



**BIODIVERSITY  
CHALLENGE FUNDS**



## **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: 31<sup>st</sup> October 2024**

**Please note all projects that were active before 1 October 2024 are required to complete a Half Year Report.**

**Submit to: [BCF-Reports@niras.com](mailto:BCF-Reports@niras.com) including your project ref in the subject line.**

<b>Project reference</b>	DPLUS183
<b>Project title</b>	Biodiversity metrics in the British Virgin Islands
<b>Country(ies)/territory(ies)</b>	British Virgin Islands
<b>Lead Organisation</b>	Royal Botanic Gardens, Kew (Kew)
<b>Partner(s)</b>	National Parks Trust of the Virgin Islands (NPTVI)
<b>Project leader</b>	Dr. Juan Viruel (he/him)
<b>Report date and number (e.g. HYR1)</b>	HYR2
<b>Project website/blog/social media</b>	<a href="https://www.kew.org/science/our-science/projects/biodiversity-metrics-british-virgin-islands">https://www.kew.org/science/our-science/projects/biodiversity-metrics-british-virgin-islands</a>

**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).**

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.

During the first six months of Y2 for DPLUS183, we have successfully recruited a new member to the RBG Kew team (Research Assistant in Spatial & Data Analysis) and we have made substantial progress towards outputs as planned. We continued using 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 happen quarterly.

The activities planned for Y2 focus on the generation of the data and the analysis required to calculate the three biodiversity metrics proposed in the project. The progress on the activities reported below were discussed in team meetings and assessed by the steering group.

## **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).*

This activity was complete in Y1.

- Activity 1.2 *Conduct fieldwork to collect plant material for ca. 150 native plant species not yet available at RBG Kew (Y1), and for any species not passing the DNA quality check in Activity 1.1 (Y2). Database all new herbarium and tissue samples.* We have 594 botanical records from Y1 fieldwork campaigns, and ca 1,650 specimens to curate and incorporate into the collections. This process involves identification, produce labels and update data in the database. After this, the specimens need to be mounted and digitised. And finally duplicates will be distributed to BVI and MAPR. This activity has continued as planned.

→ Indicator: 1.2 DNA bank created for all plant native species (ca. 650) in the BVI by YR2 Q4, increasing the available DNAs ten times from a baseline in Y1 of 10% of species. [DPLUS-C09]. This indicator remains true and will be achieved when the processing all specimens collected in Y1 (i.e., All DNAs (see below) with associated tissue and herbarium vouchers) is complete.

[DPLUS-C09]: Species reference collections made (known to science, new to science): ca. 1,650 specimens being incorporated in collections, in progress.

- Activity 1.3.1 *Extract DNA from newly collected materials. Confirm appropriate amounts of DNA were extracted as expected from recently collected materials & Activity 1.3.2 Database all DNAs and incorporate them in the DNA Bank and Tissue collection at RBG Kew.* 664 DNAs extracted, including all samples collected in fieldwork, and additional 118 DNAs extracted from samples received from MAPR herbarium.

→ Indicator: 1.3 Databasing completed for all newly collected materials by YR3 Q4 to achieve a full representation of all ca. 650 native plants in BVI. [DPLUS-C09]. This indicator remains true and progressing towards completing the full collection of ca. 650 native plants by incorporating new 786 DNAs.

[DPLUS-C09]: Species reference collections made (known to science, new to science): 786 DNAs extracted.

- Activity 1.4 *Conduct fieldwork and carry out inventory lists of species in areas with low number of presence data, including areas that will be targeted for ecological restoration plans (Y1).* All presence points obtained in Y1 have now being incorporated in the dataset for analysis in activities 2.2 (see below). Fieldwork planned for November-December 2024 aiming to fill in gaps in presence points in the database.

→ Indicator: 1.4 Collect native plant species presence points to increase our current database by 30% by YR2 Q2, from a baseline of 10,000 points. The number of presence points incorporated in the database. This indicator was reported in Y1 report and exceeded. No new records have been collected since then.

[DPLUS-C09] Species reference collections made (known to science, new to science): no fieldwork happened in Y2, but all points collected in Y1 are now incorporated in our datasets for analysis.

All assumptions for Output 1 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 remain committed to maintain and enhance their 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**

- Activity 2.1.1 *Process samples to generate genetic sequence data for all native plant species in BVI (ca. 650).*

An externally funded summer intern from the Smith College in Boston (MA, USA), Adline Dely, contributed to this activity. 746 samples have been processed so far in Y2 of the project, which includes all field work samples collected in Y1, and 118 DNAs extracted from samples received from MAPR herbarium (see Activity 1.3.1). Genomic libraries have been prepared, hybridised with the Angiosperms353 to capture 353 nuclear genes and were sent for sequencing to an external company (note: outsourcing the sequencing step is a common procedure, appropriate and cost-effective).

- Activity 2.1.2 *Conduct bioinformatic analysis and reconstruct a phylogenetic tree including all native plant species in BVI. Share the data with our colleagues working in the Tree of Life Explorer (<https://treeoflife.kew.org/>). Analysis planned to be run when data from Activity 2.1.1 are received back from the external company where we sequence our samples.*

→ Indicator: 2.1 Generate DNA sequence data and complete the Tree of Life for all native plant species in BVI (ca. 650) by YR2 Q4, from a baseline of 36 species. During the first half of Y1, we have processed 746 samples.

- Activity 2.2.1 *Run species distribution models for all native plant species in BVI.* Assessment of presence points data availability for 716 species from our database and GBIF totalling 1,134,816 records. After cleaning, 702 species have more than 5 presence points across the Caribbean, and 650 species if we focus the analysis on the Puerto Rican Bank. Datasets are now ready to start running the species distribution models.

- Activity 2.2.2 *Generate a map layer with estimates of species richness using the output from 2.2.1.* This activity will start when species distribution models are complete (see Activity 2.2.1).

- Activity 2.2.3 *Conduct conservation assessments and write a full Red List for all native angiosperms in BVI.* Presence points datasets prepared in 2.2.1 are also the input for this analysis. We recruited two summer intern students using funds from Kew, Catherine Walter and John Gibson, who worked on the Red List for BVI angiosperms. We have 132 assessments drafted in the IUCN Species Information Service (SIS), 28 of which were prepared by the two intern students and were reviewed. Another batch of 40 assessments are currently in preparation. The progress of this activity is as planned.

- Activity 2.2.4 *Integrate all data in Biodiverse software to calculate phylogenetic diversity across the territory.* This activity will start when the remaining 2.2 activities are complete.

→ Indicator: 2.2 Three biodiversity metrics calculated for the entire flora of the BVI: species richness, IUCN Red List assessments and phylogenetic diversity by YR3 Q2. [DPLUS-E03]. [DPLUS-E03]: Status of Threatened Species (DEFRA KPI).  
These indicators remain relevant and will be used to report the progress when all activities are finalised.

All assumptions for Output 2 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, and public engagement**

- Activity 3.1 *At least three NPTVI staff trained and actively collecting herbarium and tissue samples and associated data by YR1 Q4*

This activity was complete in Y1.

- *Activity 3.2 At least three NPTVI staff trained and step by step manuals produced for interpreting biodiversity metrics data and designing ecological restoration plans by YR3 Q4.*
- *Activity 3.3 NPTVI Deputy Director trained to manage and update biodiversity metrics database and use it to design ecological restoration plans.*
- *Activity 3.4 End of project workshop to integrate biodiversity metrics in conservation shared with wider stakeholders, including partners from other Caribbean islands (including overseas territories) by YR3 Q4.*

Activities 3.1, 3.2 and 3.2 planned for Y3, indicators remain relevant. All assumptions for Output 3 remain true: NPTVI retains trained staff, Appropriate designer is selected to produce cartoon.

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

All activities planned for Y3, indicators remain relevant. All assumptions for Output 4 remain true: Kew staff are able to travel to the BVI to collect materials and new data, We have continued access to high-capacity computing at Kew and capacity to maintain databases, Biodiverse software is maintained, Evidence bases successfully established from outputs 1 and 2, BVI National GIS maintained by BVI Government, J. R. O'Neal Botanic Garden maintains capacity (facilities and staff) to grow native plants in the nursery.

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

All activities planned for Y3, indicators remain relevant. All assumptions for Output 4 remain true: Kew staff are able to travel to the BVI for training and educational activities.

#### **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.**

A financial change request was submitted (23/05/2024) and approved (07/06/2024) to transfer from Research Assistant salary costs 2024/25, plus of associated overheads to next financial year 2025/26. After recruitment, we have appointed Elloise Budd for this position and incorporated her in the project. Her starting date was on the 17th June 2024, we therefore required transferring staff costs to next financial year to maintain the length of the contract of 1 year. This change allowed us to offer for this job as planned (i.e., one-year contract) and we were able to maintain the best candidate for our project.

This change does not affect the delivery of planned activities and outputs. The research assistant is responsible for activities "2.2.1 Run species distribution models for all native plant species in BVI" and "2.2.2 Generate a map layer with estimates of species richness using the output from 2.2.1". 2.2.1 is scheduled Q1-Q4 of Y2, and 2.2.2 for Q4 Y2 and Q1 Y3, therefore, having the research assistant with us during part of Q1 Y3 matches with our time expectations in the project. We do not expect that having started her contract slightly later in Y2 will affect the delivery of "Output 2.2 Three biodiversity metrics calculated for the entire flora of the BVI: species richness, IUCN Red List assessments and phylogenetic diversity by YR3 Q2.", and our progress in the first half of this financial year has happened as planned.

#### **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: CR24-024	

**4a. Please confirm your actual spend in this financial year to date (i.e. from 1 April 2024 – 30 September 2024)**

**Actual spend:**

**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 2025)?**

Yes ☐ No ☒

**4c. If you expect and 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. 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 BCF management, monitoring, or financial procedures?**

No.

**6. Please use this section to respond to any feedback provided when your project was confirmed, or from your most recent annual report.** If your project was subject to an Overseas Security and Justice Assistance assessment please use this space to comment on any changes to international human rights risks, and to address any additional mitigations outlined in your offer letters. Please provide the comment and then your response. If you have already provided a response, please confirm when.

The changes in the log frame in response to the reviewer comments in the offer letter were accepted by Darwin admin in an email correspondence dated 27/06/2024.

## Checklist for submission

### For New Projects (i.e. starting after 1<sup>st</sup> April 2024)

Have you **responded to any additional feedback** (other than caveats) received in the letter you received to say your application was successful which requested response at HYR (including safeguarding points)? You should respond in section 6, annexes other requested materials as appropriate.

If not already submitted, have you attached your **risk register**?

### For Existing Projects (i.e. started before 1<sup>st</sup> April 2024)

Have you responded to <b>feedback from your latest Annual Report Review</b> ? You should respond in section 6, annexes other requested materials as appropriate.	
<b>For All Projects</b>	
Include your <b>project reference</b> in the subject line of submission email.	
Submit to <a href="mailto:BCFs-Report@niras.com">BCFs-Report@niras.com</a> .	
Have you <b>clearly highlighted any confidential information</b> within the report that you do not wish to be shared on our website?	
Have you reported against the most <b>up to date information for your project</b> ?	
Please ensure claim forms and other communications for your project are not included with this report.	