

BIANZO

**BIODIVERSITY OF THREE REPRESENTATIVE GROUPS OF
THE ANTARCTIC ZOOBENTHOS
COMPARISON OF THE NATURE, STRUCTURE AND FONCTION**

A COOPERATIVE RESEARCH PROJECT SUPPORTED BY OSTC
UNDER THE PADD/PODO II PROGRAMME

**Kick-off Meeting
8 April 2003**





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Objectives

To investigate, at different structural and functional levels, the biodiversity of the Antarctic benthos through three representative faunal groups of different size categories:

- the nematodes (meiobenthos)
- the amphipod crustaceans (macrobenthos)
- the echinoids (megabenthos)

First objective :

To characterize and understand the nature and distribution of biodiversity

Second objective :

To improve our limited understanding of the functional role of biodiversity

by analysing different dynamic aspects (niche diversity, trophic types, role in food webs, reproduction patterns or biomass turnover).

Third objective :

To develop a Biodiversity Information System for the Antarctic benthos,
for the needs of science and society.

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Context

- The **1992 Convention on Biological Diversity** stressed the critical lack of knowledge about the world biodiversity, especially the marine biodiversity.
- The BIANZO project is an integral part of the programmes
 - ✓ **SCAR-EASIZ** (Ecology of the Antarctic Sea-Ice Zone)
 - ✓ **ANDEEP** (Antarctic Benthic Deep-Sea Biodiversity)
 - ✓ **LAMPOS** (Latin America *Polarstern* Study)
 - ✓ **SCAR-EVOLANTA**. (Evolutionary Biology of Antarctic Organisms)



- It will also contribute to the world-wide initiatives
 - ✓ **DIVERSITAS**
 - ✓ **GBIF** (Global Biodiversity Information Facilities)
 - ✓ **CoML** (Census of Marine Life) and **OBIS** (Ocean Biodiversity Information System)

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Network Partners

Royal Belgian Institute of Natural Sciences (RBINS)

Dept of Invertebrates, Laboratory of Carcinology

Promotor: Dr Claude **DE BROYER**, co-ordinator



University of Ghent (UG)

Dept of Biology, Marine Biology Section

Promotor: Prof Ann **VANREUSEL**



Free University of Brussels (ULB)

Marine Biology Laboratory

Promotor: Prof Chantal **DE RIDDER**



University of Liège (ULg)

Dept of Life Sciences, Oceanology Section

Promotor: Prof Jean-Marie **BOUQUEGNEAU**



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Users Committee

Prof Dr Wolf ARNTZ

**Alfred-Wegener-Institute for Polar and Marine Research
Bremerhaven, Germany**



Prof Dr Angelika BRANDT

**Zoological Institute and Zoological Museum
University of Hamburg, Germany**



Prof Dr Krzysztof JAZDZEWSKI

**Laboratory of Polar Biology and Oceanbiology
University of Łódź, Poland**



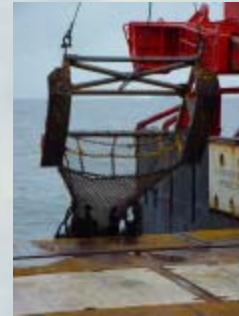
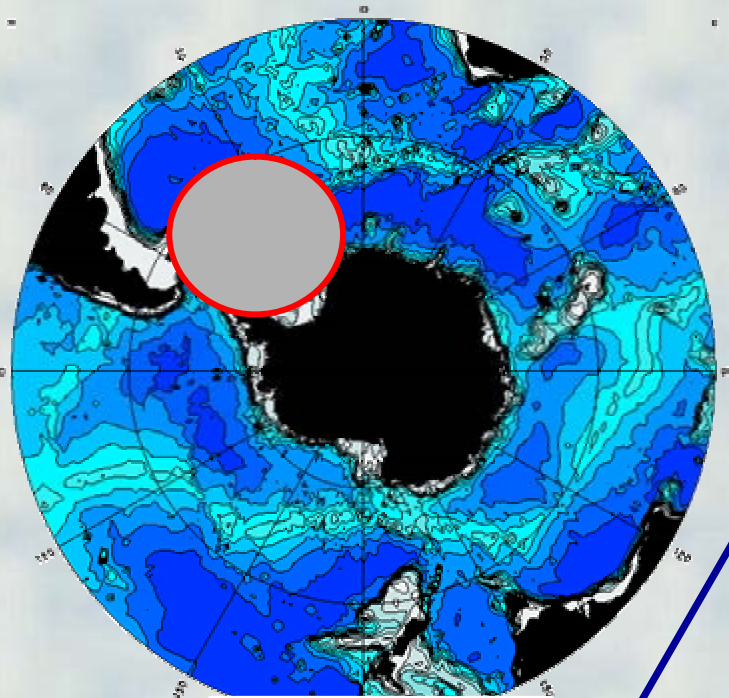
Dr Andy GOODAY

Southampton Oceanography Centre, United Kingdom



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Methodology



TAXONOMY & PHYLOGENY

- Morphological
- Molecular

ECOLOGY

- Cultivation
- Gut Contents
- Stable Isotopes

DATABASES

- Implementation
- New tools

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Expected Results

An improved knowledge of the **composition and biogeography** of the three target benthic groups in some poorly known parts of the Southern Ocean shelf.

A discovery of the nearly totally **unknown deep sea fauna** from the continental slope and abyssal basins of the Scotia and Weddell Seas.

New insights into the **phylogeny** of selected taxa to elucidate the origin(s) of the Antarctic and deep sea faunas

A detection of **potential cryptic species** (through molecular analyses) which could conduct to revise our current estimates of Antarctic species richness and our concept of generalized circumpolar distribution.

An improved knowledge of some key ecological parameters determining the **role of biodiversity in ecosystem functioning**, such as niche diversity, trophic guilds diversity and trophic roles.

An improved knowledge of some key biological elements allowing to **better understand the Antarctic biodiversity patterns**: life styles such as symbiosis, size spectra in the deep sea, reproduction and development.

New syntheses on taxonomy, faunistics, distribution and biogeography of selected groups of the Antarctic benthos

A development of comprehensive databases on the biodiversity of the 3 target groups and **their integration** into a common portal into a portal allowing common analyses and mapping applications.

BIANZO Potential Valorization

The Belgian proposal for supporting the development of the



SCAR BIODIVERSITY INFORMATION NETWORK (SCAR –BIN)

for the needs of science, environmental management and conservation in Antarctica

- 1. Develop the marine part of the future SCAR Information Network on Antarctic Biodiversity :**
 - ✓ *a portal for marine (benthic) biodiversity information*
 - ✓ *the Antarctic Marine Biodiversity Information Network*
 - ✓ *Integration of the SCAR-BIN within existing world-wide biodiversity information initiatives (GBIF...)*
- 2. Contribute to the assessment of marine biodiversity in Antarctica and to the development of science plans for Antarctic biodiversity**