# Darwin Initiative Newsletter

July 2012

Welcome to another issue of the Darwin Initiative newsletter. We are in our busiest period here at the Darwin Initiative - applications time!

While in Brazil for Rio+20, Caroline Spelman, the Environment Secretary celebrated the success of the Darwin Initiative by announcing another £7.5 million to fund further projects. Announcing Round 19 of the Darwin funding, Environment Secretary Caroline Spelman said:

"*It's been twenty years since the UK launched the Darwin Initiative in Rio, and there is no better way to celebrate its success than in the place where it first started. Since its launch, the Initiative has provided £88 million to 756 projects in over 150 countries. The money and expertise provided by the UK has funded projects across the globe, from helping to protect the endangered pink river dolphins of Brazil to saving the world's most endangered duck, the Madagascan Pochard. So I'm delighted to be able to announce more funding that will allow the Initiative to continue its legacy and save many more vulnerable species and improve the lives of some of the poorest people*".

Following this announcement the Darwin Initiative opened to new applications for Main Round projects and Post Projects with a deadline in August. Further calls will be made for the UK Overseas Territories Challenge Fund, Scoping Awards and Fellowships later in the year.

To find out more, check out the website darwin.defra.gov.uk and Twitter @Darwin_Defra.

## Darwin Initiative to Strengthen the World's Largest Marine Reserve

## (19-027)

Clownfish and anemone on the reefs in BIOT Credit J. Turner

Two years ago, the UK Government declared the Chagos Archipelago a Strict Marine Reserve, meaning that flora and fauna cannot be removed, and their habitats cannot be modified. The Reserve covers over 250 million square miles, and is the largest Marine Reserve in the world to date. The challenge now is how to best manage the Chagos Marine Reserve. Scientists from Bangor and Warwick Universities and the Zoological Society of London have been awarded a Darwin grant in

Spinners dolphins in BIOT Credit J. Turner

Round 18 to strengthen the Chagos Marine Reserve by providing scientific knowledge for effective management, and to develop a strategy that engages the support of potential stakeholders through outreach, education and engagement.

Some of the world's most pristine coral reefs occur around the Chagos Archipelago. Nesting turtles, giant robber crabs and seabirds inhabit the islands, and towers of coral arise from the deep lagoons providing habitat for dense shoals of fish. Sharks, rays and Spinner's dolphins are frequent visitors to the atoll reefs, which descend into deep, unexplored waters containing sea mounts and deep sea plains.

The UK is ranked 13th by total coral reef area out of all nations, largely due to the Chagos, but public awareness of the near pristine biodiversity is poor. The British Indian Ocean Territory is located south of the Maldives and there are 5 coral atolls with 54 small islands exposed, and 12 submerged banks. All islands are uninhabited except for Diego Garcia atoll, where there is a US naval facility. The territory includes about 50% of the Indian Ocean's most healthy coral reefs including the world's largest atoll structure, and 60,000 km2 of shallow water habitats. The Reserve's waters are used by many migratory species such as whales, sharks, turtles and sea birds. Chagos harbours 76 threatened species (IUCN Red List) including Hawksbill turtle, Red foot booby, silky shark, Coconut crab, and Bigeye tuna, providing an internationally important refuge and reference site.

The rationale for the project is that a large Ocean Legacy Reserve will protect functional ecosystems and species, benefiting the large but poor human populations around the Indian Ocean. The project will generate the best scientific data to supply information for the British Indian Ocean Territory Administration to manage the Chagos for the foreseeable future, to increase the resilience of reefs and associated ecosystems in response to global changes and possible human resettlement. Long-term benefits will be the protection of biodiversity in a wide range of ecosystems, including deep sea, pelagic, reef and island ecosystems, and protection of functional links between ecosystems, and of migratory species. The scale of the Reserve suggests that benefits will be significant at an ocean scale, and communities in some of the poorest countries around the Indian Ocean may benefit from the preservation of a genetically-balanced stock of species which may overspill juveniles and adults to unprotected regions. Other than military and support personnel, there are no local communities in the territory. However, the project aims to consult, involve, and educate Chagossian communities in the UK, Mauritius and Seychelles in the rich natural environment and conservation of the islands and surrounding marine environment.

# Enhancing the Relationship between People and Pollinators in Eastern India (19-024)

Rather than focussing on a particular species or habitat, this project is focussed on the pollination services provided by the natural environment. The aim is to enhance the knowledge and understanding of pollination services through participatory research with local communities, which we hope will result not only in healthy pollinator communities to benefit livelihoods, but will additionally lead to the protection of natural habitats for other wildlife.

India is still predominantly an agrarian country with large numbers of small and marginal farming communities whose food security depends on the sustained availability and quality of local crops, particularly legumes and vegetables such as gourds, pumpkins, and aubergines. These crops are pollinator-dependent, so these communities rely on a healthy ecosystem to provide pollinators, which are largely wild insects. Recent research reveals a declining yield in pollinator-dependent crops in India which is likely to be due to adverse impacts on the natural pollinator populations. In many areas crops must be hand pollinated. It is vital to avoid a pollination crisis for Indian subsistence farmers and there is an urgent need to empower communities to sustain their livelihoods.

A Centre for Pollination Studies has been established at Calcutta University with laboratory facilities and workshop space. We hope it will become a centre of expertise attracting national and international researchers to work on pollination ecology in India. In the states of Tripura and Orissa, satellite field stations are being established where researchers and rural advisors will work with local farmers to address pollinator limitation and the consequences for key vegetable crops.

One of the most encouraging aspects of the project so far has been the enthusiastic response of the farming community and the regional governments who are giving the project strong support. There is great potential for participatory learning at the field centres where Darwin Fellows and Rural Advisors will be based, working and living in the farming community, forming partnerships with local people to dovetail traditional knowledge with new research. Research programmes to investigate the fundamental ecology of the wild pollinators have been established. Darwin Fellows will look at pollinator limitation along a gradient of agricultural intensification, evaluating the impact of different agricultural practices on wild pollinators. The local community will be fully engaged in the research, collecting long-term data on pollinator abundance and crop yield and also field-testing interventions which aim to increase pollination services. The idea is that the lines of communication between the researchers and the farmers are open so that ideas can flow freely between them. The project started in April, so there is a long way to go but the early signs are good.

The project team meet with farmers in Remuna, Orissa Credit A Chatterjee

Felicien Randrianandrianina and a local elder making a radio programme about tenrecs
Credit Madagasikara Voakajy


# Using modern tools to support traditional management (17-008)

Outside Madagascar few people may have heard of tenrecs. Tenrecs are a diverse group of insectivores which, like most of Madagascar's native species, are found nowhere else on earth. They are also the most widely consumed of any of Madagascar's endemic wildlife. Interviews we have carried out during a 3-year Darwin Initiative-funded project to investigate the scale of bushmeat hunting in Madagascar suggest that 60-80% of most communities have eaten tenrecs in the last year, many consuming them regularly. For poor people who may lack access to animal protein from farmed animals, this is an important and popular food. The most commonly eaten tenrec (Tenrec ecaudatus) has one of the highest fecundities of any mammal (giving birth to litters of up to 30) and is classed as a game species (i.e. can be legally hunted). However, despite this extraordinary productivity, anecdotal evidence suggests that populations are declining in response to over-harvesting. Our Darwin Initiative project carried out research to investigate the scale of the issue and identify possible solutions.

In 2010 and 2011, two MSc students from the University of Antananarivo (Cynthia Raveloson and Mirana Rajaonera) worked with us carrying out their dissertation research in the Menabe region of western Madagascar. In the Menabe, tenrecs are commonly traded in markets and sold in small restaurants. Together we uncovered strong evidence that the price of tenrecs has increased rapidly over the past two decades as the number and size of individuals available decreased, and the time spent and distance travelled for hunting increased. In the past it was taboo (fady) to hunt pregnant females and baby tenrecs. However these traditional taboos appear to be breaking down and people now hunt, sell and consume any tenrecs they find regardless of reproductive status or size.

There was real concern expressed to us from local people, particularly village elders, about the worrying trend in tenrec populations. People in this region enjoy eating tenrec and see it as important culturally. We discussed possible solutions and the elders wanted to try and get the message across to the younger generation about the link between the break-down of traditional management and the possibility that tenrecs will no longer be available to be hunted. We were able to make use of modern communication tools to get this message across widely in the region. We produced radio

programmes (broadcast every Sunday afternoon over a two month period) which included stories told by elders about the history of the taboo, and observations from hunters about the reduction in tenrecs available. We also organised village discussions, school visits and a poster session which raised the issue of tenrec decline and the possible causes.

Tenrecs roasting by a fire. Credit Madagasikara Voakajy

The campaign had a positive response and at least one commune is now introducing a dina (traditional law with support of state legal institutions) which bans the hunting of pregnant and young tenrecs. In the words of one local man; “Raha hajain’ny mpihaza ny fady dia tsy tokony ho lany taranaka izy” (“If the hunters respect the traditional taboo, tenres should not run out”). We hope that our project, by helping facilitate a broad discussion about an issue of clear regional importance, will have a positive impact on reducing the pressure on this fascinating endemic animal, while sustaining the valued livelihood option (hunting and consuming tenrecs) into the future.

## Breaking New Ground in Liberia

## (19-004)

Liberia provides a stronghold for several globally endangered species, including one of the last significant populations of the pygmy hippopotamus (*Choeropsis liberiensis*). A hugely diverse array of species are found in some of the largest remaining intact blocks of the threatened Upper Guinean Forest in Sapo National Park, yet many more remain undiscovered, with 15 new plant species found in one 2010 botanical survey alone.

Years of devastating civil war have taken their toll on national capacity, disrupting the training of natural resource personnel, destroying the infrastructure for research and education and leading to a professional brain-drain.

The residents of Jalays Town, a small village of approximately 400 adjacent to Sapo, have long known the value of the park and its biodiversity, but have seen little benefit since the formation of the park in 1983.

A major new project supported by the Darwin Initiative has brought together Fauna & Flora International (FFI), the Forestry Development Authority, the University of Liberia, the Zoological Society of London, the University of Cambridge and the community of Jalays Town to develop a Centre of Excellence for Ecological Research and Conservation

A family of curious African forest elephants encounter Sapo camera traps for the first time Credit FFI FDA ZSL

The research centre was honoured by a traditional ground breaking ceremony on the 6th July by Jalays Town community members Credit B Forster_FFI

Learning (CEERCL) at Sapo. Hosting Liberian students and natural resource management professionals for training in field research methods and conservation issues complementing concurrent curriculum development, CEERCL will build capacity in the next generation of Liberia's natural resource managers, whilst generating baseline information on Liberia's biodiversity. Professor John T. Woods of the University of Liberia also recently disclosed that students of the University of Liberia have created a biodiversity conservation club to further promote the goals and objectives of CEERCL.

The Centre will provide training and employment for local residents which will diversify local livelihood options in the area and support the production of urgently needed information on local livelihood strategies and the use of natural resources. Illustrating local support for this project, land has been donated for the Centre by the Jalays town community, who held a traditional ground-breaking ceremony on June 9 to commemorate the occasion.

Bernhard Foster, technical assistant for the project, commented, "*To implement ambitious research activities in and around Sapo National Park, the support of the local community is welcome and needed to conduct field activities and run the centre successfully. No one is better qualified as those people who have lived in this area for generations*."

Dr. Mary Molokwu, project co-ordinator, added, "*It is thanks to support from the Darwin Initiative, USFWS and Basel Zoo that this project has become possible, and we look forward to working with the people of Jalays town to provide Liberian students and Forestry professionals the environment and opportunity to promote the conservation and knowledge of Liberia's rich biological diversity. We invite the international research community to explore the novel research opportunities created by this laudable initiative.*"

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# Developing tools for reducing biodiversity losses in tropical agricultural landscapes (17-003)

Winkler traps Credit N Towato

In our study region on Borneo, previously extensive areas of rainforest now exist as scattered fragments in predominantly agricultural (oil palm) landscapes. Reducing biodiversity losses arising from this degradation and fragmentation of rainforest is a critical conservation concern. A strategy of maintaining forest patches within plantations has been proposed, in order to enhance biodiversity within oil palm landscapes, and we have been examining how forest quality within fragments affects tropical leaf-litter ants. We have compared rainforest fragments formed from highly degraded logged forest ('Low Grade Reserves', LGRs) with those formed from largely undisturbed primary forest ('High Grade Reserves', HGRs), and with control sites in continuous forest. The faunal composition of ants in HGRs was more similar to continuous forest than to LGRs, and LGRs support a higher proportion of generalist species. For similarly-sized fragments, LGRs support ~ 20% of the species richness of HGRs. We conclude that forest restoration and rehabilitation of LGR plantation fragments to achieve similarly high habitat quality to HGRs may increase LGR effectiveness as reservoirs of biodiversity within plantations.

Basket making women from Ulu Papar are skilled in this craft using forest resources. Credit N Jackson

# A Community Protocol for Ulu Papar (17-030)

In 2004, a consortium of partners initiated a joint research project to investigate and document resource use patterns in Ulu Papar, an area in a remote part of Borneo home to almost 1000 indigenous Dusun. Living within nine settlements, this community depends on the natural environment for their daily subsistence – as a source of food, crafts, medicine, construction materials, recreation, cultural heritage, history and identity. This eight-year collaborative research initiative focused on documenting key ethnobiological resources important for community livelihoods and how they are used, managed and protected by the community. The project,

Community identifying sites on the Ula Papar participatory 3D map. Credit Inanc-Tekguc.

led by the Global Diversity Foundation, Sabah Parks and the Ulu Papar community and funded by the UK Darwin Initiative, involved a number of government and non-government organisations.

An important outcome achieved through this project is the enriched capacity within the community, a critical feature in promoting their role in the conservation and management of Ulu Papar. Over 300 community members from Ulu Papar villages participated in research activities, whether as community researchers, collaborators, informants, workshop participants, field guides or hosts. Indigenous community researchers were trained in multidisciplinary research techniques, including participatory GIS, 3D modelling and other methods.

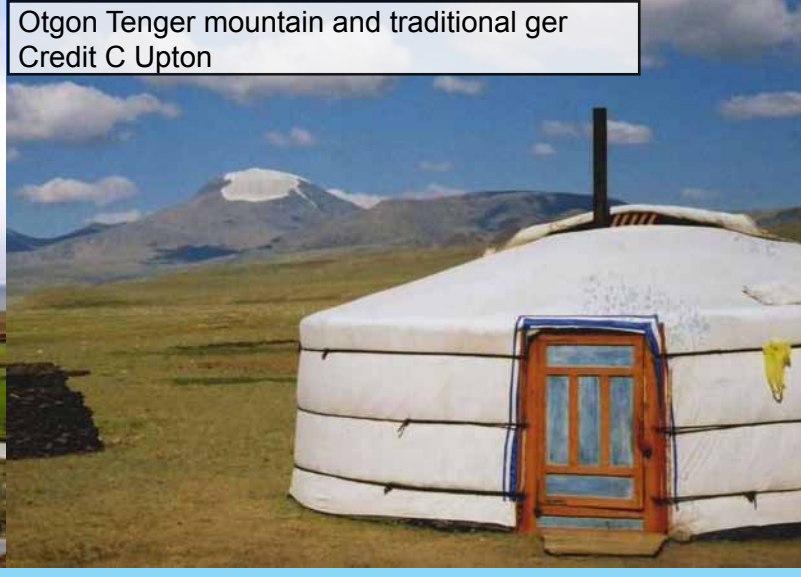
This enhanced ability and engagement in conservation action allowed the people of Ulu Papar to come together to create the Ulu Papar Biocultural Community Protocol. The need for this Protocol surfaced amidst threats to the community and their environment borne from restrictions on the protected area, Crocker Range Park, that limited villagers' access to forest resources, and plans for a development project that jeopardises the very existence of some of the villages in Ulu Papar.

The Protocol, a result of a consultative process that began in 2010, describes who the Ulu Papar community is, their way of life and culture, and the activities that sustain their daily lives, such as agriculture, hunting, and harvesting forest and river resources. It also articulates the interests, rights and responsibilities of the Ulu Papar community as a united collective in the preservation, management and utilisation of their territories and culture. Ultimately, this Protocol reflects the desire of the community to defend their identity, unique way of life and livelihoods, serving as a reference to gain recognition of Ulu Papar as an important site for the protection and promotion of biocultural heritage in Sabah.

**Press Releases and Darwin Initiative projects**

Attention all project communications teams. If you are putting out a press notice can you please contact the Defra Press Office first. The Defra Press office is there to help projects gain wider coverage of their work. They are able to gain access to Ministerial quotes in support of Press Releases, generally within 24-48 hours of request and have good links with much of the environmental press and are able to advise and support projects as to how best to promote their projects. Contact Laura.Hunter@Defra.gsi.gov.uk 0207 238 5334

Herders' households on the steppe, Mongolia
Credit C Upton



Otgon Tenger mountain and traditional ger
Credit C Upton

# Values and Valuations: New Approaches to Conservation in Mongolia (19-021)

Recent headlines in the UK and international press have highlighted Mongolia's latest reported annual GDP growth rate of 17.3%; astonishing in an era of global recession. With a major mining boom fuelling much of this growth, the future of the traditional pastoral economy and Mongolia's important biodiversity heritage are issues of vital, contemporary debate.

A sparsely populated, landlocked country, Mongolia's extensive taiga, steppe, mountain and desert ecosystems are home to a variety of important, rare and endangered species, including the Gobi bear, snow leopard, Bactrian camel and iconic migratory species such as the saiga antelope and Mongolian gazelle. Together with endemic plant assemblages and globally threated bird species, these epitomise an important biodiversity heritage.

As a signatory to the major global biodiversity conventions (Convention on Biological Diversity, Convention on International Trade in Endangered Species of Wild Flora and Fauna; Convention on the Conservation of Migratory Species of Wild Animals), Mongolia is officially committed to the protection of this heritage. Nonetheless, recent country reports highlight growing threats to and loss of biodiversity, linked to factors such as desertification and pasture degradation, mining, climate change and poorly regulated hunting and logging.

With the support of Darwin Initiative funding for a 3 year project (2012-2015), partners from the Mongolian Society for Rangeland Management (MSRM), the Mongolian Academy of Agricultural Sciences, including the Centre for Ecosystem Studies and the Mongolian Nature Protection Civil Movement Coalition, are working with Dr Caroline Upton and colleagues at the University of Leicester in the UK to develop and implement novel approaches to conservation issues. Through MSRM's well-established network of herders' Pasture User Groups (PUGs) and drawing on contemporary concerns with ecosystem services and their links to biodiversity and well-being, the team will be working with herders in contrasting ecological zones to explore, map and value ecosystem services and to develop and trial pilot Payment for Ecosystem Services schemes. Of particular importance to the approach is the participatory development of locally appropriate approaches to non-economic valuation and to evaluation of cultural services, thus facilitating recognition of customary knowledge, values and practices in conservation planning. These will complement more traditional economic approaches to valuation.

Over the three years of the project, the team aim to pilot test the socio-economic and ecological viability of particular PES schemes, for example linked to the Plan Vivo standard, at selected case study sites in Mongolian rangelands. Through this they aim to contribute to the development of a good knowledge base for future policy and practice, including evaluation of trade-offs between competing land uses; critical issues at this point in debates over the conservation of Mongolia's biodiversity heritage.

Movile Credit B Gibbons

# The Prince of Wales visits Darwin project floristic hotspot in Transylvania (EIDP037)

Fundatia ADEPT John Akeroyd presenting HRH Prince Charles with DI guides to the flora and lepitoptera of the Tarnava Mare

In July 2012 Prince Charles visited the Fundatia ADEPT Transylvania project, a Darwin Initiative-funded project that has achieved establishment of a European protected area (Tarnava Mare Site of Community Interest, Natura 2000) and is finalizing a management plan for the area.

The Tarnava Mare area is a High Nature Value Farmland (HNVF) landscape of 85,000 ha in Southeast Transylvania, with remarkable faunistic and floristic diversity. Identified species, all threatened and protected at European level but still having stable populations in the area, include 10 flora species, 23 mammal species, including wolf, bear, wild cat, otter, water shrew, fat dormouse, common dormouse and several bat species, 55 bird species, including the lesser-spotted eagle, honey-buzzard, sparrow-hawk, goshawk and corncrake, and at least 6 lepidoptera species including Scarce Fritillary, Scarce Large Blue, Woodland Brown, Large Copper, Willowherb Hawk-moth.

On 6 July Prince Charles visited the movile, which the project has identified as the botanical hotspots in this extraordinarily diverse area. The movile are natural hillocks, found in isolated groups, the result of geological uplift, erosion and slumping. Usually not more than 100m in diameter and 30m in height, the movile vary in micro-climate from extremely hot and dry, sunny south-facing sides to cooler, shady north-

facing sides. Because they offer a wide range of micro-climates, a great number and variety of plant species occurs, often varying over a few metres, ranging from plants characteristic of dry, steppic grassland to those of quite damp grassland, woodland-edges or even mountain slopes. The flora varies both across hillocks and between adjacent hillocks and slopes, a so-called 'gamma diversity' pattern of plant distribution that is particularly vulnerable to agricultural intensification. Such apparently random assemblages of plants represent ancient relicts of ecological and climatic conditions over past millennia. But unlike the situation in many European countries, they are not isolated islands within intensively managed farmland, requiring special management: rather, they exist in a massive protective buffer of semi-natural, extensive grasslands. It is this broad landscape which Fundatia ADEPT is seeking to maintain by working with the thousands of small-scale farmers of the area.

Many plants on the movile, especially on the driest slopes, are among the rarest and most threatened in Europe, and four (Adenophora *lilifolia, Crambe tataria, Echium russicum* and *Iris aphylla*) are listed on Annex II of the EU Habitats Directive as in need of special protection. Several other plants are endemic, and one, *Pulsatilla pratensis*, is probably a distinct endemic subspecies. Many plants on the movile are not only rare but also of great beauty: for example A*donis vernalis, Daphne cneorum, Orchis tridentata, Prunus tenella, Salvia nutans* and *S. transylvanica*. Each movile is a miniature botanic garden.

The movile are the most remarkable hotspots in this area. Under the Darwin Initiative project, Fundatia ADEPT hopes to assure the future of the whole Tarnava Mare area, one of Europe's best preserved lowland landscapes.

## Thailand hosts Wildlife Forensics Wrap-up Seminar (17-019)

In the heat of Bangkok city, Thailand, Darwin project 17-019 delivered in July an ambitious combination of training and an International Seminar on Wildlife Forensics. Over 80 officers from Thailand's key wildlife enforcement bodies were trained in DNA sample collection and submission, to increase the volume of good quality samples sent to Thailand's wildlife forensic laboratory. The types of sample submitted can range from a swab of blood taken from inside a suspected poacher's car, to an entire haul of illegally shipped ivory. Hence investigators need to know how to package samples, how to store them correctly, and who to contact if they are unsure about what to do. The training was led by Dr Kanita Ouithavon, a Thai geneticist who has been supported during the project in setting up Thailand's first dedicated DNA wildlife forensics laboratory, called WIFOS.

The project has been led by TRACE Wildlife Forensics Network, in partnership with TRAFFIC South East Asia. "Using local capacity to lead the enforcement officer training was key to its success" stated TRACE


Enforcement officers trained by local lab staff Credit ASEAN-WEN PCU and TRACE WFN

Director, Dr Rob Ogden. "*Not only was the training delivered in Thai language, making it accessible to more officers, it also meant that Dr Kanita and other staff at her lab established themselves as the key contact points for these officers when there are queries about the suitability of potential samples*".

After a busy day training the officers, TRACE and WIFOS staff, supported by staff from the secretariat of the ASEAN-WEN (Association of South East Asian Nations Wildlife Enforcement Network), went on to deliver a highly successful two day International Seminar on Wildlife Forensics. The event was attended by some 170 personnel from the ASEAN region, the UK and the USA. International speakers included Dr Lucy Webster, head of the Scottish SASA laboratory; Trey Knott, an expert in using DNA to investigate illegal trade in marine species, from the USA's NOAA Marine Forensics Laboratory; The UK RSPB Senior Investigator Guy Shorrock, and Interpol's Justin Gosling. ASEAN speakers included scientists from the laboratories which have been supported and developed under the TRACE lead project.

Speakers from Thailand, Malaysia, Indonesia and Vietnam described their current capacity and capabilities before closed sessions allowed the future of Wildlife Forensics in ASEAN to be discussed.

*"The number of people attending both the enforcement officer training and the Seminar shows how well integrated TRACE have become in the ASEAN region during this project" said Project lead, Dr Ross McEwing of TRACE. "It also shows how much more there is still to do to make sure the ASEAN region as a whole can make full use of wildlife forensics to investigate illegal wildlife trafficking, and to increase the intelligence gathered about this type of criminality. Perhaps one of the most promising outcomes of the project is that TRACE was last month formally endorsed as a recognised partner, listed in the ASEAN-WEN Terms of Reference, meaning we are embedded and invited to return with additional funding at any point in the future*".

A brochure describing the project outcomes in more detail can be downloaded from the project website at: http://www.asean-wfn.org/?p=549

## Into the Forest - Experiencing Batwa values by exploring the forest together (19-019)

In mid-June, Batwa elders led a group of Fauna & Flora International staff, park rangers and local leaders to explore their cultural heritage in the forests of Semliki National Park. Lying in the Albertine Rift valley, these forests are home to some of the Africa's highest levels of biological diversity. They were also home to the Batwa, an indigenous hunter-gatherer people, until they were evicted to create the national park. The combination of cultural and biological values was the platform on which this Darwin Initiative project was built. The connections between culture and biodiversity are the basis for improving management and governance of the park. The project and park staff were there to learn what this forest means to the Batwa and how Batwa values can be integrated into

Dingolo, a Mutwa elder, shows the group a medicinal herb from the forest. Credit FFI_P Wairagala

King Nzito beside the Nsaka which houses sacrificial items used during worship. Credit FFI_P Wairagala

management of this and other parks.

Visiting the forest as a group, wearing leaves on their heads and around their waists, walking the narrow forest paths under the high canopy gave the Batwa a chance to experience the forest as they once knew it and explain the meaning of the forest, its resources and of particular sites and species to their visitors. The Darwin Initiative is deepening understanding of links between biodiversity and human well-being. This exploration of Batwa values in the forest will help us understand how the natural world contributes to human needs, while at the same time, improving relations on the ground between Batwa and park management.

The Batwa narrated their stories, explaining the values of the sites, while team members asked questions. The group was led to sites associated with Batwa ancestors, to grave sites, and to sites for rituals associated with circumcision. Dancing sites for youths and for women were visited and the guides explained the significance of dances. Dances might celebrate and give thanks for a successful hunt, mourn the death of a family member, or simply be for the joy of dancing. Men, women, girls and boys all danced. They danced at different places, at different times, for different reasons and with different meanings. If dancing reflects the richness of the cultural connections between Batwa and the forest, a great deal remains to be explored.

The sites were elaborately described to inform future park and project activities and located for inclusion on park maps. The Batwa elders made it clear that all the sites visited, and the many others not visited, and the plants and animals of the forest, had meaning and significance for their lives beyond simply being resources needed for physical survival.

A few days in the forest is too short a time for the Batwa to find and describe all the sites and species of importance to them. It was a start, however, and allowed the park and project staff to begin to appreciate how Batwa values can contribute towards the park's management and its meaning. And the exploration, though just an initial exchange of information and perspectives between Batwa and park authorities, was an important step towards bridging the gap between them. As Grace Mbwatina, a Mutwa elder, noted,

*"… At least I feel happy today that there are signs that what we liked in the forest, we can access again, and feel as Batwa again within our home."*

# Coffee agroforests; a threatened habitat for biodiversity (19-018)

At the end of the last century the Polochic Valley and the lower slopes of the Pacific volcanic chain of Guatemala were covered with coffee plantations under the shade of a rich diversity of tropical forest trees. Studies by the Smithsonian Migratory Bird Centre (SMBC) in the mid 1990's showed the importance of these coffee agroforests for wintering birds from North America.

In the mid 90s coffee prices declined, crashing completely in the early 2000's, leaving thousands of coffee producers and hundreds of thousands of workers and small farmers with no income. Many farms went into bankruptcy and were then cleared for pastures, or rubber or citrus plantations. A study in 2004 by ANACAFE, with support from the British Embassy, showed the environmental impacts of these changes in land-use, and above all the threat to the fauna and flora that lived in the forest-shaded coffee.

Today only a few farms in the Pacific region of Guatemala maintain the traditional forest-shade coffee, most of these in the Palajunoj region above the city of Retalhuleu. Here several coffee estates and small-scale producer associations have declared their land as Private Nature Reserves to help protect the remnant forests and coffee agroforestry.

In the Polochic Valley we found that farms where SMBC conducted their studies have largely eliminated their coffee. However, indigenous K'chi communities maintain coffee production high up on the steep slopes of the Sierra Las Minas in the buffer zone of the Biosphere Reserve. Here, the Foundation for the Defence of Nature, works with communities to develop sustainable production systems that combine agriculture and forest and slow the need of families to clear more forest to plant maize. Also many of these coffee producers are members of the Association of Organic Producers of Polochic, which sells their coffee under Fairtrade and Organic certifications.

A coffee agroforest in Palajunoj Credit J Haggar

In May a consortium of institutions from Guatemala, the National Coffee Association, the Foundation for the Defence of Nature, the University of Valle, and the Natural Resources Institute of the United Kingdom have been visiting these communities to plan the start of a project supported by the Darwin Initiative of the UK government to study and conserve the biodiversity associated with the remaining coffee agroforests. The launch of the project was attended by the British Embassy and the National Biodiversity Office of Guatemala.

In our meetings with the farmer associations their interests have been focussed on improving their access to markets that recognize the biodiversity value of how they manage their farms, and how to determine the economic value of the environmental benefits they are providing. With the national biodiversity office – responsible for the implementation of the Convention on Biological Diversity – we aim to identify national policies that can support conservation by these land-owners. Over the course of the next 3 years the project aims to demonstrate the value of shaded coffee for biodiversity and support farmers in receiving recognition for this value.

# Darwin Initiative Project Results Presented at the International Coral Reef Symposium, Cairns, Australia.

## (18-016)

Over 2000 coral reef scientists from 80 countries gathered in Cairns Australia in July for the 12th International Coral Reef Symposium. The Symposium was organised by the Australian Research Council Centre of Excellence for Coral Reef Studies on behalf of the International Society for Reef Studies (ISRS).

Dr John Turner from the School of Ocean Sciences, Bangor University, Wales, and Tim Austin and Croy McCoy from the Department of the Environment, Cayman Islands Government, presented the results of the Defra Darwin Initiative Project to Enhance an Established Marine Protected Area System, Cayman Islands to the conference.

In the first paper, Tim Austin described how the Marine Protected Areas, first established in 1986, have proved to be a viable solution for survival of coral reef communities, providing refugia from overfishing and habitat degradation, increasing resilience against stressors from invasive species and climate change. The Darwin Project has provided evidence to show that coral cover, recruitment and coral reef health was higher in most of the Marine Protected Areas (MPA) compared to areas outside. As only 15% of the reef habitat is currently protected, and threatened by rapid development and a changing climate, greater protection is needed. The Darwin Project has planned a system of enhanced MPAs which could extend protection to between 30 and 50% of the reef environment, following a process of public consultation. There is no commercial fishing in Cayman, but artisanal, recreational and illegal fishing is poorly understood, and it is acknowledged that such small scale fisheries have the potential to heavily influence management success.

High density and biomass of fish within a Cayman No Take Marine reserve Credit J Turner

In the second paper, John Turner presented the results of structured questionnaires directed at fishers, and an analysis of illegal fishing from enforcement officer reports and legal files. Fishing is an important part of Caymanian culture, whether providing food, income or recreation to residents, and both the social and economic aspects of fishing need to be recognised when reviewing conservation strategies. The study showed that reef fish extraction was significant and that illegal fishing practices is an issue, with the potential to influence reef resilience and ecosystem functioning. Understanding the incentives to fish is important when planning MPAs, as is predicting behavioural responses of fishers to changes in MPA management, to avoid fishing effort displacement to vulnerable, previously undisturbed areas.

John Turner, Croy McCoy and Tim Austin present 3 papers reporting findings of their Darwin projects at the 12th ICRS Cairns Credit J Turner

Illegal fish catch and confiscated equipment Credit M Orr

In the third paper, Croy McCoy reported results showing that fish size, density and biomass is greater in the No Take MPAs than outside, and that there is a spillover of fish extending some 5 km from the reserve boundary. Fishers exploit this effect often fishing the boundary of the reserve. The Darwin Project studies provide evidence that MPAs maintain reef resiliency in Cayman, providing a basis for the review and enhancement of the marine protected area system to make it fit for purpose for at least another 25 years. The 12th International Coral Reef Symposium provided an excellent opportunity to disseminate the results of the Darwin Initiative Project to a large and wide audience of coral reef scientists, managers and conservation organisations from across the world.

## South Georgia (on our mind) (18-019)

Deep below the furious fifties winds that storm around Earth lies a submarine mountain chain that stretches from Cape Horn to the Antarctic Peninsula. Here the world's strongest current circulates the coldest and roughest seas, only diverted where an ancient, remote archipelago teeming with wildlife juts out of the deep sea. Throngs of penguins and seals crowd the shores in summer, whilst albatross fill the skies and whales feed in the krill-rich waters. Most of South Georgia's species however are hidden from view on the seabed – more even than known in Galapagos waters. Many of the species are from South America at their southern-most range, Antarctic at their northern-most limit or endemic. Whaling, sealing, fishing and other human activities have pushed some (e.g. Wandering Albatross) to endangered levels.

The first polar Darwin Initiative project was an ambitious plan to collate and map 130 years worth of biodiversity records for South Georgia into an open access, international database. This could then be used to interrogate existing knowledge for whether there were hot- and coldspots of knowledge, plan multi-depth, multi-apparatus science cruises to target sampling to where we knew least. This information could then be analysed to aid zoning of the world's largest Marine Protected Area. The project was based at British Antarctic Survey lead by Dr David Barnes and Oliver Hogg, hosted by the Government of South Georgia and South Sandwich Islands,with the Shallow Marine Surveys Group as the main partner organization.

An extra-ordinary 24,000 records of 1800 species were found, checked and have been entered into http://www.antarctica.ac.uk/sgmarbase, and will soon be viewable through the international database http://www.scarmarbin.be. These represent 22 phyla (two thirds of major animal types on Earth). This

South Georgia's forests are giant kelp (*Macrocystis pyrifera*) with *Himantothallus grandifoliusum* in the foreground Credit SMSG

*Margarella tropidophoroides* an endemic sea snail Credit SMSG

aided the planning of science cruises to sample the least known and potentially most vulnerable areas. A camera system was designed and built specifically for one such cruise yielding high quality images of dense and rich life on canyon sides. Specimens collected are being sent to experts across 16 countries and have led to 6 scientific papers, as many press releases and even postage stamps of marine life found. Few (<1%) of samples have been examined but new sponge, brittlestar and flatworm species have already been discovered and it seems likely many more will follow.

South Georgia now has some of the best protected waters and well managed fisheries in the world but is on the front line of 'climate change'. The project has more than just helped to quantify and map the tremendous marine biodiversity; the scientists involved have advised on a plan for new zoning and are drawing up plans for where and how best to monitor its living marine resources. This is how the Convention on Biological Diversity was envisaged to work; we quantified what the resources and threats are, are developing a plan to monitor these underpinned by science and thus we are in a better position to act on any loss or degradation. Defra funding through the Darwin Initiative together with aid from the South Georgia Heritage Trust will ultimately have made a major difference to one of the world's most hidden treasure troves of species richness.

## Belize's large-mammal corridor project (17-012)

Although natural forests cover 43% of Belize, they are concentrated in the south and north of the country, converging into a 20-km strip of forest bisected by the Western Highway, the country's busiest trunk road. Without a wildlife corridor to protect this strip from encroaching development, the forest linking Belize's southern and northern borders will be broken. This in turn will break the integrity of the intercontinental Mesoamerican Biological Corridor, as no comparable connection exists between southerly and northerly forests at this latitude anywhere from the Atlantic to the Pacific.

A Darwin Initiative project has been working in the area since 2009 in partnership with Panthera, the University of Belize, and the Belize Forest Department. The project has deployed an enthusiastic workforce of university students to help map the habitats and wildlife in the region, with a particular focus on the habitats and movements of jaguar, puma, tapir, deer, peccaries, and the prey species of the large carnivores. The project was instrumental in bringing into existence the Environmental Research Institute at the university, which now runs a Wildlife Management course with a particular focus on corridor-related ecological and social issues. Darwin-funded wildlife biologist Said Gutierrez takes undergraduates into the corridor area to learn monitoring techniques and to contribute to a continuous programme of camera-trapping and radio-tracking. Recently, he and the Darwin team captured three collared peccaries to fit them with radio transmitters. This species is an important prey of jaguars but also a popular game species, and it is persecuted in agricultural habitat for crop raiding. Those that survive outside protected areas are elusive, making conditions tough for following them. During the current rainy season, the Darwin

Camera traps catch pictures of jaguars and (inset) their peccary prey in the Central Belize corridor Credit R Foster

field crew are hiking into the corridor on foot, paddling in a canoe for 45 minutes, and then wading waist-deep in swamp waters in search of radio signals from the collars. Every radio-location that they get will inform us how these peccaries use the mosaic landscape of the corridor.

Before this project began, the Central Belize Corridor had no definition or protection. It is now recognised as a priority by the government-led National Protected Areas Secretariat. This formal recognition sets the stage from now onwards for all natural habitats within corridor borders and regardless of ownership to be used in a manner that is consistent and compatible with the conservation of a functional corridor. A crucial part of the area was designated as a Wildlife Sanctuary in 2010, along the only section of the Belize River to still retain riparian forest on both banks. The 36 km$^2$ sanctuary protects the forest within its borders from all logging, hunting, fishing and collecting of wildlife.

The Central Belize Corridor merited specific mention at the 2010 Conference of the Parties for the Convention on Biological Diversity, held in Nagoya, Japan. The Deputy Prime Minister of Belize, representing the Central American Commission for the Environment and Development, announced the re-launching of the Mesoamerican Biological Corridor project under the CBD Life Web initiative. In his keynote speech he stated: “Just last month, my government established our newest reserve - the Central Biological Corridor - that will provide critical habitat for the jaguar and other species”.

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# Wapichan people in Guyana develop community plan to save tropical forests on their traditional lands (18-003)

After years of painstaking work and multiple community consultations, the indigenous Wapichan people of southern Guyana have set out agreements and proposals for caring for their territory in a ground-breaking plan titled *Baokopa'o wa di'itinpan wadauniinao ati'o nii* (Thinking together for those coming behind us). This innovative community-led effort has resulted in more than one hundred inter-community agreements on sustainable land use, including proposals to establish an extensive 1.4 million ha Wapichan Conserved Forest over old-growth rainforest in the eastern part of their territory for the benefit of their communities and the world.

The community proposal along with a detailed locally-made digital map of their traditional territory was released at a public event in George Town on 7th February 2012. The territory's rich variety of rainforests, mountains, wetlands, savannah grasslands and tropical woodlands are the homeland of 20 communities who make a living from small-scale farming, hunting, fishing and gathering, which they have practiced for generations. Located in the South Rupununi District of south-west Guyana, the area is also home to an abundance of wildlife, including endangered species such as giant river otters, jaguars, and rare bush dogs as well as endemic species of fish and birds, like the Rio Branco Antbird.

The grassroots proposal comes at a crucial time because the entire Wapichan territory in Guyana, like many other parts of the Amazon basin the Guiana Shield is threatened by mega road and dam projects, as well as external plans for logging, mining and agribusiness development. The Wapichan people have responded to these threats by mapping their customary land use as part of a long-standing campaign to have their rights to their traditional lands legally recognised.

Building on the mapping work and community research to document traditional knowledge and customary resource use conducted over the past decade, the Wapichan (with co-funding from the Darwin Initiative/Defra, European Commission and other donors) organised more than 80 community consultations, workshops and public meetings between 2008 and 2011 to finalise the maps and produce the plan Thinking Together for Those Coming Behind Us. Discussions and agreements also involved documenting a community vision for community

The community gathered for group discussions during the first biocultural community protocol workshop. Credit Natural Justice

land use, livelihood and culture in Wapichan Wiizi (Wapichan territory) in 25 years' time.

"*In another generation our communities will continue to preserve the forest, bush islands, sacred places and cultural heritage sites. Key resources like pokoridi and ité palms will be protected and abundant. Some of our resources will have been increased, including replenishment and planting of useful plants, trees and medicines. Our children and youths will be well educated, employed in Wapichan wiizi, be respectful of our culture and will have taken up the challenge as future leaders*." [Wapichan woman elder, Shizizi, 2010]

The Wapichan project in Guyana is part of a wider project (co-funded by the Darwin Initiative/Defra) carried out by indigenous peoples and traditional resource users in Bangladesh, Cameroon, Suriname, Panama, Indonesia and Thailand, in collaboration with the Forest Peoples Programme. A primary goal of this project is to promote the implementation of Article 10(c) (on customary sustainable use) of the CBD at the national and local level. As part of the project, the Wapichan presented their maps at several CBD meetings, including COP10, and more recently shared their territorial management plan at the Indigenous Peoples' International Conference on Sustainable Development and Self-Determination held in conjunction with Rio+20 in June 2012.

Dissemination of the territorial map and plan has now been completed in all participating villages (May-July 2012) and the community response to the project outputs has been highly positive. The Wapichan are now actively seeking partners to support them in putting their territorial plan into practice for the period (2012-2015).

Key contacts: Mr Kid James, South Central Peoples Development Association (Email

## St Helena Darwin team fight to save invertebrates on the brink

## (18-020 & 19-029)

Spiky yellow woodlouse Credit P Lambdon

Any Saint Helenan schoolchild knows of the spiky yellow woodlouse, but very few "Saints", young or old, have ever seen one. This centimetre-long, bright yellow, armoured ball of spines is as enigmatic as the dark, mist-laden cloud forests which it inhabits.

A remote outpost of vibrant, tropical life in the South Atlantic, St Helena has long been famed for its unusual and rich endemic flora and fauna. At the last count, well over 400 assorted endemic invertebrates had been recorded, packed into a tiny landmass of just 122 $km^2$. Yet even this may represent a shadow of former glories. The landscape has been ravaged by introduced predators and herbivores since the 1500s, and vast swathes of land cleared for both agriculture and firewood. Areas approaching the pristine natural environment are now reduced to a few pockets.

Whilst the rate of habitat loss has slowed or even halted since the 1960s, this has not meant the end of the problems. Severe fragmentation of key biodiversity hotspots, together with a continued expansion of invasive predators and competitors, has meant that populations of

some endemic invertebrates have continued to dwindle.

Recent observations pinpoint the last refuge of the “spiky yellows” at a single location on High Peak. The only confirmed sub-population probably now contains fewer than 100 individuals, perhaps no more than 20. Not by coincidence, this tiny site is also the last vestige of black cabbage tree woodland on the island: a unique habitat type whose dense canopy retains moisture efficiently, thus trapping humidity and favouring a wealth of rare shade-loving ferns and epiphytic mosses. Unfortunately, disaster struck earlier this year when high winds brought down several trees and limbs, opening the canopy and exposing the interior to the drying effects of the sun. It has prompted strong fears that this might be the final nail in the spiky yellow coffin.

Thanks to a timely stroke of luck, a Darwin Initiative project lead by the St Helena National Trust is currently underway on High Peak which aims to restore a large swathe of lost habitats. Staff are working hard to reinstate a much more extensive stand of the black cabbage tree (*Melanodendron integrifolium*). Unfortunately the climax community will take decades to mature, and the woodlice will be long gone without much more immediate action. Over the past few weeks, frantic attempts at a last ditch rescue have been under way, by erecting an artificial canopy of shade-netting over the hole. The technical challenges were considerable due to remoteness, boggy ground and constant blustery winds. But so far, the results are promising. The dark interior has been recreated and the new canopy drips with copious moisture on misty days.

The High Peak team have adopted a ‘whole-ecosystem’ approach to restoration which aims to improve habitat for native plants, invertebrates and fungi, and are thus starting to turn the tide for the unsung micro-fauna and -flora which play a critical role in habitat function. To further bolster these efforts, a second Darwin Initiative project is about to start which is focusing exclusively on saving the island’s disappearing invertebrates. This project, a partnership between the St Helena National Trust, the UK-based Charity Buglife and St Helena Government, aims to continue the practical efforts on the ground, in addition to furthering our knowledge and educating islanders on their invertebrate riches. The spiky yellow woodlouse will remain under the shade, but hopefully, the future looks brighter.

Thanks are extended to Defra, for funding which has made the action plan possible, and also to Flora and Fauna International who provided a further small grant to conserve the spiky yellow woodlouse.

## Towards a sustainable grouper fishery for the Maldives (17-002)

The Maldives is made up of about 1,200 low-lying islands and sand cays, occupying 300 $km^2$ while the reefs cover an area of around 4,500 $km^2$. Not surprisingly, by far the greatest diversity of life in the Maldives is associated with its coral reefs. Fish are an integral part of the coral reef ecosystem – helping to maintain a natural healthy balance. They are also a valuable resource that brings both indirect and direct benefits to the Maldivian people and the nation’s economy.

The Marine Conservation Society is currently working with the Marine Research Centre in the Maldives on a 4-year Darwin Initiative project

Grouper being unloaded from fishing boat to grouper cage
Credit E Wood MCS

Offloading grouper from fishing boat to Bangaafaru grouper holding cage prior to live export Credit E Wood MCS

to ensure that the reef fisheries are managed and sustainable. Currently our main focus is on the high-value grouper fishery, which provides chilled and live fish for export. Commercial fishing for grouper in the Maldives began in the early 1990s in response to demand from international markets, particularly in the Far East. Data analysis by the Marine Research Centre shows that in 2010 exports were worth over 40 million rufiyaa (= £2 million GBP) and consisted of around 450,000 tonnes of fresh/chilled grouper and 125,000 live groupers.

The biology of groupers and the fact that they take bait very readily makes them especially vulnerable to over-fishing. The larger species take years to reach maturity and often they are caught before they have time to breed. A recent analysis for the project has shown that 69% of individuals belonging to the commonly exploited species are now caught before their theoretical maturity length, thus removing them from the population before they have had the opportunity to breed and contribute towards population regeneration. Targeting of spawning aggregations is also a serious threat.

Key to the success of any management measures for the grouper fishery is community engagement and support. So in addition to collecting fishery data and carrying out underwater surveys to investigate stock status, the project team has been consulting with the fishermen and getting their feedback and opinions on the status of the fishery and their opinions about management issues. This culminated in a Stakeholder Workshop in September 2011 which focussed on a discussion of the draft Management Plan and included a range of options and strategies for ensuring a sustainable fishery into the future.

Represented around the table were fishermen and exporters together with non-fishery stakeholders such as enforcement agencies and non-governmental organisations. The workshop sessions generated considerable debate and some compromises were inevitable, but there were positive outcomes and solutions for the way forward. Most importantly there was agreement about the need for implementation of a management plan, for controls on the size of fish taken and for protection of some key grouper spawning sites.

The final plan was completed by May 2012 and is now making its way into law. Importantly, although key principles are covered, such as the requirement for providing catch data, establishing quotas and registering boats and holding facilities, technical measures such as the number, weight and size of fish that can be caught will be subject to annual review. Adaptive management is vital for a fishery where the stock can be influenced by a variety of external factors as well as fishing pressure.

# Breaking myths on salmon impact on Chilean biodiversity (19-029)

Captive breeding of the endangered *Aplochiton* sp. in S. Chile as part of the post-project award. Credit J Sanzana

Data-less management can misguide decisions, and also can maintain some myths regarding the impact of exotic species on native biodiversity. Such is the case with invasive salmonids in Chile -the focus of our two Darwin projects (15-020, EIDPO041). Our scientific data have broken two myths that may surprise some stakeholders, managers and conservation agencies: i) rainbow trout escapees survive in the wild, and even hybridize with naturalized rainbows, that were introduced way back prior to aquaculture development; ii) the endangered galaxiids, *Aplochiton zebra* and *A. taeniatus*, cannot easily be identified based on morphological criteria alone, but can be reliably identified by molecular markers, and they co-exist and hybridize too!

Such findings have various and relevant consequences for Chile as a top world leading salmon producer, the third most consumed fish in the world. Unlike in Norway, salmonids are exotic species to Chile (and the whole of the Southern Hemisphere), hence the industry and other stakeholders have the responsibility of marketing a product that could have an ecological impact on a shared, public environment. Invasive species are an increasing concern to consumers and signatories of the Convention on Biological Diversity (CBD), Chile amongst them.

Such concerns have largely been neglected by a salmon farming industry which has tended to seek profits above anything else and also by governments that increasingly depend on private investment in times of economic crisis. Regulatory agencies often feel satisfied with listing endangered species, but are determined to take further steps to implement conservation measures, particularly when these may hamper economic development. The Chilean salmon industry has often maintained that concerns about fish escaping from fish farms are unfounded, as salmonid escapees do not survive in the wild. However, our Darwin Initiative results clearly indicate that rainbow trout escape from their cages, survive and reproduce. Rainbow trout is listed by the IUCN (International Union for Conservation of Nature) amongst the top 100 most invasive species, and our results indicate that trout escapees are hybridizing with naturalized trout and in doing so are transferring “aquaculture genes” into established populations. Thus, naturalized rainbow, the basis of a booming recreational fishing industry, can also be impacted by farm escapees, and may undermine the sport fishing industry (something yet to be established). Molecular tools developed through our Darwin projects are also helping in the delineation and conservation of the native *Aplochiton zebra* and *A. taeniatus*, two species difficult to identify, and which we now know hybridize in the wild, adding a layer of additional complexity to their conservation in the face of salmonid invasions.

These are two examples of how science generated through a Darwin Initiative and a post-project award can shed light on matters that were shrouded in mystery and ignorance until recently.

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Landscape Tequila Volcan Credit J Lovett

# Ahuisculco Carbon Project Officially Started (17-027)

Moving research findings to active implemenation is an important goal, but there are many uncertainties so it is hard to put a definite implementation output in a project logframe. First, additional funding needs to be found, and implementation activities can be substantially more expensive than the research which recommends them. Secondly, agreements need to be made at a range of levels, from the communities where the activities will take place up into the higher levels of government.

The research focus of the Darwin project 'Market Based Scheme for Conservation in La Primavera Forest Mexico' (17-027) was to investigate three components for the design for a local payments for ecosystem services approach to combine conservation in the La Primavera Biosphere Reserve with offsetting carbon emissions from the adjacent city of Guadalajara. The components are: carbon stock and sequestation potential in Guadalajara, willingness to pay for emission offsets, and willingness of the La Primavera land owners to dedicate land to carbon forestry.

The La Primavera management office put the project in touch with the environmental NGO Selva Negra, and the Mexican coordindator, Arturo Balderas Torres, together with students from ITESO university started collaborating with Selva Negra in late 2009 to generate the estimates of carbon emissions and shape the potential strategies to reduce the environmental impacts of a world-wide tour by the Guadalajara-based musical group Maná. Negotiations were held with the ejido of Ahuisculco located in one of the biological corridors connecting La Primavera to Sierra de Quila to create a conservation and reforestation project. The project was designed for a 10-year period and will provide the resources to conserve over 1000 ha of forest and reforest more than 80 ha. Selva Negra is creating an integrated strategy to promote local development, not only focusing on the commodification of carbon offsets, but also working with Universidad de Guadalajara and ITESO in the area. In the locality of the ejido implementation project two environmental engineering students are working during the summer designing a community project to manage domestic wastes and wastewater, and to monitor water quality in wells and streams. Furthermore Selva Negra and Universidad de Guadalajara are discussing the possibility of opening a High School education centre in the community; at present students need to go to other cities or just quit school. The plan entails investing an estimated 500,000 GBP in the implementation project. It will also be supported by the national forest authority, CONAFOR, and the project was presented to the Mexican president, minister of environment, governor, and head of CONAFOR during the planning phase.

The Ahuisculco project was officially started on on Saturday 7 July with a meeting in the ejido attended by the project stakeholders. The Darwin project finished earlier this year so the projcet leaders were not able to attend in person, but a speech was read out on their behalf by the La Primavera management team.

# Research to Policy: Building Capacity for Conservation through Poverty Alleviation in Uganda (19-019)

Refreshment break at the Darwin workshop! Credit D Sheil

The International Institute for Environment and Development (IIED) together with Ugandan partners the Jane Goodall Institute (JGI), the Institute for Tropical Forest Conservation (ITFC) and Advocates Coalition for Development and Environment (ACODE) organised a workshop at Makerere University, Kampala from July 12th to 14th to launch their new Darwin-funded project. Using Bwindi Impenetrable Forest National Park as a case study, and working through the Uganda Poverty and Conservation Learning Group, the project entails a combined programme of research and capacity development for policy advocacy which is intended to improve policy and practice in a number of areas:

- Improved research capabilities for evaluating success and limitations of integrated conservation and development (ICD) activities in conservation and poverty alleviation
- Improved targeting of ICD interventions for more significant development impacts and more effective conservation
- Improved resource allocation for conservation and development priorities
- Improved national and local policy on protected area management and poverty links

The purpose of the inception workshop was to encourage inputs into the detailed project design from a wide variety of stakeholders and it certainly did just that with participants ranging from community based organisations, to NGOs and academics, to government agencies and even the Presidential advisor on the environment! The workshop was very timely in that the Uganda Wildlife Authority is in the process of revising its 10 year management plan for Bwindi and so it was able to use the workshop as an opportunity to outline initial thinking on the new plan and to engage in a good-natured but spirited debate with the lawyers, scientists and NGOs present!

The workshop was also a great opportunity to make links between this and other Darwin-funded projects. IIED is working with UNEP-WCMC to provide technical support on biodiversity mainstreaming to five African countries as they revise their National Biodiversity Strategies and Action Plans (NBSAPs) over the next three years. Uganda is one of the countries involved in the project and Francis Ogwal from the National Environment Management Agency (NEMA) updated workshop participants with the plans for the NBSAP revision process and was clear that findings from the Research to Policy project would be a great contribution to the revision process. Staff from Fauna & Flora International who have received a Darwin Initiative grant for a project exploring the cultural values of the Batwa people in Bwindi Forest also participated in the workshop and strong links were made


Mountain gorilla Credit D Sheil

between the initiatives.

Key workshop outputs achieved include: identifying key components of the capacity building programme for the Ugandan Poverty and Conservation Learning Group, clarifying key research questions, and gaining stakeholder consensus for the most useful format for the project outputs.

So now the inception workshop is over, the research starts in earnest down at Bwindi with ITFC taking a lead role and hopefully generating lots of interesting findings that can support what the Project Leaders can already predict – on the basis of the workshop – will be a lively and engaging process of policy advocacy work.

The Darwin Initiative aims to promote biodiversity conservation and sustainable use of resources around the world including the UK's Overseas Territories. The Darwin Initiative projects work with local partners to help countries rich in biodiversity but poor in resources to fulfil their commitments under the CBD, CMS and CITES. The initiative is funded and administered by the UK Government's Department for Environment Food and Rural Affairs (Defra). Since 1992, the Darwin Initiative has committed over £88million to over 750 projects in over 150 countries.

This newsletter was produced by LTS International www.ltsi.co.uk

For more information on the Darwin Initiative see http://darwin.defra.gov.uk

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