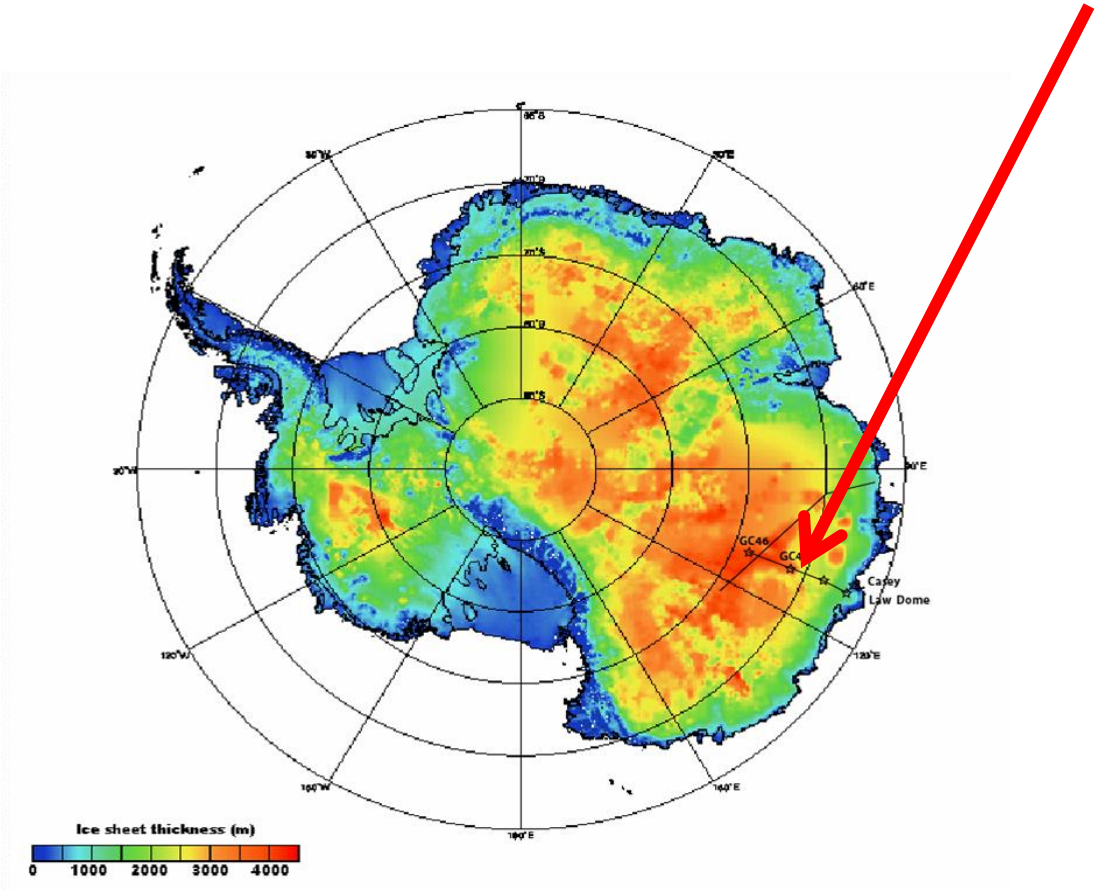
Updates on community science projects ABN (Aurora Basin North)

The overall goal for this project is to recover a 2000 year plus climate record from a site (“GC41”) in Aurora Basin, inland East Antarctica



To provide a new, high resolution accurately dated, ice core climate record (>2000 years) from the sparsely explored Aurora Basin region in the East Antarctic sector.

To gain an improved synthesis of the regional climate signals

To provide better interpretation of ice core records through comparison of deposition and preservation

To contribute towards locating a site for drilling a very old record, in excess of 1 million years (1MY).

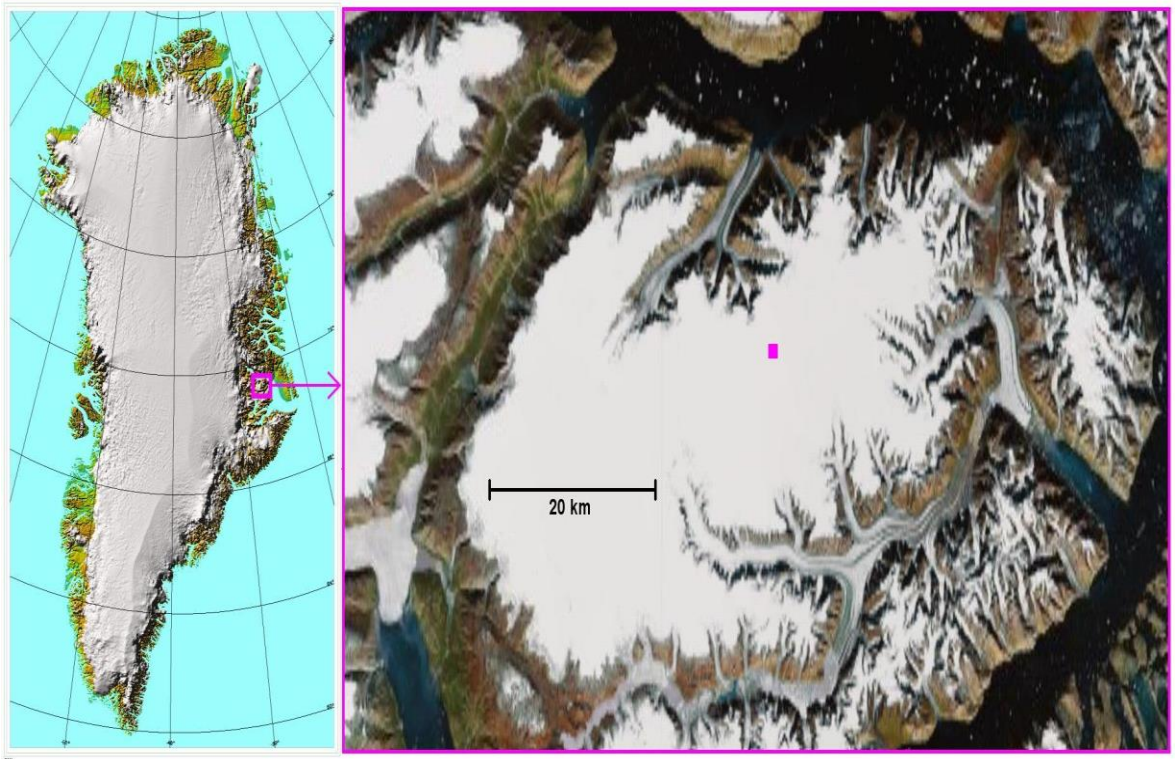
Finally, although not an objective with immediate scientific return, this project is designed to demonstrate and develop remote ice coring logistical capabilities using Australia's new combined inter-/intra-continental air transport

STATUS

2013-2014 300m 4 inch ice core drilled with DK intermediate drill
Two additional 100 m cores drilled with DK shallow drill and F shallow drill

Updates on community science projects RECAP (Renland)

The overall goal for this project is to recover a 400-600m ice core for information on sea ice conditions the last 100.000 years.



The Renland ice cap is situated in Eastern Greenland on a high elevation plateau on the Renland peninsula in the Scoresbysund fjord. **Climatic conditions on the Renland ice cap are strongly influenced by the varying Arctic sea ice export along Greenland's east coast.**

An ice core from the Renland ice cap is thus perfectly suited for obtaining information on Eastern Greenland climatic conditions including the **export of sea ice from the Arctic Ocean for the past 100,000 years.**

The RECAP ice core drilled to bedrock will be the backbone of a coordinated science program between **Denmark, Germany and the U.S**.

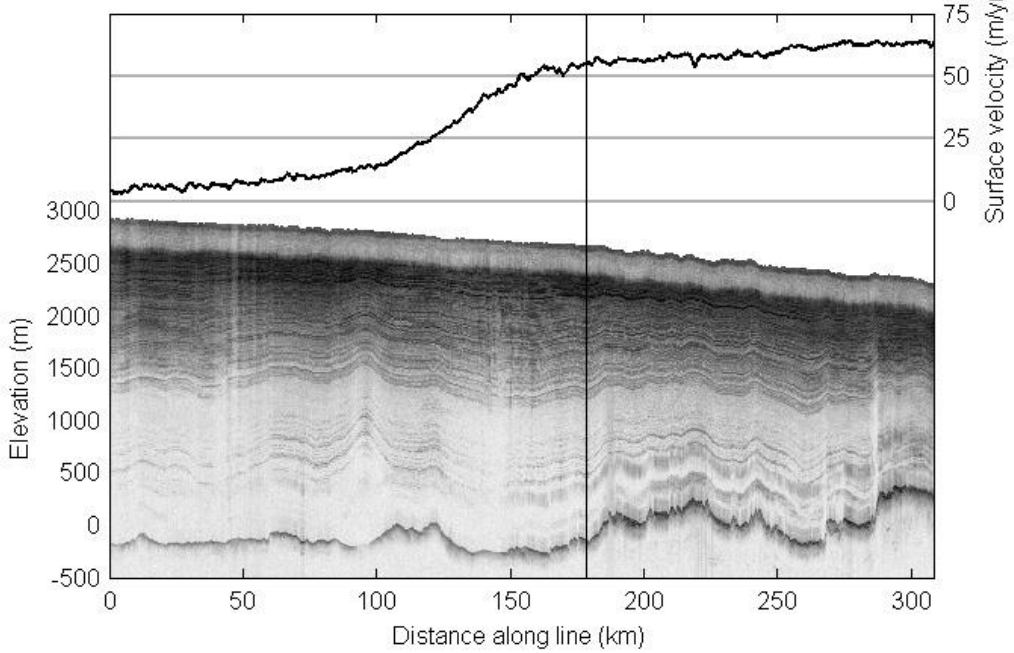
The shallowness of the Renland ice cap furthermore assures that it does not have a brittle ice zone in the Holocene ice like the Greenland ice sheet**. The RECAP ice core can therefore yield the first continuous Holocene profiles of gasses and chemical impurities extracted from Greenland.**

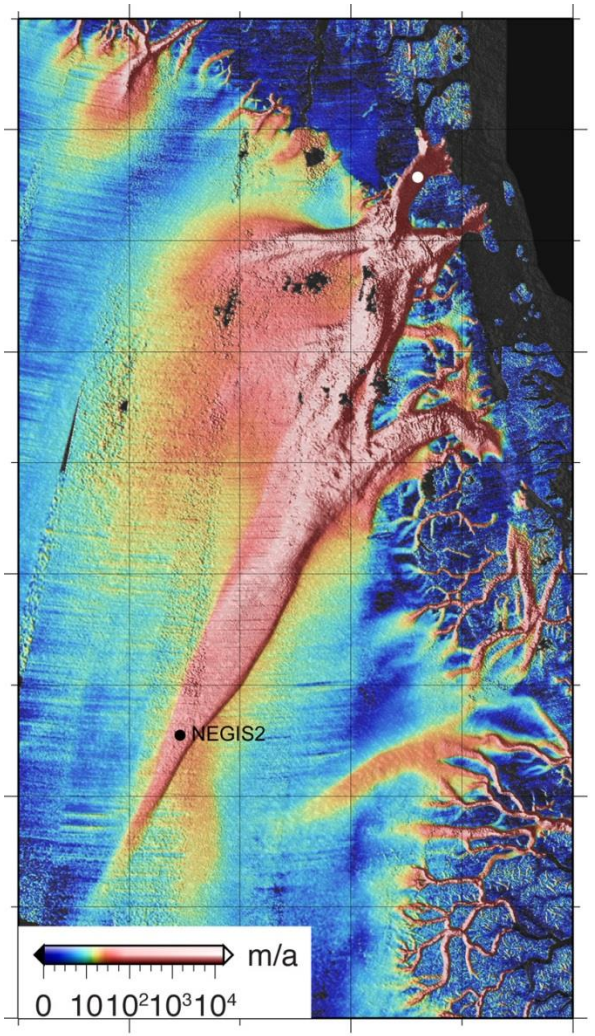
STATUS

2014: Obtain detailed RES info for site selection (OIB or/and D/US Bassler/CReSIS)
2015: Drill 400-600m to bedrock with DK intermediate drill
Drill 100m firn-air ice core with DK shallow drill

Updates on community science projects EGRIP –on NEGIS)

The overall goal for this project is to recover a 2500m deep ice core through an ice stream





Drilling an ice core through the 2550 m of ice reaching to the bedrock would allow us to reach the following goals:

-**study the dynamics of the ice flow in an ice stream** by ice rheology and deformation studies of the ice core.

-**study the dynamics of the ice flow by borehole observations** of basal sliding, borehole deformation, and basal water processes.

-**high resolution climate records of greenhouse gasses, water isotopes and impurities through the last 25.000 years** covering the onset of the present interglacial, the climatic optimum 8,000 years ago and the industrial period of the past two hundred years.