



## *Action Group:*

### **Arctic Coastal Web Implementation: Circum-Arctic Coastal Erosion Database Publication in Anticipation of the Coastal Permafrost in Transition Side Meeting at the ICOP2016**

#### **Date:**

01 January 2016 to 31 December 2016 (1 year)

#### **Action Group Contact:**

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#### **Objectives and scope of the Action Group:**

The proposed action group seeks to continue the efforts of the IPA and IASC sponsored Arctic Coastal Dynamics (ACD) group. ACD was created in 1999 with the sponsorship of the International Arctic Science Committee (IASC), and the International Permafrost Association (IPA) working group on Coastal and Offshore Permafrost (Brown and Solomon 2000). The ACD was established as a multi-disciplinary, multi-national forum to exchange ideas and information. Between 2000 to 2006 the ACD utilized annual workshops to realize a number of initiatives aiming “to improve the understanding of circum-Arctic coastal dynamics as a function of environmental forcing, coastal geology, cryology, and morphodynamic behavior” (Rachold et al. 2005). A major product of the ACD was a pan-Arctic coastal classification within a geographic information system (GIS), based on estimates of coastal erosion, carbon content, and cryolithological characteristics. Furthermore, the ACD developed a network of long-term monitoring sites including local community-based observational sites. The activities of ACD are unique for the circum-Arctic coasts, and have led to more than 80 seminal publications, and a special issue of Geo-Marine Letters in 2005.

The proposed action group is closely tied to a planned side meeting at the International Conference on Permafrost (ICOP) in 2016, titled Coastal Permafrost in Transition (CPiT). The international CPiT organizing committee consists of young researchers and ACD project

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leaders. In anticipation of the CPiT side meeting we will form a focal node for connecting the coastal researcher community in order to continue pursuing ACD science goals.

The objectives of the action group are to:

1. update and modernize the website platform of the ACD
2. publish the ACD database online
3. facilitate the CPiT side meeting where the future direction of ACD will be discussed
4. present the results of the action group efforts at the ICOP, for example by giving a plenary talk.

In collaboration with Arctic Portal, we are working on an update and merger of the existing ACD web sites hosted by Arctic Portal and the Alfred Wegener Institute. A unified and updated website will be the primary means of promoting the ACD, and enable the communication and coordination of upcoming activities within and following CPiT. We are planning a re-design of the layout and relevant graphics, and to include new features such as interactive maps and internet map services. We have received a commitment of support from Arctic Portal for these efforts. Even though the quality control (QC) of the ACD GIS was completed in 2008, the database did not go online. These data represent a unique and valuable resource, with multitudes of users, for example from industry, governments at local, regional and national levels, environmental organizations interested in coastal habitats or contaminant movements (e.g., CAFF, WWF, AMAP), policy organizations involved in assessments (e.g., IPCC, ACIA, LOICZ), and scientists from other disciplines. In addition, the new website will contain a complete archive of ACD publications and reports, a geo-coded coastal photo gallery, and bibliography of coastal studies in the Arctic.

CPiT is conceived as a one-day side meeting to be held on June 19, 2016. CPiT seeks to:

1. foster exchange among researchers and engineers from diverse career stages, disciplines, and geographic backgrounds
2. continue the legacy of ACD
3. explore future research and data needs
4. discuss best practices
5. solicit suggestions from participants regarding the direction of ACD
6. identify funding sources for future networking opportunities.

The activities of the action group, in particular the website and the CPiT effort to revive the ACD and will be presented at ICOP.

### **Timeline:**

- January 2016 - Initiation and publication of the Action Group, web site design complete; promotion of CPiT in the run-up to ICOP for additional contributions to coastal photo gallery; work on ACD database visualization styles and layers
- March 2016 - Migration of ACD archives to website complete, spatial data available online (webGIS and GIS service)

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- June 19, 2016 - CPiT side meeting: The primary outcome from this activity will be the future coordination of coastal research in the context of the ACD
- July 2016 - Exploration of funding sources, coordination of CPiT action groups, planning of future activities
- August 2016 - finalization of CPiT report, website updates, writing of funding proposals for continuation of group meetings
- December 2016 - termination of action group

### **Deliverables:**

The primary deliverables of the action group will be:

- a homepage for coastal research in the Arctic
- the release of the ACD database to the public
- reinvigorated cohesion of the ACD group and a re-formulated and updated concept for the group's future based on the ICARP III Coastal Working Group 3 report (2005), the ACD II Science Plan (2007), the State of the Arctic Coast Report (2011) and the ICARP III recommendations

A final product of the effort will be proposals for future work to funding agencies such as CliC, IASC, and national funding agencies.

### **Support of Interest groups:**

The main sponsor for this Action Group is the Coastal and Offshore Permafrost Dynamics Interest Group (COPD-IG), which was established by council at the 2008 NICOP. This initiative is also supported by PYRN, APECS, and Carbon Pools in Permafrost Regions.

### **Other Action Group Members:**

- Boris Radosavljevic (Lead); boris.radosavljevic@awi.de; +49 331 288 2162; Alfred Wegener Institute, Potsdam, Germany (PYRN)
- Louise Farquharson; lmfarquharson@alaska.edu; University of Alaska Fairbanks, United States of America (PYRN)
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The proposed action group is an initiative of PYRN members who with the support of members of the ACD Steering Group and community will coordinate and implement the objectives set forth for the action group.

### **International dimension:**

The Arctic Coastal Dynamics group benefited from enthusiastic participation of its members. This is an international resource that remains available, on which we hope to capitalize for this Action Group. Many members of the ACD group are involved in the Circum-Arctic Coastal Community Observatory Network, an initiative of IASC which began in December 2013 and which has held meetings and special sessions at such venues as Arctic Net 2014 and ASSW 2015. We aim to be the only coastal group in the Sustained Arctic Observatory Net-work (SAON; Executive: Jan René Larsen, jan.rene.larsen@amap.no). We will attend the Arctic Observing Summit in spring 2017 to represent coastal issues, and have been approached by Partnership for Observation of the Global Ocean (POGO) as an Arctic coastal point of contact for their activities. Through publication on Arctic Portal (Halldor Johannsson, halldor@arcticportal.org), we bring our activities in association with the broader Arctic science community.

### **Explanation of individual budget items:**

#### **Database maintenance**

In this context, database maintenance refers particularly to addition of new data and metadata. This does not necessarily refer to the ACD coastal classification database. The ACD also has 27 key sites. Data on file at ACD from these sites typically date back to 2001. ACD also has an outdated but extensive Russian literature library. We envision a literature database on the website, complete with a query function. Furthermore, we plan to “crowdfund” this resource, allowing registered users to add more studies. This would make coastal literature research much easier, but does require some supervision in order to ensure everything is correct. This database would contain geographic information, putting as many studies on a map of the arctic coast as possible. We would pay one of our students to carry out the initial work.

#### **Graphics design**

Updating the website also includes a graphically more appealing web presence. The logo, schematics, infographics, maps, and advertising material design would fall into this category.

#### **Content management**

This part refers mostly to migrating old content from the two ACD websites. This part of the work has been completed already.

#### **Arctic Portal tech support**

This item includes the purchase of website extensions, domain hosting, and anything else where support from Arctic Portal is required.

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## **Workshop logistics**

The side meeting at the ICOP2016 will be a major event for the future of the ACD. We expect 25-35 participants at the side meeting. As the meeting takes place on the Telegrafenberg campus, we would like to organize transportation to the conference center where the icebreaker will take place.

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