

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

Note: 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 2023

Project reference	DPLUS183
Project title	Biodiversity metrics in the British Virgin Islands
Country(ies)/territory(ies)	British Virgin Islands
Lead partner	Royal Botanic Gardens, Kew
Partner(s)	National Parks Trust of the Virgin Islands
Project leader	Juan Viruel
Report date and number (e.g. HYR1)	HYR1
Project website/blog/social media	https://www.kew.org/science/our-science/projects/biodiversity-metrics-british-virgin-islands https://twitter.com/KewUKOTs

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

Although we are not looking for specific reporting against your indicators, please use this opportunity to consider the appropriateness of your M&E systems (are your indicators still relevant, can you report against any Standard Indicators, do your assumptions still hold true?). The guidance can be found on the resources page of the relevant fund website.

DPLUS183 started on the 1st April 2023. During these six months, we have successfully recruited two new members to the RBG Kew team due to staff turnover at the start of the project (see section 2) and we have made substantial progress towards outputs as planned. We used an Excel spreadsheet with the timetable [see attached file: *DPLUS183_M&E.xlsx*] and log frame [see attached file: *BCF-St2-and-Single-Stage-Logical-Framework-Template-2022-23-FINAL_UpdateJuly23.docx*] to discuss the progress against indicators and outputs in Steering Group meetings, which happened quarterly. The attached version of the log frame was modified following the recommendations received by reviewers at the start of the project (highlighted with track changes) and to incorporate the Standard Indicators.

Output 1. Biobank for the BVI flora established: tissue and DNA of all native plant species from the BVI secured in accessioned collections.

Activity 1.1 Collect tissue material from all specimens available at Kew and extract DNA. Quantify the DNA obtained to assess if it is suitable for sequencing methods (see activities in Output 2).

The main objective during the first two quarters of the project was to carry out a gap analysis of British Virgin Islands (BVI) specimens available at RBG Kew, preserved as herbarium specimens or dried leaves in silica gel, and to extract DNA to evaluate their appropriateness for the molecular analysis we aim to conduct. Specimens not passing our quality criteria would inform the target

species for our first fieldwork campaign, which will happen during November and December 2023. In this fieldwork, we will start collecting the ca. 150 previously non-collected species (indicator 1.1).

We have collected plant tissue from 260 herbarium samples, and only nine were not suitable for sampling (too little amount of tissue available in the specimen). We obtained another 260 samples from the DNA and Tissue Bank at RBG Kew. DNA from all these samples was extracted (Indicator 1.2), and processed at RBG Kew molecular laboratory, which has facilities for genomic library preparation and target capture. The samples were then sent to be sequenced to Macrogen Inc. (Korea). High-throughput sequencing platforms are evolving fast, making not viable to have in-house sequencing facilities (high cost of equipment and maintenance, and new platforms appearing in the market every few years making the previous versions obsolete or more expensive to use). Outsourcing the generation of sequences is appropriate and cost-effective. Sequence data arrived in September, and we are running the bioinformatic analysis (see output 2). Those samples and species not successfully sequenced will be included in the target list for fieldwork.

DNA samples will be deposited and stored at the RBG Kew DNA and Tissue Bank (except for DNAs fully used for our analysis). These will contribute to Standard Indicator “DPLUS-C09 Species reference collections made (known to science, new to science)”.

In parallel, presence data from DPLUS084 have been fully processed and imported to the UKOTs database. This dataset will be incorporated into this project (Indicator 1.4). This also contributes to the Standard Indicator DPLUS-C09.

Our first fieldwork is planned in November-December 2023, and a second campaign in March 2024, which will contribute to the planned activities 1.2, 1.3 and 1.4.

The assumptions associated with this output remain true: Kew staff are able to travel to the BVI to collect materials; Export and import (e.g., CITES) permits issued for all missing species; Being able to locate all the unstudied species; Kew remains committed to maintain and enhance its specimen databases and making these publicly available; Kew’s UKOTs team retains capacity to be able to maintain the UKOTs Species and Specimens Database.

Output 2. A complete BVI Plant Tree of Life and biodiversity metrics calculated.

Although the activities for this output are planned for the second year of the project, we have made substantial progress for two of them.

Activities 2.1.1 Process samples to generate genetic sequence data for all native plant species in BVI (ca. 650) & 2.1.2 Conduct bioinformatic analysis and reconstruct a phylogenetic tree including all native plant species in BVI.

Our new Research Assistant in the molecular lab, Freya Cornwell-Davison, has received training on bioinformatics for this type of data and analysis, and is currently running preliminary analysis to have everything prepared for next year. Freya has also successfully processed all samples in the molecular laboratory, which includes three main protocols: DNA extractions, genomic library preparations and target capture enrichment, for ca. 600 samples.

The assumptions associated with this output remain true: DNA successfully extracted from problematic species (e.g., containing secondary metabolites, polysaccharides, etc.); The incorporation of new data and maintenance of the Kew Tree of Life Explorer continues at current levels; Sufficient presence points (10-15 per species) available from fieldwork activities and online resources (see methods) to adequately calculate species model distribution for each species.

Output 3. Capacity built for integrating biodiversity metrics into conservation management, action and decision-making.

Activities related to Output 3.1 will start in November in our first field work campaign. Activities for the remaining outputs are planned for FY3.

Output 4. Biodiversity metrics used to direct conservation action in the face of current and future threats.

Activities scheduled for FY3.

Output 5. Outreach activities to reinforce the importance of conserving native plant species.

Activities scheduled for FY3.

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.

Staff turnover was highlighted in our proposal as a potential risk. At the start of the project, Thomas Heller was going to be hired as project officer, and was due to conduct the lab work and participate with collating data for Red Listing, being funded at 80% of this time from the project. Thomas Heller received a promotion at RBG Kew as a Research Leader, and we required new staff for the planned activities. We submitted a change request, LTS1167, to formalise a change in the operational team at Kew, with no impact on deliverables to the project. After receiving approval for this change request, we recruited Freya Cornwell-Davison as a research assistant at 50% to help with the molecular laboratory analysis, and Amy Baker at 30% as Red List assessment specialist, who has increased her contract hours at RBG Kew. The incorporation of Freya and Amy in our team was positive and we do not expect any impacts on delivering planned activities due to these staff changes. An additional change request will be requested for laptop and software required for one of these two new positions.

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

Discussed with NIRAS: Yes

Formal Change Request submitted: Yes

Received confirmation of change acceptance Yes

Change request reference if known: LTS1167

4a. Please confirm your actual spend in this financial year to date (i.e. from 1 April 2023 – 30 September 2023)

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 2024)?

Yes No Estimated underspend: £

4c. If yes, then you need to 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. There is no

guarantee that Defra will agree a re-budget so please ensure you have enough time to make appropriate changes 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 BCF management, monitoring, or financial procedures?

No.

If you are a new project and you received feedback comments that requested a response, or if your Annual Report Review asked you to provide a response with your next half year report, please attach your response to this document.

All new projects (excluding Darwin Plus Fellowships and IWT Challenge Fund Evidence projects) should submit their Risk Register with this report if they have not already done so.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but **should also be raised with NIRAS through a Change Request. **Please DO NOT send these in the same email.****

Please send your **completed report by email** to BCF-Reports@niras.com. The report should be between 2-3 pages maximum. **Please state your project reference number, followed by the specific fund in the header of your email message e.g. Subject: 29-001 Darwin Initiative Half Year Report**