

MEMBER COUNTRY: NORWAY
National Report to SCAR for year: 2009-2010

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NATIONAL ANTARCTIC DATA CENTRE						
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SCAR DATABASE						
Not applicable						
A BRIEF SUMMARY OF SCIENTIFIC HIGHLIGHTS*:						
The Norwegian Research Council has recently adopted a Policy Document for Norwegian Polar Research 2010-13. The document is available at http://www.forskningsradet.no/servlet/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobheadertype=Content-Disposition%3A%3B%3DpolarforskningENGweb%282%29.pdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1253969149155&ssbinary=true						
Fimbulisen Ice Shelf - top to bottom - a research project investigating melting of ice shelves in Dronning Maud Land, Antarctica completed its first successful field season in the 2009-2010 austral summer. The aim of the expedition to the Fimbul Ice Shelf is to understand the interaction between the Antarctic ice sheet and the ocean. More about the project at http://fimbul.npolar.no/en/index.html.						
The Nor-US IPY traverse concluded its fieldwork in February 2009. In total 8 shallow firn cores from the two seasons of the NOR-US traverse have now been analysed at NPI for electrical properties. Accumulation rates over the period 1815-present are in the range of 16-32 mm/yr w.e. for the cores from the first year and 35-67 mm/yr w.e. for the second season. Especially the first year's results are somewhat lower than expected. There is also a decreasing trend in accumulation visible over the last 100-200 years in some of the cores. A low frequency radar was used to measure ice thickness and assess bed characteristics along the traverse route. Particular attention was paid to the Recovery Lakes area at the head of the Recovery Ice Stream. The proposed lake areas are distinct topographic basins lying some 1000 m below sea level and covered by 3400-3600 m of ice.						
During IPY Norway coordinated the BIAC project (Bipolar Atlantic Thermohaline Circulation). A joint BIAC/SCACE cruise on Polarstern in the Weddell Sea has resulted in the first measurement based assessment of Southern Ocean acidification. The paper from this work can be found at http://www.agu.org/pubs/crossref/2010/2009JC005479.shtml (Hauck J., Hoppema M., Bellerby R.G.J. Volker C., and Wolf-Gladrow D., Observations of acidification in the Weddell Sea on a decadal time scale, J. Geophys. Res., 115, C03004, doi:10.1029/2009JC005479)						
Mixing and upwelling of warm deep water in the Weddell Sea are of crucial importance since this water contributes to formation of bottom waters and may episodically flush sub-ice shelf cavities. During the IPY/BIAC cruises to the Weddell Sea relevant microstructure measurements were obtained for the first time. An ocean climate monitoring station was deployed in the Southern Weddell Sea in February 2009 by the IPY/BIAC project. The first year of data was successfully transmitted by an acoustic link on board RRS 'E.S. Shackleton' in February 2010. More info at www.bccr.no/BIAC.						
The IPY-ICESTAR project, funded through the Norwegian IPY program and directly related to ICESTAR, had a discovery paper on the cover of Nature, July 23, 2009: Double exposure. The paper by Laundal and Østgaard showed that the aurora in the two hemispheres can be quite asymmetric - which might be an indication of interhemispherical currents. K. M. Laundal and N. Østgaard Asymmetric auroral intensities in the Earth's Northern and Southern hemispheres. Highlight and Cover in Nature Letters, Vol. 460, pg. 491-493, doi:10.1038/nature08154, 2009.						
SCAR has been a co-sponsor of the CliC (Climate and Cryosphere) Project since 2004. The CliC Project Office is located at the Norwegian Polar Institute, Polar Environmental Centre, Tromsø.						