

## Acoustic profiling in Lake Balkhash , Kazakhstan

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In order to clarify sedimentary structure of the lake sediments in Lake Balkhash, and also to determine coring sites in suitable condition, acoustic profiler survey was conducted along the survey line about 290 km long in the eastern part of the lake. For this survey, the instrument of StrataBox (3.5KHz), Syquest, was used. Positions of the boat were measured by GPS in every second. Navigation of the boat was based on the map soft (Kashimir 3D) using Landsat images and SRTM3 data. Topographical situation of Lake Balkhash basin shows that the elongated lake is located along the northern margin with the advancement of deltaic areas composed of clastic materials supplied mainly from Iri River.

At the result of the survey, the most part of the lake is shallower than 10m in depth, thickness of the soft sediment is about 10m in maximum, and several buried valleys were recognized. Presence of buried valleys and erosional terraces recognized in the profiles, suggests that the lake level probably stayed at 325m, 330m, and 335m, being 5m to 15m lower than the present level of 340 m asl.

In some narrow parts, flow velocity is so high that the bottom is eroded and only coarse materials are deposited by the segregation of finer materials. Coring sites for reconstruction of environmental changes are required to be stable and continuous sedimentation.

From the survey in the eastern part of the lake, some inlets along the northern coast having thicker soft sediment, are preferable, because of weaker wave action and less inflow of terrestrial materials. Such conditions will be suitable to make clear the past environment in high resolution. It is necessary to do the same survey in the western part of the lake too, to obtain the sedimentary conditions in whole area of Lake Balkhash.