

Expedition Log

IODP Expedition 347 – Baltic Sea Paleoenvironment

Week 1

16th September 2013

Sophie Green, Deputy Expedition Project Manager (EPM)

Welcome to IODP Expedition 347, a scientific drilling operation currently underway in the Baltic Sea. Our home for the next 8 weeks is the *Greatship Manisha*, seen below.



DavidSmith©ECORD_IODP

The location of the Baltic Sea Basin in the heartland of the recurrently waning and waxing Scandinavian Ice Sheet (SIS) has resulted in a complex development history including repeated glaciations of different magnitude, sensitive responses to sea level and gateway threshold changes, large shifts in sedimentation patterns and high sedimentation rates. Its position also makes it a unique link between Eurasian and NW European terrestrial records. Therefore the sediments of this largest European intra-continental basin form a rare archive of climate evolution over the last glacial cycle. The high sedimentation rates provide an excellent opportunity to reconstruct climatic variability of global importance at a unique resolution from a marine-brackish setting, from a location where comparable sequences from the surrounding onshore regions cannot be obtained.

Furthermore, the large variability (salinity, climate, sedimentation pattern and oxygenation) that the BSB has undergone during the last glacial cycle makes it optimal for new research on the deep biosphere, addressing questions such as its evolution, biogeochemical processes and how the post-glacial diffusive penetration of conservative

seawater ions may alter the chemical composition and microbial physiology in the sub-seafloor biosphere.

The project aims to recover sediments from different settings in the Baltic Sea Basin. Materials deposited during the last glacial-interglacial cycles will be cored to address four main research themes:

- Climate and sea-level dynamics of MIS 5, including onsets and terminations
- The complexities of the last glacial (MIS 4 – MIS 2)
- Glacial and Holocene climate forcing (MIS 2 – MIS 1)
- The deep biosphere responses to glacial-interglacial cycles

(Text taken from the Scientific prospectus, which can be viewed at http://publications.iodp.org/scientific_prospectus/347/ along with other materials relating to the Expedition)

On board are a team of drilling engineers, ship crew and scientists and who work together to recover, record, analyse and store sediment cores collected from below the sea bed.

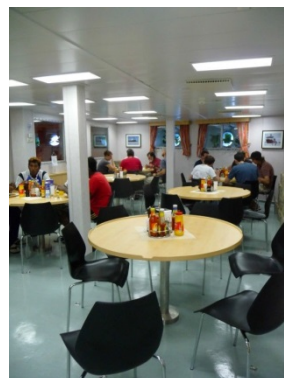
My role in this Expedition is Deputy EPM, working closely with the EPM, Carol Cotterill as part of the ESO team to co-ordinate and assist the scientists on board, and to help them document the results of their scientific analyses. Carol and I will use this log to keep you updated about life on board the *Greatship Manisha*. We'll invite representatives from different groups to provide descriptions of their specialist area of work and keep you updated on how we are progressing. For this first entry we will give you a tour of the ship and let you see what living and working conditions are like offshore.

Most of us are sharing 2 person cabins but working opposite 12 hour shifts (midday to midnight and midnight to midday) so everyone gets some quiet time. Below is a photo of a cabin, not exactly spacious but has the most important things after a long shift.



SophieGreen@ECORD_IODP

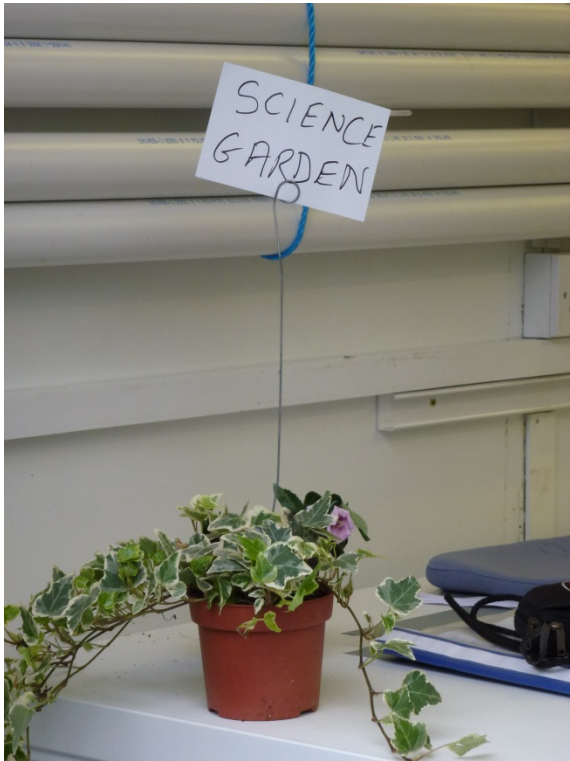
For meal times we congregate in the Mess, where a range of meals are offered 3 times a day. Due to the shift patterns opposite shifts eat breakfast and dinner at the same time so the catering crew work hard to make sure there is something for everyone. This means you can be tucking in to your morning cereal whilst the person next to you has their evening meal! Off shift there is also a Day Room to relax in. We also use this room for meetings and any other group activities (DVD watching, knitters circle etc!).



CarolCotterill@ECORD_IODP: The day room

SophieGreen@ECORD_IODP: The Mess

When it's time to start work we head out to the drilling deck. In order to work in this environment it is necessary to wear appropriate protective gear, in the form of steel toe capped boots, hard hats and very fetching red overalls. The scientific work is housed in a number of containers, arranged on the back deck and termed the 'Science Garden'. After core arrives on deck it makes a journey around these containers as the different groups carry out sampling and analysis.



CarolCotterill@ECORD_IOD



View of containers in the 'Science Garden' IanMarshall@ECORD_IODP

Whilst we are busy down on the main deck and drill floor, the vessel's Dynamic Positioning (DP) system, other shipping traffic and weather conditions – in fact anything that might affect our coring operations – are monitored from the bridge.



CarolCotterill@ECORD_IODP: 1.View of the forward facing bridge used when in transit. View of the aft facing bridge used when coring operations are taking place

Anyway, enough for now and look in for the next update on what we are doing, why we are doing it and how we are doing it!

