

Darwin Initiative Annual Report

Darwin Project Information

Project Ref Number	14-051
Project Title	In Ivan's Wake: Darwin Initiative BAP for the Cayman Islands
Country(ies)	Cayman Islands
UK Contract Holder Institution	Marine Turtle Research Group, University of Exeter
UK Partner Institution(s)	Karen Varnham Invasive Species Consultant Royal Botanic Gardens Kew Royal Society for the Protection of Birds In USA: Duke University Marine Geospatial Lab SEATURTLE.org
Host country Partner Institution(s)	Cayman Islands Department of the Environment Office of the Governor of the Cayman Islands Local collaborators in the Cayman Islands: Department of Agriculture Mosquito Control Unit Bat Conservation Group Blue Iguana Recovery Programme Cayman Wildlife Connection Garden Club of Grand Cayman Cayman Islands Humane Society National Trust for the Cayman Islands Queen Elizabeth II Botanic Park Wildlife Rehab Centre Cayman Islands Bird Club Cayman Islands Orchid Society CaymANNature Camana Bay Nursery National Museum The Shade Brigade International Reptile Conservation Foundation Cayman Islands Sailing Club
Darwin Grant Value	£178,822
Start/End dates of Project	1 st October 2005-31 st October 2008
Reporting period and annual report number	1 st April 2007-31 st March 2008 Annual report number 3
Project Leader Name	Dr Brendan J. Godley
Project website	http://www.seaturtle.org/mtrg/projects/cayman/
Author(s), date	M. Cottam, L Wright, J Blumenthal, A. Broderick, B. Godley, 29 th April 2008

1. Project Background

The project is being carried out on the Cayman Islands (see map below) and has the main aim of generating a sound, government endorsed, implementable Biodiversity Action Plan (BAP) for the Cayman Islands following the catastrophic effects of Hurricane Ivan (reef damage, loss of natural vegetation, pollution and loss of infrastructure).

The project has several strands:

- A. Integrated Scientific Monitoring and Research
 - 1. Detailed Satellite Mapping to Underpin Biodiversity Management
 - 2. Monitoring and Research of Marine Species
 - 3. Monitoring and Research of Terrestrial Species
- B. Institutional Capacity Building
- C. Raising Environmental Awareness
- D. Management Planning



Location of Cayman Islands (Prepared by Cayman Islands Department of Environment) based on ESRI World Data

2. Project Partnerships

Summary

The project is very much driven by Cayman Islands Department of the Environment (CIDoE) and other local partners with feedback and support from UK partners where necessary. We detail below how each organisation has worked this year, but it is clear that CBD commitments are being supported by progress towards Darwin Output measures (31 out of 33 lines at 100%; 12 of which exceed 150% of target).

Role of UK/USA Partners

UK lead institution: University of Exeter. Staff have supported the project throughout the last year, including administration and reporting, and establishment and facilitation of visiting scientists and research students to build capacity and assist in delivery of target studies. Dr Andy McGowan visited in May 2007, Dr Matthew Witt visited in February 2008, Dr Brendan Godley and Dr Annette Broderick visited in March 2008. Three MSc students from the University of Exeter visited between March- June 2007 and completed three highly collaborative research projects into invasive vertebrate species (Monk parakeets, Green iguanas, Red-eared sliders), with support and training from Cayman Islands Department of Environment (CIDoE) staff. One of the students has subsequently been taken on as a full-time member of staff by the CIDoE. The Marine Turtle Research Group has recently appointed an Associate Research Fellow, to begin work 1st April 2008, to provide support to the project and assist with administrative and reporting activities.

Royal Botanic Gardens Kew – Staff have provided ongoing support of floral projects, including the Millennium Seedbank Project and collections, and the Native Tree Nursery. Dr Colin Clubbe from Royal Botanic Gardens Kew attended the GSPC conference in Cuba with Mat Cottam of CIDoE.

Royal Society for the Protection of Birds – Staff have continued to offer support regarding monitoring of avian exotics and endemics.

Karen Varnham – Has continued to offer invasive species advice remotely.

USA Collaborators – Have maintained the e-mail/internet links and continued to offer advice to the project remotely, particularly regarding remote sensing and habitat mapping.

Local Partners

Blue Iguana Recovery Programme – Fred Burton of the Blue Iguana Recovery Program, who has extensive knowledge of vegetation communities on the Cayman Islands, worked closely with DoE staff to develop a terrestrial habitat classification scheme. Staff advised CIDoE on reserves establishment for the Blue Iguana (a priority target of the Blue Iguana SAP), and collaborated on an EU funding application for land purchase and construction of an interpretation centre.

Cayman Islands Humane Society – Maintained links.

Cayman Wildlife Connection – Provision of information on local species.

Department of Agriculture – Provided 8 days of veterinary assistance for cat trapping programme in Little Cayman.

Garden Club of Grand Cayman – Maintained links.

Mosquito Research and Control Unit – collaborated on collections for the new Darwin Insectarium.

National Trust for the Cayman Islands – Maintained links.

Queen Elizabeth II Botanic Park – ongoing support and management of the Native Tree Nursery.

Bat Conservation Group - Provision of information on local species.

Additional local and international collaboration

Links have been forged with many local and international organisations - wherever possible through direct collaboration in the implementation of specific conservation research / management projects. These projects are geared to delivering specific objectives of the Biodiversity Action Plan for the Cayman Islands, currently under development as a component of this Darwin Initiative. BAP targets are geared to delivery of corresponding targets of the CBD.

Texas A&M University - Will Heyman and two Ph.D. students worked in partnership with DoE staff to complete a hydrographic survey of Grouper spawning areas surrounding all three islands.

Cayman Islands Orchid Society – Collaboration in the construction of a Shade House (completed April 2007) to home rescued specimens of local orchids and growing-on of specimens propagated by the Conservation Propagation Team.

CaymANNature – Had meetings with DoE staff to discuss natural history publications. Represented on the Native Tree Nursery Management Team, responsible for development of nursery stock list.

Shade Brigade - Represented on the Native Tree Nursery Management Team.

Cayman Islands Philatelic Bureau – Completion of issue of Darwin Initiative stamps – due for release late spring 2008.

International Reptile Conservation Society – design, management and launch of Darwin site www.CaymanBiodiversity.com

Other Collaborations:

The project is carried out within the CBD focal point ministry. In the Cayman Islands the focal point for the CBD is the Ministry of Tourism, Environment, Investment and Commerce, with the support of the Department of Environment.

3. Project progress

3.1 Progress in carrying out project activities

Output 1. Partner organisations able to undertake long-term monitoring & management of the biodiversity of Cayman Islands

The below activities relate to Output 1 of the project.

Institutional Capacity Building

Within this area we have focussed on the following:

1. International Meeting Attendance:

June 2007 Jeremy Olynik attended ESRI (Geographic Information Systems Software Developer) international user's conference in San Diego, CA, USA.

January 2008 Janice Blumenthal attended Wider Caribbean Sea Turtle Conservation Network (WIDECAST) Annual General Meeting.

January 2008 Janice Blumenthal attended 28th International Symposium on Marine Turtle Biology and Conservation.

January 2008 Janice Blumenthal attended IUCN Marine Turtle Specialist Group Annual General Meeting.

March 2008 Mat Cottam attended CBD - GSPC conference in Cuba, to discuss Darwin plant initiatives.

2. Postgraduate Training of Janice Blumenthal continues. Janice spent three weeks at the University of Exeter, UK, in March 2008 where she received support in the preparation of manuscripts on Darwin marine turtle monitoring (2 papers accepted for publication, 2 submitted and a further 3 in preparation). It is expected that Janice will complete her thesis in the next 6 months. Furthermore, three MSc students from the University of Exeter spent three months in the Cayman Islands undertaking collaborative projects with DoE into invasive species monitoring. They each received training from CIDoE staff in turtle nesting beach monitoring and invasive species monitoring. All three students successfully completed their MSc qualification in September 2007. 12 local postgraduate veterinary students from St. Matthews University (Grand Cayman) received training in marine turtle nest excavation and necropsy.

3. Undergraduate and High School Student Training has been a focus of the work in the past year. 3 local undergraduate students and 1 local high school student completed summer internships assisting with marine turtle nesting monitoring. 8 local high school students completed a total of 22 weeks of work experience between them, where they received training in marine turtle nesting beach monitoring, benthic habitat mapping and public education whilst assisting with Darwin research.

4. Fundraising

Significant funds have been raised for initiatives complimentary to this Darwin project:

- Cat Control / eradication on Little Cayman. (OTPF successful bid –GBP 4,851). Total value \$ 14,619. Project implemented NOV 07. RESULT -Control successful with 19 cats caught, with 80 traps purchased, and four local members of staff trained in techniques.
- Cat control back-up and regional workshop. (OTEP bid pending – for GBP 23,205 value). Total value \$42,021.
- Native tree nursery - GBP 3,000 (OTPF bid - successful) for additional interpretative materials. RESULT - signage under production. Nursery due to open in next two months.
- Native tree nursery expansion - CI\$20,000 (approx GBP12,200) corporate - successful. Funds to be dedicated to expanding and reducing water resources footprint of nursery.

Output 2. Greatly enhanced knowledge of key biodiversity elements in Cayman Islands

The below activities relate to Output 2 of the project

Integrated Scientific Monitoring and Research

1 Detailed Satellite Mapping to Underpin Biodiversity Management:

Excellent progress has been made in this activity. Revised versions of 2006 satellite imagery were received in April 2007, following some complications with original imagery (highlighted in the 2007 Annual report). This allowed significant progress to be made in the identification and mapping of the terrestrial habitats of all three islands. Through close collaboration with Fred Burton of the Blue Iguana Recovery Program, a classification scheme for the terrestrial habitat mapping has been finalised, which directly relates to Fred's recently published 'Vegetation Classification for the Cayman Islands'. Field validation of terrestrial habitats has been completed for the eastern portion of Grand Cayman. In addition, a manual delineation of all Casuarina trees on Grand Cayman has been carried out to determine the distribution and abundance of this invasive tree; this data layer will assist in any eradication efforts and to track the spread of the species on the island.

Lagoonal benthic habitat mapping is well under way and all marine habitats have been digitised, classified and validated in the field for all of the islands. An initial accuracy assessment has been completed for the marine benthic habitats surrounding all three islands.

2 Monitoring and Research of Marine Species:

Ongoing fieldwork on conch, grouper and marine turtles has continued, resulting in 2 papers accepted for publication, 2 submitted to review and a further 3 in preparation.

Marine turtle research has focused on nesting beach monitoring and green and hawksbill turtle ecology and genetics. Key actions of the marine turtle Species Action Plans (SAPs) have been applied, resulting in amendment of the Marine Conservation Law to extend the closed season on the legal marine turtle fishery and institute maximum as well as minimum size limits.

An assessment of grouper spawning area was carried out through the completion of a hydrographic survey of the islands. This survey was conducted in a partnership between Will Heyman of Texas A&M University, two Ph.D. students and CIDoE staff. Results of the survey were used to revise boundaries for Sister Islands protected areas, and will be integrated into forthcoming legislation (Grouper SAP action).

Annual conch monitoring surveys have continued and the survey methodology has been refined (Conch SAP action). Investigations have also begun into the number and sizes of coral reef fish and invertebrates, in order to yield information on the status of fish stocks and coral reef health.

3 Monitoring and Research of Terrestrial Species:

At least 13 terrestrial SAPs are already under implementation, including pre-emptive implementation of key items identified in developing SAPs, and significant progress has been made towards plant and animal conservation aims.

Highlights over the past year have included:

- The rediscovery of Cayman Sage (*Salvia caymanensis*) on Grand Cayman, following a public appeal (in the form of a competition) for reports of this plant, not seen for 50 years (Cayman Sage SAP action). The population was mapped, seed collection made and donations sent to Royal Botanic Gardens Kew Millennium Seedbank Project, and the QEII Botanic Park for its conservation propagation programme (Cayman Sage SAP actions).
- The completion of research projects by three M.Sc. students from the University of Exeter, supported by CIDoE, into the ecology of key invasive species (Green iguanas,

Red-eared sliders and Monk parakeets), following on from earlier invasive species assessments.

- The Cayman Parrot survey was repeated and the survey methodology refined (Parrot SAP action).
- Completion of preliminary nest surveys indicated that the population of Monk parakeets (*Myiopsitta monachus*), significantly impacted by hurricane Ivan, was rapidly re-establishing. With accurate data to hand, an immediate eradication program was implemented (Parrot SAP action).
- Implementation of a cat control program in Little Cayman funded through CIDoE, Darwin and contributions from local hoteliers and the Governor's fund. Control successful with 19 cats caught, with 80 traps purchased, and four local members of staff trained in techniques. This work will contribute to the Red-footed Booby SAP.
- Facilitation of Durrell / Blue Iguana Recovery Programme survey of Little Cayman for Sister Islands Rock Iguana *Cyclura nubila caymanensis*.
- "Native Tree Nursery" Darwin Partners project passed its target of 6000 seedlings under propagation. Commercial landscapers engaged the services of the NTN for a major landscaping initiative. Establishment of native trees into the built landscape is an action item in many of the several SAPs - inc. Broadleaf (*Cordia sebestena caymanensis*) Cedar (*Cedrela odorata*), Cocoplum (*Chrysobalanus icaco*), Hohenbergia (*Hohenbergia caymanensis*), Ironwood (*Chionanthus caymanensis*), *Scaevola plumieri* (Inkberry), Silver Thatch (*Coccothrinax proctorii*), Cayman Sage (*Salvia caymanensis*), Smokewood (*Erythroxylum confusum*) and Washwood (*Jaquinia keyensis*).
- Finalisation of Flora Red List text

All of these events, activities and successes have fed directly into the media profile of the project.

Output 3. Publications and Presentations

The below activities relate to Output 3 of the project

Raising Environmental Awareness

Within this area we have focussed on the following:

1. Websites

We have continued to build and develop both websites.

<http://www.seaturtle.org/mtrq/projects/cayman/>

<http://www.caymanbiodiversity.org/> (launched November 2007)

The former is a focus for the project and outputs. The latter will be the home of action plans and several multi-media aspects currently under development. Both will be linked to each other.

2. Media

We have been very successful in all forms of media as a result of a well-planned media strategy linked in with all aspects of the project. Where possible press articles are stored online at <http://www.seaturtle.org/mtrq/projects/cayman/> Media outputs this year have included 2 TV interviews, 4 Darwin press releases and 3 partner press releases in the host country.

3. Newsletter

Two additional issues of the Darwin Newsletter have been produced (April 2007 and November 2007) and widely circulated. These have incorporated competitions aimed at engaging the public in Darwin activities, including "The Plant with No Name" – aimed at school children, the object of which was to think of a common name for the endemic bromeliad *Hohenbergia caymanensis*.

4. Darwin Seminars

Darwin Seminars were organised again this year for public and school groups. This year turtle presentations were given at summer camps (3 presentations attended by approximately 75

children in total, aged 14-18 years of age), University College of the Cayman Islands (4 classes attended by approximately 50 students in total), in local schools (attended by approximately 50 children in total, aged 4 -11 years of age) and at a Marine Veterinary Medicine workshop (attended by 10 students). A turtle nesting beach monitoring training session and presentation was also given to approximately 25 community volunteers (adults).

5. Student Involvement

Undergraduate and high school student involvement in practical conservation project work has continued to be a key area of activity over this reporting period. This year students have mainly contributed to benthic habitat mapping and marine turtle nesting beach monitoring.

6. Production of Educational Materials

Images for the Darwin Initiative stamp issue have now been finalised and the issue will be launched in late Spring 2008. The stamps will feature local endemic species, and those of conservation significance, in association with their habitats. The issue will be accompanied by interpretative brochures and posters.

In partnership with the Wider Caribbean Sea Turtle Conservation Network (WIDECAST) marine turtle textbooks (*Sea Turtles – An Ecological Guide*), teachers' guides (*Sea Turtles – An Ecological Guide Teachers' Activity Manual*), and *Endangered Caribbean Sea Turtles – an Educators Handbook*, as well as brochures and other educational materials on marine turtles were purchased by DoE and delivered to all 30 local schools in the Cayman Islands.

7. Public events

CIDoE staff attended and had information booths at 3 local events including an agricultural show and a school fair. The themes of these booths were "Shifting baselines (turtles, coral reefs, terrestrial habitats)" and "The beginning of turtle nesting season".

Management Planning

The main aim of this DI project is

"... generating a sound, government endorsed, implementable Biodiversity Action Plan (BAP) for the Cayman Islands following the catastrophic effects of Hurricane Ivan"

To this end, a number of species research and monitoring projects are continuing and extensive habitat mapping is well underway, which has begun to feed into the Habitat Action Plans. To date, for key taxa draft Species Action Plans have been prepared for:

FLORA

1. Agave (*Agave sobolifera*)
2. *Banara caymanensis*
3. Cayman Sage (*Salvia caymanensis*)
4. Inkberry (*Scaevola plumieri*)
5. Silver Thatch Palm (*Coccothrinax proctorii*)
6. Tea Banker (*Pectis caymanensis*)
7. Wild Banana Orchid (*Myrmecophila thompsoniana*)

FAUNA

8. Big-eared Bat (*Macrotus waterhousii minor*)
9. Caribbean Fruit-eating Bat (*Artibeus jamaicensis parvipes*)
10. White-shouldered Bat (*Phyllops falcatus*)
11. Buffy Flower Bat (*Erophylla sezekorni syops*)
12. Cuban Fruit-eating Bat (*Brachyphylla nana nana*)
13. Big Brown Bat / Brown Bat (*Eptesicus fuscus spp. nova*)
14. Big Brown Bat, (Cuban subspecies) (*Eptesicus fuscus dutertreus*)
15. Brazilian Free-tailed Bat (*Tadarida brasiliensis muscular*)
16. Velvety Free-tailed Bat (*Molossus molossus tropidorhynchus*)
17. Brown Booby (*Sula leucogaster*)
18. Cayman Parrots (*Amazona leucocephala*)

19. Vitelline Warbler (*Dendroica vitellina*)
20. Queen Conch (*Strombus giga*)
21. Grand Cayman Blue Iguana (*Cyclura lewis*)
22. Green Turtle (*Chelonia mydas*)
23. Loggerhead Turtle (*Caretta caretta*)
24. Leatherback Turtle (*Dermochelys coriacea*)
25. Hawksbill Turtle (*Eretmochelys imbricata*)

There has also been further work this year on the extensive redrafting of the National Conservation Law (CBD / BAP implementing legislation).

3.2 Progress towards Project Outputs

In general the project has been highly successful as evidenced by tremendous advance towards output indicators. As can be seen from Table 1, output measures have already been achieved at 100% or excess of targets in 31 out of 33 lines, 12 of which exceed 150%. Excellent progress has been made on fostering links, developing local capacity, research and raising awareness. Despite the large number of species identified as requiring dedicated SAPs (currently 32 species of plants (in two tranches), and ca. 21 species of animals), progress has been successful with 7 plants and 18 animals having been successfully drafted and many more under development. Many drafted SAPs are already under implementation, as are key actions in a number of the developing SAPs.

Janice Blumenthal has taken significant steps this year towards completion of her PhD. In this reporting period 2 marine turtle papers have been accepted for publication, a further 2 have been submitted for review, and 3 are in the final stages of preparation. It is expected that Janice will complete her PhD in the next six months.

Research and monitoring of terrestrial species undertaken as a part of this Darwin project have highlighted numerous areas in which conservation actions are necessary to prevent biodiversity loss in the terrestrial habitats. In response, CIDoE have recruited Kristan Godbeer as a full time member of staff to work within the terrestrial conservation team, following his successful completion of an MSc at the University of Exeter. His recruitment contributes significant added value to this project and will increase CIDoE's capacity to implement the Biodiversity Action Plan.

However, despite the successes outlined above, one area of challenge has remained:

As highlighted in the 2007 annual report (section 3.2), delays were encountered in conducting the habitat mapping component that was required for the development of the Habitat Action Plans (HAPs). Although habitat mapping is now well underway and much has been achieved in this area of the project this year, the production of terrestrial HAPs is still behind schedule. We therefore requested and were granted an extension of the project by the Darwin Secretariat, until 31st October 2008. This extension will ensure that all necessary HAPs are completed and under review by project completion and will allow us to include the HAP elements in the final BAP, which is being produced as one of the major project outputs.

As can be seen in Annex I the output level assumptions hold true and the indicators are adequate towards measuring outputs.

Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Total planned from application
Established codes							
1A	Number of people to submit thesis for PhD qualification *	0	0	0		0 (0%)	1
1B	Number of people to attain PhD qualification *	0	0	0		0 (0%)	1
4A	Number of undergraduate students to receive training *	0	17	3		20 (200%)	10
4B	Number of training weeks to be provided	0	24	3		27 (270%)	10
4C	Number of postgraduate students to receive training *	1	1	16		16 (1600%)	1
4D	Number of training weeks to be provided	3	3	8		14 (140%)	10
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above) *	30	10	35		75 (375%)	20
6B	Number of training weeks to be provided	30	10	23		53 (177%)	30
7	Number of (ie. different types - not volume - of material produced) training materials to be produced for use by host country	2	0	0		2 (100%)	2
8	Number of weeks to be spent by UK project staff on project work in the host country	11	17	7		35 (175%)	20 (Plus 90 by Darwin Officer who will be employed locally)
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country	1	0	0		1 (100%)	1
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording	0	1	0		1 (100%)	1

11A	Number of papers to be published in peer reviewed journals	0	3	2		5 (100%)	5
11B	Number of papers to be submitted to peer reviewed journals	3	2	2		7 (140%)	5
12A	Number of computer based databases to be established and handed over to the host country	2	2	0		4 (133%)	3
13A	Number of species reference collections to be established and handed over to the host country(ies)	1	0	0		1 (100%)	1
13B	Number of species reference collections to be enhanced and handed over to the host country(ies)	1	0	0		1 (100%)	1
14A	Number of conferences/seminars/workshops to be organised to present/disseminate findings	4	6	4		14 (1400%)	1
14B	Number of conferences/seminars/workshops attended at which findings from Darwin project work will be presented/disseminated.	2	5	0		7 (233%)	3
15A	Number of national press releases in host country(ies)	4	5	4		13 (260%)	5
15C	Number of national press releases in UK	2	0	0		2 (100%)	2
15D	Number of local press releases in UK	2	0	0		2 (100%)	2
16A	Number of newsletters to be produced	1	2	2		5 (125%)	4
16B	Estimated circulation of each newsletter in the host country(ies)	1000	1000	1000		1000 (100%)	1000
16C	Estimated circulation of each newsletter in the UK	>100	>100	>100		>100 (100%)	>100
17A	Number of dissemination networks to be established	2	0	0		2 (200%)	1
18A	Number of national TV programmes/features in host country(ies)	2	2	2		6 (150%)	4
19A	Number of national radio	1	3	0		4	4

	interviews/features in host county(ies)					(100%)	
19D	Number of local radio interviews/features in UK	1	0	0		1 (100%)	1
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)	9,785	9,785	0		£19,570 (100%)	£19,570
22	Number of permanent field plots to be established during the project and continued after Darwin funding has ceased	>50	>50	>50		>50 (100%)	>50
Other Outputs in bid	Estimated International circulation of Newsletter	200	200	200		200 (100%)	200
	Darwin Project Website	2	0	0		2 (200%)	1
New - Project specific measures							
	Press Articles in Cayman	9	15	6		30	
	TV Features in UK	1	0	0		1	
	Articles in UK Specialist Media	1	1	0		2	
	Articles in International Specialist Publications	1	1	0		2	
	Grant income obtained	£54k	£200k	£20k		£274k	
	Weeks spent by International partners (US) in the field	1	2	0		3	
	Darwin Native Tree Nursery		1			1	
	Darwin Orchid Shade House		1			1	

In Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed, eg title, name of publisher, contact details, cost. Mark (*) all publications and other material that you have included with this report.

Table 2 Publications

Type *	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Newsletter 4	April 2007		http://www.seaturtle.org/mtrg/projects/cayman/	
Newsletter 5	November 2007		http://www.seaturtle.org/mtrg/projects/cayman/	
Journal	Bell, CD, Blumenthal	Tourism in	Copy available from J	

article	JM, Austin TJ, Ebanks-Petrie G, Broderick AC, Godley BJ. Harnessing recreational divers for the collection of sea turtle data around the Cayman Islands. In press	Marine Environments. In press	Blumenthal:	
Journal article	Godley BJ, Blumenthal JM, Broderick AC, Coyne MS, Godfrey MH, Hawkes LA, Witt MJ (2008) Satellite tracking of sea turtles: Where have we been and where do we go next?	Endangered Species Research 4:3-22	www.seaturtle.org/mtrg/pubs/	

3.3 Progress towards the project purpose and outcomes

We believe that significant advancement has been made towards the project purpose; which is to carry out an assessment of the key biodiversity elements of the Cayman Islands, create the capacity for its future monitoring and conservation, and to increase environmental awareness. Excellent progress has been made in the research and monitoring of key species, as well as extensive habitat mapping, leading to greatly enhanced knowledge of the patterns of biodiversity of the Cayman Islands following Hurricane Ivan. This work has fed into the development of habitat and species action plans, many of which are already under implementation. The strong focus over the past 3 years on local capacity building, awareness raising and the development of local and international partnerships will ensure the effective sustainable management of biodiversity in the Cayman Islands in the long term. As can be seen in Annex I the purpose level assumptions hold true and the indicators are adequate towards measuring outcomes.

3.4 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

We have made great progress towards Species Action Planning (25 SAPs drafted and many more in development), which aim to deliver conservation of individual species through targeted actions: Policy and Legislation, Safeguards and Management, Advisory, Research and Monitoring, and Communication and Publicity. Key items in drafted SAPs are now under implementation with direct benefits to biodiversity anticipated. Implementation of marine SAPs this year has led to an extension of the closed season on the legal marine turtle fishery, with the aim of improving protection of the vulnerable breeding population, and an assessment of grouper spawning area, which resulted in revision of the boundaries for protected areas in the sister islands.

In addition to endemic species and those of particular conservation concern, SAPs also focus on species of cultural significance and those of local economic value – towards developing and implementing strategies for sustainable utilisation of these natural resources and equitable sharing of the benefits of biodiversity. Equitable sharing of biodiversity benefits is encouraged through the implementation of practical conservation projects and activities as an integral component of the action plans. These projects are aimed at involving and informing local groups and members of the public regarding the benefits of sustainable use and biodiversity preservation, towards engendering project ownership and fostering a culture of understanding through involvement.

Protocol forms and procedures for visiting scientists have been developed this year, to ensure the equitable sharing of information generated through collaborative projects.

4. Monitoring, evaluation and lessons

The project consortium keeps in very close contact via the Darwin Cayman Steering listserv and a formal steering group meeting is undertaken during each visit of UK project staff. These opportunities are taken to discuss progress versus key milestones and outputs and any emerging problems are dealt with. This in part helps to explain how effective the project has been.

Our major lesson is that our consortium is working well together and thanks to strong communication and industry this project has already successfully achieved many of its objectives. The only issue we have to report is that, due to the delay in habitat mapping, we would have been unable to complete the associated Habitat Action Plans within the original time frame of the project. We therefore requested and were granted an extension of six months by the Darwin Secretariat to complete the project. This will enable us to complete the HAPs and therefore produce a complete BAP within the new project timeline. The lesson we have learnt from this is that we were slightly over ambitious in our objectives regarding the production of the HAPs and did not fully anticipate the problems that we experienced in gaining high quality satellite imagery, and the delay that this could cause to producing the habitat maps.

5. Actions taken in response to previous reviews (if applicable)

There were no queries raised by the external reviewer following last year's final report.

6. Other comments on progress not covered elsewhere

Apart from the extension to the project that we have discussed above (sections 3.2 and 4), there have been no major changes to the project plans or difficulties encountered.

7. Sustainability

The project has an extremely high profile in the Cayman Islands, evidenced by the extensive array of dissemination and awareness raising activities, through which the work of the Darwin project has been promoted. There has been a high degree of media attention and strong efforts to engage the general public in conservation work. Both community volunteers and high school and university students have participated and received training in practical conservation activities.

The project has a clear exit strategy in that the main aim is production of a sound, implementable BAP based on solid scientific underpinnings, towards which a tremendous amount of work has already been undertaken. Training of DoE staff and other local partners has continued to be a focus of the project this year, and will ensure that the capacity is in place to put the BAP actions into practice and ensure the effective management of biodiversity in the Cayman Islands. CIDoE is highly committed to continuing with all work and to seeing the BAP implemented.

8. Dissemination

Community outreach and awareness raising activities are integral to the work of the Cayman Islands DoE and partner organisations. This is demonstrated by the wide range of dissemination activities and outputs that have been achieved, indeed Table 1 shows that total project targets for dissemination outputs have already been met or exceeded in many categories. Dissemination activities this year have included Darwin Seminars, Darwin Newsletters, Darwin E-mail dissemination network, continued development of two Darwin project websites, Darwin Initiative stamp issue, public events and a proactive media strategy.

Many of these activities have been aimed at raising awareness of the Darwin project with the general public, including school children and students of all ages. However, workshops, action plans and peer-reviewed papers all ensure that the work of the Darwin project is also communicated to conservation professionals, other stakeholders and the wider scientific community. CIDoE are committed to maintain this dissemination work as a core activity post-project.

9. Project Expenditure

Table 3 Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)

Item	Budget (please indicate which document you refer to if other than your project application)	Expenditure	Balance
Rent, rates, heating, overheads etc			
Office costs (eg postage, telephone, stationery)			
Travel and subsistence			
Printing			
Conferences, seminars, etc			
Capital items/equipment			
Others			
Audit			
Salaries (specify)			
Salary			
Overseas Consultants			
Total			
TOTAL			

Highlight any agreed changes to the budget and explain any variation in expenditure where this is +/- 10% of the budget.

* Carried forward of £3297.48 requested 25/01/07 (14897 + 3297.48)

** Audit Costs of £500 plus carried forward of £324.38 requested 25/01/07 (500+324.38)

***October 06- September 07 Audit Costs

By negotiation with the Darwin Secretariat we have £28726.67 to carry over into 2008/2009. We anticipate that we will use all the remaining funds in the final six months of the project.

10. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

Highlights over the past year have included:

- The rediscovery of Cayman Sage (*Salvia caymanensis*) on Grand Cayman, following a public appeal (in the form of a competition) for reports of this plant, not seen for 50 years. The population was mapped, seed collection made and donations sent to Royal Botanic Gardens Kew Millennium Seedbank Project, and the QEII Botanic Park for its conservation propagation programme.
- Completion of preliminary nest surveys indicated that the population of Monk parakeets (*Myiopsitta monachus*), significantly impacted by hurricane Ivan, was rapidly re-establishing. With accurate data to hand, an immediate eradication program was implemented (Parrot SAP action).
- Implementation of a cat control program in Little Cayman funded through CDoE, Darwin and contributions from local hoteliers and the Governor's fund. Control successful with 19 cats caught, with 80 traps purchased, and four local members of staff trained in techniques. This work will contribute to the Red-footed Booby SAP.
- "Native Tree Nursery" Darwin Partners project passed its target of 6000 seedlings under propagation. Commercial landscapers engaged the services of the NTN for a major landscaping initiative. Establishment of native trees into the built landscape is an action item in many of the several SAPs - inc. Broadleaf (*Cordia sebestena caymanensis*), Cedar (*Cedrela odorata*), Cocoplum (*Chrysobalanus icaco*), Hohenbergia (*Hohenbergia caymanensis*), Ironwood (*Chionanthus caymanensis*), Scaevola plumieri (Inkberry), Silver Thatch (*Coccothrinax proctorii*), Cayman Sage (*Salvia caymanensis*), Smokewood (*Erythroxylum confusum*) and Washwood (*Jaquinia keyensis*).
- Finalisation of Flora Red List text

I agree for ECTF and the Darwin Secretariat to publish the content of this section

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2007/08

Project summary	Measurable Indicators	Progress and Achievements April 2007 - March 2008	Actions required/planned for next period
<p>Goal: <i>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve</i></p> <p><i>The conservation of biological diversity,</i></p> <p><i>The sustainable use of its components, and</i></p> <p><i>The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</i></p>		<p>SAPs have been implemented resulting in tougher legal protection and increased protected areas for conservation of key species.</p> <p>Ex situ plant initiatives underway</p>	<i>(do not fill if not applicable)</i>
<p>Purpose: Carry out an assessment of the key biodiversity elements of the Cayman Islands; create the capacity for its future monitoring and conservation; increase environmental awareness</p>	<p>Increased knowledge of the patterns of biodiversity of Cayman Islands. Effective management of biodiversity in Cayman Islands</p>	<p>Greatly enhanced knowledge base and progress towards production of BAP.</p>	<p>Complete terrestrial habitat mapping and continue ongoing research</p>
<p>Output 1. Partner organisations able to undertake long-term monitoring & management of the biodiversity of Cayman Islands</p>	<p>Minimum of 14 staff from partner organisations trained in key biodiversity assessment techniques</p>	<p>Progress has been excellent.</p>	
<p>Activity 1.1 Training workshops</p>		<p>No workshops were planned for this period but training at postgraduate and undergraduate level has been a focus.</p>	
<p>Activity 1.2. Local Partners to International Training Events</p>		<p>3 CIDoE staff attended 5 international conferences. None planned for remainder of project.</p>	
<p>Output 2. Greatly enhanced knowledge of key biodiversity elements in Cayman Islands</p>	<p>Habitat maps, Population assessments of key species</p>	<p>Progress has been excellent, although unavoidable delays in this area in 2006-7 have carried over to 2007-8. For this reason an extension to the project has been granted by the Darwin Secretariat.</p>	
<p>Activity 2.1. Habitat Mapping</p>		<p>Marine habitats completed, excellent progress has been made for terrestrial habitats</p>	

Activity 2.2. Population Assessments		25 SAPs have been drafted, many more underway, and key actions have been initiated.
Output 3. Publications and Presentations	Computer databases, biodiversity action plan, peer reviewed papers, reference collections, conference presentations, website, research seminars, press releases and media items, newsletter; teachers resources	Progress has been excellent.
Activity 3.1. Publications		2 papers published, 2 submitted to review and a further 3 in preparation. 2 newsletters produced and second website launched.
Activity 3.2. Presentations		Darwin seminars delivered to varied audiences.

Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources</p>			
<p>Purpose Carry out an assessment of the key biodiversity elements of the Cayman Islands; create the capacity for its future monitoring and conservation; increase environmental awareness</p>	<p>Increased knowledge of the patterns of biodiversity of Cayman Islands. Effective management of biodiversity in Cayman Islands</p>	<p>Fieldwork underway. Reports and publications by partner organisations Minutes of Steering Committee Meetings</p>	<p>CI Partner organisations incorporate new knowledge into future strategies and workplans.</p>
<p>Outputs Partner organisations able to undertake long-term monitoring & management of the biodiversity of Cayman Islands Greatly enhanced knowledge of key biodiversity elements in Cayman Islands Publications and Presentations</p>	<p>Minimum of 14 staff from partner organisations trained in key biodiversity assessment techniques Habitat maps, Population assessments of key species Computer databases, biodiversity action plan, peer reviewed papers, reference collections, conference presentations, website, research seminars, press releases and media items, newsletter; teachers resources</p>	<p>Field reports, participation in field activities, workshop reports, correspondence, biological databases Habitat maps, biological databases, scientific papers Copies of all outputs sent to Darwin Initiative</p>	<p>A high proportion of participants continue current employment</p>

<p>Activities</p> <p>Research Programme</p> <p>Capacity Building</p> <p>Environmental Awareness /Publicity materials</p>	<p>Years 1 and 2 Full field season. Year 3: Limited field season. Milestones for completion of field seasons 1-3: May 06, May 07 and Mar 08, respectively.</p> <p>Milestones for submission of peer-reviewed papers 1-4: May 06, Jul 06, Jan 07, Jul 07, respectively.</p> <p>Biodiversity Action Plan Oct 08*.</p> <p>Years 1 -3: Training Workshops and Output Production with local partners Milestones for completion of workshops 1-4 are Jan 06, Mar 06, Jun 07, Mar 08, respectively.</p> <p>Years 2 and 3: Trainees to key international training events according to scheduled timing</p> <p>Year 1: Website Established (Oct 05), Public Awareness Workshop (Apr 06)</p> <p>Year 2: Darwin Seminars (Oct 06)</p> <p>Year 3: Teachers Education Pack (Sep 07), Reporting Conference (Mar 08)</p> <p>Years 1-3: Media outputs, Newsletters</p>
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* Milestone for production of the BAP has been postponed to Oct 2008 due to the extension of this project agreed by the Darwin Secretariat.

Annex 3 onwards – supplementary material (optional)