# Darwin Initiative, Darwin Plus and Illegal Wildlife Trade Challenge Fund Covid-19 Rapid Response Round - Final Report

*Due within two months of the end date of the Rapid Response Round project*

*(maximum 6 pages)*

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| Project reference | CV19RR01 |
| If linked with an ongoing project, please include that project reference here (e.g. IWT001) | DPLUS084 |
| Project title | Impacts and consequences of Covid-19 on conservation in the BVI |
| Country/ies | British Virgin Islands |
| Lead organisation | Royal Botanic Gardens Kew (Kew) |
| Partner institution(s) | National Parks Trust of the Virgin Islands (NPTVI), Forth Worth Zoo (FWZ) |
| Start/end date of project | 1st January – 31st March 2021 |
| Which fund was this project relevant to? | ~~Darwin Initiative~~ / Darwin Plus / ~~Illegal Wildlife Trade Challenge Fund~~ |
| Grant value (£) | £19,834.00 |
| Project Leader name | Thomas Heller |
| Report author(s) and date | Thomas Heller 28th May 2021 |

## 1. Project Summary

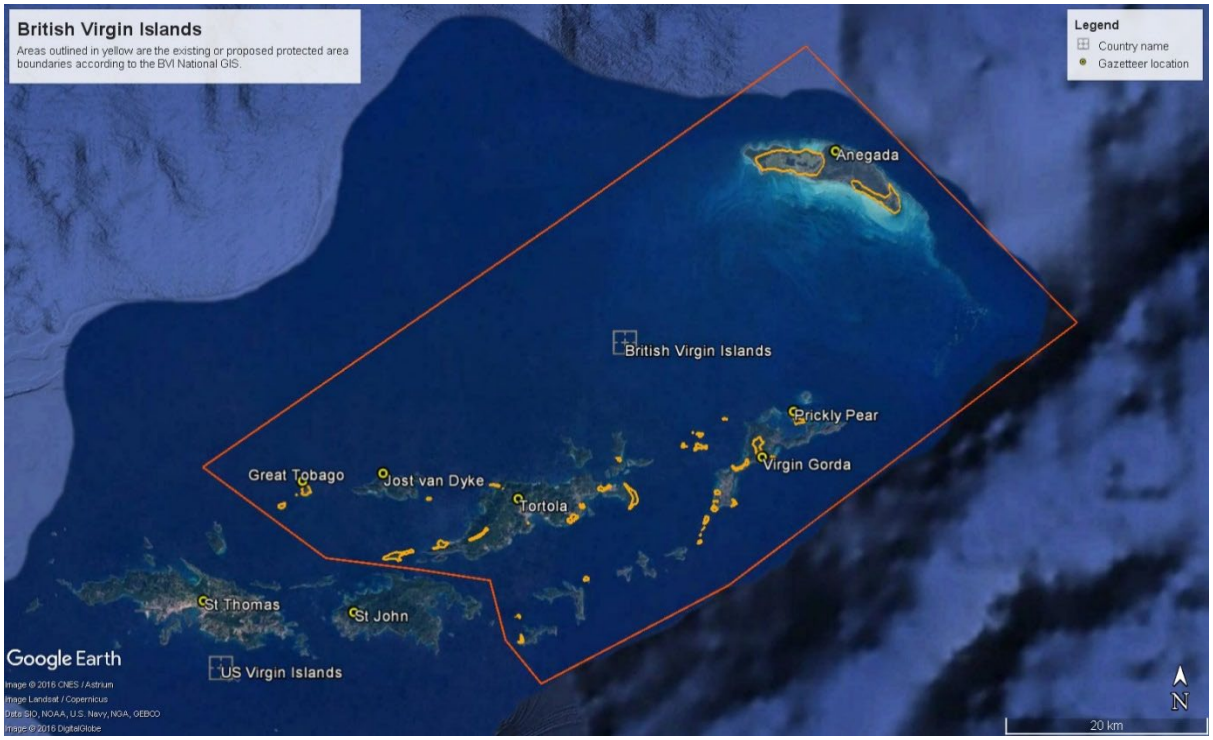
NPTVI have statutory responsibility for conservation of BVI's biodiversity and ensuring safe access to National Parks. The collaboration between NPTVI, Kew and Fort Worth Zoo on DPLUS084 *Identifying and conserving resilient habitats in the British Virgin Islands* brings together several key areas of research to strengthen biodiversity conservation in the BVI. The COVID-19 pandemic and governmental responses has had far-reaching impacts on the ability to meet these responsibilities.

With no international tourists and local restrictions to businesses and recreation over the course of 2020, the pattern of use of BVI's National Parks altered dramatically, with an observed shift in use by local residents. There was an urgent need to understand this shift, ensuring the National Parks are best positioned to serve visitors while conserving biodiversity.

With international and inter-island travel severely curtailed, the pandemic also impacted conservation research and practice, with progress on DPLUS084 halted in its second year, including monitoring and survey work, and challenges in the maintenance and development of *ex-situ* conservation collections of flora and fauna. BVI has faced two major catastrophes recently (2017 Hurricanes, COVID-19) with severe impacts on conservation action. Preparedness for future events is critical for the territories' resilience and the ability of local organisations like NPTVI to react appropriately to maintain effective biodiversity conservation.

This project has provided a better understanding of the nature and extent of the impacts and consequences of COVID-19 to inform the development of measures to recover and adapt to new ways of operating, focusing on two areas:

1. What kinds of consequences will disruptions to field and lab work during the pandemic have for the species and ecosystems we are studying, monitoring, and protecting?
2. To understand the wider impact of COVID-19 on projects, organisations, communities, and the wider environment, and the overall impact of this crisis on conservation.




## 2. Project Achievements

The intended Outcome of this project, as articulated in our application was “Conservationists working in the British Virgin Islands are better able to adapt and respond to changing circumstances, increasing prospects of success in securing the territories’ unique biodiversity for the future.”

Activities undertaken for this project are summarised below, with each of the objectives as stated in Q16 of our application:

**A National Park awareness campaign centred around a cartoon aimed at BVI residents will be created in January-February 2021. The cartoon will be shared on social media sites where BVI residents have been posting their park visits and BVI biodiversity photos.**

A cartoon was scripted by NPTVI and a local digital artist commissioned to produce the cartoon. The cartoon was uploaded to YouTube (https://youtu.be/Xo4yEPblCDc) and shared to NPTVI’s Facebook page (https://www.facebook.com/NPTVI/posts/3871726552944437), which has a wide following in the BVI, on the 19th April. Intended to raise awareness among local residents about the importance of BVI’s National Parks and the work of NPTVI, the cartoon features two characters, a turtle and a crab, voiced by local actors, having a light-hearted conversation on the subject. It is planned that this will form the first in a series of cartoons released at intervals.

**An Inventory and risk register of ex-situ collections of flora at J.R. O’Neal Botanic Gardens and fauna at the Anegada Rock Iguana Headstart Facility report will be compiled in March 2021 through data collected and analysed in January-February 2021.**

An inventory of *ex-situ* plant collections at the J.R. O’Neal Botanic Gardens (JRONBG) was undertaken, including cultivated threatened plants in the conservation nursery and public display beds, and banked seed collections at JRONBG.

The cultivated collections had previously been inventoried in early 2017, before the BVI was devastated by Hurricane Irma. The banked seed collections had not been formally inventoried before. Along with data from the UKOTs Species and Specimens Database (http://brahmsonline.kew.org/ukot), containing records of field collections made over the past 18 years, we were able to build a near-complete picture of the development of the *ex-situ* plant collections in the last two decades with which to understand the impact of COVID-19 in the last 12 months.

Together, the data served to highlight not only the immediate impact of COVID-19 on the collections and their management, with the collecting of new accessions effectively halted, it also provided a stark illustration of the impact of Hurricane Irma in 2017 (destroying two thirds of the collections). The pandemic has compounded these issues and slowed down recovery from the catastrophe, in terms of replacing collections and rebuilding infrastructure in which to effectively care for the collections.

The inventories have also served to highlight the gaps in the collections, providing a valuable document for targeted action in post-pandemic fieldwork and nursery propagation. Some threatened species were absent from the collections and had not been hitherto actively targeted in collecting activities for DPLUS084. Some of these represent taxa that have in the past proved to be difficult to maintain *ex-situ* with current infrastructure and resources and require further attention.

A study of *Cyclura pinguis* at the Anegada Rock Iguana Headstart Facility was undertaken. The impact of COVID-19 was investigated by comparing:

1) the physical condition of the animals in the headstart facility at four different points in time (pre-hurricane, post-hurricane, pre-pandemic, and one year into the pandemic);
2) the number of nests located per year;
3) the number of hatchlings brought into the headstart facility for the last 10 years.

It was found that the iguanas at the Headstart Facility continue to have a depressed Body Condition Score since the passing of Hurricanes Irma and Maria. It is not entirely clear why COVID-19 might itself result in poorer condition in the iguanas, though it does appear to contribute to the picture that the pandemic is serving to compound problems brought on by 2017's catastrophes. This is certainly true in terms of the number of nests located each year and the number of hatchlings brought into the Headstart Facility, both of which have been impacted by hurricane and pandemic disruptions. These impacts will continue to affect the iguana conservation programme for several years to come, as disruption to the intake of juveniles in one year determine the release of the animals in years to come.

Three Risk Registers were completed for NPTVI's *ex-situ* collections: the cultivated threatened plants at JRONBG, the banked seed collections at JRONBG, and the Anegada Rock Iguana Headstart Facility. These documents are the first time such an exercise to formally account for risks has been undertaken, and mitigation measures documented. Incorporating an annual review into the management of the collections will help to ensure the measures are implemented.

Evidence: The technical report, with methods used, summary results and discussion is available on the ResearchGate project page (https://www.researchgate.net/publication/351935566_Inventory_and_risk_register_of_ex-situ_threatened_plants_and_animals_in_the_BVI). The three Risk Registers are available on Hightail:

- Anegada Headstart Facility Risk Register
- J.R. O'Neal Botanic Gardens horticultural conservation collections Risk Register
- J.R. O'Neal Botanic Gardens seed bank Risk Register

**A Status report on monitoring equipment and globally threatened species during the COVID-19 pandemic will be compiled in March 2021 using data collected and analysed in** *Covid-19 Rapid Response Round Final Report Template 2021*

**January-February 2021. The report will include an assessment of monitoring equipment (21 data loggers, 32 camera traps, 18 ink traps, 20 artificial retreats), and key sites for globally threatened species on four islands (Anegada, Fallen Jerusalem, Tortola, Virgin Gorda).**

Fieldwork was undertaken to collect evidence on the consequences of disruptions to data collection and field work during the pandemic for the species and ecosystems we are studying, monitoring, and protecting. Sites where monitoring equipment had been previously installed were visited on Anegada, Tortola and Virgin Gorda. Unfortunately, sea conditions during the time-frame of the project did not permit safe landing on Fallen Jerusalem, so the monitoring stations there were not visited. Time constraints did not permit data loggers at Cooper Rock and East End. 22 camera traps, 8 ink traps, 3 transects of artificial retreats, and 10 sites with temperature and humidity loggers were visited, the equipment checked and re-deployed during the project.

The assessments undertaken for this project helped to demonstrate that, while *in-situ* monitoring equipment collected much valuable data during the pandemic, the significant gap in visitation by field personnel meant that any problems that arose were not detected, resulting in lost data. For example, where incursion by termites, disruption by feral goats, or battery exhaustion caused a camera to stop recording, the camera would sit inactive until fieldwork could resume in 2021, resulting in several months without data recorded. Similarly, the interruption to the regular surveys of *Cyclura pinguis* represent a gap in an otherwise long-term dataset and preventing any emerging problems to be documented early.

The findings of this work has provided valuable information to base future actions, to help recovery from the disruption, improving fieldwork protocols, and ways in which local capacity building and sharing of tasks can be better targeted to ensure resilience to disruptive events such as this.

The data loggers at Cooper Rock have since been visited, and now that sea conditions have become more favourable, a visit will be scheduled to Fallen Jerusalem.

Visiting and assessing key sites for threatened plants demonstrated that threats continue with reduced or no monitoring. These include illegal clearing of forest within National Parks and illegal sand mining for construction.

Evidence: The technical report, with methods used, summary results and discussion is available on the ResearchGate project page (https://www.researchgate.net/publication/351935575_Status_report_on_monitoring_equipment_and_globally_threatened_species_during_the_Covid-19_pandemic_in_the_BVI)

**The two reports and one cartoon mentioned above will be publicly available on the open access Kew Research Repository (https://kew.iro.bl.uk/) by the end of March 2021. These reports will be widely publicised using Kew's network of collaborators and social media to ensure that other countries and territories can benefit from the methodology developed.**

The Kew Research Repository is currently subject to a content freeze as the platform, managed by the British Library, is moved to a new provider. However, a project page has been created on ResearchGate, where the reports are available to our network of collaborators (https://www.researchgate.net/project/Impacts-and-consequences-of-Covid-19-on-conservation-in-the-BVI-CV19RR01), and the cartoon is publicly available on NPTVI's Facebook page and on YouTube. All items will be uploaded to the Kew Research Repository once it is available again.

**A paper on the Impacts and consequences of Covid-19 on conservation in the BVI will be prepared for submission to a peer-reviewed, open access journal.**

A paper has been drafted for submission to the open access journal Nature Conservation, published by Pensoft (https://natureconservation.pensoft.net/). The draft paper is available to view on Hightail (https://spaces.hightail.com/receive/fyVOWXLjCE). We anticipate that it will be ready for submission by the end of June.

### Gender equality issues

This project has followed the same principles applied to the Darwin Plus project (DPLUS084) to which it is linked: the project team is very balanced in terms of gender, at all levels, across the field team and Steering Group. The project has ensured shared authorship of reports/outputs and shared responsibilities for undertaking and delivering project activities.

### Value for money

This project represents good value for money, both in terms of effective deployment of existing skills and resources, as well as informing future actions to deliver meaningful outcomes for conservation in the BVI that did not fall within the scope of DPLUS084, yet enhances the outcomes of that project.
The project has been delivered entirely by the existing team of collaborators, without the need for consultants. The synergy with the current endemic iguana conservation programme, match funding from the partner organisations (overhead costs from Kew, staff costs from FWZ, and a grant from the Mohammed bin Zayed Species Conservation Fund for some staff costs at NPTVI) have all helped to enhance the value of this project.

### Effectiveness of partnerships

With international travel not possible during the course of this project, the effectiveness of the long-standing partnerships has been essential to its successful delivery. New ways of collaborating virtually, through heavier reliance on platforms such as Skype, Whatsapp and Hightail, including instant communication with international partners whilst conducting fieldwork, have helped to ensure the success of activities.

### Safeguarding and Ethical considerations

This project has followed the same safeguarding framework as for its linked project, DPLUS084, with safeguarding requirements and documentation shared among the Steering Group. Our obligations as collaborators are established in formal Memoranda of Collaboration, including commitments to Access and Benefit Sharing.

## 3. Lessons learnt

This project has helped to identify where the greatest impacts of the pandemic have been on conservation activities in the BVI, and where to focus efforts as work on DPLUS084 resumes to ensure good progress. The information presented in the technical reports will form an integral part of the adaptive management and Monitoring and Evaluation of that project. It has also highlighted areas for improvements in the longer term to ensure greater resilience to disruptive events. Such lessons include designing and funding field monitoring programmes so that they can easily be maintained by local partners, with less reliance on access by international partners; where the weaknesses are in the deployment of field monitoring equipment. It has also been instructive in understanding the cumulative effects of disruptive events in relatively quick succession (i.e. 2017's devastating hurricanes followed by COVID-19). The impacts of both will continue to be felt for some time, especially as the financial blow of COVID-19 is likely to stifle recovery at NPTVI in the future.

## 4. Other comments and feedback

The project team would like to take this opportunity to thank the Darwin Initiative for their support to undertake this work.