

**Outcome of the Workshop ‘Human impact on terrestrial habitats in the Antarctic’ held at the 22nd International Polar Meeting
23 September 2005, Jena, Germany**

The workshop joined researchers from twelve nations currently working on human impact studies in the Antarctic and sub-Antarctic. It offered a platform for a comprehensive and profound meeting of experts on current human impacts in the Antarctic and sub-Antarctic.

After a brief opening address by a representative of the Federal Foreign Office, Germany 18 presentations were given and discussed in the course of one day (see program below).

Peter Convey gave a research overview regarding alien terrestrial organisms in the Antarctic. Although few impacts are visible in the environment, there is a strong lack of basic survey and monitoring data. He stated an urgent need for the establishment of monitoring programs and measures to mitigate the risk of introduction of such organisms by the movement of people and cargo. Kevin Hughes presented results from responses of Antarctic soil micro-organisms to oil contamination. Microcosm experiments showed that oil degradation increased to the greatest extent with a treatment combination of bioaugmentation and biostimulation.

Enn Kaup summarised studies of sewage flow and waste dispersal into Antarctic lakes between the 1970s and 90s. Impacts were evident in the vicinity of stations including increases in salinity and nutrient levels. In recent years, research and environmental monitoring activities of the Russian Antarctic Expedition focussed on these and other human impacts which Maria Gavrilov outlined in the workshop.

After Michaela Mayer had given a special overview of the development of tourism in Arctic and Antarctic, three speakers reported on human impacts on the sub-Antarctic islands. Sally Poncet provided an insight into the monitoring program for the South Georgian Islands Albatross and Prion where interactions between visitors, fur seals and wandering albatrosses are evident. Marienne de Villiers summarised a variety of human impacts and presented current management activities to reduce or eliminate them on the Prince Edward Islands. Finally, experimental and observational disturbance studies on penguins of Macquarie Island were undertaken and presented by Nick Holmes.

Then, several presentations followed dealing with studies being conducted on King George Island. Rolf Weber informed about the Brazilian research network for assessing impacts around Ferraz Station in Admiralty Bay. This large multidisciplinary study runs since 2002, joining 15 research groups. A Chinese-German co-operation project on the impacts of station food and garbage on skuas at the Fildes Peninsula was presented by Wang Zipan. Preceding the vegetation mapping on the Fildes Peninsula in 2003/04, South Korean researchers produced a GPS/GIS-map for the vegetation around King Sejong Station on Barton Peninsula – an overview was given by Ji Hee Kim. Dmitry Vlasov reported results of a survey on fungi conducted on the Fildes Peninsula, Ardley and Nelson Island that covered rock, soil and building material.

To open the last session of the workshop, Rod Downie provided an insight into the development of the ASMA management package of Deception Island. This package was the result of an intensive international co-operation over several years. In the Fildes Peninsula Region, a similar approach could be used. The German research project ‘Risk assessment for the Fildes Peninsula and Ardley Island and the development of management plans for designation as Antarctic Specially Protected or Managed Areas’ was presented by Hans-Ulrich Peter, Osama Mustafa, Christina Büßer and Simone Pfeiffer.

In a final podium discussion, preliminary results of the research project, a risk assessment and management ideas for the Fildes Peninsula were discussed constructively. The participants strongly appreciated the work undertaken and supported the intention to continue with the research and to develop an effective management of the region.

Workshop Program

08:30 – 08:45	Opening of the workshop, introduction
08:45 – 09:05	<i>Peter Convey, Cambridge/UK:</i> How vulnerable are Antarctic terrestrial ecosystems to biological invasions?
09:05 – 09:25	<i>Kevin Hughes & Bethan Stallwood, Cambridge, Bangor/UK:</i> Oil spills in Antarctic terrestrial environments – the impact on soil microorganisms
09:25 – 09:45	<i>Enn Kaup, Tallinn/Estonia:</i> Human impacts in catchments and lakes of Schirmacher, Thala and Larsemann oases
09:45 – 10:15	Coffee break
10:15 – 10:35	<i>Maria Gavrilov & Victor Pomelov, St.Petersburg/Russia:</i> Environmental activities of the Russian Antarctic Expedition
10:35 – 10:55	<i>Sally Poncet, Falkland Islands:</i> Albatross and Prion Islands, South Georgia: a management challenge
10:55 – 11:15	<i>Michaela Mayer, Bremen/Germany:</i> Environmental impacts of Polar tourism
11:15 – 11:35	<i>Marienne De Villiers & John Cooper, Cape Town/South Africa:</i> Human impacts at the sub-Antarctic Prince Edward Islands
11:35 – 11:55	<i>Nick Holmes & Melissa Giese, Hobart, Kingston/Australia:</i> Investigating the variation in penguin responses to human activity on Macquarie Island
11:55 – 13:30	Lunch break
13:30 – 14:00	<i>Rolf Weber, Cristina Engel Alvarez, Antonio Batista, Martin Sander et al., São Paulo, Vitória, Santa Cruz do Sul, Rio de Janeiro, Rio Grande do Sul, Porto Alegre, Viçosa/Brazil:</i> Environmental assessment in the vicinity of Cmte. Ferraz Station (Brasil), Admiralty Bay, King George Island – Concepts and achievements in an integrated methodology
14:00 – 14:15	<i>Wang Zipan, Hans-Ulrich Peter & Anne Froehlich, Shanghai/China Jena/Germany:</i>

Impacts of station garbage on the diet of Antarctic skuas on Fildes Peninsula of King George Island

- 14:15 – 14:35 *Ji Hee Kim & Hosung Chung, Ansan/Korea:*
A baseline survey for long-term monitoring of terrestrial vegetation around King Sejong Station, King George Island
- 14:35 – 14:55 *Dmitry Vlasov & Vycheslav Krylenkov, St. Petersburg/Russia:*
Mycobiota of the Antarctic Polar Stations area on the King George Island
- 14:55 - 15:15 *Rod Downie, Cambridge/UK:*
Deception Island- a trailblazer in Antarctic site management
- 15:15 – 15:45 **Coffee Break**
- 15:45 – 15:50 *Hans-Ulrich Peter, Jena/Germany:*
Risk assessment for Fildes Peninsula and Ardley Island and the development of management plans for designation as Antarctic Specially Protected or Managed Areas – a short introduction
- 15:50 – 16:10 *Osama Mustafa, Christina Büßer, Simone Pfeiffer & Hans-Ulrich Peter, Jena/Germany:*
Mapping of traffic activities on Fildes Peninsula and Ardley Island – methods and results
- 16:10 – 16:30 *Christina Büßer, Uwe Grunewald, Tiemo Kahl, Osama Mustafa, Simone Pfeiffer & Hans-Ulrich Peter, Jena/Germany:*
Environmental data and human activities on Fildes Peninsula and Ardley Island
- 16:30 – 16:45 *Hans-Ulrich Peter, Christina Büßer, Osama Mustafa & Simone Pfeiffer, Jena/Germany:*
Biological data and risk assessment (Fildes Pensinsula and Ardley Island)
- 16:45 – 17:10 *Simone Pfeiffer, Christina Büßer, Osama Mustafa & Hans-Ulrich Peter, Jena/Germany:*
Possible elements of a drafts Management plan for the southwestern part of King George Island
- 17:10 – 18:00 Discussion and conclusions