

POLAR CLIMATE AND ENVIRONMENTAL CHANGE IN THE LAST MILLENNIUM

**International Conference
(Toruń, Poland 24th–26th August, 2015)**

On 24th–26th August 2015, the International Conference “Polar Climate and Environmental Change in the Last Millennium” was held at the Nicolaus Copernicus University (NCU) Hotel in Toruń. The organisers included the Department of Meteorology and Climatology at the NCU Faculty of Earth Sciences, the International Arctic Science Committee (IASC), the Committee on Polar Research, the Polish Academy of Sciences (PAN) and the Kujawsko-Pomorskie Branch of the Polish Geophysical Society. Honorary patronage of the conference was assumed by the Rector of the Nicolaus Copernicus University in Toruń, the President of the City of Toruń, the Marshall of the Kujawsko-Pomorskie Voivodeship and the Governor of the Kujawsko-Pomorskie Voivodeship. The aim of the conference was to present scientific achievements and to identify gaps in the field of the historical climatology of the polar regions based on early meteorological observations, history, dendroclimatology, paleolimnology, geophysics, geomorphology and other sources.

After the introduction by prof. Rajmund Przybylak, Head of the NCU’s Department of Meteorology and Climatology, initial speeches were given by prof. Wojciech Wysota, Dean of the Department of Earth Sciences, who formally opened the conference, and prof. Jacek Jania, President of the PAN Committee on Polar Research. On that day, papers were presented in four thematic sessions:

- Modelling of the Arctic climate;
- Glaciers and sea-ice history;
- Dynamics of permafrost;
- Marine and land ecosystems.

The busy day ended with a gala dinner at one of the city hotels, where conference participants continued scientific discussions until late in the evening. The next day, two subsequent sessions took place regarding the History of Arctic Climate – instrumental

observations and early-instrumental observations with a poster session between them, during which the authors could be approached. On the last day of the conference, the participants had an opportunity to learn about the history of Toruń and have a sightseeing tour of its major tourist attractions.

Each thematic session was supplemented by papers presented by keynote speakers, who were to provide a concise summary of the current state of knowledge of the individual natural environments that prevail in polar areas. For this purpose, some of the top specialists from around the world were invited. The following speakers took the floor on the first day:

- Wiesław Masłowski (USA) – *Modeling Arctic climate change and variability at process and multi-decadal scales*,
- Klaus Dethloff (Germany) – *Regional and global interactions between Arctic sea ice and the atmospheric circulation*,
- Rein Vaikmäe (Estonia) – *Polar climate and glaciation during the last millennium*,
- Astrid Ogilvie (Iceland) – *Documentary evidence of changes in climate and sea-ice incidence in Iceland during the last millennium*,
- Antoni Lewkowicz (Canada) – *Evolution of mountain and latitudinal permafrost in northwest Canada*
- Jan Marcin Węsławski (Poland) – *20 years of observations of the warming of marine ecosystem on Svalbard versus older historical records*.

On the second day, papers were presented in two sessions by:

- Tadeusz Niedzwiedź (Poland) – *Climate change in the Arctic in the last millennium*,
- Kevin Wood (USA) – *Crowd sourcing large-scale Arctic environmental data recovery from 1850 to the satellite era*.

Conference presentations covered as many as 27 papers and posters by 75 researchers from Canada, Estonia, Germany, Iceland, Norway, Poland, Russia, Sweden and the USA.

The conference was financially supported by the IASC, the Office of the Marshall of Kujawsko-Pomorskie Voivodeship, the Ministry of Science and Higher Education, the Polish Academy of Sciences (PAN) and the Nicolaus Copernicus University in Toruń. Thanks to the funds, it was possible to cover the cost of participation of 8 keynote speakers and 9 young researchers who has only started their scientific careers.

In the final discussion, summing up the conference, participants agreed that, for example, the interdisciplinarity of polar research should be improved by inviting researchers representing other fields of science to collaborate. Another conclusion was that, given the almost dramatic environmental changes observed in particular in the Arctic, the research needs to be enhanced. All the participants also supported the idea to hold the 3rd International Conference – Polar Climate and Environmental Change in the Last Millennium – in an extended circle of scientists in 2020.

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