Great Frigatebird on
Henderson Island
Credit J Lavers

UK Overseas Territories Newsletter November 2015

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)**

The Overseas Territories Environment and Climate Fund, also known as Darwin Plus, funds environmental projects in UK Overseas Territories (OTs) and fellowships for UK OT Nationals to train in the UK

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Reef survey on the recent BIOT expedition Credit R Roche

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Seed heads of *Acaena magellanica*, Falkland Islands

Credit A Davey

Publicity and information about the Darwin Initiative

For more information on the Darwin Initiative please visit:

www.gov.uk/government/groups/the-darwininitiative

For further details about current and completed Darwin Initiative projects, including their final application forms, please visit:

www.darwininitiative.org.uk

We've recently launched a Darwin blog. This includes news and thoughts on issues being tackled by the Darwin Initiative - both at the project and programme level. We're also keen to share other Darwin project blogs. You can read it here:

https://darwininitiativeuk.wordpress.com/

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.

Wild mountain chicken, endemic to Montserrat
Credit G Garcia

A word from Darwin

We've recently closed to new Darwin Plus applications - in total we recieved 36 project applications and 1 fellowship application. Previously we asked all applicants to use the same applications forms. This year, after feedback from applicants we also developed specific materials for Fellows to apply through Darwin Plus.

We very much appreciate the level of effort that goes into writing a Darwin Plus application. Yet again we've had some truly inspiring applications that highlight the wealth of knowledge and expertise there is.

The results of this funding round are to be expected before the end of the year. You will be informed by e-mail of your success.

Best of luck to all who submitted an application this year!

If you want to know more about Darwin Plus projects we have individual pages for each funded project. This includes their original application and any subsequent Annual Reports from these projects. The most recent Annual Reports were received in April this year and the majority of them should be on-line and available now.

Take a look at the Darwin website here for more information on all our projects.

Robber crab in British Indian Ocean Territory. Credit J Turner

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Three lorikeets on a pandanus branch
Credit S Oppel

Research expedition to Henderson Island

Henderson Island is one of the four islands in the Pitcairn Islands UK Overseas Territory, and one of the remotest islands in the world. This beautiful island is a raised coralline atoll about 15m above sea level. Almost untouched by human impact, it is one of the few remaining intact examples of this habitat. Henderson is home to four endemic landbirds, an important nesting site for seabirds and the only known nesting site for the Henderson petrel.

In 2011, the RSPB and the Government of the Pitcairn Islands attempted to eradicate introduced Pacific rats from Henderson to safeguard the island's native species whose long-term survival is being threatened as a result of predation by the rats. However, the eradication failed for reasons that are still uncertain but potentially linked to an unusual weather pattern experienced during the operational year.

In May this year, the Darwin Initiative supported the RSPB to mount an expedition to Henderson Island. Divided into two phases, the first team have now returned home while the second are on Henderson until late November. The purpose of this expedition is to gather more information that may increase the likelihood that a second rat eradication operation will succeed.

The first team of seven people embarked on an ambitious research programme including rat trapping, bird counts, and captive feeding trials for rats and an endemic bird, the Henderson rail. By individually marking rats with numbered ear tags, and recapturing the same rats in various places throughout the forested plateau and along the beach, the team was able to estimate both the rat density and the movement distances of rats - information that is very valuable for informing things like baiting density for an eradication.

The bird counts revealed that one species, the Henderson rail, had recovered since 2011 and was as abundant as in 2009. This species had unfortunately suffered non-target mortality from the rat eradication, as some rails had consumed the toxic bait intended for the rats.

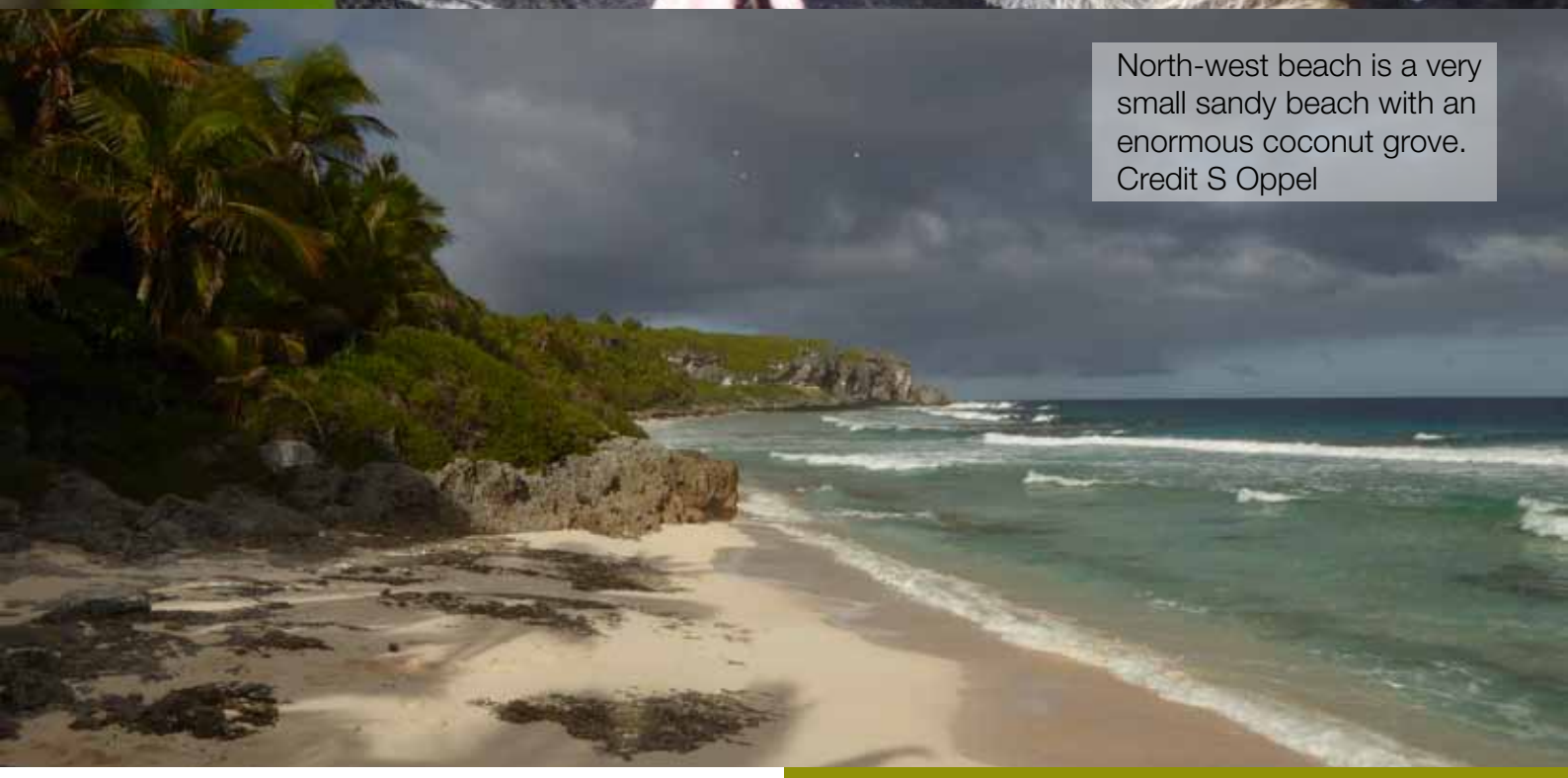
Besides the rat and rail work, the team botanist recorded the fruiting and flowering phenology of

the island's tree species to find out whether there is a distinct time of the year where rats struggle to find sufficient natural food. This would help target a time of year when bait consumption by rats would be highest.

The Henderson Island expedition is funded by the Darwin Initiative and David & Lucile Packard Foundation and continues until late November 2015.

For more information on project 19-028 click here or contact John Kelly, john.kelly@rspb.org.uk. For regular updates see the RSPB's Saving Species Blog

We individually marked all the rats to document their movements through the forest. Credit S Oppel



North-west beach is a very small sandy beach with an enormous coconut grove. Credit S Oppel

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Project partners from Puerto Rico provide plant identification training for BVI project staff in the Guánica State Forest, Puerto Rico. Credit M Hamilton

Building systems and capacity to monitor and conserve British Virgin Island's flora

An exciting new collaborative project has commenced in the British Virgin Islands (BVI) thanks to Darwin Plus funding. This project is intended to increase botanical capacity in BVI in order to help conserve the it's native flora.

The project started in April 2015 and is being led by Kew's UK Overseas Territories (UKOTs) Team, together with the National Parks Trust of the Virgin Islands (NPTVI), the University of Puerto Rico, Mayaguez Campus Herbarium (MAPR), the Departamento de Recursos Naturales y Ambientales (DRNA) from Puerto Rico and the US Fish and Wildlife Service (USFWS) and the Caribbean Ecological Service Field Office.

The project has got off to a great start with all partners working together to deliver this important project. By harnessing international and regional expertise, we hope this project will strengthen local capacity and develop the botanical collections, resources and data systems in BVI to enable long-term plant conservation and habitat management.

After an initial training visit to Puerto Rico, we held a project planning meeting. By combining our planning meeting with the training all the project partners were able to engage in BVI.

For the training we visited protected areas in BVI and discussed management practices in relation to Puerto Rican protected areas. During the field visits, we also recorded plant species of conservation concern. Through this the team made two remarkable discoveries:

- We re-discovered the BVI endemic and Critically Endangered *Calyptranthes kiaerskovii* on the island of Tortola within the Sage Mountain National Park. This small tree species was first reported as being found in Tortola in 1895; however, it had not been seen here again until the project team's find in June 2015. This is an extraordinary discovery that extends the species known range from the Gorda Peak National Park, on the island of Virgin Gorda.
- The project team also discovered a new population of *Calyptranthes thomasiana* (Thomas' Lidflower), a Virgin Islands endemic shrub that is also threatened with extinction.

You can follow our progress via: https://storify.com/KewUKOTs/building-systems-and

For more information on project DPLUS030 click here or contact Project Leader Martin Hamilton, m.hamilton@kew.org

Cayman MPAs are resulting in overspill of fish into fishing areas. Credit J Turner

Assuring engagement in Cayman's enhanced marine protected area system

Our Main project developed a new Marine Protected Areas (MPA) system flagged up 4 issues that, if not addressed, had the potential to undermine the future success of the new MPA system.

The Post Project was designed to address the 4 issues highlighted by the Main Project. This project was a partnership between the Cayman Islands Department of Environment, Bangor University and The Nature Conservancy.

The first challenge was to deal with the the control of invasive lionfish. Lionfish culling is believed to mitigate the impact of lionfish on reef-fish communities, but is resource intensive, and it was feared that reduced sightings of lionfish in culled zones may actually be due to lionfish learning to avoid divers.

In the Post Project we conducted surveys around each of the 3 Cayman Islands. The results of this has shown that the culling programme is an effective management tool which significantly reduces the density of lionfish. We also conducted surveys in No Dive Zones, (a unique type of zone in the Cayman MPA system where no culling takes place) to ensure that lionfish were not merely moving to these areas as a result of hunting.

The second challenge was to protect multi species fish spawning aggregations (SPAGs). These SPAGs come under seasonal clossures and are therefore protected from overexploitation. However, our surveys demonstrated that 26 other species of reef fish spawn at these sites at other times of the year. We deployed satellite drifters (satellite tracked drifting bouys) which showed that Cayman reefs self-recruit – that is fish larvae return to Cayman reefs. The National Conservation Council is now working with fishers to agree whether to close SPAG areas to fishing all year round, or whether to use species specific legislation to protect named species at certain times of year.

The third challenge was to assess the sustainability of concessionary fishing areas around the marine reserves, which are easily accessible from boat launch sites. Fish overspill from MPAs was assessed, together with what fishers caught and where. From this it appears clear that increases in fish numbers (and diversity) experienced in protected areas are also felt outside these areas. In the 32 proposed concessionary fishing areas, fish density and

biomass were generally the same, demonstrating an overspill of fish from reserves into fishable waters.

Questionnaires revealed that the majority of fishers were aware of the benefits of the reserve system, and what determined fishing location was a combination of abundance of fish, sea state and fuel cost.

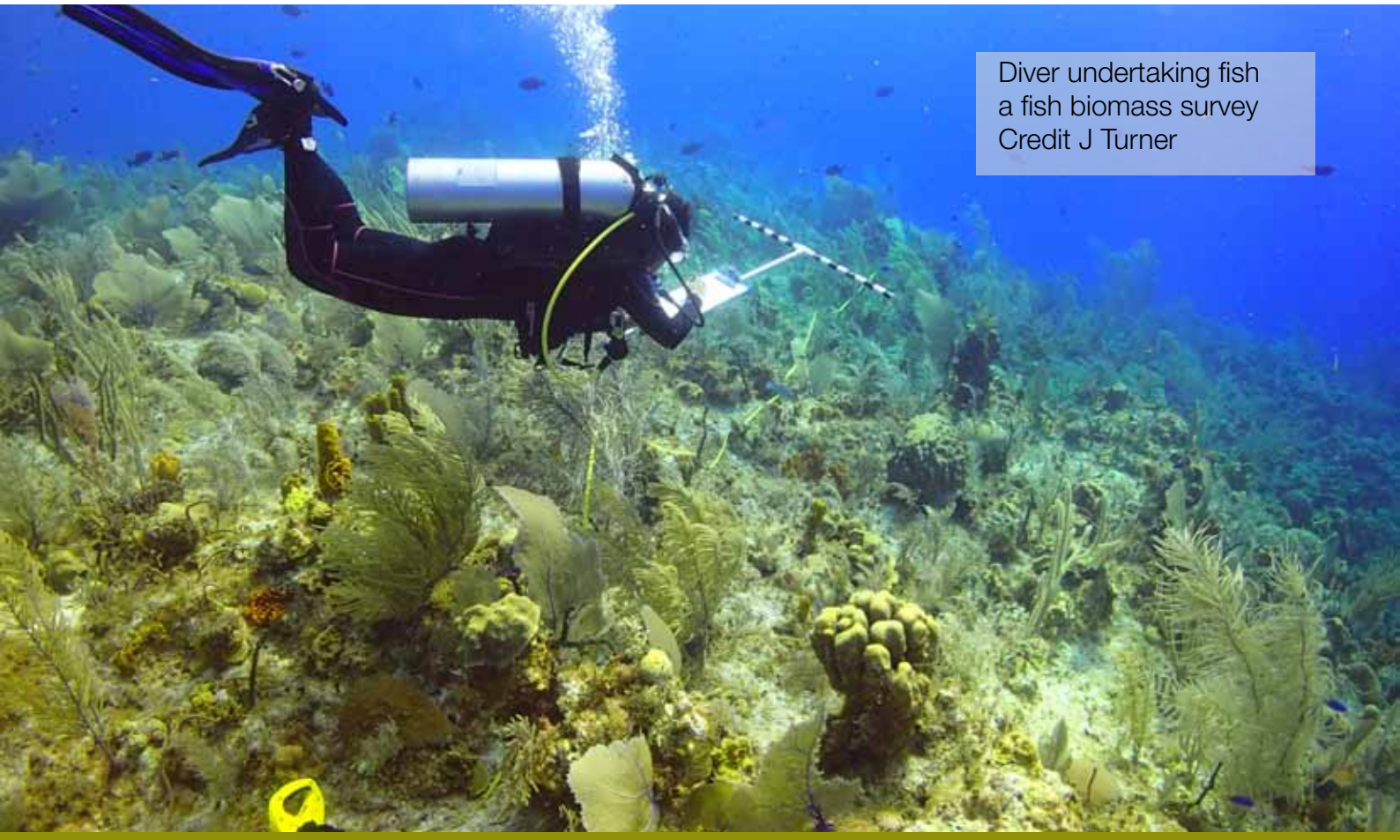
The fourth challenge was MPA enforcement dilution: the expansion of No-Take MPAs from 15% to 50% of the Cayman shelf requires an expansion in enforcement, but there are no resources to achieve this target. A novel solution was found by developing an 'app' called SIREN (System for Incident Reporting and Enforcement), consisting of an Enforcement 'app', a Public 'app' and a database which coordinates the information flow between the two.

Using the Enforcement app, enforcement officers can track incidents and access data in the field using waterproof tablets, meaning that they can stay on the beat, rather than spend time in the office.

The Public 'app' displays map based information on smart phones of their location, MPA zone, and rules that apply there, and provides a means of reporting incidents (anonymous if they prefer) and observations (e.g. turtle nesting, damaged mooring buoy) and these notifications appear directly on the Enforcement Officer's tablets. There is even a guide to which local and imported fish are sustainable!

The results of the project have been widely disseminated in local press, TV and stakeholder meetings, and at national and international conferences, as a model for other Caribbean islands in designing an efficient MPA system.

For more information on project EIDP045 click here or contact Project Leader John Turner j.turner@bangor.ac.uk



Diver undertaking fish a fish biomass survey Credit J Turner

Ferruginous duck, *Aythya nyroca* flying across Akrotiri Credit S Christodoulides

The first Darwin Plus project for the Sovereign Base Area of Akrotiri – Restoring a unique wetland

The first Darwin Plus project for the Sovereign Base Area (SBA) of Akrotiri started in April 2015 aiming to restore a unique wetland, the Akrotiri Marsh. The project is led by BirdLife Cyprus and is implemented in collaboration with two partners, the Akrotiri Environmental Education Centre (administrated by the SBAs) and RSPB (BirdLife partner in the UK).

This 2-year Darwin Plus project aims at restoring the Akrotiri Marsh to a mosaic of habitats leading to the restoration of species diversity. It also aims to provide increased socio-economic opportunities for local villagers through targeted project actions.

The site is part of the Akrotiri wetland complex which is a Ramsar site, an Important Bird Area (IBA) and a Special Protection Area (SPA) as well as a candidate Special Area of Conservation (SAC). The marsh, which covers an area of around 150 hectares, has been largely unmanaged for the last 20 years resulting in the overexpansion of reeds and the consequent loss of bird and plant diversity.

Through this project we hope to deliver ecosystem-based conservation actions in combination with public engagement actions.

We have a range of activities planned including a combination of landscaping works, water management actions and management of vegetation with grazing animals. Through this we hope to support habitat modification to create a variety of habitats and therefore increase species diversity while improving conditions for priority breeding species such as the Spur-winged lapwing *Vanellus spinosus*, the Black-winged Stilt *Himantopus himantopus* and the Ferruginous duck *Aythya nyroca*.

Opening up the reed bed will also provide more space for grazing and therefore increased opportunities for livestock keeping, a traditional activity at the site. Grazing is a key management action that will also contribute to longer-term reed management.

The project also aims to provide increased economic opportunities for local people through the promotion and preservation of traditional practices such as livestock grazing and basketry.

For more information on project DPLUS034 click here or contact Project Leader Clairie Papazoglou, clairie.papazoglou@birdlifecyprus.org.cy

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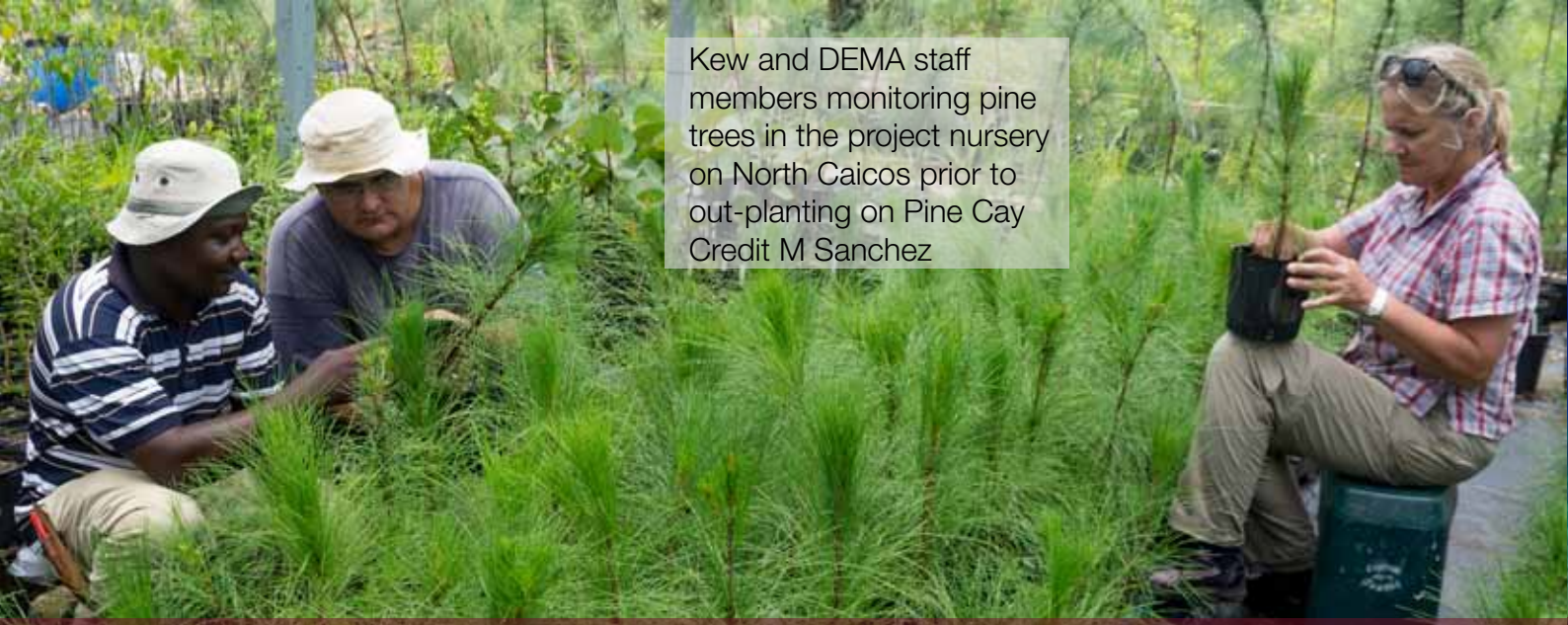

Kew and DEMA staff members monitoring pine trees in the project nursery on North Caicos prior to out-planting on Pine Cay Credit M Sanchez

Caicos Pine Forests: Mitigation for Climate Change and Invasive Species

Populations of the National Tree of the Turks & Caicos Islands (TCI), Caicos pine *Pinus caribaea var. bahamensis*, have been reduced by over 90% in the past decade by the invasive pine tortoise scale insect *Toumeyella parvicornis*. However, through our current Darwin Plus project "*Caicos Pine Forests: Mitigation for Climate Change and Invasive Species*", we have gathered an enormous amount of new knowledge about the pine forest, locally called pineyards.

Expertise from Royal Botanic Gardens, Kew (Kew), has increased understanding of the ecology of this critically imperilled ecosystem. As a result we have begun habitat restoration and there has been an increase in capacity in TCI for local ecosystem management.

We have identified 'Core Conservation Areas' for Caicos pine on the three islands. This has helped us create a focused in-situ management programme that includes out-planting and monitoring of nursery-grown trees.

In addition, the project's manager and nursery officer have undertaken seed collections at the end of hurricane season. This has been carried out using protocols developed by project partners. A portion of the seed collected goes for long-term storage at Kew's Millennium Seed Bank. The bulk of the seed is planted in the project's nursery in TCI on North Caicos again following a germination protocol developed to maximise seedling survival.

Through this Darwin project we have out-planted over 300 saplings in the Diamond Jubilee Pineyard on a Crown Land parcel on Pine Cay. This has established a restoration area where healthy pine trees are growing rapidly and already beginning to produce their first cones. This pilot restoration area continues to provide information on how best to plant and maintain saplings – a process that can be replicated in other degraded TCI pineyards.

For more information on project DPLUS016 click here or contact Martin Hamilton, m.hamilton@kew.org

Chagos reef survey
Credit R Roche

Strengthen the World's Largest Marine Protected Area, British Indian Ocean Territory

Thanks to Darwin funding we have now completed 3 major expeditions to monitor the biodiversity of the British Indian Ocean Territory (BIOT). These expeditions link directly with previous ones to build upon existing survey data, establishing BIOT as a globally important reference site.

The second objective of this project is to ensure that the world's largest marine protected area (MPA) in the British Indian Ocean Territory justifies its full no-take status. This is particularly important as fishing pressure is increasing in the wider region.

Given its location and status, the Chagos archipelago are very important to scientists as a control site. This allows us to compare BIOT against impacted and degraded locations elsewhere in the Indian Ocean and further afield.

The most recent expedition to the archipelago was the longest with nearly a month at sea between 16th March and 14th April. The team returned to sites previously surveyed to ensure continuity in data sets over time to assess change, while taking opportunities to discover new sites and make new observations. For example, we returned to sites first visited in 2006 and again in 2013 and 2014 to record a video archive of reef transects to assess changes in coral reef community structure over time, and to undertake long running visual assessments of reef cover and coral recruitment.

We continued bird monitoring on all atolls, concentrating on internationally important seabird colonies previously surveyed in 1996, 2006, 2010, 2012, 2013 and to assess the highly variable nesting successes of important species, especially the Red footed Booby.

Bird populations do not appear stable on the islands, but vary considerably, possibly due to rat predation on their young, tick infestations, poor breeding years, and the quality of island vegetation which may be affected by invasive species.

New studies assessed the implications of rat removal and consequent high bird numbers on the marine environment. High abundance

of seabirds on small islands transfer nutrients from the marine environment to the terrestrial environment because the birds feed in surrounding waters and their guano enrich the nutrient content of soils.

This nutrient enrichment effect was measured, and the processes whereby it may be transferred from the terrestrial back to the marine environment was assessed.

We also continued seawater temperature monitoring (initiated in 2006) at deep and shallow sites in lagoons and seaward reefs on each atoll. This confirmed that a warming event was developing during the expedition although no corals had bleached by the time we left Chagos.

Finally, we conducted comprehensive coral health and disease surveys across the Archipelago to assess the extent, severity and rate of progression of coral disease.

We are in the process of analysing a lot of the evidence collected as part of this expedication. The aim of the work over the past 3 years has been to provide the best scientific information to ensure effective environmental conservation and MPA management in the Territory.

Read more from the scientist's blog from the 2015 expedition: http://chagos-trust.org/2015-darwin-science-expedition-0.

For more information on project 19-027 click here or contact John Turner, j.turner@bangor.ac.uk

Nurse shark
Credit J Turner

Breaching humpback whales were a common spectacle in August off Henderson Island Credit A Donaldson

Newsletter contacts

The Darwin Initiative Secretariat (Defra)

The Darwin Secretariat is based in Defra and includes Clare Hamilton, Sally Cunningham and Stacey Hughes.

If you have any general queries about how the Darwin Initiative operates please e-mail us at

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 or 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