Darwin Plus:
Overseas Territories Environment and Climate Fund
Annual Report

To be completed with reference to the "Writing a Darwin/IWT Report" Information Note: (https://dplus.darwininitiative.org.uk/resources/reporting-forms-change-request-forms-and-terms-and-conditions/). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2021

Darwin Plus Project Information

Project reference	DPLUS085
Project title	Post-disaster Restoration of Mangroves (PROM)
Territory(ies)	The British Virgin Islands (BVI)
Lead organisation	International Union for Conservation of Nature (IUCN)
Partner institutions	Ministry of Natural Resources, Labour and Immigration, BVI
Grant value	£322,076
Start/end dates of project	2nd April 2019 - 31st March 2022
Reporting period (e.g. Apr 2020 – Mar 2021) and number (e.g. Annual Report 1, 2, 3)	April 2020 – March 2021
Project Leader name	Radhika Murti
Project website/blog/social media	https://www.iucn.org/theme/ecosystem-management/our-work/ecosystem-based-approaches-climate-change-adaptation/post-disaster-restoration-mangroves-british-virgin-islands-prom
Report author(s) and date	Emily Goodwin (IUCN), Verónica Ruiz Garcia (IUCN), Kelli Palaka (IUCN), Susan Zaluski (Jost Van Dyke Preservation Society), Dr. Gregg Moore (University of New Hampshire), and Irene Zagner (Provita)

1. Project summary

In 2017, the British Virgin Islands were hit by Hurricanes Irma and Maria (both category 5) within weeks of each other. Outside of the initial impacts of the disaster and damage to human well-being and infrastructure, the ensuing ecosystem degradation continues to impact the islands. With substantial impacts on ecosystem services including damages to key coastal ecosystems (i.e. corals, mangroves, beaches and seagrass beds) and other environmental infrastructure assets, losses were estimated at GBP 3.1 million. Preliminary estimates indicated that over 90% of red mangroves were lost or badly damaged. The sheer amount of degradation created a compounding problem for natural regeneration, as the mangrove seed banks were largely wiped out by wind, tidal energy, and a storm surge that lasted days after the hurricanes abated.

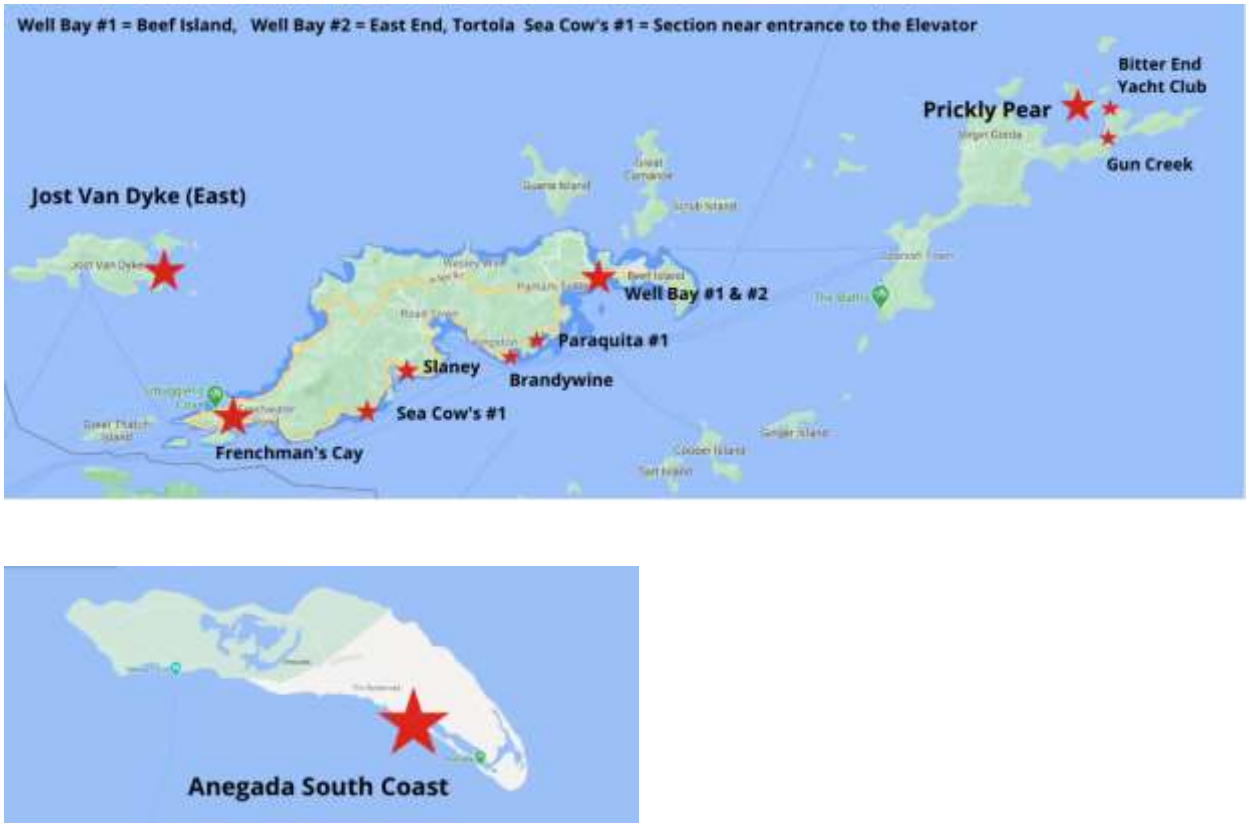
Mangrove ecosystems play a vital role in the Caribbean by providing a multitude ecosystem services such as prevention of coastal erosion, protection from wave energy and storm surges, carbon storage, water filtration, and key nursery habitat for many local and commercial fisheries.

The decimation of mangrove ecosystems in the British Virgin Islands (BVI) also significantly impacted tourism, by not only affecting the natural beauty of coastal ecosystems and beaches but also leading to decreased water quality and impacting fisheries. Mangroves not only directly benefit the communities who live near them, but also local and national economies. They are invaluable for resilience to natural disasters and adaptation to climate change, providing a coastal buffer to rising sea levels. Recognising the critical role of mangrove ecosystems in BVI, the Ministry of Natural Resources and Labour requested assistance with the recovery and restoration of mangrove ecosystems in the BVI.

The climate crisis is not only leading to increased incidence of natural disasters but also exacerbating their impacts, and low-lying islands like the BVI are particularly vulnerable to these effects. However, the restoration and sustainable management of natural ecosystems (also known as *ecosystem-based adaptation*) can increase resilience to climate change at both local community and national scales. In order to achieve this, a socioecological approach is required to restore natural ecosystems while taking human needs and societal priorities into account. This socioecological approach must be underpinned by robust scientific knowledge, much of which is available in the BVI but needs to be synthesized and compiled into a usable framework for restoration and management.

The project works to synthesize disconnected studies and information into a territory-wide mangrove risk assessment using the IUCN Red List of Ecosystems (RLE) methodology. Simultaneously, the project will be conducting on-ground mangrove restoration at selected pilot sites in the Territory in collaboration with local stakeholders. In parallel, the project team will work with the BVI government to draft an evidence-based territory-wide mangrove restoration and management plan at scale, based on the results of the RLE assessment, which will guide priority management actions on the island, like the Climate Adaptation Bill, and beyond the project, with mangrove restoration and management as an ecosystem-based approach to both disaster risk reduction and climate adaptation.

Territorial map of the primary islands comprising the British Virgin Islands, showing the distribution of mangrove ecosystems for July 2020 (in red). Mangrove distribution is based on the maps produced in the DPLUS 085 project (Berrocal 2020).



Above: Priority restoration sites as identified in the Restoration Feasibility Report (Annex I).

2. Project stakeholders/partners

The concept for the project was developed after the BVI Ministry of Natural Resources and Labour (MNRL) requested assistance with the recovery and restoration of mangrove ecosystems from IUCN. The MNRL was involved in the proposal stage and provided a support letter, enclosed with the application in 2019. Since the inception of the project, the MNRL remains a critical project partner. In the 2020 reporting period, Joseph Smith-Abbott, Deputy Secretary, together with Marcia Potter, Permanent Secretary, MNRL, and Mervin Hastings, Deputy Director of Conservation & Fisheries, set up a team of government representatives with strong expertise and skills to contribute to the operation of this project together with other mangrove activities in the BVI.

Due to internal adjustments and staff changes, the inception of the project was significantly delayed. During the prior reporting period (2019-2020), we developed functional linkages with stakeholders in order to leverage the expertise and experience of key local organizations, external partners and governmental bodies. This laid of the foundation for developing and fostering networking so as to promote active scientific practice and cooperation, proactively responding to the needs of local stakeholders. By doing so, we aim to ensure that the respective mangrove-related measures are synergistic and coherent, avoid overlap and duplication, make effective use of available resources. **IUCN's leadership in this collaboration was a key step to integrate previous and ongoing efforts to a coordinated and unified Territory-wide approach. This is a key priority of the PROM project team.**

Due to COVID-19 travel restrictions in this reporting period, IUCN - with the support of the Government of BVI - published a Request for Proposals for bringing on board the most suitable local NGO to facilitate the on-ground mangrove conservation and restoration actions, including associated field logistics, coordination with the Government of BVI and local stakeholders, and facilitating community engagement. The selected entity – from this transparent and public process – was the *Jost Van Dyke Preservation Society* that has been working on mangrove and coastal management in the BVI together with other relevant national institutions – like the National Parks Trust of the Virgin Islands (NPTVI) – for years and has also been involved in

previous Darwin-funded projects. **Susan Zaluski, of the JVDPS, joined the PROM project team in this key role as our on-ground coordinator in charge of ground implementation.**

Dr. Gregg Moore (University of New Hampshire) continued in his role as a scientific advisor and mangrove restoration expert. Moore conducted the initial post-disaster mangrove Assessment Report jointly with the Jost Van Dyke Preservation Society. Moore has also been advising the BVI government on immediate post-disaster management, including good mangrove management and restoration practices e.g. to not remove standing dead mangroves in the aftermath as even the dead physical structure can buffer wave and storm energy and reduce erosion on coastlines as well as trap and protect mangrove seedlings that will contribute to regenerating the forest naturally. Moore continues to collaborate closely with the JVDPS on the identification of key restoration site, effective mangrove restoration as well as monitoring & evaluation of project activities, and providing recommendations to the government.

A full list of project partners includes:

The Jost Van Dyke Preservation Society has extensive local knowledge on mangrove restoration pre-Irma, and launched the Territory's first mangrove nursey and funded the original post-hurricane mangrove assessment with Dr. Gregg Moore in the immediate aftermath of the storms. The JVDPS joined the BVI project team full-time in this reporting period to coordinate on-ground support for mangrove restoration actions, including associated field logistics, coordination with the Government of BVI and local stakeholders, and facilitating community engagement.

The National Parks Trust of the Virgin Islands had supported a satellite-mapping project of pre- and post- Irma landscapes in the Territory supporting the Darwin funded project "Mapping for evidence based policy, recovery and environmental resilience" with Environment Systems Limited. The Trust also has a history of mangrove restoration pre-Irma, as well as extensive political knowledge and influence;

The H. Lavity Stoutt Community College has an established mangrove nursery, funded by BVI Unite, and is collaborating with the PROM project to supply propagules and volunteer efforts, as well as supporting graduate students to support mangrove restoration work and produce student research projects on mangrove restoration in the BVI. The nursery was developed based on lessons learnt from the pilot nursery created on Jost Van Dyke.

Furthermore, Nia Jeffers, current manager of the H. Lavity Stoutt Community College's (HLSCC) mangrove nursery, has been accepted to the University of New Hampshire's Marine Biology Master's Program in fall 2021 under the supervision of Dr. Gregg Moore through a teaching and research partnership with the H. Lavity Stoutt Community College (HLSCC)'s Centre for Applied Marine Studies. As part of the PROM project, Nia will assist in activities such as ground-truthing, out-planting and monitoring and evaluation.

The University of Roehampton is an implementing partner in both the projects "Improving small island resilience and self-sufficiency in habitat monitoring and management" and "Establishing Flood-Resilience SMART Communities through Non-Governmental Organisation Partnerships" with the Caribbean Development Bank in collaboration with the Department of Disaster Management. The CDB project targets the communities of Sea Cow's Bay, East End, and Jost Van Dyke, and includes vulnerability and opportunity mapping focused on flood risks;

3. Project progress

3.1 Progress in carrying out project Activities

Output 1: RLE experts training workshop and capacity building provided for national government, local and regional stakeholders and relevant assessors

1.1 Online briefing on RLE to enable pre-workshop data gathering.

Completed. The online briefing for the RLE workshop session occurred first during the IUCN scoping mission, as reported last year, and on two further occasions. On July 2020, IUCN in

collaboration with the MNRL designed a two-hours session to connect past and present initiatives and jointly discuss how to establish a common vision for the future of mangrove restoration and management in the British Virgin Islands.

The second session took place on October 2020 in further discussion with BVI government in preparation for the online workshop. This session aimed to explain the dynamics of the one-month training and use of the training online platform (Annex 4).

1.2 Data gathering for preliminary RLE assessment.

Completed. Data gathering with local partners was finalized in February 2021 with the completion of the online repository with all the available information – BVI Mangrove Repository – that can be used in further analysis.

1.3 Expert Training workshop held on executing RLE assessments for local government, and relevant assessors.

Completed. The RLE workshop was conducted from October 20 to November 17, 2020, as a four-week asynchronous online training. This training was originally scheduled to be held in Tortola in March 2020 following the format of a five-days face-to-face meeting gathering local / national actors; however, it was rescheduled, and its modality adapted to the COVID-19 pandemic.

The adapted format was proposed to facilitate participation through flexible schedules and a shared online platform thus offering three synchronous sessions of 1 to 2 hours duration divided in seven thematic modules as follows: the content for Modules 1-3 was organized sequentially, and Modules 4 and 5 were developed to be addressed at any moment and with no particular order. Module 7 contained the documents in development and for discussion, such as the description and the conceptual model.

All the workshop materials were made available to all participants via Google Classroom including short video presentations, supplementary readings, and exercises to reinforce key concepts and understanding. An open discussion forum was available throughout the four-week period for students to post their questions, which were answered timely by the trainers.

1.4 Analysis and validation of data generated in activities 2.2 and 2.3.

Completed. Data analysis by RLE experts and data validation by the Ministry and project team has been completed for activity 2.2. However, due to the challenging covid-19 circumstances, complex data requirements and time constraints, activity 2.3 (assessment of criteria C, D and E) will not be evaluated under this RLE assessment. Thus, the risk of collapse of the mangroves of the British Virgin Islands could only be assessed by looking at the spatial symptoms of collapse. Based on the compilation of available spatial and tabular area estimates, a mangrove distribution change analysis was carried out for criterion A. A description of the available data as well as the spatial and tabular files is available on the BVI Mangrove Repository. The results indicated that the status of the mangroves of BVI is ***Endangered (EN-CR)*** *under subcriterion A2b of the RLE protocol. In addition, a current mangrove distribution map was used to estimate the indicators for assessing criterion B. The results indicate that the ecosystem could potentially be categorized as* ***Critically Endangered*** *under subcriterion B1 and* ***Endangered*** *under criterion B2. However, it is important to highlight that the application of criterion B becomes problematic when the area of study is very small, as it increases the likelihood of an ecosystem being categorized as highly threatened. In this case, the total extent of the British Virgin Islands archipelago (153 km^2) is already well below the Critically Endangered threshold for subcriterion B1. Therefore, the results of criterion A are considered to better reflect the current risk status of the ecosystem, and the overall risk category for the mangroves of BVI is established as* ***Endangered (Endangered-Critically Endangered).***

1.5 RLE Validation workshop to validate and finalise mangrove ecosystem assessment.

Completed. The preliminary report on the application of criterion A was shared and approved by national and governmental assessors to the project. The spatial data used to carry out said

assessment of criterion A is consolidated in a folder to be shared with the national stakeholders and government. The definitive version of the Conceptual Model of the British Virgin Islands mangrove ecosystem, describing key components, processes and threats was also validated.

1.6 Webinar on the Red List of Ecosystems – case studies & applications

Completed. Instead of doing a standalone session on the Red List of Ecosystems, the tool and its applications was presented in July 2020 together with the past projects and other activities within the framework of this project. The rationale behind was to highlight the linkages between BVI work so far and how it could be integrated in the analysis of mangrove ecosystems. Additionally, by doing so and showing examples from other countries it was possible to emphasize the added value of conducting baseline ecosystem risk assessments as a first step for decision making processes.

Output 2: Territory-wide Red List of Ecosystems assessment for BVI mangroves

2.1 Relevant data gathered.

Completed. GIS experts, together with local experts, and relevant scientists and stakeholders, compiled the necessary data for completion of the mapping assessment of the mangrove ecosystems, the analysis of the spatial RLE criteria and the development of the conceptual model and ecosystem description. The data has been compiled and added to the BVI Mangroves repository.

2.2 Criteria A and B assessed, according to data availability and quality.

Completed. The assessment of RLE criterion A and B has been finalized after consultation with the Ministry and project team.

2.3 Criteria C, D and E assessed, according to data availability and quality.

Incomplete. Due to limitations to access abiotic and biotic time series data relevant to the ecosystem within the timeframe of this project, the assessment of functional degradation of the ecosystem was not carried out.

2.4 Conceptual diagram for mangrove ecosystems developed.

Completed. In consultation with local experts and relevant scientists and stakeholders, including attendees of the RLE training for assessors, a conceptual model diagram for mangrove ecosystems was developed and integrated in to the RLE assessment (Annex 4). This conceptual model was discussed in various virtual meetings with the local team involved in the project to address the accuracy of the components and interactions reflected, based on the knowledge of the experts.

2.5 National RLE assessment for mangrove ecosystems.

*Completed. The national RLE assessment for mangrove ecosystems was completed in March 2021 based on criterion A and B. The results of this assessment indicated that the status of the mangroves of BVI is **Endangered (EN-CR)** under subcriterion A2b of the RLE protocol. The risk of collapse of the mangroves of the British Virgin Islands was assessed only by looking at the spatial symptoms of collapse linked to a declining distribution (Criterion A) and Restricted distribution (Criterion B). Finally, due to limitations to access abiotic and biotic time series data relevant to the ecosystem within the timeframe of this project, the assessment of functional degradation of the ecosystem was not carried out. Therefore, the status of the ecosystem is Not Evaluated under criteria C, D and E (Annex 5).*

Output 3: Prioritisation of degraded mangrove areas for restoration and other ecosystem-based approaches to benefit livelihoods and climate resilience:

3.1 Detailed and robust map of mangrove cover and restoration opportunities in BVI is produced, including pre-and post- Irma imagery.

SENTINEL 2 satellite images were analysed for the years 2017, 2018, 2019 and 2020 in order to: (i) identify the mangrove forest areas before and after hurricanes Irma and Maria, (ii) using the methodology of Index Normalized Difference Vegetation (NDVI) to identify the mangrove health in the pre and post hurricane infrared images, (iii) prepare the pre and post hurricane mangrove coverage maps and identify damaged mangrove areas, as well as the evolution in time of the natural recovery of the mangrove, this is because the mangrove forest usually recovers in short periods of time, (iv) elaboration of final maps with areas with natural mangrove recovery and areas without recovery, (v) use of the RLE methodology to determine priority areas for mangrove restoration.

3.2 Capacity building in mangrove restoration methodologies for local stakeholders is conducted.

Ongoing. Susan Zaluski of the Jost Van Dyke Preservation Society is coordinating capacity building in mangrove restoration methodologies of volunteers during the pilot plantings as described under Activity 3.3. below. Dr. Gregg Moore is providing ongoing technical support (remotely, given COVID-19 travel restrictions) and has developed training materials for restoration monitoring, plant nursery techniques, and mangrove restoration practices (see Moore's Regional Restoration and Monitoring Framework, Annex II). A formal face-to-face training on best practices of restoration at the selected key restoration priority sites will be jointly conducted under the next reporting period, tentatively scheduled for May or June 2021.

3.3 Restoration is executed with local organisations and communities at a number of priority mangrove sites based on the opportunity map as well as field data & local knowledge.

Ongoing. Restoration activities, led by the Jost Van Dyke Preservation Society,H. Lavity Stoutt Community College, and the National Parks Trust of the Virgin Islands are underway using a phased two-part approach. In this reporting period, the JVDPS produced the Post Hurricane Recovery of Mangroves in the BVI: Mangrove Restoration Feasibility Report, which documented the evidence from both the ground-truthing and the site suitability assessment, and finalised the project restoration sites, number of hectares to be restored, methodologies for restoration (including any required debris removal), estimated costs, and included a due diligence process for potential restoration sites. This report and selected sites also built upon other relevant post-hurricane mangrove studies in the BVI, including the recommendations from the Community Disaster Risk Reduction Fund (CDRRF) project "Establishing Flood-Resilient SMART Communities" and the Darwin Plus project "Mapping for evidence-based policy, recovery and environmental resilience".

The following sites were selected as key priority sites, for a total of 5.3 hectares of restoration:

1. *Frenchman's Cay/West End, 0.6-0.8 hectares to be restored*
2. *Well Bay (Tortola), 1.6 hectares to be restored*
3. *Well Bay (Beef Island), 0.3 hectares to be restored*
4. *Sea Cow's Bay, 0.1 hectares to be restored*
5. *Slaney, 0.2 hectares to be restored*
6. *Brandywine Bay, 0.3 hectares to be restored*
7. *East End Harbour (JVD), 1.2 hectares to be restored*
8. *Southeastern Cast (Anegada), hectares to be determined*
9. *Prickly Pear, 0.6 hectares to be restored*
10. *Bitter End Yacht Club, 0.2 hectares to be restored*
11. *Gun Creek, 0.1 hectares to be restored*

Simultaneously with the ground-truthing activities and due diligence processes, propagules from the HLSCCC mangrove nursery were immediately ready to be planted. As such, preliminary pilot restoration activities were led by the JVDPS during this reporting period at the following sites:

(1) *Frenchman's Cay/West End – Planting of 350 seedlings (direct planting) on October 3, 2020 with the help of 26 volunteers from the Rotary Club, National Parks trust, JVD Preservation Society, community and led by HLSCC Mangrove Nursery*

(2) *Sea Cow's Bay – Restoration of at least one section of coastline began with volunteers from Rotary Club, National Parks and the community planting approximately 300 seedlings on October 3 2020 led by HLSCC mangrove nursery.*

(3) *Brandywine Bay – Rotaract expressed interest in site restoration and an initial planting of 50 plants was carried out with 7 people in March 2021 with HLSCC mangrove nursery.*

(4) *Bitter End Yacht Club – HLSCC Mangrove nursery staff supported a trial planting in two locations (destroyed red mangrove habitat) with 85 seedlings with staff and managers of the Bitter End Yacht Club on April 8, 2021.*

(5) *Gun Creek – 132 seedlings from the HLSCC nursery were planted with 19 volunteers from Green Sprouts and the community on October 3, 2020:*

3.4 Monitoring & evaluation of success conducted throughout for adaptive management and to produce scientifically robust results.

Ongoing. The ground-truthing documented in the Post Hurricane Recovery of Mangroves in the BVI: Mangrove Restoration Feasibility Report (Annex I), as well as the Regional Restoration and Monitoring Framework (Annex II), established the framework for monitoring and evaluation of results from pilot activities on restoration. This framework includes monitoring that will capture both structural and functional parameters indicative of ecosystem health as well as restoration planting success. Permanent (i.e., geo-referenced) transects with fixed plots spanning gradients of salinity, elevation and/or tidal regime will be sampled biannually or at least once a year. The basic ecological monitoring protocol that could be realistically applied within this context includes the collection of data on stand characteristics, pore water chemistry, water quality metrics and from a pair of water level recorders (WLR) that should be established at each restoration site and each reference site.

Success will be measured with both ecological and social metrics. Among the ecological metrics include planting success that will focus on survivorship and plant growth measures (canopy height, percent cover, etc.). Additional ecological metrics will include the aforementioned contributing factors of soil conditions (pore water salinity, redox potential, pH) and hydrology (water level recorders). Finally, wildlife utilization will be measured using avian survey and point counts based on Caribbean Waterbird Census (CWC), as well as nekton survey (for sites with appropriate hydrology and water depth). For measuring success in social metrics, public engagement, community involvement, and participation in outreach, training, and restoration actions will be monitored and volunteer participation documented with gender disaggregated data. ***This framework is being implemented at all project restoration sites.***

3.5 Webinar on Nature-based Solutions for disaster risk reduction and climate adaptation – mainstreaming and implementation.

Completed. The two-hour webinar "Post-Disaster Mangrove Restoration of the British Virgin Islands (BVI): Accelerating the implementation of ecosystem-based approaches for disaster risk reduction and climate adaptation" was sponsored by IUCN in collaboration with the Ministry of Natural Resources, Labour and Immigration and held on July 7, 2020. The webinar was designed to connect past and present initiatives and jointly discuss how to establish a common vision for the future of mangrove restoration and management in the British Virgin Islands. Expert speakers include Dr. Louise Soanes, Dr. Gregg Moore, Dr. Katie Medcalf, Rozina Norris-Gumbs, IUCN representatives, and other stakeholders that shared their science, mapping, and mangrove restoration experiences (Annex 6).

The session was closed by acknowledging that while the science demonstrates the key role that mangroves play in flooding reduction, climate adaptation, fisheries provisions, water quality, and disaster risk reduction, in action, restoring and protecting mangroves in BVI requires all

stakeholders coming together to make a coordinated plan. The group reiterated that establishing a common vision for the restoration and management of mangroves in BVI cannot be completed by any one organization, Ministry, project or team, but only through coordination and joint action. Finally, it was noted that the protection and management of mangroves in BVI needs to move beyond a project-based approach. The priority of the PROM project is to lay the groundwork for long-term protection through identification of future opportunities & improved management frameworks.

Output 4: Cross sectoral policy mainstreaming and capacity building:

4.1 Drafting of a territory-wide mangrove management plan in consultation with BVI government.

Ongoing. In this project cycle, the report ***"Situational and Policy Analysis of Mangroves in the British Virgin Islands: Legislative and Management Parameters for Mangrove Restoration in the British Virgin Islands"*** *(Annex III) was finalised in a consultative process with stakeholders. This report provided policy and management recommendations that build upon the Red List of Ecosystems assessment together with the synthesized results of previous projects in BVI including the Darwin Plus project "*Mapping for evidence-based policy, recovery and environmental resilience*" and the Community Disaster Risk Reduction Fund project "*Establishing Flood-Resilient SMART Communities". *This report will be the cornerstone of the development an evidence-based sustainable management plan and framework for the long-term sustainable management of mangrove ecosystems in the BVI*.

On 29 April 2021, the Minister of Natural Resources the Hon. Vincent Wheatley delivered a statement on collective mangrove restoration efforts at the House of Assembly of the Virgin Islands (see Annex 7). In this statement he reiterated that the replanting of mangroves cannot replace the loss of healthy mangrove communities which can be destroyed with unauthorized reclamation projects and other activities, **emphasising that it is a legislative priority to introduce environmental legislation this year to afford mangroves a higher degree of protection in the BVI.** The PROM project will support this work.

4.2 Closing workshop building capacity on integrating and mainstreaming project outputs.

Not yet started under this reporting cycle.

4.3 Report on outcomes of project.

Not yet started under this reporting cycle.

4.4 PROM results are shared/communicated in international platforms including the UN Community of Ocean Action for Mangroves, the Global Mangrove Alliance (GMA), the Partnership for Ecosystem-based Disaster Risk Reduction (PEDRR), and Friends of Ecosystem-based Adaptation (FEBA).

Ongoing. Joseph Smith-Abbot, Deputy Secretary the BVI Ministry of Natural Resources, Labour, and Immigration presented on mangrove restoration in the BVI at the Caribbean Challenge Initiative and Caribbean Biodiversity Fund event "Scaling up Ecosystem-based Adaptation in the Caribbean" on July 16th, 2020.

The project is in the process of registering as a Voluntary Commitment towards the implementation of SDG 14, as part of the UN Community of Ocean Action for Mangroves.

The project is also in the process of highlighting outcomes as part of the Global Mangrove Alliance (GMA), with an upcoming news story to be published and highlighted on the GMA website. Additionally, the project will be profiled as a case study in the GMA's State of the World's Mangroves report to be released on World Mangrove Day 2021 (July 26th).

4.5 Promotion of results and report via IUCN network.

Not yet started under this reporting cycle. Plans to highlight activities and accomplishments of the project at the IUCN World Conservation Congress to be held in September 2021 and as a case study for pre-COP26 events on Nature-based Solutions, hosted by UK Rome embassy and the Italian Government, are underway.

3.2 Progress towards project Outputs

Output 1 - RLE experts training, and capacity building provided for national government, local and regional stakeholders and relevant assessors.

Completed. The training with BVI government representatives, local experts and stakeholders aimed to ensure synthesis of the data gathered through other projects and initiatives as well as to identify the gaps to complete the full RLE assessment; this would inform the elaboration of a robust management plan. The RLE training for assessors was adapted due to the Covid pandemic and completed as a four-week online course that included an online repository with the necessary data and resources between 20 October – 17 November 2020 (Annex 5).

Data compilation for the mapping assessment of the mangrove ecosystems, the analysis of RLE criterion A and the development of the conceptual model and ecosystem description was completed by GIS experts, local experts, and relevant scientists and stakeholders.

Output 2 - Territory-wide Red List of Ecosystems assessment for BVI mangroves

Completed. The Red List of Ecosystems assessment of BVI mangrove ecosystems was completed in March 2021 with overall risk category established as Endangered (EN-CR) based on subcriterion A2b. The RLE assessment completion included 1) the development of a conceptual model for BVI mangroves finalised in consultation with local experts and relevant scientists and stakeholders, 2) online repository of available information (functional and spatial) and 3) analysis report with due explanation.

BVI mangrove cover maps from 2017 to 2020, including pre and post hurricane conditions, have been developed through an analysis of SENTINEL 2 satellite images and were used in the assessment of RLE criterion A (Annex 6).

Output 3 – Prioritisation of degraded mangrove areas for restoration and other ecosystem-based approaches to benefit livelihoods and climate resilience

Completed. The *Post Hurricane Recovery of Mangroves in the BVI: Mangrove Restoration Feasibility Report* (Annex I) was completed by the Jost Van Dyke Preservation Society in collaboration with Dr. Gregg Moore in March 2021. This report documents evidence from both the ground-truthing and the site suitability assessment, and finalised the project restoration sites, number of hectares to be restored, methodologies for restoration (including any required debris removal) and estimated costs. The report further evaluates connected projects and initiatives in the BVI, as well as site accessibility, land tenure, and other factors that influence a sites' suitability for restoration. This ground-truthing and site suitability assessment was made possible through the work of our on-ground project partner, the Jost Van Dyke Preservation Society.

The following sites were selected as key priority sites, for a total of 5.3 hectares of restoration:

(12) Frenchman's Cay/West End, 0.6-0.8 hectares to be restored

(13) Well Bay (Tortola), 1.6 hectares to be restored

(14) Well Bay (Beef Island), 0.3 hectares to be restored

(15) Sea Cow's Bay, 0.1 hectares to be restored

(16) Slaney, 0.2 hectares to be restored

(17) Brandywine Bay, 0.3 hectares to be restored

(18) East End Harbour (JVD), 1.2 hectares to be restored

(19) Southeastern Cast (Anegada), number of hectares to be determined

(20) Prickly Pear, 0.6 hectares to be restored

(21) Bitter End Yacht Club, 0.2 hectares to be restored

(22) Gun Creek, 0.1 hectares

Preliminary restoration activities were also conducted during this reporting period at:

(1) Frenchman's Cay/West End, October 3 2020, 350 seedlings planted

(2) Sea Cow's Bay, October 3 2020, 300 seedlings planted

(3) Brandywine Bay, March 2021, 50 seedlings planted

(4) Bitter End Yacht Club, April 8 2021, 85 seedlings planted

(5) Gun Creek, October 3 2020, 132 seedlings planted

The *Regional Restoration and Monitoring Framework (Annex II)* was also completed in March 2021. This document provides a scientifically robust framework for monitoring and evaluation of restoration activities both for the Darwin project as well as for other complementary mangrove interventions in the Territory. Furthermore, the framework is applicable for mainstreaming and upscaling in other Caribbean contexts.

Output 4 - Cross sectoral policy mainstreaming and capacity building.

Ongoing. The *report "Situational and Policy Analysis of Mangroves in the British Virgin Islands: Legislative and Management Parameters for Mangrove Restoration in the British Virgin Islands" (*Annex III), completed in this reporting period, serves as the legislative and socioeconomic background for this project, and makes key recommendations to policies in BVI for the restoration, conservation, and protection of mangrove ecosystems. The detailed policy analysis of relevant environmental legislation in the BVI, allowed the identification of existing major gaps to mangrove legislation in the BVI, as well as key opportunities for the creation and policy integration of a comprehensive mangrove management plan.

This report underwent a consultation with key stakeholders, including the Ministry, in order to finalise a set of recommendations to ensure the protection, restoration and maintenance of the BVI mangroves by means of a coherent and targeted management plan and framework. These recommendations build upon the synthesized results of previous projects in BVI, including the Darwin Plus project "Mapping for evidence-based policy, recovery and environmental resilience" (DPLUS081) and the Community Disaster Risk Reduction Fund (CDRRF) project "Establishing Flood-Resilient SMART Communities".

Promotion of the project both regionally and internationally continues to develop, including with alignment with global initiatives. The project is well placed in IUCN's global mangrove and ecosystem-based adaptation portfolio, through the Global Island Partnership, the Global Mangrove Alliance and the UN SDG14 Community of Ocean Action for Mangroves. In addition, the groundwork is being laid for thematic synergies with the Caribbean EbA Facility.

3.3 Progress towards the project Outcome

Outcome: Community-based mangrove restoration, sustainable protection, and management for enhancing climate and disaster resilience of communities exposed to the effects of climate change

In the aftermath of hurricanes Irma and Maria many standalone projects and initiatives were launched in the BVI to focus on pre- and post- hurricane assessments with emphasis on ecosystem restoration, flooding, and disaster risk reduction. The PROM project was designed to

fill a niche in the overarching outcome of mangrove restoration for enhanced climate and disaster resilience. However, in inception meetings and discussions with partners and the BVI government, parts of the Project framework were further adapted to focus on capitalising on IUCN's convening power to bring local stakeholders working on coastal natural resources management, disaster risk reduction, and climate adaptation all to the same table, to synergize between projects and synthesize these multiple efforts into a Territory-wide approach to enhancing climate resilience of the BVI.

In this reporting period, major strides were made towards laying the groundwork for this outcome. As mentioned in the previous report, through requests from the BVI government and recognition of key gaps in mangrove restoration, the identification of key restoration sites as well as capacity building on restoration activities was identified as a key deliverable of this Project to contribute to the Outcome. Due to COVID-19 travel restrictions, the local NGO the Jost Van Dyke Preservation Society joined the project team to coordinate the on-ground mangrove conservation and restoration actions. This partnership led to completion of the necessary ground-truthing and site suitability assessment, which has culminated in the identification of key restoration sites in the *Post Hurricane Recovery of Mangroves in the BVI: Mangrove Restoration Feasibility Report* (Annex I). Susan Zaluski, from the Jost Van Dyke Preservation Society, also worked closely with Dr. Moore to conduct best practice restoration trainings for community volunteers during pilot plantings. Dr Moore also completed the *Regional Restoration and Monitoring Framework* (Annex II), which provides a scientifically robust framework for monitoring and evaluation of restoration activities both for the Darwin project as well as for other complementary mangrove interventions in the Territory. Furthermore, the framework is applicable for mainstreaming and upscaling in other Caribbean contexts.

The Red List of Ecosystems assessment, completed in this reporting period, has assisted in the identification of drivers of degradation and risk, as well as the robust monitoring & evaluation system to track mangrove regeneration on the island. This will overcome identified barriers on the synthesis and upscaling of disparate initiatives, and thus allow for the upscaling of improved coastal resources management into policy to contribute to the project Outcome.

The *report "Situational and Policy Analysis of Mangroves in the British Virgin Islands: Legislative and Management Parameters for Mangrove Restoration in the British Virgin Islands" (Annex III)* was also finalised in this reporting period, which identified existing major gaps to mangrove legislation in the BVI, as well as key opportunities for the creation and policy integration of a comprehensive mangrove management plan.

Thanks to diverse stakeholders who have helped create important synergies across multiple projects and efforts that led to the creation of these above-mentioned tools, a Territory-wide approach to enhancing climate resilience of the BVI is well-underway. On 29 April 2021, the Minister of Natural Resources the Hon. Vincent Wheatley delivered a statement on collective mangrove restoration efforts at the House of Assembly of the Virgin Islands (see Annex 7). In this statement he reiterated that the replanting of mangroves cannot replace the loss of healthy mangrove communities which can be destroyed with unauthorized reclamation projects and other activities, **emphasising that it is a legislative priority to introduce environmental legislation this year to afford mangroves a higher degree of protection in the BVI.** The PROM project will continue to support this outcome in the next reporting period.

3.4 Monitoring of assumptions

Key risks and assumptions identified in the logical framework, as well as how they are managed, are as follows:

Assumption 1: Local and national stakeholders are interested and willing to share data and incorporate recommendations for coastal planning and management.

Throughout the reporting period, government representatives have been willing to share data and information with the project team to conduct both the vulnerability mapping and ecosystem

risk assessment. However, this process was delayed significantly, as due to the outbreak of COVID-19, BVI experts could not access the hard drive devices that store key data and information.

Assumption 2: Stakeholders are interested in and supportive of initiatives.

As of this reporting period, local stakeholders and government representatives are supporting this project and collaboratively working with the project team to implement planned activities. It is worth highlighting that the approach proposed – transition from theory (synthesizing the post-hurricane assessments ongoing on the island) to practice (on-ground mangrove restoration through the PROM project) – was very well received, with strong encouragement for the project to help local stakeholders begin restoration activities.

Initial mangrove plantings carried out from October 2020 onward have received significant attention, evidenced by increase demand by corporations, schools, property owners and community groups. Project leaders do not need to solicit the public's interest at this stage, they merely need to field inquiries for participation. The anchor of the H Lavity Stoutt Community College nursery has played a pivotal role in community accessibility.

Assumption 3: Continuous support cooperation with government agencies, community leaders and IUCN.

Despite challenges due to the COVID-19 pandemic, cooperation has been reinforced in the reporting period, particularly in the context of closer relations with MNRL and local stakeholders.

Assumption 4: Sufficient funding is ensured to implement the full scope of intended activities.

Responding to the demand as described in Section 3.3, the on-ground implementation of mangrove restoration activities will be supported with additional funds as a result of budget reallocation for year 1. By doing so, the project team will respond to the BVI government and local stakeholder demand to place more emphasis on on-ground efforts. The project will also work to consider a long-term sustainability and upscaling plan in consultation with the MNRL, such as linking to the BVI Environmental and Tourism Levy.

Assumption 5: Fieldwork is not adversely affected by weather (i.e. cyclones) or political conditions.

While the project team identified weather and political conditions as major risks that could have interfered with the field operations, we could not have anticipated the real culprit: the outbreak of the COVID-19 global pandemic that began during this reporting period. The project team has worked to reduce the negative impacts of the current circumstances and implement alternative (virtual) options as appropriate, e.g., trainings and capacity building, including by conducting capacity building activities in a hybrid nature facilitated in-person by Susan Zaluski with remote participation of Dr. Gregg Moore. An update on this assumption will be reflected in the next bi-annual project report as on-ground restoration activities continue to move forward.

4. Project support to environmental and/or climate outcomes in the UKOTs

As mentioned in the previous annual reporting, one of the major challenges of Overseas Countries and Territories (OCTs) of the United Kingdom (UKOTBS), like some European OCTs, is the insufficient information available for multispecies and ecosystem indicators. This is also reflected in the ecosystem risk assessment conducted within this project based on the scientific foundations of the IUCN Red List of Ecosystems (RLE). The final report indicates a lack of accessible and available information with regards to ecosystem functional symptoms: environmental degradation (criterion C) and disruption of biotic processes and interactions (criterion D).

A mangroves repository has been created to facilitate the consolidation of data for mangroves which contributes to streamlined monitoring & evaluation across the Territory. This repository can

be a live support instrument - and be updated in a regular basis – for stakeholders in BVI for making conservation decisions.

The initial work completed on assessing mangrove status with the RLE can be linked to other policy-relevant tools thus providing a substantial buy-in at national and international levels. Likewise, the outputs of this assessment are relevant for supporting the System of Environmental-Economic Accounting (SEEA) - that provides a framework for measuring the links between the environment and economy - at the national level. These outputs, together with other indicators and the economic valuation of Natural Capital will reinforce the implementation of BVI policy instruments beyond the environmental thematic; which generates benefits in terms of reporting, adoption and implementation of multiple agreements, treaties and conventions.

In a statement to the House of Assembly of the Virgin Islands (see Annex 7) delivered on 29 April 2021, the Minister of Natural Resources the Hon. Vincent Wheatley emphasised that it is a legislative priority to introduce environmental legislation this year to afford mangroves a higher degree of protection in the BVI. Project *activity 4.1. Drafting of a territory-wide mangrove management plan in consultation with BVI government* will support this government priority.

Based on the first-year annual report, and according to the project outcome, this project is contributing / will contribute towards the following main goals:

- Addressing the awareness gaps between biodiversity, economic and human wellbeing for integration of environmental considerations into decision making, policy frameworks and regulation[1], building on previous experiences[2];
- Reducing the risks of harm from environmental hazards by 1) identifying major threats, 2) assessing the risk of collapse of mangrove ecosystems and 3) enhancing long-term resilience and adaptive capacity through a tailored mangrove management plan;
- Using resources from nature more sustainably and efficiently by providing a roadmap towards sustainable management of the BVI mangrove ecosystem and enhanced livelihoods of local communities;
- Enhancing beauty, heritage and engagement with the natural environment by deploying ecosystem-based approaches to climate adaptation (EbA) and disaster risk reduction (Eco-DRR) thus benefiting nature and human wellbeing;
- Mitigating and adapting to climate change by strengthening the capacity of stakeholder and institutions to mainstream ecosystem-based approaches into their plans (i.e. NAPs) and strategies (i.e. NBSAPs).

With regards to the forthcoming Convention on Biological Diversity (CBD COP15), the outputs of this first year combined with the work being done in other small island states has contributed, amongst others, to the development of a set of ecosystem targets. The rationale is to integrate these targets within the post-2020 Global Biodiversity Framework to be adopted by the parties in October 2021[3].

The natural capital of mangroves has immense value in real economic terms: their conservation status in island countries has the potential to play a critical role in poverty alleviation. Mangrove restoration contributes not only to disaster risk reduction alone, but also to provide employment to local communities, enhance biodiversity and fisheries productivity, and generate economic benefits to communities. This is also stated in the recently launched report so called "*The role and value of natural capital and development of indicators for use in disaster preparedness in the UK's Overseas Territory of the British Virgin Island*". In the short term, this project is also contributing to generate opportunities for youth with the strong engagement and collaboration of the JVDPS with local students from HLSCC and the Youth Empowerment Project (YEP), as well as Community-based organisations and volunteers who supporting restoration activities.

[1] For more information: https://www.gov.uk/government/publications/the-overseas-territories-security-success-and-sustainability;
[2] Resilience through Investing in Ecosystems - knowledge, innovation and transformation of risk management (RELIEF Kit), IUCN project. For more Information: https://www.iucn.org/theme/ecosystem-management/our-work/environment-and-disasters/relief-kit-project-phase-i
[3] For more detailed information: Post 2020 ecosystem target v4 (cbd.int)

5. Consideration of gender equality issues

Equal representation of stakeholders at different levels as well as gender balance will be important criteria when carrying out capacity building / training sessions and restoration interventions. For gender related aspects, the project uses as reference the BVI National Gender Policy to support and promote the rights and equality of all its citizens regardless of gender.

Key gender indicators include:

- Number of participants (50% women) trained to assess ecosystem risk using the IUCN RLE protocols to execute community-based mangrove restoration. Completed by July 2021
- Number of participants (50% women) trained in locally appropriate mangrove restoration methodologies. Completed by December 2021.

6. Monitoring and evaluation

This project will follow the standardised guidance on monitoring and evaluation for EbA following the Friends of Ecosystem-based Adaptation (FEBA) *Guidebook for Monitoring and Evaluating Ecosystem-based Adaptation Interventions*, available here. The Guidebook is a practical guide for planners and practitioners for monitoring the outcomes and impacts of EbA, and to better understand the outcomes and impacts of on-the-ground projects working with and enhancing nature to reduce the negative impacts of climate change on people. Additionally, the proposed exchange program between University of New Hampshire and the H. Lavity Stoutt Community College, led by Dr. Moore, would allow graduate level students to work on the mangrove restoration initiative including supporting on-ground monitoring & evaluation of pilot sites. As previously mentioned, Moore has accepted, Nia Jeffers (HLSCC's current mangrove nursery coordinator), Her thesis research will focus on the science of mangrove restoration ecology and she will assist the Jost Van Dyke Preservation Society in activities such as ground-truthing, out-planting and monitoring and evaluation.

The Regional Restoration and Monitoring Framework (Annex II), which provides a scientifically robust framework for monitoring and evaluation of restoration activities both for the Darwin project as well as for other complementary mangrove interventions in the Territory, was finalized in this reporting period. This framework includes monitoring that will capture both structural and functional parameters indicative of ecosystem health as well as restoration planting success. Collection of data on stand characteristics, pore water chemistry, water quality metrics and from a pair of water level recorders (WLR) that should be established at each restoration site and each reference site, will be applied to sites. Among the ecological metrics to be measured for success, include planting success that will focus on survivorship and plant growth measures (canopy height, percent cover, etc.). Additional ecological metrics will include the aforementioned contributing factors of soil conditions (pore water salinity, redox potential, pH) and hydrology (water level recorders). Finally, wildlife utilization will be measured using avian survey and point counts based on Caribbean Waterbird Census (CWC), as well as nekton survey (for sites with appropriate hydrology and water depth). For measuring success in social metrics, public engagement, community involvement, and participation in outreach, training, and restoration actions will be monitored and volunteer participation documented with gender disaggregated data.

At a Territory-wide level, the IUCN Red List of Ecosystems provides a scientifically robust framework for assessing and monitoring the conservation status of ecosystems and identifies the level of risk of collapse of ecosystems, thus, informing better ecosystem management solutions and supporting identification of areas that need urgent action. Combining the IUCN Red List of Ecosystems with ecosystem-based approaches helps in understanding the complexity of human-environmental systems and responding to societal challenges. It is hence important to understand the limits and thresholds of ecosystems to design and implement tailored interventions.

7. Lessons learnt

In this project year (2020-2021), there were unprecedented delays due to COVID-19 lockdowns and travel restrictions, which significantly impacted on-ground restoration work. As such, the project team hired the Jost Van Dyke Preservation Society (JVDPS) to coordinate and implement the restoration activities on the ground. Susan Zaluski, of the JVDPS, and her experience and connection to other relevant national institutions has been fundamental to all aspects of the project including on-ground restoration actions, coordination with the Government of BVI and local stakeholders, and facilitating community engagement.

Furthermore, the JVDPS's close connection with the H. Lavity Stoutt Community College and active linkages with their mangrove nursery has led to the commencement of pilot restoration work across 5 sites. Nia Jeffers, current manager of the H. Lavity Stoutt Community College's (HLSCC) mangrove nursery, will be joining the University of New Hampshire's marine biology master's program in fall 2021 under the supervision of Dr. Gregg Moore through a teaching and research partnership with the HLSCC's Centre for Applied Marine Studies. As part of the PROM project, Nia will assist in activities such as ground-truthing, out-planting and monitoring and evaluation.

These functional linkages with key local stakeholders and organisations, as well as external partners and governmental bodies, helped shift the focus from a project-based approach to a Territory-wide approach to mangrove restoration linking across different projects and leveraging the expertise of a wide stakeholder group. Without the JVDPS and Susan Zaluski as an on-ground partner, restoration would be delayed longer-term and these crucial linkages that have extended the reach of the project, would not have been strengthened to the extent that they are now.

Additionally, adaptability in project targets has been instrumental in the continuation of the project and its success. Throughout the lifespan of the PROM project, we have responded to the needs of the BVI government, local stakeholders, and on-ground conditions to adapt our goals accordingly. Given the complexity of mangrove ecosystems and their capacity to restore/regenerate naturally, a scientifically robust on-ground analysis was necessary to identify which areas most required "artificial" restoration as well as the type and scope of intervention needed and any associated activities. This ground-truthing of the GIS data was critical in order to make scientifically robust and realistic decisions, as well as to determine the cost effectiveness and feasibility of different restoration sites.

Furthermore, the realities of working in a post-disaster context meant that some mangrove restoration sites required a large amount of debris removal and preparation before any active restoration work could commence. In addition, some sites were determined to be impossible to restore within the project budget because of the costs associated with the required derelict vessel removal. Preliminary estimates of number of hectares to be restored were based on remote-sensing or GIS data alone, while final numbers and costs reflect the required hurricane debris removal (e.g. derelict vessels) and fence installation (which is required as over-grazing of feral ungulates on new mangrove planting sites has been documented decimating trial sites under different projects) – all realities of working in a post-disaster context. The ground-truthing exercises and local expertise of the JVDPS were critical in this regard. **Results and more information is available in Annex I.**

This adaptability was also critical in light of the unanticipated realities of COVID-19. With Darwin's support, as we were otherwise unable to spend the travel and events budget in 2020, we reallocated funds to provide additional support to mangrove restoration activities on the ground. In this reporting period, the JVDPS used this reallocated budget to undertake the preparatory phase including the ground-truthing of the GIS data, debris cleaning at necessary sites, supporting the mangrove nursery at the HLSCC to ensure propagule availability for the project, purchasing the required equipment needed, and conducting initial small-scale pilot plantings – all

key activities before proceeding with broader restoration activities to be conducted in the next reporting period.

8. Actions taken in response to previous reviews (if applicable)

9. Other comments on progress not covered elsewhere

The COVID-19 global pandemic starting in early 2020 has presented new challenges to the implementation of the project as international travel was cancelled around the world, and lockdowns occurred in BVI, delaying the groundtruthing of initial priority mapping and the implementation of restoration activities on the ground. The project team has demonstrated an adaptive and resource-oriented approach to seek efficient and rapid solutions while responding to the priorities of the BVI Government. Please see additional reflections in Section 9 above.

10. Sustainability and legacy

Key aspects of the long-term sustainability of the PROM project include:

- Connecting the dots between mangrove stakeholders and local organisations, and the creation of a Territory-wide risk assessment and mangrove management plan, to ensure a coordinated coastal resources management approach throughout the Territory rather than standalone projects and initiatives. This may include leveraging the BVI Environmental & Tourism Legacy Program, a tourism levy for natural resources management, to scale up mangrove restoration from PROM pilot restoration sites to additional restoration sites identified through the RLE assessment;

- Facilitating links with the new Memorandum of Agreement (MOU) and exchange program between University of New Hampshire and the H. Lavity Stoutt Community College to facilitate training of local BVI graduate and undergraduate students to engage in mangrove restoration as an ecosystem-based adaptation and disaster risk reduction approach, thus building expertise and leadership on these approaches with stakeholders;

- Linking of the overall integrated approach for EbA & Eco-DRR to global initiatives IUCN is engaged in, thus building on ongoing efforts to highlight the case study and lessons learned from PROM via the Global Island Partnership, the Global Mangrove Alliance, the UN Community of Ocean Action for Mangroves, and the Caribbean EbA Fund, among others;

- Politically positioning the BVI as a champion of mangrove restoration in a post-disaster context, including through advocacy for upscaling the approach to build climate resilience in the Caribbean through a full Caribbean mangrove assessment.

11. Darwin identity

2020 has proven to be a very difficult year for the reasons mentioned particularly mentioned in n sections 9,11 and 14. All the activities with a strong component on capacity building and dissemination components have been the most affected. Although the dissemination and promotion of the project at the international level has been negatively impacted, the incorporation in the project of key actors such Susan Zaluski and Nancy Pascoe has strongly enhanced the understanding of this project at the local level.

Also, IUN has made sure to bring continuity with this project building upon and avoiding overlapping with previous Darwin funded projects. This has been appreciated by the local actors

and the evidence of such approach is the joint session held in July 2020 (Annex 6). At this session, it was reiterated that establishing a common vision for the restoration and management of mangroves in BVI cannot be completed by any one organization, Ministry, project or team, but only through coordination and joint action. Finally, it was noted that the protection and management of mangroves in BVI needs to move beyond a project-based approach. The priority of the PROM project is to lay the groundwork for long-term protection through identification of future opportunities & improved management frameworks.

Besides, the project was presented in December 2020, by Milena Berrocal, at the Virtual Forum organised by the Caribbean Challenge Initiative and Caribbean Biodiversity Fund on *"The Global Standard for Nature-based Solutions (NbS): opportunities and challenges for the Caribbean Islands".*

12. Impact of COVID-19 on project delivery

We informed Darwin on postponing all capacity development activities due to COVID-19 travel restrictions and on our commitment in elaborating a contingency plan so as not to lose any momentum. This plan included the bringing on board of the local NGO, the Jost Van Dyke Preservation Society (JVDPS), to facilitate the on-ground mangrove conservation and restoration actions, including associated field logistics, coordination with the Government of BVI and local stakeholders, and facilitating community engagement. Susan Zaluski, of the JVDPS, joined the PROM project team in this key role as our on-ground coordinator in charge of ground implementation. With Susan's coordination and leadership with the established H. Lavity Stoutt Community College's Mangrove nursery, longer-term delays to restoration efforts are expected to resolve, with pilot restoration efforts already underway. Additionally, because travel was restricted due to COVID-19 in this reporting period, funds were reallocated from travel and event budgets to support on-ground restoration work. **Even as the situation with COVID-19 improves, we anticipate that virtual meetings will continue and that the JVDPS will continue their leadership of the on-ground work, including associated field logistics, coordination with the Government of BVI and local stakeholders, and facilitating community engagement.**

13. Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred during this financial year.	☐
If you have ticked the box, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.	

IUCN and its partners work with rights-based approaches for nature conservation, respecting indigenous groups and local communities' visions and socio-cultural dynamics, as well as strengthening their voices, and promoting efficient and equitable benefit sharing mechanisms.

IUCN has an Environmental and Social Management System (ESMS) that provides a systematic procedure to check projects for potential adverse environmental and social impacts to assure that negative impacts are avoided or minimised to the extent possible while positive impacts are stimulated. For this specific project, the project team apples the IUCN ESMS Standard on cultural heritage and biodiversity, as well as IUCN's policy on Gender Equality and Women's Empowerment.

14. Project expenditure

Table 1: Project expenditure <u>during the reporting period</u> (1 April 2020 – 31 March 2021)

Project spend (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (se below)	[redacted]	[redacted]	[redacted]	[redacted]
Consultancy costs	[redacted]	[redacted]	[redacted]	[redacted]

				[redacted]
Overhead Costs	[redacted]	[redacted]	[redacted]	[redacted]
Travel and subsistence	[redacted]		[redacted]	
Operating Costs	[redacted]	[redacted]	[redacted]	[redacted]
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
TOTAL	[redacted]	[redacted]		

Highlight any agreed changes to the budget and **fully** explain any variation in expenditure where this is +/- 10% of the budget. Have these changes been discussed with and approved by Darwin?

With the Forecasting exercise requested by DARWIN and submitted on December 2020, we informed Darwin about all the financial and technical changes as well as the contingency measures to address the delay in the ground truthing of initial priority mapping and the implementation of restoration activities on the ground. To accelerate the momentum of the project, as described above, the Jost Van Dyke Preservation Society was contracted as a project partner to support the work on the ground. In Q4 2020, the project conducted its first outplanting of 700 propagules. The requested changes were approved in March 2020.

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021

Project summary	Measurable Indicators	Progress and Achievements April 2020 – March 2021	Actions required/planned for next period
Impact ⇒ Mangroves are restored and managed sustainably at the territorial level increasing the flow of ecosystem services including resilience to climate change and natural disasters.		In this reporting period, the preparatory process to restoring mangroves in the BVI was finalised, and initial pilot restoration was started. Completed plantings in 2020 included the following sites: 1. *Frenchman's Cay/West (350 seedlings)* 2. *Sea Cow's Bay (300 seedlings)* 3. *Brandywine Bay (50 seedlings)* 4. *Bitter End Yacht Club (85 seedlings)* 5. *Gun Creek (132 seedlings)* By project's end, the total target area of restoration is minimum 5.3 hectares. The *Red List of Ecosystems assessment*, *Post Hurricane Recovery of Mangroves in the BVI: Mangrove Restoration Feasibility Report*, *Regional Restoration and Monitoring Framework* and *Legislative Situational Analysis*, have all been completed. These documents will promote long-term climate resilience through scientifically robust on-ground restoration efforts.	[redacted]
Outcome Community-based mangrove restoration, sustainable protection, and management for enhancing climate and disaster resilience of communities	0.1 Baseline Territory-wide mapping assessment completed to facilitate a directed approach, identification of key priority areas for restoration and future monitoring. Completed by September 2020.	0.1 Completed in previous reporting period. 0.2 Through the *Post Hurricane Recovery of Mangroves in the BVI: Mangrove Restoration Feasibility Report* incorporates evidence from both	0.4 The "Situational and Policy Analysis of Mangroves in the British Virgin Islands: Legislative and Management Parameters for Mangrove Restoration in the British Virgin Islands" report was finalised in this reporting period and

exposed to the effects of climate change.	0.2 Number of hectares identified for science-based restoration and protection of threatened mangroves-ecosystems. Completed by September 2020. 0.3 Number of supported measures for uptake and application of generated data from ecosystem risk assessment by using the Red List of Ecosystems protocol. Completed by December 2021. 0.4 Draft mangrove management plan completed for the Territory. Completed by February 2022. 0.5 Increased awareness among local communities including 50% of women on mangrove conservation for climate adaptation and disaster risk reduction. Completed by December 2021.	the ground-truthing and the site suitability assessment, the number of hectares to be restored was finalised (5.3 ha). 0.3 The assessment of the spatial criteria of the Red List of Ecosystems assessment was completed in March 2021 and has thus far informed the policy and management recommendations outlined in the "Situational and Policy Analysis of Mangroves in the British Virgin Islands: Legislative and Management Parameters for Mangrove Restoration in the British Virgin Islands." 0.5 Pilot restoration activities led by the JVDPS and HLSCC have already seen capacity building and participation from more than 51 volunteers from the community including from the Rotary Club, National Parks, Bitter End Yacht Club and Green Sprouts. Additionally, as stated above, Nia Jeffers, local manager of the HLSCC mangrove nursery, will be brought on as a master's student to assist the JVDPS in activities such as ground-truthing, out-planting and monitoring and evaluation, and contribute to additional research in coastal habitat restoration, coastal resilience and climate change.	provides policy and management recommendations that build upon synthesized results of previous projects in BVI. This report will be the cornerstone of the development of the evidence-based sustainable mangrove management plan and framework. 0.5 Susan Zaluski of the Jost Van Dyke Preservation Society is coordinating capacity building in mangrove restoration methodologies of volunteers throughout restoration activities. Furthermore, a formal in-person training event on best practices of restoration will be jointly conducted under the next reporting period, with technical support from Dr. Gregg Moore. This is tentatively scheduled for May or June 2021, depending on COID travel restriction for Dr Moore's participation.
Output 1. Red List of Ecosystems (RLE) training and capacity building provided for national government, local and Caribbean, stakeholders and relevant assessors.	1.1 Number of participants (50% women) trained to assess ecosystem risk using the IUCN RLE protocols to execute community-based mangrove restoration. 1.2 Number of participants (50% women) attending closing workshop on RLE validation results and RLE applications - how to integrate and	1.1 RLE assessor training was completed as a two-week online supplemented by 2 live online sessions between 20 October – 17 November 2020; 20 (average) participants and 80% women (Annex 5). 1.2 A total of 14 participants – 80% women (Annex 5). 1.3 Through the *Post Hurricane Recovery of Mangroves in the BVI: Mangrove Restoration Feasibility Report*, the following sites were selected: - Frenchman's Cay/West End, 0.6-0.8 hectares to be restored	

	mainstream project outputs and lessons learnt into policy, up scaling and replicate the approach to other ecosystems. Completed by December 2020. 1.3 Number of ecosystems/sites identified as priority areas for protecting and restoring highly threatened mangrove ecosystems to restore or improve livelihoods and increase climate resilience. Completed by September 2020. 1.4 Webinar on the Red List of Ecosystems organised and recorded. Completed by July 2020.	- Well Bay (Tortola), 1.6 hectares to be restored - Well Bay (Beef Island), 0.3 hectares to be restored - Sea Cow's Bay, 0.1 hectares to be restored - Slaney, 0.2 hectares to be restored - Brandywine Bay, 0.3 hectares to be restored - East End Harbour (JVD), 1.2 hectares to be restored - Southeastern Cast (Anegada), hectares to be determined - Prickly Pear, 0.6 hectares to be restored - Bitter End Yacht Club, 0.2 hectares to be restored - Gun Creek, 0.1 hectares 1.4 The Red List of Ecosystems, the tool and its applications were presented in July 2020 together with the past projects and other activities within the framework of this project. The rationale behind was to showcase the linkages between BVI work so far and how it could be integrated in the analysis of mangrove ecosystems.	
Activity 1.1 Online briefing on RLE to enable pre-workshop data gathering.		Complete. This online session took place in July 2020 between project staff and BVI Government representatives. Refer to section 3A. This session was followed by two additional sessions in July and October 2020.	N/A
Activity 1.2 Data gathering for preliminary RLE assessment.		Complete. Together with local experts, and relevant scientists and stakeholders, GIS experts compiled the necessary data for completion of the mapping assessment of the mangrove ecosystems, the analysis of RLE criterion A and the development of the conceptual model and ecosystem description.	N/A
Activity 1.3 Expert Training workshop held on executing RLE assessments for local government, and relevant assessors.		Complete. The coordination team organized a two-week online RLE training for relevant assessors between 20 October – 17 November 2020 that included an online repository with the	N/A

	necessary data and resources. In addition to this self-taught training, two live online sessions were held to provide an overview and background information on the Red List of Ecosystems global framework and its relevance for this project.	
Activity 1.4. Analysis and validation of data generated in activities 2.2 and 2.3.	Complete. Though there was limited data available and some differences in spatial resolution of the data, data analysis by RLE experts and data validation by the Ministry and project team has been completed for criterion A under activity 2.2. Given the reduced extent of the British Virgin Islands archipelago (153 km2), it was not considered appropriate to apply criterion B and therefore the analysis and validation of data is no longer required for criterion B under activity 2.2. However, due to time constraints and complex data requirements, activity 2.3 (assessment of criteria C, D and E) will not be evaluated under this ecosystem risk assessment. Therefore, data analysis and validation for activity 2.3 is no longer required.	N/A
Activity 1.5. RLE Validation workshop to validate and finalise mangrove ecosystem assessment.	A virtual meeting was held on February 24th, 2021, in order to discuss the preliminary results of the RLE assessment for criterion A (reduction in geographic distribution), as well as to discuss the next steps for the finalization of the RLE assessment. The preliminary report on the application of criterion A was shared and approved by national and governmental assessors to the project. The final version of the	N/A

		Conceptual Model of the British Virgin Islands mangrove ecosystem, describing key components, processes and threats was also validated.	
Activity 1.6. Webinar on the Red List of Ecosystems – case studies & applications		Complete. Instead of doing a standalone session on the Red List of Ecosystems, the tool and its applications was presented in July 2020 together with the past projects and other activities within the framework of this project. The rationale behind was to showcase the linkages between BVI work so far and how it could be integrated in the analysis of mangrove ecosystems. Additionally, by doing so and showing examples from other countries it was possible to emphasize the added value of conducting baseline ecosystem risk assessments as a first step for decision making processes.	N/A
Output 2. Territory-wide Red List of Ecosystems assessment for BVI mangroves.	2.1 National ecosystem risk assessment completed. 2.2 Number of key threats and drivers of change identified. 2.3 Detailed and robust map of mangrove cover in BVI, including pre- and post- Irma, available. 2.4 Conceptual model created for visualizing and informing on the risks and interactions linked to mangroves in the BVI.	The Red List of Ecosystems assessment for BVI mangroves has been completed based on the assessment of criterion A and B; an effort was made to extract the best data and "standardize" this data by only focusing on the mangroves of the seven main islands (Tortola, Virgin Gorda, Anegada, Great Camanoe, Jost van Dyke, Sandy Cay and Beef Island). Based on subcriterion A2b, the mangrove ecosystem of the BVI could be categorized as Endangered (EN-CR). Due to time and data constraints, criteria C, D and E were unable to be evaluated and thus categorized as not evaluated (NE). Additionally, given the reduced extent of the British Virgin Islands archipelago (153 km2), it was not considered appropriate to give a category of risk of collapse based on criterion B. BVI mangrove cover maps from 2017 to 2020, including pre and post hurricane conditions, have been developed through an analysis of SENTINEL 2 satellite images, see section 3 and Annex 6. These will be made widely available. Mangrove and RLE experts jointly developed the BVI mangrove conceptual model, it was then validated and finalized in consultation with local experts and relevant scientists and stakeholders, including attendees of the RLE training for assessors.	

Activity 2.1. Relevant data gathered.	Complete. As indicated in the previous section, GIS experts, together with local experts, and relevant scientists and stakeholders, compiled the necessary data for completion of the mapping assessment of the mangrove ecosystems, the analysis of RLE criterion A and the development of the conceptual model and ecosystem description. Refer to activity 1.2.	N/A
Activity 2.2. Criteria A and B assessed, according to data availability and quality.	Complete. The assessment of criterion A has been finalized through consultation with the Ministry and project team. Given the reduced extent of the British Virgin Islands archipelago (153 km2), it was not considered appropriate to apply criterion B. According to subcriterion A2b, the ecosystem is categorized as Engandered (EN-CR).	N/A
Activity 2.3. Criteria C, D and E assessed, according to data availability and quality.	Due to time constraints and constraints in the accessibility and availability of data, criteria C, D and E will not be evaluated under this RLE assessment.	N/A
Activity 2.4. Conceptual diagram for mangrove ecosystems developed.	Complete. A conceptual model for mangrove ecosystems has been developed, validated and finalized in consultation with local experts and relevant scientists and stakeholders, including attendees of the RLE training for assessors.	N/A
Activity 2.5. National RLE assessment for mangrove ecosystems.	As previously indicated, the Red List of Ecosystems assessment for BVI mangroves has been completed based on the assessment of criterion A. Based on subcriterion A2b, the mangrove ecosystem of the BVI could be categorized as Endangered (EN-CR).	N/A

Output 3. Prioritisation of degraded mangrove areas for restoration and other ecosystem-based approaches to benefit livelihoods and climate resilience.	3.1 Number of restorable degraded mangroves sites identified. 3.2 Number of mangrove hectares under restoration and/or ecosystem-based intervention. 3.3 Number of participants (50% women) trained in locally appropriate mangrove restoration methodologies. Completed by December 2021. 3.4 Monitoring & evaluation system developed to track restoration progress in the selected sites. 3.5 Webinar on Nature-based Solutions for disaster risk reduction and climate adaptation organised and recorded. Completed by September 2020.	After consultation with the project team, the Ministry of Natural Resources, Labour, and Immigration, and in consensus with local organisations, scientists and government representatives, the *Post Hurricane Recovery of Mangroves in the BVI: Mangrove Restoration Feasibility Report* has been finalised. This report documents the evidence from both the ground-truthing and the site suitability assessment, and finalised the project restoration sites, number of hectares to be restored, methodologies for restoration (including any required debris removal), and estimated costs. The selected sites for restoration and the number of hectares expected to be restored are listed below: - Frenchman's Cay/West End, 0.6-0.8 hectares to be restored - Well Bay (Tortola), 1.6 hectares to be restored - Well Bay (Beef Island), 0.3 hectares to be restored - Sea Cow's Bay, 0.1 hectares to be restored - Slaney, 0.2 hectares to be restored - Brandywine Bay, 0.3 hectares to be restored - East End Harbour (JVD), 1.2 hectares to be restored - Southeastern Cast (Anegade), to be determined - Prickly Pear, 0.6 hectares to be restored - Bitter End Yacht Club, 0.2 hectares to be restored - Gun Creek, 0.1 hectares The *Regional Restoration and Monitoring Framework,* which establishes the framework for monitoring and evaluation of results from pilot activities on restoration, was also finalised in this reporting period. Refer to section 3 and activity 3.4 The webinar *"Post-Disaster Mangrove Restoration of the British Virgin Islands (BVI): Accelerating the implementation of ecosystem-based approaches for disaster risk reduction and climate adaptation"* was held on July 7, 2020 and sponsored by IUCN in collaboration with the Ministry of Natural Resources, Labour and Immigration.	
Activity 3.1. Detailed and robust map of mangrove cover and restoration opportunities in BVI is produced, including pre-and post- Irma imagery.		Completed in previous reporting period.	N/A

Activity 3.2. Capacity building in mangrove restoration methodologies for local stakeholders is conducted.	Ongoing. Susan Zaluski of the Jost Van Dyke Preservation Society is coordinating capacity building in mangrove restoration methodologies of volunteers during the pilot plantings as described under Activity 3.3. below, with technical support (remotely, given COVID-19 travel restrictions) from Dr. Gregg Moore. Dr. Gregg Moore is providing ongoing technical support (remotely, given COVID-19 travel restrictions) and has developed training materials for restoration monitoring, plant nursery techniques, and mangrove restoration practices (see Moore's Regional Restoration and Monitoring Framework, Annex II).	A formal face-to-face training on best practices of restoration at the selected key restoration priority sites will be jointly conducted under the next reporting period, tentatively scheduled for May or June 2021, led by Susan Zaluski and Dr Moore under the next reporting period. As a backup plan contingent on COVID-19 restrictions, portions of this training may be pre-recorded to reduce connection issues and allow for its transference to the Caribbean generally.
Activity 3.3. Restoration is executed with local organisations and communities at a number of priority mangrove sites based on the opportunity map as well as field data & local knowledge.	The local NGO *Jost Van Dyke Preservation Society* was hired on to the project team to coordinate the on-ground mangrove restoration actions. As an initial step, the BVI-based team led by Susan Zaluski of the Jost Van Dyke Preservation Society has conducted the following trial plantings along with local stakeholders. More information is available in the *Post Hurricane Recovery of Mangroves in the BVI: Mangrove Restoration Feasibility report.* Sites of trial plantings include: - Frenchman's Cay/West End, October 3 2020, 350 seedlings planted - Sea Cow's Bay, October 3 2020, 300 seedlings planted - Brandywine Bay, March 2021, 50 seedlings planted	Restoration activities, as summarized in Annex I, will be occurring throughout the next reporting period.

		- Bitter End Yacht Club, April 8 2021, 85 seedlings planted, - Gun Creek, October 3 2020, 132 seedlings planted	
Activity 3.4. Monitoring & evaluation of success conducted throughout for adaptive management and to produce scientifically robust results.		*The Regional Restoration and Monitoring Framework* was completed by Dr Moore in March 2021. This robust pre- and post-restoration monitoring plan is essential to identify site suitability, track restoration success, and to inform adaptive management of both natural and restored mangrove areas. Furthermore, the framework was finalised as a higher-level restoration framework applicable for mainstreaming and upscaling in other Caribbean contexts.	Following the established M&E framework, in the next reporting period monitoring and restoration activities will continue at all project sites as restoration activities are underway.
Activity 3.5. Webinar on Nature-based Solutions for disaster risk reduction and climate adaptation – mainstreaming and implementation.		The two-hour webinar *"Post-Disaster Mangrove Restoration of the British Virgin Islands (BVI): Accelerating the implementation of ecosystem-based approaches for disaster risk reduction and climate adaptation"* was held on July 7, 2020 and sponsored by IUCN in collaboration with the Ministry of Natural Resources, Labour and Immigration.	N/A
Output 4. Facilitation of cross sectoral policy mainstreaming and project uptake.	4.1 Situation analysis of current political frameworks and opportunities for integrating nature-based solutions – particularly ecosystem-based approaches for disaster risk reduction and climate adaptation - and mangrove concepts. 4.2 Territory-wide mangrove management plan drafted in consultation with key BVI ministries. 4.3 PROM results are highlighted in international platforms including the UN	In this reporting period, the *Situational Analysis of Mangroves in the British Virgin Islands – Legislative Parameters for Mangrove Restoration* document has been finalized after undergoing consultation with the project team, Ministry and other relevant stakeholders. The recommendations in this report build upon the synthesized results of previous projects in BVI, including the Darwin Plus project "Mapping for evidence-based policy, recovery and environmental resilience" (DPLUS081) and the Community Disaster Risk Reduction Fund (CDRRF) project "Establishing Flood-Resilient SMART Communities". The detailed situational analysis (4.1) allowed the identification of existing major gaps to mangrove legislation in the BVI, as well as key opportunities for the creation and policy integration of a comprehensive mangrove management plan.	

	Community of Ocean Action for Mangroves, the Global Mangrove Alliance, the Partnership for Ecosystem-based Disaster Risk Reduction (PEDRR), and Friends of Ecosystem-based Adaptation (FEBA).	On 29 April 2021, the Minister of Natural Resources the Hon. Vincent Wheatley delivered a statement on collective mangrove restoration efforts at the House of Assembly of the Virgin Islands (see Annex 7). In this statement he reiterated that the replanting of mangroves cannot replace the loss of healthy mangrove communities which can be destroyed with unauthorized reclamation projects and other activities, **emphasising that it is a legislative priority to introduce environmental legislation this year to afford mangroves a higher degree of protection in the BVI.** Promotion of the project both regionally and internationally continues to develop, including with alignment of global initiatives such as the Global Mangrove Alliance, Friends of EbA (FEBA) network and the UN Communities of Ocean Action for supporting implementation of SDG 14. .	
Activity 4.1. Drafting of a territory-wide mangrove management plan in consultation with BVI government.		*In this project cycle, the report* ***"Situational and Policy Analysis of Mangroves in the British Virgin Islands: Legislative and Management Parameters for Mangrove Restoration in the British Virgin Islands"*** *(Annex III) was finalised in a consultative process with stakeholders. This report provided policy and management recommendations that build upon the Red List of Ecosystems assessment together with the synthesized results of previous projects in BVI including the Darwin Plus project "*Mapping for evidence-based policy, recovery and environmental resilience*" and the Community Disaster Risk Reduction Fund project "*Establishing Flood-Resilient SMART Communities". *This report will be the cornerstone of the development an evidence-based sustainable management plan and*	The detailed policy analysis and set of recommendations as mentioned above, together with the lessons learned from pilot restoration on the ground, is the groundwork for the creation of a territory-wide mangrove management plan in consultation with the BVI Government. Key policies were identified that this management plan will be mainstreamed into. On 29 April 2021, the Minister of Natural Resources the Hon. Vincent Wheatley delivered a statement on collective mangrove restoration efforts at the House of Assembly of the Virgin Islands (see Annex 7). In this statement he reiterated that the replanting of mangroves cannot replace the loss of healthy mangrove communities which can be destroyed with unauthorized reclamation projects and other activities, **emphasising that it is a legislative priority to introduce environmental legislation this year to afford mangroves a**

	framework for the long-term sustainable management of mangrove ecosystems in the BVI.	**higher degree of protection in the BVI.** The PROM project will support policy development and management recommendations as part of this process.
Activity 4.2. Closing workshop building capacity on integrating and mainstreaming project outputs.	Not yet started under this reporting cycle.	N/A
Activity 4.3. Report on outcomes of project.	Not yet started under this reporting cycle.	N/A
Activity 4.4. PROM results are shared/communicated in international platforms including the UN Community of Ocean Action for Mangroves, the Global Mangrove Alliance, the Partnership for Ecosystem-based Disaster Risk Reduction, and Friends of Ecosystem-based Adaptation.	Promotion of the project both regionally and internationally continues to develop, including with alignment global initiatives such as the Global Mangrove Alliance, the UN SDG14 Community of Ocean Action for Mangroves, and the Friends of EbA (FEBA) network. Joseph Smith-Abbot, Deputy Secretary the BVI Ministry of Natural Resources, Labour, and Immigration presented on mangrove restoration in the BVI at the Caribbean Challenge Initiative and Caribbean Biodiversity Fund event “Scaling up Ecosystem-based Adaptation in the Caribbean” on July 16th 2020.	There is interest in showcasing project activities and accomplishments at the COP26 UN climate change conference to be held in November 2021. As the outcomes of the project on the ground continue to develop, we will be working both regionally and internationally to upscale the work in 2021. The project is also in the process of highlighting outcomes as part of the Global Mangrove Alliance (GMA), with an upcoming news story to be published and highlighted on the GMA website. Additionally, the project will be profiled as a case study in the GMA’s State of the World’s Mangroves report to be released on World Mangrove Day 2021 (July 26th). The project is in the process of registering as a Voluntary Commitment for the implementation of SDG14, as part of the UN Community of Ocean Action for Mangroves.
Activity 4.5. Promotion of results and report via IUCN network.	Close connections between the IUCN Regional Office for Latin America, Mexico, and the Caribbean are established, which will facilitate upscaling of the project approach throughout the Caribbean.	RLE workshop will be hosted for the wider IUCN network in the Caribbean, which will showcase the flagship example of the BVI project as a regional model to follow.

	Plans to highlight activities and accomplishments of the project at IUCN World Conservation Congress to be held in September 2021 are underway. The IUCN Council is meeting on the week of April 27 to take a decision together with the French Government. We will adapt the plans according to the final decision. *The Regional Restoration and Monitoring Framework* is a scientifically robust framework for monitoring and evaluation of restoration activities for the Darwin project as well as for other complementary mangrove interventions in the Territory, with a framework applicable for mainstreaming and upscaling in other Caribbean contexts.	

Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Mangroves are restored and managed sustainably at the territorial level increasing the flow of ecosystem services including resilience to climate change and natural disasters.			
Outcome: Community-based mangrove restoration, sustainable protection, and management for enhancing climate and disaster resilience of communities exposed to the effects of climate change.	0.1 Baseline Territory-wide mapping assessment completed to facilitate a directed approach, identification of key priority areas for restoration and future monitoring. Completed by September 2020. 0.2 Number of hectares identified for science-based restoration and protection of threatened mangroves-ecosystems. Completed by September 2020. 0.3 Number of supported measures for uptake and application of generated data from ecosystem risk assessment by using the Red List of Ecosystems protocol. Completed by December 2021. 0.4 Draft mangrove management plan completed for the Territory. Completed by February 2022. 0.5 Increased awareness among local communities including 50% of women on mangrove conservation for climate adaptation and disaster risk	0.1 Maps and data made available on the Red List of Ecosystems (RLE) website. 0.2 Printed and digital reports and executive summaries/factsheets made publically available on the RLE and partner websites. 0.3 Participatory community consultation and mapping. 0.4 Draft management plan in consultation with Ministries shared with Darwin. 0.5 Project reports on progress implementation.	- Local and national stakeholders are interested and willing to share data and incorporate recommendations for coastal planning and management. - Community groups are interested and supportive of initiatives. - Continuous support cooperation with government agencies, community leaders and IUCN. - Sufficient funding is ensured to implement the full scope of intended activities.

	reduction. Completed by December 2021.		
Output 1 1. Red List of Ecosystems (RLE) training and capacity building provided for national government, local and Caribbean, stakeholders and relevant assessors.	1.1 Number of participants (50% women) trained – 23 to 25 March 2020 - to assess ecosystem risk using the IUCN RLE protocols to execute community-based mangrove restoration. 1.2 Number of participants (50% women) attending closing workshop on RLE validation results and RLE applications - how to integrate and mainstream project outputs and lessons learnt into policy, up scaling and replicate the approach to other ecosystems. Completed by December 2020. 1.3 Number of ecosystems/sites identified as priority areas for protecting and restoring highly threatened mangrove ecosystems to restore or improve livelihoods and increase climate resilience. Completed by September 2020. 1.4 Webinar on the Red List of Ecosystems organised and recorded. Completed by July 2020.	1.1a Training course report. 1.1b Training course attendance certificates 1.2a List of attendance for the validation workshop. 1.2b Validation workshop report. 1.3 List of key sites, map outlining their location, and overall recommendations for their restoration and sustainable management. 1.4a Promotion material for the webinar: tweets, LinkedIn posts and flyer. 1.4b List of certificates automatically delivered after attending the webinar. 1.4c List of follow-up questions.	- Supportive environment. - Required technology and software can be sourced within budget (exchange rates will not change dramatically). - Citizens and local communities engage and provide verifiable data that can be incorporated into the analyses. - Fieldwork is not adversely affected by weather (i.e. cyclones) or political conditions. - Experts are able to attend the workshops.
Output 2 2. Territory-wide Red List of Ecosystems assessment for BVI mangroves.	2.1 National ecosystem risk assessment completed. 2.2 Number of key threats and drivers of change identified. 2.3 Detailed and robust map of mangrove cover in BVI, including pre- and post- Irma, available. .	2.1 BVI mangrove assessment report published on the RLE website. 2.2 List of biotic and abiotic indicators/thresholds. 2.3 Spatial data shared with national stakeholders and government for further use.	- Citizens and local communities engage and provide verifiable data that can be incorporated into the analyses. - Access to national and global data. - Required technology and software can be sourced within budget

	2.4 Conceptual model created for visualizing and informing on the risks and interactions linked to mangroves in the BVI	2.4 Conceptual diagram for mangrove ecosystems.	(exchange rates will not change dramatically).
Output 3 3. Prioritisation of degraded mangrove areas for restoration and other ecosystem-based approaches to benefit livelihoods and climate resilience.	3.1 Number of restorable degraded mangroves sites identified. 3.2 Number of mangrove hectares under restoration and/or ecosystem-based intervention. 3.3 Number of participants (50% women) trained in locally appropriate mangrove restoration methodologies. Completed by December 2021. 3.4 Monitoring & evaluation system developed to track restoration progress in the selected sites. 3.5 Webinar on Nature-based Solutions for disaster risk reduction and climate adaptation organised and recorded. Completed by September 2020.	3.1 & 3.2 Scientific report published on progress, key outputs and lessons learnt. 3.3 List of attendance for the capacity building events. 3.4 Monitoring and evaluation results from pilot activities on restoration are published including identifying key opportunities for continued restoration, including a sustainability plan through local stakeholders. 3.5a Promotion material for the webinar: tweets, LinkedIn posts and flyer. 3.5b List of certificates automatically delivered after attending the webinar. 3.5c List of follow-up questions	- Stakeholders are interested and supportive of initiatives. - Funding availability for restoration.
Output 4 4. Facilitation of cross sectoral policy mainstreaming and project uptake	4.1 Situation analysis of current political frameworks and opportunities for integrating nature-based solutions – particularly ecosystem-based approaches for disaster risk reduction and climate adaptation - and mangrove concepts 4.2 Territory-wide mangrove management plan drafted in consultation with key BVI ministries 4.3 PROM results are highlighted in international platforms including the UN Community of Ocean Action for Mangroves, the Global Mangrove Alliance, the Partnership for Ecosystem-	4.1 Situation analysis available online 4.2 Draft of the management plan identifies entry points for incorporating ecosystem data into decision-making. 4.3a PROM results highlighted at key national, regional, and international events to champion RLE and NbS as well as promote similar projects in the region. 4.3b Communication analytics (website, social media profiles) of IUCN Global Ecosystem Management Programme, IUCN ORMACC and key partners, i.e BVI ministries, FEBA.	- Continuous support cooperation with government agencies, community leaders and IUCN. - Motivation and Interest from communities, local authorities and other stakeholders. - Political stability.

	based Disaster Risk Reduction (PEDRR), and Friends of Ecosystem-based Adaptation (FEBA).		

Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

Output 1) RLE experts training workshop and capacity building provided for national government, local and regional stakeholders and relevant assessors:

1.1 Online briefing on RLE to enable pre-workshop data gathering;

1.2 Data gathering for preliminary RLE assessment;

1.3 Expert Training workshop held on executing RLE assessments for local government, and relevant assessors;

1.4 Analysis and validation of data generated in activities 2.2 and 2.3;

1.5 RLE Validation workshop to validate and finalise mangrove ecosystem assessment.

1.6 Webinar on the Red List of Ecosystems – case studies & applications

Output 2) Territory-wide Red List of Ecosystems assessment for BVI mangroves:

2.1 Relevant data gathered;

2.2 Criteria A and B assessed, according to data availability and quality;

2.3 Criteria C, D and E assessed, according to data availability and quality;

2.4 Conceptual diagram for mangrove ecosystems developed;

2.5 National RLE assessment for mangrove ecosystems.

Output 3) Prioritisation of degraded mangrove areas for restoration and other ecosystem-based approaches to benefit livelihoods and climate resilience:

3.1 Detailed and robust map of mangrove cover and restoration opportunities in BVI is produced, including pre-and post- Irma imagery;

3.2 Capacity building in mangrove restoration methodologies for local stakeholders is conducted;

3.3 Restoration is executed with local organisations and communities at a number of priority mangrove sites based on the opportunity map as well as field data & local knowledge;

3.4 Monitoring & evaluation of success conducted throughout for adaptive management and to produce scientifically robust results.

3.5 Webinar on Nature-based Solutions for disaster risk reduction and climate adaptation – mainstreaming and implementation.

Output 4) Cross sectoral policy mainstreaming and capacity building: 4.1 Drafting of a territory-wide mangrove management plan in consultation with BVI government; 4.2 Closing workshop building capacity on integrating and mainstreaming project outputs; 4.3 Report on outcomes of project; 4.4 PROM results are shared/communicated in international platforms including the UN Community of Ocean Action for Mangroves, the Global Mangrove Alliance, the Partnership for Ecosystem-based Disaster Risk Reduction, and Friends of Ecosystem-based Adaptation; 4.5 Promotion of results and report via IUCN network.

Annex 3 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	