



## **New Evaluation of suspended Sediment Load in Icelandic Rivers**

**J. Hardardottir**, S.B. Thorlaksdottir and A. Snorrason

Hydrological Service, National Energy Authority, Reykjavik, Iceland (jha@os.is / Fax: +354 568-8896)

Over 12000 suspended sediment samples from Icelandic rivers have been analyzed for concentration and grain size during the last six decades by the Hydrological Service at the National Energy Authority. At present, samples are taken from about 30 locations, although the annual number of samples from each site varies greatly. Most of the samples have been obtained from the numerous glacial rivers, which are both the largest rivers in Iceland and the rivers mostly utilized for hydroelectric power production.

The suspended sediment analyses have been used to create rating curves and calculate sediment load for many of the larger rivers. However, the complex nature of Icelandic rivers makes the establishment of rating curves difficult. Not only are there major seasonal variations in sediment load following the melting season of the glaciers; the frequent glacial outburst floods (jökulhlaups) and glacial surges, as well as other flood events also modify the sediment load greatly. Furthermore, hydropower construction in many of the large watersheds has greatly lowered sediment load in the lower reaches and to the sea, as most of the coarse material is deposited in upstream reservoirs.

The last evaluation of sediment load in Icelandic rivers was performed in the early 1990s, but since then, a great number of samples has been taken which has been used to make new and/or updated calculations of sediment load. In this paper we introduce a new evaluation of sediment load in watersheds that cover over one quarter of the area of Iceland. Furthermore, some of the great variations in sediment load caused by glacier phenomena and/or hydropower construction in individual rivers are demonstrated. Older data are also included where no new evaluations have been performed.