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## Measuring discharge

The national discharge network consists of more than 270 stations, of which some 160 are operated by the Finnish Environment Institute (SYKE) and by the Centres for Economic Development, Transport and the Environment. Besides the environmental administration, hydropower companies are important producers of discharge data. The discharge values given in the database are daily mean values. The database contains data from about 600 sites.



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The discharge stations of the environmental administration are mostly located at natural river channels. The records of these discharge stations are based on the water level records and the rating curve of the station. Stations operated by other discharge data producers are in most cases hydropower plants or regulating dams. These discharge observations are controlled by calibration measurements.

A rating curve can be established if hydraulic conditions of a site are favorable. To estimate a rating curve, 5 to 10 discharge measurements are needed. Moreover, frequent measurements are needed to check the validity of the curve, as



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the channel may change due to human activities or natural processes - e.g. as a result of hydrotechnical construction, or erosion, or the growth of vegetation. There are also some 70 stations for which the rating curve is not valid in wintertime due to the backwater effect caused by ice in the channel. During these ice-affected periods discharge is estimated afterwards by utilizing winter measurements, simulations of a conceptual hydrological model and both ice and weather observations. Discharge observations in the database during ice-affected periods are such post-processed values.