BARENTS ECOGEOCHEMISTRY - A NEW CONTRIBUTION TO THE GLOBAL GEOCHEMICAL BASELINES PROGRAMME

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From 1999 to 2003 a multimedia, multipurpose regional geochemical mapping project will be carried out jointly by scientists from Finland, Norway and Russia. The project area encompasses Finland, the northernmost tip of Norway and the north-western part of Russia. It is an extension of the Kola Ecogeochemistry project (carried out 1992-1997). The Kola project has documented levels and sources of up to more than 50 chemical elements including radionuclides in the central parts of the Barents Region. An important aim of the project is to define the anthropogenic impact in relation to the variations in regional geochemical baselines over a very large area containing several of the largest industrial emitters in Europe but also some of its most pristine areas. At the same time the data produced will be an important contribution to the IUGS/IAGC Global geochemical baselines programme.The study area covers 1.550,000 km2 from Hammerfest in Norway to the Ural Mountains in Russia and from the Barents Sea in the North to St.Petersburg in the South, including the whole territory of Finland. Stream sediment, stream water, terrestrial moss, humus and C-horizon soil samples will be collected from 1,200 sampling sites in Russia, 300 in Finland and 50 in Norway, giving an average density of one site per 1000 km2. Samples from the tree and shrub layer and complete soil profiles were collected from nine catchments during a pilot phase in 1999. The most modern analytical methods will be used to analyse the samples, and concentrations of more than 50 elements, radionuclides, PAH's and PCB's will be determined. A geochemical baseline study in the region will give authorities and other interested parties a base to assess the existing state of the environment. It will allow distinguishing environmental impacts due to new developments from those of an older date. New results from ecogeochemical mapping of the land areas will be compared with existing data from the sea shelf territory. This will allow estimating the influence of human activities on the continent on the sea shelf. At the same time the environmental status of the whole region will be recorded before new large oil and gas deposits are exploited.