

Climate Change and Biodiversity in the European Union Overseas Entities

Pre-conference version



Credits

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Acronyms list

AFSSA: Agence Française de Sécurité Sanitaire des Aliments	PECE: Profils Environnementaux de la Commission Européenne
ARVAM: Agence pour la Recherche et la Valorisation Marine	PGEM: Plan de Gestion de l'Espace Maritime
BIOT: British Indian Ocean Territory	RSPB: Royal Society for the Protection of Birds
CCT: Chagos Conservation Trust	SPC: Secretariat of the Pacific Community
CIRAD: Centre de Coopération Internationale en Recherche Agronomique pour le Développement	STARP: Service Territorial des Affaires Rurales et de la Pêche
CNRS: Centre National de Recherche Scientifique (France)	STINAPA: Stichting Nationale Parken (Fondation des parcs nationaux, Bonaire)
CRIOBE: Centre de Recherches Insulaires et Observatoire de l'Environnement	TAAF: Terres Australes et Antarctiques Françaises
CRISP: Coral Reef Initiative in the South Pacific	ULPGC: Universidad de Las Palmas de Gran Canaria
CSIC: Consejo Superior de Investigaciones Cientificas (Espagne)	UN: United Nations
DAF: Direction de l'Agriculture et de la Forêt	UNEP: United Nations Environmental Program
DCNA: Dutch Caribbean Nature Alliance	UNESCO: United Nations Educational, Scientific and Cultural Organization
DEFRA: Department for Environment, Food and Rural Affairs (UK)	UNFCCC: United Nations Framework Convention on Climate Change
DIREN: Direction Régionale de l'Environnement (France)	UNWTO: United Nations world tourism organization
DOM: Département d'Outre-Mer	USDA: United States Department of Agriculture
DYNECAR: Dynamique des Ecosystèmes de Caraïbe	WMO: World Meteorological Organization
ECCM: Edinburgh Centre for Carbon Management	WRI: World Resources Institute
EDF: European Development Fund	WWF: World Wide Fund
ENA: Eastern North America	
ESRI: Economic and Social Research Institute (Ireland)	
EEZ: Economic Exclusive Zone	
FAO: Food and Agriculture Organization of the United Nations	
FCO: British Foreign and Commonwealth Office	
GIEC: Groupe d'Experts Intergouvernemental sur l'Evolution du Climat	
IAATO: International Association of Antarctica Tour Operators	
IBA: Important Bird Area	
IDDRI: Institut du Développement Durable et des Relations Internationales	
IEA: International Energy Agency	
IFRECOR: Initiative Française pour les Récifs Coralliens	
IPCC: Intergovernmental Panel on Climate Change	
IPEV: Institut Paul Émile Victor	
IRD: Institut de Recherche pour le Développement	
IUCN: International Union for the Conservation of Nature	
JNCC: Joint Nature Conservation Committee	
MNHN: Muséum National d'Histoire Naturelle	
NACRI: Netherlands Antilles Coral Reef Initiative	
OCTA: Overseas Countries and Territories Association	
OMMM: Observatoire du Milieu Marin Martiniquais	
ONCFS: Office National de la Chasse et de la Faune Sauvage (France)	
ONERC: Observatoire National sur les Effets du Réchauffement Climatique	
ONF: Office National des Forêts (France)	
OCTs: Oversea Countries and Territories	
ORs: Outermost Regions	
PADD: Projet d'Aménagement et de Développement Durable	
PCRDT: Programme Cadre pour la Recherche et le Développement Technologique	

Preface

Author: Dr Chris D Thomas



The Cagou (*Rhynochetos jubatus*) is an endemic bird from New Caledonia

The Kagu brings a smile to anyone who is fortunate enough to see or hear one, the only surviving representative of an entire family of birds. It could be mistaken for an over-energetic, almost demented, flightless heron with silver-grey plumage, a wonderful crest, coral-orange legs and bill, and a cacophony of laughing-yelping calls. Its eccentric quick-step walk, freeze-still then peck or probe routine is a picture of concentration as it hunts for worms and snails on the forest floor of New Caledonia – forests that not only provide a home for this and many other extraordinary species but also help maintain soil stability and water for human consumption and hydroelectric power. This spectacular island is also fringed by magnificent coral reefs, one of the most important regions in the world for marine biodiversity and a critical source of food and tourist income for the human population.

Unfortunately, climate change is already exerting pressures on wildlife in all of the European Union overseas territories. Climate change respects no boundaries, and bleaching damage to the heat-sensitive coral reefs of the EU territories has already been widely observed, including in New Caledonia. Greenhouse gas emissions are generated disproportionately by industrialised countries, but the consequences are felt all over the world. These impacts are felt in places that have high levels of biodiversity and that do not necessarily have sufficient resources to deal

with the consequences. As such, it behoves continental EU nations to reduce emissions, and also to help their overseas territories to adapt to changes that are already inevitable.

This report is, therefore, a very welcome move to recognise the consequences of climate change for the EU overseas territories, and specifically for their biodiversity. The human communities of the territories rely heavily on this biodiversity for a wide variety of ecosystem goods and services that range from food and fisheries, to water resources and fertile soils, through to tourism and coastal protection. Without the biodiversity of their natural ecosystems, the human populations of the territories would be greatly impoverished.

Many of the potential ills that face the world from climate change are encapsulated within the EU overseas territories. The EU territories range from the Antarctic to the Arctic, and from atolls that reach only a few metres above sea level to lofty mountain peaks. Gradual melting of the Greenland ice sheet, combined with thermal expansion of the oceans and increases in storm intensity, will contribute to an increasing likelihood of coastal inundation, threatening coastal human populations and wildlife. Terrestrial species that are confined to low-lying islands, such as the critically endangered Polynesian Ground Dove, have no-where else to go. Functioning natural coastal ecosystems, especially

reefs, salt marshes and mangrove forests, have the potential to minimise these impacts, and should therefore be carefully protected.

Climate change has joined over-exploitation by humans, invasive species, habitat destruction and pollution (other than greenhouse gasses) as the fifth major global threat to biodiversity. These pressures are not acting alone. A combination of over-fishing and coral bleaching may prove fatal for the reefs that play such an important role in the life and economies of many of the territories. Habitat destruction, warming and altered rainfall patterns may combine to generate seasonal droughts in some regions, whereas substantially increased rainfall and storms could bring serious erosion to devegetated tropical islands, threatening human populations and wildlife alike. Increased elevations of invasive birds, mosquitoes and bird malaria may join forces to restrict native island species to ever-higher elevations, and eventually to eliminate them completely. In continental Europe and elsewhere, many species will survive climate change by moving their distributions to higher latitudes, but this is not an option for many of the species that are confined to the EU overseas territories. Species that are restricted to oceanic islands, in particular, must survive where they are, or perish.

More species may be at risk of global extinction from climate change in the territories than in the entire continent of Europe, but no formal analyses exist. As country after country within continental Europe prepares biodiversity adaptation strategies for climate change, little attention has been given to the rest of the world, where most of the impacts of EU emissions are being felt. If adaptation is at least partially about putting right some of the wrongs that continental EU emissions have caused, then the majority of the effort and resources the EU devotes to climate change adaptation should be directed abroad, including to our overseas territories. This is important for biodiversity, and equally so for the human communities that rely heavily on ecosystems services for their quality of life – and in some cases survival.

Recognising the problem is vital. But this is only a beginning. Europe has many of the finest climate scientists, it leads the world in documenting the responses of biodiversity to climate change, and it is a leader in projecting the future potential consequences of climate change for wildlife. Let this report be a call to EU scientists and policy makers to pay greater attention to the impacts of climate change in our overseas territories, and to European governments, funding agencies and NGOs to facilitate this work so as to contribute to the development of adaptation strategies by the administrative authorities of the EU overseas territories. With such an increase in attention and effort, it is possible that many of our overseas territories could become inspiring exemplars of conservation and sustainability, rather than casualties of our insatiable greed for hydrocarbons.



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Introduction

Author: Jérôme Petit (IUCN)

Climate change is a major threat to global biodiversity. From the tropics to the Poles, the world's ecosystems are all under pressure. A study published in the scientific journal *Nature* posited that 15 to 37% of terrestrial animal and plant species could be at risk of extinction because of human-induced impacts on climate (Thomas et al., 2004).

Scattered across the four corners of the Earth, European Union overseas entities, are home to a biological diversity that is as rich as it is vulnerable. Located in several global biodiversity hotspots, these territories are home to a far greater number of endemic animal and plant species than continental Europe. However, this natural wealth is under pressure from numerous quarters: habitat destruction, invasive alien species, pollution, over-exploitation of species; no territory has been spared. Today, climate change represents an additional threat to these ecosystems, and one which could possibly end up being as damaging as all the others combined.

As a result of the remarkable diversity of their environments, European overseas entities provide a real cross section of the impacts of climate change on global biodiversity. They serve to highlight the extent of these impacts on the majority

of global ecosystems and on a large variety of taxonomic groups. Furthermore, given that overseas ecosystems are particularly vulnerable to climate change, they can serve as beacons for the European Union. With their wide geographic spread, they act as an early warning system for the effects of climate change on ecosystems generally.

"Islands are the bellwethers of international environmental policy. The world will see their success or failure on our islands first".

James Alix Michel, President of the Seychelles (IUCN Global Islands Survey).

In addition to raising the alarm, the overseas entities of Europe can also set an example. Overseas entities are among the first regions to have been affected by climate change; they could also be among the first to adapt to its effects and to implement strategies to respond to them. Overseas entities can act as learning laboratories for the creation of policies, strategies or technologies that can be used to adapt to or mitigate the effects of climate change. Such innovations, conceived on the European islands, can then be rolled out and adapted to surrounding developing countries. With European Union assistance, overseas entities could become



Nukutapu islet in Wallis et Futuna

Carole Maigny

centres of excellence for sustainable development research, ecosystem management, biodiversity protection, renewable energy development and climate change adaptation.

The International Union for the Conservation of Nature (IUCN), in collaboration with the *Ministère de l'Intérieur, de l'Outre-mer et des Collectivités territoriales* (Ministry of the Interior, the Overseas Territories and Entities), the *Conseil Régional de La Réunion* (Regional Council of the Island of Reunion) and the *Observatoire National français des Effets du Réchauffement Climatique* (ONERC) (French National Observatory for the Effects of Climate Change), decided to shine the spotlight on the European overseas entities and organize an international conference on the theme of climate change and biodiversity loss in these regions. The conference, which will take place from 7 to 11 July 2008 on the Island of Reunion, has been officially endorsed by the French Presidency of the European Union. For the first time, this gathering will bring together the 27 Member States and their 28 overseas entities, to stimulate a common debate. The objectives of this event are (1) to strengthen awareness among European institutions, the 27 Member States of the European Union, regional and global institutions, civil society and the media, of the unique natural heritage of overseas Europe, the threats it faces and the opportunities it has to offer; (2) to strengthen the effectiveness of action and cooperation among the EU, the Member States and the European overseas entities, in efforts to adapt to climate change, adopt exemplary energy policies and protect and sustainably manage their biodiversity; and (3) to strengthen regional cooperation between the European Union overseas entities and their neighbours, as well as build capacity among these entities to ensure a stronger voice in international environmental debates.

Prior to this conference it is necessary to take stock of the available scientific knowledge and to lay the groundwork for discussions. IUCN, in collaboration with the ONERC and other partners, decided to undertake a review of the risks inherent to climate change; this report is based on that study. In order to carry out this large-scale study, IUCN called on a network of more than 80 experts, researchers, academics, members of associations, public administrations, and the private sector based in the territories concerned. This consultative process enabled information to be gathered from a wide range of field actors. This information was then entered into a database and supplemented with a bibliography of scientific publications, summary documents and technical notes. The data have been summarised and transcribed in the current document. Upon completion, the document was sent for review to all contributing experts.

The objective of this paper, which is intended as a reference document, is to establish the current state of existing knowledge on the impacts of climate change on the biodiversity of the European Union overseas entities. This document starts with a thematic analysis of European overseas biodiversity, the reality of climate change, the new threats it presents for natural resources, and the resulting

socio-economic implications. This analysis presents a general overview of the global and sectoral data related to overseas territories, and highlights certain notable examples in the individual regions. The document then provides a geographical analysis of the impacts of climate change on biodiversity in the 28 European Union overseas entities. These have been divided into seven large geographical areas: the Caribbean, the Indian Ocean, the South Pacific, Macaronesia, the Amazon, the Polar Regions and the South Atlantic. For each entity a non-exhaustive overview of the current state of biodiversity, observed or potential impacts of climate change on the natural resources, and the resulting socio-economic implications are presented. For some regions, examples of strategies to adapt to or mitigate the effects of climate change that deserve particular mention have been highlighted.