries throughout the world to facilitate additional geochemical coverage.

Objectives

To reach the goals stated above, the Commission promotes and facilitates the implementation of harmonised sampling, sample preparation, quality control, and analytical protocols in geochemical mapping programmes. Commission activities carried out to promote these aims are:

- Developing partnerships with countries conducting broad-scale geochemical mapping studies.
- Providing consultation, guidance, and training in the form of workshops and short courses to build the capacity for conducting geochemical mapping programmes in countries around the world.
- Organising periodic international symposia and conferences to foster communication among the geochemical mapping community.

- Developing criteria for certifying those projects that are acceptable for inclusion in a global geochemical database.
- Acting as a repository for data collected by projects meeting the standards of harmonisation.
- Preparing complete metadata for the various certified projects.
- Preparing a global geochemical database and atlas.

In addition, the Commission will work to increase the awareness of policy and decision makers of the need for harmonised geochemical data at the global scale.

Collaboration with UNESCO International Centre on Global-Scale Geochemistry

In 2016, the UNESCO International Centre on Global-Scale Geochemistry opened in Langfang, China. The IUGS Task Group on Global Geochemical Baselines was an active participant in preparing the successful proposal originally submitted to UNESCO in 2009. One of the most important tasks for the new Commission is to establish formal collaboration with the UNESCO Centre. There is a considerable overlap in the objectives of the IUGS Commission and the UNESCO Centre and it is essential that the two groups work to support each other in the pursuit of these objectives.

Constraints

There are severe constraints placed on the Commission in the pursuit of its goals. It must be recognised that the budget required for completing global-scale geochemical coverage of the land-surface of the Earth is far beyond the scope and capability of either the Commission or the IUGS.

The success in obtaining the Commission's ultimate goal of a global geochemical database is almost entirely dependent on individual countries or groups of countries funding geochemical mapping programmes within their own region of interest.

The Commission can only offer training and consultation to these countries as needed to facilitate the establishment and successful completion of these projects. The Commission is not a funding source for these countries.

Given that the normal lifetime of an IUGS Commission as stated in the IUGS By Laws is 8 years, there is no possibility that the goal of the Commission will be accomplished in that timeframe.

Structure

The Commission is led by a Steering Committee consisting of two Co-Leaders, a Scientific Secretary and a Treasurer. The Steering Committee will be assisted by 1-2 representatives from each continent. Membership in the Commission is open to all countries with either an active geochemical mapping programme or an interest in establishing such a programme. As needed,

the Commission may form ad hoc committees to deal with specific issues, such as sampling protocols, analytical methods, databases, or quality control.

The current (2016) Steering Committee consists of:

Co-Leaders:

Dr. David B. Smith, U.S. Geological Survey, Denver, CO, USA
Prof. Wang Xueqiu, Institute of Geophysical and Geochemical Exploration, Langfang, China

Scientific Secretary:

Dr. Patrice de Caritat, Geoscience Australia, Canberra, Australia

Treasurer

EurGeol. Alecos Demetriades, Athens, Greece

It should be noted that Prof. Wang Xueqiu is both a Co-Leader of the IUGS Commission and Executive Director of the UNESCO International Centre on Global-Scale Geochemistry opened in Langfang, China. A healthy and fruitful collaboration between these two organisations can be anticipated.