EXPRESSION OF INTENT
FOR ACTIVITIES IN IPY 2007-2008.

Deadline for Submission – Open ended
Email to ipypo@bas.ac.uk or Fax to +44-1223-221468

1.0 PROPOSAL INFORMATION

1.1 Title of proposed activity

Polar Urals Environmental Change after Last Ice Age

1.2 Acronym or short form title of proposed activity

PUECH

1.3 Concise outline of proposed activity

The Polar Urals is a unique geographical site in Europe. It is situated on the border of European and Asian continents and is a distinct natural barrier for the humid air masses which flow from the Atlantic Ocean. This factor undoubtedly had a strong influence on aspect asymmetry of mountain glaciation of the Polar Urals range. Subsequently, the latitudinal extent of mountains significantly determined the environmental conditions during glacial-interglacial cycles.

On the basis of scientific investigation (i.e. QUENN Project 1996-2000), most question focus on past extend and the age of paleoenvironmental events and it was these factors in particular which have been studied and described. Most European glaciated regions have detailed climatostratigraphical and chronostratigraphical data. This data provides better understanding of the present environmental state and enables the analysis of the factors determining the direction of its transformations. The Polar Urals are, however, an area where there is still a lack of data and those interpretations that do exist are contradictory. In many publications this region was neglected or viewed as a less important in other larger-scale studies.

The PUECH project will focus on past and present state of mountainous glaciation and its relationship with climatological and hydrological processes. It will provide an approximation of the paleoenvironmental dynamics in this arctic region. The key scope of our investigation includes a recognition of the geomorphological features such as: moraine ridges (dimension, extent and altitude), fluvioglacial fans, present and past periglacial forms and rock glaciers. Spatial and temporal analysis of the differentiation of natural processes performed by C14, lichenometric and dendrochronological dating will be the second aim of our investigation.
1.4 Which IPY 2007-2008 theme(s) will be addressed by the project (see Note 1)

| Theme 1 – The current state of the polar environment | Y |
| Theme 2 - Change in the polar regions | Y |
| Theme 3 - Polar-global linkages and interaction | N |
| Theme 4 - Investigating new frontiers | N |
| Theme 5 - The polar regions as vantage points | N |
| Theme 6 - Human societies in polar regions | N |

1.5 What is the major target of the proposed activity (specify one – see Note 1)

| Natural or social science research | Y |
| Education/Outreach and Communication | N |
| Data Management | N |
| Legacy | N |
| Other Targets | N |

1.6 What significant advance(s) in relation to the IPY themes and targets can be anticipated from this project?

It will address the lack of information about Polar Urals paleogeography caused by two main factors: remote location of the site and limited environmental surveyance to date. Our research aims are:

- To determine the scale and pattern of the natural processes, precipitated by the particular geographical location of the.
- To highlight the stages when environmental changes occurred most abruptly and/or with the maximum intensity.
- To create raw-data for future analysis of Arctic mountain dynamics.

1.7 What international collaboration is involved in this project? (see Note 2)

This project is based on cooperation with:

- Professor D. Bolshiyanov – Polar Geography department of Arctic and Antarctic Research Institute, Federal Service for Hydrometeorology and Environmental Monitoring of Russian Federation.
- Professor M. Jakobsson – Chairman of The Arctic Palaeoclimate and its Extremes Project (APEX).
2.0 FIELD ACTIVITY DETAILS

2.1 Outline the geographical location(s) for the proposed field work (see Note 3)

<table>
<thead>
<tr>
<th>Central part of the Polar Urals (near Schuchie lakes), Russia</th>
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<tbody>
<tr>
<td>67° 39' N; 65° 59' E</td>
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</table>

2.2 Define the approximate timeframe(s) for proposed field activities?

<table>
<thead>
<tr>
<th>Arctic Fieldwork time frame(s)</th>
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<tbody>
<tr>
<td>07/2007 – 08/2007</td>
<td>-</td>
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2.3 What significant logistic support/facilities will be required for this project? Can these resources be usefully shared with other projects? (see Note 4)

- Snow-terrain vehicle (wiezdiekhod)
- The project requires seasonal tent-camps at a research site on the Polar Urals.

2.4 Will the project leave a legacy of infrastructure? (see Note 1)

- No

2.5 How is it envisaged that the required logistics will be secured? (one or more options can be identified)

| Consortium of national polar operators | N |
| Own national polar operator            | N |
| Another national polar operator        | N |
| National agency                        | N |
| Military support                       | N |
| Commercial operator                    | Y |
| Own support                            | Y |
| Other sources of support               | Y |

2.6 Has the project been "endorsed" at national or international level (see Note 5)

- No
3.0  PROJECT MANAGEMENT AND STRUCTURE

3.1  Is the project a component (established over the IPY 2007-2008 timeframe) of an existing plan, programme or initiative or is it a new autonomous proposal?

<table>
<thead>
<tr>
<th>New Project</th>
<th>Y</th>
<th>Component of an existing or planned activity</th>
<th>N</th>
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<tbody>
<tr>
<td>Pilot studies were performed in study area in August 2006. The PUECH Project is a new initiative for PhD students and undergraduate students of Jagiellonian University.</td>
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3.2  How will the project be organised and managed? (see Note 6)

The PUECH Project will be organised and managed by The Institute of Geography and Spatial Management, Jagiellonian University. The activity will be carried out with the scientific supervision of Professor Wiesław Ziaja. Communication will be by e-mail and by a project web-site (www.puech.geo.uj.edu.pl).

3.3  What are the initial plans of the project for addressing the education, outreach and communication issues outlined in the Framework document? (see Note 7)

The project results will be published in international and national scientific journals, and popular-science magazines. Furthermore, it is planned to present obtained results at conferences, seminars and lectures. We plan to involve students in the research program which includes the preliminary preparations and further activity.

3.4  What are the initial plans of the project to address data management issues (as outlined in the Framework document)? (see Note 8)

All geomorphological, hydrometeorological and chronological data will be made accessible in the database of the Institute of Geography and Spatial Management, Jagiellonian University. It is planned to present data for the APEX framework.

3.5  How is it proposed to fund the project? (see Note 9)

The Project received several sources of funds:
- Institute of Geography and Spatial Management, Jagiellonian University,
- The Association of Geography Students,

Funding from other institutions is currently pending.

3.6  Is there additional information you wish to provide?

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4.0 PROPOSER DETAILS

4.1 Lead Contact for the Expression of Intent

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First Name Michał (Michal)
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4.2 List up to six other project members and their affiliation.

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Faculty of Biology and Environmental Protection, Department of Biology, University of Silesia, Poland

Nadachowski Jan
Department of Pedology and Soil Geography, Institute of Geography and Spatial Management, Jagiellonian University, Cracow, Poland

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Graduated on Institute of Geography and Spatial Management, Jagiellonian University, Cracow, Poland

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