



Darwin Initiative Workshop
Biodiversity and Climate Change

24th October 2006

Zoological Society of London

Proceedings

Introduction

The Darwin Initiative Workshop took place on the 24th of October 2006. It was opened by Dr Glyn Davis, Director of Conservation Programmes from the Zoological Society of London. The morning session was chaired by Kerry ten Kate, member of the Darwin Advisory Committee, who read excerpts from a message from the Minister for Biodiversity, Landscape and Rural Affairs, Barry Gardiner MP. This highlighted that climate change would become the dominant cause of biodiversity loss by the end of the century.

The afternoon session was chaired by Glenys Parry, Head of the Darwin Initiative Secretariat.

The following is a brief summary of a few of the key points discussed. For detailed information please refer to the presentations which are available on the Darwin Initiative Website <http://www.darwin.gov.uk/events>

Section 1 - Summary of presentations and seminar conclusions

Plenary I: 'Climate change and biodiversity: interactions and implications for conservation'

The first plenary, presented by Dr Betts of the Hadley Centre, Met Office, introduced the scientific aspects of climate change and how these link to biodiversity. The debate on models of predicted changes in climate, and important hotspots and regions across the globe were presented alongside climate scenarios based on different models and assumptions about carbon emissions. Aspects of mitigation, i.e. how climate change alters biodiversity, the role of biodiversity in mitigating Climate Change (i.e. CO₂ emissions), and the role of biodiversity in managing the effects of climate change (e.g. effect of extreme weather events) were also discussed.

Plenary II: Darwin Initiative projects and adaptation to climate change

The concepts touched upon in Plenary I were related to Darwin Initiative project level work through Andrea Deri and Deepak Apte's presentation which related their experience in establishing Community Reserves in the Lakshadweep Islands, India, an area which is already having to adapt to the effects of climate change. Key points emerging from the presentation included:

- Nurturing diverse knowledge systems helps adaptive capacity strategies. Capturing knowledge from the elders and using appropriate terminology, devoid of jargon, can help make policy processes more resilient at a local level.
- Community adaptive capacity can result from creating opportunities for self-organization. Developing education curricula to include scientific and indigenous knowledge is a cornerstone of the community based management strategy in *Lakshadweep Islands*.

Plenary III: Darwin Initiative project results related to mitigation and adaptation

Climate change and threats to species: lessons and experiences from land use change in forest reserves

During this session, Dr Jane Hill from the University of York presented findings from 15 years of work in climate change impacts on biodiversity, and on insects in particular. Key points included:

- Land use change is a critical factor influencing habitat loss which in turn affects climate and species. Despite the major threat of climate change, habitat loss continues to be the immediate threat to species especially in tropical forest areas.
- Climate change impacts on biodiversity may be unpredictable (e.g. fires following drought). Insufficient sources of data about species, particularly in the tropics can be a detriment in measuring these impacts.

Role of biodiversity in managing the effects of Climate Change: the contributions of ecosystems in adapting to climate change

Ms Emily Lewis-Brown, WWF UK, spoke about the role of biodiversity in managing the effects of Climate Change in marine ecosystems. Key issues which emerged were:

- Conservation strategies can be designed to embed adaptation to climate change and planning for the protection and management of adequate and appropriate space (e.g. taking care of criteria for selection and management of Marine Protected Areas).

- It is key that sources of non-climatic ecosystem stress, such as pollution, agriculture, habitat fragmentation, and invasive species are reduced.

Forest biodiversity and carbon sequestration: practical suggestions to mitigate climate change

Dr Jos Barlow from the University of East Anglia presented findings from collaborative research on type and incidence of biodiversity in plantations, primary and secondary forests in the Amazon. The presentation looked at the extent to which carbon sequestration projects could help offset biodiversity loss from deforestation. Key points included:

- Attempts to measure biodiversity as a whole often fail to recognise that diverse species respond in different ways to land-use change.
- While primary forest remains the most viable ecosystem for biodiversity, and are our best hope for permanent CO₂ storage, plantation forest does help preserve certain types of species (e.g. bats and dung beetles). In other words they are not just 'green deserts' and may be a better alternative for biodiversity than other types of land use such as high impact agriculture.

Afternoon Seminars: group debates

The above presentations served as the platform to discuss themes tackled during Plenary III. Critical points that emerged from discussion are summarised:

Changes in project design and implementation: tools for climate proofing Darwin projects

- Members of the Darwin Initiative network need to consider how best to communicate the effects of climate change to decision making forums (eg COP) in the context of species loss, deforestation, etc, particularly in the tropics.
- Project design needs to be holistic from the start, considering: climate change, biodiversity and people.
- Habitat restoration could play a bigger role in climate change as could cultural links to reach communities.

Lessons learnt from ecosystem management and adapting to the effects of climate change

- Members of the Darwin Initiative network can support efforts to better value ecosystem services.
- The Darwin Initiative should look to mitigate against projects' carbon-emitting activities such as frequent long haul flights (e.g. by looking into minimizing carbon footprint), and could encourage projects which focus on remote assistance.
- The Darwin application process should include a climate change filter, i.e. applicants should be expected to demonstrate how their proposals would not only help achieve the aims of the CBD, but also help communities and ecosystems to mitigate greenhouse gas emissions and adapt to climate change.

Forest biodiversity management to mitigate climate change through improved resource use

- Plantations are not 'good' or 'bad': they are location and use specific. What is needed to use them for mitigation activities is a flexible set of standards which can be adapted to field level activities.
- Avoidance of deforestation is a key mitigation activity which is to be encouraged.
- Currently, financial instruments favour reforestation. Therefore biodiversity activities need to adapt and make the most of such funds/markets. Carbon markets may also create perverse incentives for land use change (e.g. bio-fuels)
- Whilst governance is more difficult in tropical forests it is too risky to focus forest conservation solely on boreal ecosystems, even in view of current climate change models.

Plenary and workshop conclusions

Participants were encouraged to further consider climate change aspects within Darwin Initiative projects, applications considering this subject are expected to increase. The next workshop is to be announced in due course.

Annex 1: Workshop Programme

Time	Session	Activity	Prospective Speakers
9:30-10:00	Registration	Tea and coffee	
10:00-10:30	Welcome and Introduction	<ul style="list-style-type: none"> Welcome by Zoological Society of London Introduction and overview of the workshop 	<p>Dr Glyn Davis Director of Conservation Programmes</p> <p>Dr Kerry ten Kate Darwin Advisory Committee</p>
10:30-12:30	Plenary I	Climate change and biodiversity: interactions and implications for conservation	Dr Richard Betts Met Office Hadley Centre
	Plenary II	Darwin Initiative projects and adaptation to climate change	<p>Dr Deepak Apte and Andrea Deri Project Coordinator/ Project Leader</p> <p>13-029 '<i>Conserving Giant Clams Through Community Reserves in Lakshadweep Islands, India</i>' LEAD in partnership with Bombay Natural History Society</p>
12:30 – 13:45	Lunch	Participants network over lunch	
13:45 –14:45	Plenary III	Introduction to Afternoon session	Ms Glenys Parry DEFRA
		Climate change and threats to species: lessons and experiences from land use change in forest reserves	<p>Dr Jane K Hill University of York 14/022 <i>'Predictive tools for Targeting Conservation Effort in Bornean Forest Reserves, Sabah'</i></p> <p>University of York, Biology Department in partnership with Univesriti of Malaysia</p>
		Role of biodiversity in managing the effects of Climate Change: the contributions of ecosystems (ocean, forest, mangrove and land conservation) in adapting to climate change	<p>Ms Emily Lewis-Brown WWF</p> <p>13-012 <i>'Integrated River Basin Management (IRBM) in the Sepik River, PNG'</i></p> <p>WWF UK in Partnership with WWF South Pacific Programme Climate Change Programme</p>

		Forest biodiversity and carbon sequestration: practical suggestions to mitigate climate change	Dr Jos Barlow University of East Anglia and Pat Hardcastle Edinburgh Centre for Tropical Forests (ECTF) 12/014 <i>'Biodiversity and functional value of Amazonian primary secondary and plantation forests'</i> University of East Anglia in partnership with Museu Paraense Emilio Goeldi
14:45-15:45 (incl. tea break)	Seminars	<i>Participants break into discussion groups. Seminars will further analyse issues presented during Plenary III. Participants are encouraged to join their preferred discussion.</i>	
		Changes in project design and implementation: tools for climate proofing Darwin projects	Facilitator Rob Wild ECTF
		Lessons learnt from ecosystem management and adapting to the effects of climate change	Facilitator Dr David Tickner WWF
		Technical discussion on forest biodiversity management to mitigate climate change through improved resource use.	Facilitator Patrick Hardcastle ECTF
15:45 – 16:05	Seminar wrap up	Presentation of Seminar Discussions	
16:05 – 16.15		Concluding Remarks	Ms Glenys Parry DEFRA
16.15 – 17.00	Participants visit London Zoo		

Annex 2: Darwin Initiative Workshop – Participant ListDARWIN INITIATIVE WORKSHOP – PARTICIPANT LIST – final list of who attended the workshop

24 October 2006
0930 – 1615h

Zoological Society of London, Regent's Park, London NW1 4RY



Name	Surname	Department	Organisation	Darwin involvement
David	Agassiz	Entomology	Natural History Museum	Applicant with 'Building capacity for entomological taxonomy and for forest sustainability'
Charlotte	Aldridge		Pragya UK	Interested party
Javier	Alvarez		Living Earth Foundation	14-033: Darwin Training Programmes for Integrated Protected Area Management, Ghana PL
Raj	Amin		ZSL	12-004: Building capacity for conservation of a critically endangered flagship species (Kenya)
Deepak	Apte	Conservation	Bombay Natural History Society	13-029: Conserving Giant Clams Through Community Reserves in Lakshadweep Islands, India – local partner
Rosalind	Aveling	Director, Conservation Partnerships	FFI	DAC member
Idrees	Babu	Conservation	Bombay Natural History Society	13-029: Conserving Giant Clams Through Community Reserves in Lakshadweep Islands, India – local team member
Janet	Barber			DAC member
Jos	Barlow	School of Environmental Science	University of East Anglia	12-014: The Biodiversity of Primary, Secondary and Plantation Forests, co PL
Dick	Beales	Overseas Territories	DFID	DFID focal point and first sift assessor for Overseas Territories applications.
Richard	Betts		Met Office Hadley Centre	Invited speaker
Jenny	Bowles	Climate Stewards	A Rocha	Interested party
Olivia	Bragg	School of Social Sciences, Geography	University of Dundee	7-038: Peatland Biodiversity Programme, co-ordinator

Name	Surname	Department	Organisation	Darwin involvement
Martin	Brasher	Wildlife Habitats and Biodiversity	Defra	Defra
Ann	Brown		Falklands Conservation	13-022 : Falkland Islands Invertebrates Project, PL
Stuart	Butchart		Birdlife International	15-030 : Strengthening Scientific Capacity of Conservation NGOs working with the CBD; also involved in current application 'Climate change impacts: developing an early warning system and adaptive management framework for African IBAs'
Jock	Campbell		IMM Ltd	14-035 : Strengthening Pro-Poor Wetland Conservation using Integrated Biodiversity and Livelihood Assessment
Robert	Close		GardenAfrica	14-050 : Africulture Project
Colin	Clubbe	Herbarium	RBG Kew	Former Darwin PL and partner in 14-027 and 14-051
Caroline	Cowan	Climate Impacts and Adaptation, Global Atmosphere Division	Defra	Interested party
Caroline	Culshaw		Natural Environment Research Council	Interested party
Daniel	Dahm	Botany	Natural History Museum	
Glyn	Davies	Conservation Programmes	ZSL	ZSL runs several Darwin projects
Ruth	Davis	Climate Change Policy	RSPB	Interested party
Matt	Daws	Seed Conservation Department	RBG Kew	12-001 : DIRECTS 14-056 : CCESSA
Andrea	Deri		LEAD International	13-029 : Conserving Giant Clams Through Community Reserves in Lakshadweep Islands, India – PL
Karen	Dickinson	Climate Change Policy	JNCC	Climate Change policy adviser for JNCC. Previously biodiversity adviser in Defra.
Sarah	Dixon	Public Awareness	Botanic Gardens Conservation International	Interested party
Roger	Flower	Environmental Change Research Centre	University College London	Interested party

Name	Surname	Department	Organisation	Darwin involvement
Nick	Folkard	International Division	RSPB	RSPB has several Darwin projects and is also a current applicant organisation
Brian	Ford-Lloyd	School of Biosciences	University of Birmingham	Interested party
Toby	Gardner	School of Environmental Science	University of East Anglia	12-014: The Biodiversity of Primary, Secondary and Plantation Forests
Rachel	Garthwaite	Science Policy	The Royal Society	Interested party
Leonard	Ghotheepithak	Darwin Initiative Secretariat	Defra	Defra
Andrew	Halstead	Entomology	Royal Horticultural Society	
Pat	Hardcastle	LTS International	ECTF	ECTF Darwin Technical Committee member
Simon	Harding	Science	Coral Cay Conservation	15-041: The Waria Valley Community Conservation and Sustainable Livelihoods Project
David	Harper	Biology	University of Leicester	12-003: Flamingo conservation and Ramsar site management at Lake Bogoria, Kenya
Jim	Harris	Natural Resources	Cranfield University	Current applicant
Monica	Harris	Corporate Affairs	FFI	Interested party – FFI is developing an internal policy on climate change and this workshop is a good starting point on which to build
Katy	Harris	Russia Programme	Taiga Rescue Network	Applicant
Matthew	Hatchwell	European	Wildlife Conservation Society	WCS partners ZSL on various Darwin projects
Alice	Henchley	Press Office	ZSL	Interested party
Jane	Hill	Biology	University of York	14-022: Predictive Tools for Targeting Conservation Effort in Bornean Forest Reserves, Sabah PL Also Project Supervisor for Darwin Fellow, Noel Tawatao
Alex	Jones	Invertebrates	Falklands Conservation	Interested party
Andrew	Jones		The Grasslands Trust	15-008: ADEPT - Agricultural Development and Environmental Protection in Transylvania
Kate	Jones	Institute of Zoology	Zoological Society of London	15-033 Monitoring Bat Biodiversity: indicators of sustainable development in Eastern Europe PL
Frederick	Kamson	Sustainable Energy	Carbon Reduction Consortium	Working with LEAD International
Anna	Karp	LTS International	ECTF	Workshop co-ordinator
Don	Kirkup	Herbarium	RBG Kew	Interested party

Name	Surname	Department	Organisation	Darwin involvement
Dominic	Kniveton	Geography	University of Sussex	14-040: Developing a Sustainable Conservation Network for Primates in Ecuador - PRIMENET
Tetyana Ivanova	Kryvomaz		Master Consulting	Ukrainian partner of now finished Darwin project (with David Minter)
Jude	Lane	Biology	University of Leeds	Interested party
David	Leech		British Trust for Ornithology	Interested party
Emily	Lewis-Brown	Marine Research	WWF	13-012: Integrated River Basin Management (IRBM) in the Sepik River, PNG
Anson	Mackay	Geography	UCL	14-029: Monitoring and simulating climate change threats to aquatic biodiversity in the Okovango delta, Botswana – co-PL
James	Mair	School of Life Sciences	Heriot-Watt University	EIDPO17 – Conservation management zoning implementation and facilitation in Perlas Archipelago, Panama - PL
Aylin	McNamara	Climate Change Group	Zoological Society of London	Interested party
Ilona	Millar		FIELD	Interested party
David	Minter		BioNet-International	Applicant
Roger	Mitchell	Chief Scientist	Earthwatch Institute	13-013: Establishing biodiversity monitoring networks to inform Estonian coastal wetland management
Elizabeth	Moore	Biodiversity Information Services	JNCC	Interested party
Mike	Morris	Livelihoods and Institutions Group	NRI, University of Greenwich	Applicant
Mike	Mwangi	Biological Sciences	University of East Anglia	Darwin Fellow/Scholar
Ahmed	Nur Jama	Agriculture	University of Reading	Interested party
Margaret	Okot	Darwin Initiative Secretariat	Defra	Defra
Sophie	Oliver	Animal Dept	ZSL	Interested party
Nat	Page	ADEPT Project	Fundatia ADEPT	15-008: ADEPT - Agricultural Development and Environmental Protection in Transylvania
Glenys	Parry	Darwin Initiative Secretariat	Defra	Defra

Name	Surname	Department	Organisation	Darwin involvement
Paul	Pearce-Kelly		ZSL	Interested party
Richard	Pettifor	Institute of Zoology	Zoological Society of London	15-002 : Integrating Crane Conservation with Sustainable Habitat Utilisation PL
Matt	Prescott	BBC Planet Relief	BBC	Interested party
Caroline	Pridham	Development	Birdlife International	Interested party
Dinarzarde	Raheem	Zoology	NHM	15-018 : Developing Land Snail Expertise in South and Southeast Asia - Deputy project manager
Mark	Rehfisch	Wetland and Coastal Ecology Unit	British Trust for Ornithology	Applicant. Interested party with 13 papers published on climate change
Beatrix	Richards	Species and Forests	WWF UK	Interested party
Deepa	Senapathi	Centre for Agri Environmental Research	University of Reading	Interested party
Paresh	Shah		Rothamstead International	Resource person and contact for Darwin Initiative information
Karamathulla	Shahib	Conservation	Bombay Natural History Society	13-029 : Conserving Giant Clams Through Community Reserves in Lakshadweep Islands, India – local team member
Alison	Shaw	Conservation Programmes	Zoological Society of London	14-060 : Sustainable management of ornamental fish species in Mamiraua
Linda	Siegele	Biodiversity and Marine Resources	FIELD	Applicant
Monique	Simmonds	Jodrell Laboratory	RBG Kew	14-050 : Africulture Project
Struan	Simpson		St James's Research	Applicant
Dominick	Spracklen	School of Earth and Environment	University of Leeds	Advisor for NGO World Land Trust
Peter	Stafford	Botany	Natural History Museum	Current applicant
Alan	Stewart	Biology & Environmental Science	University of Sussex	EIDP09/10-030 : Consolidating local capacity for biodiversity surveys in Papua New Guinea PL 14-054 : Trainign the next generation of Papua New Guinean conservation biologists PL 15/007 : Focus for Fiji: insect inventories for biodiversity assessment, Fiji. PL

Name	Surname	Department	Organisation	Darwin involvement
Noel	Tawatao	Biology	University of York	EIDPS12: Developing ecological tools for predicting impacts of forest disturbance across taxa, Darwin Fellow
Kerry	Ten Kate			Darwin Advisory Committee
Christopher	Thomas	School of Biological and Biomedical Sciences	Durham University	Past projects and intended future projects
David	Tickner		WWF	13-012: Integrated River Basin Management (IRBM) in the Sepik River – PL
Jonathan	Timberlake	Herbarium	RBG Kew	15-036: Monitoring and Managing Biodiversity Loss in South-East Africa's Montane Ecosystems
Martin	Todd	Geography	UCL	14-029: Monitoring and simulating climate change threats to aquatic biodiversity in the Okovango delta, Botswana – PL
Jenny	Towill	Carbon	World Land Trust	Interested party
Clare	Trivedi	Millennium Seed Bank Project	RBG Kew	Interested party
Steve	Walters	Science	British Council	Interested party
Olly	Watts	Climate Change Policy	RSPB	Interested party
Michael	White	Science	British Council	Interested party
Rob	Wild	LTS International	ECTF	ECTF Darwin Initiative Programme Director
Hannah	Williams	Programmes	WWF	Interested party
Chris	Yesson	School of Biological Sciences	University of Reading	Interested party
Eilidh	Young	LTS International	ECTF	Darwin Applications Manager and co-ordinator of reviews of Darwin Projects
Esther	Zamudio	Capacity Development	LEAD International	13-029: Conserving Giant Clams Through a Community Reserve in the Lakshadweep Islands, India - project team member