Biodiversity Challenge Funds Projects
Darwin Initiative, Illegal Wildlife Trade Challenge Fund, and Darwin Plus

Half Year Report

It is expected that this report will be a **maximum of 2-3 pages** in length.

If there is any confidential information within the report that you do not wish to be shared on our website, please ensure you clearly highlight this.

Submission Deadline: 31st October 2025

Please note all projects that were active before 1st October 2025 are required to complete a Half Year Report.

Submit to: BCF-Reports@niras.com including your project ref in the subject line.

Project reference	DPLUS184
Project title	Mitigating the impacts of climate change on sea turtle populations
Country(ies)/territory(ies)	Cayman Islands
Lead Organisation	Cayman Islands Department of Environment
Partner(s)	University of Exeter
Project Leader	Jane Hardwick and Joseph Roche Chaloner
Report date and number (e.g. HYR1)	HYR3
Project website/blog/social media	*doe.gov.ky*

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

Since April 2025, we have continued to make good progress with the project, particularly in terms of including a 3rd season of field data collection. Our project team remains the same as appointed in Y1, though one team member is on maternity leave and returns to work in January 2026 (as such, our project end date is now approved as 30th September 2026, after a 6-month extension was granted).

Phenology paper submitted to PLOS ONE journal and review comments received and edits underway (Standard Indicator DPLUS-C17). The paper was submitted in June 2025 and revisions are now underway. Abstract will be attached in the email.

Mitigation Experiment on effect of shade type and depth on sand temperature conducted (standard indicator DPLUS-C07). Seventy-two temperature loggers were deployed across a range of sites on two beaches (Seven Mile Beach (SMB) and Bodden Town (BT)), to compare the effect of temperature of three different natural shade types of the most common beachside vegetation species (*Scaevola taccada*, *Coccoloba uvifera* and *Casuarina equisetifolia*). For each of the three vegetation types chosen, 12 dataloggers were deployed in six pairs, on two different

beaches in shaded and unshaded locations (Figure 1 and Figure 2). Three pairs at each beach site were deployed at 61cm and three pairs placed at 46cm depth representing the mean depth of green and loggerhead turtle nests at this site, respectively. The distance to the high-water mark was kept consistent between shaded and open plots at the time of the experiment. Preliminary results showed that shading from *Coccoloba uvifera* (which was the only native species of the 3 treatments), significantly lowered temperatures in comparison to the other species, at both beach sites and at both depths.

The same experimental design was used to examine the effects of depth on temperature, as a possible 2nd mitigation measure, that could be used in addition to, or as well, as shading. The data analysis for depth is underway.

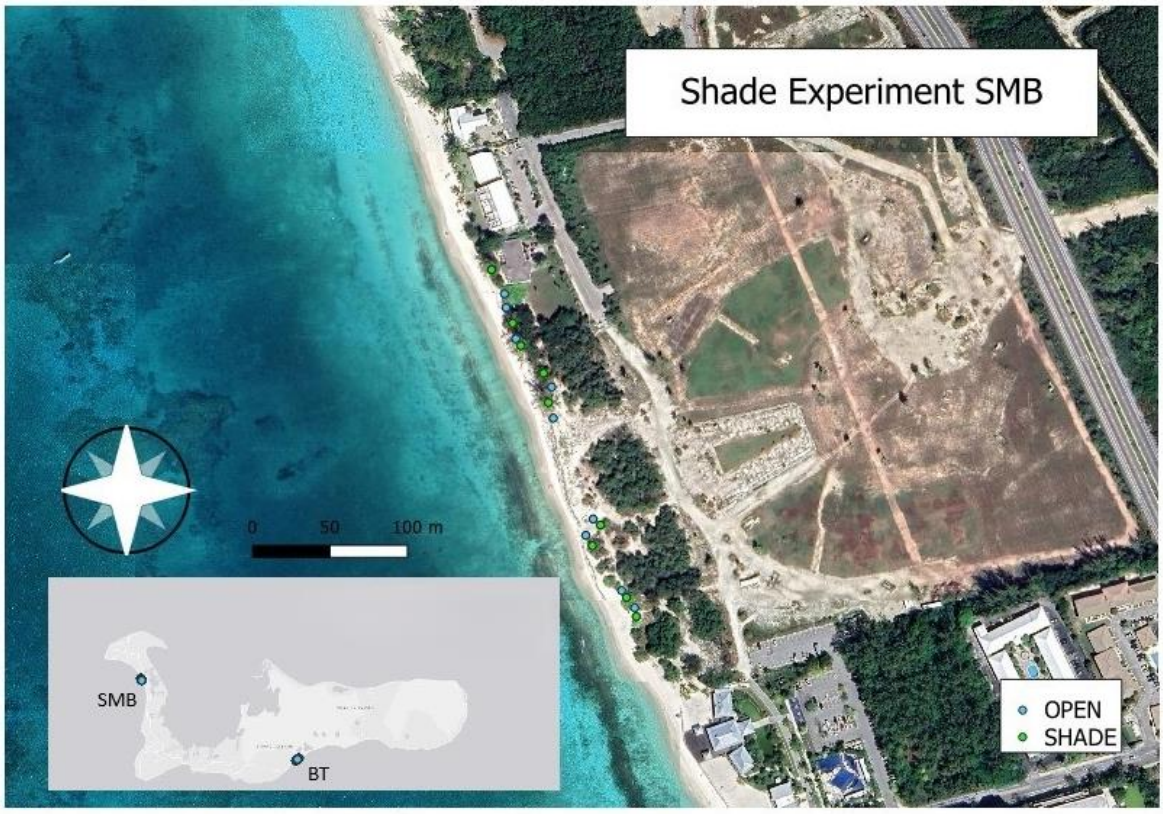

Figure 1 Locations of shaded and unshaded (open) temperature loggers deployed for the experiment on Seven Mile Beach (SMB).

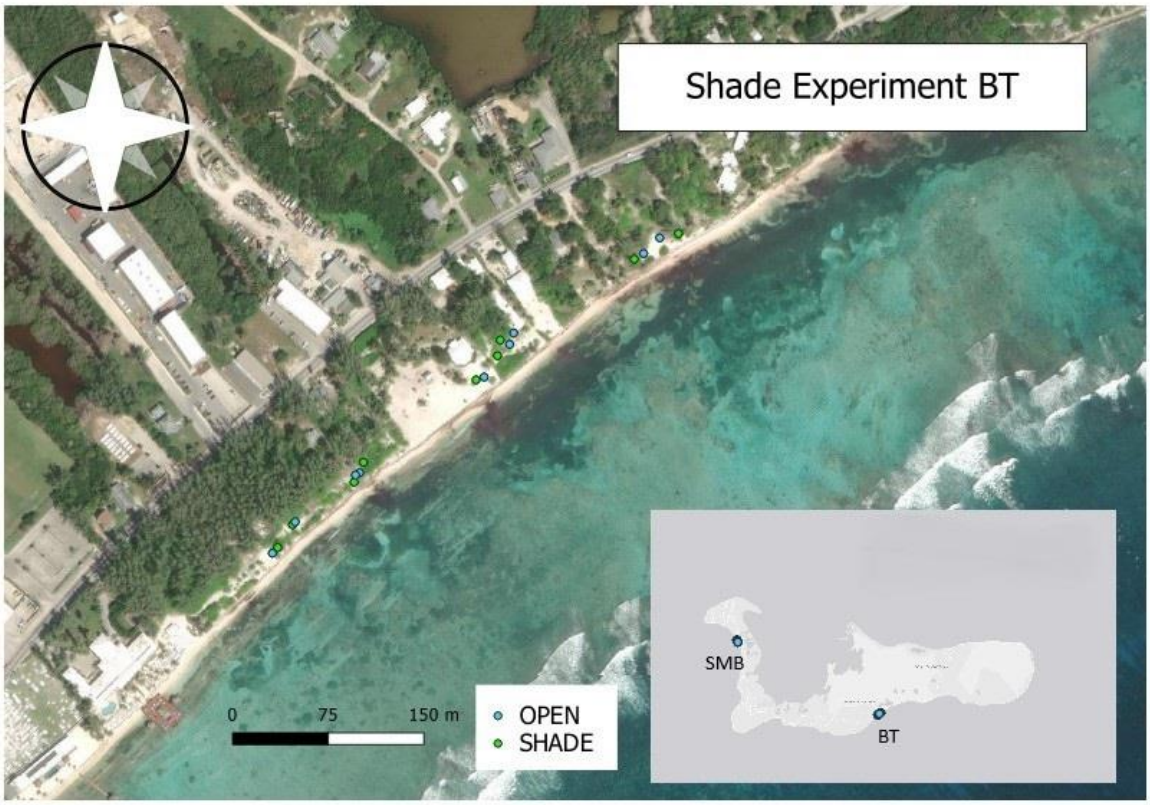

Figure 2 Locations of shaded and unshaded (open) temperature loggers deployed for the experiment on Bodden Town Beach (BT).

Third Season of Data Collection of Temperature Logger Data

Due to the project extension, we were pleased to be able to include a 3rd season of temperature logger data collection, both in nests and at sand control sites. A total of 123 temperature loggers were deployed in nests during the 2025 nesting season (Table 1), including 7 in Little Cayman. The distribution of these are illustrated on the map below (Figure 3). This also reflects nesting distribution for each species, with loggerhead nesting occurring island-wide, and green turtles more specific to the west side beaches.

Table 1 Number of Temperature Loggers Deployed in Nests in 2025 Nesting Season

	Total Deployed 2025	**Total Failed 2025**
C. mydas	63	3
C. caretta	58	1
E. imbricata	2	0

At the time of writing, no tropical storms or hurricanes impacted the islands, because of this hatching success rates were high.

This third season of data is critical as data from our first two seasons showed significant variations between the years.

2023 and 2024 data analysis found the following:

- Hatchling size distributions were significantly different between the years for both species ($p<0.001$).
- Estimated hatchling sex ratios were significantly different for loggerhead turtles between the years ($P=0.045$), but not for green turtles
- Hatchling sex ratios were female skewed (both years, both species)

Tagging as a result of TL deployment
An additional bonus to having a night team out to deploy temperature loggers for this project, is that over the past three years we have gained very accurate data on the nesting green turtle population by tagging and recording recaptures.

The number of new nesting green turtles tagged since the project started: 2023 (41 of 65 encounters); 2024 (11 of 29 encounters); 2025 (24 of 51 encounters). This data is extremely valuable in determining the population size estimates for green turtles in the Cayman Islands and wouldn't be possible without this grant.

Other achievements in the last 6 months:

Digital terrain models are complete so far, though final drone flight imagery is to be collected (end of season).

Reviews to the Sea Turtle Conservation Plan are underway (**Standard Indicator DPLUS-C07**)**.**

Numerous education activities took place including: TV interviews (2x) and radio interviews (4x), team attendance with a stall for World Oceans Day at University College of the Cayman Islands in June, and 8x school group turtle nest excavations, 1x church youth group nest excavation and 4x volunteer group nest excavations. We also conducted a public meeting in

Cayman Brac where we presented a project update in Sept 2025 (**Standard Indicator DPLUSC15**).
2. Give details of any notable problems or unexpected developments/lessons learnt 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.
Given our approved change in timeline, we are currently reviewing our budget and planning a team meeting to ensure we are taking all measures to maximise the outputs of our project.
3. Have any of these issues been discussed with NIRAS and if so, have changes been made to the original agreement?

Discussed with NIRAS:	No
Formal Change Request submitted:	No
Received confirmation of change acceptance:	No

Change Request reference if known: *If you submitted a financial Change Request, you can find the reference in the email from NIRAS confirming the outcome*

Guidance for Section 4: The information you provide in this section will be used by Defra to review the financial status of projects. This review will identify projects at random for spot checks on financial management and will include requests for evidence of the actual spend information provided below. Please ensure the figures you provide are as accurate as possible and that you have the evidence to support it. You do not need to provide it now.

4a. Please confirm your actual spend in this financial year to date (i.e. from 1 April 2025 – 30 September 2025) **Actual spend:** £[redacted]
4b. Do you currently expect to have any significant (e.g. more than £5,000) underspend in your budget for this financial year (ending 31 March 2026)? [redacted]
4c. If you expect an underspend, then you should consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year. **If you anticipate a significant underspend because of justifiable changes within the project, please submit a re-budget Change Request as soon as possible, and not later than 31st December. There is no guarantee that Defra will agree a re-budget so please ensure you have enough time to make appropriate changes to your project if necessary. Please DO NOT send these in the same email as your report.** **NB: if you expect an underspend, do not claim anything more than you expect to spend this financial year.**
5. Are there any other issues you wish to raise relating to the project or to BCFs management, monitoring, or financial procedures?

Suspicions or allegations related to fraud and error concerns should be reported to fraudanderror@Defra.gov.uk

[redacted]

6. Project risk management

6a. If your project has an Overseas Security and Justice assessment, please provide an update on any related risks, and any special conditions in your award paperwork if relevant for your project.

N/A

6b. Have any concerns or allegations relating to sexual exploitation, abuse or harassment been reported in the past 6 months?

[redacted]

Suspicions or allegations related to safeguarding concerns should be reported to ODA.Safeguarding@defra.gov.uk

7. Please use this section to respond to any feedback provided when your project was confirmed, or from your most recent Annual Report. As a reminder, all projects that were scored as 'Not Yet Sensitive' in the Gender Equality and Social Inclusion (GESI) assessment of their latest Annual Report should demonstrate how they are meeting the minimum GESI-Sensitive standard.

[redacted]