1 INTRODUCTION

Collaboration between the Geological Surveys of Scandinavian countries and the Ministry of Natural Resources of the Russian Federation has traditionally been effective. In 1991-2004, the Geological Surveys of Norway (NGU), Finland (GTK) and Russia (ROSNEDRA) carried out two large geochemical mapping projects: "Kola Ecogeochemistry" and "Barents Ecogeo-chemistry". The results of these investigations were published as the Geochemical Atlas of the Central Part of the Barents Region (Reimann et al. 1998) and the Geochemical Atlas of the Eastern Barents Region (Salminen et al. 2004). A number of other international geochemical mapping projects coinciding with the area of the Northern Europe Geochemistry project have also been completed: the "Nordkalott project" in 1980-1986 (Bölviken et al. 1986), the FOREGS Geochemical Atlas of Europe in 1996-2006 (Salminen et al. 2005) and the "Baltic Soil Survey" in 1996-1998 (Reimann et al. 2003). Additionally, many national regional-scale geochemical mapping projects have been completed in Northern Europe.

The 2nd Summit of Heads of Geological Surveys of the CIS and Far Foreign Countries, held in St. Petersburg (VSEGEI) in June 2005, decided to continue joint geochemical investigations, including ecogeochemical mapping of the border territories of NW Russia and adjacent countries. The meeting of representatives from the Geological Surveys of Finland, Norway and Russia (St. Petersburg, 17.-19.10. 2005) decided to collect the data from completed regional geochemical projects into a common database and carry out joint data interpretation in the framework of a new international project, Geochemical Assessment of the Mineral Potential and Environment Status of Fennoscandia and NW Russia (Northern Europe Geochemistry (NEG) project). In April 2006, the Russian Federal Agency, ROSNEDRA, confirmed a national project entitled "Compilation of an Ecogeochemical Atlas at the Scale of 1:5 000 000 on the Territory of NW Russia and Adjacent Frontier Areas" as a Russian input to the planned joint international geochemical mapping project.

The main geological tasks of the Northern Europe Geochemistry project were defined as follows:

- to collect existing data and related information from completed regional geochemical mapping projects in NW Russia, Finland, Sweden, Norway, Estonia, Latvia and Lithuania into a common unified database;
- to prepare accessory maps characterizing natural conditions and the main features of human activities in the project area;
- to make a set of summary maps of the spatial distribution of element concentrations and their associations in the studied natural media;
- to estimate the environmental status of the territory of the project area at the scale of 1:5,000,000;
- to compose a map of natural anomalous geochemical fields (AGF) at the scale of 1:5,000,000 for the assessment of mineral potential and selection of promising regions in the territory of the Fennoscandian Shield and its frame with the Russian Plate.
- to publish a Geochemical Atlas of Northern Europe with explanation notes to the maps and methodological recommendations for the composition of geochemical review maps.

The project area covers the territory of 7 countries (Norway, Sweden, Finland, Estonia, Latvia, Lithuania and NW Russia) and amounts to 2,175,000 km^2. The main executors of the project were the Geological Surveys of Finland (GTK), Norway (NGU), Sweden (SGU), Estonia (EGK), Latvia (LGMEA, together with Geolplus Ltd company), Lithuania (LGT) and the company SC Mineral from St. Petersburg. In Russia, the main subcontractors to the project were the Federal Institute IMGRE from Moscow (methodological support), the Joint Stock Company Arkhangelskgeolrazvedka from Arkhangelsk (summarizing and interpretation of regional geochemical data from the Arkhangelsk region) and the Federal Institute VSEGEI from St. Petersburg (analytical work).

The Steering Committee of the NEG project consisted of representatives of the main financiers (A. Morozov, ROSNEDRA, E. Ekdahl, GTK, L. Person, SGU and A. Björlykke, NGU) and the international project leader (R. Salminen, GTK). The working group of the NEG project consisted of some 20 specialists from the organizations taking part in the project. Meetings of the working group were regularly held to discus and decide on different methodological issues and interpretation of the data.

Finally, the project database included the original data from 28 regional geochemical data sets that were based on different sample media and several different applied analytical methods. Additionally, diverse accessory data were required for the background information needed in the interpretation of the geochemical maps. The compiling of such

diverse geochemical information was challenging and laborious. No new data were collected during the project, but all the work was based on data and information published or available from the archives of the participating organizations.

Thus, the main aim of the project was to harmonize and generalize the data to such an extent that the preparation of geochemical maps covering the whole project area and including data from several separate projects was possible. This work was based on the extensive experience of the partners and was carried out with the aid of modern statistical and GIS methodology. The resulting geochemical review maps enabled an assessment of the ecogeochemical status of the area and the localization of promising areas for mineral exploration.