

## **Lake Sediment Coring in the Larsemann Hills, Ingrid Chirstensen Coast, East Antarctica**

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Antarctica is scientist's paradise. The past climate has been preserved in its pristine condition in Antarctic environment. Harsh and inhospitable polar climate made it difficult to make extensive observations in this icy continent. Shortness of meteorological record from occupied stations and AWSs can potentially be extended through the use of proxy data derived from different sites across the Antarctic. The core provides information on the aspect of climate at the drilling site.

Different regions of Antarctic behave differently to the climate change. Keeping the above in mind we retrieved two cores from different region of the Antarctic, (i) a glacial lake near Maitri and (ii) from a saline lake near Davis. This report gives a detailed description of the retrieval of the second core.

There are 12 lakes in the area (after GSI-2005). It was observed that all lakes but for L-7 were totally frozen and had rocky bottoms with low sediment supply from glaciers, possibility of getting sediment core was



**Attempting sediment core retrieval from a glacio-marine lake**

remote. On our way to Davis some lakes with ample opportunity of sediment deposition were sited. After surveying the Larsemann hills on 18<sup>th</sup> and 19<sup>th</sup> February it was realized that coring was not possible. On 20<sup>th</sup> February we resumed the survey using helicopters towards Davis and two shallow- saline lakes at around 69° 24' 02.3" S & 76° 13' 02.4" E and 68° 37' 26.7" S & 77° 58' 14.6" E were identified. The former totally frozen and the later appeared suitable for coring.

The lake sediments were collected using the NCAOR corer by repeating the same technique as done before at Maitri; getting into the lake with immersion suits on and hammering the corer through the sediments. The sediment core –instate- along with corer was brought to the ship in undisturbed condition. It was kept at minus 20° C, for about four hours allowing the interstitial water to freeze in order to make sure that the sediment layers remain undisturbed while taking out the core. The core measuring 50+10 Cm, was successfully removed from the outer casing and stored at minus 20° C in the deep freezer of m/v Emerald Sea.