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Zackenberg Research Station - a Sustained Arctic Observatory in Northeast Greenland

Zackenberg Research Station is situated in the very remote high-arctic Northeast Greenland (74°28' N; 20° 34' W). The station is a normal field station providing research and accommodation facilities for different externally funded research projects. Besides that the station runs an extensive monitoring programme, Zackenberg Basic, which encompasses five sub-programmes, *i.e.* ClimateBasic (monitoring of the climate), GeoBasic (monitoring of the physical environment), BioBasic (monitoring of the terrestrial biology), Marine Basic (monitoring of the marine environment) and Glacio Basic (monitoring of the glaciers). The monitoring is carried out in a high-arctic setting within a 3,016 km² study area defined as the drainage basin to the fjord system, Young Sund/Tyrolerfjord. Most of the terrestrial investigations are however confined to the drainage basin of the river Zackenbergelven with an area of 512 km² and a glacier cover of c. 20%.

In total, c. 3,500 different parameters are measured each year at different time intervals (from several measurements per second to one measurement per year) by Zackenberg Basic. As such, Zackenberg Basic is the most extensive ecosystem monitoring programme in The Arctic. The programme was originally started in a more limited version in 1995 and has been running continuously ever since. In 2007, the programme was supplemented by a similar monitoring programme in a low arctic setting at Nuuk (The Capital of Greenland) in West Greenland, and in early 2008 a scientific synthesis of the first ten years of measurements at Zackenberg will be published by Academic Press as a book in the series Advances in Ecological Research (Meltøfte et al in press).

The presentation will focus on our practical experiences on how to run an extensive cross-disciplinary monitoring programme in the Arctic. The presentation will broach the following issues:

1. Overall purpose of the monitoring
2. Scientific concept for the monitoring
3. Practical run of the monitoring
4. Organisational set-up
5. Facilitation of cooperation across disciplines within the monitoring programme
6. Facilitation of cooperation between the monitoring programme and externally funded research projects
7. Data and publication policy
8. International cooperation
9. Economy
10. Future visions for coordinated ecosystem monitoring in The Arctic

Further information about Zackenberg Research Station and the monitoring at Zackenberg is available on the Zackenberg home page (www.zackenberg.dk) together with manuals for the different monitoring sub-programmes and on-line access to all collected data from Zackenberg.

References

Meltofte, H., Christensen, T.R., Elberling, B., Forchhammer, M.C. & Rasch, M. (eds.) in press: *High-Arctic Ecosystem Dynamics in a Changing Climate. Advances in Ecological Research 40*, Academic Press, Elsevier, New York.