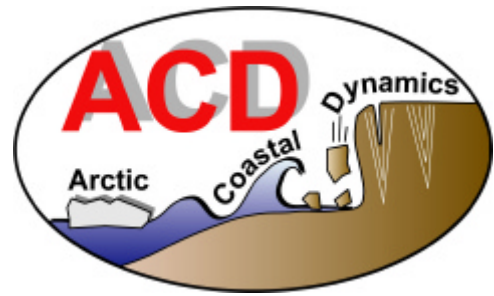


# Arctic Coastal Dynamics

5<sup>th</sup> Newsletter (March 2004)



<http://www.awi-potsdam.de/www-pot/geo/acd.html>

*The main purpose of the ACD Newsletter is to inform you as an Arctic researcher interested in coastal dynamics about the progress and activities of the IASC-IPA project Arctic Coastal Dynamics (ACD). The 4<sup>th</sup> Newsletter was sent out in February 2003 and this 5<sup>th</sup> Newsletter summarizes the achievements of the last year and the future activities.*

## 1 Achievements since February 2003

### 1.1 Fourth ACD workshop, St. Petersburg (Russia), 10-13 November 2003

The 4<sup>th</sup> IASC-sponsored ACD workshop was held in St. Petersburg, Russia, on November 10-13, 2003. Participants from Canada (7), Germany (7), Great Britain (1), the Netherlands (1), Norway (1), Russia (32), Ukraine (1) and the United States (8) attended. Of these four were young scientists supported by IASC. Two current INTAS projects provided additional support for Russian, German and Norwegian participants. VNIIOkeangeologia (Institute for Geology and Mineral Resources of the Ocean) organized the local logistics for the workshop. During the first part of the workshop, 63 papers dealing with regional and/or circum-Arctic coastal dynamics were presented. Based on the material presented, five thematic working groups were identified: (1) GIS working group to develop of a circum-Arctic coastal GIS system, (2) coastal permafrost working group to discuss processes involved in the transition of onshore to offshore permafrost, (3) biogeochemistry working group with the focus on transport and fate of eroded material (4) biodiversity working group to initiate planning of an Arctic Coastal Biodiversity research agenda, (5) environmental data working group to discuss coastal dynamics as a function of environmental forcing.

#### GIS Working Group (14 presentations)

Chairs: Rune Odegard and Frits Steenhuisen

Participants: Jerry Brown, Dmitry Drozhdov, Yuri Firsov, Allison Graves, Mikhail Grigoriev, Hugues Lantuit, Sergey Nikiforov, Rune Odegard, Volker Rachold, Feliks Rivkin, Elena Rys'kova, Shawn Serbin, Frits Steenhuisen

#### Coastal Permafrost Working Group (12 presentations)

Chairs: Michel Allard and Hans-W. Hubberten

Participants: Michel Allard, Feliks Are, Nicole Couture, Don Forbes, Mikhail Grigoriev, Jens Hölemann, Hans-Wolfgang Hubberten, Alexander Kizyakov, Olga Medkova, Volker Rachold, Pavel Rekant, Vladimir Romanovsky, Steven Solomon, N.A. Spolyanskaya, Irina Streletskaya, Vladimir Tumskoy

#### Biogeochemistry Working Group (14 presentations)

Chairs: Sathy Naidu and Vladimir Ostroumov

Participants: Georgy Cherkashov, Nicole Couture, Olga Gruzdeva, Birgit Heim, Anne Hickey, Nina Kasyankova, Alexander Kholodov, Elena Miroluhova, Sathy Naidu, Vladimir Nikulin, Vladimir Ostroumov, Vera I. Petrova, Boris Vanshtein

#### Arctic Coastal Biodiversity Working Group (14 presentations)

Chair: Christopher B. Cogan  
Participants: Christian Buschbaum, Natalia Chernova, Christopher B. Cogan, Nina V. Denisenko, Michael Jennings, Vladislav V. Khlebovich, Katja Metfies, Thomas Noji\*, John C. Roff, Boris I. Sirenko, Vassily A. Spiridonov, Mark A. Zacharias, Christoph Zöckler

\*contribution to workshop report, but not present in St. Petersburg

#### Environmental Forcing Working Group (9 presentations)

Chair: David E. Atkinson  
Participants: David Atkinson, A.A. Yermolov, Don Forbes, A.M. Kamalov, Stanislav Ogorodov, F.A. Romanenko, Steven Solomon, Alexander Vasiliev, David Viner, G.K. Zubakin

A report of the 4<sup>th</sup> Workshop including a detailed summary and the extended abstracts will be published in "Reports on Polar and Marine Research".

### **1.2 Field work in 2003**

Several ACD relevant field studies in the western Laptev, Kara, Barents, and Beaufort Seas, and annual measurements at the key sites were performed. Special focus has been placed on the transition of onshore to offshore permafrost, a coastal drilling transect was performed in the western Laptev Sea, and the fate of eroded organic material, transects were sampled for organic geochemical and nutrient analyses at several sites.

### **1.3 Publications and products**

- A report of the 3<sup>rd</sup> ACD Workshop (Oslo, 2-5 December 2002), including ca. 30 extended abstracts, was published in the journal "Reports on Polar Research (Volume 443)" in spring 2003, and distributed at the 8<sup>th</sup> International Conference on Permafrost (ICOP) in Zurich (Switzerland), July 2003.
- A library of coastal photographs was compiled and made available through the ACD web site. The photo library, the metadata information of the ACD key sites and the Russian bibliography were included in the new CAPS-CD of the International Permafrost Association (presented at ICOP in Zurich).
- ACD has been accepted as an IGBP/LOICZ regional project (see LOICZ newsletter June 2003); a scientific article on the ACD project has been presented in the LOICZ December Newsletter (No. 29).
- Several other ACD related papers have been published, a publication list, which will be frequently updated, is available at the ACD web page.

### **1.4 Conference presentations since February 2003**

- European Land-Ocean Interaction Studies (ELOISE) Conference in Gdansk (Poland), 24-27 March 2003;
- Arctic Science Summit Week in Kiruna (Sweden), 31 March - 4 April 2003;
- EGU/AGU Conference in Nice (France), 6 -11 April 2003;
- Annual conference of the Russian permafrost community in Pushchino (Russia), 19-21 May 2003;
- 8<sup>th</sup> International Conference on Permafrost in Zurich (Switzerland), 21-25 July 2003 (several ACD relevant presentations were given in the coastal session chaired by H.-W. Hubberten and V. Rachold, the INTAS teams and the ACD Steering Committee met);
- International Conference on Arctic Margins (ICAM) in Halifax (Canada), 30 September - 3 October (ACD report has been presented in the coastal session chaired by S. Solomon).
- SEARCH Open Science Meeting in Seattle (USA), 27-30 October 2003, the session on coastal processes was chaired by S. Solomon and V. Rachold

## 2 Activities in 2004

### 2.1 New ACD-related Projects and Proposals

- The European Science Foundation (ESF) has recently approved funding for the ESF-Network SEDIFLUX (Sedimentary Source-to-Sink Fluxes in Cold Environments), which has an ACD component. The first workshop and Steering Committee meeting will be held in Iceland, June 2004.
- INTAS approved the application for the Young Scientist Grant of Stanislav Ogorodov (Moscow State University) who will stay at AWI Potsdam as a guest scientist for 3 months in 2004 and 2005.
- A new INTAS proposal will be developed, deadline for submission is June 2004.
- A US-coordinated proposal will be submitted to the National Science Foundation ("Study of the Northern Alaska Coastal System" - SNACS)
- As an ACD initiative and thanks to financial support provided by IASC a working group on Arctic Coastal Biodiversity was convened during the workshop (see *Arctic Coastal Biodiversity Working Group Report, chapter 3.4.1, page 158*). After the initial steps, which were coordinated under the umbrella of ACD, the biodiversity group will develop its own research program as a separate project (linked to ACD), a proposal will be presented to the IASC Council at the Arctic Science Summit Week in Reykjavik (Iceland), 21 - 28 April 2004.
- ACD-related Canadian activities are expected to accelerate through involvement in the Canadian Program "ArcticNet (National Network of Centers of Excellence)".

### 2.2 Publications and products

- The segmentation and classification of the circum-Arctic coastline has been almost completed during the 4<sup>th</sup> ACD workshop and remaining gaps will be closed during spring 2004. A first version of the GIS, which will be available on CD-ROM, is anticipated by end 2004. This will include the coastal classification and the relevant environmental and climate forcing data as individual GIS layers
- A special issue of the journal "Geo-Marine Letters" (Springer) will be available by the end of 2004. The special issue will comprise ca. 15 papers on Arctic coastal dynamics, which are currently under review.

### 2.3 ACD related field work in 2004

Several ACD relevant field studies in the Laptev, Kara, Barents, East Siberian and Beaufort Seas and at Svalbard, and annual measurements at the key sites will continue.

The field activities in the Laptev Sea will focus on the transition of onshore to offshore permafrost in the coastal zone. The expedition target is a coastal section in the western Laptev Sea. Starting at the cliff and perpendicular to the shoreline, a transect consisting of 5-6 permafrost boreholes with depths of up to 100 m will be drilled. Geochemical and sedimentological studies on the transport and fate of eroded material will be continued.

Beaufort Sea activities will focus on geophysical studies of the on-offshore transition and validation of techniques for mapping of bottom-fast ice in that zone. The establishment of GPS monitoring sites in support of sea level change and vertical motion studies is also continuing.

### 2.4 Forthcoming ACD relevant meetings

- Arctic Science Summit Week, Reykjavik (Iceland), 21 - 28 April 2004 (Report to the Arctic Ocean Science Board AOSB),

- Annual conference of the Russian permafrost community, Tyumen (Russia), 22-29 May 2004 (special session on Arctic land ocean interactions, coastal and offshore permafrost and coastal dynamics),
- 32<sup>nd</sup> International Geological Congress, Florence (Italy), 20-28 August 2004,
- Arctic Climate Impact Assessment ACIA Meeting, Reykjavik (Iceland), November 2004,
- XXI International Coastal Conference, Svetlogorsk (Russia), 7-11 September 2004,
- AGU Fall Meeting in San Francisco (USA), 13-17 December 2004 (a special session on Arctic coastal dynamics focusing on coastal and offshore permafrost is planned, co-chaired by Volker Rachold and Vladimir Romanovsky).
- A Coastal Working Group theme will be developed for the 2<sup>nd</sup> International Conference on Arctic Planning (ICARP II) which will be held in autumn 2005 (Working Group Chair: Volker Rachold).

### **2.5 Next ACD workshop**

The 5<sup>th</sup> ACD workshop will take place in Montreal (Canada), 13-16 October 2004, hosted by the Department of Geography at McGill University. For further information please visit the conference web page at [www.acd2004.mcgill.ca](http://www.acd2004.mcgill.ca) or email: [acd2004@geog.mcgill.ca](mailto:acd2004@geog.mcgill.ca). A specific workshop announcement will be circulated separately.

### **3 Financial support**

Financial support by the following organizations is highly appreciated:

- International Arctic Sciences Committee (IASC);
- International Permafrost Association (IPA);
- Canadian Department of Foreign Affairs and International Trade (DFAIT) - Canada-Germany agreement;
- INTAS (International Association for the promotion of co-operation with scientists from the New Independent States of the former Soviet Union): project numbers INTAS Open Call 2001-2329 and INTAS Open Call 2001-2332;
- International Arctic Research Center (IARC): grant "Analysis of Coastal Meteorological and Oceanographic Forcing in the Arctic Basin".

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