

Trias North newsletter

News from the research project
Reconstructing the Triassic northern Barents shelf:
basin infill patterns controlled by gentle sags and faults

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Triassic North Fieldwork Campaign to Edgeøya and beyond

11 geologists set out from Longyearbyen on the *Ulla Rinman* on the evening of the fourth of August. Their destination – the far eastern island of Edgeøya in the Svalbard archipelago. The team included a newly employed PhD and a PostDoc attached to the Triassic North project, along with senior scientific staff and collaborative team-members from as far away as Italy and the USA.

This year's field-campaign aimed to collect both regional-scale Triassic sedimentary data to provide a comprehensible paleogeographic understanding of the areas development, but also to understand in full detail the structural and sedimentological development of the growth-faults exposed at Kvalpynten.

On Edgeøya the tasks were plenty and the team often split into five different groups that went separate ways. Detailed GPS data, photometric collection, sandstone sampling, sedimentological logging, facies observations and fault and structure analysis were carried out. Chilly winds and low clouds were not much of a hindrance, but a lazy polar-bear guarded the northern access to a beach-section for two whole days, preventing the eager American team from getting a better a look at shale detachments. VHF radios were kept warm as the “Geological Field Party” and “Black Zodiac” communicated with boats offshore about the bear's location. *‘It is just beneath the dolerite sill intrusion’* was apparently not informative enough!

Edgeøya exposes brilliant Mesozoic outcrops:



*It's a tough life
in the field as In-
grid, Beyene and
Helge discovered*

300–350 meter cliffs, free from vegetation and largely free of scree with near-vertical faces revealing intricate sedimentological features. The only problem with such brilliant cliffs, is that they are in fact just that, cliffs. Our hardy team scrambled up steep rock avalanches, edged our way up winding incised valleys, clambered up icy snow-chutes and even undertook long treks to attempt to reach the outcrops from above. A snow-chute which was impossible to climb just two years ago had stabilized, and the team could collect its longest log to date, almost 200 m.

The team spent four days at Kvalpynten, two at Svartpynten and a day each at Wilhelmøya and

Skrukkefjellet. New locations provided new outcrops, new challenges and a closer look at some very old reptilian bones!

With a gale-force wind in our back the *Ulla Rinman* was carried back to Longyearbyen many hours earlier than expected. A tired but happy crew came ashore, weighted down with well-filled notebooks and a large quantity of rock-samples. As the fall season descends and geologists reluctantly return to their offices, the time for analysis and collation of data begins. What exciting results can we expect from this summer's expedition?

Ingrid Anell



Exploring new sites and new outcrops from above, Alvar Braathen approaches the edge with caution

Aleksandra Smyrak-Sikora samples a rock perched on a ledge high above the valley floor



Presenting our staff

Under this heading we will present some of those working at the Trias project, and we start out with some recently hired PhDs and postdocs. Now in October, Urszula Czarniecka will start as a Trias postdoc at Polish Academy of Science, and we have plans for two more junior researchers in Norway. Presentations will come in future issues of the newsletter.



Beyene standing as a scale very close to the sandstone mountain that has well exposed outcrop of De Geerdalen sandstone formation at Edgeøya, Kvalpynten

BEYENE

I am **Beyene Girma Haile**, a Trias North affiliated PhD student in the Department of Geosciences at the University of Oslo. My current work is aiming at understanding the relationship between reservoir quality and diagenesis and depositional environment, provenance, and burial history of Late Triassic clastic reservoirs. Petrology, mineralogy and sedimentology studies will be performed on outcrop and core samples to better understand and evaluate the regional variability of diagenetic alteration features.

Prior to starting my PhD, I worked as a research assistant at UiO with industry funding and as part of the FME SUCCESS research center. My work was related to geological CO₂ storage with special focus on CO₂ mineral trapping, and diagenetic modifications of petroleum systems and shale fracture

networks. My main task was to design and perform laboratory experiments in order to understand the rate of mineral dissolution, nucleation and growth, perform experimental diagenesis and characterize natural core samples using different analytical methods.

I earned my Bachelor of Science in Chemistry from Addis Ababa University, Faculty of Science (Ethiopia). I have two master degrees, in Geology and Chemistry, both from the University of Oslo. In these works, in the geology MSc I performed a detailed study on the kinetics of carbonate growth, whereas the topic of the chemistry MSc was related to calibration of alpha detecting systems using gamma sources.

INGRID

My name is **Ingrid Anell**. I am working as a postdoc on the Triassic North Project at University of Oslo. I have a PhD in geology from the University of Copenhagen and a postgraduate certificate in geological risk management from the University of Geneva.

My PhD chiefly focused on the uplift of the North Atlantic margins and seismic reflection interpretation of the infill of the North Sea. I have undertaken a previous postdoc for the SUCCESS Centre at UNIS (the University Centre in Svalbard) where my work focused on detailing the development of the Triassic of the Northern Barents shelf to provide a regional understanding of the proposed CO₂ reservoir of the Longyearbyen CO₂ Lab.

My work in the Triassic North Project will cover a wide range of topics but mainly focus on regional development, structures, sediment infill, fault development and linking the onshore-offshore development.



TORE



I am **Tore Grane Klausen**, and I am working as a Trias North postdoc at University of Bergen. I have a PhD degree in sedimentology from the University of Bergen, where I worked on the Snadd Formation and its fluvial deposits. This work has been extended through the present postdoc position, where the overall aim is to tie the different depositional systems together.

My work at Trias will focus on the Triassic clinoform successions with particular focus on quantification of different clinoform parameters that subsequently may serve as a basis for comparison with modern and ancient counterparts. Careful investigations might also reveal depositional trends that can be linked back to rates of delta progradation and delta lobe switching. Differential subsidence across the basin will also be recorded in the accumulated heights of the clinoform successions and they can thus potentially reveal information about areas of accommodation and the basin configuration at the inception of discrete clinoforms.



Upcoming events: In November researchers from Trias North will visit all industry partners to exchange views on what we are doing.

The Trias North project is hosted by University of Oslo and funded by the Research Council of Norway, Tullow Oil, Statoil, Lundin Norway, Edison Oil and RWE Dea. Research partners are University of Bergen, University Centre in Svalbard, Norwegian University of Science and Technology, NORSAR, Uni Research, University of Utrecht, University of Parma, Polish Academy of Sciences, and University of Nebraska at Omaha, and we are cooperating with Geological Survey of Norway, Geological Survey of Canada and others.

Please spread this newsletter within your institution and to other Trias fans.