

Darwin Initiative: Half Year Report

(due 31 October 2007)

Project Ref. No.	14-051
Project Title	In Ivan's Wake: Darwin Initiative BAP for the Cayman Islands
Country(ies)	Cayman Islands
UK Organisation	Marine Turtle Research Group, University of Exeter
Collaborator(s)	Karen Varnham Invasive Species Consultant Royal Botanic Gardens Kew Royal Society for the Protection of Birds Central Science Laboratory
Project Leader	In USA: Duke University Marine Geospatial Lab 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 Humane Society National Trust for the Cayman Islands Queen Elizabeth II Botanic Park Wildlife Rehab Centre
Report date	14 th NOV 2007
Report No. (HYR 1/2/3/4)	
Project website	www.CaymanBiodiversity.com http://www.seaturtle.org/mtrg/projects/cayman/

1. Outline progress over the last 6 months (April – September) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up).

The project has continued to progress well.

APRIL

Training / Research:

- Following on from earlier invasive species assessments, research projects are initiated by three M.Sc. students from Exeter, supported by DoE, to study key species: Green Iguana *Iguana iguana*, Red-eared slider *Trachemys scripta* and Monk parakeet *Myiopsitta monachus*.
- Completed hydrographic survey of Grouper *Epinephelus striatus* spawning areas surrounding all three islands. Partnership with Will Heyman of Texas A&M University, two Ph.D. students and DoE staff.

- Determine techniques for mapping lagoons using an automatic classification (supervised and unsupervised) combining previous assessment of South Sound, GC.
- Marine benthic habitat field validation in the sister islands completed (4 days in field).
- Received revised versions of 2006 satellite imagery after some complications with original imagery.

Partnerships:

- “Orchid Shade House” Darwin Partners project is completed, with unveiling and dedication ceremony at the QEII Botanic Park.

Education:

- Spring 2007 Darwin Newsletter issued. Includes a public appeal (in the form of a competition) for reports of Cayman Sage *Salvia caymanensis*, (Cayman Sage SAP action) to determine whether this plant, not seen for 50 years, remains extant.

MAY

Research:

- Repeat and refine methodology of Parrot survey *Amazona leucocephala* and Conch survey *Strombus gigas*, Grand Cayman (Parrot and Conch SAP action).
- GIS benthic classification, including development of guidelines for future survey. Assessment of grouper spawning area hydrographic survey of the islands. Results used to revise boundaries for Sister Islands protected areas – to be integrated into forthcoming legislation (Grouper SAP action).
- Students and community volunteers assist DoE staff with marine turtle nesting beach monitoring.

Action Plans:

- Completion of preliminary nest survey indicates that the population of Monk Parakeet (previously invasive in Cayman), significantly impacted by hurricane Ivan, is rapidly re-establishing. With accurate data to hand, an immediate eradication program is implemented (Parrot SAP action).

Partnerships:

- “Native Tree Nursery” Darwin Partners project passes target of 6000 seedlings under propagation. Commercial landscapers engage services of NTN for major landscaping initiative (including airport expansion and schools developments).

Education:

- Images of local species and habitats finalised for issue of Darwin Initiative stamps (due 2008).

JUNE

Training:

- One DoE staff member attends ESRI international user's conference in San Diego, CA, USA.

Research:

- Turtle nesting beach monitoring (Darwin MSc students, community volunteers). Green turtle ecology & genetics fieldwork (local students).
- Conch survey and MSc invasive species projects ongoing.

Action Plans:

- Extensive redrafting of the National Conservation Law (CBD / BAP implementing legislation) with a view to presentation to Legislative Assembly, Sept. 07.
- Collaboration with Department of Planning in creation of Recommended Planting Palette, featuring native trees and non-invasive exotics.

JULY

Training:

- Necropsy training session (St. Matthew's University)

Research:

- Final field validation of GIS benthic classification around GC completed (2 volunteer students assisted with field work).
- Completed initial phase of the benthic mapping portion of all three islands.
- Students and community volunteers assist DoE staff with marine turtle nesting beach monitoring.

Action Plans:

- *Salvia caymanensis* is rediscovered GC. The population is mapped and seed collection made. Donations to Royal Botanic Gardens Kew Millennium Seedbank Project, and the QEII Botanic Park for conservation propagation programme. Additional seed is incorporated into the Native Tree Nursery stock selection, to encourage conservation through domestic planting and establishment in urban areas (Cayman Sage SAP actions).

Education:

- Turtle summer camp presentations (three presentations, ages 14-18)
- Turtle nesting beach monitoring training session and presentation (community volunteers).

AUGUST

Research:

- Students and community volunteers assist DoE staff with marine turtle nesting beach monitoring.
- Intuitive symbology created for display of mapped benthic habitats.
- Researched accuracy assessments completed by various other studies in remote sensing and determined the most suitable method for our own assessment. Stratified random sampling method based on a detailed habitat's coverage area selected.

Dominant habitats will have the most random points assigned to it, less dominant will have less points, etc. A truly random sample without stratification would have excluded some habitats.

- Began researching examples of terrestrial landcover classifications from respected sources in the remote sensing community. Finalized a terrestrial habitat classification scheme and assessed feasibility of accurately mapping all of the desired habitat types.
- Manuscript submitted: *Allometric scaling of diving behaviour in juvenile hawksbill turtles*. Three additional manuscripts currently *in prep*.

SEPTEMBER

Research:

- Students and community volunteers assist DoE staff with marine turtle nesting beach monitoring.
- Little Cayman Hawksbill ecology and genetics fieldwork.
- Draft SAPs now completed for 14 species, and 9 species of bats - some already under implementation.

Education:

- Finalisation of structure and content for Darwin Initiative website, www.CaymanBiodiversity.com, for predicted launch Nov 2007. Website launch is detailed in the AUTUMN 2007 Newsletter (attached).
- Turtle Talks – University College of the Cayman Islands (4 classes).

OCTOBER

Training:

- Meeting with Fred Burton (Blue Iguana Recovery Programme), who has extensive knowledge and experience of vegetation communities in the islands, to acquire ground-truth points and discuss potential obstacles.

Research:

- 5 days of accuracy assessment field work around Grand Cayman
- Students and community volunteers assist DoE staff with marine turtle nesting beach monitoring.
- Completed rough manual delineation of terrestrial habitat types for GC using hi-res 2004 aerial photographs, to assist in interpreting coarser-res 2006 satellite imagery. It will also help in creating habitat training sites for use in a supervised classification.
- Masking water / clouds from multi-spectral satellite imagery of the islands, and researching classifications using the *Near-Infrared* image band of the satellite imagery.
- New full-time member of staff employed by DoE, to assist with Terrestrial programmes.

Education:

- Turtle Presentation – Marine Veterinary Medicine (MARVET) workshop

- 2 DoE staff attend Gulf Coast Fisheries Inst. to deliver presentation on Grouper work.

Training TOTAL

2 overseas students

3 Darwin MSc student projects – 3 x 3 months. One student is subsequently taken on as a full-time member of staff.

7 local work experience students (3 university, 4 high school)

12 St. Matthew's University students

26 community volunteers

1 DoE staff member - ESRI international user's conference

Education TOTAL

University College of the Cayman Islands (approx. 50 students)

Summer camps (approx. 75 students)

St. Matthew's necropsy training (approx. 10 students)

Community training session / presentation (approx. 25 adults)

MARVET: approx. 10 students.

Darwin website, www.CaymanBiodiversity.com launched NOV 2007.

Newsletters APR and NOV.

2 DoE staff attend Gulf Coast Fisheries Inst. conference

Media TOTAL

Darwin releases:

2 x TV interview on Darwin

Display of flora to greet airport visitors - 31 March 2007

Orchid Shade House opens - 24 May 2007

Plant extinct? Find it and win - 7 May 2007

Extinct" plant found on GC - 26 July 2007

Darwin mentioned in Partner releases:

Spotlight on PWD, DoE, Botanic Park - 30 August 2007

UCCI friends invite guest speakers - 14 July 2007

Garden Club Marked 50th Anniversary With Celebration - 8 June 2007

2. Give details of any notable problems or unexpected developments that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

As predicted in the previous report, the initial delays encountered in acquisition of suitable satellite imagery have had some repercussions for timely delivery of the *Habitat Mapping* components of this project, (fully finalised images were not received until APR 07). While the extensive marine and benthic mapping has now been completed, the terrestrial mapping is only more recently started.

Have any of these issues been discussed with the Darwin Secretariat and if so, have changes been made to the original agreement?

This issues has been raised with the Mrs Okot of the Darwin Secretariat. We have requested a 6 months no cost extension to the project to allow terrestrial mapping to be completed in advance of more effective Habitat Action Planning.

Discussed with the DI Secretariat: no/yes, in..... (month/yr)

Changes to the project schedule/workplan: no/yes, in.....(month/yr)

3. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

The emphasis on immediate implementation of SAPs through community based projects has been well received, delivering on expectation that the BAP is a tool for implementation of practical conservation measures, as opposed to another planning exercise.

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan or budget should not be discussed in this report but raised with the Darwin Secretariat directly.

Please send your **completed form email** to Eilidh Young, Darwin Initiative M&E Programme at Darwin-Projects@ectf-ed.org.uk . The report should be between 1-2 pages maximum. **Please state your project reference number in the header of your email message eg Subject: 14-075 Darwin Half Year Report**