

Newsletter

September 2016

*Green turtle cover up,
Credit: Sam Weber*



The Darwin Initiative supports developing countries to conserve biodiversity and reduce poverty. Funded by the UK Government, the Darwin Initiative provides grants for projects working in developing countries and UK Overseas Territories (OTs).

Projects support:

- the Convention on Biological Diversity (CBD)
- the Nagoya Protocol on Access and Benefit-Sharing (ABS)
- the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)
- the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

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Credit: K Peach

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Credit: TREE AID

Publicity and information about the Darwin Initiative

For more information on the Darwin Initiative please visit gov.uk/government/groups/the-darwininitiative

For further details about current and completed Darwin Initiative projects, including their final application forms, please visit darwininitiative.org.uk

There is also a Darwin blog. This includes news and thoughts on issues being tackled by the Darwin Initiative – both at the project and programme level. You can read it here darwininitiativeuk.wordpress.com

We're also keen to share other Darwin project blogs. If you have a blog you'd like to share on our website, please get in touch at darwin-newsletter@ltsi.co.uk

Publicity and referencing Darwin Initiative

We kindly remind project leaders that if they are publicising their work then it is important that they make every effort to mention Darwin Initiative funding. This is important as it helps us to ensure the Darwin Initiative retains a high profile and to secure continued Government funding.



CITES COP17

JOHANNESBURG 2016

WORLD WILDLIFE CONFERENCE

A word from Darwin

The 17th meeting of the Conference of the Parties to CITES (CoP17) - <https://cites.org/cop17> - will take place from 24th September to 5th October 2016 and it is being held in Johannesburg, South Africa.

To tie in with this, for this quarter's newsletter we invited articles from projects that highlight their work relating to both the legal and illegal trade of wild animals. As a one-off, we not only invited articles from Darwin Initiative projects but also from projects funded under Darwin's sister grant scheme – the **Illegal Wildlife Trade Challenge Fund**.

We have received some great articles for this bumper edition of the newsletter. Updates range from projects carrying out work with communities on-the-ground, to stories documenting the enormous amount of work carried out to build national enforcement and judiciary capacity to improve the implementation of legislation.

Since the last newsletter, we have begun new application rounds for Darwin Main projects and Darwin Plus projects. At stage 1 of Darwin Main we received 415 applications – each year the number and quality of applications continues to improve!

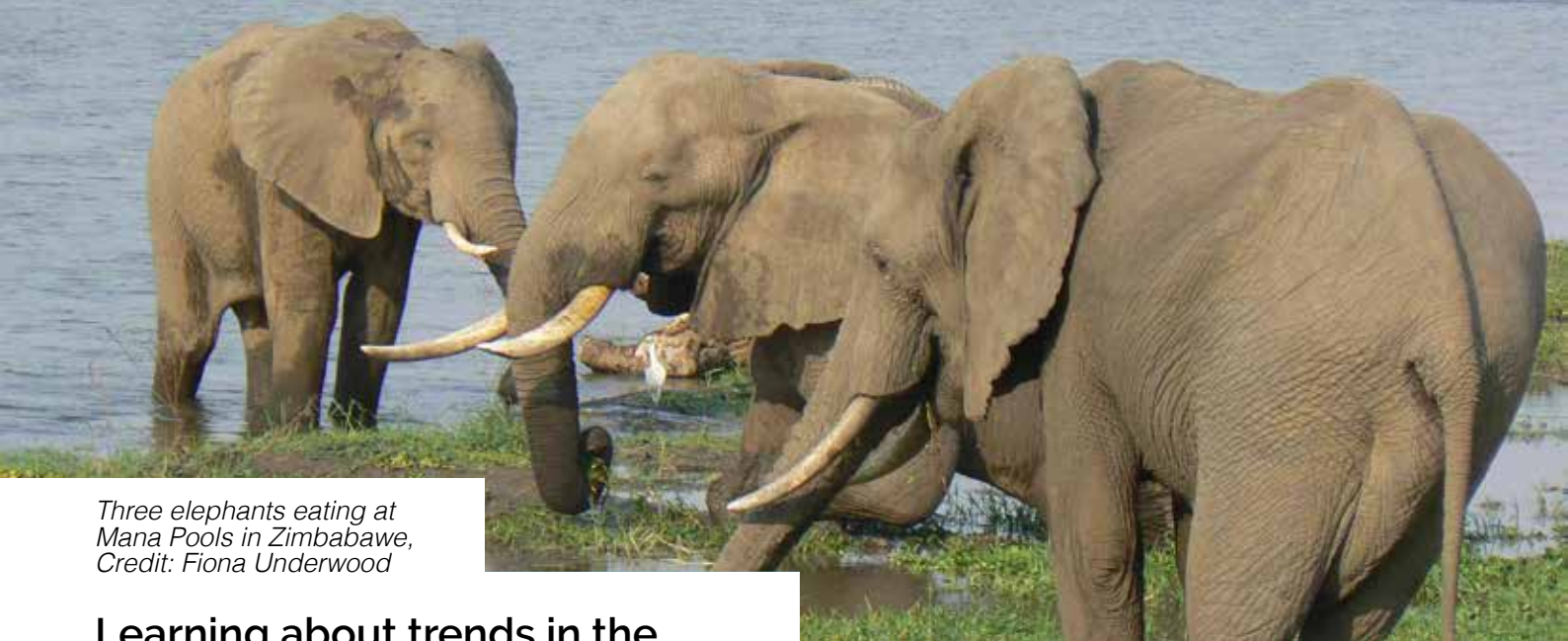
We love receiving project updates and stories for the Darwin newsletter, but we are eager to hear from projects throughout the year. If you work on a project and would like to share your success stories (or struggles!) with a broader audience, please get in contact any time at Darwin-newsletter@ltsi.co.uk and we can tweet, blog or Facebook about it!

Happy reading!



*Wildlife product identification,
Credit: WCS Vietnam*

Project Articles



Three elephants eating at Mana Pools in Zimbabwe, Credit: Fiona Underwood

Learning about trends in the illegal ivory trade to inform decision making on elephants

At the upcoming CITES CoP, trends in the illegal ivory trade will be a key focus of discussions. These discussions will be based around a **report** using data on illegal ivory seizures collected by the Elephant Trade Information System (ETIS). ETIS is one of two global monitoring systems for elephants that were mandated by CITES in 1997 and it is managed by TRAFFIC International (the other being MIKE – Monitoring the Illegal Killing of Elephants).

Clearly, it is the results that are of most interest to the audience (of policy makers and NGOs) to help inform decision making about elephants but some work is needed to obtain these results. To turn ivory seizures data into useful information about trends in the illegal ivory trade requires quite a complex statistical analysis; the analysis is complex because of the inherent biases in seizures data. Specifically, countries differ in their ability to make and report seizures – so an increase in seizures might be because of increased law enforcement, or countries getting better at reporting their seizures to ETIS, not because the illegal ivory trade is increasing. Thus, strategies for accounting for differences in the ability of countries to make and report seizures must be accounted for when trying to describe the trends in the trade.

In 2009, there were no off-the-shelf statistical methods for analyzing these data and so some analyses were ad-hoc without a coherent and robust framework. This is a major challenge for many monitoring programmes. It is often relatively easy to obtain resources to collect data, including training of those collecting data and building database to store the data. In comparison, it can be much harder to obtain funding to help turn this data into usable information for policy makers.

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One component of Darwin Initiative Project 17-020 “Enhancing the Elephant Trade Information System to Guide CITES Policy”, which ran from 2009 – 2012, was to develop a methodological framework for making sense of the ETIS data. This project was a collaboration between statisticians, then at the University of Reading, and TRAFFIC International. A further project aim was to translate these statistically complex findings into simple language and concepts that could be communicated to a non-technical decision-making audience. Two indicators were developed (Transactions Index and Weights Index).

This framework is now being used routinely to produce indicators of the illegal ivory trade to inform decision making by CITES and others, on elephants. It was first used to produce indicators of the ivory trade for the previous CoP in 2013 using data from 1996 – 2011. Since then the methodology has been used to update these trends every year and most recently for the upcoming CoP. Such analyses have provided key pieces of information for the development of National Ivory Action Plans for eight CITES Parties and will continue to be useful in monitoring their progress.

For more information on project 17-020, click [here](#) or contact Project Leader Dr. Fiona Underwood, fiona@fmunderwood.com



Judge giving sentence to Khoa, Credit: WCS Vietnam

Greater commitment & capacity to prosecute and convict wildlife criminals in Vietnam yields results

In recent years, Vietnamese wildlife criminals have generally been met with weak enforcement from national agencies that lack the skills or political support necessary to mount an effective response.

In Ho Chi Minh City (HCMC) alone, there have been at least 12 cases of people trafficking elephant ivory, rhino horn, pangolins, and tiger products in the period 2013-2015. Arrests have led to the seizure of approximately 400kg of wildlife products. However, of those arrests, only one case made it to court, resulting in four criminal convictions and 10 months of probation to each convicted individual.

With funding from Defra's IWT Challenge Fund, the Wildlife Conservation Society and Viet Nam CITES Management Authority initiated a project in 2014 to increase the capacity and commitment of Vietnam's criminal justice system to effectively enforce laws to disrupt and dismantle wildlife trafficking networks. HCMC was selected as a pilot site.

Since it began, the project team have carried out training and outreach exercises to officers from the Environmental police department, People's Procuracy (i.e. Prosecutors), judges and court officials at regional, city- and district levels. The training provided knowledge of legislative updates related to wildlife protection, gave experience through case-studies of commonly encountered wildlife crimes, and introduced frequently

traded species and trafficking dynamics.

The Tan Binh procuracy and Judge Ngo Duc Thu of the Tan Binh District Court admitted to having little experience in dealing with wildlife crime cases until the project's interventions. Our training and regular on-the-job support gave the prosecutors and judge Thu knowledge and motivation that they applied to the case of Phan Huynh Anh Khoa (aka Khoa Xi Trum), a notorious HCMC-based wildlife trader that was caught red-handed by the Environmental Police Department. At the trial in June 2016, based upon the case developed by the Tan Binh procuracy, Judge Thu gave Khoa a sentence of five years imprisonment and a fine of almost £2,000, the highest punishment ever for a wildlife criminal in Vietnam.

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Whilst it is only one case, this sentencing represents a big step forward for the judiciary system of Vietnam where most wildlife criminals escape without conviction. The investments along the enforcement chain from detection, through prosecution and conviction by the IWT Challenge Fund have undoubtedly contributed to this development and we are now working with the procuracy and Courts to expand this impact in other pending cases.

For more information on IWT Challenge Fund project IWT015, please contact Project Leader Hoang Bich Thuy, hbthuy@wcs.org



Credit: Ascension Island Heritage Society

Ascension Island's new CITES Ordinance receives Category 1 Status

Over the past 4 years, through projects funded by the Darwin Initiative and with support and expertise from overseas partners, Ascension Island Government Conservation and Fisheries Department (AIGCD) has undertaken a major strategic planning exercise.

This has resulted in the development of a National Biodiversity Action Plan (NBAP), a scientific roadmap for the designation of an evidence-based marine protected area at Ascension Island, and the enactment of four Ordinances relating to the protection of Ascension's biodiversity. These can all be accessed here: www.ascension-island.gov.ac/government/conservation/projects/bap.

“ with the correct measures and conservation actions in place, some population declines can be reversed ”

The most recent piece of legislation to be enacted is the Control of Trade in Endangered Species Ordinance 2015 that has just received Category 1 status from the CITES Secretariat. This Ordinance makes provision for the regulation of trade in endangered species by Ascension Island Government. While the import and export of species listed by CITES occurs very infrequently at Ascension Island, having the legislation in place provides the legal framework to ensure that this remains the case.

Ascension Island is famous for the green turtles *Chelonia mydas* (CITES listing: Appendix 1) that nest upon its beaches and until the 1920s they provided fresh meat for residents and passing ships. Now, over 70 years after legal protection and the cessation of commercial turtle harvesting, the average number of green turtle clutches deposited annually at Ascension Island has increased six fold since monitoring began in 1977, from approximately 3,700 to 23,700 clutches per annum. This highlights the need for the robust legal protection of threatened species and shows that with the correct measures and conservation actions in place, population declines can be reversed.



Until the 1920's, the green turtles of Ascension Island provided fresh meat for residents and passing ships, Credit: Ascension Island Heritage Society

For more information, please contact Dr. Nicola Weber of the Ascension Island Government Conservation and Fisheries Department, nicola.weber@ascension.gov.ac



Rakhine Coastal Association stakeholder workshop, Credit Martin Callow WCS

Securing marine fisheries, livelihoods and biodiversity in Burma through co-management

Burma's marine resources have long provided sustenance to its coastal people. Over 25,000 small-scale fishing vessels are registered to fish its coastline and nearly half of the country's population lives in coastal states and regions. Despite fisheries' importance, Burma has limited capacity for sustainable management.

This overexploitation has resulted in drastic declines of stocks; a 2014 marine survey carried out by Norway showed that pelagic stocks are currently only 10% of their 1979 biomass, with similar estimates for inshore fisheries. Inshore fisheries are of particular concern as the decline directly influences local livelihoods and food security. The impacts of fishing practices on protected marine species, such as dugong, turtles, sharks and rays, are also evident.

Fortunately, the tide is on the turn. The newly elected government of Burma is in the process of decentralising authority of the inshore fisheries sector to its states and regions, a development that provides the platform for empowering local people and enabling fisheries co-management.

In support of this process, WCS is working in southern Rakhine state, and harnessing the needs of local fishers and fish-workers to explore how to rebuild their resources. By working in partnership with the Rakhine Coastal Association, Department of Fisheries, Pyoe Pin and academic and technical implementing partners

(University of Exeter, Environmental Defense Fund (EDF) respectively), the project is implementing a participatory process to document catch and effort, and collect social and value chain data (with a reach of over 1,200 fishers).

Combined with outreach and training, the project is aiming to improve coastal fisheries governance, secure fishers' tenure for sustainable fisheries management and develop a spatially explicit sustainable co-management plan.

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Fortunately, the tide is on the turn

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Owing to the political shift towards federalism, the model has significant potential to scale in Rakhine state, and beyond. Working in partnership with EDF, the project is assessing additional sites across Burma to ensure the resources offer value for money and impact. Similarly, the project's work is enabling them to improve knowledge of shark and ray catches and trade. In addition, this is enabling the project to support the government of Burma with preparations for CITES CoP17, and to build links with their broader efforts (funded by Defra's IWT Challenge Fund) to combat illegal wildlife trade and support the national plan of action for the conservation of sharks.

For more information about Burmese fisheries, see: <https://myanmarbiodiversity.org/portfolio-items/marine-fisheries>

For more information on project 23-024, click [here](#) or contact Project Leader Martin Callow, mcallow@wcs.org

China-Laos CITES enforcement exchange seminar

From July 12 to 14 2016, the China-Laos CITES Enforcement Exchange Seminar was held in Jinghong City, Xishuangbanna Prefecture, Yunnan Province. This meeting was organized by Beijing Normal University (BNU) under the efforts and guidance of CITES Management Authority of China (CITES CNMA). This seminar was a major event, strengthening bilateral communication and exchanges at all levels, providing the opportunity to enhance cooperation for CITES enforcement and strengthen wildlife resources trans-regional protection work.

A total of 15 Laos officials attended this meeting, from a range of government and law enforcement departments. From the Chinese side, 30 delegates attended including experts and scholars from relevant international organisations, and individuals from national and provincial government departments. Participants from the customs regulation, anti-smuggling authority, public security and border defence were also in attendance.

Dr. MENG Xianlin, the director general of CITES CNMA, opened the meeting. In his keynote speech he stressed the importance of capacity building of

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This seminar was a major event, strengthening bilateral communication and exchanges at all levels

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enforcement institutions, especially with increased international attention on cross-border and trans-regional enforcement. In September 2015, the China CITES enforcement delegation reached a consensus on joint performance with Laos and Vietnam and signed a “memorandum of cooperation” on combating illegal wildlife trafficking in the region. He also thanked the IWT Challenge Fund who funded this workshop through its grant to BNU.

The director of Laos Ministry of Natural Resource and Environment, Sangvane Bouavong, delivered a speech on behalf of Laos. He documented his country's conservation efforts and the importance of strengthening the protection of endangered species including the critically-endangered Saola (a forest-dwelling bovine also known as the Asian unicorn – despite having two horns!). In 2009, Laos joined the Asian law enforcement network, and Mr Bouavong pledged continued cooperation with all countries to better fight wildlife criminal activities and pursue sustainable development.



China-Laos enforcement seminar

As a result of the seminar...

...the two sides have reached agreement on how best to continue their relationship and jointly combat illegal wildlife trade:

- the CITES organisations of China and Laos will enhance communications and information exchange about wildlife trade
- they will promote cooperation in border forest public security cross-border law enforcement
- they will further explore how to best establish a liaison system between China and Laos

For more information on IWT Challenge Fund project IWT019, please contact Project Leader Aster Zhang, asterzhang@bnu.edu.cn



Engraving carapace of adult ploughshares no longer deters poachers due to heightened demand, Credit: Durrell

Breaking the chain: combating the illegal trade in ploughshare tortoises

Ploughshare tortoises are restricted to a tiny corner of Madagascar and are one of the most threatened reptiles in the world. Although few people have heard of them, to reptile enthusiasts they are well-known – their value is their rarity and their large golden domed shells. They are kept as pets, seen as status symbols and they command high prices in the illegal markets of SE Asia and China.

However, the ploughshare tortoise is not the sole victim of illegal trafficking in Madagascar. Sadly it is a flagship species for the many reptiles and amphibians that are leaving the country illegally. In fact it is also a flagship for the hundreds of reptiles, especially tortoises and turtles that are smuggled through Asia every day.

Durrell Wildlife Conservation Trust and both national and international partners have worked to restore the species over the last 30 years. Until 2009 this was a model species recovering programme – habitat protection, community engagement, captive breeding and release. It was a success story. However the political crisis in Madagascar from 2009 to 2013 brought with it a wave of poaching that required a new approach to challenge.

The aim of the Defra-funded project called “Breaking the chain” was to bring partners working on all aspects of the illegal trade chain from Madagascar to Asia, together in one project. This has enabled the formation of the strongest and most integrated partnership ever assembled. While Durrell, Madagascar National

Parks and the Ministry of Environment focused on site protection, Madagasikara Voakajy studied local community attitudes to poaching, US-based Turtle Conservancy provided expertise on ploughshare husbandry and biology, Alliance Voahary Gasy worked with local magistrates and legal frameworks, UK Border Force and Wildlife Conservation Society supported training for customs agents and national park staff, and TRAFFIC International have monitored the Asian trade markets for the species.

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This has enabled the formation of the strongest and most integrated partnership ever assembled.
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As a result we were able to build up a community patrol network for the national park, train park rangers to use the SMART monitoring system, implement new methods to understanding motivations to poach within the local communities and move intelligence through the chain to track shipments and seizures.

But this project has been taking place within an extremely charged political atmosphere; governance and capacity within law enforcement remains low. Smuggling has continued to increase. From 2015 to 2016 the domestic black market price increased from about \$30 per animal to over \$600 per animal!

As a consequence, more and more people have got involved in the business of tortoise smuggling. In light of this, the Regional Department of the Environment, MNP and Durrell sought the help of the Regional Security Task Forces.

In light of these challenges we are adapting the project the focus on known weaknesses. We need to bolster security within the national park and improve the management of patrols and the information they gather. In order to improve engagement from communities, we need to focus more attention on how the national park can benefit them.

At the international level we are able to support a team member to join the Malagasy delegation at the CITES Conference of Parties meeting. Madagascar has the opportunity to demonstrate to the international community its proactive attitude towards the protection



Credit: Durrell

Engaging local communities

This photograph shows the mayor of Soalala (in red) persuading the villagers of Jejema and Karananjy in Baly Bay to cooperate with Madagascar National Parks and Durrell in their efforts to protect the ploughshare tortoise



Members of the village patrols, Credit: Durrell

of its natural resources and to forge international partnerships to combat the crisis in tortoise smuggling. Ultimately success will come through a combination of strong enforcement and local engagement. We know it can be achieved and that the restoration of the ploughshare tortoise is a real possibility.

Although we face difficult times, this IWT Challenge Fund project is making a hugely important contribution to saving a flagship for the many species being illegally traded into extinction.

For more information on IWT Challenge Fund project IWT003, please contact Project Leader Dr. Andrew Terry, andrew.terry@durrell.org



Face-to-face training in Ethiopia, Credit: Daniel Assefa, EWCA

The Border Point Project: tackling illegal wildlife trade in Ethiopia

The illegal wildlife trade robs states and communities of their natural capital and cultural heritage, with serious economic and social consequences. It undermines the livelihoods of those communities that depend upon natural resources and it damages the health of the ecosystems they depend on, undermining sustainable economic development. The criminal activity and corruption associated with trafficking restricts the potential for sustainable investment and development, which is essential in any new economic activities and enterprises.

The Border Point Project launched in March 2015 and the team, made up of staff from Born Free Foundation Ethiopia and the Ethiopian Wildlife Conservation Authority, has to date visited 59 sites connected to the nine major border points in Ethiopia. In addition, the team provided training for two police training Centres in Oromia and one in the Southern Nations, Nationalities and People's regional states, as well as in six National Defence Force Training Centres. In order to familiarise people with the project, staff meet stakeholders on site and deliver capacity building workshops, while raising awareness of the impacts and implications of wildlife crime. Within the first sixteen months the Border Point Project provided face to face training to 5,253 border point officers and 10,811 training centre officials and officers at nine Centres.

The team recently launched public awareness campaigns, reaching 12.3 million mobile phone users (60% of all lines available) through a universal text message. The Border Point Project also printed and distributed 10,000 copies of a law enforcement booklet and 5,000 copies of an information poster in two different local languages, with the translation and printing of the

same booklet and poster in two further local languages currently underway.

All of these activities are being conducted with one aim in mind; bring an end to Illegal Wildlife Trafficking in Ethiopia and beyond to 'keep wildlife in the wild'.

Looking ahead to the coming year the team will be working to achieve four main objectives:

1. Strengthening the National IWT Steering Committee within Ethiopia - to increase capacity and direction within multiple agencies regarding available measures to combat IWT
2. Deploy the Task Force to the country's nine major open border points as well as federal and regional training centres – to increase capacity within law enforcement agencies in Ethiopia to understand and enforce wildlife laws
3. Incorporation of IWT activities into poverty alleviation programmes in Ethiopia – to increase understanding of the link between IWT and poverty as well as improving our ability to make a positive contribution to poverty alleviation in Ethiopia, ultimately providing people with an alternative to wildlife exploitation as a means of supporting their families
4. Launching innovative public awareness raising mechanisms – to increase public understanding within Ethiopia of the impacts of IWT both to people and wildlife and increase support for the work of the authorities in tackling IWT

For more information on IWT Challenge Fund project IWT007, please contact Project Leader Fetene Hailu, fetenehailu@gmail.com



*Mangalane Village Meeting,
Credit: Jo Shaw*

Protecting wildlife by linking communities and conservation in Mozambique

Our project works with the Mangalane community and neighbouring Sabie Game Park (SGP) in Mozambique to protect endangered black and white rhinoceros populations in South Africa's Kruger National Park (KNP). Spanning 40km along the eastern boundary of KNP, SGP is a private game reserve adjacent to five subsistence farming villages of the Mangalane community.

Defra support via the IWT Challenge Fund is enabling us to develop sustainable and participatory wildlife conservation projects aimed at improving the livelihoods of surrounding communities with a resultant improved survival rate and increase in rhino populations. Prior to the inception of the project in April 2015, baseline surveys showed the community had a negative attitude towards wildlife, a lack of governance and institutional capacity for benefit sharing and no natural resource monitoring systems. Furthermore, Mozambique is known as a key trade route of illicit wildlife products, including rhino horn sourced from South Africa.

Through a partnership with Southern African Wildlife College (SAWC), the project has established participatory governance institutions using a Learning-by-Doing approach, to create a sound environment for equitable benefit sharing generated from wildlife on SGP. As a result of this project, more wildlife revenue is being made available to communities, and this has been received both as household cash and deposited into village accounts for community development projects.

The new governance structures allow 420 households to directly benefit from wildlife.

Defra also funds a Village Police programme which focuses on natural resource monitoring. 21 individuals chosen by the community have been employed and are trained in daily incident reporting, fence patrols, charcoal monitoring, cattle theft and community welfare. Through this holistic approach, SGP has reported a decline in poaching incursions during the months of April, May and June 2016.

The prolonged drought in 2015 threatened food security and the projects adapted to the on-the-ground situation, by initiating a new "Food for Conservation" Programme. This involved communities in conservation activities by upgrading roads and cattle kraals (enclosures) in exchange for food grants. Subsequently, a Small Grants competition is in development to establish a sustainable community driven initiative to improve community livelihoods.

After 18 months of activities in Mangalane, surveys show a positive change in people's attitudes towards wildlife. The results of this project have assisted in developing a pilot site with replicable and adaptive strategies to conserve wildlife, benefit surrounding communities, adding hope to the future of southern African rhino populations.

For more information on IWT Challenge Fund project IWT011, please contact Project Leader Jo Shaw, jshaw@wwf.org.za



Credit: Jamie Manwell

Connecting enhanced livelihoods to elephant & rhino protection – Northern Kenya

In the harsh environment of northern Kenya, pastoralist communities struggle with frequent droughts, poor health care, sparse government services and the threats posed by cattle rustling and ivory poaching. At the same time, ethnic rivalries continue to hinder development and disrupt lives. However, all this is changing, thanks to a new movement based on community conservation.

By the end of 2015, 33 members of the umbrella organisation the Northern Rangelands Trust (NRT) were managing over 44,000 km² of land for the purposes of transforming lives, securing peace, and conserving natural resources.

The conservancies are managed by democratically elected boards and staffed by local people, often mixing ethnic groups that have historically fought with one another. Although the conservancies are still dependent on donor funds, they raise increasingly large sums from activities related to conservation and tourism. The profits are being channelled into education, healthcare and development activities.

With support from the IWT challenge fund and others, the proportion of illegally killed elephants in NRT conservancies has dropped 53% in since 2012. This can be attributed to a number of things, including coordinated efforts of conservancy rangers, NRT's

mobile patrol teams, support from the Kenya Wildlife Service, and an increasing awareness of the importance of conservation and “ownership” of wildlife by resident communities.



Community conservancy school, Credit: Phil Carter

Communities feel more compelled to conserve and protect wildlife due to the benefits derived from development projects initiated through the conservancy livelihood fund, supported by IWT and other donors. In 2015 and 2016, the fund has collectively supported 32 community development projects in infrastructure, health, water, women and youth microfinance, education bursaries and agriculture - benefiting over 11,000 community members.

For more information on IWT Challenge Fund project IWT026, please contact Sophie Harrison, **sophie.harrison@nrt-kenya.org**



*Seaweed farmer transports her harvest from the beach,
Credit - Ivana Rubino*

General Darwin News



Team member Paulo putting a recorder up in Taga forest, Credit: Deja Rivea

Monitoring the Manumea: largest-ever scientific sound recorder survey undertaken

The use of automatic sound recorders has revolutionised wildlife ecology and conservation research. In Samoa, the team working on the critically endangered Manumea, or tooth-billed pigeon, turned to a relatively new technology to undertake a ground-breaking survey across the country. Remote automatic sound recorders were placed in the forests and set to turn on and record during key periods of the day, with the aim of revealing critical new information on the species.

'This was the largest sound recorder survey conducted in science to date,' says Dr. Rebecca Stirnemann, a postdoctoral fellow at Australian National University.

While most previous studies typically use 5 to 20 recorders, the team set 72 recorders across 2842 square kilometres in Samoa, a tropical island nation in the South Pacific. 'We wanted to study where this rare and very elusive bird is found and what landscape features they need so conservation action can be targeted,' Stirnemann says. "Because the species is rarer than a tiger and covers a large area, we needed a large spatial coverage.'

With only 200 Manumea birds estimated to remain in the wild, the results from this study are critical for conservation. However, the results are not only relevant for the Manumea. Buried in the thousands of hours of sound recordings are crucial data on other endangered species, such as the Mao and the friendly ground dove species also only found in Samoa. "We now have the enormous task of sorting through the data," says Samoa Conservation Society Officer Christine Tuioti, who has just completed the task of downloading the information.

Categorizing and analysing thousands of hours of sound files is not easy, but the "soundscape" of today's Samoa has great value.

"This dataset will also form an important baseline to monitor forests as they change." says Moeumu Uilli, a principal officer of Forestry for Samoa, "For instance, it can be used to show success as restoration projects are implemented or to monitor climate change".

On the steep slopes of Samoa's islands, travelling to field sites to deploy the recorders was no small task. Teams spent weeks hiking and working with local communities to honour local customs and involve as many as possible in environmental conservation.

This project was a partnership across the Pacific with the sound recorders lent from across both New Zealand and Australia. "It was only by working together that we could make this happen," says Dr. Stirnemann. The recorders were placed across the country with the help of many volunteers and in collaboration with the Ministry of Natural Resources and Environment, Samoa.

"This project was only possible because the Department of Conservation, New Zealand and a number of private scientists and consultants across Australia and New Zealand lent us the recorders" says scientist Dr Rebecca Stirnemann. The team is also grateful for funding from the Darwin Initiative, the Rufford Conservation Fund and Auckland Zoo.

For more information on project 21-001, click [here](#) or contact Project Leader Rebecca Stirnemann, rstirnemann@gmail.com



A seaweed farmer checks her crop during the drying process, Credit: Ivana Rubino

A multi-faceted approach to conservation and poverty alleviation in Southwest Madagascar

The Bay of Ranobe in the southwest of Madagascar constitutes part of “Le Grand Recif de Toliara”, the third largest coral reef system in the world. It is also the main source of livelihoods for the approximately 20,000 people that live within the bay and depend on fishing to provide for their families. Declining fishery yields and increased competition for marine resources drives a familiar pattern of over-exploitation and ecosystem collapse. Fishermen are increasingly turning to destructive fishing methods, destroying corals and seagrass beds to extract the last remnants of marine productivity, while marine turtles that use the bay as a habitual feeding ground are actively hunted for their high market value.

This Darwin Initiative funded project uses a multi-faceted approach to address the concomitant drivers of biodiversity decline in the region: extreme poverty, few

opportunities for skill development and minimal livelihood strategies. Through the provisioning of skills based training, fishermen are supported in the establishment of seaweed and sea cucumber farms, utilising the previously underexploited resource potential of the bay, while maintaining their cultural ties to the ocean. As an alternative livelihood strategy, these community managed aquaculture farms have proven to be popular, with 260 families benefiting from a direct increase in revenue. For vulnerable communities living in extreme poverty, this represents a promising step towards sustainability.

To demonstrate their commitment to marine stewardship, participating communities have established a limited-use protected zone of more than 400 hectares over critical seagrass habitat. This provides protection from destructive fishing methods such as the use of seine nets and gives relief to juvenile fishes and feeding



A sea cucumber farmer displays his product, Credit: Ivana Rubino

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In the last 18 months of the project, over 1,000 turtles were released
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existing participants. Such training is critical in ensuring communities have the skills and knowledge necessary to maintain their alternative livelihood activities long after the life of the project, guaranteeing a long and profitable legacy.

For more information on project 21-018, click [here](#) or contact Cale Golding, calegolding@gmail.com

turtles. The next phase of the project is to establish no-take areas within these protected zones.

Working closely with local partners and associations, this project encourages communities to be directly involved in conservation actions for marine turtles. Turtles that have been caught in fishing nets are tagged and then released by the fishermen who catch them. In the last 18 months of the project, over 1,000 turtles were released in this way. From a baseline of 655 turtles caught and killed in the fishery each year, this translates into considerable protection for the species.

By engaging communities in direct conservation actions and delivering alternative livelihood options to fishermen, communities are economically motivated to engage in conservation behaviour, and are empowered to act as stewards of their own marine resources. Now in the final year of Darwin funding, this project continues to expand the scope of alternative livelihood activities, by including additional villages and building upon the training of



Marine turtles are tagged and measured prior to release, Credit: ReefDoctor



Colour-coded fishing vessels show which managed access fishing areas fishers are allowed to fish, Credit: J. Maaz WCS

Ending open access fisheries: securing fishers' livelihoods

Belize uses a combination of tools that work in concert with each other to manage its national fisheries including regulations on gear, seasonal closures, and a world-renowned system of marine reserves. As a result, its fisheries have not experienced the same catastrophic collapse as some of its regional neighbours.

Until recently, Belize's fisheries sector operated under a completely open-access system. Any Belizean aged 18 or older could obtain a commercial fishing license to fish nearly anywhere in Belize's territorial waters. That approach threatens the long-term sustainability of the fisheries sector by encouraging more fishers to compete for limited resources, with a greater incentive to fish illegally.

In 2011 the Government of Belize, with the support of the Wildlife Conservation Society and the Environmental Defense Fund, introduced a managed access programme for the country's fisheries at two pilot sites, the Glover's Reef Marine Reserve (GRMR) and the Port Honduras Marine Reserve (PHMR). Managed access significantly reduces open-access fishing in Belize. It is designed to provide traditional fishermen secure and dedicated access to fishing areas within marine reserves, thereby reducing competition, turf wars, and the incentive to fish illegally. Since its implementation, there has been a dramatic decrease in the number of illegal activities in GRMR and PHMR.

With the support from the Darwin Initiative, WCS has been able to move managed access from a pilot initiative to a national management regime that is widely

supported by the fishing community. The support empowered WCS to work extensively with the fishing communities to establish managed access committees per fishing area that are comprised of fisher-elected representatives. This inclusion of fishers led to the design and support for the national implementation of managed access. On June 27 2016 the Government of Belize announced its decision to endorse the national expansion of managed access to the entire territorial waters of Belize. Through this management system, Belize's territorial waters are divided into nine fishing areas from which fishers can select a maximum of two fishing areas along with an optional deep slope fishing

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Over time...licensed fishers will develop a sense of ownership for the area.

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The effectiveness of fisheries management tools such as managed access relies heavily on their ability to demonstrate realised benefits to users. Over time, through managed access and the employment of sustainable fishing practices, licensed fishers will develop a sense of ownership for the area. That bodes well not only for their future, but for the long-term conservation of Belize's precious marine resources.

For more information on project 22-01 4, click [here](#) or contact Project Leader Nicole Auil Gomez, nauilgomez@wcs.org



Credit: BAS

Unlocking the secrets of South Georgia's icy past

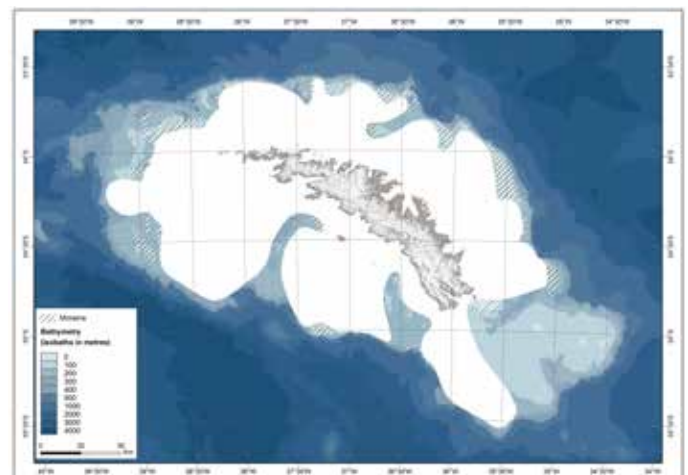
The ship RRS James Clark Ross visited the remote island of South Georgia as part of Darwin Initiative projects in 2011 and 2013. The **February 2016 newsletter** reported how this led to the discovery of growing carbon sinks of marine biodiversity on the island's continental shelves. Further work by British Antarctic Survey, their Darwin partner, the Government of South Georgia and South Sandwich Islands and scientists from the Antarctic Seabed Carbon Capture Change project (www.ascoc.co.uk) has revealed a treasure trove of information useful to conservation, fisheries, biogeographic science and implementation of the Convention on Biological Diversity.

Fishermen and marine biologists have long known that the edge of South Georgia's shelf seemed to be its most productive area. New research, published in the Journal of Biogeography on the 25th August 2016 (<http://onlinelibrary.wiley.com/doi/10.1111/jbi.12855/abstract>), suggests that this is where the ice reached at its most extensive point during the last ice age.

Previous expeditions by marine geologists suggested that the peak of the last glacial maximum (LGM) had either been restricted to the island's fjords ('Little ice')



An Agassiz trawl is readied for sampling on the deck of RRS James Clark Ross, Credit BAS



The results of Darwin fieldwork suggests that during the last glacial maximum the icesheet covered much, but not all of the continental shelf around South Georgia

or extended out occupying tens of thousands of square km ('Big ice'). The Darwin Initiative grant-funded work by an international team of biologists found that most of South Georgia's seabed species (especially those with restricted dispersal) only occurred outside of the 'Big ice' area. However they found hotspots of species also occurred in the far north east shelf plain and the troughs, called cross shelf fjords, suggesting the ice may not have covered these areas.

Groups of animals with sessile (non-moving) adults, such as bryozoans and sponges, seem to have made little progress reinvading South Georgia's continental shelf in the 20,000 years since the LGM. However bryozoans and sponges which were known secondary colonisers of mobile species, such as sea urchin spines may have 'hitched a ride' in to recolonize more quickly. BAS molecular ecologist, Chester Sands, found that other more mobile groups, particularly the brittle stars, had managed to reinvade much more quickly, to dominate

the inner fjord sediments. **Why does it matter where marine biodiversity is and how long it takes to recolonize?**

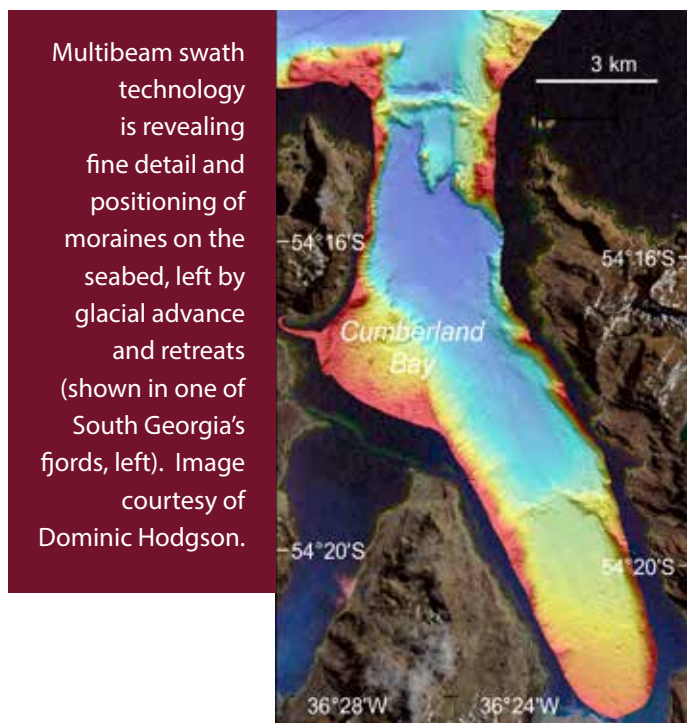
South Georgia is one of the world's largest islands with an entirely native marine fauna (as far as we know). PhD student Oliver Hogg said that most of South Georgia's many endemics, rare species and edge of range species are amongst this seabed biodiversity treasure trove which is richer than around Galapagos. He added 'Our Darwin Initiative field work has shown how incredibly long the recovery times of some elements of seabed life can be'. This greatly aids conservation and management decision-making, balancing the size, position and nature of the one of the world's largest Marine Protected Areas with the crucial finances of the regional fishery. The international Convention on Biological Diversity stresses the need to determine the biodiversity present and what status it has such that potential threats can be then identified and attempts made to mitigate them. It is very clear that not all areas of seabed are equally valuable

with respect to marine biodiversity; the outer area of the shelf which may be little disturbed for hundreds of thousands of years is much richer than the species-poor inner area recovering from glaciation. Even within the outer ancient seabed, the moraines of rubble bulldozed to the edges of the continental shelf seem to be particularly rich in species that occur nowhere-else.

The ASCCC team, investigating 'blue carbon' (carbon captured and stored by marine organisms), found considerable implications of this unusual biodiversity distribution. The ancient, rich biodiversity beyond the reach of ice in the last glaciation is capturing and storing nearly 4.5 tonnes.km², five times the amount of carbon compared to the young, depauperate (lacking in species), inner shelf plain. This suggests that South Georgia and possibly other sub-Antarctic shelves could become very much more important regions of natural carbon capture and storage – as a feedback against climate change. Importantly, the team think that unlike more productive coastal marshes and mangroves, much of this carbon is genuinely sequestered through burial in deep sediments. Darwin Project Leader David Barnes said 'If, and it is a big if, the marine organism carbon capture also accelerates with increasing sea temperature, then the sub-Antarctic could develop global significance to carbon budgets'. Remote and wilderness overseas territories have so much more to offer than aesthetics, tourism and fisheries; one of the world's newest and largest MPAs could be a hugely valuable and growing 'blue carbon' capture and storage hotspot.

An infographic from deSciPhered (see asccc.co.uk homepage) shows moraines and biodiversity pushed to the shelf edge by glaciation but recolonizing at very different rates.

This article discusses research carried out during two different closed Darwin projects – EIDCF013 and DAR18-019. For further information contact Project Leader David Barnes, dkab@bas.ac.uk





Living fossil Helenoconcha relictata surviving in isolated remnants of cloud forest habitat, Credit: Lourens Malan

The surprising discoveries of St Helena's cloud forest project

Working with St Helena's native plants and animals you soon get used to handling very rare species on a daily basis. Terrestrial conservation has a very long history on this 121km² south Atlantic island. Native ecosystems have been systematically destroyed over the last 500 years leaving less than 1% of the island giving refuge to the remaining fragments of native habitat.

These tiny fragments boast an incredible concentration of endemic diversity. No less than 600 endemic species survive which is about a third of the total endemic diversity across all the British overseas territories. Most of what remain cling onto the steeper parts of the volcanic cliffs complicating their exploration. This is likely the reason why there is surprisingly little known about the former ecosystems and their ecology. In an attempt to fill some of the gaps in our knowledge before more of the remaining fragments disappear, the cloud forest project was started as part of ongoing attempts at halting losses and improving connectivity between the isolated fragments.

The focus of this Darwin Plus project is to secure the remaining genetic diversity of St Helena dogwood, whitewood, the cabbage and false gumwood. These trees once used to be commonplace in the cloud forest,

but have dwindled to unsustainable numbers along with the fragile habitats they tend to shelter in. The inaccessibility of the soft and crumbly cliffs where the survivors remain makes seed collection dangerous to the collector as well as the habitat. Irreversible damage can be caused to the fragile vegetation in the process. The time needed to access one tree practically mean that the seed collecting window is shut by the time you get to the next tree and adequate sampling is not feasible. The project is securing clones for ex-situ conservation and undertakes site assessments; documenting relevant tree and associated invertebrate data.

During the process of scouring the cliffs looking for survivors, the project has found a number of surprises along the way.

The first of these was the discovery, by accident, of St Helena's colourful spiky yellow woodlouse on the leaves of a dogwood tree. This critically endangered species was thought only to occupy a small range in different habitat in a remote portion of the Peaks National Conservation Area. As a result the project team took time in site surveys to check for the presence of this elusive isopod and recorded its presence on a further

30 trees over 18 different sites. This information is now paying dividends in the 'Conservation of the spiky yellow woodlice and black cabbage tree woodland on St Helena' Darwin Project.

Large bellflower is probably even less populous than the spiky yellow woodlouse so its presence on a small cliff, in numbers more than double the known world population of these critically endangered plants, was a great find for the team. With very little extra effort, cuttings and seed of individuals of this species are being developed ex-situ along with the four primary tree species, to propagate numbers and secure genetic diversity. There is a hybrid bellflower that might further jeopardise the survival of large bellflower. With financing from Darwin Plus, the project's field teams have found more localities with this so called hybrid have found more localities with this so called hybrid and ongoing growing trials is making us wonder if it is not a separate species in its own right, having characteristics unlike either 'parent'. Further growing trials should shed more light.

Other finds are also helping to improve our knowledge on the rarity of some of the island's listed critically endangered species. Whilst still extremely rare, the large kidney fern appears to have been under recorded in previous surveys, not surprisingly as it is difficult to spot at a distance in mixed fern assemblages. The project team has been pleased to find that although numbers remain low, its distribution appears to be much more widespread than previously known.



St Helena's flagship invertebrate the spiky yellow woodlouse, Credit: Lourens Malan

If ferns are difficult to find then small invertebrates are almost impossible. Time spent in the field undertaking careful surveys and site maintenance have allowed the re-discovery of invertebrates not seen for decades or even centuries. Perhaps the most exciting of these is the distinctively marked *Chlorita edithae*, known only from a few specimens collected in 1857 by Edith Wollaston, the wife of prominent entomologist Thomas Vernon Wollaston. This tiny but striking leaf hopper seems to be associated strongly with the endangered whitewood tree of which we have found only 29 old trees. Some invertebrate discoveries are less easy to place where previous knowledge is lacking. Project staff has found a very small and less impressive 'close cousin' of the spiky yellow woodlouse. Tantalisingly, not enough individuals have been found yet to justify destructive sampling for taxonomic work on this new species.

The project team is grateful to Darwin for funding this work which is providing key conservation benefits and lots of unexpected gains in our efforts to conserve the unique endemic nature of St Helena.

For more information on project DPLUS029, click [here](#) or contact Project Leader Lourens Malan, lourens-malan@enrd.gov.sh



Striking St Helena leaf hopper not observed since 1857, Credit: Lourens Malan



Municipal staff at GIS training in WCS office, Credit: WCS Paraguay

Building capacity for natural resources management in the Paraguayan Chaco

The Darwin Initiative project on “Sustainable Ranching and Participatory Land Use Planning in Bolivia and Paraguay” led by the Wildlife Conservation Society (WCS), is focused on improving natural resources management in the isolated and impoverished districts of the Paraguayan Chaco, recently identified as the region with the “highest deforestation rate in the world” (Hansen et al, 2013).

As ranching activity continues to spread and intensify in response to the demands of growing human populations and rising meat consumption, its negative impacts on biodiversity and the livelihoods of vulnerable communities reliant on ecosystem services are evident. Consequently, since the beginning of the project in 2014, a series of activities have been developed to advance a more rational use of the Chacoan territory. As part of the project strategy, WCS joined forces with local government’s authorities, such as the Puerto Casado Municipality, and developed capacity building workshops for environmental governance officials. The workshops covered topics such as environmental laws and regulations, decentralisation processes, and the requirements to establish specialised technical offices to monitor land use change in each municipality.

Due to a lack of technical and human resources, the Puerto Casado Municipality was not able to undertake the continued monitoring of its natural resources, nor the necessary measures to control the proper use of its land. However, the current municipal administration is highly committed to promoting the management of their resources. With the support of the Darwin Initiative, WCS collaborated with them to establish this technical office.

To this end, and as a reflection of their commitment, the Mayor of Puerto Casado proposed formalizing the joint endeavour in an addendum to the original cooperation agreement signed with WCS two years ago. A specialized instructor was hired to provide theoretical and practical training on the use of Geographic Information Systems (GIS) to three municipal officers, first in WCS’s main office in Asunción, and later in Puerto Casado. Office furniture, GPS equipment and computers were also provided with Darwin support, while the Municipality is providing the Internet service.

Plans for the upcoming months include meetings with between WCS and the Municipal Board to support the elaboration of a by-law, to formally establish the Environmental Office. Subsequently, the municipality will elaborate further by-laws for the creation of environmental taxes and other relevant legal resolutions, which will not only ensure the safeguarding of natural resources in its territory, but will also provide the local government with a source of income to sustain the office in the long term. The by-laws will be based on models developed by legal advisors from the Environmental Law and Economics Institute (IDEA), another project partner, and delivered by WCS to the municipality in the form of a methodological guide to improve municipal management.

For more information on project 21-004, click [here](#) or contact Project Leader Lilian Painter, lpainter@wcs.org



A KFS Officer during a visit in one of the tree nurseries, Credit: Emily Mateche

Securing the upstream of Yala Swamp through riparian zone rehabilitation

The Yala River is one of the main rivers that recharges Yala swamp and forms the northern catchment area of Lake Victoria. The Yala riverine ecosystem is an important habitat for hippos, antelopes, crocodiles, pythons, a variety of birds and the globally near threatened species such as the leopard. Local communities heavily rely on resources from this riverine ecosystem for supporting their livelihoods. With rising population growth in the area and ever increasing demand for natural resources, the pressure on the wildlife habitat is increasing.

Encroachment on the riparian area is one of the main threats resulting in habitat loss and increased incidence of human-wildlife conflict. Nature Kenya, through support from the Darwin Initiative for their project "Balancing development and conservation in Kenya's largest freshwater wetland", is working with the County Government of Siaya, the Kenya Forest Service (KFS), the Water Resources & Management Authority (WRMA) and Community Based Organizations (CBOs) to take key actions to protect the riparian zone of River Yala. Through the project, CBOs have been supported to raise over 174,264 seedlings of native trees and bamboo. These are currently being planted over an area of 200ha and the total area to be planted is likely to be around 67km of the 219 km stretch of River Yala.

“ Through the project, CBOs have been supported to raise over 174,264 seedlings of native trees and bamboo

A number of measures have been put in place to ensure tree survival including supervision visits by officers from

KFS. Visits will involve monitoring tree planting and growth, provision of technical support to farmers and intensive sensitisation of riparian land owners to support tree planting, and to provide post planting care for the trees. More trees are being raised with agreed quotas for establishing on-farm wood lots, habitat restoration and for sale by the CBOs as an income generating activity. Installation of energy efficient improved stoves into households is also ongoing; these stoves require less wood or charcoal to operate, and produce less smoke so are healthier. These interventions aim to reduce pressure on the ecosystem.

Community members have gathered valuable experiences along the way. For Rambugu-Hafife Farmers, one of the groups involved tree nursery establishment, a member affirms, “we have learnt the value of bamboo and we have planned to invest in raising bamboo seedlings during the next season”. For Uriri Women Group, one of the members Ms. Perez Akinyi highlights, “the proceeds from the sale of tree seedlings forms part of members’ shares. Only shareholders are allowed to borrow money from the group and this encourages active participation of members”. Mr. Samson Odhiambo Genga, a member of Olalo CBO who is spearheading some sensitisation activities in villages within Lihanda Sub-location observes, “through spreading messages on the importance of habitat restoration, we have managed to bring on board riparian land owners who were initially hesitant to be engaged. The riparian land owners are currently actively involved in the on-going tree planting exercise and some are requesting more trees than we have targeted to plant”.

” For more information on project 21-015, click [here](#) or contact Project Leader Serah Munguti, advocacy@naturekenya.org



Credit: B Rivard

Newsletter Contacts

The Darwin Initiative Secretariat (Defra)

The Darwin Secretariat is based in Defra and includes Claire Millar, Fiona Charlesworth, Eleanor Whittle, Sally Cunningham and Shaluki Perera.

If you have any general queries about how the Darwin Initiative operates please e-mail us at [**darwin@defra.gsi.gov.uk**](mailto:darwin@defra.gsi.gov.uk)

For any queries on project applications or existing projects please contact our Darwin Administrators (LTS International) at [**darwin-applications@ltsi.co.uk**](mailto:darwin-applications@ltsi.co.uk) or [**darwin-projects@ltsi.co.uk**](mailto:darwin-projects@ltsi.co.uk)

This newsletter is produced quarterly. To include an article on your project please contact us at [**darwin-newsletter@ltsi.co.uk**](mailto:darwin-newsletter@ltsi.co.uk)

The UK Government's Darwin Initiative aims to promote biodiversity conservation and sustainable use of resources around the world including the UK's Overseas Territories. Since 1992, the Darwin Initiative has committed over £126 million to over 997 projects in 159 countries