



UK IGBP National Committee

Minutes of the meeting of the UK International Geosphere-Biosphere Programme National Committee, 28 November 2006

6 Carlton House Terrace
London SW1Y 5AG

tel +44 (0) 20 7839 5561
fax +44 (0) 20 7930 2170

www.royalsoc.ac.uk

Present:

DA Miss Dawn Ashby (Secretary), Plymouth Marine Laboratory
CB Dr Chris Baker, NERC
RB Prof Rick Battarbee, University College London
RC Miss Ruth Cooper, Royal Society
RG Ms Rachel Garthwaite, Royal Society
RH Dr Roger Harris, Plymouth Marine Laboratory
SH Prof Sandy Harrison, University of Bristol
GL Mr Graham Leeks, Centre for Ecology and Hydrology
RP Prof Raymond Pollard, National Oceanography Centre, Southampton
RN Ms Rachel Newton, Royal Society
AW Prof Andrew Watson, University of East Anglia

1. Welcome and Apologies

- 1.1 RH welcomed everyone to the Royal Society, in particular new member Raymond Pollard from the National Oceanography Centre, Southampton representing IMBER. Apologies were received from:

Dr Heiko Baltzer, University of Leicester
Mr John Ingram, Oxford University
Prof Tim Jickells, University of East Anglia
Dr William Sturges, University of East Anglia

2. Royal Society Environmental Research Programme (RC)

- 2.1 The Royal Society has received seven proposals for funding under the Environmental Research Programme. These will be considered at the GERC meeting in the afternoon where it will be decided which proposals, if any, are to be developed further.

3. Minutes of the Previous Meeting and Review of Actions

The minutes of the previous meeting were accepted as an accurate record.

Action 1 from previous meeting: DP to contact John Ingram to ask if there is anything the NC can do to help in the planning process.

Action closed. DP has now left the committee.

Action 2 from previous meeting: DP to draft a paragraph for DA to submit to IGBP [about GCTE Soil Organic Matter Network (SOMNET) data for IGBP bulletin].

Action closed. DP has now left the committee.

Action 3 from previous meeting: GL to contact Alison Holt about the DIVERSITAS Urban Biodiversity programme.

Action closed as it related to the Urban Environment proposal which was not funded.

Action 4 from previous meeting: GL to contact David Simon to investigate further links with IHDP.

Action closed as it related to the Urban Environment proposal which was not funded.

Action 5 from previous meeting: BS to report on future activities of the ITCT.

BS not present, action closed.

Action 6 from previous meeting: GL to invite a representative from Defra International to give a presentation to the committee.

Carried forward to next meeting.

Action 1: GL to invite a representative from Defra International to give a presentation to the committee.

Action 7 from previous meeting: SH to contact Thorsten Kiefer regarding links between iLEAPS and PAGES.

SH contacted Thorsten Kiefer with regard to planning for the Palaeo meeting. Thorsten was very positive about forming links with iLEAPS but would welcome some guidance as to how to proceed in practice.

Action 8 from previous meeting: Committee members to send nominations for possible new members to RH.

RH has contacted potential new members and as a result Raymond Pollard and John Ingram have joined the committee.

Action 9 from previous meeting: SH and RB to complete proposal for a meeting to integrate PAGES and AIMES into the IGBP core projects.

The proposal has been completed and will be considered at the GERC meeting this afternoon.

Action 10 from previous meeting: RB to discuss PAGES/AIMES integration at the PAGES Executive meeting.

PAGES/AIMES integration has been discussed at two executive committee meetings where there was considerable enthusiasm for integration and the proposed Royal Society meeting.

Action 11 from previous meeting: DA to send news from the National Committee to IGBP at Stockholm.

Action completed, an update will be sent for the next IGBP bulletin.

Action 12 from previous meeting: DA to forward information about factsheets to IGBP.

Action completed.

Action 13 from previous meeting: *RG to circulate information on how to propose Royal Society environmental research programme projects.*

Action completed.

Action 14 from previous meeting: *RH to present Palaeo and Modern Perspectives proposal as in progress to GERC.*

Action completed, the revised proposal will be considered this afternoon.

Action 15 from previous meeting: *RH to contact SH with recommendations from the committee for the Palaeo and Modern Perspectives proposal.*

Action completed, the feedback provided by GERC has been incorporated into the revised proposal.

Action 16 from previous meeting: *DA to send recommendations for cross cutting theme to IGBP.*

Action completed.

Action 17 from previous meeting: *RH to recommend to GERC that a Royal Society discussion meeting be considered on providing environmental information to policy makers.*

The recommendation was made to GERC which received a neutral response.

Action 18 from previous meeting: *DA to circulate RG's contact details to the committee.*

Action completed.

Action 19 from previous meeting: *DA to keep IGBP community informed of the work of the UK IGBP National Committee.*

A website has been developed for the committee and an e-newsletter is planned, this will be discussed further under agenda item 9.

Action 20 from previous meeting: *RH to write to committee members who had not attended recent meetings.*

Action completed, David Powlson has rotated off the committee and is thanked for his contribution towards the work of the committee.

4. Tour de Table – update from members on their specialist IGBP elements (All)

- 4.1 RH reported on the activities from GLOBEC since the last meeting. GLOBEC is a mature project which is moving into its integration and synthesis phase, although it still has some active field projects.

The GLOBEC regional programme, ESSAS (Ecosystem Studies of Sub-Arctic Seas) held a workshop in St Petersburg, Russia to compare four sub-Arctic marine ecosystems in June 2006.

GLOBEC Focus 1 held a workshop on the impact of climate variability on marine ecosystems in Berlin, Germany in September 2006.

A joint GLOBEC/IMBER executive meeting was held in Plymouth in September, which included discussions on how to incorporate GLOBEC science into the new IMBER programme in 2009. Plans are underway for the final GLOBEC OSM in 2009.

A GLOBEC session on “Marine ecosystems: trends, feedbacks and predicting future states” was held at the recent ESSP conference, convened by Francisco Werner and Manuel Barange.

4.2 SH reported that iLEAPS are planning their next SSC meeting where next year’s projects will be approved. A UK-French project has been funded as part of QUEST-INSU called DESIRE (Dynamics of the Earth System and the Ice-core Record) which starts on 1 March 2007.

4.3 RP reported that IMBER and LOICZ have set up a joint Continental Margin Task Team which will be holding an open science meeting in Shanghai in September 2007.

IMBER’s Capacity Building task team has developed a Capacity Building Strategy and Implementation Plan. The plan aims to enhance research capabilities in developing countries and globally in IMBER activities which have few practitioners. It also aims to strengthen graduate education in ocean sciences, which will include activities such as the floating university project. A Capacity Building working group is being established.

A joint IMBER/SOLAS Carbon Working Group has been established under the leadership of Arne Koertzinger, and their Joint SOLAS-IMBER Ocean Carbon Research Implementation Plan is available from the IMBER website. As part of their implementation three joint working groups have been established:

WG1 – Surface ocean CO₂ fluxes. A surface pCO₂ and vulnerability workshop will be held in Paris in April 2007.

WG2 – Interior ocean carbon storage.

WG3 – Carbon cycle climate sensitivities and feedback.

RP is chairing the recently established Data Management committee for IMBER which at present is trying to operate via e-mail and a web blog, however this is proving difficult to engage all members. The committee will also meet alongside the IMBER SSC meeting and RP will be attending the SCOR meeting on Co-ordination of Marine Projects next week. Patrick Monfray is working on developing links with the Global Ocean Data Assimilation Experiment (GODAE) and IMBER.

At present there is no official UK contribution to IMBER as this has been on hold pending the outcome of the Oceans 2025 proposal. A discussion ensued about the role of IMBER in the wider community. IMBER presently has no dedicated fieldwork programmes and consists solely of endorsed projects. This gives IMBER limited control over the direction of the projects and no data to manage. Previous marine IGBP projects have had a strong UK contribution, for example the Biogeochemical Ocean Flux Study (BOFS), a NERC special topic contributing to JGOFS; Land Ocean Interaction Study (LOIS), a NERC Thematic Programme contributing to LOICZ; Marine Productivity, a NERC Thematic Programme contributing to GLOBEC and UK SOLAS, a NERC directed programme contributing to International SOLAS. Possible NERC funding mechanisms for a UK contribution to IMBER were considered and it was thought that a consortium bid may be the most appropriate approach; however NERC would be keen to see that the project had support from elsewhere (co-funding) and a very focussed proposal would need to be submitted after a successful concept note had been submitted.

4.4 RB reported that PAGES, financial problems have now been alleviated and the PAGES IPO is fully funded with half of its funding from the US National Science Foundation

and half from the Swiss National Research Council. The executive officer has had his contracted extended for the duration of the project.

A new structure for PAGES is being developed which will consist of four foci plus cross-cutting themes. Foci 1-3 are paleoclimate projects primarily supporting WCRP science. RB is involved in Focus 4 which concentrates on past human-climate-environment interactions which is an integrated programme bringing together communities working on water, land-cover and soil within PAGES, IGBP and ESSP. Currently PAGES are seeking leaders for the four foci.

PAGES-AIMES links are being developed through the project Integrated History Of People on Earth (IHOPE) which aims to map the integrated record of biophysical and human system change on Earth over the last several thousand millennia, with higher temporal and spatial resolution in the last 1000 and 100 years using observations and system models. IHDP is a strong supporter of the project.

Future PAGES related events include the 17th International Union for Quaternary Research (INQUA) conference which will be held in Cairns, 28 July – 3 August 2007, and the PAGES OSM which is planned for 2009 in Seattle.

- 4.5 GL reported that LOICZ has published a synthesis publication during 2006 and there is currently a call for research proposals concerned with land-ocean interactions in the coastal zone. Despite the UK having a good record of supporting IGBP science there is only one UK led project affiliated to LOICZ at present.

A joint UNEP/GEF-LOICZ publication on the role of the coastal ocean in the disturbed and undisturbed nutrient and carbon cycles – a management perspective is now available from the LOICZ website (<http://www.loicz.org/>).

- 4.6 AW reported that UK SOLAS currently has a ship out at sea studying deep ocean gas exchange. Unfortunately the cruise has been plagued with problems ranging from loss of a CTD, to a crack in the aft bulkhead and persistent bad weather.

CARBOOCEAN has been endorsed by IMBER, SOLAS and LOICZ and is a consortium of 47 international groups with an interest in the marine carbon cycle funded within the 6th Framework Programme. The project uses ships of opportunity and time series stations to monitor how much carbon dioxide is in the North Atlantic. CARBOOCEAN has completed two surveys of pH in the North Sea in 2001 and 2005 where a large decrease in pH (0.08) was observed over the 4 years. Ocean wide there has been a decrease of only 0.3 in the past 100 years.

Funding for CARBOOCEAN will cease in 3 years and no further funding can be obtained from the Framework programmes. Funding CARBOOCEAN is likely to be too large a commitment for any one country and it may be appropriate to approach the European Science Foundation for funding. In the meantime it is important to raise awareness of the value of the programme within individual countries. The committee considered that the links between CARBOOCEAN and GOOS/GEOS are currently not very well developed, which will be important to help ensure continued funding.

Defra are funding a pilot project involving PML, NOC and UEA on ocean acidification in order to develop a trial monitoring strategy for CO₂ in UK shelf seas. This project uses similar equipment to CARBOOCEAN, such as ferry boxes and integrating time series stations. It is hoped that if the pilot project is successful then a monitoring programme would be implemented. The committee would be interested in receiving

feedback from the Defra ocean acidification working group, RG is involved in the committee and will provide feedback.

Defra has identified a limited number of coastal time series stations as part of their Marine Environmental Change Network (MECN). It would be useful to have some synergy between the MECN time series stations (location, data sets etc.) and the CARBOOCEAN monitoring.

RP also reported that a review article on natural and artificial iron experiments, which was a product of a SOLAS meeting in New Zealand, has been accepted for publication in science.

Action 2: RG to provide feedback on Defra ocean acidification working group.

5. Chair's Report

See Appendix 1 for the IGBP congress planning document.

5.1 RH reported that he has received a request for a contribution to the IGBP Newsletter from Eric Huss. RH and DA will draft an article from the committee including information on the role of the UK IGBP committee and details of past and future events including the UK GLOBEC, AMT, CASIX/CLASSIC and Palaeo meetings.

Action 3: RH and DA to submit an article the IGBP Newsletter by 15 January.

5.2 IGBP are seeking input for planning for the 2008 congress including suggestions for working groups, themes and plenary talks, all with an emphasis on integration within ESSP. They would also like details of documents and posters which could be displayed and distributed at the meeting. RH will send a synopsis of the request to the committee for suggestions. IGBP are also seeking sponsorship for the congress and NERC has been approached for a contribution.

Action 4: RH to send request for input to planning for IGBP congress to committee.

6. Update from NERC

For further details please see Appendix 2.

6.1 The new NERC Science Strategy is being developed, there was an initial consultation followed by a series of expert group meetings. NERC Council met in late November to consider the recommendations from the Science Innovation and Strategy Board (SISB). It is expected that the strategy will be published in early 2007 which will be followed by further consultation.

6.2 NERC has initiated a Funding Allocation and Budgeting (FAB) project which aims to enable NERC to become more efficient and responsive to changing needs in its use of funding.

6.3 A Research Councils UK (RCUK) publication is now available on the web detailing which institutes are eligible to apply for research council funding (see <http://www.rcuk.ac.uk/research/eligibility.htm>).

6.4 The Tyndall Centre has been prominent in a number of recent activities (see Appendix 2) and the UK Energy Research Centre has recently undergone a light-touch mid-term review of progress.

- 6.5 The National Centre for Earth Observation (NCEO) was established in August 2006 to co-ordinate UK earth observation activities across several centres of excellence.
- 6.6 The RRS James Cook is undergoing sea trials and is expected to enter full service in spring 2007.
- 6.7 A QUEST (Quantifying and Understanding the Earth System) funding opportunity is now open and research proposals are invited on earth system processes and prediction.
- 6.8 An event aimed at a general audience on atmospheric chemistry is being planned as the finale to the NERC UK Atmospheric Science programme.
- 6.9 The NERC website has been upgraded and CB would welcome feedback on the site.

Action 5: All to send feedback to CB on the new NERC website.

7. Royal Society Environmental and Climate Change work

See Appendix 3 for a summary of Royal Society activity, May-November 2006.

- 7.1 RG introduced Rachel Newton to the committee who will be working as the Policy Officer for Environment and Climate Change.
- 7.2 Since the last meeting RG has responded to three consultations, the UK Marine Bill, the RCEP initial consultation on the environmental effects of novel materials and applications and the Environmental Audit Committee's inquiry into the UN Millennium Ecosystem Assessment.
- 7.3 RG is scoping ideas for a new project on Air Quality in the UK during the 21st century. The project will be focused on air quality and ground-level ozone over the period 2030-2050. The project will be split into three phases, modelling global ground level ozone levels, assessing the potential impacts upon human health and the natural environment and identifying solutions and policy recommendations. A working group has been established which will meet in December 2006 led by David Fowler from CEH and it is hoped to launch the project before the end of the year.
- 7.4 RN is working on a scoping document to evaluate if the Royal Society should undertake work in the fishing and whaling policy areas. CB offered to provide comments on whaling policy.
- 7.5 A two day meeting is being held in March to showcase the IPCC climate change report. This will include a speaker from each chapter, a discussion panel and a public lecture by Ralph Cicerone from the National Academy of Science.
- 7.6 A two day workshop is being organised by Defra, DifD, NERC, JNCC and the Royal Society on understanding the dynamics of biodiversity/climate interactions. Suggestions are sought for speakers, particularly from developing countries.
- 7.7 The energy and climate change section of the Royal Society have recently launched a project on biofuels and are also working on a scoping exercise on adaptation to climate change.
- 7.8 The Royal Society are considering holding an international meeting on the barriers to the uptake of clean coal and carbon capture and storage technology, with an emphasis on China.

- 7.9 The European Academies of Science Advisory Council recently launched a project on Ecological Goods and Services in a European context.

Action 6: CB to send comments to RG on whaling policy.

8. Planning for the Palaeo and Modern Perspectives on Global Change meeting

See Appendix 4 for the revised proposal.

- 8.1 The proposal for the Palaeo meeting was presented to GERC in draft form at the last meeting, feedback from GERC has been incorporated into an updated proposal which will be presented to GERC in its revised form this afternoon. A provisional date of 27 June 2007 was set for the meeting.
- 8.2 SH noted the timeliness of the meeting given that there will be a Leverhulme conference in the autumn which the outcome of the Palaeo meeting can feed into. SH will contact Harry Elderfield who is leading the meeting to make a formal link.
- 8.3 The next step will be to contact potential speakers and moderators and to publicise the meeting, the PAGES UK community has a mailing list of over 300 and UK IGBP of over 700.

Action 7: SH to contact Harry Elderfield re links between the Palaeo meeting and the Leverhulme conference.

9. Engaging the UK IGBP community: National Committee website and e-newsletter

- 9.1 DA presented the new IGBP website to the committee and asked for recommendations for improvement and potential links to and from the site. Suggestions included links to the IGBP Fast Track Initiatives, the Environmental Research Funders Forum, DEFRA, ESSP and IGFA. CB recommended sending details of the site to the NERC list servers. A form for users to recommend meetings to the committee was also thought to be useful for the website. GL suggested that there should be details of references resulting from IGBP activities.
- 9.2 An e-newsletter from the UK IGBP community was also discussed. It is planned to produce the newsletter every six months, following each IGBP NC meeting. Suggestions for the newsletter should be sent to DA.

Action 8: CB to send details of NERC list servers to DA.

Action 9: GL to send references from IGBP activities to DA.

Action 10: DA to update IGBP NC website.

Action 11: All to send recommendations for website and e-newsletter to DA.

Action 12: DA and RH to produce IGBP NC e-newsletter.

10. Engaging the UK IGBP community: Next IGBP NC initiatives and proposals to the Global Environmental Research Committee

- 10.1 BS sent his apologies for being unable to attend the meeting however he asked for the idea of a possible future meeting to be raised. DA reported that BS has consulted with

Doug Parker (Leeds University) and Claire Reeves (UEA) who lead the UK involvement in the IGBP-endorsed African Monsoon Multidisciplinary Analyses (AMMA) project. This project has mounted successful research campaigns in West Africa earlier this year. They are interested in holding a meeting in two years time once the scientific findings from the fieldwork have matured. BS will prepare a full proposal for the next IGBP NC meeting.

Action 13: BS to present AMMA proposal at the next meeting.

11 Membership issues

- 11.1 RH has contacted members of the committee who have come to the end of their term and several members have rotated off the committee. Two new members have been recruited; Raymond Pollard and John Ingram, although input to the committee is still needed from the IGBP terrestrial community.

Action 14: All to send suggestions for new committee members to RH, particularly terrestrial scientists.

12. AOB

- 12.1 There were no items of AOB.

13. Date of next meeting

- 13.1 The date of the next meeting was set by GERC as 21 May 2007.

List of Actions

- Action 1: GL to invite a representative from DEFRA International to give a presentation to the committee.**
- Action 2: RG to provide feedback on Defra ocean acidification working group.**
- Action 3: RH and DA to submit an article the IGBP Newsletter by 15 January.**
- Action 4: RH to send request for input to planning for IGBP congress to committee.**
- Action 5: All to send feedback to CB on the new NERC website.**
- Action 6: CB to send comments to RG on whaling policy.**
- Action 7: SH to contact Harry Elderfield re links between the Palaeo meeting and the Leverhulme conference.**
- Action 8: CB to send details of NERC list servers to DA.**
- Action 9: GL to send references from IGBP activities to DA.**
- Action 10: DA to update IGBP NC website.**
- Action 11: All to send recommendations for website and e-newsletter to DA.**
- Action 12: BS to present AMMA proposal at the next meeting.**
- Action 13: DA and RH to produce IGBP NC e-newsletter.**
- Action 14: All to send suggestions for new committee members to RH, particularly terrestrial scientists.**

International Council for Science (ICSU)



4th IGBP Congress

‘Sustainable Livelihood in a Changing Earth System’

Venue and Date: 4-9 May 2008, Cape Town (South Africa)

Expected number of participants: c.350 (c.300 at 3rd Congress, Banff, www.igbp.net/Congress)

Task leaders: Local Organising Committee (LOC) and International Scientific Committees (ISC), with support from Regional Office in Brazil and www.thebeconferences.co.za, a local Professional Conference Organiser.

Sponsors: As in previous Congresses, IGBP will collaborate with international and local sponsors (see <http://www.igbp.net/congress/sponsors.html>)

CALL for PLENARY PRESENTATIONS and WORKING GROUPS

Target groups: we now seek inputs to the 4th IGBP Congress from the IGBP SC, Core Projects SSCs and IPOs, National Committees and Adhering Bodies (ICSU, DIVERSITAS, IHDP, WCRP, SCOR, ESSP Joint Projects, IAI, APN, AfricanNESS);

Deadline: 1 May 2007

IGBP Congresses are major events occurring every four years. Previous congresses were held in Banff, Canada (2003; see www.igbp.kva.se/congress), Germany (1996) and Japan (1999). By 2008, IGBP will be well into its second phase of research. As consigned in the IGBP Constitution, four-yearly congresses should host an ‘Advisory Panel’ to review and recommend on priorities to the Programme. The overall objective of the 4th IGBP Congress include:

- To seek advise which will allow refinements of the IGBP scientific agenda for the period 2008–2013,
- To kick-off mid-term synthesis in light of IGBP’s ICSU review,
- To broaden outreach efforts toward agencies, corporations and civil society, namely developing communication tools that deal with risk and vulnerability in global change, and
- To question where is IGBP work contributing to the knowledge needed to address mitigation, innovation and adaptation, as well as facilitating large-scale pilot projects and institutional networking;

As in previous congresses the agenda will include a mixture of plenary presentations and working group discussions. Emphasis will be placed on integration across traditional boundaries and disciplines, and on interaction with the ESSP Joint Projects. Furthermore, the event will allow direct contact between all the IGBP Project Scientific Steering Committees and all IGBP National Committee representatives. Such meetings will tentatively take place on the first and last days of the

Congress. The International Project Offices (IPOs) may organise additional SSC meeting days, as appropriate. Guests will be invited from ICSU, DIVERSITAS, IHDP, WCRP, SCOR and other partner organisations operating at regional level, such as IAI, APN and AfricanNESS.

Specific goals:

- To look into *applied* Earth System science and how to improve on IGBP relevance to the policy community;
- To address the challenges of Global Change and development in Africa (e.g. climate change as a stress factor to Africa, water systems and livelihood, how will climate change affect Africa's development), and
 - Be forward looking
 - Suggest pathways for solutions, including mitigation, innovation and adaptation.
 - Address critical aspects of GEC (similar to FTI projects)
 - Of interest to several core projects

Draft Programme outline:

Day 0 - Sunday 4 May (PM): *Official Opening: Public exhibits, posters and a high-profile lecture*

Days 1 and 5 - Monday 5 and Friday 9 May: *Closed SSC annual meetings (2 days); additional mtg days, before or after 4 and 9 May 2008, can be arranged as appropriate/requested.*

Day 2 - Tuesday, 6 May:

AM: (*Open Symposium*) Tentative: *Sustainable African Pathways in a Changing Earth System;*

PM: *cont. SSCs mtgs. or ½ day excursions;*

Day 3 - Wednesday, 7 May: *Global Focus.* Mix of plenary and parallel working-groups; goal: forward looking, scientific cross-cutting interaction; themes to be selected from open proposals to IGBP projects, ESSP JPs, NCs, AfricanNESS, IAI, APN;

Day 4 - Thursday, 8 May: *IGBP Adhering-Bodies and Stakeholders day:*

AM: Open Advisory Panel: *Applied Regional environmental change research and sustainable livelihood.*

PM: Formal closure - *IGBP Science Panel: ESS Science-stakeholders dialogue*

Day 5 - Friday - 9 May: Closed meetings: cont. SSCs meetings.

Proposed Sessions content

Day 0 - Sunday 4 May (PM): **Opening day** (PM)

1. *Public lecture* – Name(s) TBA

2. *Public outreach* (eg. school groups): the local organising committee (with CT Science Center etc) will arrange for a weekly public view a range of GEC displays; Scientific posters;

3. *Media event.*

Days 1 and 5 - Monday 5 and Friday 9 May: *SSC meetings*

SSCs will be charged with forward-looking questions (e.g. mid-term synthesis goals, is there a sunset clause/evolution into...); will the ESSP JPs SSCs willing to meet (TBD)?

Day 2 - Tuesday, 6 May: **African – Global Nexus.**

Tentative theme: *Sustainable African Pathways in a Changing Earth System*

Session 1- The Challenges: Applied Earth System science: improving on IGBP relevance; GEC and African development: e.g. climate change in Africa and water systems: how will climate change affect Africa's development: will it slow it down or speed it up?

Session 2- Pathways for solution: What are the issues and pathways for development of livelihoods?

-> Topics to highlight the problem areas within Africa and global scale repercussions, as well as to highlight examples of work and pathways to solution within Africa

[e.g. above to reflect the Scientific Priority Themes to be developed in the Africanness Science Plan (in prep.), namely 1.Climate Change and Variability; 2.Health and Wellbeing; 3.Ecosystems and Sustainable Livelihood; 4.Water Systems; 5.Sustainable Energy; 6.Cross-cutting Issues/ Guiding Principles.]

Day 3 - Wednesday, 7 May: IGBP Science and beyond.

Tentative theme: *Sustainable Livelihood in a Changing Earth System'*

IGBP Core-Project (ESSP JPs) interaction:

- Forward looking, scientific interaction on cross-cutting themes
- Focus on IGBP mid-term synthesis
- Address critical aspects of GEC similar to FTI projects
- Of interest to several core projects

[Suggestions for themes to request from core projects, ESSP JPs and National Cmts.: aerosol/ cloud/ climate - connection, role of fire, water provision, land systems and livelihoods, land-ocean interaction, marine systems, AMMA/ IRSs, scenarios, vulnerability and adaptation, etc...]

Day 4 - Thursday, 8 May: IGBP Adhering-bodies and Stakeholders day.

AM: National Committees lead (South African NC and ICSU chair):

Applied Regional environmental change research and sustainable livelihood. The plenary themes should ideally feed into the afternoon panel discussion (see below).

PM: Applied IGBP science and stakeholders needs:

What are the issues and pathways for development of livelihood: an IGBP- stakeholders' dialogue. How can GEC science be applied to sustainable development needs? how to change IGBP in order to develop problem-oriented, policy-relevant approaches;

Day 5 - Friday - 9 May: Closed meetings: cont. SSCs meetings.

International Scientific Committee:

Carlos Nobre (chair)
Mark Stafford-Smith (IGBP Vice-chair 07-)
Olga Solomina (IGBP Vice-chair 07-)
Bob Duce (IGBP treasurer)
Mary Scholes (IGBP Vice-chair 2000-2006)
Guy Midgley (liaison with Local Organising Cmt; on behalf of IGBP NCs)
Thomas Roswall (ICSU, TBC)
Martin Rice (ESSP)
1 IGFA rep (Renee le Roux, South Africa IGFA rep., TBC)
Eric Odada (AfricanNESS, Global Change Network for Africa)
IAI & APN (TBC)

Local Organising Committee:

- Guy Midgley (Chair)
- Mary Scholes
- Colleen Vogel/Gina Zervogel (IHDP related)
- Bruce Hewitson (IPCC WG1, climate science)
- Colleen Moloney (Marine ecosystem, Benguela project)
- Barney Kgope (SANBI, CO2 impacts)
- Sospeter Muhongo (ICSU Regional African Office)
- Dhesigan Naidoo (Dept Science and Technology)
- Representative from Dept Env Affairs and Tourism
- Denis Laidler/Mark Gordon (Climate Change and Regional Planning, Western Cape)
- Ticky Forbes (LOICZ SSC member)
- John Field
- Dept Foreign Affairs rep (TBC)

• **Professional Conference Organizer:** Thebe Conventions, Cape Town
<http://www.thebeconferences.co.za/>

5 May, Day 1	6 May, Day 2	7 May, Day 3	8 May, Day 4	9 May, Day 5
IGBP SSCs	<i>African – Global nexus</i>	<i>IGBP Science and Beyond</i>	<i>Open Advisory Symposium</i>	IGBP SSCs
SSC mtgs GLP IMBER GLOBEC IGAC ILEAPS LOICZ SOLAS PAGES AIMES ESSP JPs SSCs?	<i>Sustainable African Pathways in a Changing Earth System: problem areas within Africa and impacts at the global scale.(e.g. Africanness agenda)</i> Plenary Session 1: <i>The challenges</i> Plenary Session 2: <i>Pathways for solutions</i>	Forward looking, Scientific interaction cross-cutting themes in plenary& parallel WG sessions <i>Plenary talks</i> <i>Working-group Sessions</i>	Open Advisory Panel (Adhering-bodies: NCs, ICSU IAI, APN, AfricanNESS) South Africa NC-lead: <i>cross cutting scientific themes with a focus on regional sustainability</i> - IRSS: e.g. MAIRS; AMMA	SSC meetings (Cont.) GLP IMBER GLOBEC IGAC ILEAPS LOICZ SOLAS PAGES AIMES ESSP JPs SSCs?
(... Cont. Closed SSC mtgs) GEC Exhibitions Poster Sessions (incl. NCs) Public Lecture: TBA	SSC meetings (cont.) <i>OR</i> Free PM Sightseeing	<i>Working-groups</i> Wrap-up W-Group Sessions in Plenary IGBP-SC dinner/ CT Declaration	Applied IGBP Science <i>Panel: ESS Science-stakeholders dialogue</i> Formal closure	(... Cont./ Conclusion)

NATURAL ENVIRONMENT RESEARCH COUNCIL

UPDATE FOR GERC AND IGBP-NC ON NERC ACTIVITIES SINCE LAST MEETING: NOTE FOR MEETING 28th November 2006

1. NERC Science Strategy

The development of the new NERC science strategy continues. The sectoral panels are: *Forecasting and mitigation of natural hazards; Environment, pollution and human health; Biodiversity; Climate systems (prediction & adaptation); and Sustainable use of natural resources*. There are two cross-cutting themes, Earth System Science and Technologies.

NERC Council is about to consider the recommendations of the sectoral panel chairmen and the Science and Innovation Strategy Board.

The new strategy will be published in late 2006/early 2007.

2. Funding matters

(i) New ways of managing and funding NERC investments

NERC has decided to change the way it plans, funds and manages research programmes and infrastructure so that it can deliver its strategic priorities more effectively and flexibly. These changes will take effect in mid-2007 to coincide with the development of NERC's new strategy, the setting of targets for the next 5-10 years and the Comprehensive Spending Review.

The Research Councils have been challenged by Government to demonstrate that they deliver science and innovation as effectively and efficiently as possible. NERC must show that it has a clear strategic direction, and the ability to deliver its strategy whilst adapting flexibly to new priorities and changing circumstances.

In response to this challenge, NERC Council initiated the Funding Allocation and Budgeting (FAB) project. The project has reviewed NERC's strategic planning, funding and management processes. For details see <http://www.nerc.ac.uk/funding/allocation/statement0906.asp>

(ii) Research organisation eligibility

Revised arrangements for research organisation eligibility for NERC research grants have been announced. Full details of the eligibility criteria for both individual applicants and research organisations, can be found in the [NERC Research Grants Handbook](http://www.nerc.ac.uk/funding/application/researchgrants). (<http://www.nerc.ac.uk/funding/application/researchgrants>)

3. Tyndall Centre

The Centre has been prominent in a number of recent activities:

(i) Tyndall Manchester hosted a side event at Labour Party Conference(27 September 2006): *Time to Get Real: Avoiding 'dangerous' climate change - what does it really mean for the UK?*.

(ii) A report by the Co-operative Bank and Friends of the Earth (September 2006) drew on Tyndall's 2005 document *Decarbonising the UK* and asserted that "Everyone's carbon dioxide emissions must go to zero to allow for aviation pollution reveals major analysis of UK climate change targets".

(iii) A new sea level report for OECD (25 October 2006) explores the long-term impacts of sea level rise, the implications, and how to assess them.

4. UK Energy Research Centre

On 16 October UKERC launched its Energy Research Atlas and the National Energy Research Network (NERN). The Energy Research Atlas is the first tool to show the live status of energy R&D in the UK and is intended to form a key part of the evidence base for prioritising and planning research, development and demonstration (RD&D) activities. The NERN is an umbrella network for energy researchers and is unique in its aim to network all energy disciplines, giving members visibility of a wide and multifaceted area.

See <http://ukerc.rl.ac.uk/ERA001.html> and <http://www.ukerc.ac.uk/content/view/347/779>

UKERC has just completed its internal light-touch review of progress to date. The review process includes submitting several highlights to the Research Councils for assessment by external peer review and consideration of the whole review by the UKERC Supervisory Board.

5. **National Centre for Earth Observation (NCEO)** was announced in August 2006. It will co-ordinate UK EO activities across several centres of excellence. These centres use data from Earth observation satellites to monitor both global and regional changes in the environment, and to develop a detailed understanding of these changes so that future environmental conditions can be predicted. The centres have already highlighted significant environmental changes - for instance ozone depletion, atmospheric pollution, and melting sea ice.
6. **Delivery of the new research ship, RRS James Cook**, took place in August 2006. It will undertake crucial sea trials over the next few months and will go into full service as a research ship in spring 2007.
7. **Centre for Earth Observation Instrumentation.** It was announced in September 2006 that NERC and the DTI are to jointly support a Centre for Earth Observation Instrumentation. It will be expected to provide an excellent, internationally-competitive, instrument and instrument technology research and development programme, clearly driven by longer-term NERC science objectives and the NERC Earth Observation strategy.
8. **QUEST programme funding opportunity**

Research proposals are invited under six headings in Earth System Processes and Prediction. Successful projects will build on existing research efforts, both within and outside QUEST, in order to maximise the added value for the programme as a whole. The headings are: *Assessing and Facilitating QUEST*; *Biogeochemical Cycles and Feedbacks*; *Climate-Carbon Modelling*; *Assimilation and Prediction*; *Dynamics of the Palaeocene-Eocene Thermal Maximum*; *Environmental Change and Fisheries*; and *Fire data assimilation and prediction*. (<http://www.nerc.ac.uk/research/programmes/quest/events/ao070314.asp>) Closing date: 14th December 2006.

9. 'Our Changing Atmosphere' event, London

To mark the end of four major research programmes, in which NERC invested £20m to further understanding of the chemistry and physics of the atmosphere and to quantify the effect of greenhouse gases on climate and air quality, an end-of-programmes event will be held on Tuesday 23rd January 2007 at The Institute of Physics, 76 Portland Place, London. (This event is aimed at a general audience and all are welcome).

The four NERC programmes featured are: *Clouds, Water Vapour & Climate (CWVC)*; *Polluted Troposphere*; *Upper Troposphere Lower Stratosphere Ozone (UTLS – Ozone)*; and *Core-Strategic Measurements for Atmospheric Science (COSMAS)*.

To register for the event please see <http://www.nerc.ac.uk/research/areas/atmospheric/events/reg-070123.aspx>

Summary of Royal Society Environment activity May – November 2006-12-18

Rachel Garthwaite, Manager Environment and Climate Change, Royal Society
Rachel.garthwaite@royalsoc.ac.uk
0044 207 451 2526

1. Changes in Science Policy staffing

The Royal Society Energy and Environment portfolio underwent some staffing changes in September 2006. Rachel Newton joined the science policy unit as the Policy Officer Environment and Climate Change. Tanzeed Alam was originally filling this post but is now focusing on Energy and Climate Change. The Science Policy Unit will be represented at future GERC and IGBP meetings by Rachel Garthwaite and Rachel Newton. Ruth Cooper (International Unit) will continue to be the Royal Society contact point.

2. Science Policy Section

a Consultation responses

- i Royal Society submission to the UK Marine Bill Consultation (June 2006)
<http://www.royalsoc.ac.uk/document.asp?tip=0&id=4912>
- ii Response to RCEP initial consultation on the environmental effects of novel materials & applications (June 2006)
<http://www.royalsoc.ac.uk/document.asp?tip=0&id=4852>
- iii Royal Society submission to the Environmental Audit Committee's inquiry into the UN Millennium Ecosystem Assessment (October 2006)

The Environment team is not planning to respond to any further consultations in the immediate future as we are focusing on other priorities (see below). However, we will be keeping a watching brief and will prepare responses where consultations are of sufficient importance to the Royal Society.

b New Environment projects – Air Quality in the 21st century

At the last meeting I explained that the environment team had been identifying topics for the next major Royal Society environment project. Following discussions at the May Royal Society Council meeting we have decided to undertake a project on Air Quality in the UK during the 21st Century. The project will be focussed on air quality and ground-level ozone over the period 2030-2050. The project will be split into three phases. The first will be focused on modelling global ground level ozone levels for 2030-2050, which will enable predictions to be made regarding global concentrations. The second phase will be to assess the potential impacts of these concentrations on human health, natural environment (including agricultural landscapes), and possibly also structures and buildings. The third phase will be focused on identifying solutions and policy recommendations. The core working group, Chaired by Professor David Fowler FRS, will meet in early December and it is hoped to launch the project before the end of the year.

c Other Environment team projects

Following requests from Professor David Read (Vice President, Biological Secretary) and the Royal Society press office, the environment team is currently evaluating whether we should undertake work in the fisheries and whaling policy areas. Background documents based on advice from the Royal Society Environment and Marine Advisory Networks are in preparation.

d Royal Society Climate Change policy activity

i) Stern report

The report from the Stern Review was launched at the Society on the 30th October. It was chaired by the President of the Royal Society and the Prime Minister. The Secretary of State for the Environment, David Miliband, also attended. Support for the launch was provided by the Society's staff.

ii) Royal Society meeting on IPCC WG1 report

The Society is hosting an event on 1-2 March 2007 to showcase the IPCC working group 1 report on the physical basis of climate change.

<http://www.royalsoc.ac.uk/event.asp?month=3&id=5464>

The report itself will be launched on 2 February 2007. The aim of the Society's event is to raise the profile of the report, to support the IPCC process, and to discuss the report's findings, in particular advances in climate change science since the Third Assessment report in 2001. The main speakers are the IPCC lead authors but a wider group of scientists and policymakers will form the discussion panel. Sir David King and Secretary of State for Environment, Food and Rural Affairs David Milliband will address the conference. Dr Ralph Cicerone, President of the US NAS will give a public lecture on the evening of the first day. We are also considering events around the launch of the other three reports.

iii) Biofuels study

The biofuels study, chaired by Professor John Pickett FRS was launched in October 2006 and is due to hold its second working group meeting in December. This will be followed in January with an evidence gathering workshop with industry. The study is aiming to report to the Royal Society Council in July, with publication shortly afterwards. This will maximise its influence on the development of research into biofuels and allow the Society to contribute effectively to the development of the Renewable Transport Fuels Obligation.

iv) International workshop on biodiversity–climate interactions

This two day international workshop on biodiversity and climate change (adaptation, mitigation and human livelihoods) will be held on 12-13 June 2007 at the Royal Society. The workshop will bring together scientists and policymakers and is being hosted jointly by the Royal Society, NERC, Defra, Dfid and the Joint Nature Conservation Committee. The meeting has been organised to feed into the Convention on Biological Diversity subsidiary body of science, technical and technological advice and the United Nations Convention on Climate Change (UNFCCC) Conference of Parties (COP) who will be meeting in July and December 2007 respectively. The resulting report will also have wider implications for policymakers, research funders and scientists.

v) Climate change advisory network

The Royal Society science policy unit has initiated a network of climate change experts to support the provision of Royal Society advice in relevant policy exercises. This will include the updating of past work, the initiation of new projects where there are emerging scientific issues, or policy issues which would benefit from a scientific perspective. The group will also provide advice on Ocean Acidification. Members will both raise and discuss topical subjects which may lead to studies, workshops or meetings held by the Society.

vi) Adaptation

The emphasis of the energy and environment team's work on climate change has been placed on energy and mitigation. However, we recognise that adaptation is also an important area of climate change policy. We are therefore reviewing the adaptation policy area with the intention of identifying whether the Royal Society should be engaged in this subject, and if so, how we might focus our activity.

vii) Activities around the representation of the evidence of climate change

The Society has played an important role in identifying occurrences when the science of climate change is being misrepresented. Its desire to ensure that sound science underpins discussions on climate change action has resulted in high profile interactions with ExxonMobil and various newspaper correspondents. The Society has received international support for its stance. The publication of the IPCC's fourth assessment report is expected to attract considerable attention from those who wish to undermine the scientific evidence in these reports. Because of the Society's recent profile in the debate and its planned work programme, it is likely that we will be drawn into the debate. This work is carried out by the policy and media relations team.

e International activity

The Royal Society currently supports two environmental research programmes, the SE Asia Rainforest Research Programme, and another on Lake Baikal. The funding for these is coming to an end, and the Royal Society will soon be considering proposals for new projects (please refer to Ruth Cooper's paper).

Earlier this year The Royal Society discussed with the Chinese Academy of Science the possibility of a joint-academy project on clean coal. It was decided that this project should not go ahead, however we are now considering holding an international meeting to be held jointly with the Royal Academy of Engineers on an international meeting on the barriers to the uptake of clean coal and carbon capture and storage technology, with emphasis on China.

The European Academies Science Advisory Council (EASAC) recently launched a project on Ecological Goods and Services in a European context. The intention is to provide a report which will discuss the importance of ecological goods and services in Europe. The aim is to support current EU biodiversity and sustainable development policies by providing scientific evidence for the role of ecosystems in underpinning the delivery of European social and economic policy objectives. The working group is chaired by the UK (Professor Alastair Fitter FRS (York University)) and includes representation from the European Academies. The first meeting of the working group was held in early November. The report is expected to be completed before June 2007.

Proposal for UK IGBP Meeting: Palaeo and Modern Perspectives on Global Change

Background: We need to understand the mechanisms and processes of climate and environmental change in both natural and anthropogenically-perturbed situations. The various components of the earth system respond on very different timescales to perturbations: the atmosphere reacts on timescales of hours to years, natural ecosystems on time-scales of years to decades to centuries, the land-surface on timescales of decades to hundreds of years, the ocean on centennial to millennial timescales, and the cryosphere on timescales of up to millennia and longer. These two considerations make it important to examine climate and environmental change in the recent past and over the longer-term timeframe offered by the “palaeo” record if we are to be able to improve our ability to predict the direction of future global changes.

Within the organizational framework of the IGBP Programme, PAGES represents palaeo-science and the data-gathering activities that underpin it. However, key science issues that arise out of the palaeo-record are considered important foci for many of the other IGBP projects. For example, explaining the apparently tightly-controlled upper and lower limits on atmospheric trace gases on glacial-interglacial timescales as shown by the ice-core record is considered to be a key focus for modeling activities within iLEAPS and SOLAS. A major focus for the GLP project is how ecosystem structure and functioning is affected by changes in atmospheric composition and biogeochemical cycles on different timescales. GLP has also identified a need to exploit the palaeo-record of recolonisation of different environments in order to achieve a better understanding of the survival of natural vegetation in the future. Similarly, DIVERSITAS and the ESSP GWSP have identified the need to set the understanding of the contemporary hydrological and freshwater ecological systems in a temporal context

The problem here is that palaeo-questions within most of the IGBP core projects are seen primarily as modeling exercises; the community that is responsible for the data syntheses and process studies that are required underpinnings for such modeling exercises resides in PAGES. It is timely, as the new IGBP projects move from planning to implementation, to bring these two communities together to stimulate a more integrated view of the dynamics of the earth system. Specifically, it is important to examine the key challenges posed by the palaeo-record from the perspective of each of the IGBP projects and to build a dialogue between these projects and the PAGES community to ensure that these challenges are addressed in a realistic way.

Specific Aims of the Meeting

The meeting is expected to achieve the following objectives:

- 1) To inform the UK science community of the major challenges to our understanding of the medium and long-term dynamics of key aspects of the earth system as currently perceived by the IGBP community;

- 2) To inform the UK science community about the availability of resources (e.g. process studies, data syntheses, modeling tools) for tackling such challenges over the next 5-10 years;
- 3) To strengthen the links between the IGBP projects at a critical phase in the planning and implementation of new projects, including their link with the ESSP integrated projects on water, food, carbon and human health
- 4) To explore differences in perspective and in our understanding of key aspects of the earth system that stem from the timescale at which these phenomena are studied;
- 5) To explore approaches based on analysis of observations at different time and space scales and on the use of modeling tools;
- 6) To develop ideas for improving the integration of palaeo-studies within the other core IGBP projects and to provide feedback to the international IGBP on how to do this.

An important outcome of the meeting would be a summary report for IGBP, aimed at improving the formulation of palaeo-research foci within core projects and ensuring that observational components of these foci will be supplied by the palaeoscience community.

Structure of Meeting

The meeting will be structured around a series of paired talks. Each talk would last 20 minutes. A further 20 minutes would be given over to chair-moderated discussion of the topic by participants. It is important that a clear steer is given to speakers: those addressing the topic from a contemporary perspective would be expected to define unresolved fundamental science issues important for understanding what is happening now and may happen in the future, those addressing the topic from a palaeo-perspective would have to spell out how the palaeorecord may help resolve key science issues.

There could be an opportunity for a poster session (e.g. over an extended lunchbreak) to increase the input from non-speakers, including e.g. PhD students. The meeting would conclude with a plenary discussion to bring together key decisions and recommendations

UK Members of IGBP projects SSC

Peter Liss (SOLAS)

Peter Taylor (SOLAS)

Andy Watson (SOLAS)

Tim Jickells (SOLAS)

Peter Burbridge (LOICZ)

Laurence Mee (LOICZ)

Patrick Holligan (LOICZ)

Kerry Turner (LOICZ)

Andrew Goudie (LOICZ)

Sandy Harrison (iLEAPS)

Eric Wolff (IGAC)

Raymond Pollard (IMBER)

Carol Turley (IMBER)

Colin Prentice (AIMES)

Diana Liverman (AIMES)
Matt Williams (AIMES)
Rick Battarbee (PAGES)
Phil Williamson (GLOBEC)
Chris Reid (GLOBEC)
Roger Harris (GLOBEC)

We should also target GCP members (Corinne Le Quéré), GWSP (no UK representative, Joseph Alcamo, Kassel), GECAFS (John Ingram), GLP (no UK representative, Paul Leadley, Paris XI), PAGES-CLIVAR Working Group (Keith Briffa, Paul Valdes) and DIVERSITAS (Geoff Boxshall).

Relevance to IGBP

Improve implementation plans; improve communication

Proposed Date

April 2007

Note: there are currently no IGBP-related meetings in April 2007.

Scale of Meeting

Ca 150 people

Note: The number of UK scientists on the international IGBP mailing lists is an order of magnitude greater than this. Some European participation is also likely, including participation by members of the IGBP Office in Stockholm and of IPOs in Europe.

Publicity

In addition to the Royal Society's own webpage news, the meeting would be advertised through the IGBP and PAGES calendars (www.igbp.kva.se/cgi-bin/php/frameset.php/, www.pages.unibe.ch/calendar/), through the IGBP IPOs, through the Quaternary Research Association calendar (<http://qra.org.uk/meet.html/>) and through a mailing to individual scientists on the UK IGBP mailing lists.

Appendix 1: Draft Programme for the “Palaeo and Modern Perspectives on Global Change” open meeting

9.00: Coffee and registration; poster set-up

9.30: Welcome and introduction to the meeting

10.00-11.00: Biodiversity, ecosystem structure and functioning and the palaeorecord:
Suggested speakers: Paul Leadley, Kathy Willis
Moderator: Colin Prentice

11.00-11.30: Coffee break

11.30-12.30: The regulation of ocean productivity
Suggested speakers: Tim Jickells, Elsa Cortijo
Moderator: Karen Kohfeld

12.30-14.00: Lunch and posters

14.00-15.00: Ocean fertilization and the biological pump
Suggested speakers: Corinne Le Quéré, Ros Rickaby
Moderator: Andy Ridgwell

15.00-16.00: Changing land-surface conditions and human interactions, water fluxes and nutrient fluxes to the coastal ocean
Suggested speakers: Laurence Mee, John Dearing
Moderator: Diana Liverman

16.00-16.30 Coffee break

16.30-17.30: Natural regulation of atmospheric oxidizing capacity
Suggested speakers: Nicola Warwick, Jerome Chappellaz
Moderator: Eric Woolf

17.30-18.00: Final plenary session
Moderators: Sandy Harrison and Rick Battarbee

18.00: End of meeting

Appendix 2: Proposed list of speakers and moderators

Rick Battarbee

Department of Geography, University College London,
Pearson Building, Gower Street, London WC1E 6BT, UK.

Email: r.battarbee@ucl.ac.uk

Jerome Chappellaz

Lab de Glaciologie & Geophysiques de l'Environnement,
UMR 5183 CNRS-UJF, 54 rue Moliere, Domaine Universitaire BP96,
F-38402 St Martin d'Herès Cedex, France

Email: Jerome@lgge.obs.ujf-grenoble.fr

Elsa Cortijo

Centre des Faibles Radioactivites. Domaine de CNRS, Avenue de la Terrasse,
91198 Gif-sur-Yvette Cedex, France

Email: elsa.cortijo@cfr.cnrs-gif.fr

John Dearing

Department of Geography, University of Liverpool, Roxby Building,
Liverpool, L69 7ZT, UK

Email: J.Dearing@liv.ac.uk

Sandy Harrison

School of Geographical Sciences, University of Bristol,
University Road, Bristol, BS8 1SS, UK

Email: sandy.harrison@bristol.ac.uk

Tim Jickells

School of Environmental Sciences, University of East Anglia,
Norwich, NR4 7TJ, UK

Email: T.Jickells@uea.ac.uk

Karen Kohfeld

School of Earth and Environmental Sciences, Queens College,
City University of New York, 65-30 Kissena Blvd, Flushing, New York 11367, USA

Email: Karen.kohfeld@qc.cuny.edu

Paul Leadley

University of Paris at Orsay, ESE, Batiment 362,
F-91405, Orsay Cedex, France

Email: paul.leadley@ese.u-psid.fr

Corinne Le Quéré
School of Environmental Sciences, University of East Anglia,
Norwich, NR4 7TJ, UK
Email: c.lequere@uea.ac.uk

Diana Liverman
Environmental Change Institute, Oxford University Centre for the Environment,
Dyson Perrins Building, South Parks Road, Oxford OX1 3QY, UK
Email: Diana.liverman@eciox.ac.uk

Laurence Mee
School of Earth, Ocean and Environmental Sciences, University of Plymouth,
Plymouth, PL4 8AA, UK
Email: lmee@plymouth.ac.uk

Colin Prentice
QUEST, Department of Earth Sciences, University of Bristol,
Wills Memorial Building, Queen's Road, Bristol, BS8 1RJ, UK
Email: colin.prentice@bris.ac.uk

Ros Rickaby
Department of Earth Sciences, University of Oxford,
Parks Road, Oxford, OX1 3PR, UK
Email: rosr@earth.ox.ac.uk

Andy Ridgwell
Department of Earth and Ocean Sciences, University of British Columbia,
6339 Stores Road, Vancouver, British Columbia, Canada, V6T 1Z4.
From autumn 2006: School of Geographical Sciences, University of Bristol,
University Road, Bristol, BS8 1SS, UK
Email: aridgwell@eos.ubc.ca

Nicola Warwick
Centre for Atmospheric Science, Cambridge University,
Chemistry Department, lensfield Road, Cambridge CB2 1EW, UK
Email: Nicola.Warwick@atm.ch.cam.ac.uk

Kathy Willis
School of Geography, Oxford University Centre for the Environment,
University of Oxford, South Parks Road, Oxford OX1 3 QY, UK
Email: Kathy.willis@geography.oxford.ac.uk

Eric Woolf
British Antarctic Survey, High Cross, Madingley Road,
Cambridge, CB3 0ET, UK
Email: EWWO@bas.ac.uk

Appendix 3: Outline costings for the Palaeo and Modern Perspectives on Global Change open meeting

Assuming an attendance of 150 and based on costings for previous open meetings of this size.

Room hire (WTLH, City of London 1, 2 and 3)	£2150
Facilities (projector, poster boards, technical costs)	£ 500
Printing (abstracts books, meeting flyers, name badges)	£1000
Catering (morning coffee, buffet lunch, afternoon tea)	£4750
Non-UK speakers costs	£1300
UK speakers costs	£ 370
TOTAL COSTS	£10070
Registration fee income (based on 150 x £25)	£3750
Support sought from Royal Society	£6320

Submission prepared by Sandy P. Harrison (Member of the UK IGBP Committee). The UK IGBP Committee would be responsible for arrangements for the meeting, in liaison with the Royal Society.