

Summary Third DIMA Workshop, University of Southampton
September 16-24, 2019

The focus of the workshop was to discuss key themes that might form the basis of future cooperative research proposals and to identify the types of data (i.e., proxies) and computer models that can be useful in addressing the research questions. A secondary focus was an update on the multi-proxy analyses of cores taken during the second DIMA workshop (Tomsk, September, 2018) and follow-up on lab procedures discussed during the first workshop (Magadan, March, 2018).

Research themes involve the use of paleo-records from lakes and peats to better understand processes that although important on their own will be useful in predicting possible responses of northern environments to future global warming. These themes include:

- Climate reconstructions
- Carbon accumulation in peat ecosystems
- Role of fire in shaping northern landscapes and its influence on the carbon budget
- Reconstructing local and regional landscapes

More specifically, what is the impact of global warming on Siberia and the Russian Far East? How vulnerable are these regions to the drivers of climate and landscape change?

The group reaffirmed the need for multi-proxy studies to provide a more complete understanding of paleoenvironments. Additionally, the group reiterated that single proxy studies are becoming increasingly difficult to get published in the better quality journals.

Proxies that are of importance to the DIMA group include both traditional (e.g., palynology diatoms, chironomids; plant macrofossils) and newly developing data types (e.g., charcoal, DNA, testate amoebae, organic biomarkers).

Two paleovegetation models were discussed at the workshop: 1) a biome model, which reconstructs vegetation types at regional to continental scales and 2) a landscape reconstruction model. Both models have been provided to each of the labs in the DIMA group.

Proposed projects for the Magadan region:

1. Paired peat-lake core project (areas near Atka and Chistoye Lake) to assess the different paleoenvironmental signals in each depositional setting to provide a more complete knowledge of climate impacts on northern landscapes; Dr. Kimberley Davies, Dr. Helen Mackay; Dr. Charlotte Clarke
2. Lake Koaleane. To obtain a multi-proxy high resolution record from a poorly known region of western Beringia (implications for archeology and the history of the Bering Land Bridge); Dr. James Fielding.
3. Multi-proxy study of a transect of lake sites along the Kolyma road to assess the ability of different proxies for climate reconstructions; Dr. Andy Henderson; Dr. Maarten van Hardenbroek