German Arctic Expeditions 2018 - 2019

FARO/ASSW, 2019, Archangelsk

Uwe Nixdorf, Dirk Mengedoht (Alfred Wegener Institute, Germany)
CATS aims to assess how climate change will affect the highly sensitive Arctic Environment and to what extent these changes may impact the climate in Europe.
2018: 20th Anniversary of the LENA Expeditions

Successful Russian-German cooperation:

- Multiple third-party funded projects (RSF, RFBR, DFG, HGF, ESA, ERC, EU, etc.)
- > 150 joint scientific articles
- > 250 joint datasets archived in open access
- > 85 student theses finished

International Symposium 17 to 19 October 2018
AARI St. Petersburg
Highlights LENA 2018

Drilling of a new 65 m deep permafrost borehole on Samoylov Island for environmental reconstruction and permafrost temperature monitoring

Implementation of a Lena River water monitoring with support of station
Russian-German Expeditions
LENA

Responsible institutions:
• Arctic and Antarctic Research Institute of Roshydromet (AARI), St. Petersburg, Russia
• Melnikov Permafrost Institute, Siberian Branch of the Russian Academy of Sciences (MPI SB RAS), Yakutsk, Russia
• Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI), Bremerhaven and Potsdam, Germany
• Trofimuk Institute for Petroleum Geology and Geophysics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia (IPGG SB RAS)
Modern vegetation studies and lake sediment coring at the Tundra-Taiga-Transition zone in Chukotka and Yakutia

Mountain lake and Alas lake coring and sampling mixed boreal forests affected by disturbances in Central Yakutia

Glacial lake coring and treeline forest analyses at the northeastern treeline extension in Chukotka

Intensive landscape analyses:
- Alas agriculture
- Spruce recruitment
- Larch-dominated forests
- Thermokarst lake formation

Legend:
- Field sites 2018
- Tree-line (GIDA)
- Forest heights [m] (NASA)
- 0
- 12
- 24
- 0 500 1000 km

Weather station
- Active Layer
- Permafrost
Expedition Magadan 2019

June/July 2019

*Polar Terrestrial Environmental Systems*

*Boris Biskaborn*

Freshwater biotic and abiotic system reactions to past and recent climate changes:
Seismic transects and sediment coring in lake Kisi, Magadan, Far-East Russia.

Exped. Lake Khamra 2019

November/December 2019

*Polar Terrestrial Environmental Systems*

*Boris Biskaborn*

Freshwater biotic and abiotic system reactions to past and recent climate changes:
Sediment coring in lake Khmara, Yakutia, Central Siberia.
Outlook 2020:

MODULAR OBSERVATION SOLUTIONS FOR EARTH SYSTEMS

- designed to investigate the interactions of short-term events and long-term trends across Earth compartments
- new observing system for detecting rapid permafrost thaw events (terrestrial, aquatic and aerial methods)
- next test campaign: April –October 2020, Lena River Delta
- coordinated with T-MOSAiC
- focus on thermokarst lakes and degrading permafrost processes
Outlook 2020:

Permafrost distribution in the Arctic

Mackenzie Delta 2018

Lena Delta 2020
Thank you!

Спаси́бо!