

# DARWIN NEWS

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Newsletter of the UK Darwin Initiative



Promoting biodiversity conservation and the sustainable use of resources • <http://darwin.defra.gov.uk>

## Darwin Information Project launches new website

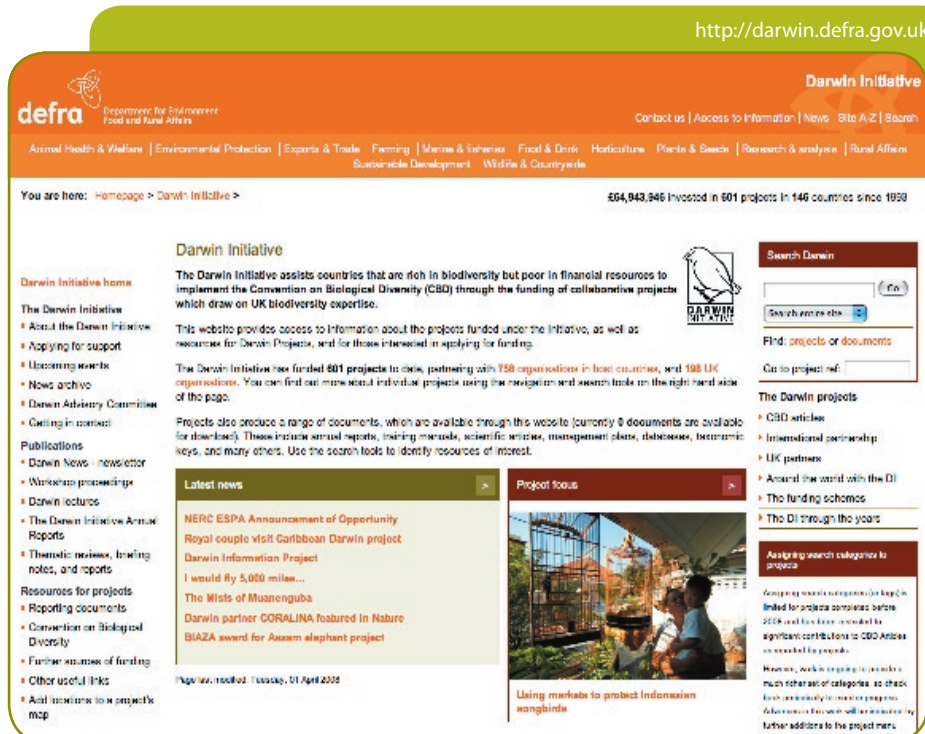
As many of you will already be aware, the Darwin Initiative has launched a new version of the Darwin website. The website has also been moved to the Defra domain name, at the new address <http://darwin.defra.gov.uk>

The new site is a major component of the Darwin Information Project (DIP), which has been developed over the past months. Over the lifetime of the Darwin Initiative, a large body of knowledge and experience has been built up by Darwin projects.

This knowledge has been very difficult to access, as it resides in a multitude of reports, plans, databases, and other outputs generated over the years. One of the aims of the Darwin Information Project is to gather this information together and make it available through the Darwin website.

With more than 600 projects

in the current database, and thousands of documents that will become available to browse, users need efficient mechanisms for navigating the archive. This is being achieved by a major effort to categorise all Darwin projects. As the results of this work become available, new documents and navigation tools will appear on the website, so check back often!



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Full contact details for the Darwin Secretariat and the ECTF Monitoring and Evaluation Programme are available on the Darwin website.

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### Information for authors

Darwin News is published quarterly. Suggestions for articles can be submitted to the editor at any time (see contact details). In the first instance, only titles should be sent. Articles will then be commissioned for specific issues.

# Conservation of Small Vertebrates in Tsingy Bemaraha National Park, Madagascar

University of Aberdeen; Association Nationale pour la Gestion des Aires Protegees (ANGAP)

Richard K. B. Jenkins & P.A. Racey\*  
Project ref.: 14-006

Malagasy scientists on our Darwin Initiative team surveyed the famous Tsingy forest of western Madagascar. In the Parc National Tsingy de Bemaraha, Andrianajoro Rakotoarivelo focussed on the impact of forest degradation on the abundance of arboreal rodents whilst his colleague, Félicien Randrianandrianina, investigated how the morphology of the bats that roost in the park's many caves influence how they respond to deforestation. Christian Randrianantoandro continued to develop a new

chameleon monitoring protocol and has presented his preliminary result in the 2007 annual conference of the Society for Conservation Biology after obtaining sponsorship from the Conservation Leadership Programme. He has been awarded a further grant to continue to develop the work he started in this Darwin project.

Roma Randrianavelona's team conducted the first biodiversity survey of Belitsaka forest and encountered low levels of forest

degradation but a high demand for bushmeat, especially fruit bats and tenrecs.

We have produced six colour posters for the park's new visitor interpretation centre and have complemented this by running language courses for guides and training sessions on how to identify the small vertebrates seen along the park's trail system.

# Tool kits for the Sustainable Management of Ghana's Riverine Biodiversity

E Maltby\*, B Moss, RT Leah, Chris Gordon  
Project ref.: 14-017

During the 2006/7 period, Ghana experienced significant water resource problems exacerbated by drought and the possible longer term effects of climate change. The Water Resources Commission (WRC) has recognised the complexity of the challenges to meet

the needs of people, development and biodiversity against a background of population growth,

University of Liverpool;  
University of Ghana

urbanisation and the need to maintain environmental quality. WRC has publicly identified the role of the Darwin Ghana project in contributing to the development of a more integrated approach to water resource management. Based on a practical tool-kit, the project has already raised awareness of an approach which can assist planners and local authorities to better deal with the conflicting demands for and pressures on Ghana's rivers and associated biodiversity.

The project study area.



## Capacity building for biodiversity studies of freshwater insects, Argentina

S. Brooks\* & G. Spinelli  
Project ref.: 15-025

NHM; Museo de Ciencias Naturales de La Plata; Centro Regional Universitario Bariloche; Administracion Parques Nacionales; Universidad de la Patagonia, Esquel, Chubut; Agency Catedral Turismo

The Nahuel Huapi National Park (NHNP) in northern Patagonia contains part of the Valdivian Rainforest, the largest temperate rainforest in South America. This biodiversity hotspot has recently been included among the most threatened ecoregions in the world by the Global 2000 initiative, launched by WWF and the World Bank.

Our project will deliver an infrastructure for the study and interpretation of wetlands in NHNP, identification guides, a database of freshwater insects, and a GIS spatial data repository of freshwater insect distributions.

One aim of our project is to create a centre of excellence for the study of freshwater ecosystems, the taxonomy of freshwater insects and the interpretation of wetland ecosystems at the biological station in Puerto Blest (EBPB). Several international and national courses and visits have already taken place in the field station. The field

station also functions as an interpretive centre, promoting the value and sustainable use of wetlands to visitors to the park.

We have trained students, park rangers, fishermen, teachers and other members of the public in various techniques to get them involved in biodiversity and conservation topics. We now have an enthusiastic team of people working closely together, assisting the specialists and training more volunteers.

In October 2008 our DARWIN Initiative project will sponsor a symposium within the XII Argentinean Congress of Entomology. It will be a good opportunity to communicate our results and discuss our aspirations with scientists working in other biodiversity hotspots in Argentina and neighbouring countries.

Puerto Blest field station.



## Bornean Wild Cat & Clouded Leopard Project

Katherine Secoy\*, Maryati Mohamed, Henry Bernard, Joanna Ross & Andrew Hearn. Project ref.: 15-026

To date, the project has resulted in several thousand images of wildlife from Danum Valley. These images include the fourth and fifth photos in the world of the clouded leopard, the first confirmed record of this species for the whole of Sabah.

Camera trap data has provided the first scientifically robust density estimate for clouded leopards on Borneo, revealing a robust population in the study area. A female clouded leopard was successfully trapped and radio collared, a first for this species. We

The rarely seen Bornean Clouded Leopard



have been gradually building a picture of her home range and habitat use. These data will inform forest management to ensure sufficient habitat remains in the future for the survival of these enigmatic cats.

Global Canopy Programme; Wildlife Conservation Research Unit; Royal Society South East Asian Rainforest Research Project; Institute for Tropical Biology and Conservation; Universiti Malaysia Sabah

# A national plan for mammal conservation in Tanzania

Charles Foley, Sarah Durant\*, Alex Lobora, Simon Mduma  
Project ref.: 14-055

Institute of Zoology; Zoological Society of London; Tanzania Wildlife Research Institute (TAWIRI)

This project has conducted five in depth surveys for medium to large mammals, including 4 in areas never before surveyed

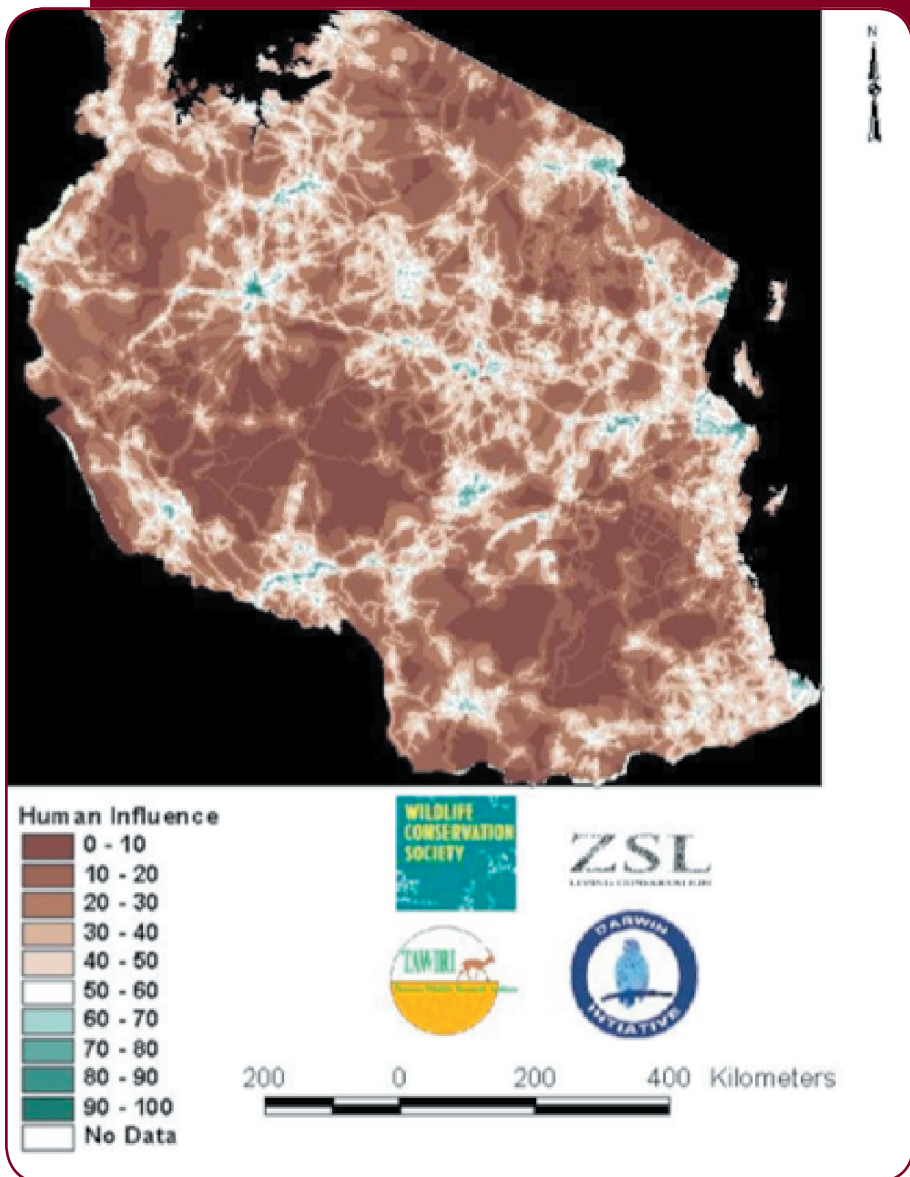
systematically for these species, and 3 in areas which were largely or completely unknown. Our survey in Minziro Forest Reserve showed clear evidence of a population of tree pangolin, a species only once before documented in Tanzania, and not known to be currently resident in the country, as well

as a second population of giant pangolin, which is known to occur at only one other site in Tanzania, as previously discovered by the project's survey last year in Mahale. This information will be used to help aid the conservation of an already much degraded reserve. The year also saw the launch of the project website, which allows people to submit information about mammals they have seen in Tanzania online, and provides distribution maps of all medium to large mammals in the country. This website will help to engage the public and private sectors, and hence encourage further contributions of information to the project.

Finally, the project is working with a new initiative, the Wildlife Picture Index at ZSL and WCS which will extend its impact into the international arena. This initiative aims to use camera trap survey techniques as a tool for monitoring biodiversity at an international level to measure progress towards CBD 2010 targets.

The project website can be found at [www.tanzaniamammals.org](http://www.tanzaniamammals.org)

Draft 'Human Footprint' map of Tanzania showing areas of low human influence (brown) to high human influence (blue).



## Conservation of Pakistan's Marine Cetacean Biodiversity and Pelagic Environment

Mauvis Gore\*, P Jamal Siddiqui & Ejaz Ahmad  
Project ref.: 14-005

University Marine Biological Station Millport (University of London); Centre for Excellence in Marine Biology (CEMB) at Karachi University; WWF-Pakistan

Members of this DI Project have worked closely with the Ministry of Environment's "Pakistan Wetlands Programme" on a Marine National Park recommendation for the area around Haft Talar/ Astola Island, made to the Minister of State for Environment and subsequently recommended by the Prime Minister of Pakistan. This is well ahead of plan and is of great significance in the potential for conservation and management of Pakistan's cetaceans and their pelagic environment.

The great extent of our survey work and findings has been very rewarding in providing information for this recommendation, aided by the commitment and high level of activity of the CCP team

members. Further, we have had high levels of interest and support generated across a very wide range of governmental and non-governmental organisations.

WWF-Pakistan has begun developing a National Marine Programme, which includes our project. The Pakistan Whale and Dolphin Society has been established, which is a very significant step. Ecotourism pilot projects have been very successful, with two commercial trips organised to test the concept, and much subsequent interest generated by word of mouth. Formal publicity is planned to help develop this avenue.

The number of organisations and individuals who have responded

positively when we have contacted them or who have on their own initiative sought us out to propose collaboration has far exceeded our most optimistic expectations. The Darwin Initiative has provided the platform for this important work to be undertaken.

Map showing the coastline of Pakistan, with the Hub River marking the border between the coastal provinces Sindh and Balochistan. The green lines indicate areas where boat, beach and community surveys have been carried out.



# Developing integrated assessment of biodiversity in Belize

Lindsay Maskell\*  
Project ref.: 14-025

CEH; Natural History Museum;  
Wildtracks and Belize Audubon Society

The project has built significantly on the infrastructure developed in the first year. Training of project personnel has continued and developed. There has been organised training in bat identification. Botanical identification skills have increased through formal courses and on-the-job training and participation in bird surveys has also led to skills development.

This training has extended outside of the project team to students from the University of Belize, 28

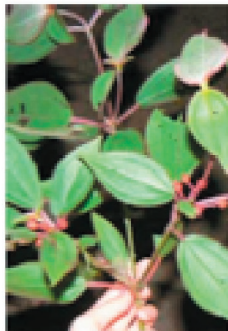
of whom attended botanical training and 15 were educated in herpetological identification techniques.

In addition to all of these capacity building activities the project has carried out a major phase of data collection and now has data from bird and bat surveys and 160 vegetation quadrats as well as a collection of botanical specimens.

Cover page of identification key produced by the project.

## Melastomataceae of Belize

*Miconia* sp  
(482)  
(photos 87-90)  
Habitat: Forest.  
Habit: Shrub.  
Height <2m  
ID tip: Short.



87 U. Zag 481 (detail)



88 U. Zag 481 (upper lf. surface)



89 U. Zag 481 (lower leaf surface)



90 U. Zag 481 (fruit)

86

Terminology :



This guide has been funded by the Darwin Initiative and produced in association with Wildtracks, Belize Audubon Society, and CEH.



Clarifications :

*Miconia nervosa* and *Clidemia dentata* can be differentiated when sterile by the

The purple underside of *Miconia oinochrophylla* leaves are unique in mature plants, some species such as *Tococa gualanensis* have seedling leaves with purple undersides (above).

*T. gualanensis* leaves are clearly very hairy (*M. oinochrophylla* is glabrous) and adult plants with



# Enabling the people of Montserrat to conserve the Centre Hills

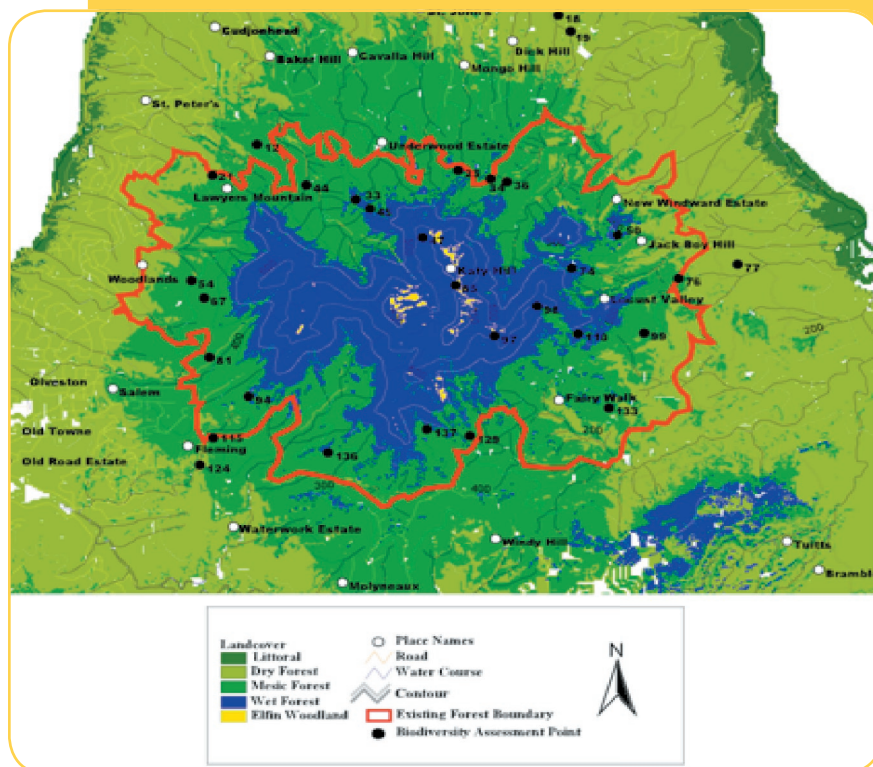
Carole McCauley, Stephen Mendes & Sarah Sanders\*  
Project ref.: 14-027

RSPB; Durrell Wildlife Conservation Trust; RBG Kew; Ministry of Agriculture, Lands, Housing, & Environment; MoTourist Board

The Centre Hills Management Committee (CHMC) was formed as an advisory body of local stakeholders representing government, civil society, and the private sector. The CHMC is working to spread word about the Centre Hills and project activities, and is engaging the public in discussions about the vision

management, and knowledge/perceptions/activities of stakeholder groups with regard to the natural environment. The biological assessment report documents the presence, abundance, and range of key taxa, including plants, reptiles, amphibians, insects, bats, and birds. It also identifies biodiversity "hot spots" containing species and habitats of high conservation concern.

Montserrat vegetation map



management, and knowledge/perceptions/activities of stakeholder groups with regard to the natural environment. The biological assessment report documents the presence, abundance, and range of key taxa, including plants, reptiles, amphibians, insects, bats, and birds. It also identifies biodiversity "hot spots" containing species and habitats of high conservation concern.

The Conservation and Environmental Management Bill has been produced and circulated among stakeholders such as resource owners, users, and managers. This new legislation will ultimately provide an updated framework under which biodiversity and protected areas will be managed. It includes provisions for a regulatory board and an environmental fund to finance conservation and management activities.

A successful bid to OTEP to conduct an economic valuation study will allow for the collection of information critical to the Centre Hills management planning process. It is hoped that enhanced appreciation of the costs and benefits of conservation and various development activities will inform policy development.

and management objectives for the Centre Hills.

Two major pieces of research were completed that are contributing to the development of updated environmental legislation and the Centre Hills Management Plan. The socioeconomic assessment report documents land ownership and use, legislative and institutional frameworks for environmental

and various development activities will inform policy development.

During a tour of the Caribbean in March 2008, HRH the Prince of Wales and the Duchess of Cornwall visited the project, partly to learn more about the environment and the island's threatened wildlife.



## Reintroduction of endemic Mauritian reptile communities

N.Cole, C. Jones\*, R. V. Tatayah & V. Bachraz  
Project ref.: 15-038

Durrell Wildlife Conservation Trust; University of Bristol; Mauritian Wildlife Foundation and National Parks and Conservation Service

The Indian Ocean island of Mauritius typifies the problems facing biodiversity on a global scale. Extensive habitat destruction and the introduction of alien species have caused numerous extinction events, most notably the dodo. These disturbances have also caused the loss of more than 60% of the endemic Mauritian reptile species from the main island and continue to threaten the last remaining reptile populations on the offshore islands.

Thirty years ago it was recognised that marooned reptiles on Round Island faced extinction and that translocation was a necessity to secure their future survival. Several other reptile species, restricted to one or a few of the small offshore islands, have since been discovered and are also threatened by extinction.

Funding from the Darwin Initiative has enabled Mauritians to build upon years of research and island restoration to conduct the first lizard translocations within the Indian Ocean. The reintroduction of four vulnerable species to islands within their former range is therefore an outstanding achievement for conservation within the Mascarenes. These are the first steps towards the re-establishment of sustainable reptile populations and the restoration of unique island communities within one of the leading biodiversity hotspots.

As a direct result of this Darwin Initiative project Mauritians are reversing the decline of endangered reptile species. For the first time in more than 150 years the large and gregarious Telfair's skink *Leiolopisma telfairii* has successfully reproduced in the wild outside of Round Island. At 219 ha and one of the few

A3 Poster: Saving the reptiles of Mauritius. Available from MWF – email: [executive@mauritian-wildlife.org](mailto:executive@mauritian-wildlife.org)



locations in the Mascarenes to have remained free of invading rats, Round Island represented the last location on Earth to support the Telfair's skink. With many of the Mauritian islands now cleared of rats this project has made it possible to conduct the first lizard translocations in the Indian Ocean.

# Important Bird Area conservation and capacity building in Central Asia

Michael Brombacher\*, Sergey Sklyarenko (KAZ),  
Roman Kashkarov (UZB) and Eldar Rustamov (TUR)  
Project ref.: 14-061

RSPB; Association for the Conservation of Biodiversity in Kazakhstan (ACBK); Uzbekistan Zoological Society (UZS); Ministry of Nature Protection of Turkmenistan; Turkmenistan Society for Nature Conservation

Important Bird Areas (IBAs) are an effective tool worldwide in site and species conservation. The European Union respects the quality and effectiveness of this biodiversity conservation tool and protects IBAs through EU legislation (NATURA 2000). More than 10,000 IBAs have already been identified in the world and national conservation organisations are engaged in monitoring and protecting them.

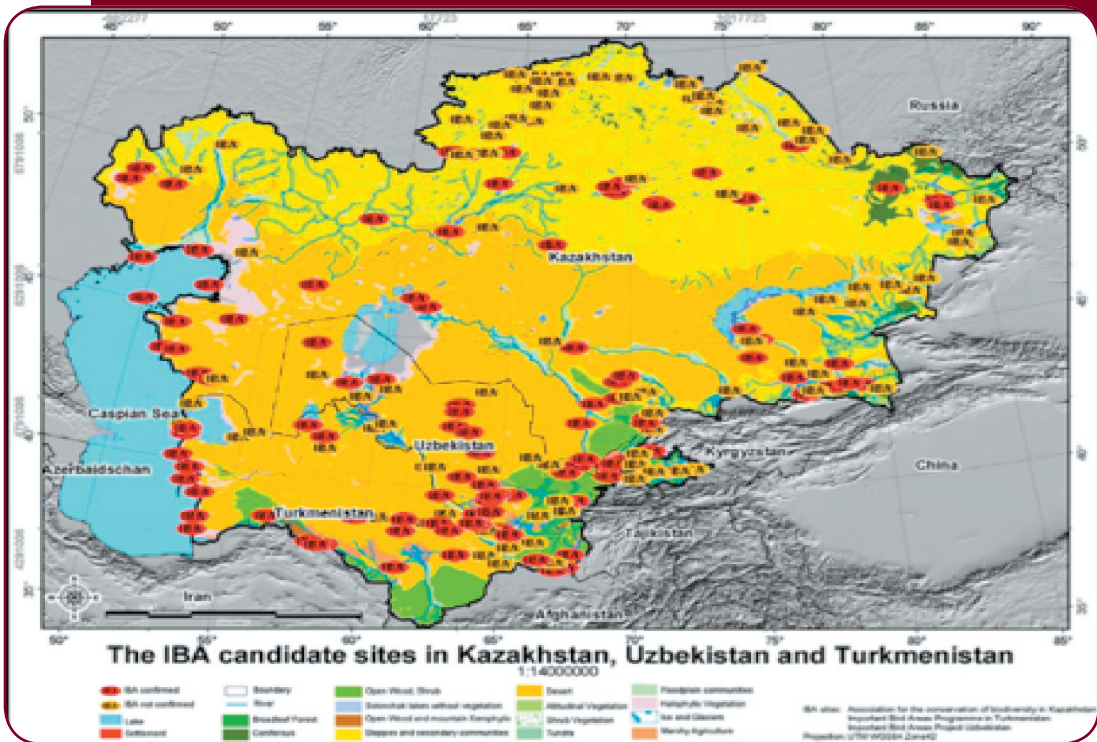
A conspicuous gap of the global IBA map was Central Asia. This gap is being largely closed by this project, which has identified and designated 219 IBAs in Kazakhstan,

Uzbekistan, and Turkmenistan. Together they cover almost 20 million hectares of steppe, semi-desert, desert, mountain and extensive wetland habitats, an area almost equal to the land surface of the UK. It is expected that the first of these will achieve legal protected status in 2009.

The host-country partners in Turkmenistan, Kazakhstan and Uzbekistan are significantly increasing their technical and managerial capacity to be leading conservation organisations in their countries.

A major effort has been made to identify and train biology students to become the future generation of conservationists in the project countries (currently the lack of young biologists/conservationists is a major obstacle in Turkmenistan, Kazakhstan and Uzbekistan): More than 65 students have already participated in training activities and currently 12 student wildlife clubs are established as part of this project using additional external funding.

The three project countries showing all remaining IBA candidate sites (yellow) and already confirmed IBAs (red).



## Conservation of the mangrove finch *Cactospiza heliobates*

Glyn Young\* & Birgit Fessl  
Project ref.: 15-005

Durrell Wildlife Conservation  
Trust; Charles Darwin Founda-  
tion; Galápagos National Park

The Mangrove Finch Project has succeeded in raising the profile of the Galápagos archipelago's most endangered bird. Even before results of the first year's fieldwork can be evaluated, interest locally and internationally in this poorly known bird has been significantly increased.

The Project has also helped promote a new discipline in Galápagos conservation, that of single species led action. This has continued with the development of the Floreana Mockingbird Action Plan.

A captive husbandry facility has been built at CDRS, to be used for husbandry and breeding trials. This was greatly extended

to incorporate both Mangrove Finch and Floreana Mockingbird restoration projects.

In an expedition searching for the critically endangered finch in former inhabited areas, the Project team led by Birgit Fessl confirmed in February 2008 the presence of Mangrove Finch in the area of Carthago Bay, Isabela 11 years after their first discovery in this location. The researchers could identify at least 4 birds at different locations by their characteristic beak and plumage as well as by a peculiar song that is different to the song of the only other known breeding population in western Isabela. The

presence of Mangrove Finches after such a period of time leads to the possibility that there is a small but stable population in the extended mangrove area of Carthago Bay and its vicinity.

Mangrove Finch *Cactospiza heliobates*



## Cryo-conservation Centre of Excellence for Sub-Saharan Africa (CCESSA)

CCESSA, together with the Darwin Initiative and the Millennium Seed Bank Project, were given considerable exposure at the African Union/Economic Commission for Africa Science and Technology Exposition, which was held in parallel with the African Union Heads of State meeting in Addis Ababa, January 2007. In excess of 2000 delegates attended the exposition and visitors to the stand included the South African President, and the South African Ministers of Science and

Technology, and of Foreign Affairs, as well as other African leaders.

CCESSA were very effectively represented by our project students. The display was one of a few selected to present a special showing to the representatives of the Gates Foundation. The display and the travel and subsistence costs of the student presenters were sponsored by the South African Department of Science and Technology.

P. Berjak, N.W. Pammenter &  
H.W. Pritchard\*  
Project ref.: 14-056

RBG Kew; University of  
KwaZulu-Natal

# Temperate Rainforest Conservation in Chile

Macaulay Institute; Wildlife Conservation Research Unit; Pontificia Universidad Catolica de Chile; Corporacion Parques para Chile

Nicolas Galvez, Jerry Laker, Alison Hester\*, Rodrigo Calcagni, Karl Yunis, Mercedes Ibanaz & Cristian Bonacic  
Project ref.: 15-006

Linking science and technology with community-oriented social change is the essence of this Darwin project, and the mechanism by which we expect the Pucon area, the study site for this project, to become the benchmark for environmental good practice in Chile. Using an interdisciplinary approach, combining the strengths of the university and NGO sectors, we are making progress to inform landscape level decision making based on reliable, science-based knowledge.

There have been several key advances during the first 9 months:

## Establishing the Centre for Biodiversity, Pucon

The Centre for Biodiversity is an innovative concept in Chile. It involves a public-private partnership in which commercial activities, in the form of a visitor centre and ecotourism, will support not-for-profit activities, such as conservation science, environmental training and workshops. A site has been acquired strategically located at the entrance to a protected area of araucarias, the Cañi. Office facilities have been established for 5 researchers on this site, plus another office for GIS in Pucon. The Cafe del Centro is complete and running.

The Centre has already hosted a range of talks and meetings since its opening in February 2007 and will provide a focus for environmentally positive action in the area through conservation work involving volunteers, thesis students, focus groups and courses.

## Launching the conservation science programme at the Centre for Biodiversity

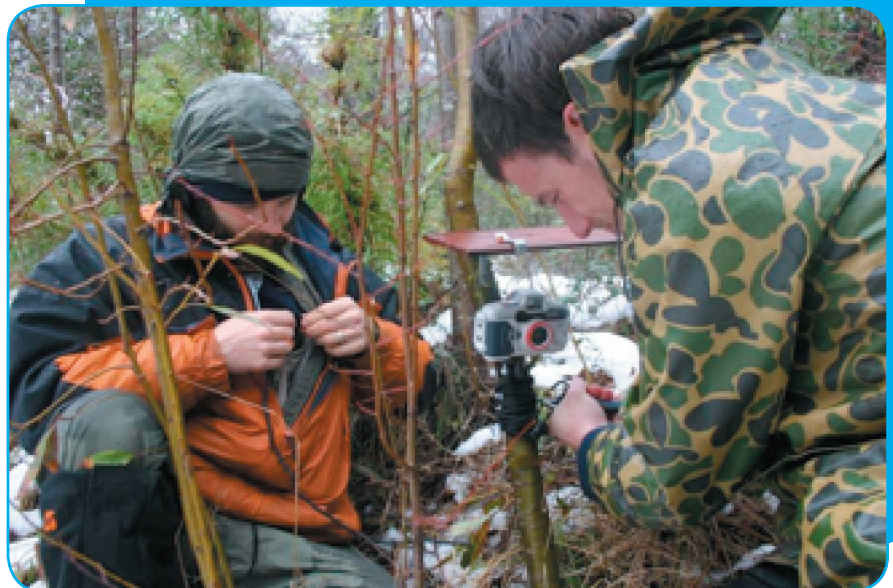
The Centre for Biodiversity is working to encourage private landowners to practice conservation management either within or outside the National Park system. This is the key to generate wider benefits for society, linking biodiversity, sustainable development and landscape management.

The science strategy developed within the project will support this process. We have opened up several approaches that will generate information about the biodiversity of the region and processes of land use change. In this first phase, we have advanced well in 3 main areas:

1. Preliminary evaluation of large mammal presence and distribution through camera trapping. This work is supplemented with interviews with farmers to identify points of conflict, such as livestock predation and hunting, between wildlife and the local community. Chilean partners have secured a grant to supplement this work.

2. Digital cartography of vegetation, hydrology and land use in the study zone based on aerial photos. Chilean partners have secured grants to fund

MSc students installing camera traps.



mapping, based on missions flown in Jan 2007.

3. Establishment of the Comité de Iniciativa to create the new Araucarias Biosphere Reserve. The nucleus zone of the new reserve will extend to almost the entire range of the Araucaria tree, while its buffer zone will provide a framework for sustainable development in the Andes sector of the IX Region of Chile. The Darwin project is hosting this process at the Centre for Biodiversity.

# Conserving biodiversity in the modernising farmed landscapes of Uganda

Phil Atkinson, David Mushabe,  
Olivia Nantaba & Juliet Vickery\*  
Project ref.: 14-032

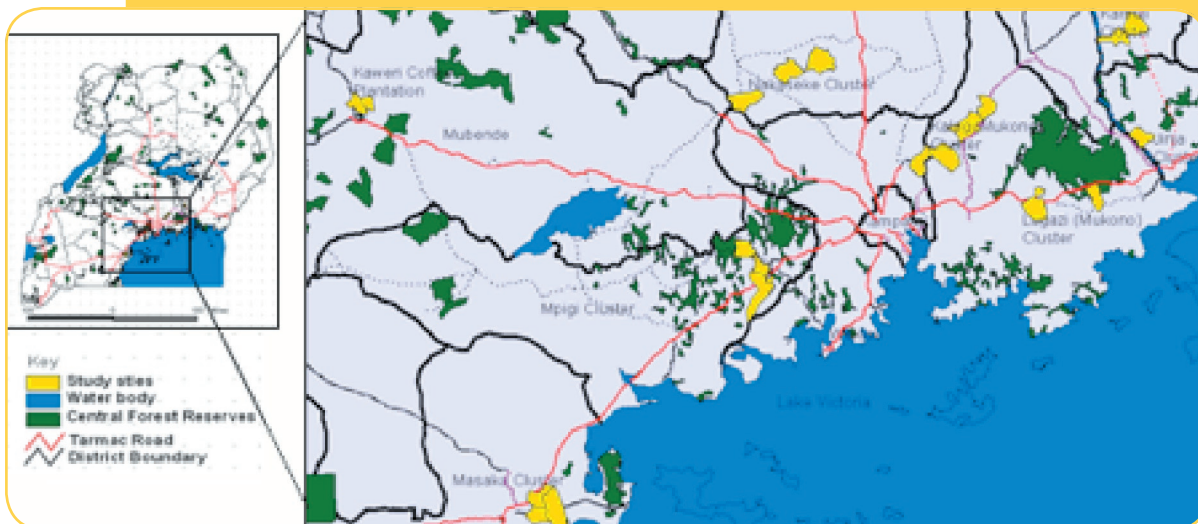
Traditionally the wider countryside has been relatively undervalued for its biodiversity. Instead, attention has focused on biodiversity hot spots and protected areas. This project begins to address this knowledge gap by providing

types of habitats and the bird communities in our study areas. Areas of high population density tend to have more maize and sugarcane and less banana. This has an impact on birds, with more forest dwelling species being found in areas of low intensity (higher population density). Although we are just starting the full analysis, the number of larger trees stands

BTO; RSPB; Bournemouth University; University of Reading (CAER); NU; MUIENR; MUDFBEM; DIIS; UWS; PMA; NAADS; NEMA

The second major achievement has been the establishment and development of the Agrobiodiversity Working Group. Made up from about 20 organisations, this met four times during 2006 (twice with farmers in the field). There is real enthusiasm for this group

Locations where the 26 study sites are located. Sites were grouped into eight clusters and there were 2-4 sites per cluster. Each yellow polygon represents a parish.



quantitative information on patterns and trends in biodiversity (birds, insects [with an emphasis on pollinators] and trees) in relation to agricultural land use in a sample of smallholder and large-scale farming systems in the Ugandan banana / coffee arc around Lake Victoria.

Initial analysis of bird survey data has led to some exciting findings. Population density, our measure of farming intensity, is strongly related to both the

out as being important, especially for large frugivores such as Black and White Casqued Hornbill and Great Blue Turaco and we expect more relationships to become apparent as we fully analyse the data. Interestingly, the amount of fallow or the number of trees was not related to farming intensity. This is encouraging as it suggests that even in intensive farming areas the landscape could be modified to accommodate these large frugivores.

to continue (at government and NGO level) and organising a joint workshop with EPOPA (promoting organic farming in Africa) was one of the high points in 2006/2007. The group have developed their own Terms of Reference and one of the major tasks in 2007/2008 is the development of the handbook for extension workers that will promote biodiversity- and farmer-friendly farming.