Asia is home to a growing majority of the Earth’s population living in regions highly sensitive to impacts of climate change, including water resources and increasing desertification. Future assessment of regional climate variability is important in understanding past climate variability. However, instrumental records used to establish climate and environmental variability are sparse and temporally limited. Fortunately, ice core data provide a source of high-resolution records of past climate dynamics and atmospheric chemistry that range from seasonal to millennial scales. The Asian Ice Core Array (AICA) is an international collaborative effort to enhance the spatial and temporal understanding of physical and chemical climate variability, to establish a baseline for assessing modern climate variability in the context of human activity, and to contribute to the prediction of climate variability in Asia. Ice core reconstructions of past climate parameters including temperature, precipitation (e.g., droughts), atmospheric circulation; and atmospheric chemistry (e.g. dust and anthropogenic pollution) will enable continuous, co-registered, and multiparameter measurements of stable isotope (δD and δ18O), major ions (e.g., Na+, Mg2+, Ca2+, Cl−, NO3-, and SO42−), and trace elements (e.g., Al, Ti, Fe, Cr, and Rb) in ice. NCA sites span a large area of the continent and include ice cores from the Himalaya, Tian Shan, Altai, and mountain ranges on the Tibetan Plateau. These regions have been subject to an enormous loss of glacier ice as a result of recent global warming leading to serious concerns about future regional water resources. In addition to the crucial question of water availability, the very records needed to understand past climate variability and to predict future ones are disappearing, making the immediate recovery of ice cores the most urgent need.

**AICA Site Comparisons**

**Major Soluble Ions**

**Trace Elements**

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**Anthropogenic Pollutants**

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**NOAA Hysplit**

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**Asian Ice Core Array (AICA) sites**

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**Asian Glaciers in Retreat**

During the 20th century many of Asian glaciers have been in retreat leading to concerns about future water resources.

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**References**

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