

Determining environmental change in Central Asia using proxy data

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To clarify the past environment in Central Asia, various proxy data were used in this study, including tree-ring data, glacier changes, glacier runoff, lake-level changes, ice-core data, and old maps and documents. Tree-ring data can give summer temperatures and precipitation. Old maps, lacustrine terraces, and lake sediments show lake-level changes. Glacier changes reflect climatic conditions, and old documents and maps show the changes in human activity and lifestyle. Ice-core data from mountain glaciers of Central Asia area important proxy data for

environmental changes in the highlands over 10,000 years. The data include information on dust storms, cold/warm climate conditions, snow accumulation, and vegetation conditions.

To reconstruct past environment, we should interpret the environment using several types of proxy data, not one type. For example, the shrinking of the Aral Sea since 1960s is a current environmental problem. There are reports that the area of the Aral Sea in the past was similar to the current lake area. A decline in the levels of other lakes in Central Asia has been reported, indicating that significant environmental changes are occurring. What was the environment like in the past? This study introduces one illustration to interpreting past environment using proxy data, including ice-core data.