The Geochemical Baseline Survey of the Environment is a long-established, high-resolution regional geochemical mapping project run by the British Geological Survey. A project initially stimulated by mineral exploration and to assist geological mapping has successfully evolved into a survey that has many environmental applications. Much of the current demand for surface geochemical data is driven by legislation. The geochemical mapping, originally based on the collection of drainage samples, has expanded to include soils and a further suite of determinands in stream waters. The methodology of the project and application of the baseline data are described and issues common to worldwide geochemical mapping programmes are discussed.