

***Evolution and Biodiversity in the Antarctic: The Response of Life to Change
(EBA)***

Report for SCAR SRP Performance Review March 2008

1. Rationale

Evolution and Biodiversity in the Antarctic: the Response of Life to Change (EBA) was endorsed by SCAR and became operational from January 2006.

The overall aim of the EBA programme is to understand the evolution and diversity of life in the Antarctic, to determine how these have influenced the properties and dynamics of present Antarctic and Southern Ocean ecosystems, and to make predictions on how organisms and communities will respond to current and future environmental change.

This programme involves an explicit integration of work on marine, terrestrial and limnetic ecosystems. The science in this programme thus extends over an entire biome on Earth. By comparing the outcome of parallel evolutionary processes over the range of Antarctic environments, fundamental insights can be obtained into evolution and the ways in which life responds to change, from the molecular to the whole organism level and ultimately to biome level. Most national programmes individually cannot attempt a study on such a bold scale, whereas the collaborative spirit of the Antarctic science community provides a mechanism for achieving outstanding scientific success.

EBA has established five Working Packages to cover the intended areas of research:

- Work Package 1: Evolutionary history of Antarctic organisms
- Work Package 2: Evolutionary adaptation to the Antarctic environment
- Work Package 3: Patterns of gene flow and consequences for population dynamics: Isolation as a driving force
- Work Package 4: Patterns and diversity of organisms, ecosystems and habitats in the Antarctic, and controlling processes
- Work Package 5: Impact of past, current and predicted future environmental change on biodiversity and ecosystem function

2. Overview of Progress

Since 2006, the development of the EBA has not quite followed the intended path as outlined in the EBA Implementation Plan (2005). Whereas pre-2006, SCAR supported separate marine and terrestrial biological programmes, EBA brought these disciplines under one umbrella. This has meant a significant increase in the number of groups that contribute to the one SCAR programme of EBA. From the outset, the EBA Co-Chairs and the SSG-LG representative have had challenges identifying the numerous and disparate groups that contribute to the aims of the EBA. Two work package leaders (one marine and one terrestrial) for each work package have been identified (see Section 5), with the aim of them keeping in touch with the community working on topics within their work package, but there remain challenges in maintaining contact with these members and getting information from them regarding the wider biological community.

However, it is clear that there are a large number of projects/programmes and individuals who are undertaking research towards the goals of EBA, within very diverse areas of biology. Those with which we have positive interactions are summarised in Appendix 1. It remains likely that more will be

identified. EBA's role, as is appropriate for a non-science-funding umbrella or facilitator, has quickly developed into one of connection, and encouragement of various initiatives.

The committee will need to remain vigilant in convening workshops before 2013 in order to answer the questions that it poses in its Science Plan (2004).

Information regarding the outputs and inputs specifically concerning the EBA programme and its undertakings are provided in the summary format requested by SCAR below. However, also appended to this report are the submissions from many projects/programmes that contribute to EBA in a broader sense (Appendix 3). This highlights not only the high level, diversity and connectivity of research that contributes to EBA, but also the challenge that EBA has in keeping a track of these widely distributed groups.

3. Major Tasks and Timeframe

Year	Task outlined in 2005 Implementation Timeline	Comments
2005	Planning meeting in Cambridge in March to draft Implementation Plan	Completed
	SCAR Biology Symposium "Evolution and Biodiversity in the Antarctic", Curitiba, Brazil.	Completed
	International workshop on EBA where work package sub-committees will be appointed and specific milestones detailed.	Completed as part of Curitiba meeting
	IPY advanced planning, database construction and integration	Falls within individual IPY programme remits, not EBA
	Circulation of questionnaire about planned and anticipated research activities that will contribute to the aims of EBA in order to collect feedback from potential participants.	Completed
2006	SCAR Open Science Meeting, Hobart. EBA begins. Workshop: Factors driving evolution in the Antarctic.	Decision made to encourage smaller community-led 'targeted' workshops, e.g. within WPs, rather than single large and centralized meetings
2007	Second workshop: World View of Evolution. Miraflores, Spain.	As above, this was removed from planning programme
2008	SCAR Open Science Meeting, St. Petersburg. Evolutionary Biology-Biodiversity Joint Session.	PC on SOC for this meeting, various EBA-linked workshops and contributions, overall session structure different to working assumption at time of inauguration of EBA
2009	SCAR Biology Symposium, possibly in Japan or Korea. Major EBA session and third workshop (integrative) one. Also mid-program review.	Symposium planned for Sapporo, Japan; 26 - 31 July 2009
2010	EBA-IPY activities: will be the SCAR Open Science Meeting where we will devote to IPY results.	
2011	last field season	
2012	SCAR Open Science Meeting	
2013	SCAR Biology Symposium – wrap-up of results and last year of program	

4. Deliverables

The EBA Implementation plan (2005) outlined that the main output from the EBA programme would be a significant step forward in our understanding of the Antarctic biota and its evolution. There would also be

important contributions to fundamental understanding in a number of disciplines. Specific outputs do and will include the following (as demonstrated in the following sections):

- Primary literature publications and books
- Conference proceedings and publications from workshops
- Programme reports
- Website
- Input to databases
- Advisory reports to ATCM and others (e.g., CEP, CCAMLR, COMNAP)
- Input to, and feedback from, international programmes
- Synergies with other SCAR programmes (e.g., ACE, AGCS, SALE)
- Trained PhD graduates and post-doctoral research fellows
- Capacity development of students and members from developing Antarctic nations
- Outreach via National Programmes and in coordination with proposed SCAR Outreach Committee

5. EBA Committee

Name	Role	Gender	Country	Term From
Dr Peter Convey	<i>Co-Chair</i>	Male	United Kingdom	2005
Prof Guido di Prisco	<i>Co-Chair</i>	Male	Italy	2005
Shulamit Gordon	<i>Secretary & JCADM Representative</i>	Female	New Zealand	July 2007
Dr Dana Bergstrom	Secretary (past 05-07)/Member	Female	Australia	2005
Prof Angelika Brandt	Member	Female	Germany	2005
Dr Marc Lebouvier	<i>Member (conservation matters)</i>	Male	France	2005
Dr Ad H.L. Huiskes	<i>CO LSSSG (ex officio)</i>	Male	The Netherlands	2005
Dr Michael Stoddart	<i>Census of Antarctic Marine Life</i>	Male	Australia	2005
Dr Brigitte Hilbig	Work Package 1 leader	Female	Germany	2005
Dr Dominic A. Hodgson	Work Package 1 leader	Male	United Kingdom	2005
Prof Daniel P. Costa	Work Package 2 leader	Male	United States	2005
Prof Takeshi Naganuma	Work Package 2 leader	Male	Japan	2005
Prof Antonio Mateo Solé-Cava	Work Package 3 leader	Male	Brazil	Stepped Down February 2008
Dr Elie Poulin	Work Package 3 leader	Male	Chile	March 2008
Dr Ian D. Hogg	Work Package 3 leader	Male	New Zealand	2005
Dr Julian Gutt	Work Package 4 leader	Male	Germany	2005
Dr Satoshi Imura	Work Package 4 leader	Male	Japan	2005
Dr Edith S. E. Fanta	Work Package 5 leader	Female	Brazil	2005
Prof Thomas A. (Tad) Day	Work Package 5 leader	Male	United States	Stepped Down December 2007
Dr David Renault	Work Package 5 leader	Male	France	March 2008

6. Outputs

a. Key achievements

- I. *Publications*: Section 6c below demonstrates that at least 142 peer reviewed papers were published by groups contributing to EBA in 2006 and 138 in 2007. Key publications of note are:

- A Paper to be submitted to the upcoming ATCM meeting in Kiev resulting from the joint ATS-EBA workshop that was held in South Africa in October 2006 (see appendix 2).
 - IX SCAR International Biology Symposium Evolution and Biodiversity in Antarctica *Antarctic Science Special Edition Volume 19(2) 2007*. Eds E. Fanta, W. Arntz, W. Detrich, H. Kawall
 - Antarctic Ecology: From Genes to Ecosystems. Part 1. Rogers, A.D, Murphy, E., Clarke, A., Johnston, N. (eds). *Philosophical Transactions of the Royal Society B*. Vol. 363(1477), 2007.
 - Antarctic Ecology: From Genes to Ecosystems. Part 2. Rogers, A.D, Murphy, E., Clarke, A., Johnston, N. (eds). *Philosophical Transactions of the Royal Society B*. 2007.
 - CONVEY, P., GIBSON, J. A. E., HILLENBRAND, C.-D., HODGSON, D. A., PUGH, P. J. A., SMELLIE, J. L., AND STEVENS, M. I. (In press). Antarctic terrestrial life - challenging the history of the frozen continent? *Biological Reviews*.
 - FRENOT Y., CHOWN S.L., WHINAM J., SELKIRK P.M., CONVEY P., SKOTNICKI M.L. & BERGSTROM D.M. 2005. Biological invasions in the Antarctic: extent, impacts and implications. *Biological Reviews of the Cambridge Philosophical Society*, 80, 45-72.
 - Convey, P. 2007. Non-native species in the Antarctic terrestrial environment: presence, sources, impacts and predictions. "Non-native species in the Antarctic" Workshop Proceedings, Gateway Antarctica, Christchurch, New Zealand. de Poorter, M., Gilbert, N., Storey, B., and Rogan-Finnemore, M. (Eds.)
 - Frenot, Y., Convey, P., Lebouvier, M., Chown, S.L., Whinam, J., Selkirk, P.M., Skotnicki, M. & Bergstrom, D.M. 2007. Biological invasions in the Antarctic: extent, impacts and implications. "Non-native species in the Antarctic" Workshop Proceedings, Gateway Antarctica, Christchurch, New Zealand. de Poorter, M., Gilbert, N., Storey, B., and Rogan-Finnemore, M. (Eds.)
 - Latitudinal Gradient Project (LGP) *Antarctic Science Special Edition Volume 18(4) 2006*. Eds. M.R. Balks, V. Cummings, T.G.A. Green, C. Howard-Williams, D. Peterson and J.G. Webster-Brown.
 - Convey P, Stevens MI. 2007. Antarctic Biodiversity. *Science* 317(5846): 1877-1878.
 - Verde C, Parisi E, di Prisco G. 2006. Non-Antarctic primitive and modern notothenioid fish species: tracking the adaptive evolution in the structure, function and molecular phylogeny of haemoglobin. *Deep Sea Research* 53: 1105-1114.
 - Verde C, Parisi E, di Prisco G. 2006. The evolution of thermal adaptation in polar fish. *Gene* 385: 137-145.
- II. *Workshop Sponsorship*: As the role of EBA has developed several workshops have been sponsored to encourage communication among scientists particularly to foster new ideas and cross-discipline discussions. Appendix 2 lists the various workshops that EBA has sponsored or has been involved in. Of note is the upcoming Antarctic Gradients invited workshop to be held at BAS in May 2008. Sixteen participants from UK, South Africa, Spain, New Zealand, Australia, US and Italy will be attending. This workshop came out of discussions from the Latitudinal Gradient Project community in New Zealand with input from the US' McMurdo Long Term Ecological Research project. This is a prime example of how EBA can facilitate work in new areas of research.
- III. *EBA Website*: A new EBA website was launched in July 2007 to help promote the cause of EBA and bring to the fore the various groups that contribute to EBA. See www.eba.aq
- IV. *EBA Newsletter*: An inaugural EBA Newsletter was distributed in March 2008 to give recent news of the various parts of EBA. We hope that these initiatives will increase the communication of EBA-related news and activities around the Antarctic biological community and the greater Antarctic community. This newsletter is attached to this review (Appendix 5) and also available on the EBA website.
- V. *Links with the Antarctic Master Directory*: EBA's JCADM representative (who is also the EBA Secretary) has created an EBA portal in the Antarctic Master Directory where information about

Antarctic data is stored. This enables us to easily search for all types of data that contribute to EBA outcomes.

b. Contributions to IPY Programmes:

Besides being a SCAR programme, EBA has also been endorsed by the IPY Committee (Project # 137, coordinated by Guido di Prisco). Although the two EBA's have a lot in common, they have some differences:

- Teams that joined EBA-SCAR did so through a specific procedure which involved filling a questionnaire. Teams that joined EBA-IPY have applied through the EoI sent to the national organizations. Although the two procedures were different, the teams often coincide.
- Within national programmes, participation in EBA-SCAR takes place within a longer time span (corresponding to the length of EBA-SCAR 2006-2013) than participation in EBA-IPY (2007-2009). This will affect the provision of funding according to the procedures by each nation.

Some of the EBA-IPY projects that contribute to EBA are identified in Appendix 1.

Several other projects that contribute to EBA are themselves IPY endorsed projects such as CAML, SCAR-MarBIN, Aliens, TARANTELLA and ICED. These are listed in Appendix 1.

c. Publications in peer reviewed literature

As highlighted, EBA as it stands does not publish, however the many projects and programmes that contribute to EBA do. Individual publications from these groups can be seen in Appendix 3, but we have also compiled all publications into one list, including the project name (Appendix 4). This highlights that many publications are co-written by members of more than one project.

Number of peer reviewed publications that contribute to EBA (as at completion date of this report)

Year	Number of Publications
2006	142
2007	138
2008	8
In Press	32

d. Other publications

Please see individual project/programme submissions for details on other publications. Note that particularly significant EBA-related publications have been picked up effectively by the media arms of author parent organizations.

An inaugural EBA Newsletter was circulated in March 2008 to the EBA listserver, the Joint Committee on Antarctic Data Management listserver and the general SCAR community. This can be found on the EBA website in the Publications and Reports section [here](#) and is also appended for your information (See Appendix 5).

e. Brochures, posters, press/media articles and similar PR material

None directly, although this is an integral element of several of the component programmes, research groups, and national organizations.

f. Web site details and number of hits to this site if data is available

A new EBA website (www.eba.aq) was designed and came into use in July 2007. This replaced a web page that had been hosted by the Netherlands' polar programme.

The new website contains pages on:

- Current EBA News
- Work Package information
- Publications and Reports
- Information about data
- Conferences and Meetings
- Links to other EBA related projects
- EBA Contacts

Statistics of the new EBA Website since its release in July 2007

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jul 2007	97	154	861	17022	43.50 MB
Aug 2007	159	196	754	15089	41.67 MB
Sep 2007	340	375	874	11412	28.09 MB
Oct 2007	640	765	1440	14696	33.57 MB
Nov 2007	643	937	1758	7368	18.02 MB
Dec 2007	668	853	1374	8149	20.72 MB
Jan 2008	473	584	1119	7175	17.88 MB
Feb 2008	386	528	1342	15211	42.72 MB
Total	3226	4140	8853	86239	217.81 MB

g. Project Databases

Biodiversity Database

The Australian Antarctic Data Centre (AADC) hosts and maintains a Biodiversity Database (<http://data.aad.gov.au/aadc/biodiversity/>) which contains data on Antarctic and sub-Antarctic flora and fauna. This started through EBA's predecessor, RiSCC, and is EBA's main database. This database contains as many collections of data that we are aware of in the public domain (see <http://data.aad.gov.au/aadc/biodiversity/collections.cfm>). The samples and/or observations from each collection are classified into one of three possible habitat domains - terrestrial, limnetic or marine (see table below).

Number of Observations and Collections Currently in the Biodiversity Database (as of 19/2/08)

Habitat Domain	Number of Observations	Number of Collections
Terrestrial	96687	28
Marine	248650	39
Limnetic	3926	7

The terrestrial and limnetic data are from as many accessible data sources as possible. They are dominated by a copy of the Antarctic Plant Database from BAS. Copies of other databases are privately held and could be made public with permission of the data custodians. The Australian data is published to GBIF for inclusion in their global catalogue. The marine component in this database is restricted to data from the Australian programme and, once it becomes public, it is published via webservice directly to SCAR-MarBIN (www.scarmarbin.be) and to GBIF and OBIS.

Over the last year, in conjunction with the improvements and growth of external databases such as the Catalogue of Life, Dave Watts (AAD) has been validating higher level taxa so that the database has a relatively consistent taxa system, with as many species containing authorities as is possible. There are also plans to improve the on-line mapping tools and utilise the Antarctic Digital Database for background topography. A list of terrestrial and limnetic bioregions contains links to the relevant collections or maps.

Web statistics for this database (as of 19/2/08) are:

39,314 page views in 2007 of which 5,000 were internal to AAD and 34,165 external to AAD.

Other Databases

There are also other databases that are coordinated by several of the individual projects/programmes that contribute to EBA. See: SCAR-MarBIN, MERGE, SO-CPR.

The Antarctic Master Directory

The [Antarctic Master Directory \(AMD\)](#) is a central directory system housed by NASA's Global Change Master Directory that contains information about Antarctic data (metadata). Through the Joint Committee on Antarctic Data Management, Antarctic nations are encouraged to submit their metadata to the AMD so that a record of what data have been collected and where it was collected can be kept.

EBA has set up a portal within the AMD which gives access to metadata submitted since EBA was established and metadata submitted before EBA was established, but that contribute to EBA's aims. This portal can be accessed [here](#). Groups who associate their work with EBA are encouraged to enter their metadata into the AMD and link it to the EBA programme under 'Projects'. Note that metadata can be linked to more than one project.

This means that if EBA wants to see what data has been collected that relate to EBA, this can be done through a simple search function on the AMD. EBA is the only one of the SCAR SRPs that has set up such a portal, though others may be under construction. However, in order for this to be effective, data centres do need to tag their metadata with the EBA project.

h. Number and type of education/training and other capacity building activities

None

i. Notes on new technology/model developments

None

VI. Inputs

a. Number, gender and country of participating scientists in your project

See summary table (Appendix 1) for individual projects/programmes that contribute to EBA.

b. Meetings and workshops

Several meetings and workshops have been, and are planned to be, sponsored by EBA, and many have been linked to EBA. These can be found in Appendix 2.

c. Links to other SCAR SRPs or SCAR Action or Expert Groups

The Southern Ocean Continuous Plankton Recorder Survey (SO-CPR Survey) has identified itself as a project that contributes to EBA and this is currently an LS-SSG Action Group.

Links have been made with ACE and AGCS through the SCAR inter-programme leaders group.

d. Links to other ICSU bodies or to other scientific groups

None directly. These links happen at the component programme level, e.g. CAML links to CoML, and thereby into Diversitas.

Submitted 27 March 2008

Compiled by: Shulamit Gordon, Pete Convey, Guido di Prisco.

Appendix 1: Projects/Programmes that contribute to the EBA Programme

Project Name	Lead Contact	Lead Contact Country	Discipline	IPY Project	Website	Ref'd Pubs (06-08)	Other Countries involved	Number of Participants
Aliens in Antarctica [Aliens]	Dana Bergstrom	Australia	Terrestrial	#170	www.aliensinantarctica.aq	None	9 Countries with scientists involved: Australia, Belgium, France, Japan, New Zealand, Poland, South Africa, The Netherlands, United Kingdom	23 (43% female)
Anemonies Database	Daphne G. Fautin	U.S.A.	Marine	No				
ANtartic benthic DEEP-sea biodiversity: colonisation history and recent community patterns – SYSTEM Coupling [ANDEEP-SYSTCO]	Angelika Brandt & Brigitte Ebbe	Germany	Marine	#66	http://www.cedamar.org/	None. 1 st field season just complete	8 countries out of: USA, United Kingdom, Belgium, Italy, France, Norway, Spain, Switzerland, Russia, Argentina, Australia	53 participants. 43% female
Automatic Monitoring of Penguin Populations [AMPPoP]	Yvon LE MAHO	France	Combined	#251	Under Construction	1	France, Japan, USA, UK, Australia, Italy, New Zealand	13 (30% female)
Biodiversity-Change in the formerly ice shelf-covered Larsen A/B area	Julian Gutt	Germany	Marine	Under CAML	-	1	14 countries including: Germany, Canada, Czech Republic, Spain, Russian Federation, Belgium, Italy, Ukraine, USA, UK, France, Chile	48 (54% female)
Biodiversity, Function, Limits and Adaptation from Molecules to Ecosystems [BIOFLAME]	Peter Convey	U.K.	Marine/Terr estrial	No	www.antarctica.ac.uk	~110 since 2006	UK, Germany , Australia	14 UK (36% female)
Biodiversity of three representative groups of the Antarctic Zoobenthos - Coping with Change [BIANZO II]	Chantal de Ridder	Belgium	Marine	No				
Census of Antarctic Marine Life [CAML]	Michael Stoddart	Australia	Marine	#53	www.caml.aq	-	20 countries	200
Climate change, human activities and biodiversity in subantarctic terrestrial ecosystems [Ecobio]	Marc Lebouvier	France	Terrestrial	Under ALIENS and TARA NTELLA	Under Construction	8	France, Australia, Belgium, New Zealand, Poland	12 (25% female)
Collaborative Research: Relevance of planktonic larval dispersal to endemism and biogeography of Antarctic benthic	Ken Halanych	U.S.A.	Marine	No				

invertebrates								
Comparative Biologic and Monitoring Research of Gentoo (Pygoscelis papua) in Terms of its Conservation as a Living Resource	Roumiana Metcheva	Bulgaria	Marine/Terr estrial	No				
Comparative Studies of Gentoo Populations [GOSGEN]	Volodymyr Bezrukov	Ukraine	Marine/Terr estrial	No				
Cool Plants 9Group of projects)	Sharon Robinson	Australia	Terrestrial	No	http://www.uow.edu.au/science/biol/staff/sharonr/sr_coolplants.html	4	Australian, German, Austrian, Czech Rep, Italian, USA	21 (62% female)
Did Antarctic octopuses colonise the deep sea?	Louise Allcock	U.K.	Marine	No				
Discovery 2010: Integrating Southern ocean Ecosystems into the Earth System [Discovery 2010]	Eugene Murphy	U.K.	Marine	No				
Ecology and Evolution of Antarctic Invertebrates	Sven Thatje	U.K.	Marine	No	-	24	UK, Germany, US, Argentina, New Zealand	5 in UK
Evolution and Biodiversity in the Antarctic [EBA-IPY]	Guido di Prisco	Italy	Marine/Terr estrial/Aquat ic	#173	www.eba.aq	19	All SCAR Nations.	
Health of Arctic and Antarctic bird populations [BIRDHEALTH]	Maarten Loonen	The Netherlands	Terrestrial	#172				
Holocene climate variability and ecosystem changes in the coastal East and Maritime Antarctica [HOLANT]	Wim Vyverman	Belgium	Terrestrial	Under MERGE	www.HOLANT.UGent.be	3	Belgium, UK	11 (36% female)
Impact of CLimate induced glacial melting on marine and terrestrial COastal communities on a gradient along the Western Antarctic PENinsula [ClicOPEN]	Doris Abele	Germany	Marine/Terr estrial	#34				
Integrated circumpolar studies of Antarctic marine ecosystems to the conservation of living resources [AMES]	Svein Iversen	Norway	Marine	#131	www.imr.no	None. 1 st field season still underway.	Germany, USA, China, Brazil, Norway	20 Total participants. 25% female
Integrating Climate and Ecosystem Dynamics in the Southern Ocean [ICED]	Rachel Cavanagh	U.K.	Marine	#92	http://www.iced.ac.uk	None	20 countries	~100 scientists (~25% female)
International Collaborative Expedition	Cinzia	Italy	Marine	#93	www.icefish.neu.edu	7	Italy, France, New Zealand, USA,	12

to collect and study Fish Indigenous to Sub-Antarctic Habitats [ICEFISH]	Verde						Germany, Australia, Brazil, U.K. South Africa	
Internationally coordinated studies on Antarctic environmental status, biodiversity and ecosystems. (Environmental, Biological, and Ecological Studies in Antarctica) [EBESA]	Roberto Bargagli	Italy	Terrestrial	Under EBA-IPY	-	6 Italian	Italy, Czech, Ukraine Republic	28 (42% female)
Latitudinal Gradient Project [LGP]	Shulamit Gordon	New Zealand	Marine/Terrestrial/Aquatic	Under MERGE and EBA-IPY	www.lgp.aq	51 (some will overlap with others listed here)	New Zealand, Italy, USA.	24
McMurdo Dry Valleys Long term Research Project [MCM-LTER]	Berry Lyons	U.S.A.	Terrestrial/Aquatic	No	www.mcmlter.org	30	USA, Canada, New Zealand, Australia, UK, Czech Republic, Japan	Pls: 7 Total=7 (2 female); Current Formal Collaborators: Total=6 (2 female);
Microbiological and Ecological Responses to Global Environmental Changes in Polar Regions [MERGE]	Takeshi Naganuma and Annick Wilmotte	Japan and Belgium	Terrestrial	#55	Not one central one for MERGE. Some sub-projects have websites.	7 Publications - Some overlap with other projects	Japan, New Zealand, Brazil, Malaysia, Poland, Spain, Belgium, UK	At least 48 participants (30% female)
Natural climate variability - extending the Americas palaeoclimate transect through the Antarctic Peninsula to the pole [CACHE-PEP]	Dominic Hodgson	U.K.	Marine/Terrestrial	Under MERGE	http://www.antarctica.ac.uk/bas_research/current_programmes/cache/pep/index.php	18 (some will overlap with others listed here)	UK and Belgium are main partner	
Polar Aquatic Microbial Ecology [PAME]	Gunnar Bratbak	Norway	Aquatic	#71	http://www.uib.no/pame/	0	Norway and France	14 (36% female)
Response of Polar, Tropical and Temperate Microalgae to Global Warming and Increased UV Radiation	Phang Siew Moi	Malaysia		No				
Retrospective and Prospective Vegetation Change in the Polar	Terry Callaghan	Sweden	Terrestrial	#214				

Regions: Back to the Future [BTF]								
SCAR-Marine Biodiversity Information Network [SCAR-MarBIN]	Claude de Broyer	Belgium	Marine	#83	http://www.scarmarbin.be	See: http://www.scarmarbin.be/imis.php?module=dataset&show=search		International Scientific Steering Committee: 16 participants from 8 countries
Scratching The Surface [IMARES-SUIT]	Jan Andries van Franeker	The Netherlands	Marine	No	http://www.pooljaar.nl/poolijs www.jafweb.nl	4	Netherlands, Belgium, Germany and Canada	8 Male
Sex and Variation in Antarctic Lichens	Paul Dyer	U.K.	Terrestrial	No	-	4	UK	3 male
Southern Ocean Continuous Plankton Recorder Survey [SO-CPR]	Graham Hosie	Australia	Marine	No	http://data.aad.gov.au/adc/cpr/index.cfm	7 from 2006	Australia, Japan, Germany, New Zealand, UK, USA and Russian.	25 (32% female)
Structural-functional characteristics of microbe cenoses in Antarctica. The investigation of microorganisms role in biogeochemical cycles	Oleksandr Tashyrev	Ukraine	?	Under EBA-IPY	-	?	Ukraine	5
Terrestrial ecosystems in Arctic and Antarctic: effects of UV light, liquefying ice, and ascending temperatures [TARANTELLA]	Ad Huiskes	The Netherlands	Terrestrial	#59	www.tarantella.aq	None	The Netherlands, Czech Republic, United Kingdom, Norway, Belgium, USA, Canada, Japan, France, Spain	24 (21% female)
Trophic Ecology of the Nearshore Zone [TRENZ]	Jonathan Stark	Australia	Marine	No				
Understanding, valuing and protecting Antarctica's unique terrestrial ecosystems: Predicting biocomplexity in Dry Valley ecosystems	Allan Green	New Zealand	Terrestrial	No				
Vulnerability of native communities to invasive insects and climate change in sub-Antarctic islands [Evince]	David Renault	France	Terrestrial	No				

Appendix 2: Workshops/Meetings Supported by EBA or linked to EBA

Title	Venue	Date	Report/Supported Personnel	Attendees/Supported
2005				
IX SCAR Biology Symposium	Curitiba, Brazil	25-29 July 2005	<u><i>Antarctic Science Special Edition Volume 19(2) 2007</i></u> . Eds E. Fanta, W. Arntz, W. Detrich, H. Kawall	
2006				
EBA Core Steering Committee Meeting	Hobart, Australia	8 July 2006	<u>Minutes</u>	6 Attended (3 female); NZ, UK, Italy, France, Korea
EBA Work Package Leader Meeting	Hobart, Australia	10 July 2006	<u>Minutes</u>	10 attended (2 female); UK, Italy, France, Japan, NZ, Brazil, Germany
LGP International Workshop	Hobart, Australia	10 July 2006	<u>Final Report</u>	~40 attended (17 female). Argentina, US, UK, NZ, Belgium, Canada, Germany, Australia, Malaysia, Poland, China, Spain, France
CAML Workshop	Hobart, Australia	11 July 2006		
EBA Open Meeting	Hobart, Australia	12 July 2006	<u>Minutes</u>	38 attended (15 female); Argentina, NZ, UK, Malaysia, Brazil, France, The Netherlands, Japan, Poland, Chile, China, Australia, Germany, India
Aliens Workshop	Hobart, Australia	15 July 2006	<u>Minutes</u>	11 attended (3 female); South Africa, UK, Poland, France, The Netherlands, Japan, Germany
SYSTCO-IPY Workshop	Bremerhaven, Germany	September 2006		
TARANTELLA – IPY Implementation Workshop	Rilland, The Netherlands	9-11 October 2006		24 attended (5 female); The Netherlands, Czech Republic, United Kingdom, Norway, Belgium, USA, Canada, Japan, France, Spain
Workshop on Terrestrial biodiversity in the Antarctic: Microbial, Macroscopic, Indigenous and Alien	Stellenbosch, South Africa	18-20 October 2006	<u>Report</u>	21 attended; Australia, France, Japan, The Netherlands, NZ, South Africa, USA, UK
SCAR Cross-Linkages Workshop	Rome, Italy	6-8 November 2006	<u>Report</u>	15 attended (2 female) Italy, UK, The Netherlands, Finland, USA, Sweden
SCAR-MarBIN Workshop: Evolution of Marine Organisms of the Southern Ocean	Leuven, Belgium	December 2006		
2007				
SCAR-MarBIN Workshop	Bialowieza, Poland	2-8 June 2007		32 attended; Supported personnel: Vanhoorne, Segers, Ramm
International Workshop on Antarctic Biology: Critical Issues and Research Priorities for IPY (2007-2009)	Follonica, Italy	7-9 June 2007	Abstract booklet produced.	48 attended from Italy, NZ, UK, Germany, Korea, Bulgaria, India, USA, Spain, Czech Republic; 30 invited presentations; partially supported (not by SCAR funds).
<u>International Conference</u>	Selekhard City,	17-21 June	Joint EBA-MERGE session.	Supported personnel: Roberto Bargagli (Italy), Takeshi

<u>on Cryogenic Resources of Polar Regions</u>	West Siberia, Russia	2007		Naganuma (Japan), two Malaysian microbiologists.
Latitudinal Gradient project Workshop	Wellington, New Zealand	2 July 2007	<u>Minutes</u>	~50 attended; NZ, UK, Australia, Italy. Supported personnel: Diana Wall (female US), Berry Lyons (US), Peter Convey (UK)
<u>10th International Symposium on Antarctic Earth Sciences (ISAES-2007)</u>	Santa Barbara, CA, USA	26 August - 1 September 2007	Joint EBA-ACE session giving a bioperspective.	Supported personnel: Pete Convey, Jan Strugnell (female, UK), Bettine van Vuuren (female SA)
The Southern Ocean Observing System (SOOS) Workshop	Bremen, Germany	1-3 October 2007	<u>Interim Report</u>	32 Attended. Dan Costa and Edith Fanta EBA WP leaders attended.
Upcoming in 2008				
Dynamics in the Southern Ocean (ICED) programme - first model development workshop, Old Dominion	University, Virginia, USA	16 - 18 April 2008		Subsidising 4 key participants
<u>Polar and Alpine Microbiology</u>	Banff, Alberta, Canada	11-15 May 2008		Subsidising 3 key participants (Korea, USA, India)
Antarctic Gradients – Invited Workshop	BAS, U.K.	19-21 May 2008		16 Invited participants. Some expenses will be covered.
International workshop "The polar and alpine environments: molecular and evolutionary adaptations in prokaryotic and eukaryotic organisms	Naples, Italy	May 29th--30th, 2008	Special Issue in <i>Gene</i> .	18 invited presentations from Italy, UK, USA, Germany, Belgium, France, Austria; partially supported (not by SCAR funds).
Antarctic Gradients Open Workshop	St Petersburg, Russia	5 July 2008		
<u>Extremophiles 2008</u>	Cape Town, South Africa	7-11 September 2008		Subsidising 2-3 key participants, specific conference session
Upcoming in 2009				
Xth SCAR International Biology Symposium	Sapporo, Japan	26 - 31 July 2009		

Appendix 3: Review Responses from Projects/Programmes that contribute to EBA – See attached file: Review Appendices.doc

Appendix 4: Refereed Publications from EBA-Related Projects 2006-2008 – see attached file: All EBA Publications.doc

Appendix 5: EBA Newsletter – see attached file: EBANewsletterMar08.pdf