GLOBAL FUND FOR CORAL REEFS

Programme Title: Impact Funding for BahamaReefs	**Recipient Organisation(s):** The Nature Conservancy & UN Capital Development Fund
Programme Contact: Shenique Smith, Northern Caribbean Program Director, The Nature Conservancy, *salbury@TNC.org*	**Programme Location:** Commonwealth of The Bahamas
Programme Description: The BahamaReefs Programme is a long-term initiative led by The Nature Conservancy in partnership with the GFCR to facilitate the development of and investments in projects and businesses that contribute to the resilience of coral reefs and surrounding communities in The Bahamas.	**Grant Allocation Approved by GFCR:** -TNC: $4,900,000 -Blue Bridge: Up to $3,075,669 As per GFCR Executive Board decision, disbursements will be determined based on fiduciary assessment, expenditures and GFCR Secretariat's performance review. Proposed Start Date: January 2022 Proposed End Date: December 2029 The project start date will be triggered by the first tranche of disbursement from GFCR.

Key expected results:

- Enabling environment enhanced for improved coral reef resilience with a sustainable flow of financing for reef conservation, threat abatement actions and improved policy environment;
- Improved capacity for innovative, scalable reef restoration techniques for conservation practitioners;
- More viable sustainable reef-positive livelihood options for coastal communities;
- Improved biodiversity in priority sites and climate refugia; and
- Increased recovery potential of reef communities from major shocks.

Signature of Recipient Organisation:

Print:
Organisation The Nature Conservancy
Name Robert Brumbaugh
Title _____

Signature: _____ Date:_____

GLOBAL FUND FOR CORAL REEFS

National Coordinating Authority

Name of institution: Department of Marine Resources

Name of representative: Mr. W. Gregory Bethel

☑ **Official support letter(s) attached**

Signature of UNCDF:

Print Name: Preeti Sinha

Title: Executive Secretary

Signature: _____ [redacted] _____ Date: 07-Dec-2021

Signature of Executive Board UN Representative :

Print Name: Andrew Hudson

Title: Head of Water & Ocean Governance, UNDP

Signature: _____ [redacted] Date: 08-Dec-2021

BUDGET BY UNDG CATEGORIES

All in USD

	TNC	UNCDF	Total
1. Staff and other personnel	$ 1,862,158	$ 129,900	$ 1,992,058
2. Supplies, Commodities, Materials	$ -	$ -	$ -
3. Equipment, Vehicles, and Furniture (including Depreciation)	$ -	$ -	$ -
4. Contractual services	$ 765,000	$ -	$ 765,000
5. Travel	$ 86,000	$ -	$ 86,000
6. Transfers and Grants to Counterparts	$ 1,780,000	$ 2,744,557	$ 4,524,557
7. General Operating and other Direct Costs	$ 86,281	$ -	$ 86,281
Total Direct Costs	**$ 4,579,439**	**$ 2,874,457**	**$ 7,453,896**
8. Indirect Support Costs (Max. 7%)	$ 320,561	$ 201,212	$ 521,773
TOTAL Budget	**$ 4,900,000**	**$ 3,075,669**	**$ 7,975,669**

DEPARTMENT OF MARINE RESOURCES
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No. MAMR/LIA/23
In replying please quote this number

16 September 2021

Secretariat
Global Funds for Coral Reefs
New York, USA

Dear Sir/Madam,

Re: Letter of Support for project entitled "Impact Funding for Bahama Reefs" led by The Nature Conservancy

The Department of Marine Resources is the government agency responsible for the administration, management, and development of fisheries in The Bahamas. The vision of the Department is to encourage the optimum sustainable use and integrated management of fishery resources and the marine environment of The Bahamas for the maximum benefit of the Bahamian people. To learn more about the Department of Marine Resources please visit our webpage.

With this letter I confirm my support for the proposal titled *"Impact Funding for Bahama Reefs Bahama Reefs"* developed by The Nature Conservancy for submission to the Global Fund for Coral Reefs. I believe this project will encourage long term sustainable financing for the protection and restoration of coral reefs and other marine ecosystems; promote the effective management of protected areas to conserve critical habitat (coral, mangrove forests, sea grasses, etc.) and vulnerable species and help rebuild fisheries stocks; support the development of the fisheries and aquaculture sector to promote food security, socio-economic development, and employment within The Bahamas.

The Department supports the pipeline of opportunities as a means of increasing funding for long term coral reef conservation and restoration and agrees with the recommendations to tackle the drivers of reef degradation as outlined in the Bahama Reefs Programme Document.

My department is committed to supporting the Bahama Reefs Project. We believe it is important to reduce drivers to reef degradation, encourage the effective management of

protected areas and support the sustainable development of the fisheries sector through innovative tools. If you require any additional information, please do not hesitate to contact me at gregorybethel@bahamas.gov.bs.

Sincere regards,

W. Gregory Bethel (Mr.)
Director of Marine Resources (Actg.)

GLOBAL FUND FOR CORAL REEFS

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Acronyms

AIC	U.S. All Islands Coral Reef Committee
AMMC	Antiquities, Monuments and Museum Corporation
ASB	Annual severe bleaching
BCU	Bio Climatic Unit
BCRC	Blue Carbon Resilience Credit
BDB	Bahamas Development Bank
BNPAS	Bahamas National Protected Areas System
BNT	Bahamas National Trust
BPAF	Bahamas Protected Areas Fund
BTT	Bonefish and Tarpon Trust
CAPEX	Capital expenditures
CBD	Convention on Biological Diversity
CCI	Caribbean Challenge Initiative
CCPF	Compete Caribbean Partnership Facility
COP	Conference of the parties
CTF	Conservation Trust Fund
DEPP	Department for Environmental Planning and Protection
DMR	Department of Marine Resources
EEZ	Exclusive economic zone
EHCP	Elizabeth Harbour Conservation Partnership
EPA	U.S. Environmental Protection Agency
FDI	Foreign Direct Investment

FU	Forest Unit
GDP	Gross Domestic Product
GEF	Global Environment Facility
GFCR	Global Fund for Coral Reefs
IDB	Interamerican Development Bank
INDC	Intended nationally determined contribution
MMA	Marine Managed Area
MMM	Maximum monthly mean
MoU	Memorandum of Understanding
M&E	Monitoring and Evaluation
MPA	Marine and coastal Protected Area
MSC	Marine Stewardship Council
MSME	Micro, Small and Medium-sized Enterprise
MUR	Multi-scale Ultra-high Resolution
NGO	Non-governmental organization
NISP	National Implementation Support Partnership
NOAA	National Oceanic and Atmospheric Administration
PIMS	Perry Institute Marine Sciences
PoWPA	Programme of Work on Protected Areas
RRN	Reef Rescue Network
SBDC	Access Accelerator Small Business Development Centre
SC	Steering Committee
SCTLD	Stony Coral Tissue Loss Disease
SDG	Sustainable Development Goal
SfM	Structure for motion
SOF	Sustainable Ocean Fund
SST	Sea Surface Temperature
TNC	The Nature Conservancy
UNCDF	United Nations Capital Development Fund
UNEP	UN Environment
UNFCCC	United Nations Framework Convention on Climate Change
WCMC	World Conservation Monitoring Centre

GLOBAL FUND FOR CORAL REEFS

FACT SHEET

Title of the proposed Programme: Impact Funding for BahamaReefs

Convening Agent: Shenique Smith, Northern Caribbean Programme Director, The Nature Conservancy, *salbury@TNC.org*

Co-implementing organisation(s):

Co-implementing organisation	Name	Title	Email
UNCDF (co-recipient)	Anders Berlin, Ben Midberry	Director, the LDC Investment Platform	Anders.berlin@uncdf.org benjamin.midberry@uncdf.org
Access Accelerator Small Business Development Centre (SBDC)	Davinia Bain	Executive Director	davinia.bain@sbdcbahamas.com
Blue Finance	Nicolas Pascal	Executive Director	npascal@blue-finance.org
BNT-Bahamas National Trust	Eric Carey	Executive Director	ecarey@bnt.bs
Perry Institute Marine Sciences (PIMS)	Craig Dahlgren	Executive Director	cdahlgren@perryinstitute.org
Elizabeth Harbour Conservation Partnership	Catherine Booker	EHCP Secretary, Marine conservationist	catherine.booker@gmail.com
Coral Vita	Gator Halpern	Founder and President	gator@coralvita.co
BPAF-Bahamas Protected Areas Fund	Karen Panton	Executive Director	kpanton@bahamasprotected.com

Name of coral reef site(s) or project area(s): The Bahamas

Period of implementations (years and months): Eight years
Start date (month, year): January 2022
End Date (month, year): December 2029

Total grant programme amount: USD 10,694,093 (total grants requested from GFCR for 4 years + total co-finance grants for 8 years)
GFCR Grant Window contribution: USD 8,391,093

Other sources of grant co-financing: USD 2,203,000 (USD 100,000 to be leverage in private philanthropy by Blue Finance; USD 800,000 received by BNT in the programme 8 years from public funding; USD 400,000 to be granted to PIMS by IDB – final phase of approval; USD 600,000 in grants already received by Coral Vita; USD 203,000 in grants received by TNC for Blue Carbon; USD 100,000 received by TNC from other donors and invested in specific activities – please see co-finance table in the budget file for more details).

Leverage and co-financing ambition:
Total investment capital leverage: USD 15,500,000
GFCR Investment Window: USD 10,000,000
Public investment if any: n/a
Other private investment if any: USD 5,500,000 (USD 500,000 committed by the Sustainable Ocean Fund to Blue Finance; USD 5,000,000 to be accessed in investments by the Blue Economy Programme Accelerator led by SBDC)

Relevant objective/s from national strategic document/s (please refer to section 5c for more detailed information):

- *Caribbean Challenge Initiative (CCI) two goals*: (1) to effectively conserve and manage at least 20 percent of the marine and coastal environment by 2020 (the 20-by-20 goal);[1] and (2) to have in place fully functioning sustainable finance mechanisms that will provide long-term and reliable funding to conserve and sustainably manage the marine and coastal resources and the environment.
- *The Programme of Work on Protected Areas (PoWPA) goals* under the UN Convention on Biological Diversity (CBD), which are aligned with the CCI goals.
- *The National Development Plan: Vision2040 goal 11*: "The Bahamas will have a natural environment that supports the long-term sustainable development of the Bahamian economy and way of life for generations." and its Strategy 11.3 that commits to the "Sustainable Use and Management of Resources." It reiterates the 20% target set out by the CCI and looks to "Increase protected areas under effective management (including sustainable funding)." The SDGs are also integrated into the National Development Plan.
- *The Bahamas intended nationally determined contribution (INDC) to the UN Framework Convention on Climate Change (UNFCCC)* from 2015, in which coral reefs, seagrass and mangroves are highlighted as key ecosystems for climate adaptation.
- *The Fisheries Act (2020)*, which determines the development of fisheries management plans, the possibility of declaring marine protected areas (MPAs) and the need of conservation and management measures for these areas, including management plans.
- *The Environmental Planning and Protection Act (2019)*, which determines the preparation of a National Environmental Policy Framework, with several national policies and plans, including the development of a National Coral Reef Conservation Plan.
- *The Bahamas Micro, Small and Medium-sized Enterprises Policy* which aims to create a highly entrepreneurial sector through innovation and competition of businesses supported by improved governmental regulations.

[1] The CCI 20-by-20 goal was not achieved yet, and the Government of The Bahamas is still aiming for this target.

SDG targets and relevant gender markers on which the progress will be accelerated (includes targets from a range of SDGs and development pillars):

- The SDGs and targets listed considered the BahamaReefs outputs and the pipeline interventions. They are presented in a summarized form to highlight what is relevant: *Goal 2—Zero Hunger*—targets 2.3: double the incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers; and 2.4: ensure sustainable food production systems that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change. By protecting and managing MPAs and possibly supporting sustainable fisheries through the Blue Economy Programme Accelerator, the BahamaReefs will contribute to improved food security.
- *Goal 4—Quality Education*—target 4.4: increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship. With the training provided by the Reef Rescue Network and the Blue Economy Programme Accelerator, the BahamaReefs will contribute to this target.
- *Goal 5—Gender Equality*—target 5.5: Ensure women's full and effective participation and equal opportunities for leadership. The Reef Rescue Network and the BNT-Blue Finance project in MPAs in Andros have targets for women economic empowerment (see section 3). The Blue Economy Programme Accelerator will also adopt a gender criterion in the selection of businesses to receive support.
- *Goal 8—Decent Work and Economic Growth*—targets 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation; and 8.10: strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services. The support to restoration activities (through Blue Carbon, Reef and mangrove insurance, the Reef Rescue Network and Coral Vita) and the Blue Economy Programme Accelerator will contribute to these two targets.
- *Goal 12—Responsible Consumption and Production*—target 12.2: achieve the sustainable management and efficient use of natural resources. This target will be accelerated depending on the projects supported by the Blue Economy Programme Accelerator.
- *Goal 13—Climate action*—target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters. Restoring reefs and mangroves will increase resilience of communities and ecosystems in The Bahamas.
- *Goal 14—Life Below Water*—targets 14.1: prevent and significantly reduce marine pollution; 14.2: sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans; 14.5: conserve at least 10 percent of coastal and marine areas; and 14.7: increase the economic benefits to Small Island developing States from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism. All the interventions included in this proposal contribute to these targets.
- *Goal 15—Life on Land*—target 15.1: ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands. By restoring mangroves through Blue Carbon projects, the BahamaReefs will contribute to this target.
- *Goal 17—Partnership for the Goals*—target 17.1: Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection. By supporting the

establishment of new financial mechanisms through the Bahamas Protected Areas Fund (BPAF), the programme will contribute to this target.

Relevant GFCR outcomes:

- Outcome 1: Protect priority coral reef sites and climate change refugia
- Outcome 2: Transform the livelihoods of coral reef-dependent communities
- Outcome 3: Restoration and adaptation technology

Ecosystem Area Protected: (total area protected at the national level)

Ecosystem Area Protected	Area (km2)
Coral Reefs	532.76
Mangroves	488.64
Seagrasses	4167.38
Total	5188.78

Types of activities supported:

Potential activities from the pipeline opportunities could include:

- Restoration:
  - Coral farming
  - Ecosystem restoration (mangroves, seagrass and coral reefs)
  - Reef restoration technology
- MPA management:
  - Mooring installation
  - MPA infrastructure building
  - Waste management facilities
  - Community-based/SME ecotourism
- Sustainable fisheries and aquaculture:
  - Seaweed farming, sea urchin aquaculture
  - Crab/lobster harvesting

Estimated Number of Beneficiaries:

The table below provides indications of how many Bahamians can benefit from the pipeline projects at the initial implementation sites. It considers only the numbers provided by the partners at this stage, so not all projects have an estimated number of beneficiaries. These numbers will be refined with each project during the inception phase:

	Number of People
Total number of people in the initial implementation sites that will benefit from healthier reefs (benefits mainly through coastal protection, tourism, food security)[2]	Andros – 7530 (3,769 men and 3,761 women) Grand Bahama – 51,368 (24,996 men and 26,372 women) Abaco – 17,224 (8,902 men and 8,322 women) Exuma – 6,928 (3,468 men and 3,460 women) Total – 83,050 people (41,135 men and 41,915 women)

[2] Source: Census 2010. Available online: https://www.bahamas.gov.bs/wps/wcm/connect/a6761484-9fa0-421d-a745-34c706049a88/Microsoft+Word+-+2010+CENSUS+FIRST+RELEASE+REPORT.pdf?MOD=AJPERES

	Number of People
Local employment (new jobs created)	The Blue Economy Programme Accelerator will support 50 Bahamian-owned enterprises in the first two years. While the corresponding number of jobs is unknown, it is anticipated that at least 100 jobs will be created. In the Fiscal Year 2019, with their core programme, 443 jobs were created. The BNT-Blue Finance project in Andros plans to create 10 new small enterprises, which can be individual (businesses run by one person). At least 10 new jobs created. The Reef Rescue Network projects the creation of around 100 jobs in the tourism sector, i.e., dive shops, ecolodges, hotels, etc. Elizabeth Harbour Conservation Partnership expects that six new job positions will be created.
Increase in income	The BNT-Blue Finance project in Andros will work with at least 30 fishers to monitor biodiversity and increase their earnings with this additional service to the MPA. The Reef Rescue Network will work with their current and new members, mainly the dive shops, to increase their revenue streams with coral restoration dive packages.
Subsistence fishing with improved fishing practices	Sustainable fisheries may be supported by the Blue Economy Programme Accelerator. This number is to be assessed in the future. The BNT-Blue Finance project in Andros will work with at least 30 fishers to monitor biodiversity and projects. It is anticipated they will obtain an increase in protein consumption due to the benefits of MPAs because of the spill-over effect.
Number of homes, businesses and other infrastructure with greater coastal protection	The two pilot Blue Carbon sites estimate an annual reduction in people flooded of 724 in Grand Bahama and 35 in Abaco. The annual reduction in flooded area is of 62.27 km2 in Grand Bahama and 49.08 km2 in Abaco, meaning an annual reduction in property losses from flooding of USD 136 million in Grand Bahama and USD 8 million in Abaco.
Women economic empowerment opportunities	The BNT-Blue Finance project in Andros has a target of having up to 50% of the new MSMEs led by women and 30% of MPA staff positions held by women. The Reef Rescue Network committed to training 10 women as reef rescue diver instructors with PADI and is looking to get PADI to waive fees for training a number of Bahamian women as scuba instructors.

SELF-ASSESSMENT

Eligibility criteria	Yes/No
The proposal reflects a comprehensive ecosystem approach to mitigating direct and indirect drivers of coral reef degradation.	Yes
The proposal is based on a blended finance approach. Inclusion of innovative business models and financial instruments to catalyse private sector engagement and investment into coral reef conservation and resilience initiatives and business models.	Yes
The proposal benefits local communities and engages local stakeholders in implementation and governance to ensure local ownership.	Yes
The proposed results are aligned with national SDG priorities and strategic documents.	Yes
The proposed Programme is endorsed by the government.	TBC
The proposal is based on country consultations, as explained in the programme document, and efforts have been or will be made to secure Programme government endorsement of the full proposal (the Letter of Endorsement).	Yes
The proposal is based on the standard template for the programmatic document, it is complete, and it includes: - Theory of change, demonstrating contribution to GFCR outcomes; - Results-oriented partnerships; - Environmental and socioeconomic baseline data is available, and/or there is a strategy in place to collect data; - Targeted results have clear, measurable indicators that are linked to the GFCR Results Framework found in the Fund TOR; - Blended solutions (transactions) and substantive outcome-level results with leverage potential; - The programme includes quick wins and a longer-term vision for sustainable financing for coral reef conservation and resilience; and - Risk assessment and mitigation measures.	Yes
The proposal is expected to use the requested grant capital to leverage investment window or other private sector investment at a minimum ratio of 1:4.	Yes

1. Executive Summary

The Bahamas' economy and society are highly dependent on the goods and services provided by coral reefs. Current initiatives and resources directed to protect and restore these ecosystems are insufficient and cannot properly tackle the main drivers of reef degradation. This will lead to further decline and potential eradication of Bahamian reefs as climate change accelerates, risking the future of livelihoods that depend on them and increasing the country's climate change vulnerability.

The country is one of the 10 most vulnerable to climate change effects globally.[3] Sea-level rise is a main threat to the society and the economy, as 80% of the country's landmass is within 1.5 meters of sea level and 90% of freshwater lenses are within 1.5 meters of the land surface, fragile to contamination. Climate change also magnifies other threats to local communities, such as tropical hurricanes.[4] According to the World Bank Macro Poverty Outlook, "*In addition to the severe impacts of Hurricane Dorian, the country faces an average annual loss from windstorms of USD 850 million — over 6% of GDP.*"[5]

The Nature Conservancy (TNC) has designed the Impact Funding for BahamaReefs Programme (BahamaReefs) as a long-term initiative, motivated by its selection as the Global Fund for Coral Reefs (GFCR) convening agent in The Bahamas. This unique and exciting opportunity will facilitate the development of and investment in projects and businesses that contribute to the resilience of coral reefs and surrounding communities in the country.

This programme will help address some of the main environmental and developmental challenges faced by The Bahamas. In terms of the environment, the country is one of the most vulnerable to climate change effects. Sea-level rise is a main threat, as 80% of the country's landmass is within 1.5 meters of sea level and 90% of freshwater lenses are within 1.5 meters of the land surface, fragile to contamination. Climate change also magnifies other threats, such as coral bleaching and tropical hurricanes. In 2019, Hurricane Dorian, the strongest hurricane ever recorded to hit ground in the region, highlighted the country's vulnerabilities. With the COVID-19 pandemic in 2020, more challenges were posed to an already underperforming economy. The country is highly dependent on the tourism sector, which accounts for approximately half of GDP, which is estimated to have contracted by 16.3% in 2020. Unemployment is on the rise, particularly affecting the most vulnerable members of society, including women. Poverty is also expected to rise above 13%.

Coral reefs are essential to tourism and fisheries by providing food and job security as well as coastal protection. Despite their inherent value for the ecology and economy of The Bahamas, coral reefs have dramatically declined over the last 50 years as corals have been faced with

[3] On Germanwatch's Long-Term Climate Risk Index (1999-2019), which assesses the level of exposure and vulnerability to extreme weather events, The Bahamas is ranked 6th out of 181 countries (higher rankings indicate higher climate vulnerability). Available online: https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_1.pdf

[4] https://www.cbd.int/countries/profile/?country=bs

[5] Op.cit. World Bank

increased local and global threats. [6,7] The main direct causes and drivers of reef degradation in The Bahamas include (but are not limited to) poorly planned coastal development, unsustainable fishing practices, introduced coral diseases and increasing climate change effects.

The Bahamas contains one of the most extensive networks of climate resilient coral reefs in the Caribbean. According to UNEP-WCMC [8], the country contains two priority bio climatic units (BCUs) with nearly all the country's 3,150 km2 of coral reefs. TNC's most recent mapping using 4m Planetscope Dove imagery (Schill et al., 2021)[9] acquired between October 2017 and September 2019 measured 5,531 km2 of coral reefs, which includes more small-patch and fringing reefs as well as deeper shelf reefs. Reefs in the country have also been highlighted by the United Nations Coral Futures project for resilience. There are also three Blue Hope Spots[10] associated with Bahaman coral reefs. One of these reefs is the Andros Barrier Reef that is the 3rd largest barrier reef in the world. The country's resilient coral reefs are found throughout the whole marine territory. This is why BahamaReefs will take a country-wide approach. Nevertheless, some initial areas for implementation were identified corresponding to where investment opportunities were identified. Initial focal areas include the islands of Andros, Grand Bahama, Abaco and Exuma.

With the interventions planned under the BahamaReefs Programme, TNC expects to achieve the following three Outcomes:

1. Improved management effectiveness of priority coral reef sites, including climate refugia;
2. Livelihoods of reef-dependent communities are strengthened by reef-positive businesses; and
3. Coral reefs and associated ecosystems are restored to increase resilience.

To support the achievement of these Outcomes, the programme will deliver a series of activities to strengthen the enabling conditions for private investments in the country, including the identification of a preliminary pipeline of investment opportunities. The support to these identified opportunities follows a pipeline approach where initiatives evolve gradually from a pilot phase, when they are mainly supported through grants, to development and maturity phases, when they are able to access other types of capital, including concessional and commercial debt and equity. The preliminary pipeline of investment opportunities identified includes seven initiatives:

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[6] Bahamas Coral Reef Report Card 2020. Available online: http://www.nature.org/media/bahamas/bahamas-coral-reef-report-card.pdf

[7] Jackson, J.B.C., Donovan, M.K., Cramer, K.L., and Lam, V.V. (editors). (2014). Status and Trends of Caribbean Coral Reefs: 1970-2012. Global Coral Reef Monitoring Network, IUCN, Gland, Switzerland. Available online: https://portals.iucn.org/library/efiles/documents/2014-019.pdf

[8] UNEP-WCMC, WorldFish Centre, WRI & TNC (2010) Global distribution of warm-water coral reefs, compiled from multiple sources including the Millennium Coral Reef Mapping Project. version 1.3. includes contributions from IMaRS-USF and IRD (2005), IMaRS-USF (2005) and Spalding et al. (2001). URL http://data.unep-wcmc.org/datasets/1.

[9] Schill, S.R., McNulty, V.P., Pollock, F.J., Fritjof, L., Jiwei L., Knapp, D., Kington, J., McDonald, T., Raber, G.T., Escovar-Fadul, X., and Asner, G. (2021). Regional-scale high-resolution benthic habitat data from PlanetScope imagery for conservation decision-making and marine planning, Remote Sensing, in review.

[10] https://mission-blue.org/hope-spots/

Most aligned BahamaReefs Outcome	Type of investment opportunities	Project name	Location	Leading institutions
3	Finance Instrument	1. Blue Carbon and Resilience Credits	Abaco and Grand Bahama	TNC global
3	Finance Instrument	2. Reef and mangrove insurance	Nationwide	TNC global
2	Finance Instrument	3. Blue Economy Programme Accelerator	Nationwide	Access Accelerator Small Business Development Centre (SBDC)
1	Direct conservation	4. Blended finance for the effective management of MPAs	Andros	Bahamas National Trust (BNT) and Blue Finance
3	Direct conservation	5. Reef Rescue Network	Nationwide	Perry Institute for Marine Science (PIMS)
1	Direct and indirect conservation	6. Minimizing the ecological impact of tourism in Elizabeth Harbour	Exuma	Elizabeth Harbour Conservation Partnership
3	Direct Conservation	7. Scaling Coral Restoration - Coral Vita	Currently in Grand Bahama with potential to be nationwide	Coral Vita

These seven initiatives are requiring grants to leverage private investments and to generate revenue streams to make them sustainable. It is expected that all initiatives are able to establish a consolidated flow of income in a way that they are not dependent on grants after the programme is finished.

From the total of almost USD 8,4 million requested from the GFCR Grant Window (grants and concessional loans), USD 5,4 million will be dedicated to the seven projects in the pipeline. In addition, there are USD 2,1 million in co-financing grants for the pipeline, totalling USD 7.5 million in grants and concessional loans for the pipeline. The seven projects will potentially leverage USD 10 million from the GFCR Investment Window, USD 5,5 million in other private investments, and are projected to generate almost USD 79.7 million in revenues in the 8 years of the programme. If the leverage potential considers the projected revenues as private finance attracted to coral reefs, a total of USD 7.5 million in grants would generate USD 95.2 million in investments and projected revenues. This is a leverage ratio of 1:13. If the total grant amount requested of USD 8.4 million is considered (including research and planning, pipeline development and management costs) and the total co-financing grants of USD 2.2

million, then the leverage ratio would be 1:9. These calculations are detailed in the budget spreadsheet and in the section 12 of this document.

The BahamaReefs Programme builds on the experience of TNC in The Bahamas and on the established network of partners working to conserve and restore coral reefs in the country. It also builds on the track record of NatureVest, TNC's impact investment arm. TNC as a global science-based conservation organisation has been developing knowledge and tested approaches to protect coral reefs in different regions, including in several Caribbean countries. The programme is designed in a favourable moment, given a priority focus on the potential of the Blue Economy for the country's recovery after the COVID-19 pandemic.

The programme will be implemented over a span of eight years, from the beginning of 2022 until the end of 2029.

2. Programme Strategy

2.1 Problem statement

The Bahamas' economy and society are highly dependent on the services provided by coral reefs. Current initiatives and resources directed to protect and restore these ecosystems are insufficient and cannot properly tackle the main drivers of reef degradation. This could lead to the decline and eradication of Bahamian reefs as climate change accelerates, risking the future of livelihoods that depend on them and increasing the country's climate change vulnerability.

2.2 Theory of change

If TNC and partners are able to operationalise innovative financial mechanisms that can leverage private finance to complement public and philanthropic funding, then local actors and their partners will have the resources to develop reef protection and restoration initiatives and reef-positive businesses.[11]

If reef protection and restoration initiatives and businesses receive the required support to become investable and a long-term pipeline of investment opportunities is built, then private funding will be attracted to finance this pipeline, addressing coral reef degradation and supporting restoration. Healthy reefs will provide economic opportunities for local communities, which are key beneficiaries of this project.

If the local drivers of reef degradation are addressed through improved management and restoration initiatives, then coral reefs in The Bahamas will be more resilient to climate change and other stressors, supporting the sustainable development of coastal communities and climate adaptation.

2.3 The BahamaReefs Programme

The BahamaReefs Programme will implement the following interventions:

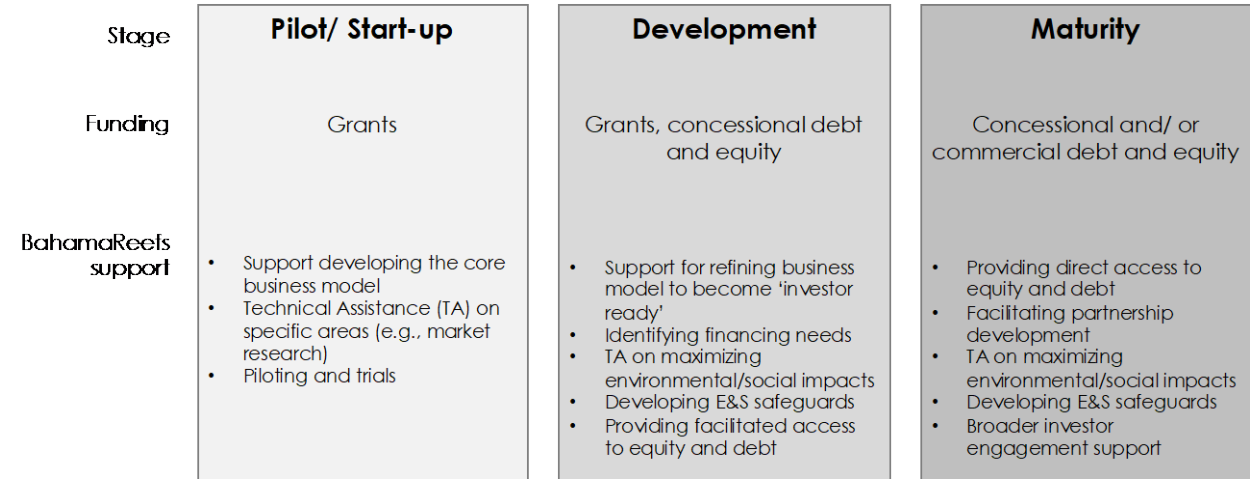
[11] Reef-positive businesses are considered businesses that have positive impacts to coral reefs (promote direct conservation and restoration) and also businesses that reduce threats to coral reefs (address drivers of degradation).

- **Research and planning:** science-based assessments, policy framework support, advocacy for the use of new conservation finance mechanisms, and planning processes in coordination with national authorities;
- **Pipeline development:** institutional setup of business-support facilities, provision of technical assistance, training, development of business partnerships and piloting; and
- **Execution of investment opportunities:** project sourcing and appropriate development, access to grants, and inclusion in concessional and commercial capital pipelines for review and decisions to be made by lenders and investors, and the implementation of environmental and social impact frameworks.
- **Monitoring and evaluation:** all activities may evolve during the project implementation based on results from the monitoring and evaluation process and adoption of adaptive management techniques.

2.4 Pipeline approach

Businesses will be recommended for different forms of financial support depending upon their maturity and compliance with donor and investor criteria, as outlined in Figure 1 below:

Figure 1: Support provided to businesses at differing stages of maturity



The pipeline will develop over time and support the most impactful interventions required to address the drivers of coral reef degradation in priority sites. Initial implementation of the programme will take place in areas where there are business initiatives around coral reef conservation and restoration and investment opportunities were identified, which are also identified within the global reef resilience studies (50 Reefs, Coral Futures, Blue Hope Spots and TNC's own work presented in Annex VI). The initial focal areas are the islands of Andros, Grand Bahama, Abaco and Exuma (see map in section 5). Further research will be conducted to increase the resolution of identifying climate refugia in The Bahamas. With local scientific validation of resilience, these climate refugia will be priority sites to be effectively managed for the BahamaReefs programme.

To improve the financial stability for coral reef conservation and restoration in the long-term, the BahamaReefs Programme pipeline will have a strong focus on developing innovative long-term finance instruments. The initial pipeline identified includes the three categories of

interventions defined by the GFCR, with the following areas (more details on each pipeline opportunity are provided in Section 3):

- **Direct conservation:** MPA effective management and ecosystem restoration (mangrove, seagrass and coral reefs);
- **Indirect conservation:** ecotourism and wastewater management; and
- **Finance and business development instruments for conservation:** Blue Carbon Resilience Credits, reef insurance, accelerator facility for SMEs in the Blue Economy, inclusion of the conservation trust fund (CTF) Bahamas Protected Areas Fund (BPAF in the partnership.

2.5 Expected outcomes

With these interventions, TNC expects to achieve the following three outcomes through the BahamaReefs Programme:

1. Improved management effectiveness of priority coral reef sites, including climate refugia;
2. Livelihoods of reef-dependent communities are strengthened by reef-positive business; and
3. Coral reefs and associated ecosystems are restored to increase resilience.[12]

These three outcomes contribute directly to the "Protection," "Transformation" and "Restoration" Outcomes projected by the GFCR. TNC recognizes the importance of the fourth GFCR outcome, "Resilience," which is embedded into the BahamaReefs Programme expected results, especially under Outcome 3.

Cross-cutting issues to be addressed under the three outcomes are:

- Local capacity creation for long-term sustainability of reef-positive businesses: The Bahamas business environment and conservation community do not have a track record of working in collaboration, and the promotion of reef-positive business at the required scale will require the creation of capacities in different levels and areas of knowledge. For example, conservation and community-based organisations will need business development orientation and assistance, and guidance on accessing financing, while businesses will require scientific expertise to ensure their activities are reef-positive, as well as generating benefits to local communities. Capacity building actions will also be needed at the government level to help them engage fully in the implementation of innovative finance instruments being proposed under the BahamaReefs Programme.
- Gender equality through women economic empowerment: Women are among the vulnerable groups most affected by the economic damage caused by the COVID-19 pandemic in The Bahamas. Half of the population depends on tourism services for employment, and a large portion of job losses affect women.[13] The BahamaReefs Programme will mainstream gender equality criteria in its interventions and include a focus on creating economic empowerment opportunities for women. This aspect will be highlighted in the activities under Outcome 2.

[12] Resilience in this proposal follows the GFCR definition of referring both to communities and ecosystems.

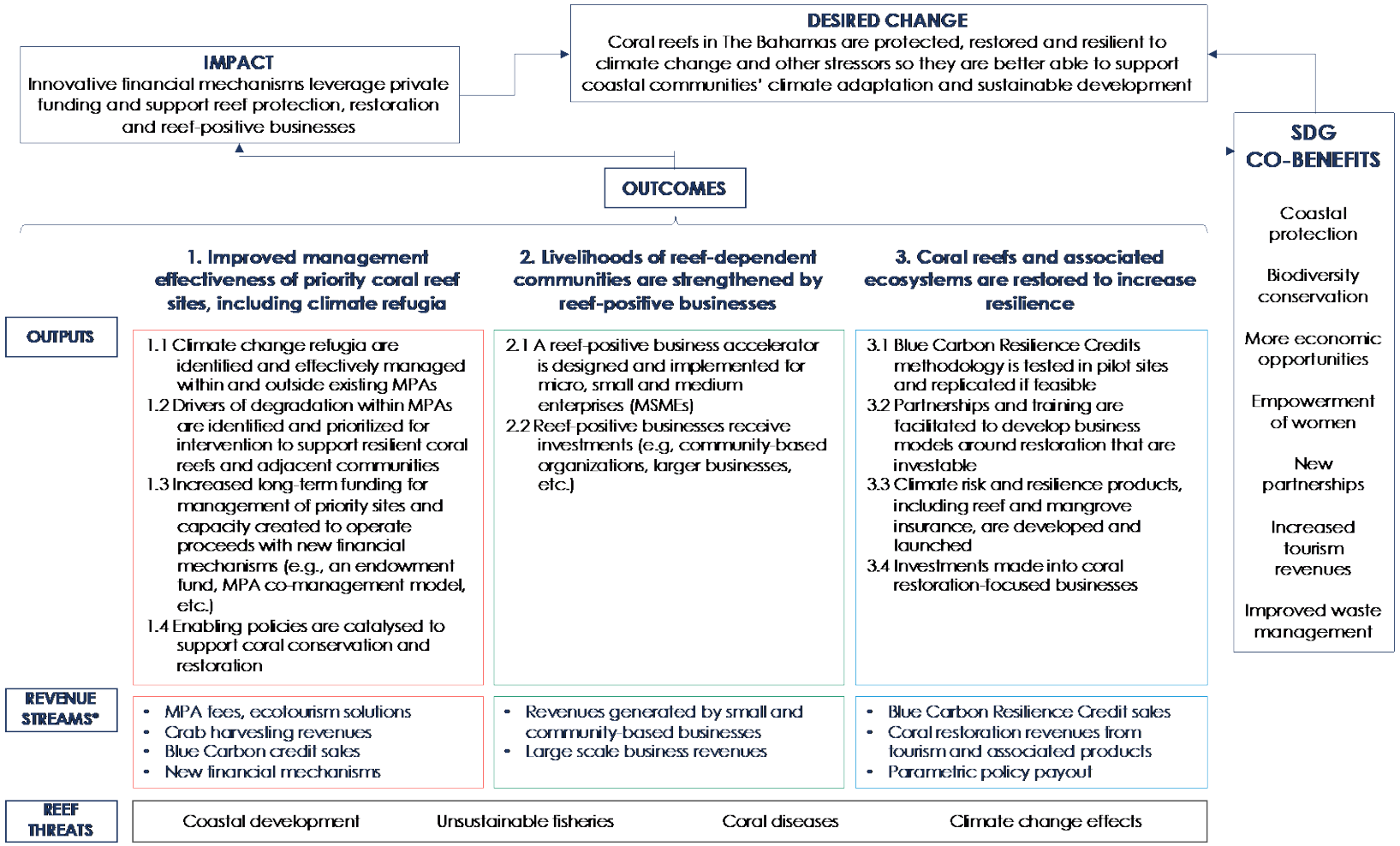
[13] Op.cit. World Bank Macro Poverty Outlook 2021.

- Governance and knowledge sharing: This programme will support strategic government initiatives under development that improve the governance of coral reef protection and management. For example, a Blue Economy Committee is being created by the government and engages different ministries and agencies. A similar committee already exists within the Bahamas Development Bank for supporting investment strategies in the Blue Economy sector in the country. TNC, as the BahamaReefs Programme convening agent, will dedicate resources to support these governance initiatives and to inform them on the progress of its pipeline. Collaboration with these initiatives is included under the Programme management budget and affects the three Outcomes.

Figure 2 below presents a summarized version of the BahamaReefs Programme logic of intervention. Detailed outcomes, outputs and activities are provided in Annex III.

GLOBAL FUND FOR CORAL REEFS

Figure 2: BahamaReefs Theory of Change.



* The revenue streams mentioned in the Theory of Change diagram refer to the investment opportunities identified in the preliminary pipeline. These are detailed in the next section "Specific Interventions." The specific pipeline opportunities are not explicitly mentioned in the Theory of Change, but they will contribute to the outputs and outcomes.

3. Specific Interventions

3.1 Research and planning

The following specific interventions are planned to help create the enabling conditions that will allow reef-positive businesses to be successful in The Bahamas:

- Identification of climate change refugia and measures for them to be effectively managed within and outside existing MPAs (Output 1.1). This will include:
    - An assessment of the available regional data complemented by data specific to The Bahamas, to determine the refugia areas and their overlap with current and planned MPAs (Activity 1.1.1);
    - A discussion with local specialists and government agencies on climate change refugia assessment in a technical workshop with the support of TNC Caribbean Science team (Activity 1.1.2);
    - The support to MPA managers to develop and implement climate-smart management plans. This will include prioritization of MPAs (considering the climate refugia assessment) for the development and/or review of four management plans; and training by the TNC's Reef Resilience Network for 10 to 15 MPA managers to become trainers on the use of the Adaptation Design Tool,[14] to help local managers build climate resiliency into their MPA management plans. Objectives include: building local capacity; fostering a shared understanding of likely climate impacts; updates to management actions and the identification of new strategies or policies to incorporate in site management plans. The Adaptation Design Tool was developed in partnership with the National Oceanic and Atmospheric Administration Coral Reef Conservation Program (NOAA), the U.S. All Islands Coral Reef Committee (AIC), the U.S. Environmental Protection Agency (EPA) and TNC Reef Resilience Network to assist MPA managers to incorporate climate considerations into their management actions and plans and has been used by managers in New Caledonia, Hawaii, Micronesia and other coral reef countries around the world. Technical support will be given to the trainers after the workshop as they support development of climate smart management plans throughout The Bahamas (Activity 1.1.3).
- Identification and prioritization of the drivers of coral reef degradation within MPAs for intervention to support resilient coral reefs and adjacent communities (Output 1.2). This will include:
    - A refined assessment of main drivers of degradation in current and newly established MPAs (Activity 1.2.1);
    - The development and/or review of four management plans to include priority interventions for threats abatement (Activity 1.2.2). These will be the same

[14] More information on this tool can be found at: https://reefresilience.org/community-based-climate-adaptation/climate-adaptation-tools/ccap-adaptation-design-tool/

management plans to be reviewed/ developed to include climate considerations in Activity 1.1.3;
    - the identification of business initiatives that address the identified threats in the MPAs for potential support through the BahamaReefs.
- Catalyzation of enabling policies to support coral reefs conservation and restoration that also includes enabling the creation of sustainable revenue streams (Output 1.4). This will include the support to the government to develop a framework around co-management of fisheries and MPAs (Activity 1.4.1); support for the development of a national coral reef conservation plan that includes a strategy to incorporate sustainable revenue streams for conservation (Activity 1.4.2); and support for the development of a regulatory and permitting framework for coral harvesting and outplanting, which is key for the establishment of a restoration market (Activity 1.4.3).

3.2 Pipeline development

The BahamaReefs will be constantly working to identify and develop new investment opportunities that can compose its pipeline during the programme implementation. The following specific interventions are planned in this sense:

- Assessment and roadmaps for new national and regional financial mechanisms to mobilize additional resources to MPAs (Activities 1.3.1 and 1.3.2). This activity will be carried out in partnership with the Bahamas Protected Areas Fund (BPAF), who is part of the regional Caribbean Sustainable Finance Architecture, a regional partnership supporting the implementation of innovative finance for conservation. If new financial mechanisms are proven to be viable, the BahamaReefs programme will support BPAF to implement them and create the capacity to manage long-term resources for the MPAs.
- Continuous screening of opportunities to be included in the BahamaReefs pipeline (Activity 2.2.2). This activity will be implemented by TNC Bahamas with the support of the NatureVest team. It will include three main streams of action: (i) develop the screening process with refined screening criteria to be determined together with UNCDF and the GFCR; (ii) carry out outreach to potential candidates in collaboration with strategic partners (including the SBDC, MPA managers, and private sector entities such as the Chamber of Commerce); and (iii) making available an application process (request for interest) through the programme online channels. TNC will work with the GFCR to increase the pipeline according to the availability of resources, ensuring expectations created can be fulfilled. This activity will also maintain a balance between increasing the pipeline with new projects and supporting the Micro, Small and Medium-sized Enterprise (MSMEs) supported by SBDC to evolve in the continuum of support offered by the BahamaReefs.
- Lessons learned exchange and results sharing to replicate solutions (Activity 2.2.3). This activity will be implemented by TNC Bahamas with the support of the global coral reef team and the communication team. It is focused on establishing a permanent exchange among the pipeline project partners and with other stakeholders in The Bahamas, in the Caribbean and globally. Knowledge deliverables planned include projects factsheets, videos, written stories, a series of local events (seven events are budgeted including workshops and community events).

3.3 Execution of investment opportunities

During the full proposal preparation period, TNC identified current and future projects, initiatives and businesses to compose the BahamaReefs preliminary pipeline. A set of criteria was established to ensure the projects identified and eventually supported are aligned with TNC's priorities in the country and the GFCR requirements. The following criteria were adopted:

1. Alignment with national commitments and priorities (Nationally Determined Contribution—NDC, National Biodiversity Strategy and Action Plan—NBSAP, National Development Plan—NDP, Sustainable Development Goals—SDGs)
2. Proven (science-based) direct (conservation or restoration) or indirect (reduction of degradation drivers) benefits to coral reefs
3. Increased community and ecosystem resilience to climate change effects
4. Generation of economic opportunities for Bahamians, including women
5. Potential for revenue generation that allows for financial sustainability of coral reef protection/restoration efforts in the long-term

TNC was able to identify interventions in four economic sectors, which are the priority sectors to tackle the drivers of degradation of coral reefs in The Bahamas:

- Tourism
- Coastal and marine resources
- Waste management
- Fisheries and aquaculture

It is important to highlight that the interventions presented in this section will need to be refined and developed during the programme inception phase (first six to nine months). This will include the signature of a legal agreement between TNC and the partners implementing the projects, preparation of a specific monitoring and evaluation plan, evaluation and due diligence by the UNCDF of the specific opportunities where its intermediation is necessary, and any other implementation details. More information on the partner organisations and their projects is provided in Annex VIII.

The specific investment opportunities composing the BahamaReefs preliminary pipeline are the following:

Table 1: BahamaReefs preliminary pipeline investment opportunities with most aligned outcome, type of intervention and partner institutions.

Most aligned BahamaReefs Outcome	Type of investment opportunities	Project name	Location	GFCR grant amount (USD)	Leading institutions
3	Finance Instrument	1. Blue Carbon and Resilience Credits	Abaco and Grand Bahama	1,262,500	TNC global
3	Finance Instrument	2. Reef and mangrove insurance	Nationwide	370,000	TNC global

Most aligned BahamaReefs Outcome	Type of investment opportunities	Project name	Location	GFCR grant amount (USD)	Leading institutions
2	Finance Instrument	3. Blue Economy Programme Accelerator	Nationwide	526,110	Access Accelerator Small Business Development Centre (SBDC)
1	Direct conservation	4. Blended finance for the effective managemen t of MPAs	Andros	300,000 (grant) and 500,000 (conc. loan*)	Bahamas National Trust (BNT) and Blue Finance
3	Direct conservation	5. Reef Rescue Network	Nationwide	450,000 (grant) and 450,000 (conc. loan*)	Perry Institute for Marine Science (PIMS)
1	Direct and indirect conservation	6. Minimizing the ecological impact of tourism in Elizabeth Harbour	Exuma	459,585 (grant) and 460,000 (conc. loan*)	Elizabeth Harbour Conservation Partnership
3	Direct Conservation	7. Scaling Coral Restoration - Coral Vita	Currently in Grand Bahama with potential to be nationwide	625,000	Coral Vita

* concessional loan terms need to be confirmed with UNCDF and informed to projects.

The description of each opportunity with the required GFCR support is presented below. An eighth opportunity was presented by the Dutch company Van Oord, based on an improved technology for coral reef restoration in large scale called Reef Engine. This opportunity is not included in the initial pipeline as the company requires a high level of grants (more than USD 2 million) and the business model to maintain the equipment in the long term is not clear. It may be a useful technology to be combined with other opportunities in reef restoration, including biodiversity offsets (which are not obligatory right now in The Bahamas). More information on the Van Oord technology is provided in Annex VIII.

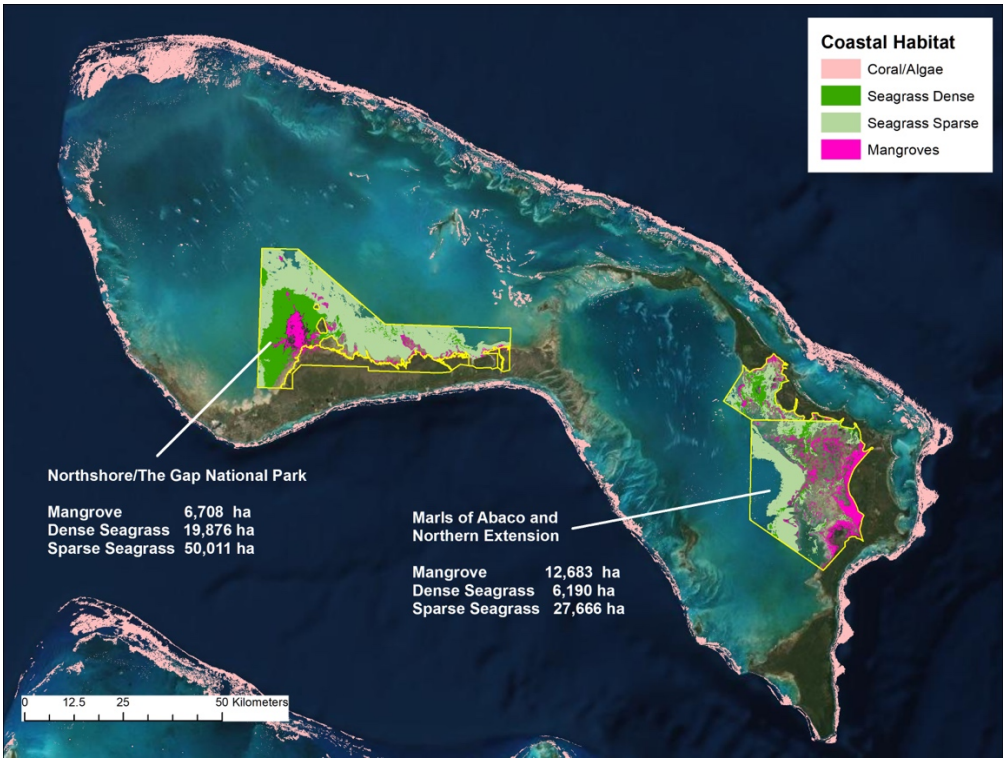
3.3.1 Blue Carbon and Resilience Credits

(Output 3.1 – Activities 3.1.1, 3.1.2, 3.1.3 and 3.1.4)

Current stage and future timeline

The TNC global team is currently working on developing a new revenue stream for coastal protection, the Blue Carbon and Resilience Credits (BCRC) initiative, in principle to be commercialized in the voluntary credit market. When implemented, the BCRC will be the first-ever credit to value two combined services of coastal wetlands: carbon sequestration and coastal resilience of communities (e.g., resilience against coastal flooding). TNC is developing "Resilience Credits" as a new methodology to advance SDG Goal 13: Climate Action. By combining carbon offset and coastal resilience credits, mangrove conservation and restoration projects can sell these credits to support ongoing conservation work. TNC engaged EY (formerly Ernst & Young) to conduct a market analysis of BCRCs and identified an appetite among a variety of corporate partners to purchase these credits (e.g., airlines, insurance companies) as well as interest from the GFCR Investment Window. This intervention is currently in the final stages of completing a pre-feasibility assessment in two sites in The Bahamas: in Abaco and Grand Bahama (50 km2 in each site, see figure below). The total area for all coral reef in Abaco and Grand Bahama is 1,236.50 km2.

Figure 3: Abaco and Grand Bahama coral reefs and associated ecosystems



These two islands were the most affected by Hurricane Dorian in 2019, having lost extensive areas of mangrove. Pending study recommendations, next steps would include: develop the carbon project documents, implement restoration activities and take blue carbon and

resilience credits to markets. It is expected that with the support of the GFCR, TNC Blue Carbon team can finalise the methodology in the next two years.

How it addresses drivers and barriers identified

Coral reef ecosystems often include adjacent mangroves. While coral reefs are not significant carbon sinks, nearby mangroves are. By targeting sites that contain coral reefs adjacent to mangroves, this new funding stream can directly benefit coral reefs because: (i) new MPAs can be created at sites that have both reefs and mangroves; (ii) activities to reduce pollution and sedimentation in mangrove systems improve water quality and promote the health of adjacent coral reefs; and (iii) protecting and restoring reef-proximate mangrove forests that serve as fish nursery grounds and supports the health of herbivorous fishes who graze algae that can overgrow coral and compete with coral for settlement space. In addition, mangrove restoration increases coastal storm surge protection, increasing the resilience of communities in developed areas to impacts from climate change—what could be observed in Abaco and Grand Bahama with Dorian.

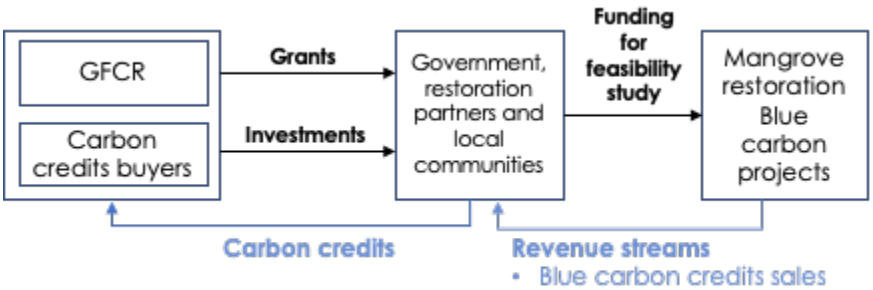
Local stakeholders' profile and how they will be engaged

Partners—Bonefish and Tarpon Trust (BTT), with support from The Bahamas National Trust (BNT), Friends of the Environment, and MANG—have developed a plan to plant 100,000 mangrove seedlings over the next three to five years in Grand Bahama and Abaco to replenish the mangrove seed bank and kick-start natural regeneration. Some economic opportunities for local Bahamian stakeholders will be generated by these restoration activities, such as mangrove nurseries and planting services. In addition, the pre-feasibility study assessed that 1,685 people are under flood risk in Grand Bahama, and 161 in Abaco. These local stakeholders would benefit from the mangrove restoration, which would reduce the area flooded. The estimated annual reduction in people flooded is 724 people in Grand Bahama and 35 in Abaco.

Financial model

A pipeline of BCRC projects can be supported through a blended finance approach that de-risks individual pilot sites. Grants would be pooled to develop site-based projects, while investment capital from potential credit buyers would provide long-term financing for restoration and conservation activities, as illustrated by the figure below.

Figure 4: Blue Carbon and Resilience Credits model.



GFCR required support and leveraging potential

It is expected that the GFCR provides grants to TNC global to finance the feasibility phase in the two pilot areas in Abaco and Grand Bahama. For this phase, the required grants are USD 203,500. This covers staff time and contracts for carbon data collection (carbon core sampling). If the feasibility phase confirms that the two projects are viable, grants will be needed for: develop the carbon project documents (USD 232,000 between staff and contractors); restore the two project sites (USD 1 million in 5 years, but only USD 800,000 were added in the budget for the first 4 years with USD 7,000 for TNC staff to follow the work); and take the credits to market with premium price based on the resilience methodology (USD 20,000). The Grand Bahama site is expected to generate around 350 thousand tons of CO2e over 20 years, an estimated gross revenue of USD 7.7 million, costs of around USD 800,000 and net cashflow of USD 3.5 million. The Abaco site is expected to generate around 211 thousand tons of CO2e over 20 years, an estimated gross revenue of USD 4.6 million, costs of around USD 800,000 and net cashflow of USD 1.9 million. If the projects prove to be viable and are taken to market, they are projected to generate a total net cashflow over 20 years of USD 5.4 million, with a total grant investment of USD 1,262,500 from the GFCR (considering 4 years) and USD 203,000 in grant co-finance. Therefore, the leverage potential ratio is of 1:3.7. If we consider only the revenues for the duration of the BahamaReefs programme (until end of 2029), which are USD 810,000, the leverage ratio is 1:0.6.

Path to financial sustainability

If the BCRC initiative is established as a possible credit in the market, future project sites will be identified and developed in a grouped approach, reducing costs of project development. These costs will be covered by carbon credit buyers, who will invest in advance and get paid with the certified credits.

3.3.2 Reef and mangrove insurance

(Output 3.3, Activity 3.3.1)

Current stage and future timeline

Insurance for nature is mostly in the exploratory phase in The Bahamas. However, TNC's experience with reef insurance is increasing in the region with Mexico's Quintana Roo state government having purchased their third annual policy in 2021 for reef insurance. Using insurance to secure investments in reef restoration and recovery following storm impacts is gaining traction, with additional policies expected to be purchased this year. The requested support included is focused on replicating the Mexico reef insurance mechanism in The Bahamas. The reef insurance mechanism in The Bahamas is in feasibility phase, with grant support requested for the development of the business case. A second approach TNC is looking at to expand opportunities and diversify funding sources is the development of a mangrove insurance. The mangrove insurance would be used in The Bahamas in mangrove areas that benefit coral reefs. In the Bahamas, most mangrove areas have direct influence on coral reefs. Mangrove insurance has not been implemented in any location yet. In 2020, a prefeasibility study was completed, and The Bahamas was identified as a prime candidate for further exploration because it contained some of the most cost-effective opportunities for mangrove restoration A full feasibility study for mangrove insurance, spanning Mexico, Florida, and the Caribbean is ongoing. The mangrove insurance work will depend on the results of this ongoing study, so no grants were requested in the BahamaReefs budget for now.

How it addresses drivers and barriers identified

Both reef and mangrove insurance products have the potential to be integrated with the restoration interventions identified (Coral Vita, Reef Rescue Network, Blue Carbon Resilience Credits) and be offered to different actors, including governments. This integration can happen, for example, in a reef restoration project, as the mechanism can help recover restored reefs in case of storm events, supporting the restoration outcomes. Depending on who is financing the restoration effort (governments, hotels, other coastal developers), the cost of the insurance can be included in the restoration project overall budget. These possibilities need to be studied in The Bahamas context, which is included in the business case phase. The insurance mechanism improves the business environment by providing greater certainty that the timely recovery and restoration of important coastal ecosystems like reefs and mangroves is prioritized and supported financially following storm events.

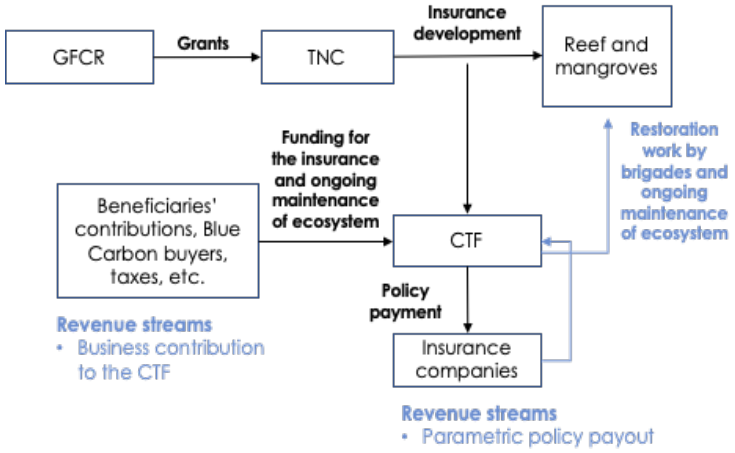
Local stakeholders' profile and how they will be engaged

A key element of the insurance mechanism is to have prepared facilities on the ground. These include coral nurseries and trained personnel to assess damage in the case of an event and quickly deploy repairing actions. The groups trained for repairing the reefs are called reef brigades, and they will be composed of local communities in the areas where the insurance mechanism is established. Reef brigades may also include park staff/wardens, government officers like fisheries officers, and NGOs. To form reef brigades in The Bahamas, TNC can work with established restoration partners, such as the Perry Institute for Marine Science (PIMS), which leads the Reef Rescue Network (see below) involving local dive shops. PIMS trains local divers to restore reefs as part of their tourism offer. These trained restoration divers can lead reef brigades within the insurance mechanism, including other community members. They are one of the most invested groups in the reef recovery, as their business depends on healthy reefs, they already know the reefs conditions, and they can rapidly assess damage and start repair.

Financial model

The identification of funding sources for the insurance model is part of the development of the financial instrument in The Bahamas. Funding is necessary for the annual insurance policy payment and also for ongoing conservation and restoration works in the targeted ecosystems. Funding may come from direct beneficiaries, such as hotels with coastal properties or municipalities, and also through combining this model with other instruments. The existence of a conservation trust fund (CTF) is another key element of the model, as this is a structure to aggregate the necessary resources, acquire the policy, administer the funding directed to ongoing activities, receive the policy payout in case of an event and quickly deploy this as grants to the reef brigades.

Figure 5: Reef and mangrove insurance model.



GFCR required support and leveraging potential

TNC is requesting USD 370,000 in grant funding to build the business case for reef insurance in The Bahamas. The business case includes estimating the economic benefits provided by reefs to the local economy and to the livelihoods of communities; the damage that hurricanes can cause to the reefs and the cost of reducing it; the losses to the economy and impact on livelihoods that may be caused by the damages to reefs by hurricanes; and assessing if there is a business case to repair the reefs. If the business case proves that the mechanism is feasible, the following activities would be carried out and the estimated budget would be included in Year 2 of the programme: assess the institutional and regulatory framework; design the financial structure and institutional arrangement; and implement the insurance mechanism, setting up the emergency fund and buying the insurance. If the mechanism is developed and implemented, it may generate revenues in the form of pay-out payments, which will depend on the parametric insurance established and the intensity of the events damaging the ecosystems. Therefore, it is difficult to estimate the leverage potential.

Path to financial sustainability

There are several potential pathways for the financial sustainability of this mechanism. One of them is the establishment of a large enough endowment in the CTF, which can maintain the annual payment of the policy and also finance ongoing conservation and restoration actions. It is important to mention that as other sites develop the reef and mangrove insurance methodology, the costs of replicating it are expected to decline. Another possibility, as mentioned above, is to embed the insurance into restoration mechanisms, such as the blue carbon projects. The price of the annual policy would be included in the carbon and resilience credits sold to investors.

3.3.3 Blue Economy Programme Accelerator

(Output 2.1, Activities 2.1.1, 2.1.2 and 2.1.3)

Current stage and future timeline

The Access Accelerator Small Business Development Centre (SBDC) was founded in 2018 by the University of the Bahamas, the Bahamas Chamber of Commerce and the Ministry of Finance. Its goal is to increase employment and wealth generation opportunities in The

Bahamas through the development and advancement of the Micro, Small and Medium-sized Enterprise (MSME) sector. SBDC offers three main services to entrepreneurs delivered through its various programmes: business advisory services, training and entrepreneurial programming, and access to capital. Advisory services typically include business counselling, business mentorship, business plan development, financial statement preparation and analysis, exporting and importing support, disaster recovery assistance, research and business coaching. By the end of FY 2019, the SBDC had funded USD 49.9 million to MSMEs, including disaster recovery support after Hurricane Dorian and business continuity support during the COVID-19 pandemic. TNC is negotiating with the SBDC to collaboratively establish a Blue Economy Programme Accelerator, to focus on MSMEs operating reef-positive businesses and a letter of support from SBDC for BahamaReefs is included in Annex VIII. Some preliminary sectors/economic activities that could be supported are: sustainable tourism, sustainable fisheries and aquaculture, wastewater/plastic waste management, organic agriculture, and ecosystem restoration services. For now, the accelerator is the only BahamaReefs intervention that could support fisheries and aquaculture initiatives. It is expected that it selects business ideas in this sector, including seaweed farming, sea urchin reproduction, sustainable fisheries, among others. TNC would be the technical partner, assessing projects' potential benefits and risks in environmental and social aspects, ensuring they can be considered reef-positive businesses, while SBDC would carry out the financial assessment and provide its current services. This intervention is still in a negotiation phase. It is anticipated that SBDC and TNC can sign an MoU in the next couple of months to jointly develop the programme. The development of the programme would take three to six months to launch following the start of the BahamaReefs.

How it addresses drivers and barriers identified

This programme has the potential to address several drivers of degradation, as it may finance enterprises in several economic sectors. Threats potentially addressed include: destructive fishing practices, poor agriculture and livestock practices (leading to harmful runoff and poor water quality), unsustainable tourism, poor wastewater treatment, garbage and solid waste (plastics, leaching from landfills, etc.) and invasive species. Reductions in any of these threats would lead to benefits for coral reefs. To ensure the businesses supported are addressing identified threats, criteria will be established by TNC and SDBC for the selection of initiatives. Preliminary criteria include: operations model that include proven benefits to reefs; proximity to (or influence in) MPAs and climate refugia; minimal carbon footprint; assessed social and environmental risks and mitigation measures; emphasis on marginalized groups including women economic empowerment.

Local stakeholders' profile and how they will be engaged

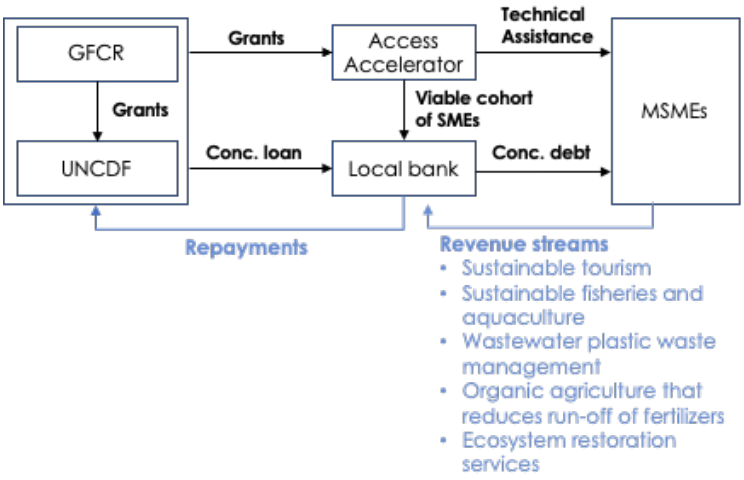
The local stakeholders to benefit will depend on the enterprises that enter the technical assistance cohort of the Blue Economy Programme Accelerator and receive funding through the local partner local banks. One important criterion is that the SBDC will only support enterprises that are fully Bahamian owned or have at least 50% ownership by Bahamians, ensuring benefits to local people. According to the SBDC 2019-2020 Annual Report, in the FY 2019, 443 jobs were created.

Financial model

The financial model is to use grants for the design and launch of the Blue Economy Programme Accelerator, and then use the current structure of the SBDC to provide technical assistance to Bahamian MSMEs operating reef-positive business. The participation of TNC in the process

would also be financed by grants from the GFCR. Together, SBDC and TNC will select up to 50 MSMEs to receive acceleration support (register of new enterprises, licenses and permitting, training, review of business model by specialists, mentoring, financial model development, etc.). After the first cohort has graduated, the viable enterprises will have facilitated access to investment capital under concessionary conditions through the partnerships SBDC already has with several local commercial banks. The MSMEs that access investment capital will repay this with the revenues generated from their business models, as illustrated in the figure below.

Figure 6: Blue Economy Programme Accelerator potential model.



GFCR required support and leveraging potential

The SBDC has an already-established model and would apply it to the Blue Economy Programme Accelerator with the partnership with TNC. For this, USD 526,110 in grants are required from the GFCR to finance the design and launch of the Blue Economy Programme and its implementation. From this amount, USD 400,000 would be transferred to SBDC through the UNCDF Blue Bridge, to finance staff and communication costs for the design and launch of the programme (USD 150,000), and to cover grants of USD 5,000 to each of the 50 selected MSMEs for business advisory services in two years (USD 250,000). The remaining cost refers to TNC staff participation and would be transferred directly from the GFCR to TNC. The SBDC already offers a guarantee to partner banks and has a USD 5 million capital facility with one of the partners to be accessed by future cohorts. A potential innovation to be negotiated in the BahamaReefs inception phase would be a concessional loan from the GFCR through the UNCDF to increase the reach of the programme. This is not necessarily how the final design of the programme will be, as the SBDC already has access to capital in the country. Considering the initial grant request and the potential to leverage the existing USD 5 million investment capital, the leverage potential ratio is 1:10.

Path to financial sustainability

There are some potential pathways for the financial sustainability of this mechanism. One of them is the SBDC expanding its partnerships with other local investors, something they have been already working at. Another possibility is the idea of one of their partners taking a concessional loan from the GFCR platform, through the UNCDF, as mentioned above. A third

possibility would be if the GFCR Investment Window could have an equity investment into the programme. All possibilities will depend on the results of the first cohort of MSMEs supported.

3.3.4 Blended finance for the effective management of MPAs

(Activity 1.3.3)

Current stage and future timeline

Blue Finance has developed a co-management model based on a blended finance approach, which has been tested in several countries, including the Dominican Republic and Belize in the Caribbean region. The objective is to improve marine biodiversity and sustainable use of marine and coastal ecosystems through a sustainable finance strategy. In The Bahamas, Blue Finance has partnered with the Bahamas National Trust (BNT) to help it develop tangible revenue mechanisms by 2022 for the effective management of the MPAs. Blue Finance plays an advisory and technical assistance role, facilitating access to investments, developing the business models, supporting local coordination and management (profiling, recruitment, capacity building and co-supervision with BNT of key personnel), formulating different plans, supporting ESG monitoring, reviewing performance indicators for social and environmental impacts. BNT is the MPAs co-manager, responsible for all activities in the areas and the implementation of the management plans. The initiative has already started in 2020 with a pilot phase in the Andros MPAs network,[15] which includes 5 MPAs summing 6000 km2, with the potential for upscaling to other MPAs. Initial funding has been secured from different sources (United Nations, Blue Finance, others). The future timeline is to receive GFCR grant support in the first quarter of 2022 for Andros MPAs and following that, the areas will be investment-ready in 10 months.

How it addresses drivers and barriers identified

This intervention provides direct conservation actions to address factors threatening the reefs. The improved management of the MPAs will strengthen natural resource management, reduce illegal and unsustainable fishing, restore crucial marine habitats and prevent unsustainable tourism.

Local stakeholders' profile and how they will be engaged

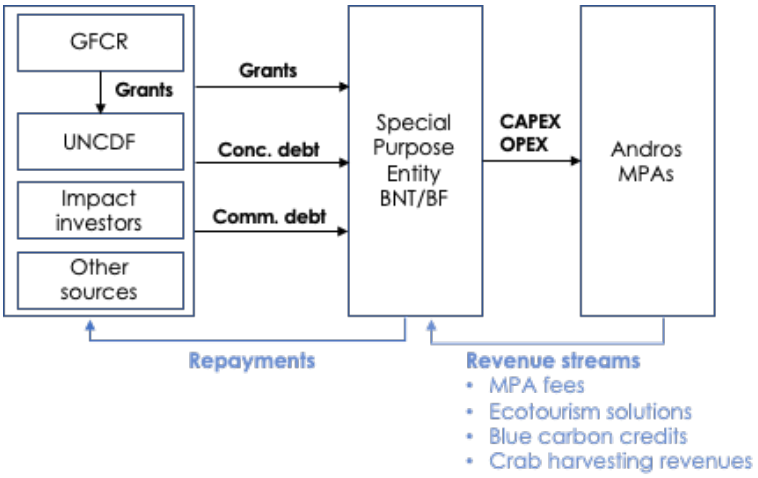
In the four targeted MPAs in Andros, there are community members who can potentially benefit from this intervention. By protecting or enhancing ecosystem functioning, ecological processes and ecosystem services, coral reef-dependent communities will improve their living and increase resilience to climate change effects. In addition, an increase in household income is expected in fishing communities, in cash and in kind (increased proteins). The intervention is also expected to generate up to 10 new MSMEs (including individual enterprises), operating in ecotourism, sustainable fisheries, aquaculture and potentially in restoration works (e.g., replanting of mangrove). These new MSMEs can apply to receive support from the SBDC through the Blue Economy Programme Accelerator, if they are initiated when SBDC and TNC launch the programme. Additionally, up to 30 fishers may receive new income from MPA resource monitoring. The project adopts an inclusivity target of having up to 50% of the new MSMEs led by women and 30% of MPA staff positions held by women.

[15] West Side National Park, Crab Replenishment Reserve, North and South Marine Parks, Blue Holes National Park

Financial model

The financial model presents an innovative and scalable approach that uses catalytic and development finance to mobilise commercial impact finance into MPAs, with expected results of improved food security, more sustainable development and enhanced climate change resilience. By restoring crucial marine habitats, the MPAs will improve the tourism offer and marketing appeal and create opportunities in the blue economy sectors. The revenue streams combined from tourism fees, ecotourism solutions, blue carbon credits and crab harvesting will enable investor repayment and maintain a sustainable flow of resources in the long term, as illustrated by the figure below.

Figure 7: The Blue Finance model.



GFCR required support and leveraging potential

This project is to be supported through the UNCDF Blue Bridge. The project requests USD 300,000 in grant support, with USD 120,000 as preparation grant, which will be used in project design and execution, and USD 180,000 potentially as a recoverable grant to finance capital expenditures (CAPEX). Initial needs for CAPEX include patrol boats, mooring and demarcation buoys, visitors facilities, underwater trails demarcation and field research station refurbishment. In addition, a concessional loan of USD 500,000 would allow for additional CAPEX with a focus on both MPA management and business development (ecotourism facilities, programmes and early-stage work capital). The specific terms of the recoverable grant and the concessional loan will be discussed and defined with UNCDF. With these amounts, the partners have confirmed the interest of the Sustainable Ocean Fund (SOF) to provide an additional USD 500,000 in commercial debt, which will allow for additional CAPEX, business development and a blue carbon project certification. An additional amount of USD 100,000 will be mobilized in grants from other sources to complement the GFCR and SOF finance, which are already in the process of being confirmed. In addition, BNT can secure that at least USD 100,000 will be invested in Andros annually, from the public resources they receive. The MPAs are expected to achieve additional annual revenues of around USD 800,000 from 2025 onward, estimated to come from MPA fees (20%), ecotourism programmes (40%), and blue carbon (40%). Crab harvesting or farming potential revenues still have to be studied. Considering a period of 8 years (from 2022 to 2030), the GFCR grant window resources totalling USD 800,000 and USD 900,000 in grant co-finance, would leverage a total of USD

6.4 million in investments (USD 500,000 from SOF) and projected revenues (USD 5.9 million from 2022 to 2029). This is a leverage ratio of 1:4.

Path to financial sustainability

This financial model has a clear pathway to financial sustainability based on the establishment of a mix of revenue streams. In the long term, after repaying the investors, the MPAs will be financially capable of maintaining their operating costs.

3.3.5 Reef Rescue Network

(Output 3.2, Activity 3.2.1)

Current stage and future timeline

The Reef Rescue Network (RRN) was established in 2017 by The Perry Institute for Marine Science (PIMS) with a grant from the Disney Conservation Fund. The RRN currently includes 24 partners in The Bahamas, representing dive operators (11), NGOs (7), and other tourism related businesses (as detailed in Annex VIII). The network is expanding to add at least three new dive operators and one community-based group in 2021. Within the RRN, PIMS trains local partners in effective methods for coral restoration, conducts site assessments and helps establish coral nurseries that the partners maintain and outplant corals from to their dive sites (with site selection by PIMS, as well as follow-up data collection and evaluation). Local partners offer coral restoration experiences to guests using a PADI Reef Rescue Diver specialty course developed by PIMS, or similar experience (for non-PADI affiliates). PIMS is currently working with the Ministry of Tourism, Out Island Promotion Board, and others to assist the partners with building local capacity, business planning and marketing around participatory coral restoration for their customers to help them grow their businesses and benefit coral reefs. Funds during the next two years will be used to add new partners and expand the scale of coral restoration conducted by existing partners; make the programme self-sustaining by making coral restoration more profitable for partners; and build local capacity for coral restoration within the dive industry, including an increased involvement of local PADI Dive Masters with a focus on gender equity.

How it addresses drivers and barriers identified

The initiative helps restore populations of critically endangered coral species (primarily *Acropora spp.*) that are not recovering after their populations were decimated by disease decades ago. This is done by increasing genetic diversity at sites, increasing biomass and increasing reproductive capacity and egg fertilization success. Since 2017, the RRN has created 30 nurseries with 3997 coral outplanted in The Bahamas. The technique used is in situ midwater nurseries—either tree nurseries or line nurseries. In terms of success rate, the best data available is from the nurseries established with Disney at Castaway Cay in 2008 and restoration sites around that island. At one site, annual survival averaged 75% per year for *Acropora cervicornis* and *A. palmata*, but at the rest of sites survival averaged 90% (including through several hurricanes). The one site had lower survival because of high predation rates. PIMS has also tracked change in percentage cover of live coral, which varies among reefs based on how many corals were outplanted. For sites where they outplanted from 2010 to 2018, they continue to see 1% annual increase in live coral cover and annual 3% increase in coral volume.

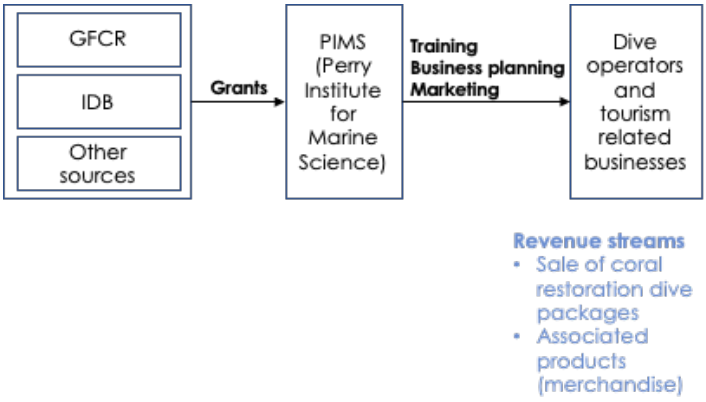
Local stakeholders' profile and how they will be engaged

The initiative supports a valuable part of The Bahamas tourism economy, particularly in the Family Islands, that was growing prior to the COVID-19 pandemic but is now suffering. The number of new jobs created will vary among partners, but projections are for 100 or more jobs for Bahamians to be created through this intervention. This number is based on a consultation carried out with the RRN about their projections for job creation due to increased business scale. Furthermore, the network is expected to engage 200-plus Bahamians involved in coral restoration through non-profits and other partners, and to train at least 15 Bahamians to be PADI Dive Masters or other higher-level certifications. The initiative has prioritized capacity building for women to increase their employment opportunities. As such, they have committed to training additional 10 Bahamian women as reef rescue diver instructors with PADI in the first two years of the BahamaReefs programme. PIMS is also looking to get PADI to waive fees for training a number of Bahamian women as scuba instructors.

Financial model

PIMS has carried out resource mobilization for the development of the concept, the initial establishment of coral nurseries to demonstrate proof of concept, monitoring and evaluation costs, as well as some training costs and expansion of the RRN to new partners. The financial model envisioned for the future is that the network partners can cover the basic costs of restoration and improve livelihoods through the sale of coral restoration dive packages (day packages and overnight packages) and associated products (merchandise, etc.), as illustrated in the figure below.

Figure 8: The Reef Rescue Network business model.



GFCR required support and leveraging potential

PIMS currently has a proposal in partnership with Coral Vita in the final approval phase of the IDB's Compete Caribbean Cluster programme, requesting USD 400,000 to support capacity building, business planning and marketing for the for-profit partners that are dive operators, or are in related tourism fields. IDB will not fund materials, supplies and other necessary expenses for expanding the initiative. Moreover, it will not fund NGO partners, including PIMS, who are doing the oversight, planning, data collection, monitoring and evaluation as part of the RRN. The request to the GFCR grant window is to provide USD 450,000 for covering PIMS' costs in the first two years of the project (development phase). After that, PIMS projects an annual cost of USD 150,000 to maintain the network activities (maturity phase). PIMS is open to access a concessionary loan of USD 450,000 to cover the network costs for years three to

five, when a financial sustainability model would be put in place with the partners to maintain the network. PIMS anticipates that the project will result in more than 10,000 customers per year engaged in coral restoration throughout the network of for-profit partners. This is expected to generate revenues in excess of USD 3 million annually, after the development phase of 24 months. Considering the total amount of USD 1,300,000 in grants and a possible loan (considering GFCR and IDB), and the projected revenues in the maturity phase (6 years), the leverage potential ratio is 1:14.

Path to financial sustainability

The challenge in this intervention is to generate enough revenues so that the network partners can contribute with the basic running costs, including monitoring and evaluation, carried out by PIMS. The science-based work provided by PIMS is what makes the network a strong direct conservation initiative. For now, all revenues go back to the dive shops, and no resources are provided to PIMS by the members. PIMS' initial vision was to engage dive businesses that were significantly affected by Hurricane Dorian and COVID-19 and will need some time to establish or strengthen their businesses in the next two years. There is an opportunity for member dive shops owned by Bahamians (about half of the members) to access the Blue Economy Programme Accelerator to be launched by the BahamaReefs. As members stabilize, they may grow their businesses by accessing debt. PIMS will work to streamline annual costs during the development phase and expand the number of network partners. It will also work on a funding model for the network costs, to create a financially sustainable initiative after the five years of support from the BahamaReefs programme. This could be done through charging a percentage of dive packages (something already done by PIMS with RRN members in Saint Lucia), creating a dive tag, and creating different categories of partners, where partners contribute differently to the network's annual costs.

3.3.6 Minimizing the ecological impact of tourism in Elizabeth Harbour

(Activity 2.2.1)

Current stage and future timeline

The Elizabeth Harbour Conservation Partnership (EHCP) is a Bahamian community-based non-profit started in 2010 with funding from the GEF-funded "Integrating Watershed and Coastal Areas Management (GEF-IWCAM)" project. The harbour has had a history of sewage contamination predominantly from visiting yachts' discharge of wastewater, as well as pollution from nearby commercial properties containing institutions such as restaurants and shops. Further to this, visiting vessels discharge wastewater, causing environmental degradation and eutrophication. The seagrass beds have also suffered from anchoring. EHCP is initiating a new project to improve harbour management and water quality by minimizing the impacts of boating tourism to seagrass and coral reefs. This will be achieved by installing mooring fields and pump-out services for Elizabeth Harbour and creating economic opportunities for the local community. This initiative was already envisioned by the IWCAM project, but the model implemented in 2010 proved unsustainable. The pump-out boats operated for six years, but were damaged by Hurricane Matthew in 2016. They did not realize the full potential, as there was a lack of coordination with the government enforcement authorities, so boats used the pump-out services voluntarily only. Moorings (15) installed for overnight use in a high-use area were not officially designated to any entity after the IWCAM project. The moorings were used but not maintained properly, and within a year most had been damaged or failed. The main lesson learned was that a self-sustaining harbour management structure is needed, to work in close collaboration with the government entities.

This new concept is being developed, including a strategic and financial plan, which the EHCP intends to use to fundraise for the capital and first two years of operating costs. The planning and installation phase is supposed to be finished in 2022, and the initiation and development of services between 2022 and 2024 (development phase). Two more years are envisaged for the business model to achieve maturity and be self-sustainable in 2026.

How it addresses drivers and barriers identified

The wastewater management directly addresses the threat of pollution, benefitting coral reefs and adjacent ecosystems. The moorings address the physical damage to seagrass beds caused by anchoring. The planned activities will also include a monitoring and evaluation effort to determine potential restoration actions to recover the seagrass bed in the harbour, a future project that may be financed through blue carbon.

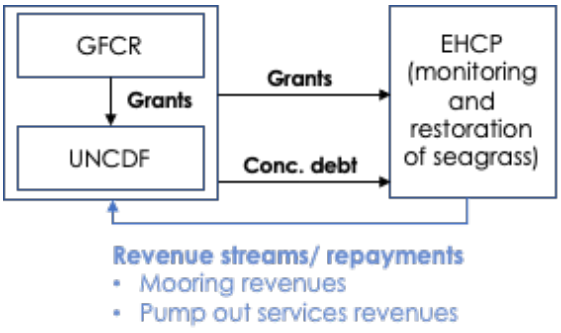
Local stakeholders' profile and how they will be engaged

It is expected that the management of moorings and pump-out services will create jobs and/or entrepreneurship opportunities for at least five to six people from the local community (these new positions would include a full-time Natural Resource Manager, to oversee operations and conservation activities, two full-time seasonal wardens, to manage and maintain moorings and pump out services, and two part-time seasonal wardens, to assist with moorings and pump out operations). Indirectly, the better management of the harbour and the recovery of the coastal habitats will improve living conditions for a broader group of community members, with improved food security and coastal resilience provided by less damaged coral reefs.

Financial model

The financial model is to use grants and possibly a concessional loan for installing the required infrastructure, acquiring support vessels, and training the community members that will manage the services. With the structures in place and trained personnel, the services will generate revenues from mooring rental services and pump-out services, which should be sufficient to cover operational costs in the long term. Although there is not sufficient regulation and enforcement in place, the EHCP will play a significant role in advancing the creation of local port regulations and working with government agencies such as the Police Force, Port Department, Department of Environmental Health, and Port Authority to establish adequate oversight of the harbour and ensure enforcement takes place. A monitoring and enforcement plan will be drafted in year 1 with the leadership of the EHCP. This plan will outline the responsibilities of the EHCP, government agencies, and the BNT in enforcement, monitoring, and conservation activities.

Figure 9: The Elizabeth Harbour management model.



GFCR required support and leveraging potential

This project is to be supported by the UNCDF Blue Bridge with resources from the GFCR grant window. UNCDF would provide EHCP with USD 459,585 in grants and additional USD 460,000 through a concessional loan. This level of funding would cover all of the anticipated infrastructure costs, including 60 moorings, two pump-out boats, ecological monitoring costs and training. It would also cover the cost of the staff for the management structure in EHCP. The EHCP requested that these resources are provided 100% as grants but are open to explore the possibility of a concessional loan, subject to the loan terms still to be defined by UNCDF. They expect to have revenues of around USD 83,760 in the first year; USD 360,560 in the second year; USD 424,800 in the third year; and USD 506,720 from year four on. Considering the total amount of USD 919,585 in grants and a possible loan, and the projected revenues for 8 years, the leverage potential ratio is 1:4.

Path to financial sustainability

It is expected that after receiving the grant support, EHCP can maintain the moorings and pump-out services with the revenues they generate. EHCP projected revenues considering the average number of boats per month based on real, average observations (assumptions for their projected revenues are detailed in Annex VIII). An envisioned possibility is that EHCP may be able to apply for the Blue Economy Programme Accelerator support.

3.3.7 Scaling Coral Restoration - Coral Vita

(Output 3.4, Activity 3.4.1)

Current stage and future timeline

Coral Vita is a commercial company founded in 2015 by two graduate students at the Yale School of the Environment. The company has been operating in The Bahamas since 2018, and has raised more than USD 3.3 million in investment funding and more than USD 600,000 in grant funding for their reef restoration initiative. In Freeport, Grand Bahama, Coral Vita has built the world's first commercial land-based coral farm for reef restoration. Coral Vita has initially partnered with the Grand Bahama Port Authority and the Grand Bahama Development Company, besides a network of national and international partners. Coral Vita's approach is innovative compared to traditional restoration, as its primary emphasis is on land-based coral aquaculture rather than ocean-based nurseries. This offers key advantages, such as being able to acclimate corals to predicted future ocean conditions by controlling parameters, accelerate coral growth rates through micro-fragmenting, improve the economies of scale for farming, initiate R&D projects to advance the field's efficacy, and potentially supply an entire region's reefs from a centralized facility. Coral Vita takes a commercial approach to unlock critically needed sustainable financing to support ecosystem-scale restoration. Simultaneously, the farm serves as a revenue-generating eco-tourism attraction. In early 2021, the company signed a restoration service contract with the Bahamian Government. This was a USD 30,000, three-month project to fund the growth of several hundred coral colonies to be outplanted onto historically degraded reefs important for tourism and fishing south of Freeport, Grand Bahama. It also allowed the hiring of two Bahamians as paid interns as part of blue economy work force development and the production of three videos for national distribution about the importance of healthy coral reefs to The Bahamas, the impact of climate change on coral reef health, and Stony Coral Tissue

Loss Disease. A final report was recently submitted to the Government, which is reviewing it. Metrics and site for restoration were selected by Coral Vita, and coral growth is ongoing. The funds for this project were matched by the Grand Bahama Port Authority.

How it addresses drivers and barriers identified

The initiative directly relates to sustaining and maintaining coral reef ecosystems, slowing their degradation by actively planting resilient corals into impacted reefs to boost reef health. It also addresses degradation through educational and community-based programme activities.

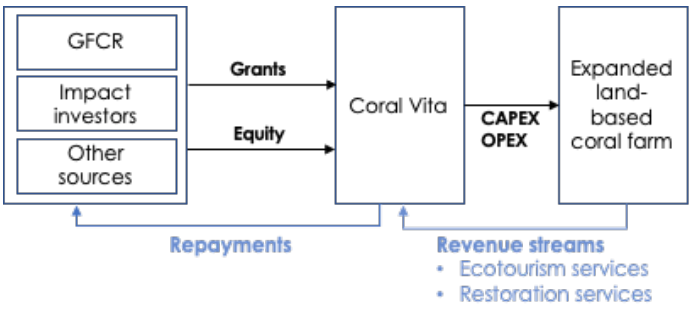
Local stakeholders' profile and how they will be engaged

The coral farm is not only a production facility for restoration but is also an education centre for the local community, as well as an eco-tourism attraction. By raising awareness about the importance and opportunities of reef conservation and restoration, they are helping to build community stewardship over the reefs. They host regular school field trips to the farm, and currently employ five full-time Bahamians on staff and two Bahamian summer interns. They have also employed more than a dozen local contractors at different points over the past three years. As operations grow and tourism begins to open back up, they plan on increasing the Bahamian staff working for Coral Vita.

Financial model

The financial model is based on an expanded land-based coral farm that can generate enough revenues through ecotourism and restoration services, as illustrated in the figure below.

Figure 10: The Coral Vita business model.



GFCR required support and leveraging potential

It is expected that this project receives initial support through the UNCDF Blue Bridge. Coral Vita is currently seeking USD 625,000 in grant funding to demonstrate the commercial viability of the initiative over the next 18 months. This funding will cover operational costs like labour and utilities as they develop the ecotourism and restoration as revenue streams that will sustain operations in the future. After this 18-month development phase and the restart of the tourism market following the pandemic, Coral Vita aims to have assessed the tourism revenue potential and begun work on multiple restoration contracts that will demonstrate the economic viability of the model when scaled. In approximately 18 months, Coral Vita plans to raise a Series A investment round. Depending on the rate of growth at the time, this round may target between USD 5 to 10 million in funding. This may likely include

the expansion of the Grand Bahama farm to a large-scale facility, as well as potentially funding new farms created in additional countries. At the large-scale, up to 100k coral fragments can be grown each year in the Grand Bahama farm. Restoration as a Service (RaaS) customers will extend to other Bahamian islands, including resorts, coastal private property owners, developments, and potentially conservation financing mechanisms (e.g., reef insurance, blue bonds, etc.). Depending on the success of both restoration impact and revenue potential, this farm can be further upgraded to a 'gigafarm' capable of growing ~1 million coral annually and supplying large-scale restoration projects throughout the entire country. Revenues combining RaaS and ecotourism projected only for The Bahamas are of USD 1,175,000 until 2023 with the small-scale farm; USD 4,700,000 until 2026 with a large-scale farm; USD 7,700,000 in 2026 with a giga-scale farm; USD 12,700,000 from 2027 on. Considering the USD 1.2 million in grants (USD 625,000 from the GFCR and USD 600,000 in co-finance grants) and the USD 10 million in private equity with USD 51,675,000 million in projected revenues until 2029, the leverage potential from grants to investments and revenues is 1:50.

Path to financial sustainability

Coral Vita's plans for financial sustainability are based on selling ecotourism products and services and reef restoration as a service, selling projects to stakeholders ranging from hotels and cruise lines to governments and insurance companies. They also plan to sell opportunities for private and corporate reef sponsorships.

4. Expected Results

At this point of the programme development, the expected results are presented as high-level achievements, in most cases without a quantitative target. TNC will take the first six to nine months of the programme implementation as an inception phase, when formal agreements will be signed with each partner and a specific Monitoring and Evaluation (M&E) plan (including quantitative targets and indicators) will be developed for each intervention. The M&E plans will allow the review of this table of expected results and the addition of quantitative targets where possible.

Expected results	Short term (1 to 3 years)	Mid-term (5 to 10 years)	Long term (10+ years)
Outcome 1: Improved management effectiveness of priority coral reef sites, including climate refugia			
1.1 Climate change refugia are identified and effectively managed within and outside existing MPAs.	• Climate change refugia identified throughout the country and local validation as priority sites[16] • Streamline use of improved methodological tools to address climate change and biodiversity (e.g., increased number of entities using structure for motion (SfM) techniques to collect coral restoration monitoring data, finding best substrate for branching vs. massive coral recruits to settle on in labs, improved micro-fragmentation techniques, research on the optimal size to outplant lab grown corals, etc.)	• Improved management effectiveness of priority sites (i.e., climate refugia)	• Improved resilience of priority sites to climate change impacts • Biodiversity values increased at priority sites (i.e., climate refugia) • Proposed or expanded marine managed areas (MMAs) in priority sites (i.e., climate refugia)

[16] See Annex VI for a detailed description of available data and work already carried out by TNC under the heading "Identifying resilient reefs in the Bahamas and the Caribbean."

Expected results	Short term (1 to 3 years)	Mid-term (5 to 10 years)	Long term (10+ years)
1.2 Drivers of degradation within MPAs are identified and prioritized for intervention to support resilient coral reefs and adjacent communities.	• Drivers of degradation within MPAs are identified and baselines are established to monitor the drivers • Priority actions implemented to decrease threats affecting priority MPAs	• Decreased threat levels to marine ecosystems • Enabling conditions in place to sustain decreased threat levels (i.e., policies addressing wastewater and solid waste disposal, etc.)	• Biodiversity values increased at priority sites as a result of decreased threat levels • Enabling conditions in place to sustain decreased threat levels (i.e., policies addressing wastewater and solid waste disposal, etc.)
1.3 Increased long-term funding for management of priority sites and capacity created to operate proceeds with new financial mechanisms (e.g., an endowment fund, MPA co-management model, etc.). *(Investment opportunity: Blended finance for the effective management of MPAs)*	• Improved capacity for conservation practitioners in carrying out management activities (includes business development, accounting, management) and reef restoration projects • New financial mechanisms identified with roadmaps designed	• Improved management effectiveness at priority sites • Strengthened community support and integration into reef conservation activities • Additional revenue streams coming from new financial mechanisms implemented	• Continuous improvements in management effectiveness at priority sites • Sustained public buy-in for supporting reef conservation activities • Sustainable funding streams consistently accessed and flowing to reef conservation projects
1.4 Enabling policies are catalysed to support coral conservation and restoration.	• Policies to modify or develop with a workplan agreed with government authorities	• Reef conservation policies are submitted for consideration by the government • Increased awareness of reef conservation	• Growth of the Blue Economy • Enabling conditions in place for continued investments to be made in

Expected results	Short term (1 to 3 years)	Mid-term (5 to 10 years)	Long term (10+ years)
		efforts results in continued support for activities • Increased policy support for reef positive businesses	successful reef and coastal restoration activities • Improved management effectiveness of the marine space • Improved biophysical conditions of priority sites
Outcome 2: Livelihoods of reef-dependent communities are strengthened by reef-positive businesses			
2.1 A reef-positive business accelerator is designed and implemented for Micro, Small and Medium-size Enterprises (MSMEs). *(Investment opportunity: Blue Economy Programme Accelerator)*	• Reef positive accelerator established and operationalised • Reef positive businesses receive support from the accelerator, including business advisory, training and access to investments	• Businesses implement successful initiatives to reduce the incidence of anthropogenic threats to the marine environment • Beneficiaries experience increased economic benefit from sustainable reef-positive businesses	• Net positive growth and performance of supported MSMEs • Growth of the Blue Economy • Improved biophysical conditions of marine space • More reef positive businesses opened or expanded • Continued support from the private sector and other stakeholders • Decreased threat levels to marine ecosystems

Expected results	Short term (1 to 3 years)	Mid-term (5 to 10 years)	Long term (10+ years)
2.2 Reef-positive businesses receive investments (e.g., community-based organisations, larger businesses, etc.). *(Investment opportunity: Minimizing the ecological impact of tourism)*	• Improved management effectiveness of marine space • More viable economic sustainable livelihood opportunities created for local communities • Decreased threat levels to marine ecosystems	• Improved water quality at target sites adjacent to reefs • New reef-positive businesses fully established and operationalised and existing businesses improved • Continued growth of the Blue Economy • Funding received is used in profit-generating activities to continue supporting reef conservation activities	• Beneficiaries experience increased economic benefit from sustainable reef-positive businesses • Improved biophysical conditions of marine space • More reef positive businesses opened or expanded • Continued support from the private sector and other stakeholders growing • Investments received are leveraged to attract further investments to grow and expand reef-positive businesses
Outcome 3: Coral reefs and associated ecosystems are restored to increase resilience			
3.1 Blue Carbon Resilience Credits (BCRC) methodology is tested in pilot sites and replicated if feasible. *(Investment opportunity: Blue Carbon and Resilience Credits)*	• 10,000 ha of mangroves under restoration in Abaco and Grand Bahama • Improved capacity of relevant stakeholders to plan and implement restoration activities • Improved management effectiveness for MMAs	• Continued improved biophysical conditions of priority sites • Improved water quality at reef sites adjacent to restored mangrove sites • Funding mobilized from BCRC credit sales to support marine conservation activities	• Improved carbon sequestration potential of coastal vegetation (mangroves) • Improved coastal resilience of vulnerable communities, evidenced by reduced flooding • Improved biophysical conditions of target sites • Proposed new or expanded MPAs encompassing reefs and mangroves

Expected results	Short term (1 to 3 years)	Mid-term (5 to 10 years)	Long term (10+ years)
			• Net revenue of >USD 5.4 million generated
3.2 Partnerships and training are facilitated to develop business models around restoration that is investable. *(Investment opportunity: Reef Rescue Network)*	• Improved capacity of relevant stakeholders to plan and implement restoration techniques and to develop business models on coral restoration that is investable • Improved capacity of local community members to manage and maintain coral nurseries and assess damage in the case of an event	• Multiple viable restoration projects ongoing across The Bahamas employing efficient restoration techniques • Beneficiaries experience increased economic benefit from sustainable, reef-positive businesses • Strengthened network of restoration partners and practitioners within The Bahamas	• Increased marine biodiversity across priority sites • Improved recovery potential of reef communities • Reef recovery methodologies and techniques streamlined throughout priority sites across Bahamas
3.3 Climate risk and resilience products, including reef and mangrove insurance, are developed and launched. *(Investment opportunity: Reef and mangrove insurance)*	• Business case of mangrove and reef insurance completed • Stakeholder support secured for long-term success of restoration projects • Direct beneficiaries engaged	• Improved capacity of communities to support reef restoration and disaster recovery efforts • Reef insurance mechanisms set up to reduce the risks of conservation and restoration projects	• Improved biodiversity of key ecosystems • Reefs undergo faster rate of recovery post-disaster due to consistent interventions through insurance mechanisms • Insurance mechanisms employed, and funding released to support post-climate disaster recovery for prioritized reef sites
3.4 Investments made into coral restoration-focused businesses.	• Improved land-based restoration techniques and continued research/	• Increased efficacy of coral farming techniques	• Increased marine biodiversity across targeted sites (seeded

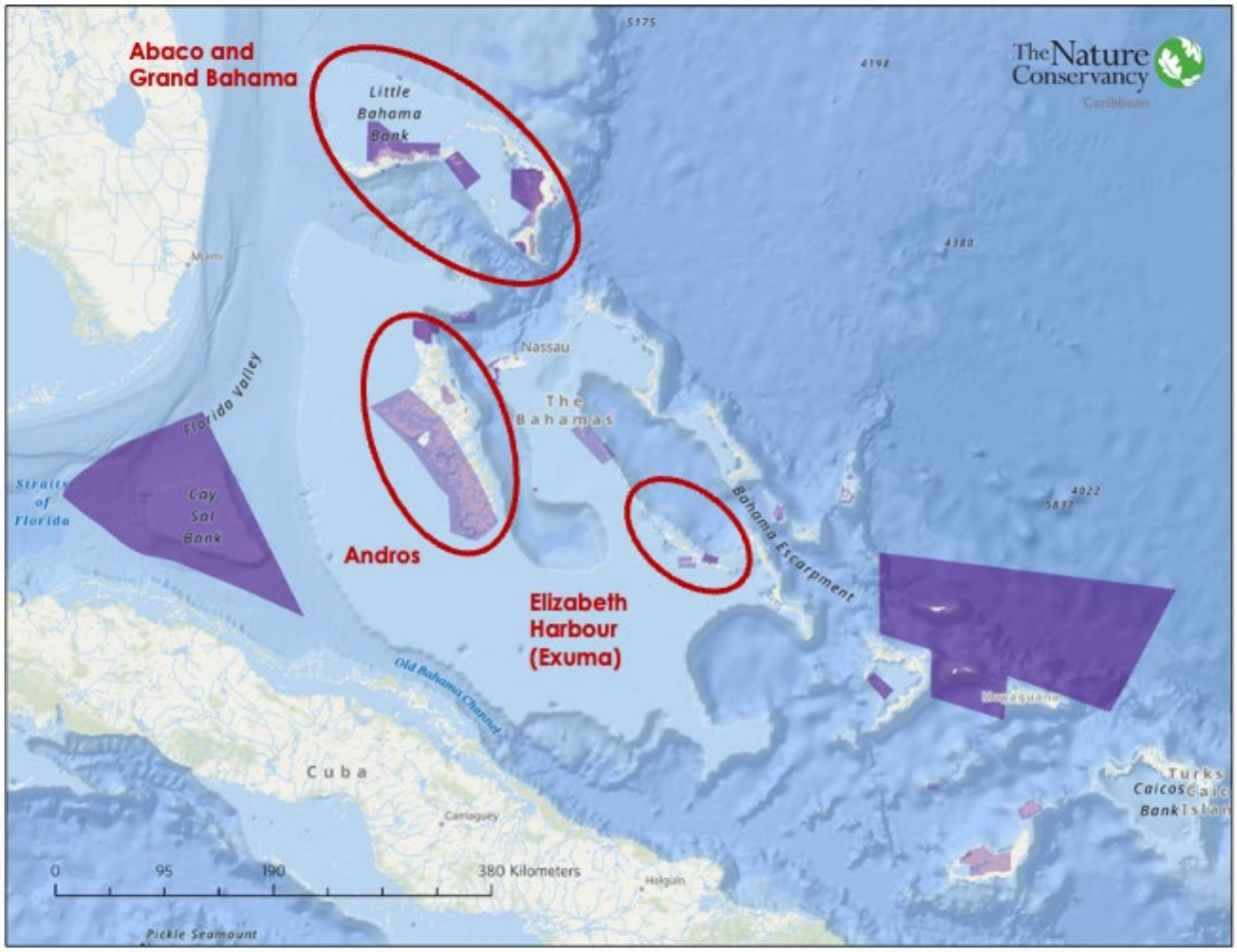
Expected results	Short term (1 to 3 years)	Mid-term (5 to 10 years)	Long term (10+ years)
(Investment opportunity: Coral Vita)	innovations to accelerate uptake of reef conservation methodologies	• Increased services sales (i.e., tourism and restoration services) from land-based coral farms resulting in larger net profits and growth in restoration businesses	using recruits or fragments from restoration businesses operations) • Investments received are leveraged to attract further investments to grow and expand reef-positive businesses • Improved resilience of priority sites to climate change impacts

5. Focal Area(s) Environmental, Social and Policy Analysis

This section presents a summary of environmental, social and policy analysis. The full analysis is provided in Annex VI.

As mentioned in Section 2, the BahamaReefs programme has a national reach. The priority climate refugia sites will be selected for protection and effective management through a robust scientific assessment. However, the initial implementation of the programme will take place in areas where there are business initiatives and investment opportunities designed to support coral reef conservation and restoration activities. The initial focal areas are the islands of Andros, Grand Bahama, Abaco and Exuma, which are highlighted in the protected areas map below.

Figure 11: Bahamian protected areas and BahamaReefs initial focal areas.



5.1 Ecological characteristics, condition and resilience of the Bahamian reefs

The Bahamas has one of the largest marine territories of any country in the Caribbean, covering approximately 382,354 square kilometres. The Bahamas contains 13 major islands and 700 smaller islands and cays and consists of two large, shallow carbonate banks. Andros Island is the third-longest barrier reef system in the world (>200 km).[17] The islands are low-lying and composed mostly of limestone so corals can grow close to the shore. Coral reefs occur mostly fringing the bank margins, with some small patch reefs on the banks in areas with high tidal circulation and with a few barrier reefs.[18] There are three major reef zones in The Bahamas: reef crest, patch reef and fore reef—each with its own set of species.

Extension of ecosystems impacted by the programme

At the national level, The Bahamas has 5,531 km^2 of coral reef area. These areas were mapped using 4m Planetscope Dove imagery (Schill et al., 2021)[19] acquired between October 2017 and September 2019 and includes total areas for the following reef types: reef crest (27.3 km^2), fore reef (104.7 km^2), back reef 95.9 km^2), spur and groove (267.9 km^2), with the largest class being coral/algal reef matrix (5,035.5 km^2), which captures other types such as patch and fringing reefs. This same mapping exercise identified a total of 53,929.9 km^2 of seagrass beds across the shallow marine zone (<30m depth) with 13,976.3 km^2 of dense seagrass and 39,953.6 km^2 of sparse seagrass area. An accuracy assessment using independent field data yielded an overall accuracy of 80% with a standard error <1%. All benthic habitat datasets for the Insular Caribbean can be viewed and downloaded using a customized web application.[20] For mangrove area, a 2021 mapping effort using high resolution (1m imagery) and manual digitization estimated 467.2 km^2 of mangrove habitat across The Bahamas.

Bahamian coral reefs health

A five-year assessment of the health of Bahamian coral reefs[21] found that overall, reefs in The Bahamas were faring better than other reefs across the Caribbean. The assessment included indicators such as: benthic condition, coral condition, coral disease, recruit density, parrotfish biomass, grouper index and an integrated reef health index. The majority of islands surveyed contained corals that were more than 60% alive. An integrated reef health index[22] was developed for The Bahamas and found that 60% of all sites rated in "good health" were in MPAs. Rates of coral recruitment in The Bahamas are limited because of low densities of adult corals; fewer adults reduce fertilization success and larval production on a reef. Limited

[17] Jones, L., Alcolado, P.M., Cala, Y., Cobian, D., Coelho, V.R., Hernandez, A., Jones, R., Mallela, J., and Manfrino, C. (2008). The effects of coral bleaching in the northern Caribbean and western Atlantic.

[18] Wilkinson, C.(2008. Status of coral reefs of the world: 2008. Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre, Townsville, Australia, 296 p.

[19] Schill, S.R., McNulty, V.P., Pollock, F.J., Fritjof, L., Jiwei L., Knapp, D., Kington, J., McDonald, T., Raber, G.T., Escovar-Fadul, X., and Asner, G. (2021). Regional-scale high-resolution benthic habitat data from PlanetScope imagery for conservation decision-making and marine planning, Remote Sensing, in review.

[20] http://caribbeanmarinemaps.tnc.org/

[21] Dahlgren C., Sherman, K., Haines, L., Knowles, L., and Callwood, K. (2020). Bahamas Coral Reef Report Card Volume 2: 2015-2020.

[22] Average across indicators: benthic condition, coral condition, coral disease, recruit density, parrotfish biomass, grouper index.

settlement space due to macroalgae and smothering of coral recruits by algae if they do settle reduce recruitment success. Additionally, the low number of reef-building species also reduces the recruitment potential on sites. Large parrotfish are key grazers in The Bahamas. They were found on all reefs surveyed, but populations have decreased significantly in some areas, which has the potential to decrease coral reef resilience (grazers control algae, which can outcompete corals). Groupers play a key role in reef ecosystems as top predators. While groupers have become rare in the Caribbean, The Bahamas still includes a few places where populations of large groupers are still viable with the healthiest populations located in MPAs.

Threats facing Bahamian reefs

Hard coral cover in the Caribbean has declined 50% to 80% over the last three decades, because of a combination of thermal stress, disease outbreaks, pollution, sedimentation and other factors.[23] Over the past century, The Bahamas has experienced at least one hurricane or tropical storm event every two years. While healthy reefs may recover from storm impacts, degraded reefs are less resilient and slower to recover overall. Additionally, the frequency and intensity of storms over the last several decades may limit the ability of reefs to recover from damage. In 2019, Hurricane Dorian became the strongest hurricane to make landfall in the Atlantic. Coastal development has caused significant impacts in The Bahamas, especially around New Providence, where over a 10-year period, reefs decreased in live coral cover by up to 70% at some sites. Surveyed reefs within MPAs with limited to no development had 50% to 75% more coral than control sites.[24] While coral disease in The Bahamas has historically been low compared to other parts of the Caribbean, the introduction of SCTLD has caused significant impacts. The first outbreak was confirmed in the fall of 2020 near Grand Bahama. Transmission may be driven by shipping, ocean currents, hurricanes and human activities (boating, fishing, etc.). The Bahamas government has appointed a SCTLD task force led by the Department of Marine Resources. The mandate of the task force is to develop and implement strategies to achieve the short-term goal of preventing the spread of SCTLD and the long-term goal of eradicating it from The Bahamas. BNT, PIMS and TNC are members of the task force. Overfishing, especially of herbivores such as parrotfish, can reduce reef resilience. While commercial fisheries in The Bahamas (lobster, conch and grouper) have regulations such as size limits or closed seasons, most reef fish, including parrotfish, have no regulations in place to protect them. Most threats are present in all four initial focus areas.

Coral bleaching

The Bahamas has experienced bleaching impacts for decades. More recently, however, there has been an increase in the number of bleaching events related to more frequent and longer lasting thermal stress events.[25] For example, in 2015, The Bahamas was particularly hard hit by bleaching. Nearly 70% of corals surveyed off Andros and Abaco were bleached, with 100% of corals bleached at some sites. Following the 2014 to 2017 event, surveys in Eleuthera showed less impacts than other parts of The Bahamas.[26,27]

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[23] Jackson, J.B.C., Donovan, M.K., Cramer, K.L., and Lam, V.V. (editors). (2014). Status and Trends of Caribbean Coral Reefs:1970-2012. Global Coral Reef Monitoring Network, IUCN, Gland, Switzerland

[24] Ibid.

[25] Op.cit. Dahlgren et al. (2020).

[26] Weiler, B.A., Van Leeuwen, T.E., and Stump, K.L. (2019). The extent of coral bleaching, disease and mortality for data-deficient reefs in Eleuthera, The Bahamas after the 2014–2017 global bleaching event. Coral Reefs, 38(4), pp.831-836

[27] Parker et al. (2020); Op.cit. Dahlgren et al. (2020).

Coral reef resilience

TNC Scientists identified and mapped thermal stress regimes in coral reefs throughout The Bahamas.[28] Climate models indicate that reefs in The Bahamas are likely to experience severe thermal stress in coming decades (see maps in Annex VI),[29] yet some coral communities are more likely to cope with future warming than others, because they are likely to experience less thermal stress and/or are more likely to acclimatize to the changing climate. These coral communities represent important priorities for protection. Research suggests that The Bahamas contains one of the most extensive networks of climate resilient coral reefs in the Caribbean, including two priority areas (BCUs). Other factors that support reef resilience include connectivity and strong local support for reef conservation. A 2015 study assessed coral connectivity across the Wider Caribbean and identified Bahamian reefs as priorities for both receiving and contributing larvae to other EEZs. Further, The Bahamas includes several Blue Hope Spots[30] (places identified as having strong local support and are critical to ocean health). A detailed presentation of the work of TNC in identifying resilient reefs in The Bahamas and the Caribbean is available in Annex VI.

Description of biodiversity

- Number of coral species: 45 to 50 species[31]
- Number of fish species: 567 species[32]
- Emblematic species: queen conch (*Lobatus gigas*), Nassau grouper (*Epinephelus striatus*), Elkhorn coral (*Acropora palmata*)
- Protected species: elasmobranchs (sharks), cetacea and trichechus (marine mammals), marine turtles
- Critically endangered species (CR): Nassau grouper (*E. striatus*), Elkhorn coral (*Acropora palmata*), staghorn coral (*A. cervicornis*), smalltooth sawfish (*Pristis pectinata*), Great hammerhead (*Sphyrna mokarran*), Scalloped hammerhead (*S. lewini*), Oceanic whitetip shark (*Carcharhinus longimanus*)[33]
- Endangered species (EN): Exuma goby (*Elacatinus atronasus*) – also endemic, Lobed star coral (*Orbicella annularis*), mountainous star coral (*O. faveolata*)

Current protection

The Bahamas has taken proactive steps to protect its coastal and marine resources. Important milestones included the creation of the Sea Gardens in 1892 northeast of Nassau, the establishment of the Exuma Cays Land and Sea Park in 1958, a "no-take" zone since 1985, and the passage of the Fisheries Resources (Jurisdiction & Conservation) Act in 1977. At the turn of the millennium, The Bahamas Government created a network of marine protected areas (MPAs).[34]

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[28] Wolff, N. unpubl. data Incorporating bleaching risk into reserve design for The Bahamas.

[29] Wolff, N.H., Donner, S.D., Cao, L., Iglesias-Prieto R., Sale, P.F., and Mumby, P.J. (2015). Global inequities between polluters and the polluted: climate change impacts on coral reefs. Global Change Biology 21:3982–3994.

[30] https://mission-blue.org/hope-spots/

[31] Note this number is not exact as coral taxonomy is a bit fluid with species being separated out and there are some hybrids which have unique species names (e.g., *Acropora prolifera)*

[32] Bohlke & Chaplin. (1993).

[33] IUCN red list. Note more corals are under review and will be listed as EN or CR shortly.

[34] Anderson L., Dahlgren, C., Knowles, L., Jupp, L., Cant-Woodside, S., Albury-Smith, S, McKinney-Lambert, C., and Lundy, A.. (2018). *20 by 20 White Paper: Marine Protection Plan.* Prepared for the Office of the Prime Minister,

In 2000, The Bahamas Government developed a system of fishery reserves to protect commercially important marine species by declaring four areas for the protection of lobster, conch and Nassau Grouper. In 2002, the size of the national parks system was doubled. In February 2004, the Government of The Bahamas made a commitment to implement the Convention on Biological Diversity Programme of Work on Protected Areas (PoWPA) which aims to establish and maintain a comprehensive, effectively managed, and ecologically representative national protected area system. Later that year, the Government of The Bahamas represented by The Bahamas Environment Science and Technology Commission along with the Bahamas National Trust and TNC's Northern Caribbean Programme signed a National Implementation Support Partnership (NISP) agreement to implement the Programme of Work on Protected Areas (PoWPA) that was adopted at the Seventh Meeting of the Conference of Parties to the Convention on Biological Diversity (COP-7). The Department of Marine Resources joined the NISP in the fall of 2006.[35]

In 2008, the Caribbean Challenge Initiative (CCI) was launched to provide greater leadership to chart a new course for protecting and sustainably managing the marine and coastal environment across the Caribbean. The Bahamas was one of two governments that initially agreed to participate in the CCI, committing to effectively manage at least 20% of their near shore and marine environment by the year 2020 (the 20-by-20 goal). In 2012, The Bahamas expanded the West Side National Park from 286,080 acres to 1.2 million acres—one of the largest marine reserves in the Caribbean. By 2015, 15 new MPAs were formed and three areas were expanded, comprising more than 11 million acres totalling 10% protection of The Bahamas' marine and coastal habitats (see list of MPAs and map in Annex VI). The following year, TNC, Bahamas Reef Environment & Educational Foundation and the Bahamas National Trust launched a collaborative initiative called Bahamas Protected to identify priority areas for protection and help advance the objectives of the CCI. Guided by economic valuation data, sound science and stakeholder consultations, the Conservancy and its partners identified and proposed to the Government of The Bahamas 43 new marine sites for protection. If declared, these areas would result in the country reaching 20% marine protection, which would double the current protected area coverage.[36]

5.2 Local communities and the value of coral reef ecosystem services

Communities dependent on coral reef ecosystems in the area

The Bahamian archipelago includes more than 700 islands, of which only 30 are inhabited. Seventy percent (70%) of the total population—approximately 396,000—lives in New Providence, where the capital Nassau is located, while another 14.5% resides on the island of Grand Bahama and 10.3% lives on Abaco. The remaining population is scattered throughout the archipelago.[37]

Ministry of the Environment & Housing and the Ministry of Agriculture & Marine Resources by the Bahamas National Trust, Perry Institute for Marine Science, The Nature Conservancy and Bahamas Reef Environment & Educational Foundation.

[35] Moultrie, S. (2012). Master Plan for The Bahamas National Protected Area System. The Nature Conservancy, Northern Caribbean Office. Nassau, The Bahamas.

[36] *Sun-soaked islands amidst Caribbean blue this unique archipelago needs protecting.* TNC, 2020.

[37] Haas, A., Feedler, T., and Brooks, E.. (2017). *The contemporary economic value of elasmobranchs in The Bahamas: Reaping the rewards of 25 years of stewardship and conservation.* Biological Conservation. Vol. 207. pg 55-63.

The insularity and extensive carbonate shelf with productive coral reefs and other habitats, plus a large area of coastal wetlands, especially mangrove forests, contribute to the abundance and diversity of fish in The Bahamas.[38] Bahamian coral reefs are home to the greatest diversity of life within the archipelago and provide critical ecosystem services that support a vibrant economy, including tourism, fisheries and protection from coastal erosion. These reefs owe much of their value to the corals themselves, which are the architects and engineers of the reef, building reef structure that protects shorelines and provides habitat to marine life.

Principal sectors and livelihood activities

With few natural resources and a limited industrial sector, the Bahamian economy is heavily dependent on tourism and the financial services sector. These sectors have traditionally attracted most of the Foreign Direct Investment (FDI), which is heavily encouraged by The Bahamas Government. Tourism and related services contribute approximately 70% of the country's Gross Domestic Product (GDP) and employ a little more than half of the work force. The Bahamas relies primarily on imports from the United States to satisfy its fuel and food needs for local and tourist consumption, averaging around 7 million tourists annually, about 85% from the United States. Financial services constitute the second most important sector of the economy, accounting for up to 15% of GDP.[39]

The World Bank recognizes The Bahamas as a high-income developed country with a GDP per capita of USD 32,218 (2018) and a Gross National Income per capita of USD 30,520 (2018). However, the Bahamian economy is grappling with the dual, unprecedented economic crises brought by the impact of Hurricane Dorian in September 2019 and the ongoing effects of the global COVID-19 pandemic, projected to inflict combined losses of USD 7.5 billion or 60% of GDP.[40]

Value of coral reef ecosystem services

Bahamians are highly dependent on the services provided by the country's extensive marine and coastal ecosystems, such as coral reefs, mangrove forests and seagrass beds.[41] The current MPA network was valued at nearly USD 6 billion annually, including the spiny lobster fishery, tourism, coastal protection and carbon sequestration benefits.[42] Every year over 1 million visitor trips are directly linked to coral reefs.[43] Coral reef-related tourism generates USD 671 million annually in The Bahamas—USD 353 million from reef-adjacent activities, like beach visits, and USD 318 million from on-reef activities, like snorkelling and diving. The coral reefs with the highest tourism value in The Bahamas generate more than USD 5.7 million per square kilometre per year and fall within the top 10% of the Caribbean's tourism-valued

[38] Moultrie, S. (2012). Master Plan for The Bahamas National Protected Area System. The Nature Conservancy, Northern Caribbean Office. Nassau, The Bahamas.

[39] International Trade Administration U.S. Department of Commerce. *Bahamas Country Commercial Guide: Market Overview.* Available online: https://www.trade.gov/country-commercial-guides/bahamas-market-overview.

[40] Ibid.

[41] Silver. J., Arkema, K., Griffin, R., Lashley, B., Lemay, M., Maldonado, S., Moultrie, S., Ruckelshaus, M., Schill, S., Thomas, A., Wyatt, K., and Verutes, G. (2019). *Advancing Coastal Risk Reduction Science and Implementation by Accounting for Climate, Ecosystems, and People.* Frontiers in Marine Science. Vol.6.

[42] Op.cit. TNC, 2020.

[43] Ibid.

reefs.[44] The Bahamas shark diving industry is considered to be the largest in the world, contributing approximately USD 113.8 million annually to the Bahamian economy.[45]

In The Bahamas, the spiny lobster fishery covers more than 45,000 square miles of the Great Bahama Bank and Little Bahama Bank and relies heavily on large swaths of mangrove forests and seagrass beds found inside and outside marine protected areas.[46] These habitats offer shelter, food and larval recruitment for spiny lobsters and other economically and culturally important fisheries. They also make a significant contribution to fisheries production in The Bahamas. The spiny lobster fishery supports more than 9,000 Bahamian fishers,[47] and approximately six million pounds of spiny lobster valued at USD 23.5 million are exported annually from The Bahamas.[48]

Storm protection is a critical ecosystem service offered by coastal habitats in The Bahamas.[49] The Bahamas' low-lying nature makes it particularly vulnerable to climate change. It is estimated that these natural habitats offer valuable coastal protection services to an estimated 39,000 people, providing a cost savings of USD 806 million annually.[50] Mangroves and seagrasses have been identified as major carbon sinks that can store and sequester carbon for centuries. Across the entire Bahamas MPA network, more than 400 million metric tons of carbon are stored, at a value of more than USD 5 billion in avoided damages from emissions globally.[51]

Communities' engagement in ecosystems management

MPAs are an important tool to protect ecosystems and therefore local welfare and local and national economies.[52] Currently, less than 50% of The Bahamas Marine Protected Areas Network is effectively managed. To address this shortfall, TNC and local partners established the Bahamas Protected Areas Fund (BPAF), to establish sustainable funding for protected areas management and on-the-ground marine conservation efforts.[53] Bahamian fisheries face significant challenges because of the impacts of climate change, habitat degradation and unsustainable fishing practices, including illegal fishing and poaching. A significant decline in the diversity and abundance of marine species threatens fragile ecosystems, food security and the livelihoods of many. In 2018, TNC helped The Bahamas make history by earning the Marine Stewardship Council (MSC) sustainability certification for its spiny lobster fishery, one of the most economically important fisheries in the country. It is the country's largest seafood export and supports thousands of Bahamian households.

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[44] *Reef-Associated Tourism Value of Coral Reefs in The Bahamas.* TNC, 2019.

[45] Op.cit. Haas et al. (2017).

[46] Oop.cit. TNC, 2020.

[47] Ibid.

[48] Arkema, K., Fisher, D., and Wyatt, K. (2017). *Economic valuation of the Bahamian marine protected areas.* Prepared for BREEF by The Natural Capital Project, Stanford University.

[49] Op.cit. Silver et al. (2019).

[50] Op.cit. Arkema et al. (2017).

[51] Ibid.

[52] Hargreaves-Allen V. and L. Pendleton. (2010). *Economic Valuation of Protected Areas in The Bahamas*. Report submitted to The Bahamas National Trust.

[53] Op.cit. TNC, 2020.

To help reefs adapt, in 2011 TNC expanded its Coral Restoration Climate Change Adaptation Programme to The Bahamas. TNC-trained volunteers carefully propagated *Acropora* corals in nurseries off New Providence and Andros Island. Once the coral fragments were of adequate size and healthy, they were outplanted on nearby reefs to improve genetic diversity.[54] In 2016, TNC developed a Bahamas-wide Coral Reef Report Card in collaboration with the Perry Institute for Marine Sciences and the Atlantis Blue Project Foundation.[55] The coral reef report card was the first of its kind—it assessed reef health at 214 sites across the Bahamian archipelago.[56] The report card serves as an important educational tool to raise public awareness about coral reef health and recommends coral reef restoration measures and management strategies to the Government of The Bahamas.

In effort to scale up conservation impact in the field of coral reef restoration and coral conservation science, TNC partnered with the Cape Eleuthera Institute, the Perry Institute for Marine Science, SECORE International and the Shedd Aquarium to launch the Bahamas Coral Innovation Hub. In the spring of 2018, the idea of the Hub was born to advance innovative scientific research and first-class educational programming. Later that year, TNC and its partners established the Hub in South Eleuthera to advance cutting-edge coral reproduction techniques—micro-fragmentation and facilitated sexual reproduction—to restore threatened and degraded coral reefs. A pilot coral spawning expedition soon followed, which resulted in the creation of 1.3 million new embryos. The Innovation Hub also serves as a vehicle for education and knowledge-sharing among coral scientists, practitioners, educators and local community members.[57]

Through the BahamaReefs, TNC will facilitate partners working on restoration exchange lessons learned and share results among themselves, with broader networks in the country, such as the Innovation Hub, and with international groups, such as the global Reef Resilience Network. The two main projects in the BahamaReefs pipeline working with restoration are the Reef Rescue Network (RRN) led by PIMS and Coral Vita. They already collaborate in several initiatives, including maintaining BNT coral nurseries and having presented a joint project to the IDB Compete Caribbean. It is important to highlight that they are very different types of stakeholders. PIMS is a local actor active in the country for more than 50 years, with a proven track record of successful restoration experiments and building the capacity of an established network of partners. Moreover, PIMS is driving the work of the SCTLD Task Force established in the country. Coral Vita is a business recently established based on providing restoration as a service to clients. Its experience in restoration is incipient, with a first outplant done recently in June 2021. PIMS and Coral Vita use different techniques to reproduce and grow corals. It will be key that the two projects keep on exchanging their learning and results to advance coral restoration science.

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[54] *Working with partners to protect nature in The Bahamas*. TNC, 2016.

[55] Ibid.

[56] Dahlgren, C., Sherman, K., Lang, J., Kramer, P.R., and Marks, K. (2016). Bahamas Coral Reef Report Card Volume 1: 2011–2013.

[57] O p.cit. TNC, 2020, and *Ocean Challenge*. TNC, 2020. Final Report prepared from Bezos Family Foundation.

5.3 Policy and investment environment

Policy environment

The Bahamas is considered a leader in marine conservation, establishing the Sea Gardens Protection Act in 1892, which prohibited dredging or removal of coral, sea fans or other organisms from the seabed. Notable government commitments and initiatives for protecting marine natural capital include:

- The Bahamas is part of the Caribbean Challenge Initiative (CCI) where they have committed to set aside at least 20% of its coastal marine waters as MPAs. The CCI was formally established with The Bahamas 2020 Declaration in Bonn, Germany, at the Ninth Conference of the Parties in May 2008. The 2020 Declaration served as the Government of The Bahamas' confirmation of its intent to preserve the country's marine and terrestrial environments and to meet the targets established by the UN Convention on Biological Diversity (CBD) Programme of Work on Protected Areas (PoWPA).
- The Biological Resources and Traditional Knowledge Protection and Sustainable Use Act limits the entry and unlawful extraction of the genetic resources (including coral and marine biodiversity) of The Bahamas. The Act enables DEPP to be a National Competent Authority" who will be responsible for the oversight and administration to comply and implement the Nagoya Protocol and CBD.
- The Bahamas National Protected Areas System (BNPAS) Project (2010 to 2014) was implemented and was funded by the Global Environment Facility (GEF) to enable The Bahamas to meet its commitments under the CBD PoWPA.[58]
- The National Development Plan: Vision2040, provides a roadmap for the future development of The Bahamas. Goal 11 of the roadmap is that "The Bahamas will have a natural environment that supports the long-term sustainable development of the Bahamian economy and way of life for generations." Within this goal is Strategy 11.3 that commits to "Sustainably Use and Manage Resources." It reiterates the 20% target set out by the CCI and looks to "Increase protected areas under effective management (including sustainable funding)." The SDGs are also integrated into the National Development Plan.[59]
- The Bahamas is a party to the UN Framework Convention on Climate Change (UNFCCC) and is a signatory to the Paris Agreement. The Bahamas submitted an initial nationally determined contribution (INDC) in 2015 that calls for a 30% in GHG reductions by 2030 compared to 2010. Coral reefs, seagrass and mangroves were all highlighted as key ecosystems in terms of adapting to climate change.[60]

The main policies to protect the marine environment established are presented in a table in Annex VI.

It is also important to highlight The Bahamas Micro, Small and Medium-sized Enterprises Policy (2017), which aims to create a highly entrepreneurial sector through innovation and

[58] Bahamas Protected Areas Fund website. Available online https://bahamasprotected.com/about/

[59] NDP Secretariat. (2017). 2nd Working Draft of the National Development Plan of The Bahamas. Available online: https://www.vision2040bahamas.org/media/uploads/2nd_Working_Draft_of_the_NDP_website_30.11.17c.pdf

[60] The Government of The Bahamas. (2015). Intended Nationally Determined Contribution (INDC) Under the United Nations Framework Convention on Climate Change. Available online: https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Bahamas/1/Bahamas%20INDC%20Submission.pdf

competition of businesses supported by improved governmental regulations.[61] This policy recognizes that MSME industry is the backbone of the private sector, and that entrepreneurship provides employment, creates wealth and develops a robust and self-reliant economy. The policy is an intervention framework that provides coordinated, clear and targeted support to the sector in an effort to expand its contribution. The creation of the SBDC was an action to support this policy implementation.

Although The Bahamas is well advanced in policies for marine conservation, there are some specific pieces of legislation that are lacking and that are essential as enabling conditions for the current and future investment opportunities. The pieces of legislation needed include a:

- **Framework around co-management of fisheries and MPAs.** This will help to create a strong legal foundation for co-management in The Bahamas and provide better conditions for reef-positive businesses to operate in fisheries and within MPAs[62];
- **National coral reef conservation plan.** Building on the Environmental Planning and Protection Act (2019) that aims to establish a National Coral Reef Conservation Plan as part of the National Environmental Policy Framework[63]; and
- **Regulatory and permitting framework for coral harvesting and outplanting.** This framework will be integrated into the national coral reef conservation plan.

Investment environment

The Bahamas has had strong economic performance in recent decades, but the economy remains relatively undiversified and is currently underperforming.[64] The country is highly dependent on the tourism sector, which accounts for approximately 50% of GDP.[65] Unemployment is on the rise, particularly affecting the most vulnerable members of society, including women. Poverty is also expected to rise to above 13%.[66] The pandemic slowed the reconstruction efforts following Hurricane Dorian in 2019 and the structural fiscal reforms aimed to improve the business environment.

Certain elements of The Bahamas' context pose difficulties for private investment to take place,[67] including high costs of doing business, immature value chains, low levels of competitiveness, productivity and financial capacity, a shortage of investment-ready projects and micro, small and medium enterprises (MSMEs) with significant barriers in gaining access to credit and business development services.

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[61] Available at http://www.accessaccelerator.org/wp-content/uploads/2019/01/SME-Policy.pdf

[62] Brumbaugh, D.R. (2017). Co-Management of Marine Protected Areas: A Suggested Framework for The Bahamas. Report to The Nature Conservancy, Northern Caribbean Programme, Nassau, Bahamas. 32pp. Available online: https://www.researchgate.net/publication/322369169_Co-Management_of_Marine_Protected_Areas_A_Suggested_Framework_for_The_Bahamas

[63] Environmental Planning and Protection Act. (2019). Available online: http://www.depp.gov.bs/wp-content/uploads/2020/02/Department-of-Environmental-Protection-Planning-Act-2019.pdf

[64] 2nd working draft of the National Development Plan of the Bahamas: Vision 2040 (NDPB, 2017). Available online: https://www.vision2040bahamas.org/media/uploads/2nd_Working_Draft_of_the_NDP_website_30.11.17c.pdf

[65] World Bank Macro Poverty Outlook 2021. Available online: https://pubdocs.worldbank.org/en/505961602705115630/mpo-bhs.pdf

[66] Op.cit. World Bank

[67] The World Bank's 2020 Doing Business Report positioned The Bahamas' overall ease of doing business ranking in 119th place out of 190 economies surveyed in 2020.

The financial sector is dominated by banks, with seven banks that are domiciled in The Bahamas and three foreign-owned banks that account for three quarters of all banking assets.[68] Besides tourism, real estate and construction are also important in terms of GDP, accounting for 22%. The Bahamas hosts a large offshore financial sector that has limited links to the domestic financial sector.

More frequent and more destructive hurricanes pose a risk to both economic growth and the financial sector. The Bahamas has been hit by 11 hurricanes in the last 20 years, costing 4.3% of GDP on average. During the 20 years prior to these, there were 4 hurricanes at an average cost of 3% of GDP. Off the back of COVID-19, the tourism sector saw a 64% decline in visitor numbers,[69] with GDP estimated to have contracted by 16.3%.[70]

Micro, Small and Medium-sized Enterprises (MSMEs) account for an estimated 90% of registered businesses in the country,[71] but have traditionally had difficulty accessing credit and business development services. In 2017, the Bahamian Government created an MSME policy and the Small Business Development Centre (SBDC) which will take advantage of that policy to benefit those who want to get into business and those already in business who want to improve outcomes. Through the Access Accelerator, the Government of The Bahamas has committed USD 5 million per year for the next five years, a total commitment of USD 25 million, to be disbursed to Bahamian MSMEs through loans and equity financing.[72]

In 2020, the Inter-American Development Bank (IDB) approved a USD 200 million loan to promote competitiveness and environmental resiliency in The Bahamas by supporting MSMEs, modernizing the institutional and legal framework to protect the natural resources, and economic diversification by promoting scientific and institutional developments in the Blue Economy.[73] This programme will support the mandate of the Bahamas Economic Recovery Committee (ERC), made up of private and public stakeholders, that was set up in 2020 to address the challenges presented by COVID-19. The programme aims to support the development of the Blue Economy, helping to increase the employment for young people in blue jobs and greater protection of coastal and maritime ecosystems. It also aims to support the governance and financial management of Marine Protected Areas.

The IDB-led Compete Caribbean Partnership Facility (CCPF), in partnership with the Institute of Marine Affairs, is looking to provide support to selected Caribbean start-ups and innovative firms to create new products and services, improve their processes and scale their commercial models rooted in cutting-edge technologies that contribute to the sustainable management of oceans and coastal resources (or marine ecosystems). The Bahamas is one of the 13 target

[68] IMF. (2019). The Bahamas Financial System Stability Assessment. Available online: https://www.imf.org/~/media/Files/Publications/CR/2019/1BHSEA2019002.ashx

[69] Bethel et al. (2021). Blue Economy and Blue Activities: Opportunities, Challenges, and Recommendations for The Bahamas. Available online: https://www.mdpi.com/2073-4441/13/10/1399

[70] https://www.imf.org/en/Countries/BHS

[71] IDB. (2013). IDB Country Strategy with the Commonwealth of The Bahamas 2013-2017. Available online: http://www.depp.gov.bs/wp-content/uploads/2016/02/Country_Strategy_with_The_Bahamas_2013-2017.pdf

[72] Access Accelerator website. Available online: https://www.accessaccelerator.org/about/

[73] IDB. (2020). The Bahamas will promote competitiveness and environmental resiliency with the IDB support. Available online: https://www.iadb.org/en/news/bahamas-will-promote-competitiveness-and-environmental-resiliency-idb-support

countries as part of the facility, individual start-ups or private companies can apply for up to USD 160,000 in non-reimbursable technical assistance grants to implement their Blue Economy innovation project.[74]

The Bahamas Development Bank (BDB) is committed to fostering the Blue Economy in The Bahamas.[75] To support innovation in the Blue Economy, BDB is offering a grant of up to USD 7,500 in each of the four themes of Food of The Future, Ocean Bio-Extractives, Maritime Industry & Energy, and Blue Arts, Culture and Tourism.[76]

[74] Compete Caribbean website. Available online: https://www.competecaribbean.org/

[75] BDB. (n.d). Blue Economy. Available online: https://bahamasdevelopmentbank.com/our-work/themes/blue-economy/

[76] Government of The Bahamas. (n.d). The Bahamas Development Bank hosts Blue Economy Think Tank. Available online: https://www.bahamas.gov.bs/wps/portal/public/gov/government/news/

6. Analysis of drivers of degradation

The drivers of coral reef degradation were assessed at the national level. These are not significantly different at the local level for the four initial implementation areas.

Table 2: Direct and indirect drivers of degradation to coral reef ecosystems (supporting information provided in Annex VI).[77]

Threat present	Specific area(s) where threat activity occurs AND where impacts are observed	Actor(s) responsible	Magnitude of threat and impact (available data and potential methods)	Existing local strategy or project/initiative to mitigate the threat
☒ Coastal development (including tourism infrastructure)	Countrywide	Local actors (private and public entities), foreign Investors	CDSS database includes hotels (Huggins et al., 2007)[78]; Can be modelled using the Environmental Risk Surface (ERS) tool to identify threat magnitude (Schill and Raber, 2009)[79]	Environmental Planning & Protection Act, 2019 EIA regulations, 2021; Planning and Subdivision Act, 2010; Building Regulations Act

[77] Baselines for individual threats will be determined in the programme inception phase. The table indicates available sources of information that will be used to complement local expert knowledge.

[78] Huggins, A.E., Keel, S., Kramer, P., Núñez, F., Schill, S., Jeo, R., Chatwin, A., Thurlow, K., McPearson, M., Libby, M., Tingey, R., Palmer, M., and Seybert, R. (2007). "Biodiversity Conservation Assessment of the Insular Caribbean Using the Caribbean Decision Support System," Technical Report, The Nature Conservancy.

[79] Schill, S., and Raber, G. (2009). "Protected Area Tools (PAT) for ArcGIS 9.3: User Manual and Tutorial," The Nature Conservancy, Arlington, VA.

Threat present	Specific area(s) where threat activity occurs AND where impacts are observed	Actor(s) responsible	Magnitude of threat and impact (available data and potential methods)	Existing local strategy or project/initiative to mitigate the threat
☒ Overfishing	Countrywide	Local fisherman, poachers, foreign fishers	Data from Halpern et al., 2019[80]; Harborne 2017[81]; Can be modelled via fisher surveys/expert mapping and GIS-based methods	Fisheries Act, 2020; Port State Measures Agreement; Expansion of Protected Areas; Marine Stewardship Council Certification (MSC) of Spiny Lobster Fishery
☒ Destructive fishing practices (blast, cyanide, trawling, etc.)	Countrywide	Local fisherman, Poachers, Foreign Fishers	No known data; Can be modelled via fisher surveys/expert mapping and GIS-based methods	Fisheries Act, 2020; Bahamas Protected Project (Expansion of Protected Areas); Marine Stewardship Council Certification (MSC) of Spiny Lobster Fishery, update of key fisheries regulations (in progress)
☐ Irresponsible marine and freshwater aquaculture			No known data; Can be modelled via expert mapping and GIS-based methods	
☒ Poor agriculture and livestock practices	New	Illegal immigrants, local farmers	CDSS database includes coastal outlet risk	Bahamas Agriculture & Industrial Cooperation Act, 2006

[80] Halpern, B.S., Frazier, M., Afflerbach, J., Lowndes, J.S., Micheli, F., O'Hara, C., Scarborough, C., and Selkoe, K.A. (2019). Recent pace of change in human impact on the world's ocean. *Scientific reports*, *9*(1), pp.1-8.

[81] Harborne, A. (2017). Modelling and Mapping Fishing Impact and the Current and Potential Standing Stock of Coral Reef Fishes in the Bahamas, Final Technical Report, Florida International University, Miami, FL. 56 pp.

Threat present	Specific area(s) where threat activity occurs AND where impacts are observed	Actor(s) responsible	Magnitude of threat and impact (available data and potential methods)	Existing local strategy or project/initiative to mitigate the threat
(leading to harmful runoff and poor water quality)			(Huggins et al. 2007)[82]; Can be modelled using the ERS tool to identify threat magnitude	
☒ Unsustainable tourism (overcrowding, cruise ships, etc.)	New Providence, Grand Bahama, Abaco	Dive shops, cruise ships, hotels	No known data; Can be modelled via expert mapping and GIS-based methods	Environmental Planning & Protection Act, 2019
☒Poor wastewater treatment	Countrywide	Local actors (private and public entities), foreign investors	No known data; Can be modelled via expert mapping and GIS-based methods	Environmental Planning & Protection Act, 2019 (National Water Quality Management Policy)
☒ Garbage and solid waste (plastics, leaching from landfills, etc.)	Countrywide		No known data; Can be modelled via expert mapping and GIS-based methods	Environmental Planning & Protection Act, 2019 (National Persistent Organic Pollutants and Toxic Chemicals Management Policy)
☒ Invasive species	Countrywide	Illegal immigrants, foreign nationals,	No known data; Can be modelled via expert	Environmental Planning & Protection Act, 2019; Natl. Invasive Species Strategy, Fisheries Act

[82] Huggins, A.E., Keel, S., Kramer, P., Núñez, F., Schill, S., Jeo, R., Chatwin, A., Thurlow, K., McPearson, M., Libby, M., Tingey, R., Palmer, M., and Seybert, R. (2007). "Biodiversity Conservation Assessment of the Insular Caribbean Using the Caribbean Decision Support System," Technical Report, The Nature Conservancy.

Threat present	Specific area(s) where threat activity occurs AND where impacts are observed	Actor(s) responsible	Magnitude of threat and impact (available data and potential methods)	Existing local strategy or project/initiative to mitigate the threat
		locals, aquarium trade	mapping and GIS-based methods	
☒ Coral Reef disease (e.g., Stony Coral Tissue Loss Disease)	Countrywide	Shipping industry, cruise ships, pleasure craft, divers (tourists, locals, poachers, etc.)	Dahlgren, 2021[83]	Environmental Planning & Protection Act, 2019 (Natl. Coral Reef Conservation Plan, Natl. Biodiversity Strategy & Action Plan), Fisheries Act 2020,
☒ Energy production and mining (clean energy, fossil fuels and extractives)	New Providence and Grand Bahama	Shipping industry, energy sector, oil and gas industry (storage and trans-shipment terminals)	No known data; Can be modelled via expert mapping and GIS-based methods	Environmental Planning & Protection Act, 2019 (National Policy for the protection of the Ozone Layer; National Policy for the Reduction of Emissions from Greenhouse Gases; National Air Quality Management Policy); Natl. Energy Policy; Electricity Act
☒ Marine traffic and shipping	Northern and Central Bahamas	Flags of convenience (shipping industry), Cruise ships, foreign pleasure craft	Automated Identification System (AIS,)[84] 2018, and Halpern et al., 2019	Merchant Shipping Act; Natl. Maritime Policy

[83] PIMS coral reef survey database—provided to TNC in July 2021, by Craig Dahlgren

[84] Automatic identification system (AIS) data are used to identify and track vessels for various purposes (primarily navigational safety). These data can be used to study vessel traffic, such as ship routing and speed over ground (SOG). TNC purchased this data in 2018 for the Caribbean region.

Threat present	Specific area(s) where threat activity occurs AND where impacts are observed	Actor(s) responsible	Magnitude of threat and impact (available data and potential methods)	Existing local strategy or project/initiative to mitigate the threat
☐ Logging and wood harvesting			Data from Hansen et al., 2018[85]; Can be modelled via expert mapping and GIS-based methods	
☒ Coral Bleaching	Countrywide	Climate change	NOAA Coral Reefwatch[86]; UNEP 2020.[87]	Environmental Planning & Protection Act 2019 (National Coral Reef Conservation Plan, National. Biodiversity Strategy & Action Plan), Fisheries Act 2020
☒ Hurricanes	Countrywide	Climate change	Knapp et. al., 2010[88]	Integrated Coastal Zone Management Policy Framework; Emergency Plan of Action, The Bahamas: Hurricane Dorian; Comprehensive Emergency Management/Safety/Business Continuity programmes/plans; Disaster Policies; Damage and Needs Assessments

[85] Hansen, M.C., Potapov, P.V., Moore, R., Hancher, M., Turubanova, S.A., Tyukavina, A., Thau, D., Stehman, S.V., Goetz, S.J., Loveland, T.R. and Kommareddy, A. (2018). Global forest change. Available online: https://earthenginepartners.appspot.com/science-2013-globalforest (Accessed 7.20. 2019).

[86] Available online: https://coralreefwatch.noaa.gov/product/5km/description_climatology.php

[87] UNEP 2020. Projections of future coral bleaching conditions using IPCC CMIP6 models: climate policy implications, management applications, and Regional Seas summaries. United Nations Environment Programme, Nairobi, Kenya

[88] Knapp, K.R., Kruk, M.C., Levinson, D.H., Diamond, H.J., andNeumann, C. J. (2010). The International Best Track Archive for Climate Stewardship (IBTrACS): Unifying tropical cyclone best track data. Bulletin of the American Meteorological Society, 91, 363-376.

7. Addressing Drivers of Degradation

Table 3: Interventions and threats.

Threat	Programme intervention (if any)	Description of how the intervention will directly or directly mitigate the threat to coral reef ecosystems
Coastal development (including tourism infrastructure)	• Reef and mangrove insurance • Blue Carbon and Resilience Credits • Coral Vita	Reef and mangrove insurance and blue carbon projects are finance instruments that can be combined to make coastal development projects more sustainable and resilient, both by offsetting impacts and by improving coastal protection. A potential offset mechanism may be established in the future combining these finance instruments and the restoration efforts included in the proposed interventions.
Overfishing	Blended finance for the effective management of MPAs	In MPAs the improvement of effective management may reduce overfishing.
Destructive fishing practices (blast, cyanide, trawling, etc.)	• Potentially addressed by the Blue Economy Programme Accelerator • Blended finance for the effective management of MPAs	• The Accelerator may finance fishing enterprises willing to change gear and improve practices. • To improve management effectiveness of MPAs, BNT will also work with fishermen to reduce destructive practices.
Poor agriculture and livestock practices (leading to harmful runoff and poor water quality)	Potentially addressed by the Blue Economy Programme Accelerator	The Accelerator may finance agriculture and livestock enterprises within coral reef dependent communities or communities bordering MPAs that are willing to improve practices.

Threat	Programme intervention (if any)	Description of how the intervention will directly or directly mitigate the threat to coral reef ecosystems
Unsustainable tourism (overcrowding, cruise ships, etc.)	• Potentially addressed by the Blue Economy Programme Accelerator • Blended finance for the effective management of MPAs • Effective Management of Elizabeth Harbour • Reef Rescue Network	• The Accelerator may finance tourism enterprises willing to improve practices. • In MPAs the improvement of effective management may reduce unsustainable tourism. • In Elizabeth Harbour the proposed intervention reduces unsustainable tourism by providing adequate mooring and pump-out services. Reef Rescue Network creates sustainable tourism practices engaging visitors with coral restoration, which helps to reduce visitors to other overcrowded areas, raise awareness of visitors, and create a circular economy between the diving industry and restoration practices.
Poor wastewater treatment	Effective Management of Elizabeth Harbour	In Elizabeth Harbour, the proposed intervention reduces unsustainable tourism by providing adequate mooring and pump-out services.
Garbage and solid waste (plastics, leaching from landfills, etc.)	Potentially addressed by the Blue Economy Programme Accelerator	The Accelerator may finance recycling enterprises that improve garbage and solid waste management.
Invasive species	• Potentially addressed by the Blue Economy Programme Accelerator • Blended finance for the effective management of MPAs	• The Accelerator may finance fishing enterprises that target invasive species. • The effective management of MPAs will likely reduce the spread of marine invasive species such as the lionfish
Coral Reef disease (e.g., Stony Coral Tissue Loss Disease)	• Reef Rescue Network • Coral Vita • Blended finance for the effective management of MPAs	• Both initiatives work to increase coral restoration, helping to recover some populations and genets of species affected by the Stony Coral Tissue Loss Disease. • The effective management of MPAs can help to reduce the spread of SCTLD across The Bahamas and safeguard coral reef refugia within MPAs.

Threat	Programme intervention (if any)	Description of how the intervention will directly or directly mitigate the threat to coral reef ecosystems
Energy production and mining (clean energy, fossil fuels and extractives)	Not addressed	The BahamaReefs Programme is focusing on more direct conservation activities, but, in the future, it may identify investment opportunities oriented to energy production, as it is an important issue in The Bahamas, mainly dependent on imported fossil fuels to have thermal energy.
Marine traffic and shipping	Not addressed	The BahamaReefs Programme is focusing on more direct conservation activities, but, in the future, it may identify investment opportunities with shipping and cruise companies.

8. Partners

The BahamaReefs Programme builds on the experience of TNC in The Bahamas and on the established network of partners working to conserve and restore coral reefs in the country. TNC as a global science-based conservation organisation has been developing knowledge and tested approaches to protect coral reefs in different regions, including in several Caribbean countries.

The programme is designed in a favourable moment. There is a priority focus on the potential of the Blue Economy for the country's recovery after the COVID-19 pandemic. This can be observed in the public sphere, with the government composing a Blue Economy committee to coordinate actions and adopting Blue Economy-related conditions in a new loan from the Interamerican Development Bank; as well as in the financial sector, with the Bahamas Development Bank Blue Economy Committee discussing how to build specific funding support to businesses that are supportive of the marine and coastal resources.

The main partnerships established to implement the BahamaReefs Programme are summarized in the table below. These alliances will be formalized through specific legal instruments, such as memorandum of understanding (MoUs) and cooperation agreements. This will be carried out during the programme's inception phase. The combination of the different partners will provide the programme the technical capacity required. If additional areas for capacity are identified in the future, TNC will bring additional expertise and capacity to bear through regional and global programmes and staff or establish new partnerships.

Table 4: Describe why the convening agent believes the co-implementing partners are appropriate and well qualified to be included in the programme.

Co-recipients organisations (UN organisation or non-Profit who can be eligible for direct access to the GFCR, max three)	Description of role, level of engagement thus far, track history in the sector and region, technical capacity. Be as specific as possible.
UN Capital Development Fund (UNCDF)	UNCDF will play a key role to channel grants and concessional loans to some of the interventions included in the preliminary pipeline. UNCDF is part of the GFCR investment continuum through its Blue Bridge. UNCDF has not supported projects in The Bahamas yet, but it has the required technical capacity to work with the projects TNC identified.
Partner and organisation designation (e.g., government, NGO, private business; not receiving GFCR funds, local public of commercial bank, financial institution)	Description of role, level of engagement thus far, track history in the sector and region, technical capacity. Be as specific as possible.

Access Accelerator Sustainable Business Development Center (SBDC)—NGO	SBDC is a Bahamian non-profit founded in 2018 by the University of the Bahamas, the Bahamas Chamber of Commerce and the Ministry of Finance. By the end of the last fiscal year, SBDC had funded USD 49.9 million to Micro, Small and Medium-sized Enterprises (MSMEs), with 9,488 clients registered. SBDC provides the required technical capacity in the financial aspects, which complements TNC skills that are more focused on the environmental and social aspects. SBDC will operate a specific Blue Economy programme under the BahamaReefs in partnership with TNC.
Bahamas Protected Areas Fund (BPAF)—NGO	BPAF is a national conservation trust fund created by the BPAF Act in 2014 to help ensure sustainable financing for the Bahamian marine parks. It is a body corporate governed by a multi-stakeholder Board of Trustees. One of its responsibilities determined by the Act is to establish and maintain a Register of Protected Areas. BPAF will support TNC carrying out grantmaking for non-profits within the programme, and convening stakeholders supporting enabling conditions.
Perry Institute for Marine Science (PIMS)— NGO	PIMS conducts research throughout The Bahamas and other parts of the Caribbean. PIMS also conducts a wide range of conservation, education and citizen science programmes. It is one of the oldest leading research organisations in The Bahamas founded more than 50 years ago, in 1970. PIMS and TNC have a long-standing consolidated partnership, collaborating in specific projects, such as the Bahamas Coral Reefs Report Card. PIMS will provide the most accurate information on the current status of Bahamian reefs and will be a hub for the programme to work with a network of small dive shops and other tourism businesses in restoration efforts.
Elizabeth Harbour Conservation Partnership (EHCP)—NGO	EHCP is a community-based Bahamian non-profit organisation conceived during the Exuma GEF-IWCAM Project. Its mission is to guide the ecologically sustainable development of the coastal zone and waters of Elizabeth Harbour with the aim of enhancing tourism, fisheries, and recreational use, through stakeholder education and participation, and collaborative management of harbour facilities. It will implement a community-based business focused on the operation of pump-out services, environmental monitoring, and the management of moorings.
Bahamas National Trust (BNT)—NGO	BNT is a non-profit, non-government, membership organisation founded in 1959 by the BNT Act. It is governed by a 29-member council made up of appointed representatives from some of the most prestigious conservation and scientific organisations in the world and from government. BNT currently manages 32 MPAs in the country. It will implement new structures and revenue streams in Abaco MPAs with the support of Blue Finance. BNT has the mandate to potentially replicate the experience in Abaco to other of its managed areas.

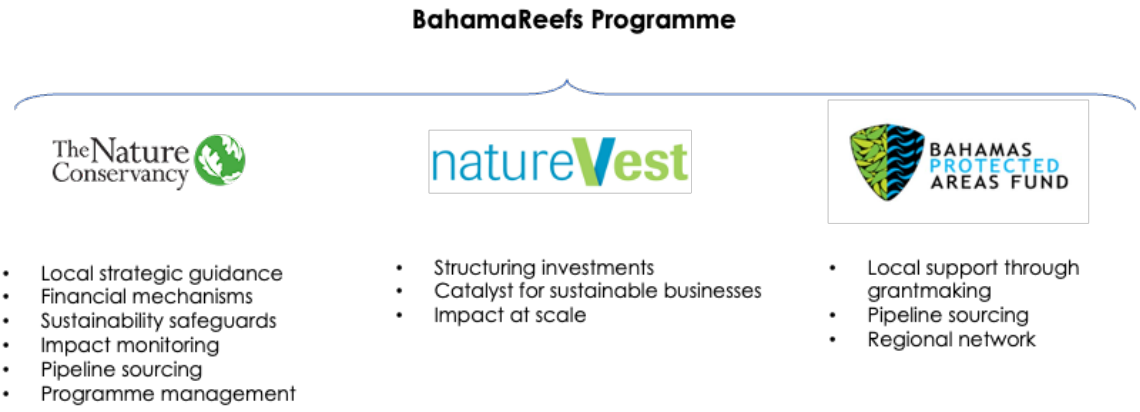
Blue Finance—NGO	Blue Finance has a track record of establishing blended finance solutions for the management and sustainable financing of MPAs. The NGO implements collaborative management agreements between non-profit partners and local governments, providing technical assistance, as well as management and marketing expertise. It has projects in MPAs in the Dominican Republic and in Belize, successfully attracting private finance. It is a direct partner of GFCR.
Coral Vita—private company	Coral Vita is a for-profit founded in 2015 with a land-based coral farm established in Grand Bahama in 2018. Its vision is to create a global network of high-tech coral farms to support coral restoration. It has an ambitious business model to provide different services around coral restoration, including tourism, education, increased resilience and reef repair. It will implement the expansion of its business and support the development of new restoration technologies to scale up restoration.

9. Leadership strategy for collaboration and governance arrangements

The Nature Conservancy (TNC), through its Northern Caribbean unit based in Nassau, has participated in and led initiatives to map marine and coastal ecosystems and monitor their status for more than a decade in The Bahamas, collaborating with academic, governmental and civil society partners, including the Bahamas National Trust (BNT), the Perry Institute for Marine Science (PIMS), the Department of Marine Resources (DMR) and the Department for Environmental Planning and Protection (DEPP). The scientific knowledge produced is a strong basis for the BahamaReefs implementation.

TNC Northern Caribbean unit, also called TNC Bahamas, will lead the programme management as the convening agent. It will engage staff from other units of TNC's global structure, including its impact investment arm, NatureVest, global coral reef, conservation science and policy programmes, and the broader Caribbean team. NatureVest brings specific investment expertise and a global experience with different financial instruments. This will be essential for assessing current and new pipeline opportunities in The Bahamas. BPAF, the Bahamas Protected Areas Trust, will also provide core support to the programme, as it may be used as a financial management vehicle in different operations, especially where grantmaking is needed. TNC is a founder of BPAF and a permanent Board member. BPAF also brings a multi-stakeholder convening capacity that will support the programme to achieve its results. The figure below illustrates the core institutions collaborating for the BahamaReefs programme coordination unit and their complementary skills.

Figure 12: TNC and partners in the programme coordination unit



As the convening agent, TNC will host the programme management unit, coordinating programmatic activities, narrative reporting, collaboration between recipient organisations, the government and the local partners. Coordination between TNC and the recipient organisations on monitoring and reporting is detailed in Section 13. It is expected that the agreements between TNC and each recipient organisation will also determine how identified risks will be managed and how conflict resolution will be carried out in case of poor partner performance.

A Programme Steering Committee (SC) will provide overall strategic direction and programme oversight, approving annual work plans and budgets, and reviewing technical and financial reporting. This committee will be co-chaired by TNC and GFCR (see Table 5 for SC full composition) and will meet twice every year. The governance arrangement of the BahamaReefs is illustrated by the figure below and the roles and responsibilities are detailed in the table below.

Figure 13: BahamaReefs governance.

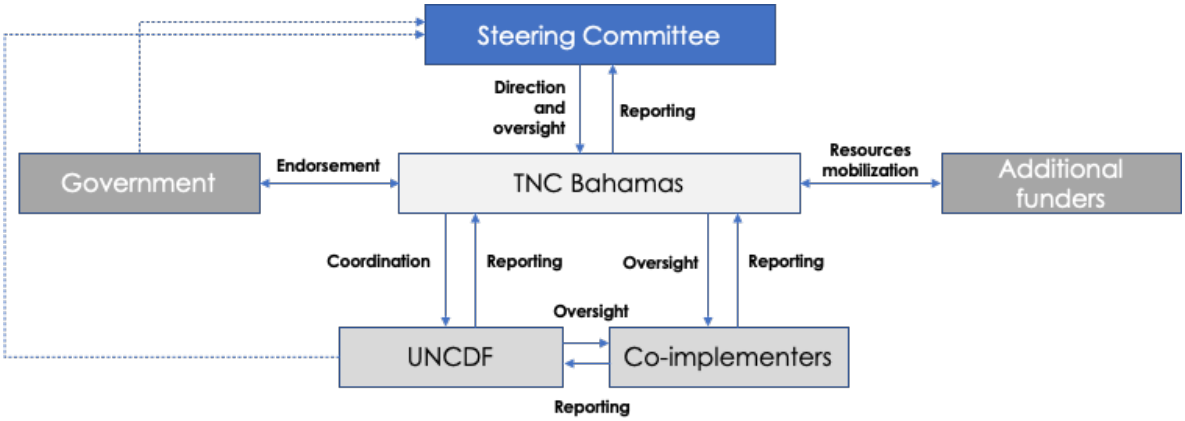
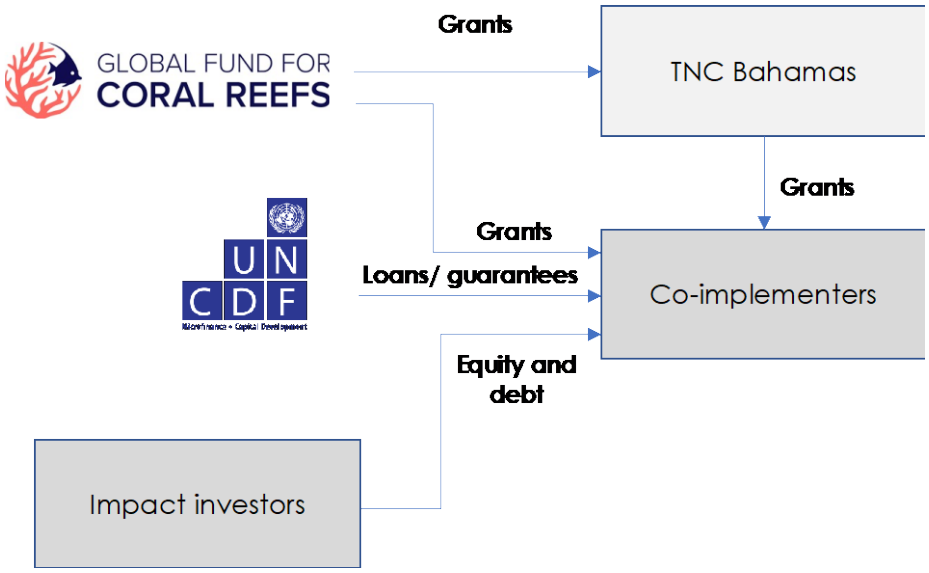


Table 5: Roles and responsibilities of the governing parties.

Governance bodies	Main roles and responsibilities	Staffing
Steering committee	1. Overall strategic direction and programme oversight 2. Approval of annual work plans and budgets 3. Review of financial and technical reporting	GFCR Global Team, UNCDF, TNC, NatureVest, BPAF Government representatives from DMR and DEPP (TBC)
Convening agent (TNC Bahamas)	1. Serve as Co-chair of the Steering Committee 2. Facilitates collaboration between recipient organisations, the host government and the local partners for the implementation of the programme 3. Host the Management Unit responsible for operational and programmatic coordination 4. Compile annual work plans and narrative reports to the Steering Committee 5. Coordinate Steering Committee meetings 6. Facilitate audits and evaluation 7. Manage project workplan and budget 8. Define impact monitoring frameworks for the projects 9. Provide advice and technical assistance for projects on environmental and social aspects 10. Coordinate partners for technical assistance on financial aspects 11. Carry out the communication and visibility strategy 12. Source and screen new pipeline opportunities	Full-time project manager, part-time support from admin, technical, communication, M&E, legal, finance teams. TNC Global teams and NatureVest team will provide part-time support, as well
Co-recipient (UNCDF)	1. Granted direct access to the GFCR 2. Assume full programmatic and financial accountability for funds disbursed by GFCR 3. Develop annual work plan and budgets 4. Report on its narrative and financial achievement to the Steering Committee via TNC	Co-recipient staff subcontractors
Co-implementers	1. Execute under pre-approved annual budgets 2. Technical and financial reporting to TNC	Co-implementers staff subcontractors

The financial flows expected are illustrated in the figure below:

Figure 14: Financial flows in the BahamaReefs programme.



10. Engagement with Local Actors

During the programme proposal development, TNC engaged a set of strategic partners through one-on-one meetings. The table below details the stakeholders consulted:

Table 6: Stakeholders contacted for the preparation of this proposal.

Sector	Company/ Organisation	Name	Role
Government	Ministry of Environment and Housing—DEPP	Rochelle Newbold, Indira Brown and Sydnei Cartwright	Director, Senior Officer and Project Officer
Government	Ministry of Agriculture and Marine Resources—DMR	Gregory Bethel, Lester Gittens and Edison Deleveaux	Acting Director, Fisheries Officer and former DMR Director/ consultant
Private sector	Blue Finance	Nicolas Pascal	Executive Director
Private sector	Coral Vita	Sam Teicher and Gator Halpern	Chief Reef Officer and Founder and President
Private sector	Van Oord	Martin Kershaw, Greg Williams and Neal Erlenborn	Director, Research and Development and Director of Debt and Equity
Scientific/ NGO	Perry Institute Marine Sciences (PIMS)	Craig Dahlgren	Executive Director

Sector	Company/ Organisation	Name	Role
Scientific /NGO	BNT–Bahamas National Trust	Eric Carey, Lindy Knowles, Kateryann Johnson, Janeczka Johnson	Executive Director, Science Director, Finance Director and Grant Manager
Scientific /NGO	ELizabeth Harbour Conservation Partnership	Catherine Booker	EHCP Secretary, Marine conservationist
Finance	Bahamas Development Bank	Sumayah Cargill, Regina Smith and Paige Bastian	Director Strategic Development and Initiatives, Project Officer and Administrative Manager
Finance	Small Business Development Centre—Access Accelerator	Davinia Bain, Samantha Rolle and Mikea Zonicle	Executive Director, Director of External Relations and Executive Assistant
Finance	Interamerican Development Bank	Claudia Stevenson	Lead Private Sector Specialist
Finance	BPAF—Bahamas Protected Areas Fund	Karen Panton	Executive Director
Finance	MAR Fund	María José González	Executive Director
Finance	Sustainable Ocean Fund	Simon Dent and Antoine Rougier	Head of the Fund and ESG Manager
International cooperation	UN Joint SDG Fund	Maxsalia Salmon Aneesah Abdullah	UN Country Office for Jamaica, Bahamas, Bermuda and Turks & Caicos & Cayman Islands

In its role of convening agent, TNC plans to keep these groups of stakeholders engaged during the implementation period of the programme. The table below presents some strategies for the stakeholder engagement by the programme main groups.

Table 7: Stakeholder engagement strategy by main groups.

Stakeholder group	Impact of programme on stakeholder	Influence of stakeholder on programme	Level of engagement during programme proposal development	How will they be engaged during implementation?
Government authorities	The programme will support the development	Specific pipeline projects will implement actions within MPAs and/or	Meetings were held with DMR and DEPP and more information will be provided	TNC is to take a decision on the participation of DMR and/or DEPP in the Steering Committee.

Stakeholder group	Impact of programme on stakeholder	Influence of stakeholder on programme	Level of engagement during programme proposal development	How will they be engaged during implementation?
	of enabling policies.	require permits. New enabling policies will influence current and future pipeline.	until the full proposal is finalized.	Another possibility is to have a specific committee to maintain government authorities involved in the programme.
Projects and businesses	The programme will facilitate access to funding.	Projects will deliver part of the expected results and contribute to the programme impact.	Meetings were held with all projects and businesses in the pipeline and they provided information on their plans and needs through a project template developed by TNC.	TNC will sign formal agreements with all projects and businesses to be supported, establishing frequent reporting and information exchange. TNC will promote regular meetings with each project and specific meetings with all projects for learning and collaboration.
Financial institutions	The programme may provide investment opportunities in the Blue Economy.	The pipeline may be extended to new opportunities if additional funding is available.	Meetings were held with the Bahamas Development Bank and IDB but no specific collaboration was defined. SBDC and BPAF will be partners and have contributed to the content presented in the proposal. MAR Fund was only an exchange meeting as they are also developing a GFCR proposal.	TNC will keep holding meetings with IDB and BDB in the future to explore their engagement in the programme. SBDC and BPAF will be involved as implementation partners. BPAF will be part of the Steering Committee and SBDC will be part of the projects' meetings.

Stakeholder group	Impact of programme on stakeholder	Influence of stakeholder on programme	Level of engagement during programme proposal development	How will they be engaged during implementation?
Other scientific/NGOs	The programme will generate new knowledge in coral reefs conservation and restoration.	The programme may benefit from other scientific/ NGOs partners working in the collection of data required for the monitoring of the indicators.	For the proposal preparation, all scientific/NGO institutions contacted are included in the pipeline projects.	TNC has the practice of publishing findings and data to advance coral reef science. All new information produced under the programme will be shared with the broader conservation community through presentations in specific events and publications.

11. Period of Implementation

The programme will be implemented over a span of eight years, from the beginning of 2022 until the end of 2029. The programme will have two main phases. The first four years, from the beginning of 2022 to the end of 2025, the BahamaReefs will deploy most of the grant funding from the GFCR Grant Window into the development of the seven investment opportunities identified in the initial pipeline. In addition, structural actions will be carried out to enhance the enabling environment for reef-positive businesses, including coordinated efforts with the government agencies. In the second phase, from the beginning of 2026 to the end of 2029, the programme will track progress of the initial projects, facilitate access to investment capital by the projects that achieve an investment-ready state and, depending on funding availability, support other pipeline opportunities identified. One possibility for the second phase is to have new rounds of support to MSMEs through the Blue Economy Programme Accelerator, by SBDC.

A detailed quarterly timeline was developed for the first four years, and it is available in the budget and spreadsheet file, attached to this proposal.

12. Grant Cost, Co-financing and Leverage Potential of the Programme

As explained in section 11, the first four years of the BahamaReefs programme is when most of the grant funding from the GFCR is programmed. The total budget attached to this proposal has a total of USD 8,391,093 . From that, USD 5,403,195 (64.4%) are dedicated to the projects in the initial pipeline. The remaining amount is dedicated to activities to enhance the enabling environment for reef-positive businesses (research and planning and pipeline development), programme management costs and indirect costs.

This initial budget is expected to be reviewed annually by the Steering Committee and resources may be reallocated depending on the success of feasibility phases of different projects and activities. It is possible that the total amount estimated for Phase 1 is not fully used in four years and part of it could be included in the budget for the second phase. The second phase budget, from 2026 to 2029, will be calculated in the mid-term review.

All the amounts presented in Section 3 are estimates and will need to be refined in the programme inception phase. The tables below were complete using the estimates given in Section 3, so they may also be adjusted after the programme starts implementation. Additional co-finance may be added to the final budget, as TNC is still assessing information from partners and from its own programmes.

The table below presents the preliminary pipeline projects with their co-financing, request for GFCR Grant Window, investments sought or secured differentiated between debt and equity and projected revenues.

Table 8: Grant cost, co-finance and leverage potential of preliminary pipeline (in USD).

Projects	Co-finance (grants) 8 years	Grants GFCR	Concessional loans*	Co-finance (Debt)	Equity	Projected revenues
Blue Carbon Resilience Credits	203,000	1,262,500				810,000
Reef and mangrove insurance		370,000				
Blue Economy Programme Accelerator		526,110		5,000,000		
MPA co-management	900,000	300,000	500,000	500,000		5,907,000
Reef Rescue Network	400,000	450,000	450,000			18,000,000
Elizabeth Harbour		459,585	460,000			3,402,720
Scaling Coral Restoration - Coral Vita	600,000	625,000			10,000,000	51,675,000
Total	**2,103,000**	**3,993,195**	**1,410,000**	**5,500,000**	**10,000,000**	**79,794,720**

* Concessional loan terms are not defined by UNCDF Blue Bridge yet, so these amounts are subject to confirmation after terms are clear.

If the leverage potential considers the projected revenues as private finance attracted to coral reefs, a total of USD 7,506,195 in grants, including co-finance, would generate USD 95,294,720 in investments and revenues. This is a ratio of 1:13, as shown in the table below.

Table 9: Pipeline leverage ratio

Total grants (GFCR and co-finance) and concessional loans to the pipeline	7,506,195
Total leverage (debt, equity and projected revenues) from pipeline	95,294,720
Pipeline leverage ratio	13

If the leverage potential considers that the total amounts in grants (from the GFCR and other sources) of USD 10,694,093 , would generate USD 95,294,720 in investments and revenues, the ratio is 1:9, as shown in the table below.

Table 10: Total leverage ratio

Total grants BahamaReefs programme (GFCR Grant Window + Co-finance grants)	10,694,093
Total leverage (debt, equity and projected revenues) from pipeline	95,294,720
Total leverage ratio	9

Table 11: Summary of total grant costs.

Category	**Amount (USD)**
GFCR Grant Window (programme total)	8,391,093
Grant Co-financing (TBC)	2,203,000
Total Grant Costs	10,694,093

Table 12: Summary of total investments sought or secured. Please differentiate between debt and equity investments.

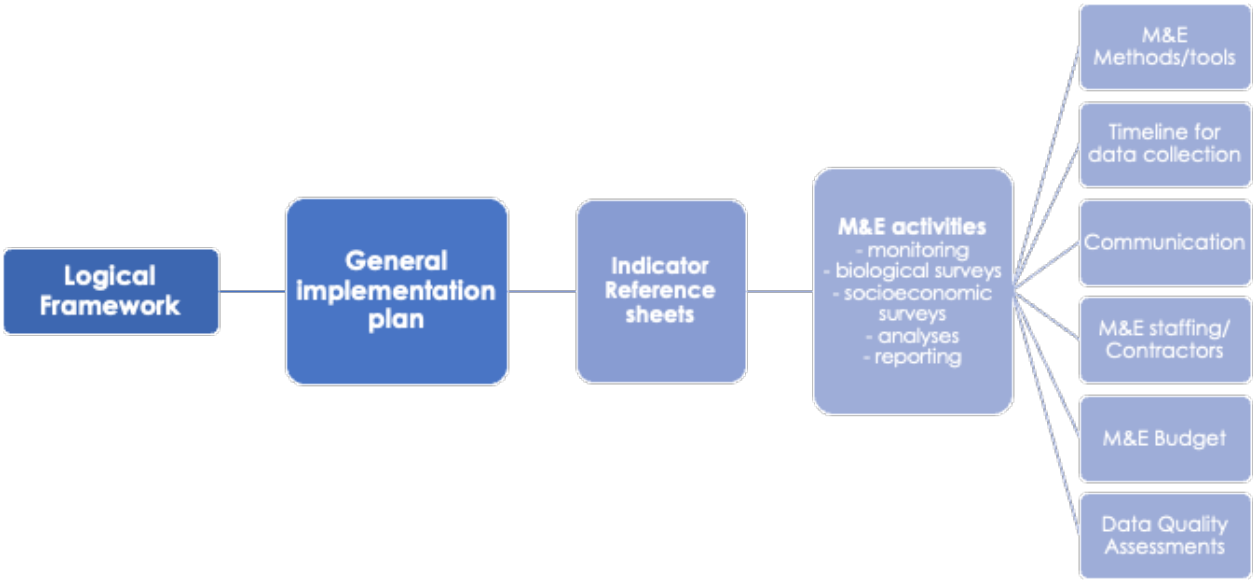
Category	**Debt (USD)**	**Equity (USD)**	**Total (USD)**
GFCR Investment Window		10,000,000	10,000,000
Public Investment co-financing			
Private Investment co-financing	5,500,000		5,500,000
Total Investment	5,500,000	10,000,000	15,500,000
Expected Programme leverage ratio of grants to investment capital			1:2 (if projected revenues are not considered)

13. Strategy for Monitoring and Evaluation

As already mentioned in Section 4, it is important to reinforce that specific monitoring and evaluation (M&E) plans will be developed with each of the pipeline interventions during the programme inception phase, when targets will be refined.

The BahamaReefs M&E strategy will build on the M&E work already carried out by TNC in the Caribbean, adopting indicators that are already used in other projects that focus on coral reefs, ocean governance, sustainable livelihoods and sustainable financing. Relevant GFCR standard indicators will also be incorporated into the M&E strategy. This will allow TNC to aggregate and compare some of the information collected through this programme. The M&E strategy will include the elements illustrated by the figure below.

Figure 15: Elements of the BahamaReefs M&E strategy.



The M&E strategy will have its own goals and objectives linked to the programme outcomes. The logical framework will provide the basis for the M&E strategy. In it the indicators for the outcomes and outputs will be listed, with the main risks and assumptions.

The M&E General Implementation Plan will then be developed detailing the methodologies to be used. This will include data collection procedures, timelines and approved protocols; data management and analysis procedures; and reporting standards and frequency.

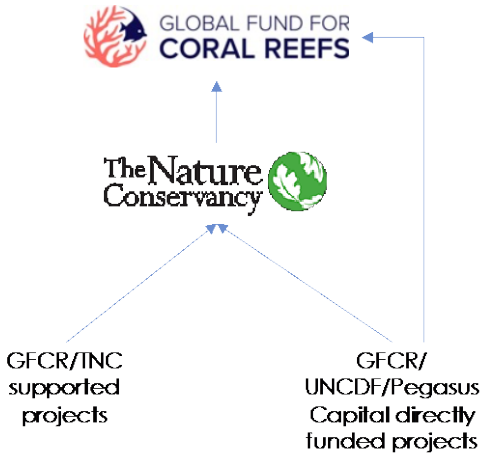
The implementation plan will contain the Indicator Reference Sheets, which determine how each of the indicators are linked to the outputs and outcomes and includes definitions of key terms and formulas to calculate metrics as needed. Indicators will cover:

- Output monitoring
- Process monitoring (where relevant)
- Outcome monitoring (where relevant)

- Environmental aspects
- End-use monitoring (i.e., once commodities are purchased, figuring out where they go or what they're being used for—applicable to potential alternative livelihood activities)

Depending on how the indicators will be measured, a list of M&E activities will be composed, with a timeline for data collection. Other important parts of the M&E Strategy will then be developed, including communication methods, M&E staffing and generating a list of potential contractors, and data quality assessments. When all these aspects are determined, the M&E budget will be refined. The figure below illustrates the envisioned reporting structure, already detailed in Section 9.

Figure 16: Elements of the BahamaReefs M&E strategy.



A draft Performance Management Plan was developed, and the link to access it is in Annex IX.

14. Communication and Visibility

BahamaReefs aims to educate and engage community members, policymakers, the private sector and other stakeholders to increase support for long-term coral reef conservation, which includes scaling up coral restoration, advancing coral science and improving management of MPAs. Additionally, the Programme will promote policy frameworks to help develop and implement innovative finance mechanisms that generate sustainable funding for coral reef conservation today and into the future. The Programme will raise awareness about opportunities for the private sector and government to invest in reef conservation in The Bahamas, while also elevating innovative coral conservation finance models throughout the Caribbean region and other parts of the world—where they can be replicated to address funding barriers, dramatically scale up coral conservation and reduce drivers of degradation.

Through an array of communication products created for national, regional and global audiences, we will establish a brand identity for BahamaReefs, illustrate the need for long-term coral conservation and the effective management of MPAs in The Bahamas, and make the case for using innovative finance mechanisms to scale up coral reef protection, restoration and MPA management effectiveness by removing funding barriers. Videos, written stories,

photography, infographics, press outreach, a social media campaign and local community-based events will incorporate on-the-ground voices from stakeholders who depend daily on coral reef ecosystem services and the benefits MPAs provide and conservation finance expert voices who can speak to the viability and benefits of investing in innovative funding models.

Our suite of communications products will illustrate how innovative finance mechanisms translate to long-term coral conservation success while also promoting security and growth for economies, businesses and livelihoods. In this way, the communications and visibility component of BahamaReefs will not only promote a groundswell of support for innovative finance mechanisms but also influence positive attitudes around the effective management of MPAs and coral conservation science made possible through the Global Fund for Coral Reefs and its donors.

15. Accountability, Financial Management and Public Disclosure

The Programme will be using a pass-through fund management modality, where UN Multi-Partner Trust Fund Office will act as the Administrative Agent (AA) under which the funds will be channeled for the Programme through the AA.

The convening agent and recipient organisations shall assume full programmatic and financial accountability for the funds disbursed to them by the Administrative Agent of the Global Fund for Coral Reefs (Multi-Partner Trust Fund Office). Such funds will be administered by each recipient organisation, Fund and Programme in accordance with its own regulations, rules, directives and procedures. Each recipient organisation shall establish a separate ledger account for the receipt and administration of the funds disbursed to it by the Administrative Agent.

Indirect costs of the Recipient Organisations recovered through programme support costs will be 7%. All other costs incurred by each entity in carrying out the activities for which it is responsible under the Fund will be recovered as direct costs. The project management cost should not exceed 18%.

Funding by the GFCR will be provided on an annual basis, upon successful performance of the programme.

Procedures on financial transfers, extensions, financial and operational closure, and related administrative issues are stipulated in the Operational Guidance of the GFCR.

Partners must comply with GFCR Fund brand guidelines, which includes information on donor visibility requirements.

Each recipient organisation will take appropriate measures to publicize the GFCR and give due credit to the other partners. All related publicity material, official notices, reports and publications, provided to the press or Fund beneficiaries, will acknowledge the role of the host Government, donors, partners, the Administrative Agent and any other relevant entities. In particular, the Administrative Agent will include and ensure due recognition of the role of each recipient organisation and partners in all external communications related to the GFCR.

GLOBAL FUND FOR CORAL REEFS

Annex I: Technical Review Criteria for Programme Documents

Category	Criteria	Weight in category	Weight of total
1. Mandatory criteria	1.1 Submission is appropriate, complete and follows guidelines outlined in the call for proposal	Pass/Fail	
	1.2 Feasible time frame (two to eight years) with quantitative milestones on a semi-annual basis	Pass/Fail	
	1.3a Clearly delineated impact metrics positively affecting coral reefs and associated ecosystems and coastal and reef-dependent communities (e.g., x hectares protected, x% increase in fish density, x% increase in biodiversity, alternative incomes for xx fishers, coastal protection for xx households, etc.)	Pass/Fail	
	1.3b Drivers negatively affecting coral reefs and associated ecosystems identified and clear actions to mitigate (e.g., overfishing: impose a no-take zone, agricultural runoff: introduce upstream regulation and enforcement)	Pass/Fail	
	1.3c Monitoring plan adequately described tied to delivering proposed impact metrics and appropriately resourced	Pass/Fail	
	1.5 Co-investment from local sponsors (can be in the form of funding or in-kind/staff time)	Pass/Fail	
	1.6a Revenue generation schemes are included	Pass/Fail	
	1.6b Already revenue generating	Pass/Fail	
	1.6c If Point 1.6b is "Fail," then does the proposal include a clear, feasible route to market and eventually secure financial sustainability?	Pass/Fail	
	1.7 Clear budget with overhead/management accounting for no more than 18% (breakdown by outcome and output)	Pass/Fail	
	1.8 Targeted grant to investment leverage ratio is 1:3 or above	Pass/Fail	

2. Relevance	2.1 Relevance of approach according to GFRC vision and the SDGs (drivers addressed and use of blended finance mechanisms)	X/10	75%
	2.2 Theory of Change and rationale for the proposal is clear with potential for scaling up and replication	XX/10	
	2.3 Conservation and biodiversity outcomes are project priorities with multiple drivers of degradation addressed and tied to milestones appropriately timed and measured (clearly stated; % increase in live coral cover, reduction of invasive species, increase in fish density, hectares protected, reduction in pollution, etc.)	XX/20	
	2.4 Blue finance mechanisms are viable and include appropriate timeline to implementation (business models using blue bonds, debt, guarantees to attract investment, etc.)	XX/20	
	2.5 Scale of positive impact for coastal and reef dependent communities. (i.e., number of benefactors and type)	X/10	
	2.6 Project aims to address issues of gender and social inclusion with clear metrics, timelines, and delivery routes (e.g., more economic opportunities for women)	X/5	
3. Delivery and operations	3.1 Roles and responsibilities (clarity and appropriateness of governing and policy frameworks) with local employment favoured and gender balanced	X/5	25%
	3.2 Capacities or convening agent and partners (technical capacities and/or abilities), readiness of actors involved, baseline metrics, capacity for monitoring and reporting impacts	X/5	
	3.3 Duration and milestones (clarity and appropriateness of), with risks and mitigating factors delineated	X/5	
	3.4 Budget adequacy (cost-efficiency and appropriateness)	X/5	
	3.5 Stage of development—is the concept past the idea stage, demonstrated by financing secured, signed partnership agreements, signed contracts with the community or government, IP produced, or other contractual evidence	X/5	

Annex II: Budget and Work Plan

Include or link the budget broken down to the activity level. The GFCR Global Team has provided a template.

Annex III: Results Framework

The indicators used in the results framework are detailed in the Performance Management Plan (PMP), which is under development (see Annex IX). Baselines and targets will be defined in the inception phase when TNC and the partners develop the specific M&E plan for each intervention.

Result/Indicators	Baseline	Annual targets	Means of Verification	Responsible partner
Outcome 1: Improved management effectiveness of priority coral reef sites, including climate refugia				
Outcome 1 indicator: Number of hectares of priority sites under improved management	TBD	TBD	Project logs, METT surveys	TNC
Outcome 1 indicator: Number of hectares of ecosystems under improved biophysical conditions as a result of project measures	TBD	TBD	AGRRA surveys, photomosaics of restoration activities, water quality assessments, threat reduction assessments in general, Project logs	TNC and project partners
Output 1.1: Climate change refugia are identified and effectively managed within and outside existing MPAs				
Indicator: Number of hectares of priority sites under improved management	TBD	TBD	Project logs, METT surveys	TNC
Indicator: Number of hectares of ecosystems under improved biophysical conditions as a result of project measures	TBD	TBD	AGRRA surveys, photomosaics of restoration activities, water quality assessments, threat reduction assessments in general, Project logs	TNC and project partners
Output 1.2: Drivers of degradation within MPAs are identified and prioritized for intervention to support resilient coral reefs and adjacent communities				
Indicator: Integrated local threat index is decreased from high and very high levels (3,4,5 on the index) to low and medium levels (0,1,2 on the index) (standard)	TBD	TBD	Surveys with key experts and stakeholders; water quality and solid waste analysis; enforcement of marine vessel movement; recreational vessel traffic; focus group and secondary data collection (reports, newspaper articles, etc.); fishing trends, from the	TNC and project partners

Result/Indicators	Baseline	Annual targets	Means of Verification	Responsible partner
			fisheries management authority for The Bahamas	
Indicator: Number of new or improved coral reef protection resolutions, declarations and laws passed for governing bodies. Including allocated national budget to implement coral reef protected area management and enforcement. (custom indicator from standard)	TBD	TBD	Project logs	TNC and project partners
Output 1.3: Increased long-term funding for management of priority sites and capacity created to operate proceeds with new financial mechanisms (e.g., an endowment fund, MPA co-management model, etc.)				
Indicator: Volume of private finance mobilized from leveraging GFCR funds for management of priority marine sites	TBD	TBD	Project logs, partner logs	TNC and project partners
Indicator: Volume of public finance mobilized from leveraging GFCR funds for management for management of priority marine sites	TBD	TBD	Project logs, partner logs	TNC and project partners
Indicator: Annual capital expenditures (USD/yr) for strengthened management and enforcement capacities of MPA and LMMA networks (standard)	TBD	TBD	Project logs, partner logs	TNC and project partners
Indicator: Ratio of protected area costs covered by the private sector vs. the public sector or grants (e.g., costs for management, monitoring and enforcement) (standard)	TBD	TBD	Project logs, partner logs	TNC and project partners
Indicator: Number of persons with increased support or buy-in for marine conservation activities and reef positive businesses	TBD	TBD	Surveys, project and partner logs	TNC and project partners
Indicator: Number of reef-positive businesses with improved operations	TBD	TBD	Project logs, partner logs	TNC and project partners
Output 1.4: Enabling policies are catalysed to support coral conservation and restoration				
Indicator: Number of new or improved coral reef protection resolutions, declarations and laws passed for governing bodies. Including allocated national budget to implement coral reef protected area management and enforcement. (custom indicator from standard)	TBD	TBD	Project logs, partner logs	TNC and project partners

Result/Indicators	Baseline	Annual targets	Means of Verification	Responsible partner
Indicator: Number of hectares of proposed or expanded protected areas	TBD	TBD	Government records, GIS data	TNC
Outcome 2: Livelihoods of reef-dependent communities are strengthened by reef-positive businesses				
Outcome 2 indicator: Number of reef-positive businesses with improved operations	TBD	TBD		
Output 2.1: A reef-positive business accelerator is designed and implemented for Micro, Small and Medium-sized Enterprises (MSMEs)				
Indicator: Number of persons with increased support or buy-in for marine conservation activities and reef positive businesses	TBD	TBD	Socioeconomic surveys of project beneficiaries, using partner logs	TNC and project partners
Indicator: Number of beneficiaries with actual or perceived increased economic benefit	TBD	TBD	Socioeconomic surveys of project beneficiaries, using partner logs	TNC and project partners
Indicator: Number of local entrepreneurs (total # of individuals) and women managing (# of women) businesses with a direct or indirect positive impact on coral reef and associated ecosystems vs. baseline (t=0) (standard)	TBD	TBD	Socioeconomic surveys of project beneficiaries, using partner logs	TNC and project partners
Indicator: Number of locals (total # of individuals) and women (# of women) employed in businesses with a direct or indirect positive impact on coral reefs and associated ecosystems vs. baseline (t=0) (standard)	TBD	TBD	Socioeconomic surveys of project beneficiaries, using partner logs	TNC and project partners
Indicator: Number of persons with improved capacity to carry out marine conservation activities	TBD	TBD	Socioeconomic surveys of project beneficiaries, using partner logs	TNC and project partners
Output 2.2: Reef-positive businesses receive investments (e.g., community-based organisations, larger businesses, etc.)				
Same 5 indicators as Output 2.1				
Outcome 3: Coral reefs and associated ecosystems are restored to increase resilience				
Outcome 3 Indicator: Number of hectares of ecosystems under improved biophysical conditions as a result of project measures	TBD	TBD	AGRRA surveys, photomosaics of restoration activities, water quality assessments, threat reduction assessments in general, Project logs GIS data for coastal and marine habitat extent were derived from TNC's habitat geo-database, which draws on multiple sources	TNC and project partners

Result/Indicators	Baseline	Annual targets	Means of Verification	Responsible partner
			and is updated when new data becomes available. The highest resolution habitat data that is available is used for each seascape for monitoring and deriving area calculations.	
Output 3.1: Blue Carbon Resilience Credits (BCRC) methodology is tested in pilot sites and replicated if feasible				
Indicator: Number of hectares of ecosystems under improved biophysical conditions as a result of project measures	TBD	TBD	AGRRA surveys, photomosaics of restoration activities, water quality assessments, threat reduction assessments in general, Project logs GIS data for coastal and marine habitat extent were derived from TNC's habitat geo-database, which draws on multiple sources and is updated when new data becomes available. The highest resolution habitat data that is available is used for each seascape for monitoring and deriving area calculations.	TNC and project partners
Indicator: Volume of private finance mobilized from leveraging GFCR funds for management of priority marine sites	TBD	TBD	Project logs and partner logs	TNC and project partners
Output 3.2: Partnerships and training are facilitated to develop business models around restoration that are investable				
Indicator: Volume of private finance mobilized from leveraging GFCR funds for management of priority marine sites	TBD	TBD	Project logs and partner logs	TNC and project partners
Indicator: Number of persons with increased support or buy-in for marine conservation activities and reef positive businesses	TBD	TBD	Surveys and focus groups with project beneficiaries, project logs, partner logs	TNC and Project partners
Indicator: Number of persons with improved capacity to carry out marine conservation activities	TBD	TBD	Surveys and focus groups with project beneficiaries, project logs, partner logs	TNC and project partners
Output 3.3: Climate risk and resilience products, including reef and mangrove insurance, are developed and launched				
Indicator: Volume of private finance mobilized from leveraging GFCR funds for management of priority marine sites	TBD	TBD	Project logs and partner logs	TNC and project partners

Result/Indicators	Baseline	Annual targets	Means of Verification	Responsible partner
Indicator: Volume of public finance mobilized from leveraging GFCR funds for management for management of priority marine sites	TBD	TBD	Project logs and partner logs	TNC and project partners
Indicator: Government and private sector investments (USD) into coral reef restoration efforts and coral reef restoration businesses	TBD	TBD	Partner logs	Project partners
Output 3.4: Investments made into coral restoration-focused businesses				
Indicator: Volume of private finance mobilized from leveraging GFCR funds for management of priority marine sites	TBD	TBD	Project logs and partner logs	TNC and project partners
Indicator: Government and private sector investments (USD) into coral reef restoration efforts and coral reef restoration businesses	TBD	TBD	Partner logs	TNC and project partners

Annex IV: Social and Environmental Compliance

BahamaReefs does not yet have full view of its pipeline, however potential activities from the pipeline opportunities could include:

- Restoration:
  - Coral farming
  - Ecosystem restoration (mangroves, seagrass and coral reefs)
  - Reef restoration technology
- MPA management:
  - Mooring installation
  - MPA infrastructure building
  - Waste management facilities
  - Community-based/SME ecotourism
- Sustainable fisheries and aquaculture:
  - Seaweed farming/ sea urchin aquaculture
  - Crab/lobster harvesting

The Social and Environmental Compliance section has been completed based on these expected activities.

Part 1—Social and Environmental pre-screening checklist

CHECKLIST POTENTIAL SOCIAL AND ENVIRONMENTAL RISKS	
Principles 1: Human Rights	Answer (Yes/No)
1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? [89]	No
3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5. Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
6. Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7. Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8. Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women's Empowerment	
1. Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3. Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process, and has this been included in the overall Project proposal and in the risk assessment?	No
4. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?	No

[89] Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being	
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below	
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management	
1.1 Would the Project potentially cause adverse impacts to habitats (e.g., modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	No
1.2 Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g., nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	Yes
1.3 Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems and/or livelihoods? (Note: If restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4 Would Project activities pose risks to endangered species?	No
1.5 Would the Project pose a risk of introducing invasive alien species?	No
1.6 Does the Project involve harvesting of natural forests, plantation development or reforestation?	No
1.7 Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	Yes
1.8 Does the Project involve significant extraction, diversion or containment of surface or groundwater? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No
1.9 Does the Project involve utilization of genetic resources? (e.g., collection and/or harvesting, commercial development)	Yes
1.10 Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11 Would the Project result in secondary or consequential development activities that could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested lands will generate direct environmental and social impacts (e.g., felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.*	No
Standard 2: Climate Change Mitigation and Adaptation	

2.1 Will the proposed Project result in significant[90] greenhouse gas emissions or may exacerbate climate change?	No
2.2 Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Yes
2.3 Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
Standard 3: Community Health, Safety and Working Conditions	
3.1 Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2 Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g., explosives, fuel and other chemicals during construction and operation)?	No
3.3 Does the Project involve large-scale infrastructure development (e.g., dams, roads, buildings)?	No
3.4 Would failure of structural elements of the Project pose risks to communities? (e.g., collapse of buildings or infrastructure)	No
3.5 Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6 Would the Project result in potential increased health risks (e.g., from waterborne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7 Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8 Does the Project involve support for employment or livelihoods that may fail to comply with national and international labour standards (i.e., principles and standards of ILO fundamental conventions)?	No
3.9 Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g., due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage	
4.1 Will the proposed Project result in interventions that would potentially adversely impact sites, structures or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts.)	No

[90] In regards to CO_2, "significant emissions" corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

4.2 Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement	
5.1 Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2 Would the Project possibly result in economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions—even in the absence of physical relocation)?	No
5.3 Is there a risk that the Project would lead to forced evictions?[91]	No
5.4 Would the proposed Project possibly affect land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples	
6.1 Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2 Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3 Would the proposed Project potentially affect the human rights, lands, natural resources, territories and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? If the answer to the screening question 6.3 is "yes," the potential risk impacts are considered potentially severe and/or critical, and the Project would be categorized as either Moderate or High Risk.	No
6.4 Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5 Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6 Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories and resources?	No
6.7 Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No

[91] Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group or community to reside or work in a particular dwelling, residence or location without the provision of, and access to, appropriate forms of legal or other protections.

6.8 Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9 Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency	
7.1 Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional and/or transboundary impacts?	No
7.2 Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	No
7.3 Will the proposed Project potentially involve the manufacture, trade, release and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol*	No
7.4 Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5 Does the Project include activities that require significant consumption of raw materials, energy and/or water?	No

PART 2—IDENTIFYING AND MANAGING SOCIAL AND ENVIRONMENTAL RISKS

Please fill in this section with preliminary analysis and suggestions for risk mitigation measures, referring to the items in the above checklist which are applicable to this Transformative Partnership. This document will be further updated and consolidated when a full project plan is developed.

For additional guidance on Questions 1 to 6, please refer to UNDP's Social and Environmental Screening Procedure (SESP).

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the Project mainstreams the human-rights-based approach

The project will apply TNC's Human Rights Guide for Working with Indigenous Peoples and Local Communities,[92] which outlines TNC's commitment to a human-rights-based approach. BahamaReefs will look to transform the livelihoods of coral reef-dependent communities in The Bahamas through climate adaptation and sustainable development. This will be achieved through:

- The design and implementation of a reef-first community business incubator. This will look to support sustainable enterprises and local entrepreneurs and help to provide additional sources of incomes to coastal communities and reduce the pressure on coral reefs;
- Technical assistance to support established reef-first businesses to enhance the engagement and increase the inclusion of communities in their business models; and
- Mobilized investment in community-based reef-first businesses (i.e., sustainable fisheries, seaweed, tourism, etc.), helping to support and increase the resilience of local communities to climate change and other stressors.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

The BahamaReefs Programme will mainstream gender equality criteria in its interventions and include a focus on creating economic empowerment opportunities for women. This aspect will be highlighted in the activities under Outcome 2. Through reef protection, restoration and the creation of reef-positive businesses, BahamaReefs will support local job creation for women and men. BahamaReefs will ensure an inclusive approach throughout the project and the results framework will include sex-disaggregated indicators and set gender-specific targets. The M&E plan will also ensure adherence to indicators related to gender equality and women's empowerment.

Briefly describe in the space below how the Project mainstreams environmental sustainability

The overall objective of BahamaReefs is to protect and restore coral reefs in The Bahamas and increase coastal communities' resilience to climate change and other stressors. The project will support activities contributing to this overall objective including, but not limited to:

- Coral restoration;
- Reef risk and resilience projects (such as insurance and recovery response);
- Blue carbon (with mangrove restoration);
- Businesses related to MPAs management (including sustainable tourism); and
- Waste management.

Prior to any potential investment, all activities will be screened based on the following environmental and social criteria;

1. Alignment with national commitments and priorities (NDC, NBSAP, NDP, SDGs);
2. Proven (science-based) direct (conservation or restoration) or indirect (reduction of degradation drivers) benefits to coral reefs;
3. Increased resilience of communities and ecosystems to climate change effects;
4. Generation of economic opportunities for Bahamians, including women; and

[92] https://www.tnchumanrightsguide.org/wp-content/uploads/TNC-Full-Guide-01-01.pdf

5. Potential for revenue generation that allows for financial sustainability of coral reef protection/restoration efforts in the long term.

The project will help with mainstreaming environmental sustainability into the business models or the organisations carrying out these activities. Through supporting these activities, the project will enhance the resilience of The Bahamas coastal ecosystems and reduce vulnerability of coastal communities to climate change impacts. Other environmental co-benefits from this project include biodiversity conservation, increased carbon sequestration, ecosystem restoration and improved waste management.

QUESTION 2: What are the Potential Social and Environmental Risks Identified? Note: Describe briefly potential social and environmental risks identified in Annex 1—Risk Screening Checklist (based on any "Yes" responses). If no risks have been identified in Annex 1 then note "No Risks Identified" and skip to Question 4 and Select "Low Risk". Questions 5 and 6 not required for Low Risk Projects.	QUESTION 3: What is the level of significance of the potential social and environmental risks? See Annex 3 for descriptions of ratings. Note: Respond to Questions 4 and 5 below before proceeding to Question 6			QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?
Risk Description	Impact and Probability (1-5) See Annex 3, Table 1 and 2	Significance (Low, Moderate, High) See Annex 3 Table 3	Comments	Description of assessment and management measures as reflected in the Project design. If Strategic Environmental and Social Assessment is required, note that the assessment should consider all potential impacts and risks.
Risk 1: Project activities within or adjacent to critical habitats and/or environmentally	I = 3 P = 1	Low	There are project activities related to improving the effectiveness of existing	This project is not proposing the establishment of new MPA sites, rather improving the management of existing sites. Environmental and social safeguards and frameworks will be in

sensitive areas, including legally protected areas			MPA management. These activities will not result in the creation of new MPAs but will be designed to improve the effectiveness of MPA management and are unlikely to produce negative environmental or social impacts.	place to ensure that all projects will avoid any negative impacts on these areas, and where possible will improve the management of MPAs. During the project design, TNC will seek to engage with government agencies and co-management actors, such as Bahamas National Trust (BNT), and any other stakeholders or local communities dependent or working in these areas. TNC is part of the Bahamas Protected programme, which is a joint effort between TNC, BNT, the Bahamas Reef Environment Educational Foundation and multiple national stakeholders. Bahamas Protected have developed a set of socioeconomic and governance principles that the project will adhere to. These principles aim to maximize benefits and minimize costs to local communities and other stakeholders, and align the network with local legal, political and institutional requirements.[93]
Risk 2: Project involves the production and/or harvesting of fish populations or other aquatic species	I = 3 P = 2	Low	Project activities could include sustainable fisheries and aquaculture which will involve the production/harvesting of crab and/or seaweed.	BahamaReefs will help transition business models to sustainable fisheries and aquaculture. Eventually this will help to increase the yields for local fishers and allow them to sell their products at a premium, therefore improving livelihoods and coastal communities. These projects will be monitored and reviewed to assess the environmental and social impact of sustainable fisheries and aquaculture.

[93] Bahamas Protected. (2017). *Expanding The Bahamas Marine Protected Area Network to Protect 20% of the Marine and Coastal Environment by 2020: A Gap Analysis*

Risk 3: The utilization of genetic resources through the collection and harvesting of coral	I = 2 P = 3	Low	Project activities could include coral farming and reef restoration which would include the collections and harvesting of coral larvae and fragments.	Coral restoration and farming could help increase the health and resilience of coral reefs (through higher coral cover, genetic diversity, structural complexity, species diversity) while providing a source of revenue to local communities through reef-first business models.
Risk 4: Potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change	I = 3 P = 3	Low	Threats such as coral bleaching, tropical hurricanes, sea level rise and sea surges are magnified by rising temperatures. Reefs in The Bahamas are likely to experience severe thermal stress in coming decades.	Despite the increased risk of climate change impacts on coral reefs, resilient coral reefs with a large number of thermal refugia have been identified in The Bahamas. These coral reefs incur less degradation in the face of predicted ocean acidification and rising sea surface temperatures. BahamaReefs will identify climate change refugia within and outside of MPAs and propose management strategies and conservation of these sites.
Risk 5: Project activities affect land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources	I = 3 P = 1	Low	Project activities related to MPA management could strengthen the enforcement of fishing rights within the project sites.	This project is not proposing the establishment of new MPA sites, rather improving the management of existing sites. This could result in strengthening the enforcement within MPAs but is unlikely to ultimately change fishing rights for local communities. As listed above in response to Risk 1, with regards to any activities relating to MPAs there will be consultation with local communities and stakeholders as well alignment with local regulations and requirements.

	QUESTION 4: What is the overall Project risk categorization?		
	Select one (see Annex IV – Table 4, or SESP, for guidance)		Comments
	Low Risk	X	
	Moderate Risk	☐	

	High Risk	☐	
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the Social Environmental Standards are relevant?		
	Check all that apply		Comments
	Principle 1: Human Rights	☐	
	Principle 2: Gender Equality and Women's Empowerment	☐	
	1. Biodiversity Conservation and Natural Resource Management	☐	
	2. Climate Change Mitigation and Adaptation	☐	
	3. Community Health, Safety and Working Conditions	☐	
	4. Cultural Heritage	☐	
	5. Displacement and Resettlement	☐	
	6. Indigenous Peoples	☐	
	7. Pollution Prevention and Resource Efficiency	☐	

PART 3—RATING THE IMPACT, PROBABILITY AND SIGNIFICANCE OF RISK

Table 1: Rating the "Probability" of a risk.

Score	Rating
5	Expected
4	Highly Likely
3	Moderately Likely
2	Not Likely
1	Slight

Table 2: Rating the "Impact" of a risk.

Score	Rating	Social and environmental impacts
5	Critical	Significant adverse impacts on human populations and/or environment. Adverse impacts high in magnitude and/or spatial extent (e.g., large geographic area, large number of people, transboundary impacts, cumulative impacts) and duration (e.g., long-term, permanent and/or irreversible); areas impacted include areas of high value and sensitivity (e.g., valuable ecosystems, critical habitats); adverse impacts to rights, lands, resources and territories of indigenous peoples; involve significant displacement or resettlement; generates significant quantities of greenhouse gas emissions; impacts may give rise to significant social conflict.
4	Severe	Adverse impacts on people and/or environment of medium to large magnitude, spatial extent and duration more limited than critical (e.g., predictable, mostly temporary, reversible). The potential risk impacts of projects that may affect the human rights, lands, natural resources, territories and traditional livelihoods of indigenous peoples are to be considered at a minimum potentially severe.
3	Moderate	Impacts of low magnitude, limited in scale (site-specific) and duration (temporary), can be avoided, managed and/or mitigated with relatively uncomplicated accepted measures.
2	Minor	Very limited impacts in terms of magnitude (e.g., small affected area, very low number of people affected) and duration (short), may be easily avoided, managed, mitigated.
1	Negligible	Negligible or no adverse impacts on communities, individuals and/or environment

Table 3: Determining the "Significance" of a risk.

IMPACT	5					
	4					
	3					
	2					
	1					
		1	2	3	4	5
	PROBABILITY					
Green = Low; Yellow = Moderate; Red = High						

Table 4: Overall social and environmental risk categorization of the project.

Risk Categories	Description
Low	Projects that include activities with minimal or no risks of adverse social or environmental impacts.
Moderate	Projects that include activities with potential adverse social and environmental risks and impacts, that are limited in scale, can be identified with a reasonable degree of certainty, and can be addressed through application of standard best practice, mitigation measures and stakeholder engagement during Project implementation. Moderate Risk activities may include physical interventions (e.g., buildings, roads, protected areas, often referred to as "downstream activities) as well as planning support, policy advice, and capacity building (often referred to as "upstream" activities) which may present risks that are predominantly indirect, long-term or difficult to identify.
High	Projects that include activities—either "upstream" or "downstream" activities—with potential significant and/or irreversible adverse social and environmental risks and impacts, or which raise significant concerns among potentially affected communities and individuals as expressed during the stakeholder engagement process. High Risk activities may involve significant impacts on physical, biological, ecosystem, socioeconomic or cultural resources. Such impacts may more specifically involve a range of human rights, gender and/or environmental sustainability issues.

Annex V: Programme Risk Management Matrix

Risks	Risk Level: Very high High Medium Low (Likelihood x Impact)	Likelihood: Almost Certain—5 Likely—4 Possible—3 Unlikely—2 Rare—1	Impact: Extreme—5 Major—4 Moderate—3 Minor—2 Insignificant—-1	Mitigating measures	Responsible Unit/Person
Contextual risks					
Climate change effects damaging reefs	High	3	3	The BahamaReefs programme will be supporting projects that protect, enhance, and restore coral reefs and associated ecosystems. These ecosystems are critical for both climate change mitigation and adaptation. Specifically, the programme is focused on improved management effectiveness of priority coral reef sites, including climate refugia. These areas are more resilient to the impacts of climate change and will help future-proof the programme.	TNC
Major natural disasters in projects areas	High	4	4	The programme will aim to increase climate change resiliency and reduce vulnerability to natural disasters in The Bahamas through strengthening the livelihoods of reef-dependent communities through reef-positive business[94]; and ensuring that coral reefs and associated ecosystems are restored to increase resilience.	TNC

[94] Reef-positive businesses are considered businesses that have positive impacts to coral reefs (promote direct conservation and restoration) and also businesses that reduce threats to coral reefs (address drivers of degradation).

COVID-19 risks					
COVID-19 impacts on the tourism sector	High	4	3	COVID-19 has demonstrated an overreliance on tourism to The Bahamas economy. The BahamasReefs programme will look to source a diverse pipeline of investable projects and business models from a range of sectors, including restoration, MPA management, and sustainable fisheries and aquaculture. This will help to provide an alternative source of income, avoiding an overreliance on tourism to support reef-positive business.	TNC
Risks from COVID-19 leads to unfavourable investment climate	High	3	3	The Bahamas faced severe socioeconomic impacts due to the pandemic. The international community has extended loans to help with the response and recovery (World Bank USD 100 million loan). The ocean and blue economy have been identified as a priority in recovery efforts.[95] The BahamasReef programme can help support new and emerging reef-positive opportunities that support a fast and resilient recovery. This can in turn help to diversify the economy, produce more food, provide jobs and support sustainable development.	TNC
Recovery from COVID-19 reduces focus from the government on ecosystems	Medium	2	3	The programme has received positive feedback from the Bahamian government during the consultations as part of the project preparation phase. COVID-19 has highlighted the need for a resilient, diverse,	TNC

[95] OECD. (2021). COVID-19 pandemic: Towards a blue recovery in small island developing states. Available online: https://www.oecd.org/coronavirus/policy-responses/covid-19-pandemic-towards-a-blue-recovery-in-small-island-developing-states-241271b7/

conservation and restoration				sustainable economy, which this programme will support.	
Restrictions because of COVID-19 delay the implementation of programme activities	Medium	2	3	The Bahamas has good Internet connection, and institutions have adapted quite well to remote work. TNC can provide the online tools for virtual meetings, and restrictions tend to be reduced as vaccination advances in the country.	TNC
Programmatic risks					
Lack of political buy-in	Medium	2	3	TNC has been in discussion with strategic government agencies throughout the stakeholder engagement of the project preparation phase. The project interventions presented to date have been widely accepted. The government has made strong commitments related to the Caribbean Challenge Initiative for the creation and management of MPAs, and the BahamasReef programme will align all project interventions with national commitments and priorities. An output to support the development of policies and plans key for coral reefs is included to keep governmental agencies engaged. They will also participate in the programme governance.	TNC
Limited pipeline opportunities	High	3	3	As outlined in Section 3, the programme has identified several projects, initiatives, and businesses to compose the BahamaReefs preliminary pipeline. TNC also has established relationships and partnerships in the country that will help to build a robust investment pipeline. The	TNC

				programme will provide technical assistance, training, development of business partnerships and piloting to create investable opportunities.	
Institutional risks					
Limited local capacity and skills relating to financing projects	Medium	3	2	TNC will partner with local and international organisations that understand the local investment climate and have a track record of establishing blended finance solutions. TNC will also leverage the experience of NatureVest, which will bring specific investment expertise and a global portfolio of different financial instruments.	TNC/ NatureVest
Lack of stakeholder participation in the BahamaReefs programme	Low	1	3	TNC has an established network of partners working to conserve and restore coral reefs in the country. This programme will build on this and has engaged several organisations during the project preparation phase, including NGOs, policymakers, scientists and financial institutions. During the implementation phase, the programme will also host a series of local community events to garner further support.	TNC/ Co-implementing recipient organisations
Insufficient sources of long-term finance to maintain sustainable management of projects	Medium	2	3	The BahamaReefs Programme is a long-term initiative that aims to implement innovative financial mechanisms to provide sustainable funding for long-term coral reef conservation. For example, this could include setting up an endowment fund or an MPA co-management model (see BNT-Blue Finance intervention). This will ensure that sustained funding streams are consistently accessed and flowing toward	TNC

				reef conservation projects. An output to establish new financial mechanisms within BPAF was included to increase funding capacity.	
Fiduciary risks					
Project cost overrun	Low	2	3	During the project development phase, the programme has developed a detailed work plan, budget and milestones to ensure financial accountability and expenditure. The Programme Steering Committee will also review all financial and technical reporting. A full-time Programme Manager will be in place to oversee the project management and reporting.	TNC/ Programme Steering Committee/ Programme Manager
Investment risk	Medium	3	3	There can be no assurance that the development of any particular investment will be successful or that its business will be profitable. The programme will mitigate risk through robust due diligence of all pipeline opportunities and regular project monitoring and reporting. The UNCDF Blue Bridge Facility will also play a role in providing loans and guarantees to support businesses that are not yet profitable.	TNC/ UNCDF
Assumptions: 1. There will be sufficient interest from the co-implementing partners in receiving finance from TNC via GFCR. 2. If these initiatives and businesses receive the required support to become investable and a long-term pipeline of investment opportunities is built, then private funding will be attracted to finance these projects, addressing coral reef degradation and supporting restoration. 3. If the drivers of degradation are addressed, then coral reefs in The Bahamas will be protected, restored and more resilient to climate change and other stressors, supporting the sustainable development of coastal communities and climate adaptation.					

The risk-management methodology is depicted below, where the risk level is measured as the product of Likelihood and Consequence.

Likelihood	Occurrence	Frequency
Very Likely	The event **is expected** to occur in most circumstances	Twice a month or more frequently
Likely	The event **will** probably occur in most circumstances	Once every two months or more frequently
Possibly	The event **might** occur at some time	Once a year or more frequently
Unlikely	The event **could** occur at some time	Once every three years or more frequently
Rare	The event **may** occur in exceptional circumstances	Once every seven years or more frequently

Consequence	Result
Extreme	An event leading to **massive** or **irreparable** damage or disruption
Major	An event leading to **critical** damage or disruption
Moderate	An event leading to **serious** damage or disruption
Minor	An event leading to **some** degree of damage or disruption
Insignificant	An event leading to **limited** damage or disruption

	Consequences				
Likelihood	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Extreme (5)
Very likely (5)	Medium (5)	High (10)	High (15)	Very High (20)	Very High (25)
Likely (4)	Medium (4)	Medium (8)	High (12)	High (16)	Very High (20)
Possible (3)	Low (3)	Medium (6)	High (9)	High (12)	High (15
Unlikely (2)	Low (2)	Low (4)	Medium (6)	Medium (8)	High (10)
Rare (1)	Low (1)	Low (3)	Medium (3)	Medium (4)	High (5)

Level of risk	Result
Very High	Immediate action required by executive management. Mitigation activities/treatment options are mandatory to reduce likelihood and/or consequence. Risk cannot be accepted unless this occurs.
High	Immediate action required by senior/ executive management. Mitigation activities/treatment options are mandatory to reduce likelihood and/or consequence. Monitoring strategy to be implemented by Risk Owner.
Medium	Senior Management attention required. Mitigation activities/ treatment options are undertaken to reduce likelihood and/or consequence. Monitoring strategy to be implemented by Risk Owner.
Low	Management attention required. Specified ownership of risk. Mitigation activities/treatment options are recommended to reduce likelihood and/or consequence. Implementation of monitoring strategy by risk owner is recommended.

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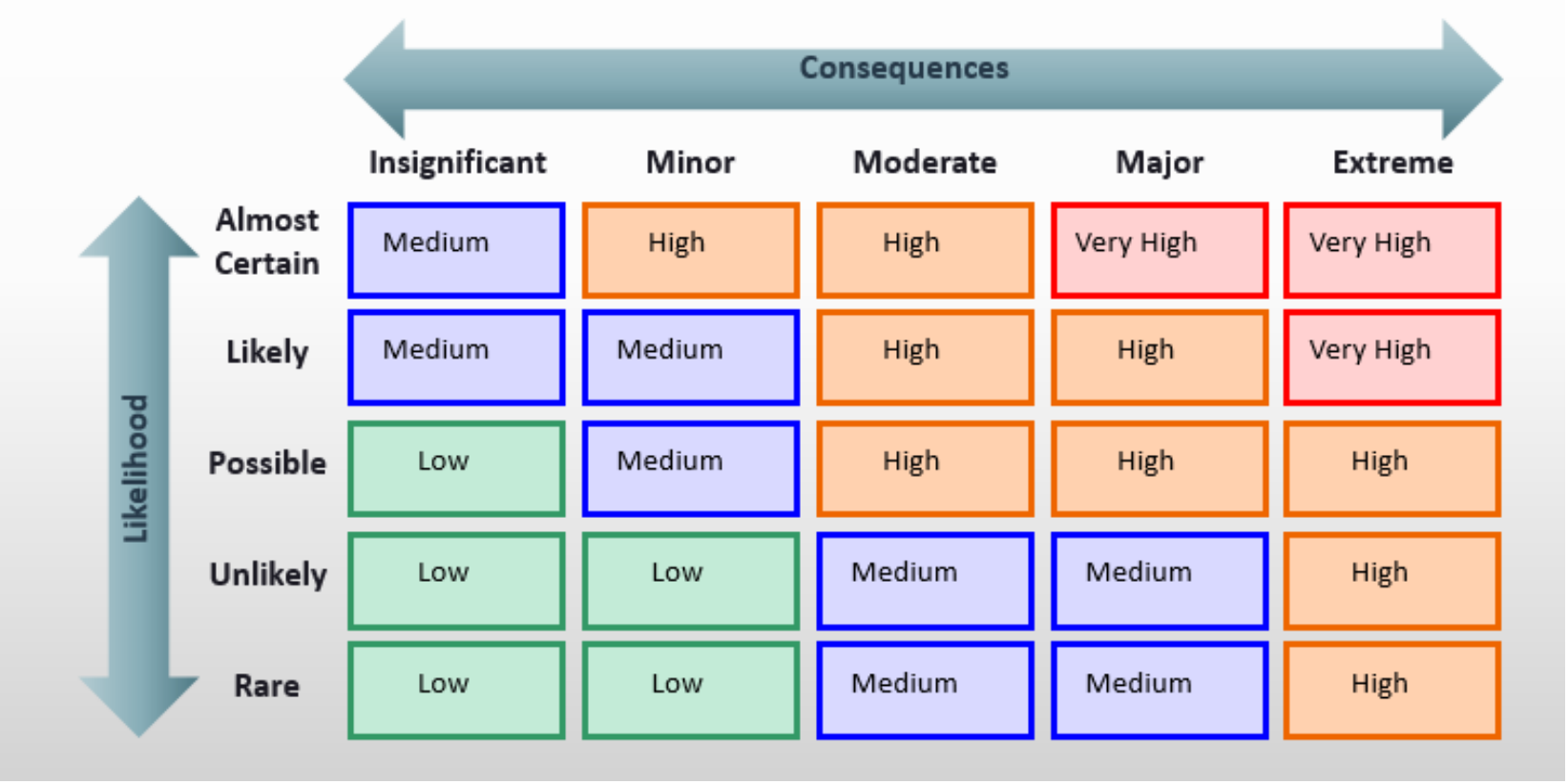


Annex VI: Supporting Information on Environmental, Social and Policy Analysis

Please provide any site-specific documents of baseline studies on coral reef ecosystem health, maps, resiliency to climate change and baseline data on socioeconomic context.

Part 1—Environmental analysis

The Bahamas has one of the largest marine territories of any country in the Caribbean, covering approximately 382,354 square kilometres. The Bahamas contains 13 major islands and 700 smaller islands and cays and consists of two large, shallow carbonate banks. The largest is the Great Bahama Bank with Andros Island—Andros Island has the third-longest barrier reef system in the world (>200 km).[96] The Little Bahama Bank forms a chain extending from the Straits of Florida to the Caicos Islands. The islands are low-lying and composed mostly of limestone so corals can grow close to the shore. Coral reefs occur mostly fringing the bank margins, with some small patch reefs on the banks in areas with high tidal circulation and with a few barrier reefs.[97]

There are three major reef zones in The Bahamas: reef crest, patch reef, and fore reef—each with its own set of species. The reef crest often includes branching elkhorn coral and may include both barrier and fringing reefs. Patch reefs often form in sheltered lagoons, shallow banks leeward of islands (e.g., Rose Island) or in channels between islands (Exuma Cays Land and Sea Park). The fore reef is located offshore from the reef crest and often includes large mounding corals.[98]

Extension of ecosystems impacted by the programme

At the national level, The Bahamas has 5,531 km^2 of coral reef area. These areas were mapped using 4m Planetscope Dove imagery (Schill et al., 2021)[99] acquired between October 2017 and September 2019, and includes total areas for the following reef types: reef crest (27.3 km^2), fore reef (104.7 km^2), back reef 95.9 km^2), spur and groove (267.9 km^2), with the largest class being coral/algal reef matrix (5,035.5 km^2), which captures other types such as patch and fringing reefs. This same mapping exercise identified a total of 53,929.9 km^2 of seagrass beds across the shallow marine zone (<30m depth) with 13,976.3 km^2 of dense seagrass and 39,953.6 km^2 of sparse seagrass area. An accuracy assessment using independent field data yielded an overall accuracy of 80% with a standard error <1%. All benthic habitat datasets for the Insular Caribbean can be viewed and downloaded using a customized web application.[100] For mangrove area, a 2021 mapping effort using high-

[96] Jones, L., Alcolado, P.M., Cala, Y., Cobian, D., Coelho, V.R., Hernandez, A., Jones, R., Mallela, J., and Manfrino, C. (2008). The effects of coral bleaching in the northern Caribbean and western Atlantic.

[97] Wilkinson, C. (2008). Status of coral reefs of the world: 2008. Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre, Townsville, Australia, 296 p.

[98] Dahlgren, C., Sherman, K., Lang, J., Kramer, P.R., and Marks, K. (2016). Bahamas Coral Reef Report Card Volume 1: 2011–2013.

[99] Schill, S.R., McNulty, V.P., Pollock, F.J., Fritjof, L., Jiwei, L., Knapp, D., Kington, J., McDonald, T., Raber, G.T., Escovar-Fadul, X., and Asner, G. (2021). Regional-scale high-resolution benthic habitat data from PlanetScope imagery for conservation decision-making and marine planning, Remote Sensing, in review.

[100] http://caribbeanmarinemaps.tnc.org/

resolution (1m imagery) and manual digitization estimated 467.2 km^2 of mangrove habitat across The Bahamas.

Benthic habitat classification of The Bahamas

A four-band (blue, green, red, near infrared) (4m pixel) surface reflectance composite combining more than two years of observations from PlanetScope (PS) Dove Classic images was created for the Caribbean Basin using 38,642 scenes that were acquired between October 1, 2017, and September 15, 2019, and mosaicked using a Mercator projection. A multi-year timeframe was necessary to reduce cloud contamination and ensure adequate coverage. The near-daily global coverage that the Dove constellation provided facilitated the compilation of a cloud-free and optimal water column image composite of the Caribbean's nearshore environment. These data were used to develop a first-of-its-kind regional 13-class benthic habitat map out to 30m depth using an object-based image analysis approach.

The total area of coral reef mapped using the 4m Planetscope Dove imagery is estimated to be 5,531 km2 that includes 27.3 km2 of reef crest, 104.7 km2 of fore reef, 95.9 km2 of back reef, 267.9 km2 of spur and groove, and the largest class being the coral/algal reef matrix at 5,035.5 km2. Other benthic habitats mapped across the shallow marine zone <30m depth) include dense seagrass (13,976.3 km2), sparse seagrass (39,953.6 km2), hardbottom dense algae (6,192.8 km2), hardbottom sparse algae (7,754.2 km2), sandy bottom (44,988.9 km2), and muddy bottom (513.9 km2). The total area of shallow marine habitat mapped across The Bahamas in the shallow marine zone totals 118,911 km2. Table 11 shows the total habitats listed individually, as well as the percentage included within currently declared marine protected or managed areas.

Table 13: Total area (km2) of benthic habitat classes within the shallow marine zone (<30m depth) across the EEZ and corresponding area and percentage within declared marine protected or managed areas (P/M %).

	Reef Crest		Fore Reef		Back Reef		Coral/Algae		Spur and Groove		Coral Reef Totals	
Country/ Territory	**Total km²**	**P/M %**	**Total km²**	**P/M %**	**Total km²**	**P/M %**	**Total km²**	**P/M %**	**Total km²**	**P/M %**	**Total km²**	**P/M %**
The Bahamas	27.26	5.14 (19%)	104.65	22.61 (22%)	95.91	23.40 (24%)	5,035.50	457.95 (9%)	267.90	23.66 (9%)	5,531.22	532.76 (10%)

	Dense Seagrass		Sparse Seagrass		Seagrass Totals	
Country/Territory	**Total km²**	**P/M %**	**Total km²**	**P/M %**	**Total km²**	**P/M %**
The Bahamas	13,976.29	938.68 (7%)	39,953.61	3,228.70 (8%)	53,929.90	4,167.38 (8%)

	Hardbottom Dense Algae		Hardbottom Sparse Algae		Hardbottom Totals	
Country/Territory	**Total km²**	**P/M %**	**Total km²**	**P/M %**	**Total km²**	**P/M %**
The Bahamas	6,192.81	841.05 (14%)	7,754.22	927.84 (12%)	13,947.03	1,768.88 (13%)

	Sand		Muddy Bottom	
Country/Territory	**Total km²**	**P/M %**	**Total km²**	**P/M %**
The Bahamas	44,988.89	4,465.90 (10%)	513.93	**174.69 (34%)**

Accuracy assessment of benthic habitats

An accuracy assessment was conducted on the 13-class benthic habitat product using 2,686 field data points that were excluded from the training of the classification algorithm. These points were collected at a variety of locations between 2010 and 2017, based on interpretation of GPS-referenced underwater video transects. Each of these points were cross-walked to the benthic habitat classification scheme. Once cross-walked, these points represented eight of the 13 classes, as coral subclasses (e.g., reef fore, reef crest, reef back, as well as spur and groove) could not be distinguished from video footage and were collapsed into the coral/algae class. Results yielded an overall accuracy of 72% with a standard error of 1.3%, yielding a 3% confidence interval of 69% to 75%. This overall accuracy is calculated as the stratified (area-weighted) percentage of correctly classified sites in each sample drawn from the classified map. It is an estimate of the percent of the total mapped area that is classified/mapped correctly based on the comparison of the final map with the field gathered reference data. Table 12 shows the error matrix of the accuracy assessment. Producer's accuracy (errors of omission) and user's accuracy (errors of commission) are calculated and reported for each class. Producer's accuracy is the area weighted proportion of correctly classified reference locations divided by the estimated proportion of area for the reference class (derived from the classification) and multiplied by 100 to express as a percent. User's accuracy is the area weighted proportion of correctly classified reference locations divided by the area weighted proportion of reference locations determined to be in each class, multiplied by 100.

Classes that exhibited the most confusion include sparse and dense seagrass, as well as sparse and dense hardbottom algae. This confusion is not surprising as these classes can be very difficult to distinguish, particularly in deeper waters. The large time range between when the field data was collected and changed in the benthic habitat composition could account for failure to observe and note differences in density between field data collection and satellite imaging. Another accuracy assessment was created after combining these pairs of classes, yielding six remaining classes. The estimate of the overall accuracy of this second assessment was 80% with a standard error of less than 1% yielding a 2% confidence interval of 78% to 82%. The user's and producer's accuracy for this six-class accuracy assessment are reported in Table 13.

Benthic habitat data portal

All benthic habitat datasets for the Insular Caribbean can be viewed and downloaded using a customized web application found at http://caribbeanmarinemaps.tnc.org/. This Google Earth Engine app was developed as a tool for sharing the resulting map layers to non-technical stakeholders. Google Earth Engine (GEE) is an open-source remote sensing tool that provides free access to satellite imagery and analysis and allows geospatial developers to run complex geoprocessing and remote sensing functions. GEE apps provide users with the ability to query, filter, visualize and download datasets without technical expertise, software licenses or extensive storage capacity. It also allows for exploration of habitat composition statistics developed from this map. For example, pie charts can be automatically generated that show the area totals for each benthic habitat class by selected geography. This app was embedded

into the Caribbean Marine Maps site (CaribbeanMarineMaps.tnc.org), an ArcGIS Online StoryMap, that facilitates easy access to The Nature Conservancy's suite of coral and marine data resources in the Caribbean. The site includes data visualization tools, access to data downloads, training videos and scientific information explaining the development process and utility as well as limitations of various datasets.

Table 14: Accuracy assessment of the Caribbean benthic habitat product using 2,686 field data points collected between 2010 and 2017 with reef classes combined. The reported overall accuracy is 72% (not shown in the table).

	Observed Class (Reference)								
	Boulders and Rocks	**Coral/ Algae**	**Hard-bottom Dense Algae**	**Hard-bottom Sparse Algae**	**Muddy Bottom**	**Sand**	**Seagrass Dense**	**Seagrass Sparse**	**User's Accuracy**
Boulders and Rocks	**0.04**	0.01	0.00	0.00	0.00	0.00	0.00	0.00	85.7%
Coral/ Algae	0.02	**5.75**	1.13	0.33	0.00	0.16	0.27	0.17	73.5%
Hardbottom Dense Algae	0.06	1.16	**16.11**	1.27	0.00	0.35	0.41	0.70	80.4%
Hardbottom Sparse Algae	0.13	1.27	1.65	**11.42**	0.00	2.92	0.63	4.19	51.4%
Muddy Bottom	0.00	0.00	0.00	0.00	**0.65**	0.00	0.00	0.09	87.5%
Sand	0.17	1.62	0.46	0.40	0.29	**26.94**	1.04	0.75	85.0%
Seagrass Dense	0.03	0.21	0.27	0.04	0.01	0.09	**4.52**	0.31	82.3%
Seagrass Sparse	0.00	1.13	0.35	0.91	0.35	0.61	1.95	**6.67**	55.8%
Producer's Accuracy	9.2%	51.6%	80.7%	79.4%	50.1%	86.8%	51.3%	51.8%	

Table 15: Accuracy assessment results of the six-class major benthic habitat types after combining sparse and dense seagrass as well as sparse and dense hardbottom algae.

	Boulders and Rocks	**Coral/Algae**	**Hardbottom Algae**	**Muddy Bottom**	**Sand**	**Seagrass**	**User's Accuracy**
Boulders and Rocks	**0.04**	0.01	0.00	0.00	0.00	0.00	85.7%
Coral/Algae	0.02	**5.75**	1.46	0.00	0.16	0.44	73.5%
Hardbottom Algae	0.16	2.43	**32.69**	0.00	2.35	4.62	77.4%
Muddy Bottom	0.00	0.00	0.00	**0.65**	0.00	0.09	87.5%
Sand	0.17	1.62	0.87	0.29	**26.94**	1.79	85.0%
Seagrass	0.05	1.08	1.35	0.24	0.53	**14.19**	81.4%
Producer's Accuracy	9.2%	52.8%	90.0%	55.3%	89.9%	67.1%	

Bahamian coral reefs health

A five-year assessment of the health of Bahamian coral reefs[101] found that overall, reefs in The Bahamas were faring better than other reefs across the Caribbean. The assessment included indicators such as: benthic condition, coral condition, coral disease, recruit density, parrotfish biomass, grouper index, and an integrated reef health index. Across nearly all surveyed sites, reef-building corals occupied less space than macroalgae. Average coral cover across surveyed sites (over 11,670 square miles of seafloor; (see Figure 16), was 11% and macroalgae cover was ~46%. Reefs off the island of Abaco had the highest coral cover; Sandy Cay Reef and Mermaid Reef both had >50% coral cover. Sites with the highest coral cover and lowest macroalgal cover were often located in national parks (e.g., Exuma Cays Land and Sea Park).

The majority of islands surveyed contained corals that were more than 60% alive. Stressors such as coral bleaching and disease can cause partial tissue loss in corals, and do not always kill the coral entirely (i.e., partial mortality). Reefs off Grand Bahama, New Providence and Rose Island had higher rates of partial mortality among coral colonies. Reef-building species (e.g., star corals (*Orbicella spp*.) and brain corals (*Pseudodiploria spp., Diploria labrynthiformis*, and *Colpophyllia natans*)) had the highest partial mortality rates. More than 28,000 corals were surveyed for coral disease, and 1.2% of all surveyed showed evidence of disease. The most common diseases in the region include Dark Spot and Black Band. In 2020, Stony Coral Tissue Loss Disease (SCTLD) was detected off Grand Bahama, New Providence, and several other locations. While disease rates were low overall in The Bahamas from 2015 to 2019, several sites had concerning levels of disease. Andros Island and sites off New Providence and Grand Bahama had the highest rates of disease.

Rates of coral recruitment in The Bahamas are limited because of low densities of adult corals (see Figure 17); fewer adults reduce fertilization success and larval production on a reef. Limited settlement space due to macroalgae and smothering of coral recruits by algae if they do settle reduce recruitment success. Additionally, the low number of reef-building species also reduces the recruitment potential on sites. Forty percent (40%) of sites surveyed had no recruits, and of the sites with recruits, more than 60% of the recruits belonged to one species of brooding corals, which contribute less to overall reef framework—only 10% of recruits were from major reef builders (star, brain, elkhorn, staghorn and massive starlet coral species).

[101] Dahlgren C., Sherman, K., Haines, L., Knowles, L., and Callwood, K. (2020). Bahamas Coral Reef Report Card Volume 2: 2015-2020.

Figure 17: Coral cover by site.

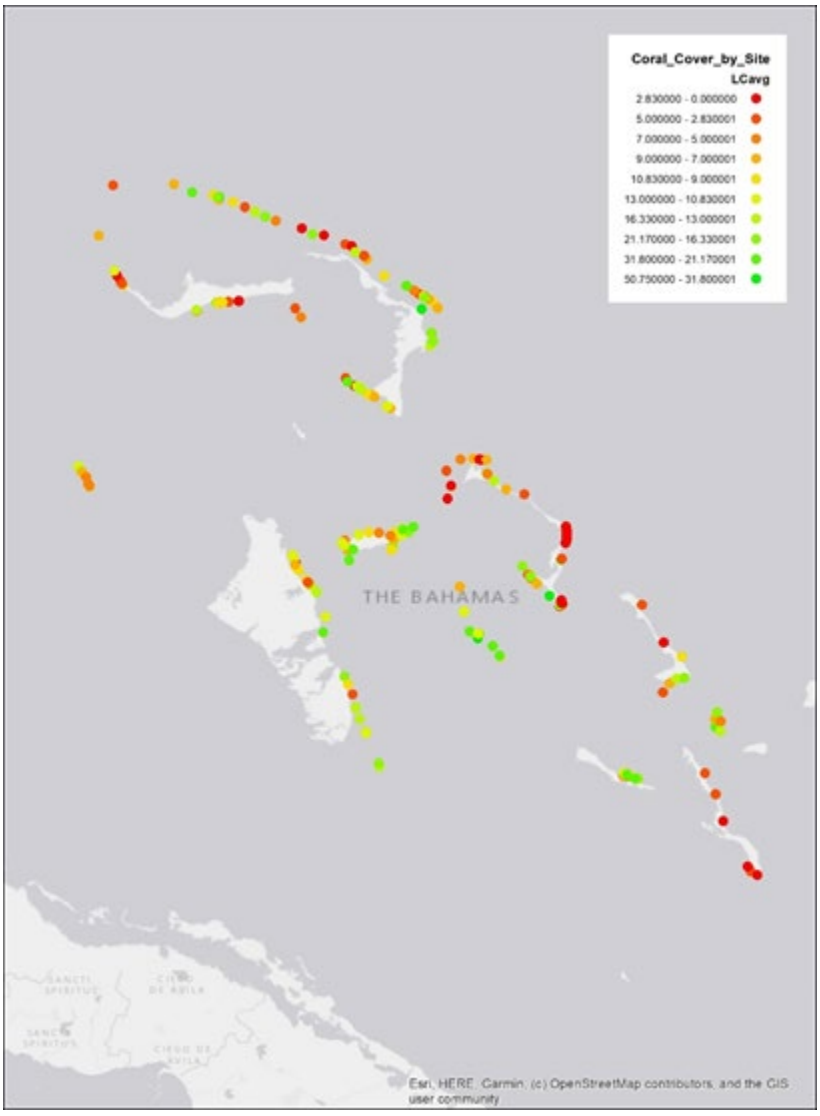
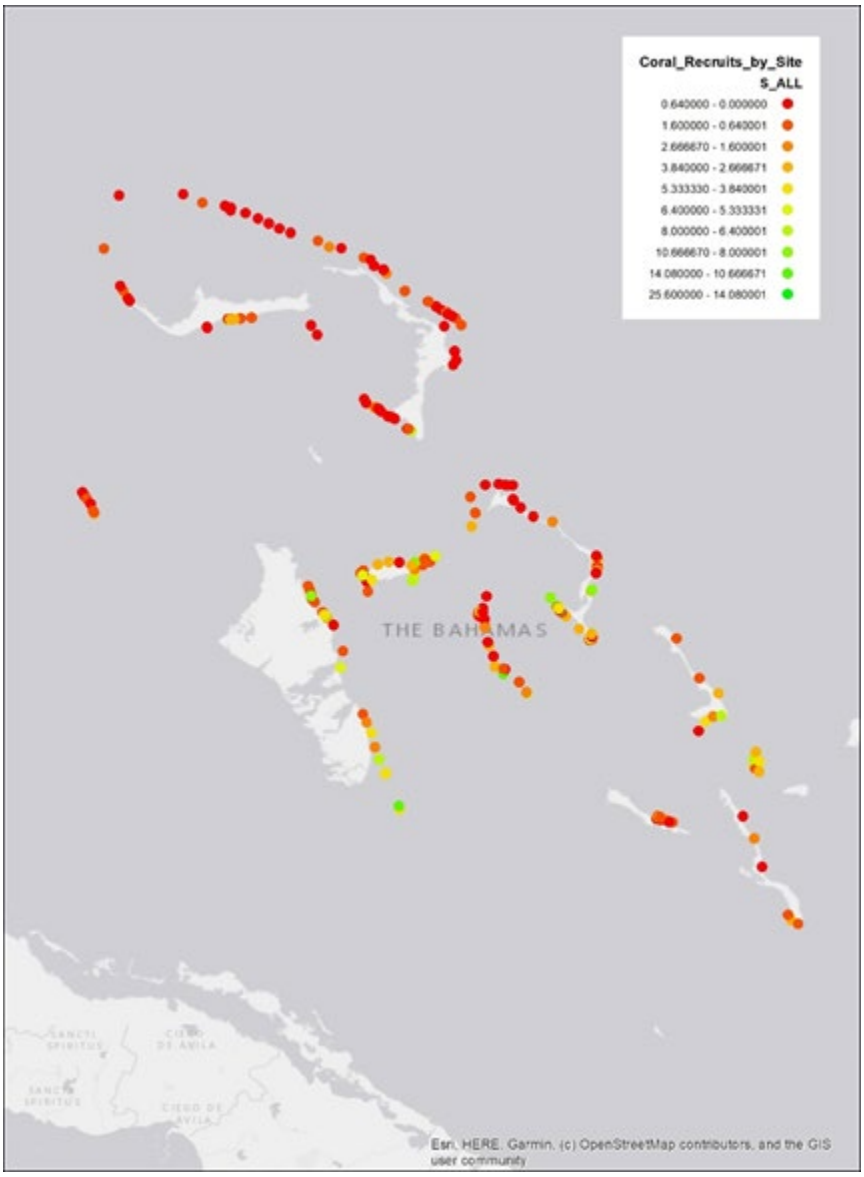


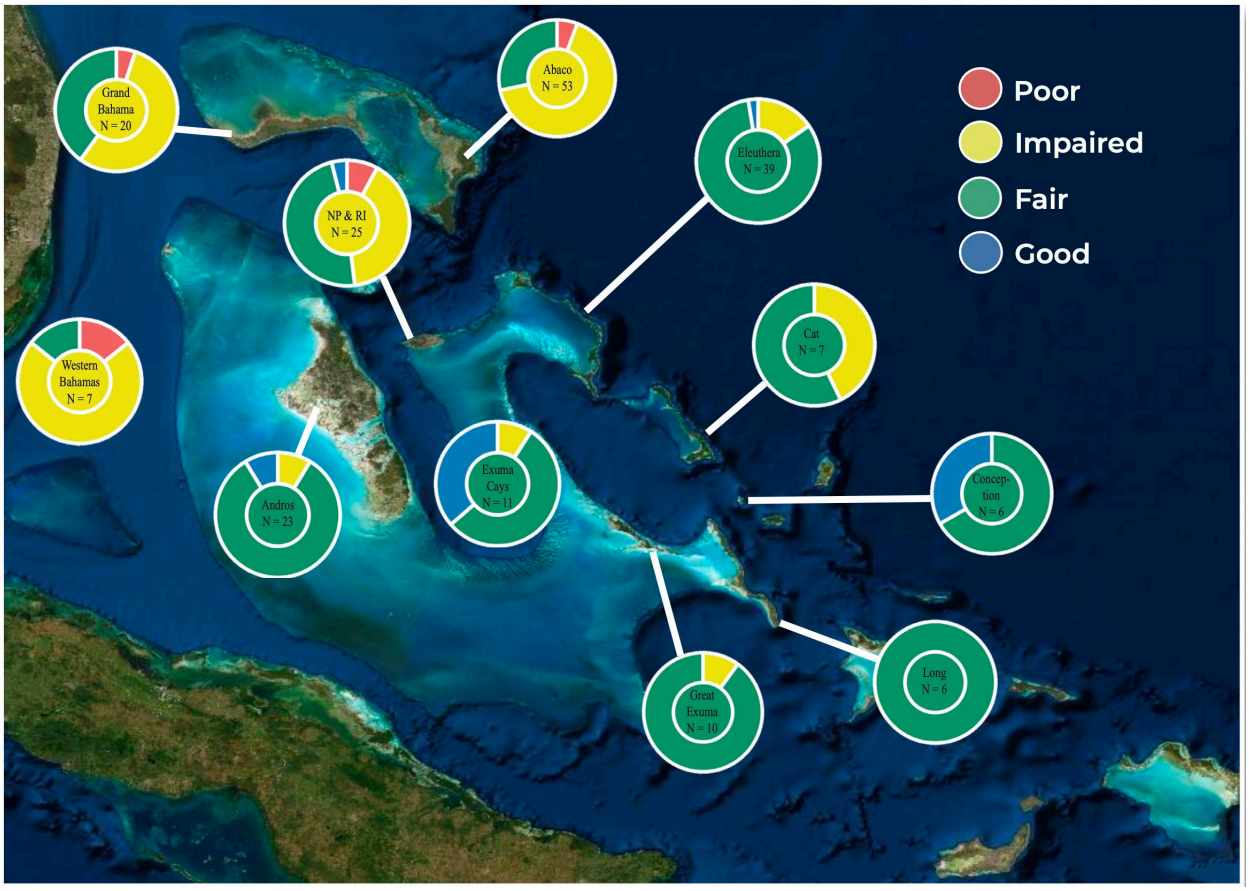
Figure 18: Coral Recruits by Site.



Large parrotfish are key grazers in The Bahamas (e.g., *Sparisoma chrysopterum; S. aurofrenatum; S. viride; Scarus hypselopterus*). Parrotfish were found on all reefs surveyed, but their sizes and abundance (biomass) varied among sites because of natural variability in reef structure and overfishing. Parrotfish populations have decreased significantly in some areas (e.g., mean biomass of grazing parrotfish around New Providence and Rose Island decreased by ~40% from 2011 to 2019), which has the potential to decrease coral reef resilience (grazers control algae, which can outcompete corals). Groupers play a key role in reef ecosystems as top predators, and they have high value economically; they are among the most valuable fishery species in The Bahamas. While groupers have become rare in the Caribbean, The Bahamas still includes a few places where populations of large groupers are still viable with the healthiest populations located in MPAs.

An integrated reef health index[102] was developed for The Bahamas and found that 60% of all sites rated in "good health" were in MPAs. The areas with highest scores were Conception Island (remote, national park) and Exuma Cays Land and Sea Park (well-protected no-take national park with low development). The location with the lowest scores was Western Bahamas (decades of sand dredging). Reefs off New Providence and Grand Bahama were scored as impaired because of sites that had poor coral recruitment, lower grouper and parrotfish scores, and poor reef condition.

Figure 19: Integrated reef health index for Bahamian Reefs; Dahlgren et al., 2020.[103]



Threats facing Bahamian reefs

Hard coral cover in the Caribbean has declined 50% to 80% over the last three decades, due to a combination of thermal stress, disease outbreaks, pollution, sedimentation and other factors.[104] In the 1970s and early '80s, coral cover in the Caribbean averaged ~35%. Two of

[102] Average across indicators: benthic condition, coral condition, coral disease, recruit density, parrotfish biomass, grouper index.

[103] Op.cit.

[104] Jackson J.B.C., Donovan, M.K., Cramer, K.L., and Lam, V.V. (editor.s) (2014). Status and Trends of Caribbean Coral Reefs:1970-2012. Global Coral Reef Monitoring Network, IUCN, Gland, Switzerland

the most devastating events to impact Caribbean coral reefs occurred in the 1980s. In 1983, a disease outbreak decimated more than 90% of the sea urchin, *Diadema antillarum*, and populations have not recovered regionally. The loss of urchins resulted in an increase in macroalgae and the subsequent overgrowth of corals in many areas. In the 1980s, a separate disease caused the mass mortality of elkhorn (*Acropora palmata*) and staghorn (*A. cervicornis*) corals—the main framework builders of reefs. The population collapse of both *Diadema* and *acroporid* corals and their inability to recover have had significant impacts on the structure and functioning of Caribbean coral reefs.

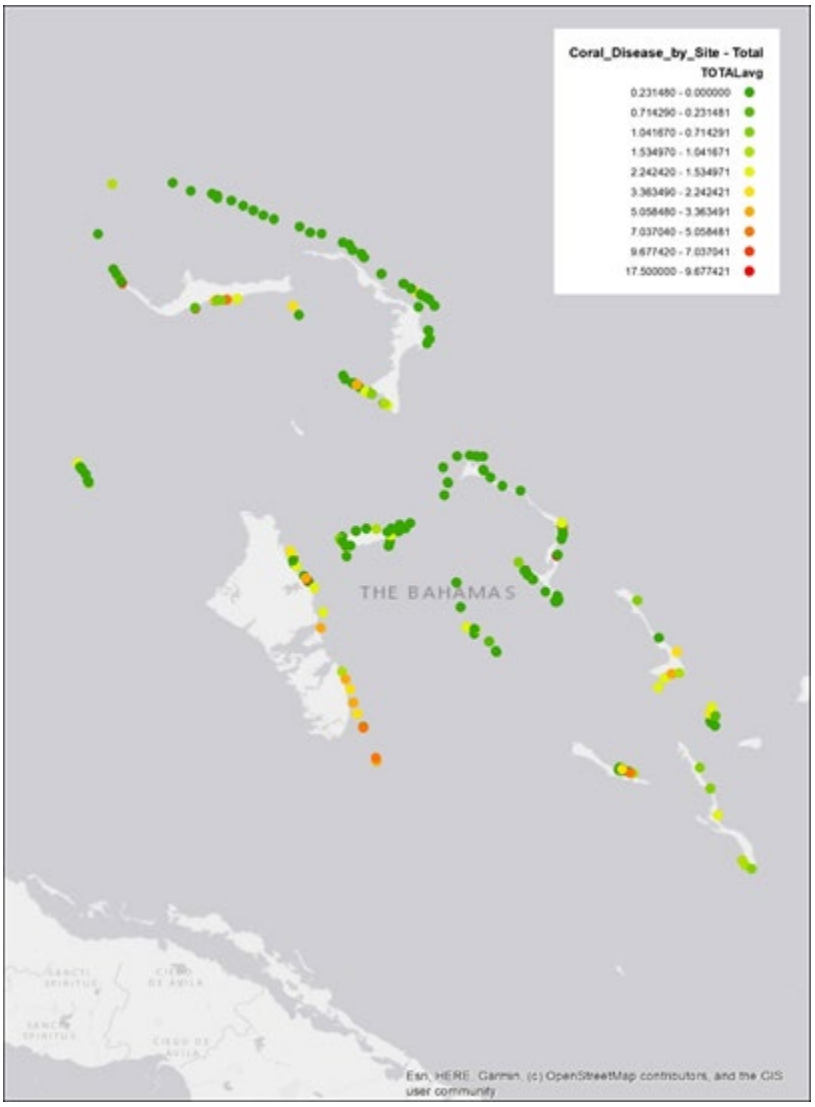
Over the past century, The Bahamas has experienced at least one hurricane or tropical storm event every two years, with some islands experiencing hurricanes more frequently than others. While healthy reefs may recover from storm impacts, degraded reefs are more vulnerable. Additionally, the frequency and intensity of storms over the last several decades may limit the ability of reefs to recover from damage. In 2019, Hurricane Dorian became the strongest hurricane to make landfall in the Atlantic. It first hit Central Abaco and caused major devastation both on land and underwater. Reefs were affected by bleaching, breakage from waves and debris from land (trees, houses, cars), and sediment that smothered the reef. Mermaid Reef (highest % of live coral of any reef surveyed in The Bahamas) suffered severe damage; about 30% of Mermaid Reef's corals were dislodged and moved, leading to a reduction of coral cover by 40%.[105]

Coastal development has caused significant impacts in The Bahamas, especially around New Providence, where over a 10-year period, reefs decreased in live coral cover by up to 70% at some sites. The decline was driven by petroleum leaks that led to blooms of cyanobacteria that overgrew corals. Impacts from coastal development include dredging and land-use change (resulting sediment can smother coral); wastewater runoff (increased nutrients can increase macroalgal growth and outcompete coral), and invasive species (e.g., Casuarina trees growing along the coast can be swept onto the reef during hurricanes and increase coastal erosion). Surveyed reefs within MPAs with limited to no development had 50% to 75% more coral than control sites.[106]

While coral disease in The Bahamas has historically been low compared to other parts of the Caribbean, the introduction of SCTLD has caused significant impacts. The first outbreak was confirmed in 2020 near Grand Bahama, and by March 2020, significant areas have been impacted with 18 species infected and up to 95% of some species killed or infected (see Figure 17). Half of reef-building corals are vulnerable to SCTLD. Transmission may be driven by shipping, ocean currents, hurricanes and human activities (boating, fishing, etc.).

[105] Op.cit. Dahlgren et al. (2020).
[106] Ibid.

Figure 20: Coral disease by site.

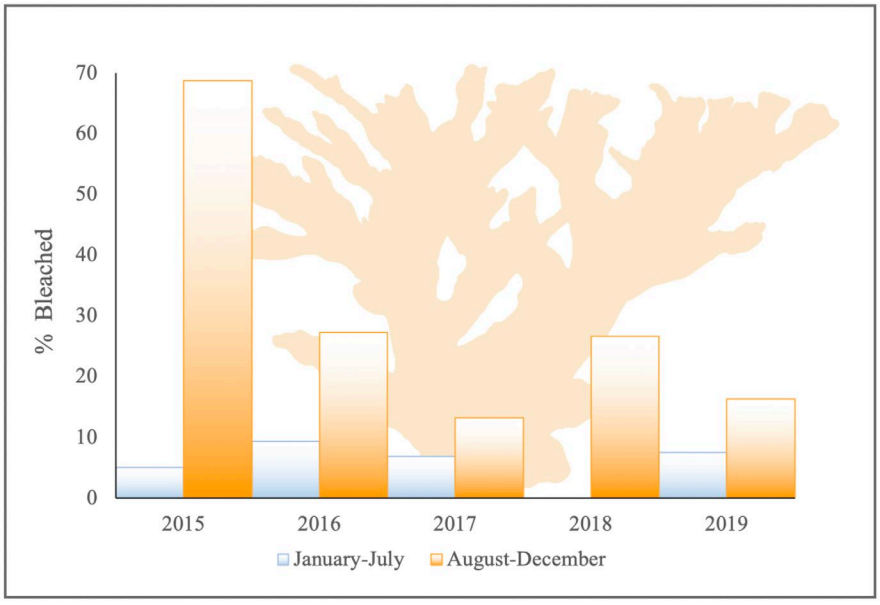


Overfishing, especially of herbivores such as parrotfish, can reduce reef resilience. While commercial fisheries in The Bahamas (lobster, conch and grouper) have regulations such as size limits or closed seasons, most reef fish, including parrotfish, have no regulations in place to protect them. Overharvest of parrotfish has expanded across The Bahamas and threatens reef health because healthy parrotfish populations control algal growth. For example, in the Exuma Cays Land and Sea Park, parrotfish grazing intensity was two times higher than outside the park. Unfortunately, surveys indicate decreases in parrotfish populations of up to 84% at sites (e.g., around New Providence).

Coral bleaching

The Bahamas has experienced bleaching impacts for decades (see Figure 18). In 1998, corals in the northern (Walker's Cay) and central Bahamas (New Providence) bleached severely (over 60% to 80%).[107] The 1998 event resulted in unprecedented coral mortality and subsequent disease along Andros Island's coral reefs and was responsible for significant coral reef decline on Andros Island.[108] By contrast, less severe bleaching occurred in 2005 and 2007, although sea surface temperatures and resultant impacts varied in the different reef regions because of the large size of The Bahamas.[109] More recently, however, there has been an increase in the number of bleaching events related to more frequent and longer lasting thermal stress events. In 2015, The Bahamas was particularly hard hit by bleaching. Nearly 70% of corals surveyed off Andros and Abaco were bleached, with 100% of corals bleached at some sites.[110] But there was some good news. Some corals (e.g., Mermaid Reef off Abaco) may be more genetically adapted to thermal stress.[111] Additionally, following the 2014 to 2017 event, surveys conducted in Eleuthera showed less impacts than other parts of The Bahamas: 11% of surveyed corals showed signs of bleaching, suggesting that levels of coral bleaching there were lower than other areas.[112]

Figure 21: Percent of surveyed corals bleached from 2015 to 2019; Dahlgren et al., 2020



[107] Wilkinson, C. (1998). Status of Coral Reefs of the World: 1998.

[108] Kramer, P.R,. and Kramer, P.A. (2010). Status of Coral Reefs Andros Island, Bahamas. Monitoring Report for 2009. Atlantic Undersea Test Evaluation Center (AUTEC) Andros Island, Bahamas.

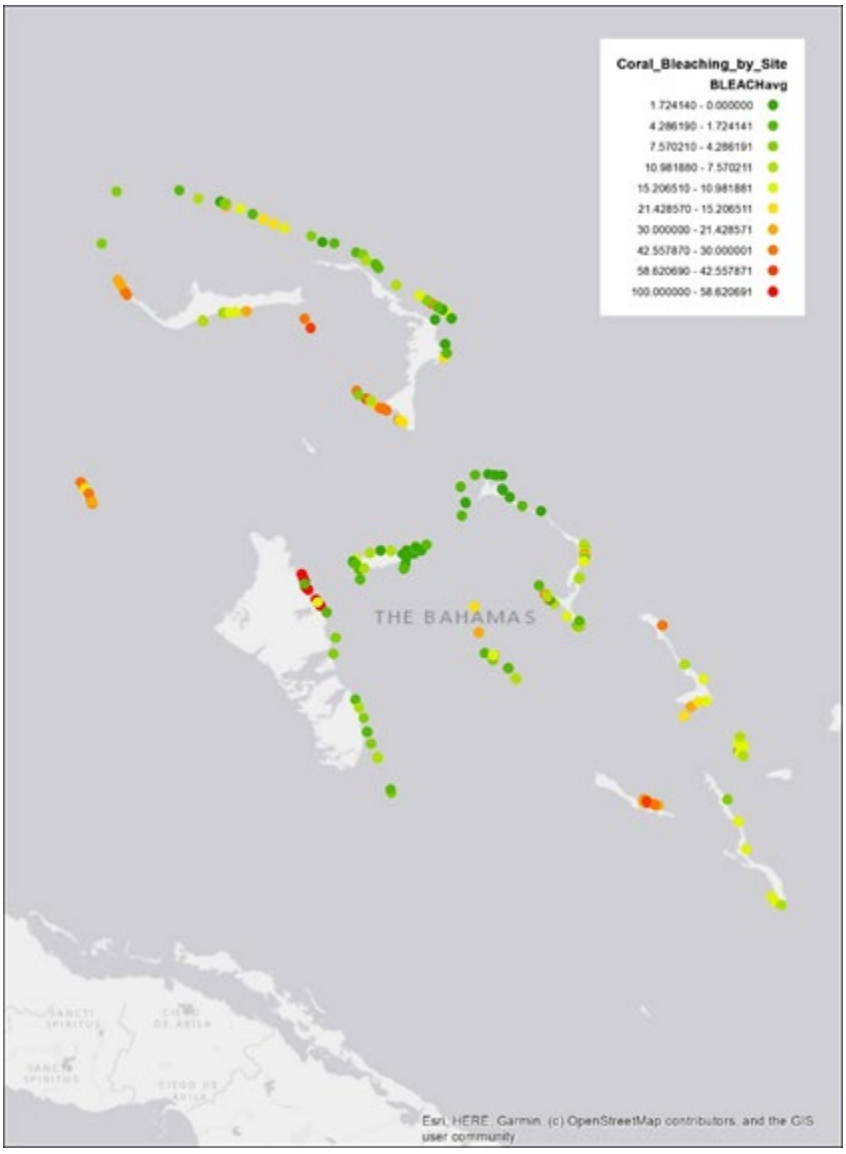
[109] Ibid., op.cit. Jones et al. (2008).

[110] Op.cit. Dahlgren et al. (2020).

[111] Parker et al. (2020). Op.cit. Dahlgren et al. (2020).

[112] Weiler, B.A., Van Leeuwen, T.E. and Stump, K.L. (2019). The extent of coral bleaching, disease and mortality for data-deficient reefs in Eleuthera, The Bahamas after the 2014–2017 global bleaching event. Coral Reefs, 38(4), pp.831-836.

Figure 22: Coral bleaching by site.



Coral reef resilience

TNC Scientists identified and mapped thermal stress regimes in coral reefs throughout The Bahamas (see Figures 20 through 26 below).[113] Climate models indicate that reefs in The Bahamas are likely to experience severe thermal stress in coming decades.[114] Yet some coral communities are more likely to cope with future warming than others, because they are likely to experience less thermal stress and/or are more likely to acclimatize to the changing climate (see Figure 27). These coral communities represent important priorities for protection.

[113] Wolff, N. unpubl. data Incorporating bleaching risk into reserve design for The Bahamas.

[114] Wolff, N.H., Donner, S.D., Cao, L., Iglesias-Prieto R., Sale, P.F., and Mumby, P.J. (2015). Global inequities between polluters and the polluted: climate change impacts on coral reefs. Global Change Biology 21:3982–3994.

Research suggests that The Bahamas contains one of the most extensive networks of climate resilient coral reefs in the Caribbean, including two priority areas (BCUs; see Figure 28). These areas contain nearly all the country's coral reefs. Bahamian reefs also have been identified as resilient in other global analyses (e.g., UNEP 2020). The UNEP report (2020) ranked The Bahamas reefs as a "climate winner" because they contain the greatest number of reef pixels that are projected to experience annual severe bleaching (ASB)—the latest across the Wider Caribbean and Western Atlantic.

Figure 23: Historical chronic thermal stress. 1985-2020 SST (temperature trend).

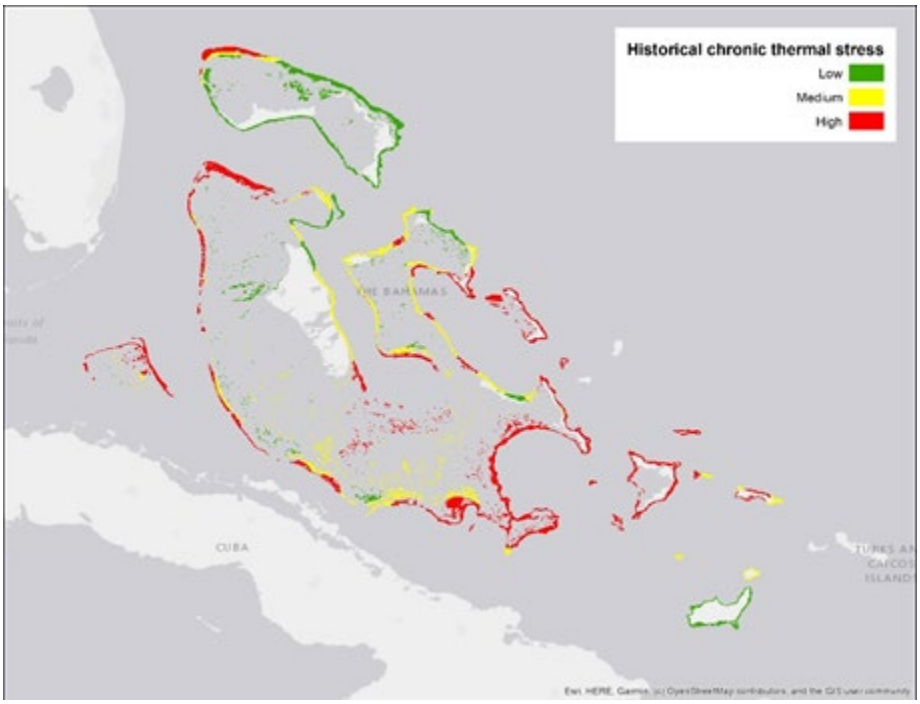


Figure 24: Historical acute thermal stress 1985-2020 SST (sum DHW above 8° weeks)

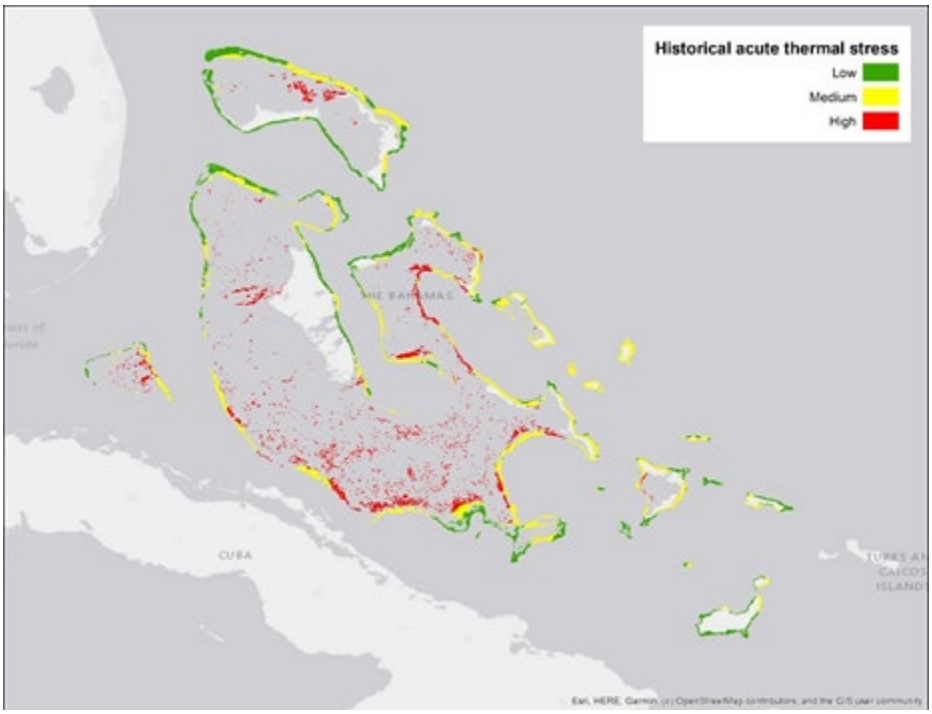


Figure 25: Future chronic thermal stress. 1985-2020 SST (temperature trend).

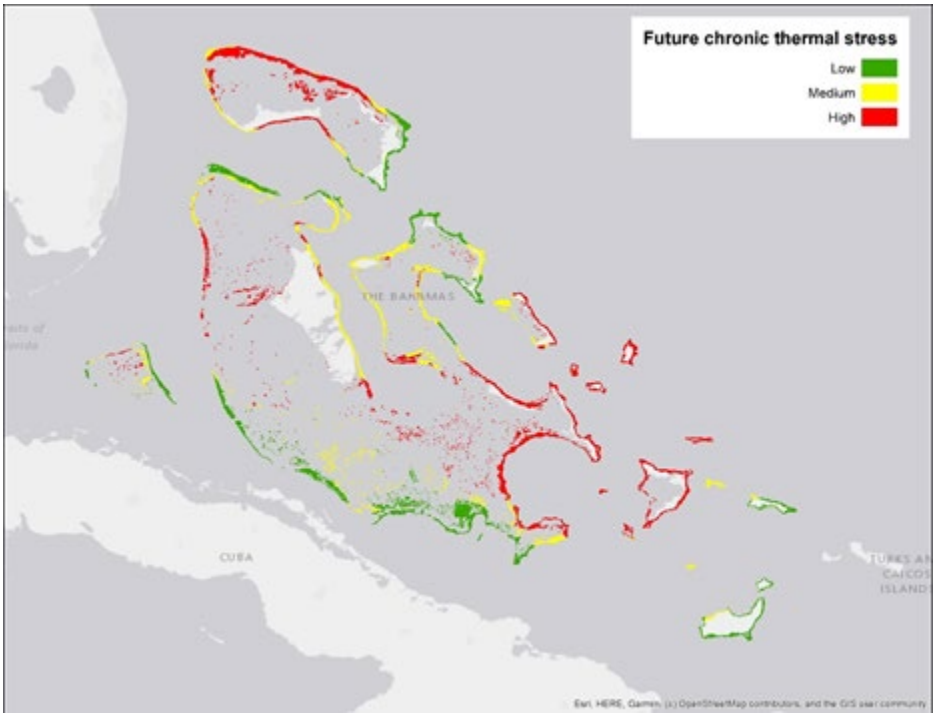


Figure 26: Future acute thermal stress. 1985-2020 SST (sum of DHW above 8° weeks).

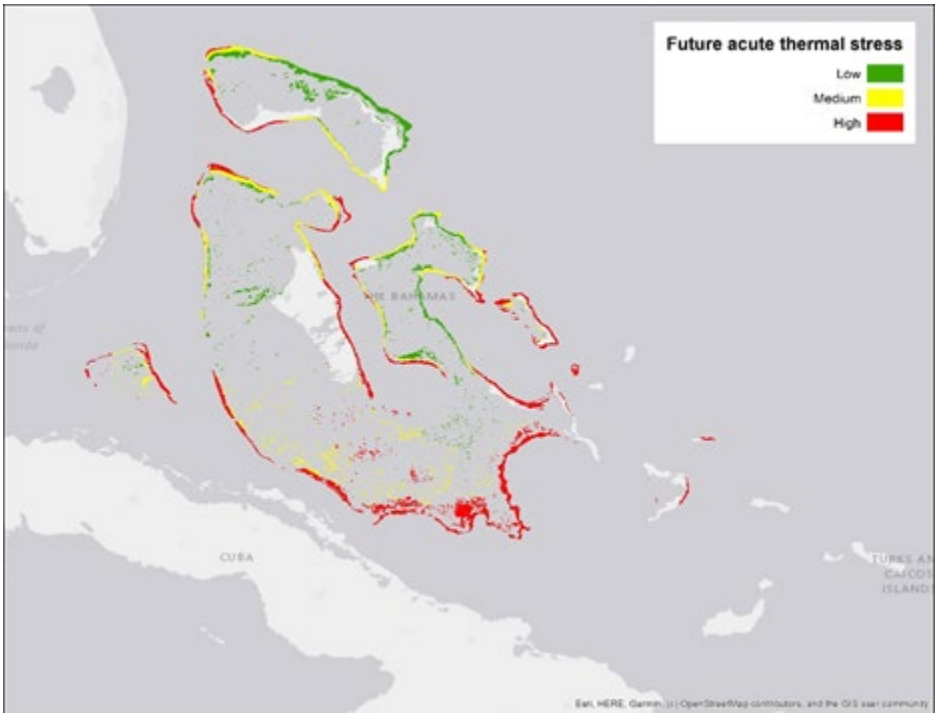
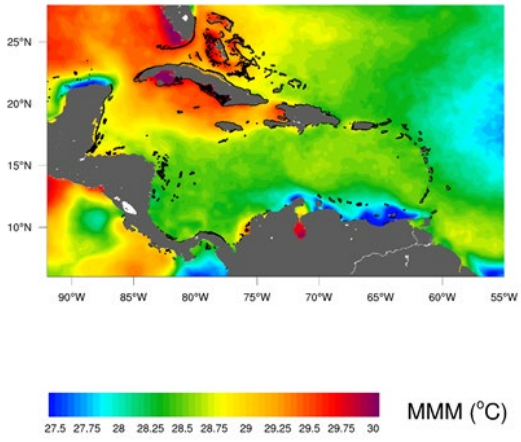


Figure 27: Maximum monthly mean (MMM) from the CoralTemp v3.1 climatology. The MMM is the warmest month in the climatology (1985–2012) and is the threshold used to determine when temperatures become stressful to corals and cause bleaching.



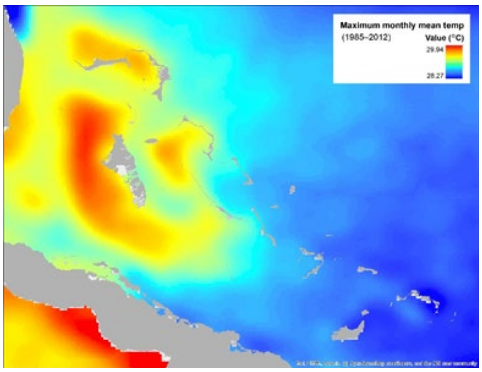


Figure 28: The amplitude of the annual cycle (computed as the maximum of the CoralTemp v3.1 monthly climatology minus the minimum) is used to identify where corals have experienced greatest annual variability (left); Amplitude of annual cycle zoomed into Bahamas (right).

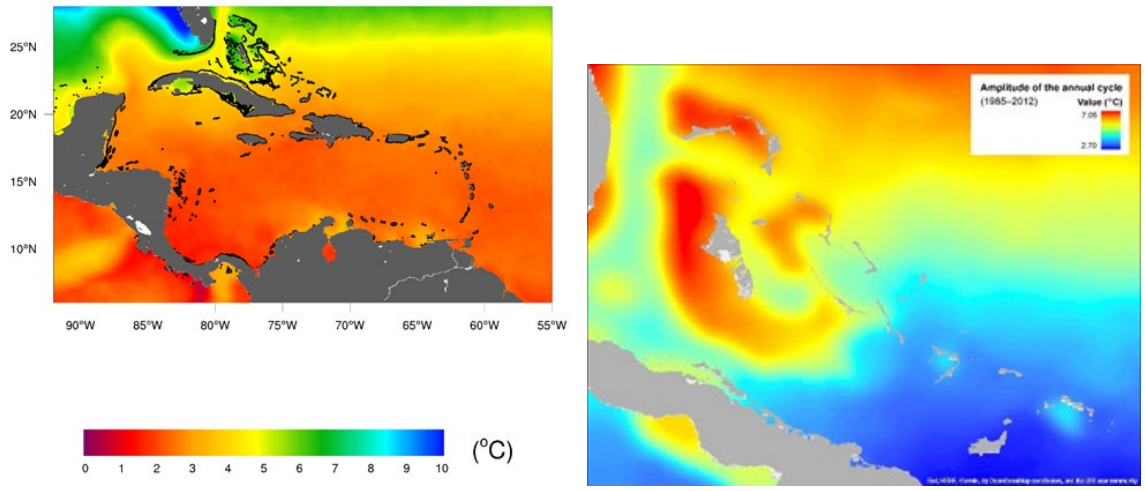


Figure 29: Maximum Degree Heating weeks from a multi model GCM ensemble in the year 2050 using emission/GHG concentration scenario SSP5-8.5 (worst-case scenario).

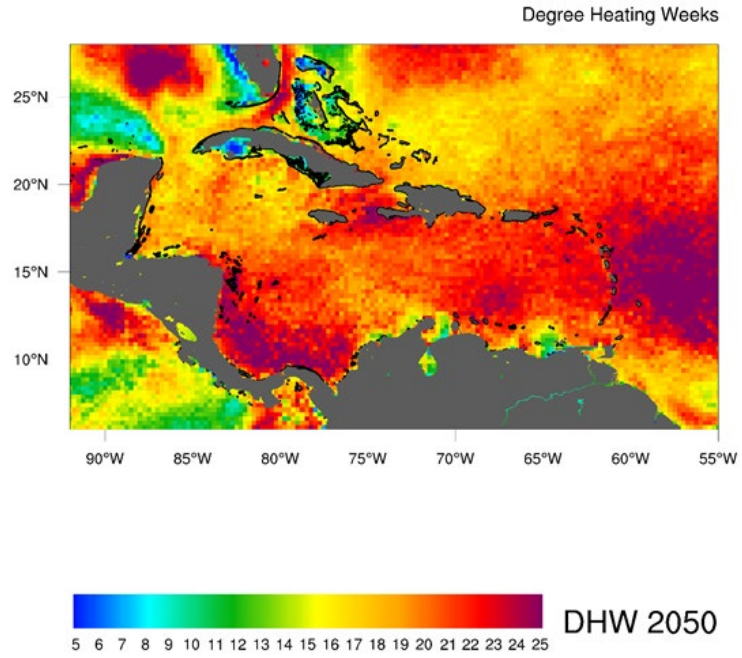
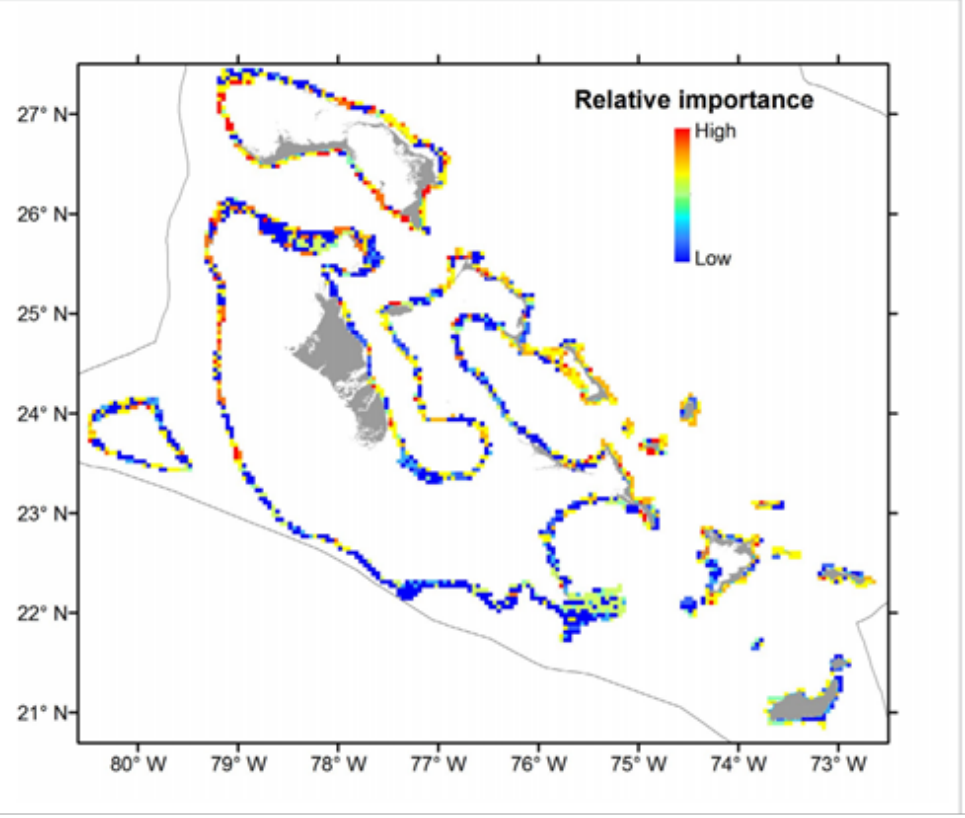


Figure 30: Areas of high relative importance based on ability to cope with thermal stress. Source: Wolff unpub. data.[115]



[115] Op.cit. Wolff unpub. data

Figure 31: BCUs in The Bahamas. Source: Beyer et al., 2018.[116]

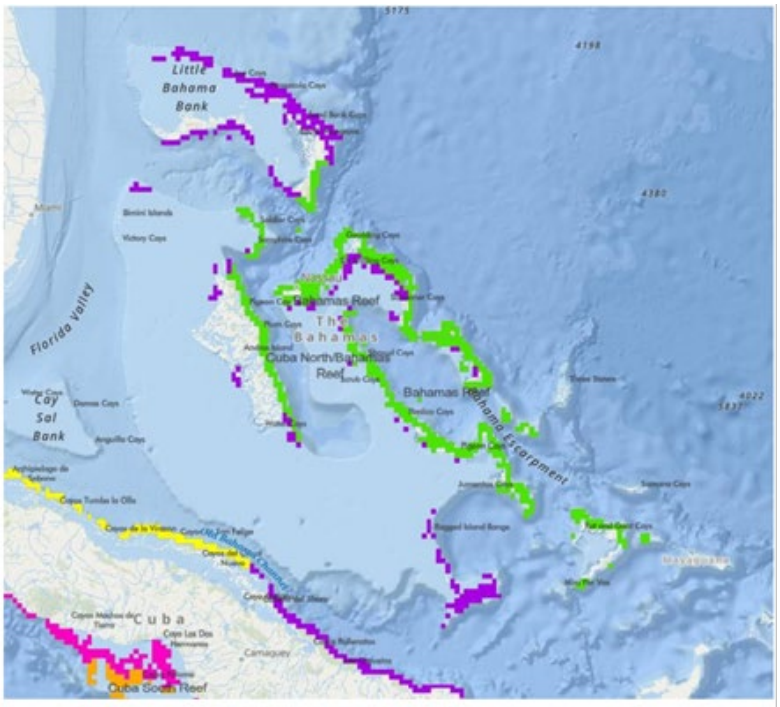


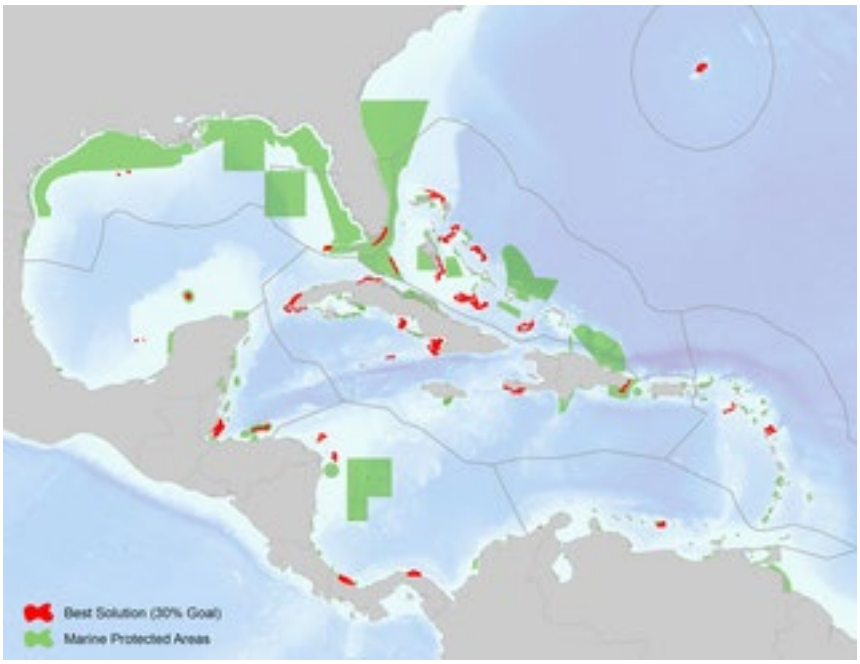
Figure 1 The two BCUs present in the Bahamas (Bright Green and Purple)

Other factors that support resilience include connectivity and strong local support for reef conservation. A 2015 study assessed coral connectivity across the Wider Caribbean and identified the Bahamian reefs as priorities for both receiving and contributing larvae to other EEZs (Figure 29). Additionally, The Bahamas includes several Hope Spots[117] (places identified as having strong local support and are critical to ocean health).

[116] Beyer, H.L., Kennedy, E.V., Beger, M., Chen, C.A., Cinner, J.E., Darling, E.S., Eakin, C.M., Gates, R.D., Heron, S.F., Knowlton, N., and Obura, D.O. (2018). Risk-sensitive planning for conserving coral reefs under rapid climate change. Conservation Letters, 11(6), p.e12587.

[117] https://mission-blue.org/hope-spots/

Figure 32: Results of coral connectivity best solution. Source: Schill et al., 2015.[118]



Identifying resilient reefs in The Bahamas and the Caribbean

A number of analyses have highlighted potentially resilient reefs globally, including in The Bahamas (Beyer et al., 2018; UNEP 2020). The UNEP report developed projections of the timing of severe coral bleaching conditions using the CMIP6 generation of models due to the finer scale resolution than the previous CMIP5 (~¼ x ¼° vs. 1 x 1°). The report analyses average results from multiple models for two model scenarios (SSP5-8.5 or worst-case scenario, and SSP2-4.5, an ambitious, but plausible scenario). The analyses utilize global datasets and present future exposure to bleaching conditions from thermal stress but do not consider differences due to local reef ecology, human impacts or other factors. The Beyer et al., 2018, was a coarser resolution study (temperature data at 1 x 1°) that only utilized global data. Although it considered other environmental factors, it did not include reference to current ecological conditions or human impacts. Connectivity was considered in Beyer et al. (2018) and was modelled using Wood et al. (2014) based on simulations of larval dispersal. While a valuable "first cut," the results of Beyer et al. (2018) do not match conditions on the ground/in the water in many reef regions (e.g., coral reefs with demonstrated resilience in the Meso-American reef, northern Red Sea, Chagos and Micronesia did not show up as priorities). Reefs are complex and there is significant heterogeneity among them and how they respond to stressors. To accurately predict refugia, it is essential to consider climate patterns at finer resolution, and to consider local reef health and local stressors.

[118] 30% target for local retention and betweenness centrality values by reef unit, overlaid onto the World Database on Protected Areas and The Nature Conservancy's Marine Protected Area Database of the Insular Caribbean. Schill, S.R., Raber, G.T., Roberts, J.J., Treml, E.A., Brenner, J., and Halpin, P.N. (2015). No Reef Is an Island: Integrating Coral Reef Connectivity Data into the Design of Regional-Scale Marine Protected Area Networks. PLoS ONE 10(12): e0144199. https://doi.org/10.1371/journal.pone.0144199

TNC's Caribbean team is leading an effort to identify, protect and restore valuable reef refugia across the Caribbean (CoralCarib Project), building on the previous analysis (Beyer et al., 2018; UNEP 2020). Importantly, the TNC effort addresses some of the critical limitations of the previous studies. The UNEP analysis only considers historical and future thermal stress; thus, the section below primarily highlights differences among several critical metrics considered in both the TNC Caribbean analysis and Beyer et al., 2018. Key differences between the TNC CoralCarib project and previous global analyses were related to scale. The TNC project is utilizing a regional model capable of capturing finer scale processes (i.e., finer resolution); new, more accurate and finer resolution coral reef data (TNC's new Caribbean benthic habitat maps); finer scale connectivity model, a hurricane intensity model, and validation with local stakeholders to capture human threats and current reef condition and enabling factors such as MPA effectiveness and local support for management.

Key differences between the analyses that identify potentially resilient reefs

Thermal stress:
Beyer et al. (2018) used NOAA CRW "CoralTemp" and CRW version 3 heat stress product suite datasets (CRWv3; https://coralreefwatch.noaa.gov) at about 5 km spatial resolution to quantify thermal history metrics. They evaluated thresholds for quantifying hotspots (thresholds of 0, 1 and 2◦C) and DHW (thresholds of 0 to 8 in 2◦C increments). They evaluated 27 thermal history metrics and selected a subset of metrics to capture historical thermal stress exposure and trends. Specifically, they calculated: (i) the sum of hotspots and number of days of hotspots greater than 0, 1 and 2◦C, (ii) 7 the maximum hotspot and maximum DHW, (iii) the mean duration of DHW events greater than 0, 2, 4, 6, or 8◦C DHW. Notably, Beyer et al. (2018) used CMIP5 models which have been significantly improved in the latest version (CMIP6). CMIP6 has four times the spatial resolution of the CMIP5 and also includes other improvements. Additionally, Beyer et al. consider only RCP2.6 (Representative Concentration Pathway 2.6 representing the lowest emissions scenario). RCP 2.6 is unrealistic considering we are currently tracking above the highest emissions scenario (RCP 8.5).

The TNC Caribbean reef refugia analysis (CoralCarib) addresses some of these key gaps. It utilizes the latest generation of climate model projections (CMIP6) to project future thermal exposure on coral reefs. It identifies thermal refugia at the highest spatial resolution available today (1 km).[119] It considers the highest number of possible futures or emission scenarios analyses to date (SSP1 2.6, SSP2 4.5, SSP3 7.0 and SSP5 8.5), and unlike UNEP (2020) does not condense all the model information within one scenario into an average. Both acute metrics of thermal stress and also chronic thermal stress were considered as both have been shown to influence reef health by decreasing coral calcification and growth.[120]

The Multi-scale Ultra-high Resolution (MUR) Sea Surface Temperature (SST) Analysis observational is able to reconstruct small-scale SST features, resulting in a feature resolution up to 10 times finer than 5km to 25 km products. Downscaling using the MUR dataset allows us to identify areas where local oceanographic conditions promote thermal refugia and provide information at an unprecedented scale (1 km) to inform reef management. Historical daily SST data at 0.01 degree spatial resolution for 1985 to 2019 was produced from two different

[119] Dixon et al., 2021
[120] Lindsey et al., 2013; Bozec and Mumby 2015

observational SST datasets: the European Space Agency Climate Change Initiative SST Analysis at 5 km (1985 to 2006), and the Multi-scale Ultra-high Resolution SST Analysis (2006 to 2019). For each site, we calculated a metric of chronic thermal stress (trend in temperature) and a metric of acute thermal stress. To assess future projections in temperature, SST data was obtained for four different emission scenarios, or Shared Socioeconomic Pathways (SSP): SSP1 2.6 (sustainability, 14 models), SSP2 4.5 (middle of the road, 15 models), SSP3 7.0 (regional rivalry, 13 models), SSP5 8.5 (fossil-fueled development, 15 models) that cover a wide spectrum of possible futures. SSP data for 2020 to 2100, originally at about 25km to 100 km spatial resolution, was downscaled to 1 km. We converted climate SSP data to 0.01 degree resolution using bilinear interpolation as commonly done in similar studies,[121] and used statistical downscaling by asynchronous linear regression.[122] Acute and chronic thermal stress metrics were calculated for each model and scenario. For each site, we calculated a metric of chronic thermal stress (trend in temperature) and a metric of acute thermal stress (sum DHW above 8º weeks for the entire period).

Hurricanes:
Beyer et al. (2018) used cyclone activity datasets (1985 to 2014) updated from Carrigan and Puotinen (2011) using three metrics of cyclone impacts on coral reefs: average annual days of exposure, maximum number of days of exposure to cyclones (winds of gale force or higher), and the inverse of the return time interval of at least one day of exposure per year. In the TNC Caribbean refugia analysis, hurricane impacts are modelled using the International Best Track Archive for Climate Stewardship (IBTrACS v4) dataset (Knapp et al., 2010), the same dataset used by Carrigan and Puotinen above but using a longer time period (1980 to 2020). These data were selected over the cyclone activity data utilized in Beyer et al. (2018) that is freely available at a coarse spatial resolution (25 km^2 cells).

Habitat:
Beyer et al. (2018) used coral reef locations from the Global Distribution of Coral Reefs dataset (UNEP-WCMC et al., 2010), and was updated by the National Oceanic and Atmospheric Administration (NOAA). These data were mapped onto a 0.05 degree (~5 km) raster dataset that matches the NOAA Coral Reef Watch (CRW) datasets. For each of these cells, the area of reef was estimated using the UNEP-WCMC polygon data.

By contrast, the TNC Caribbean refugia analysis uses much finer resolution data that can be used to identify the location of reefs and other benthic habitats across the Caribbean, mapped recently by TNC (Schill et al., *in prep*). These maps are the first high-resolution detailed benthic maps for the Caribbean that combine satellite data, airborne imagery, drone data and diver data to validate the maps.

Connectivity:
Connectivity is a key component of reef resilience (Mcleod et al., 2019), as the protection of ecologically connected source reefs is essential to provide larvae to reseed reefs following disturbance. Beyer et al. utilized a global model for assessing coral larvae dispersal probability (Wood et al., 2014). To improve the resolution and accuracy of connectivity patterns, the TNC Caribbean team utilized a connectivity model developed specifically for the Caribbean (Schill et al., 2015). The Caribbean connectivity model utilized an ocean circulation model and

[121] Brito-Morales et al., 2020, van Hooidonk et al., 2015
[122] Stoner et al., 2013

regional coral reef data to simulate spawning events (e.g., from NOAA's Real-Time Ocean Forecast System and based on the Hybrid Coordinate Ocean Model (HYCOM)). Coral larval dispersal patterns were analysed between coral reefs across jurisdictional marine zones to identify spatial relationships between larval sources and destinations within countries and territories across the region. The Caribbean connectivity model included five parameters to quantify connectivity: time of spawning, frequency of spawning, pelagic larval duration, settlement behaviour and larval mortality.

In the Caribbean refugia analysis, TNC considered both incoming and outgoing larvae. To describe the ability of a reef to receive larvae, we used in-strength, the sum of all ingoing connections, including the diagonal (local retention, Ospina-Alvarez et al., 2020). To describe the ability of a reef to supply larvae we used out-strength, the sum of all outgoing connections. This metric was identified by Magris et al. (2016, 2018) and Ospina-Alvarez et al. (2020) as an appropriate metric to identify good source areas that allow emigration and foster post disturbance recovery. Each reef site was associated with the connectivity value closest to its location.

By contrast, Beyer et al., 2018 utilized global connectivity datasets that did not take into account regional oceanographic patterns. They assessed outgoing settlement (proportion of particles that reached any habitat cell) and export (proportion of particles reaching any cell other than the source cell, hence omits self-seeding). The TNC Caribbean connectivity model (Schill et al., 2015) evaluated local retention by reef unit (i.e., degree to which each reef unit is self-sustaining). The inclusion of self-seeding capacity is essential as many reefs rely on self-seeding to support recovery following disturbance (Storlazzi et al., 2017).

Local consideration of threats:
Land-based sources of stress can reduce the ability of a reef to survive and recover from climate impacts. Beyer et al. (2018) did not consider land-based stressors in their analysis of reef refugia. To ensure consideration of local threats, the TNC reef refugia model was validated with local knowledge. The top-ranked sites were assessed by local stakeholders and additional data were considered through community input such as coral cover, presence/absence of local anthropogenic threats, and enabling conditions such as MPA effectiveness and local support for management.

Additional details on TNC's Reef Refugia Modelling for the Caribbean (CoralCarib)
To identify hope reefs, we used several data sets on the environmental characteristics of reef sites, including how connected reefs are to other reefs, how many hurricanes influence reef sites, and how increases in temperature (in the past and the future) affect reef sites. Future temperature increases were determined using four different climate change projections, ranging from a very sustainable future to one based on a high fuel-use economy. This led to a ranking of all reef sites across each country based on the likelihood of those reefs to be able to survive future climate change and seed other reef sites. The model highlights important refugia sites and provides an indication of national significance for each country, from a regional context.

To investigate the effectiveness of the current MPA network within The Bahamas of protecting the higher ranked refugia sites, an overlay analysis was done where rankings were summarized by each protected area. The mean value of the aggregated rankings was calculated and is reported in the table below for each of the 76 MPAs. Lower values indicate high importance for climate refugia. These data can provide guidance for improving

management within higher ranked MPAs, but also the model can be used to identify areas outside the MPA network that need consideration for other management actions.

Figure 33: Bahamian ranked by refugia score (preliminary results).

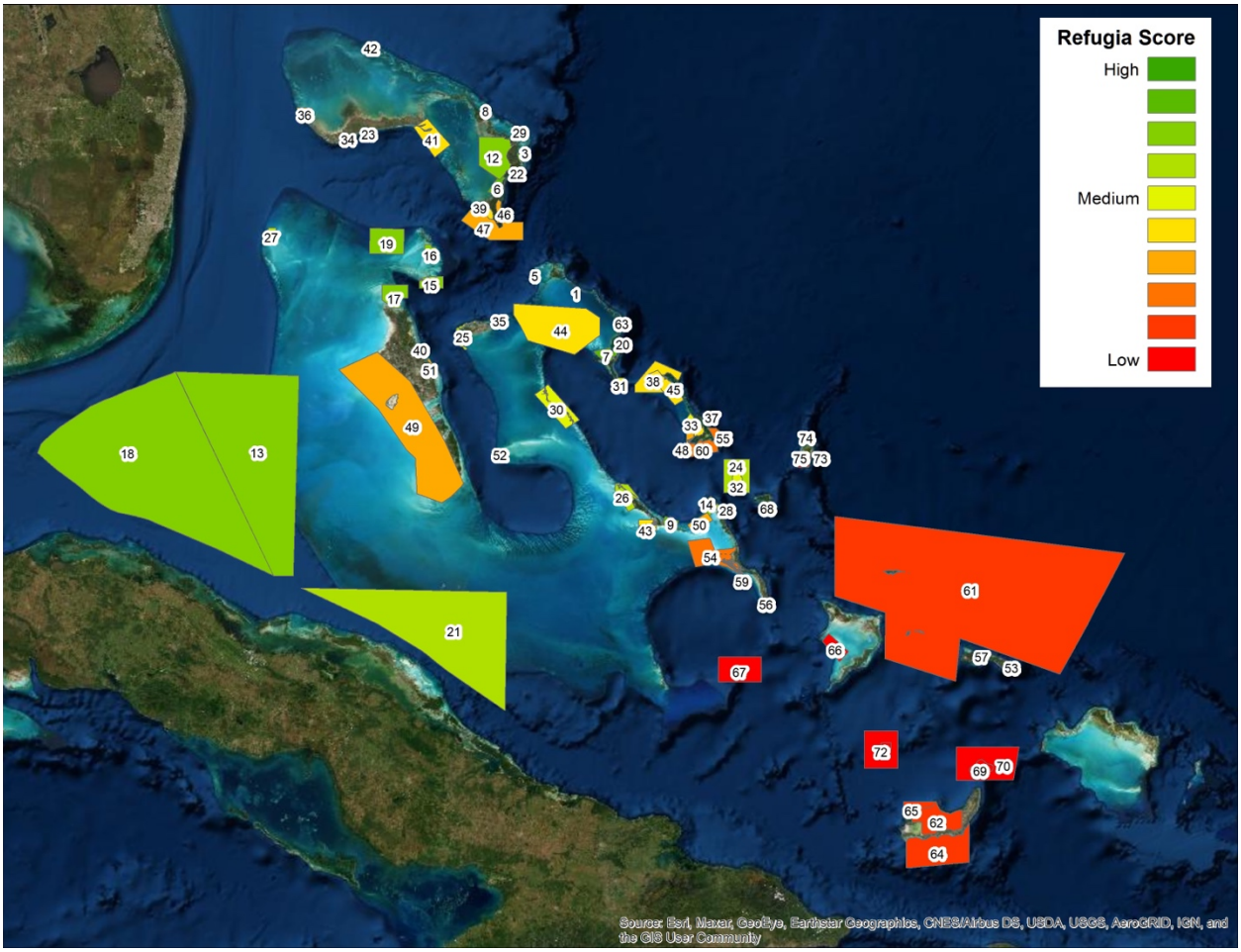


Table 16: Preliminary ranking of MPAs by refugia score – Top 20 MPAs.

Rank	AREA NAME	MEAN
1	Seahorse National Park	944
2	Atholl Island PA	1,203
3	Pelican Cays Land and Sea Park	1,714
4	Lucayan National Park	1,952
5	Egg Island	2,580
6	South Abaco Blue Holes National Park	3,629
7	Rock Sound	4,103
8	Crab Cay Marine Reserve	4,308
9	Moriah Harbour Cay National Park	5,094
10	East Abaco Creeks—Snake Cays	5,297
11	No Name Cay Marine Reserve	5,303
12	Marls of Abaco National Park	6,592

13	Expansion of Cay Sal MMA	7,628
14	North Long Island Reef System	7,628
15	South Berry Islands Marine Reserve	7,660
16	Kemps Cay to Pigeon Cay	8,546
17	Joulter Cays National Park	9,082
18	Cay Sal Marine Managed Area	9,193
19	West Berry Islands	10,054
20	Half Sound North	10,366

Description of biodiversity

- Number of coral species: 45 to 50 species[123]
- Number of fish species: 567 species[124]
- Emblematic species: queen conch (*Lobatus gigas*), Nassau grouper (*Epinephelus striatus*), Elkhorn coral (*Acropora palmata*)
- Protected species: elasmobranchs (sharks), cetacea and trichechus (marine mammals)
- Critically endangered species (CR): Nassau grouper (*E. striatus*), elkhorn coral (*Acropora palmata*), staghorn coral (*A. cervicornis*), smalltooth sawfish (*Pristis pectinata*), great hammerhead (*Sphyrna mokarran*), scalloped hammerhead (*S. lewini*), oceanic whitetip shark (*Carcharhinus longimanus*)[125]
- Endangered species (EN): Exuma goby (*Elacatinus atronasus*)—also endemic, lobed star coral (*Orbicella annularis*), mountainous star coral (*O. faveolata*)

Description of current protection

The Bahamas has taken proactive steps to protect its coastal and marine resources. Important milestones included the creation of the Sea Gardens in 1892 northeast of Nassau, the establishment of the Exuma Cays Land and Sea Park in 1958, a "no-take" zone since 1985, and the passage of the Fisheries Resources (Jurisdiction & Conservation) Act in 1977. At the turn of the millennium, The Bahamas Government created a network of marine protected areas (MPAs).[126]

In 2000, The Bahamas Government developed a system of fishery reserves to protect commercially important marine species and declared four areas for the protection of lobster, conch and Nassau Grouper. In 2002, the size of the national parks system was doubled. In February 2004, the Government of The Bahamas made a commitment to implement the Convention on Biological Diversity Programme of Work on Protected Areas (PoWPA) which aims to establish and maintain a comprehensive, effectively managed, and ecologically representative national protected area system. Later that year, the Government of The Bahamas represented by The Bahamas Environment Science and Technology Commission, the Bahamas National Trust and TNC's Northern Caribbean Programme signed a National

[123] Note this number is not exact as coral taxonomy is a bit fluid, with species being separated out and there are some hybrids which have unique species names (e.g., *Acropora prolifera)*

[124] Bohlke & Chaplin. (1993).

[125] IUCN red list. Note more corals are under review and will be listed as EN or CR shortly.

[126] Anderson L., Dahlgren, C., Knowles, L., Jupp, L., Cant-Woodside, S., Albury-Smith, S., McKinney-Lambert, C., and Lundy, .A (2018). *20 by 20 White Paper: Marine Protection Plan.* Prepared for the Office of the Prime Minister, Ministry of the Environment & Housing and the Ministry of Agriculture & Marine Resources by the Bahamas National Trust, Perry Institute for Marine Science, The Nature Conservancy and Bahamas Reef Environment & Educational Foundation.

Implementation Support Partnership (NISP) agreement to implement the Programme of Work on Protected Areas (PoWPA) that was adopted at the Seventh Meeting of the Conference of Parties to the Convention on Biological Diversity (COP-7). The Department of Marine Resources joined the NISP in the fall of 2006.[127]

In 2008, the Caribbean Challenge Initiative (CCI) was launched to provide greater leadership to chart a new course for protecting and sustainably managing the marine and coastal environment across the Caribbean. The Bahamas was one of two governments that initially agreed to participate in the CCI, committing to effectively manage at least 20% of their near shore and marine environment by the year 2020 (the 20-by-20 goal). In 2012, The Bahamas expanded the West Side National Park from 286,080 acres to 1.2 million acres—one of the largest marine reserves in the Caribbean. By 2015, 15 new MPAs were formed and three areas were expanded, comprising more than 11 million acres totalling 10% protection of The Bahamas' marine and coastal habitats (see list of MPAs and map in Annex VI). The following year, TNC, Bahamas Reef Environment & Educational Foundation and the Bahamas National Trust launched a collaborative initiative called Bahamas Protected to identify priority areas for protection and help advance the objectives of the CCI. Guided by economic valuation data, sound science and stakeholder consultations, the Conservancy and its partners identified and proposed to the Government of The Bahamas 43 new marine sites for protection. If declared, these areas would result in the country reaching 20% marine protection, which would double the current protected area coverage.[128]

The Bahamas National Protected Areas System (BNPAS) includes MPAs under the authority of multiple management entities. These include:

- Bahamas National Trust (BNT), the quasi-governmental organisation with responsibility for management of the majority of the national park system;
- Department of Marine Resources (DMR), which manages fisheries reserves;
- Forestry Unit (FU), which has been proposed as a co-manager of some of the 2015 PAs and is designating national "conservation forests;" such forests that include fully submerged mangrove habitats will qualify as MPAs; and
- Antiquities, Monuments and Museum Corporation (AMMC), which has jurisdiction over marine sites and objects of historical, anthropological, archaeological and paleontological significance, and has been proposed to co-manage a new PA.

[127] Moultrie, S. (2012.) Master Plan for The Bahamas National Protected Area System. The Nature Conservancy, Northern Caribbean Office. Nassau, The Bahamas.

[128] *Sun-soaked islands amidst Caribbean blue this unique archipelago needs protecting.* TNC, 2020

Table 17: Current status of marine protected areas (MPAs) and marine managed areas (MMAs) in The Bahamas, including the management agency, year of establishment (and expansion), size, and year of completion of the general management plan (GMP). Under Management agency, "tbd" means that the management agency has yet to be determined. MPAs are shown in Figure 30 where they are identified by the numbers in the second column. Source: Brumbaugh, D.R. 2017.[129]

Island(s), part		MPA	Management agency	Established /expanded	Area, sq. km	GMP
Abaco, north	1	Black Sound Cay National Park	BNT	1988	0.01	draft
	2	Crab Cay Marine Reserve	DMR	2009	4.4	
	3	No Name Cay Marine Reserve	DMR	2009	4.9	
	4	Walker's Cay National Park	BNT	1980	24	draft
Abaco, central [2]	5	East Abaco Creeks National Park [2]	tbd	2015	54	
	6	Fowl Cays National Park	BNT	2009	13	draft
	7	Marls of Abaco National Park [2]	tbd	2015	866	
	8	Pelican Cays Land and Sea Park	BNT	1972	8.5	draft
Abaco, south	9	Cross Harbour National Park	tbd	2015	61	
Andros, north	10	Andros Blue Holes National Park	BNT	2002	162	
	11	Andros Joulter Cays National Park	tbd	2015	375	
	12	Andros North Marine Park	BNT	2002	20	draft
	13	Andros South Marine Park	BNT	2002	14	draft
	14	Andros West Side Andros National Park [2]	BNT	2002/2009	6,070	2013
Berry Islands	15	South Berry Islands Marine Reserve	DMR	2009	194	2013 [3]
Cay Sal	16	Cay Sal Marine Managed Area	tbd	2015	16,844	
Conception	17	Conception Island National Park	BNT	1964/2009	121	
Crooked/Acklins	18	Bight of Acklins National Park	tbd	2015	249	
	19	Southeast Bahamas Marine Managed Area	tbd	2015	24,496	
Exumas	20	Exuma (Jewfish Cay) Marine Reserve	DMR	2009	150	
	21	Exuma Cays Land and Sea Park	BNT	1958	456	2006
	22	Moriah Harbour Cay National Park	BNT	2002/2015	92	
Grand Bahama	23	East Grand Bahama National Park	tbd	2015	487	
	24	Lucayan National Park	BNT	1977/2015	7.8	draft
	25	North Shore / The Gap National Park	tbd	2015	947	
	26	Peterson Cay National Park	BNT	1968/2015	4.4	
	27	Green Cay National Park	tbd	2015	11	
Hogsty	28	Hogsty Reef Protected Area	tbd	2015	50	
Inagua	29	Inagua National Park	BNT	1963	890	
	30	Little Inagua National Park	BNT	2002	254	
	31	Union Creek Reserve	BNT	1965	25	
New Providence	32	Bonefish Pond National Park	BNT	2002	5.0	draft
	33	Southwest New Providence Marine Managed Area	tbd	2015	74	
San Salvador	34	Graham's Harbour National Park	BNT	2015	23	draft
	35	Green's Bay National Park	BNT	2015	2.4	draft
	36	Pigeon Creek and Snow Bay National Park	BNT	2015	20	draft
	37	West Coast Dive Site	BNT	2015	42	draft

Notes:

[1] sizes were sourced from various documents and spreadsheets. Conflicts in reported sizes sometimes differed among sources, so all values here should be considered estimates until they can be more fully validated.

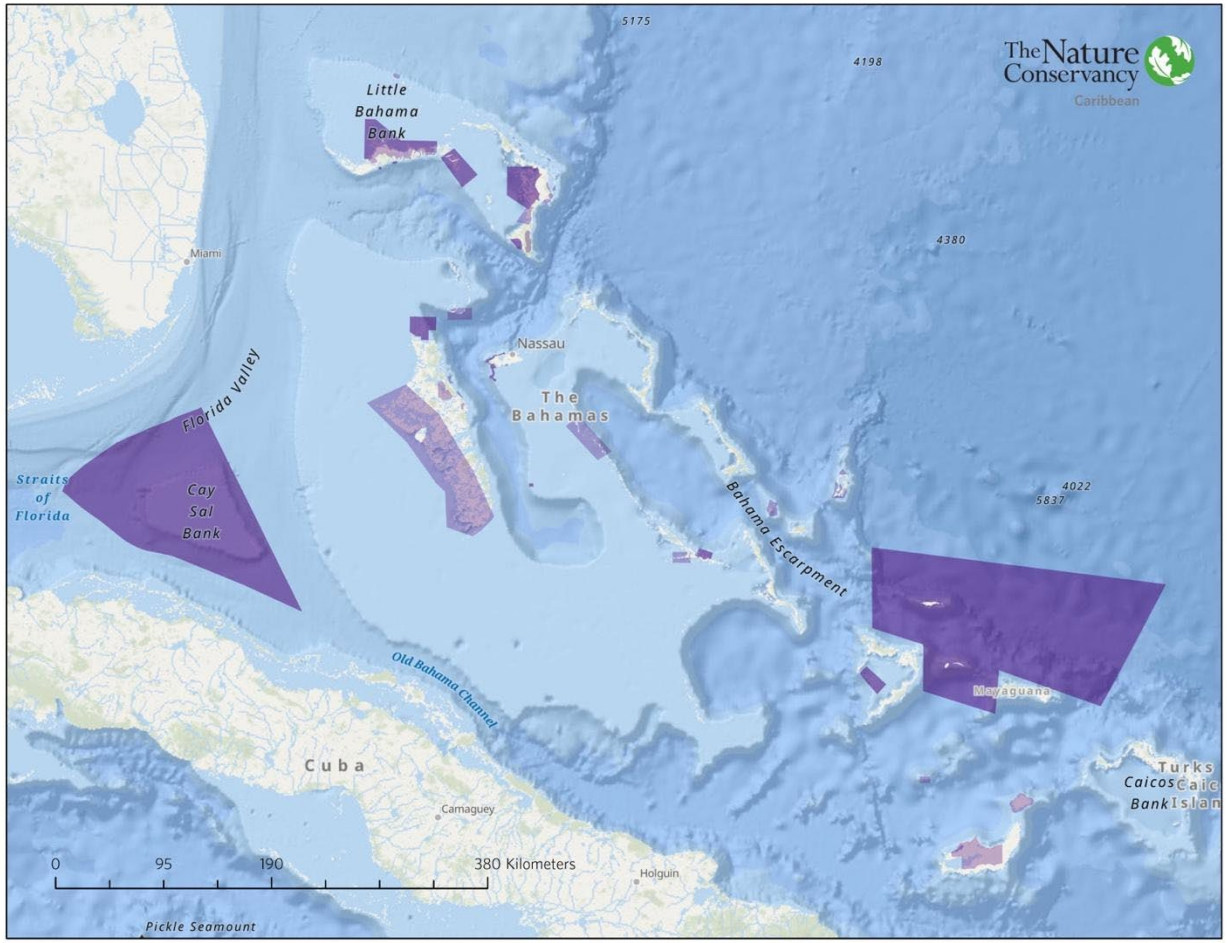
[2] includes Hope Town district

[3] PA extends beyond the indicated part of the island

[4] GMP was completed in 2013, but GOB approved changes to reserve regulations in 2014 as a condition of private sale of Chub Cay Club

[129] Brumbaugh, D.R. (2017). Co-Management of Marine Protected Areas: A Suggested Framework for The Bahamas. Report to The Nature Conservancy, Northern Caribbean Program, Nassau, Bahamas. 32pp. Available online: https://www.researchgate.net/publication/322369169_Co-Management_of_Marine_Protected_Areas_A_Suggested_Framework_for_The_Bahamas

Figure 34: Map of The Bahamas National Protected Area System.



Part 2—Social analysis supporting material

Communities dependent on coral reef ecosystems in the area

The Bahamian archipelago includes more than 700 islands, of which only 30 are inhabited. Seventy percent (70%) of the total population—approximately 396,000—lives in New Providence, where the capital Nassau is located, while another 14.5% resides on the island of Grand Bahama and 10.3% lives on Abaco. The remaining population is scattered throughout the archipelago.[130]

The insularity and extensive carbonate shelf with productive coral reefs and other habitats, plus a large area of coastal wetlands, especially mangrove forests, contribute to the abundance and diversity of fish in The Bahamas.[131] Bahamian coral reefs are home to the greatest diversity of life within the archipelago and provide critical ecosystem services that support a vibrant economy, including tourism, fisheries and protection from coastal erosion. These reefs owe much of their value to the corals themselves, which are the architects and engineers of the reef, building reef structure that protects shorelines and provides habitat to marine life.

Principal sectors and livelihood activities

With few natural resources and a limited industrial sector, the Bahamian economy is heavily dependent on tourism and the financial services sector. These sectors have traditionally attracted most of the Foreign Direct Investment (FDI), which is heavily encouraged by The Bahamas Government. Tourism and related services contribute approximately 70% of the country's Gross Domestic Product (GDP) and employ a little more than half of the work force. The Bahamas relies primarily on imports from the United States to satisfy its fuel and food needs for local and tourist consumption, averaging around 7 million tourists annually, about 85% from the United States. Financial services constitute the second most important sector of the economy, accounting for up to 15% of GDP.[132]

The World Bank recognizes The Bahamas as a high-income developed country with a GDP per capita of USD 32,218 (2018) and a Gross National Income per capita of USD 30,520 (2018). However, the Bahamian economy is grappling with the dual, unprecedented economic crises brought by the impact of Hurricane Dorian in September 2019, and the ongoing effects of the global COVID-19 pandemic, projected to inflict combined losses of USD 7.5 billion or 60% of GDP.[133]

Value of coral reef ecosystem services

The Bahamas boasts a diverse array of ecosystems that provide myriad economic benefits to the nation. Bahamians are highly dependent on the services provided by the country's extensive marine and coastal ecosystems, such as coral reefs, mangrove forests and seagrass

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[130] Haas, A., Feedler, T., and Brooks, E. (2017). *The contemporary economic value of elasmobranchs in The Bahamas: Reaping the rewards of 25 years of stewardship and conservation.* Biological Conservation. Vol. 207. pg 55-63.

[131] Moultrie, S. (2012). Master Plan for The Bahamas National Protected Area System. The Nature Conservancy, Northern Caribbean Office. Nassau, The Bahamas.

[132] International Trade Administration U.S. Department of Commerce. *Bahamas Country Commercial Guide: Market Overview.* Available online: https://www.trade.gov/country-commercial-guides/bahamas-market-overview.

[133] Ibid.

beds.[134] In 2016, The Nature Conservancy, Bahamas Reef Environment & Educational Foundation and the Bahamas National Trust launched a collaborative initiative called Bahamas Protected to identify priority areas for protection and help advance the objectives of the Caribbean Challenge Initiative. As part of this work, the Conservancy and its partners completed a comprehensive economic evaluation of the Bahamas Marine Protected Areas System. The current MPA network was valued at nearly USD 6 billion annually, including the spiny lobster fishery, tourism, coastal protection and carbon sequestration benefits.[135]

Every year, more than 1 million visitor trips are directly linked to coral reefs.[136] Coral reef related tourism generates USD 671 million annually in The Bahamas—USD 353 million from reef-adjacent activities, like beach visits, and USD 318 million from on-reef activities, like snorkelling and diving. The coral reefs with the highest tourism value in The Bahamas generate more than USD 5.7 million per square kilometre per year and fall within the top 10% of the Caribbean's tourism-valued reefs.[137]

The Bahamas shark-diving industry is considered to be the largest in the world, contributing approximately USD 113.8 million annually to the Bahamian economy. Shark tourism generated 99% of the total revenue, while shark research and filming contributed to the remainder. The relative economic importance of shark diving was greater in the Family of Islands.[138]

In The Bahamas, the spiny lobster fishery covers more than 45,000 square miles of the Great Bahama Bank and Little Bahama Bank and relies heavily on large swaths of mangrove forests and seagrass beds found inside and outside marine protected areas.[139] These habitats offer shelter, food and larval recruitment for spiny lobsters and other economically and culturally important fisheries. They also make a significant contribution to fisheries production in The Bahamas. The spiny lobster fishery supports more than 9,000 Bahamian fishers,[140] and approximately 6 million pounds of spiny lobster valued at USD 23.5 million are exported annually from The Bahamas.[141]

Storm protection is a critical ecosystem service offered by coastal habitats in The Bahamas.[142] The Bahamas' low-lying nature makes it particularly vulnerable to climate change. Low-income households make up a substantial portion of The Bahamas population. Critical infrastructure and local economies are typically found along the coasts. Coral reefs, seagrass and mangroves can attenuate waves and surge associated with storms, sea level rise and flooding that impact these vulnerable communities. It is estimated that these natural habitats

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[134] Silver. J., Arkema, K., Griffin, R., Lashley, B., Lemay, M. Maldonado, S., Moultrie, S., Ruckelshaus, M., Schill, S., Thomas, A., Wyatt, K., Verutes, G. (2019). *Advancing Coastal Risk Reduction Science and Implementation by Accounting for Climate, Ecosystems, and People.* Frontiers in Marine Science. Vol.6.

[135] Op.cit. TNC, 2020.

[136] Ibid.

[137] *Reef-Associated Tourism Value of Coral Reefs in The Bahamas.* TNC, 2019.

[138] Op.cit. Haas et al. (2017).

[139] Op.cit. TNC, 2020.

[140] Ibid.

[141] Arkema, K., Fisher, D., and Wyatt, K. 2017). *Economic valuation of the Bahamian marine protected areas.* Prepared for BREEF by The Natural Capital Project, Stanford University.

[142] Op.cit. Silver et al. (2019).

offer valuable coastal protection services to an estimated 39,000 people, providing a cost saving of USD 806 million annually.[143]

Mangroves and seagrasses have been identified as major carbon sinks that can store and sequester carbon for centuries. The ability of these coastal ecosystems to contribute substantially to carbon storage is largely due to their ability to vertically accrete soils that hold carbon. Across the entire Bahamas MPA network, more than 400 million metric tons of carbon are stored, at a value of more than USD 5 billion in avoided damages from emissions globally. The Andros West Side National Park, which covers most of the western half of Andros Island, stores the vast majority of the carbon in the entire protected area network.[144]

Communities engagement in ecosystems management

MPAs are an important tool to protect ecosystems and, therefore, local welfare and local and national economies.[145] Although the declaration of protected areas is important, the effective management of existing and future parks is key to healthy coral reefs, mangroves and seagrass beds and to the fishing and tourism industries that depend on these resources. Currently, less than 50% of The Bahamas Marine Protected Areas Network is effectively managed. To address this shortfall, TNC and local partners established the Bahamas Protected Areas Fund (BPAF), a conservation trust fund designed to establish sustainable funding for protected areas management and on-the-ground marine conservation efforts. In addition to sustainable funding support, TNC works directly with marine protected area managers and other stakeholders on the ground to implement effective, long-term management of protected waters.[146]

Bahamian fisheries face significant challenges because of the impacts of climate change, habitat degradation and unsustainable fishing practices, including illegal fishing and poaching. A significant decline in the diversity and abundance of marine species threatens fragile ecosystems, food security and the livelihoods of many. The Nature Conservancy is working with the Government of The Bahamas and local actors to reverse the decline and support the sustainable development and management of key fisheries. One such fishery is the spiny lobster fishery. In 2018, TNC helped The Bahamas make history by earning the Marine Stewardship Council (MSC) ecolabel certification for its spiny lobster fishery—the first Caribbean fishery to achieve this renowned certification. The spiny lobster fishery is one of the most economically important fisheries in The Bahamas. It is the country's largest seafood export and supports thousands of Bahamian households. However, lobster populations are being severely threatened by unregulated fishing—including the harvesting of juveniles, and the capture and sale of spawning adults and lobsters during the closed season.[147]

To address this dilemma, TNC worked closely with the Department of Marine Resources, The Bahamas Marine Exporters Association, the World Wildlife Fund, local fishers and other stakeholders to markedly improve The Bahamas spiny lobster fishery to meet MSC certification standards. Being awarded and retaining the certification is no easy feat. It is

[143] Op.cit. Arkema et al. (2017).
[144] Ibid.
[145] Hargreaves-Allen, V. and Pendleton, L. (2010). *Economic Valuation of Protected Areas in The Bahamas*. Report submitted to The Bahamas National Trust.
[146] Op.cit. TNC, 2020.
[147] Ibid.

dependent on The Bahamas' ability to prove the lobster population is healthy, harvesting techniques cause minimal damage to lobster habitat (mangroves, seagrasses, corals, etc.) and the marine environment, and the spiny lobster fishery is managed sustainably. This milestone sends a message to the world that The Bahamas is a leader in sustainable fisheries management. It also provides a level of food security because the certification secures access to international markets in the United States and Europe where consumers are willing to pay premium prices for lobster meat, which is in high demand.[148]

To help reefs adapt, in 2011 TNC expanded its Coral Restoration Climate Change Adaptation Programme to The Bahamas. TNC-trained volunteers carefully propagated *Acropora* corals in nurseries off New Providence and Andros Island. Once the coral fragments were of adequate size and healthy, they were outplanted on nearby reefs to improve genetic diversity.[149]

In 2016, TNC developed a Bahamas-wide Coral Reef Report Card in collaboration with the Perry Institute for Marine Sciences and the Atlantis Blue Project Foundation.[150] The coral reef report card was the first of its kind—it assessed reef health at 214 sites (on the Cay Sal Bank, Andros, the Southern Bahamas, New Providence and Rose Island, the Little Bahama Bank, the Exuma Cays and the Berry Islands) across the Bahamian archipelago.[151] The report card serves as an important educational tool to raise public awareness about coral reef health and recommends coral reef restoration measures and management strategies to the Government of The Bahamas.

In effort to scale up conservation impact in the field of coral reef restoration and coral conservation science, TNC partnered with the Cape Eleuthera Institute, the Perry Institute for Marine Science, SECORE International and the Shedd Aquarium to launch the Bahamas Coral Innovation Hub. In the spring of 2018, the idea of the Hub was born to advance innovative scientific research and first-class educational programming. Later that year, TNC and its partners established the Hub in South Eleuthera to advance cutting-edge coral reproduction techniques—micro-fragmentation and facilitated sexual reproduction—to restore threatened and degraded coral reefs. A pilot coral spawning expedition soon followed, which resulted in the creation of 1.3 million new embryos. The Innovation Hub also serves as a vehicle for education and knowledge-sharing among coral scientists, practitioners, educators and local community members. More than 235 students have been educated about the threats to coral reefs, climate change, coral reef health, restoration techniques, the importance of coral reefs as nature-based solutions for coastal protection, and the need to develop resilience plans to safeguard the future of Bahamian reefs.[152]

Part 3—Policy analysis supporting material

Policy environment

The Bahamas is considered a leader in marine conservation, establishing the Sea Gardens Protection Act in 1892, which prohibited dredging or removal of coral, sea fans or other organisms from the seabed. The Bahamas also established the first MPA of any kind in the

[148] Ibid.

[149] *Working with partners to protect nature in The Bahamas*. TNC, 2016.

[150] Ibid.

[151] Dahlgren. C, Sherman, K., Lang, J., Kramer, P.R., and Marks, K. (2016). Bahamas Coral Reef Report Card Volume 1: 2011–2013.

[152] Op.cit. TNC, 2020, and *Ocean Challenge*. TNC, 2020. Final Report prepared from Bezos Family Foundation.

world in 1958, with the establishment of the Exuma Cays Land and Sea Park. This led to the creation of the Bahamas National Trust (BNT) in 1959, whose mandate is to develop and maintain these protected areas. In 2002, the Government of The Bahamas added 10 new MPAs to the BNT portfolio. This was further expanded in 2015, with an additional 11 million acres being protected, taking the overall area of the country's coastal, near-shore and deep-water habitats that are under protection to 10%.[153]

Notable government commitments and initiatives for protecting marine natural capital include:

- The Bahamas is part of the Caribbean Challenge Initiative (CCI), where they have committed to set aside at least 20% of its coastal marine waters as MPAs.
- The Bahamas 2020 Declaration was formally declared in Bonn, Germany, at the Ninth Conference of the Parties in May 2008. The 2020 Declaration served as the Government of The Bahamas' confirmation of its intent to preserve the country's marine and terrestrial environments and to meet the targets established by the UN Convention on Biological Diversity (CBD) Programme of Work on Protected Areas (PoWPA).
- The Bahamas National Protected Areas System (BNPAS) Project (2010 to 2014) was implemented and was funded by the Global Environment Facility (GEF) to enable The Bahamas to meet its commitments under the CBD PoWPA.[154]
- The National Development Plan: Vision2040, provides a roadmap for the future development of The Bahamas. Goal 11 of the roadmap is that "The Bahamas will have a natural environment that supports the long-term sustainable development of the Bahamian economy and way of life for generations." Within this goal is Strategy 11.3 that commits to "Sustainably Use and Manage Resources." It reiterates the 20% target set out by the CCI and looks to "Increase protected areas under effective management (including sustainable funding)." The SDGs are also integrated into the National Development Plan.[155]
- The Bahamas is a party to the UN Framework Convention on Climate Change (UNFCCC) and is a signatory to the Paris Agreement. The Bahamas submitted an initial nationally determined contribution (INDC) in 2015 that calls for a 30% in GHG reductions by 2030 compared to 2010. Coral reefs, seagrass and mangroves were all highlighted as key ecosystems in terms of adapting to climate change.[156]

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[153] Bahamas Protected. (2018). Marine Protection Plan. Available online: https://marineplanning.org/wp-content/uploads/2019/07/Bahamas-Protected_-20-by-20-Marine-Protection-Plan_Full-Report_Sept2018.pdf

[154] Bahamas Protected Areas Fund website. Available online https://bahamasprotected.com/about/

[155] NDP Secretariat. (2017). 2nd Working Draft of the National Development Plan of The Bahamas. Available online: https://www.vision2040bahamas.org/media/uploads/2nd_Working_Draft_of_the_NDP_website_30.11.17c.pdf

[156] The Government of The Bahamas. (2015). Intended Nationally Determined Contribution (INDC) Under the United Nations Framework Convention on Climate Change. Available online: https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Bahamas/1/Bahamas%20INDC%20Submission.pdf

Table 18: Government policy and the enabling environment of The Bahamas.[157]

Government policy	Year	Description
Environmental Planning and Protection Act[158]	2019	Helped to establish the Department of Environmental Planning and Protection (DEPP) who will ensure the integrated protection of the environment and the sustainable management of its natural resources. The DEPP will play an important role in managing protected areas.
Environmental Impact Assessment Regulations[159]	2021	Designates requirements for the Certification of Environmental Clearance, which sets out the process for project proponents carrying out an Environmental Impact Assessment or Environmental Management Plan. It also lays out the consultative process the project proponent is required to undertake. If all the requirements laid out in this policy are fulfilled then project proponents will be granted a Certificate of Environmental Clearance.
Fisheries Act[160]	2020	Sets out the continuance of the Department of Marine Resources. The DMR functions are "to develop strategies to manage, protect and conserve all fisheries resources of The Bahamas." The DMR plays a key role in the development and implementation of strategies and plans with respect to Marine Protected Areas.
Ministry of Environment Act[161]	2019	The Act determines the Ministry of the Environment to oversee the integrity of the environment of The Bahamas, to establish the Environmental Administration Fund and the Environmental Trust Fund. The Ministry will "manage, protect and conserve all land, water, air and living resources of The Bahamas, having regard to the environmental, economic and social benefits they may confer on The Bahamas."

[157] Adapted from Settelmyer et al. (2021). Bahamas Blue Carbon Feasibility Study Final Report.

[158] Environmental Planning and Protection Act. (2019). Available online: http://www.depp.gov.bs/wp-content/uploads/2020/02/Department-of-Environmental-Protection-Planning-Act-2019.pdf

[159] Environmental Impact Assessment Regulations. (2020). Available online: https://www.depp.gov.bs/wp-content/uploads/2020/11/Extension-of-Act-and-EIA-Regulations.pdf

[160] Fisheries Act. (2020). Available online: https://img1.wsimg.com/blobby/go/3cc51733-d4fe-4572-b5fa-01fb8ab0ebdb/downloads/Fisheries%20Act%202020.pdf?ver=1621389245398

[161] Ministry of Environment Act. (2019). Available online: http://extwprlegs1.fao.org/docs/pdf/bha199550.pdf

Government policy	Year	Description
The Bahamas National Trust Act[162]	1959	Established the Bahamas National Trust (BNT) for conserving "submarine areas of beauty or natural or historic interest and as regards lands and submarine areas for the preservation (so far as practicable) of their natural aspect, features, and animal, plant and marine life."
The Bahamas Protected Areas Fund Act[163]	2014	This Act establishes the Bahamas Protected Areas Fund (BPAF) as a body corporate and defines its functions and powers. It also defines the system of protected areas in The Bahamas and requires the Board of the Fund to establish and maintain a register called the Register of Protected Areas.
The Biological Resources and Traditional Knowledge Protection and Sustainable Use Act[164]	2020	The Act protects biological resources and the associated traditional knowledge in The Bahamas to prevent it from being exploited by foreign interests. The Act will help The Bahamas to comply with the Nagoya Protocol and CBD via the DEPP who will act as the "National Competent Authority." The Act promotes the use of biological resources, including aquacultural, for national benefits.
Forestry (Declaration of Protected Trees) Order	2021	The Forestry Act of 2010 provides protection to wetlands, water reserves, endemic flora and fauna and protected trees. Recently, the Minister of Environment and Housing, acting under the Forest Act, issued the Forestry (Declaration of Protected Trees) Order, 2021, which names all four species of mangrove (black, white, red and buttonwood) as protected trees and which prohibits harvesting of mangroves without a permit which may only be granted by the Director of Forestry acting in consultation with the Director of Agriculture. In effect, with this order, all mangroves in The Bahamas come under the responsibility of the Forestry Unit.

[162] The Bahamas National Trust Act. (1959). Available online: https://bnt.bs/wp-content/uploads/2020/03/bntact.pdf

[163] The Bahamas Protected Areas Fund Act. (2014). Available online: https://bahamasprotected.com/bpaf-act/

[164] DEPP. (2020). The Biological Resources and Traditional Knowledge Protection and Sustainable Use Act. Available online:https://www.depp.gov.bs/wp-content/uploads/2020/11/Biological-Resources-and-Traditional-Knowledge-Act-Draft.pdf

Investment environment

According to the World Bank's 2020 Doing Business Report, The Bahamas ranks 119th out of 190 economies in ease of doing business ranking.[165] The Bahamas was ranked low in terms of property registration (181 of 190), trading across borders (161 of 190) and getting credit (152 of 190). These areas of the business climate could deter private investment into The Bahamas.

The financial sector is dominated by banks, with seven banks that are domiciled in The Bahamas and three foreign-owned banks that account for three-quarters of all banking assets.[166] The economy is of a relatively small size and highly dependent on tourism, which accounts for 45% of GDP. Real estate and construction are also important in terms of GDP, accounting for 22%. The Bahamas hosts a large offshore financial sector that has limited links to the domestic financial sector.

More frequent and more destructive hurricanes pose a risk to both economic growth and the financial sector. The Bahamas has been hit by 11 hurricanes in the last 20 years, costing 4.3% of GDP on average. During the 20 years prior to these, there were four hurricanes at an average cost of 3% of GDP. Off the back of COVID-19, the tourism sector saw a 64% decline in visitor numbers,[167] with GDP estimated to have contracted by 14.8%.[168]

Micro, Small and Medium-sized Enterprises (MSMEs) account for an estimated 90% of registered businesses in the country,[169] but have traditionally had difficulty accessing credit and business development services. In 2017, the Bahamian Government created an MSME policy and the Small Business Development Centre (SBDC), which will take advantage of that policy to benefit those who want to get into business and those already in business who want to improve outcomes. Through the Access Accelerator, the Government of The Bahamas has committed USD 5 million per year for the next five years, a total commitment of USD 25 million, to be disbursed to Bahamian MSMEs through loans and equity financing.[170]

In 2020, the Inter-American Development Bank (IDB) approved a USD 200 million loan to promote competitiveness and environmental resiliency in The Bahamas by supporting MSMEs, modernizing the institutional and legal framework to protect the natural resources, and economic diversification by promoting scientific and institutional developments in the Blue Economy.[171] This program will support the mandate of the Bahamas Economic Recovery Committee (ERC), made up of private and public stakeholders, that was set up in 2020 to

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[165] The World Bank. (n.d). Ease of Doing Business in The Bahamas. Available online: https://www.doingbusiness.org/en/data/exploreeconomies/bahamas#

[166] IMF. (2019). The Bahamas Financial System Stability Assessment. Available online: https://www.imf.org/~/media/Files/Publications/CR/2019/1BHSEA2019002.ashx

[167] Bethel et al. (2021). Blue Economy and Blue Activities: Opportunities, Challenges, and Recommendations for The Bahamas. Available online: https://www.mdpi.com/2073-4441/13/10/1399

[168] World Bank. (2021). The Bahamas. Available online: https://pubdocs.worldbank.org/en/505961602705115630/mpo-bhs.pdf

[169] IDB. (2013). IDB Country Strategy with the Commonwealth of The Bahamas 2013-2017. Available online: http://www.depp.gov.bs/wp-content/uploads/2016/02/Country_Strategy_with_The_Bahamas_2013-2017.pdf

[170] Access Accelerator website. Available online: https://www.accessaccelerator.org/about/

[171] IDB. (2020). The Bahamas will promote competitiveness and environmental resiliency with the IDB support. Available online: https://www.iadb.org/en/news/bahamas-will-promote-competitiveness-and-environmental-resiliency-idb-support

address the challenges presented by COVID-19. The program aims to support the development of the Blue Economy, helping to increase the employment for young people in blue jobs and greater protection of coastal and maritime ecosystems. As part of this the program also aims to support the governance and financial management of Marine Protected Areas.

The Compete Caribbean Partnership Facility (CCPF), in partnership with the Institute of Marine Affairs, is looking to provide support to selected Caribbean start-ups and innovative firms to create new products and services, improve their processes and scale their commercial models rooted in cutting-edge technologies that contribute to the sustainable management of oceans and coastal resources (or marine ecosystems). The Bahamas is one of the 13 target countries as part of the facility, individual start-ups or private companies can apply for up to USD 160,000 in non-reimbursable technical assistance grants to implement their Blue Economy innovation project.[172]

The Bahamas Development Bank (BDB) is committed to fostering the Blue Economy in The Bahamas.[173] To support innovation in the Blue Economy, BDB is offering a grant of up to USD 7,500 in each of the four themes of Food of The Future, Ocean Bio-Extractives, Maritime Industry & Energy, and Blue Arts, Culture and Tourism.[174]

Annex VII: Drivers of degradation

Specific information and maps are provided in Annex VI.

Annex VIII: Business Models and Financial Instruments

Please provide any specific documents or graphics that illustrate in greater detail the financial models associated with the interventions of the programme.

Partner Institutions

Access Accelerator Sustainable Business Development Center (SBDC)

Access Accelerator
Small Business Development Centre

https://www.accessaccelerator.org/

[172] Compete Caribbean website. Available online: https://www.competecaribbean.org/
[173] BDB. (n.d). Blue Economy. Available online: https://bahamasdevelopmentbank.com/our-work/themes/blue-economy/
[174] Government of The Bahamas. (n.d). The Bahamas Development Bank hosts Blue Economy Think Tank. Available online: https://www.bahamas.gov.bs/wps/portal/public/gov/government/news/

SBDC is a Bahamian non-profit founded in 2018 by the University of The Bahamas, the Bahamas Chamber of Commerce and the Ministry of Finance. By the end of the last fiscal year, SBDC had funded USD 49.9 million to Micro, Small and Medium-sized Enterprises (MSMEs), with 9,488 clients registered. SBDC provides the required technical capacity in the financial aspects, which complements TNC skills that are more focused on the environmental and social aspects. SBDC will operate a specific Blue Economy programme under the BahamaReefs in partnership with TNC.

In 2021, the Access Accelerator announced a partnership with the Bahamas Entrepreneurial Venture Fund to facilitate the distribution of loans to small businesses as part of their MSME Loan Guarantee Programme. The programme is a product of funding through the Inter-American Development Bank (IDB). The funding gives the Government of The Bahamas USD25 million for a Credit Enhancement Programme, of which USD 22 million guarantees loans to MSMEs through the Access Accelerator over five years.[175] They have also launched other partnerships with the Royal Caribbean Group in the last year to support small tourism businesses in Grand Bahama, the Berry Islands and New Providence.[176] SBDC has provided a letter of support for inclusion in the BahamaReefs Pipeline. The support letter can be accessed at the following link: https://tnc.box.com/s/xdawd5ep1im7xl9m0vj0pkynilj3i46v

Bahamas National Trust (BNT)

bnt BAHAMAS NATIONAL TRUST

https://bnt.bs/

BNT is a non-profit, non-government, membership organisation founded in 1959 by the BNT Act. It is governed by a 29-member council made up of appointed representatives from some of the most prestigious conservation and scientific organisations in the world and from government. BNT currently manages 32 MPAs in the country, with more than 2 million acres of marine and terrestrial areas protected. It will implement new structures and revenue streams in Abaco MPAs with the support of Blue Finance. BNT has the mandate to potentially replicate the experience in Abaco to other of its managed areas.

BNT is also supporting the Ministry of Public Works Project Implementation Unit, which is funded by IDB, to implement parts of the Climate Resilient Coastal Management & Infrastructure Program. This program aims to use traditional and nature-based solutions to

[175] SBDC. (2021). One million dollars for small businesses through Access Accelerator and Bahamas Entrepreneurial Venture Fund partnership. Available online: https://www.accessaccelerator.org/news-events/bahamas-entrepreneurial-venture-fund-partnership/

[176] SBDC. (2021). Access Accelerator makes BIG WAVES in the tourism industry with new partnership with Royal Caribbean Group. Available online: https://www.accessaccelerator.org/news-events/access-accelerator-makes-big-waves-in-the-tourism-industry-with-new-partnership-with-royal-caribbean-group/

build coastal resilience at several sites throughout The Bahamas, beginning with Andros and East Grand Bahama. BNT will be conducting ecological assessments of other habitats like seagrass beds and coral reefs to determine restoration priorities. This program kicked off in September 2020 and is set to continue until 2024.[177]

Perry Institute for Marine Science (PIMS)

https://www.perryinstitute.org/

PIMS conducts research throughout The Bahamas and other parts of the Caribbean. PIMS also conducts a wide range of conservation, education and citizen science programs. It is one of the oldest leading research organisations in The Bahamas, founded more than 50 years ago, in 1970. PIMS and TNC have a long-standing consolidated partnership, collaborating in specific projects, such as the Bahamas Coral Reefs Report Card. PIMS will provide the most accurate information on the current status of Bahamian reefs and will be a hub for the programme to work with a network of small dive shops and other tourism businesses in restoration efforts.

PIMS has set up the Reef Rescue Network, which works with organisations and businesses to establish coral nurseries throughout the Caribbean, grow and outplant corals, as well as monitor the health of local coral reefs. They help to provide technical assistance and resources for coral restoration. They have also helped set up The Bahamas Coral Innovation Hub (BCIH), a center for development, implementation and dissemination of scalable coral restoration techniques to help counteract coral reef decline, in collaboration with Cape Eleuthera Institute (CEI), and TNC.[178]

The table below details the Reef Rescue Network members in The Bahamas, the location where they operate, and their number of nurseries, outplanted corals, species and fragments.

Table 19: Reef Rescue Network members in The Bahamas.

Partner	Island	Number of Nurseries	Number of Outplanted Corals	Number of Species	Number of Frags
Stuart Cove's Dive Bahamas	Nassau, New Providence	1	2.012	1—ACER	550

[177] BNT. (2021). Ministry of Public Works & BNT Launch ICZM Project to Improve Coastal Resilience. Available online: https://bnt.bs/latest-news/ministry-of-public-works-bnt-launch-iczm-project-to-improve-coastal-resilience/
[178] PIMS. (n.d). Coral Reefs. Available online: https://www.perryinstitute.org/coral#cr

Partner	Island	Number of Nurseries	Number of Outplanted Corals	Number of Species	Number of Frags
Neal Watson's Bimini Scuba Center	Bimini	1	0	2—ACER, APAL	300
Seafari Bahamas	San Salvador	1	96	2—ACER, APRO	200
Greenwood Beach Resort	Cat Island	1	0	1—ACER	300
Dive Exuma	Great Exuma	1	0	1—ACER	250
Small Hope Bay Lodge	Andros	2	187	1—ACER	300
Tiamo Resort	Andros	1	0	1—ACER	250
Kamalame Cay	Andros	1	0	1—ACER	100
BREEF	Nassau, New Providence	1	164	1—ACER	90
Valentines Dive Center	Harbour Island	1	0	1—ACER	90
Andros Beach Club	Andros	2	163	2—ACER, APRO	500
Forfar Field Station	Andros	1	276	3—ACER, APRO, APAL	69
All Star Liveaboards	Exuma	1	100	3—ACER, APRO, APAL	100
Atlantis Resort	Paradise Island	2	299	2—PPOR, ACER	281
Disney Conservation	Castaway Cay	1	700	2—ACER, APAL	288
Cape Eleuthera Island School	Eleuthera	1	0	1—ACER	1.950
Bahamas National Trust (BNT)	Grand Bahama	2	0	1—ACER	500
Friends of the Environment	Fowl Cay	1	0	1—ACER	250
Norwegian Cruise Line (NCL)	Great Stirrup Cay, The Berry Islands	1		3—ACER, APRO, APAL	170
The Bahamas Agriculture and Marine Science Institute (BAMSI)	Joulters Cays	1	0	1—ACER	150
Baha Mar Resort	Nassau, New Providence	1	0	2—PPOR, PFUR	60
Blue Lagoon Island	Blue Lagoon Island	1	0	1—ACER	250
VanOrd	Nassau, New Providence	1	0	1—APAL	220

Elizabeth Harbour Conservation Partnership (EHCP)

https://elizabethharbourpartnership.org/

EHCP is a community-based Bahamian non-profit organisation conceived during the Exuma GEF-IWCAM Project. Its mission is to guide the ecologically sustainable development of the coastal zone and waters of Elizabeth Harbour with the aim of enhancing tourism, fisheries and recreational use through stakeholder education and participation, and collaborative management of harbour facilities. It will implement a community-based business focused on the operation of pump-out services, environmental monitoring, and the management of moorings

Current government agencies and private entities that are involved in the EHCP includes:[179]

- The Exuma District Local Government
- Local Port Authority
- The Port Department
- The Department of Environmental Health Services
- The Ministry of Tourism
- The Water and Sewerage Corporation
- Department of Marine Resources
- Harbour Solutions (pump-out services)
- Dive Exuma and Turtle Divers (mooring inspection)
- Elvis Water Taxi

Assumptions for revenue generation through moorings and pump-out services:
Overall assumption: The EHCP will have the capacity to manage the infrastructure and work with government agencies (and the BNT) to provide enforcement of existing laws and create new local regulations that support harbour management goals.

Basic pump-out and moorings assumptions:
- Year 1—Service EHCP moorings only
- Year 2—Service EHCP and BNT moorings

[179] EHCP. (n.d). Elizabeth Harbour Conservation Partnership. Available online: https://elizabethharbourpartnership.org/about/

- Year 3—Full service to east end of EH
- Pump-out boat operates 20 days/month

Pump-outs per pump-out boat:
Average Price/Boat
- Tank size—pump-out boat
- Average size holding tank—50 gallons

Average boats/trip
- 2 trips/day
- Average boats serviced per day/pump-out boat

Boat traffic =	
<40Ft	45%
40 to 60Ft	45%
>60Ft	10%
Length of Stay	
Daily	50%
Weekly	25%
Monthly	25%
Average stay	**14 days**
Mooring Fees	
Daily	USD 35
Weekly	USD 275
Monthly	USD 400
Average daily rate	USD 20

Coral Vita

https://www.coralvita.co/

Coral Vita is a for-profit founded in 2015 with a land-based coral farm established in Grand Bahama in 2018. Its vision is to create a global network of high-tech coral farms to support coral restoration. It has an ambitious business model to provide different services around coral restoration, including tourism, education, increased resilience and reef repair. It will implement the expansion of its business and support the development of new restoration technologies to scale up restoration.

In early 2021, Coral Vita raised USD 2 million to expand its coral farming and restoration technology. This technology can help grow coral 50 times faster than average, at almost a

quarter of the costs of ocean-based coral farming. They also expanded their "Adopt A Coral" campaign to extend its support to local operations.[180]

Blue Finance

Blue finance

http://blue-finance.org/

Blue Finance has a track record of establishing blended finance solutions for the management and sustainable financing of MPAs. The NGO implements collaborative management agreements between non-profit partners and local governments, providing technical assistance, as well as management and marketing expertise. It has projects in MPAs in the Dominican Republic and in Belize, successfully attracting private finance. It is a direct partner of GFCR. More information on the Blue Finance project in The Bahamas in partnership with BNT can be found at this link: https://tnc.box.com/s/pos7dwaxvjetydquvl1rdofmchda4w66

Van Oord

Van Oord
Marine ingenuity

https://www.vanoord.com/en/

Royal Van Oord is a Dutch maritime contracting company. In 2010, Van Oord launched a Coral Rehabilitation Initiative to enhance rehabilitation of degraded natural coral reefs by out-planting laboratory cultured juvenile corals obtained from natural spawning. An innovative mobile laboratory, the ReefGuard, was developed to ensure the availability of a controlled environment to facilitate fertilization, primary settling and initial outgrowing of larvae before outplacement.

During the project preparation phase, they presented a new equipment for scaling up coral restoration through a Coral Engine programme to maximise the benefits of the ReefGuard, but a revenue model still needs to be developed. The request presented by Van Oord to TNC is available at: https://tnc.box.com/s/wbvw5g0jupr2au7245aewotn7mx9js8z

Annex IX: M&E Strategy

The BahamaReefs M&E framework is designed in alignment with GFCR's monitoring guidance and TNC Caribbean's coral strategy M&E Framework. The coral restoration indicators were developed by a technical working group formed from TNC coral experts across the Caribbean

[180] Tech Crunch. (2021). Coral Vita cultivates $2M seed to take its reef restoration mission global. Available online: https://techcrunch.com/2021/01/05/coral-vita-cultivates-2m-seed-to-take-its-reef-restoration-mission-global/

working on the German (IKI) funded CoralCarib project (detailed proposal currently under development as of August 2021). Its first draft is available in the following link: https://tnc.box.com/s/1oihqdbwwg95tzc3wgsg2b2colu3mef7

Annex X: Communication and Visibility

1. Overall Programme communication objectives

- Communication objectives in country
  - increase community, private sector, policymaker and other stakeholder support for long-term coral reef conservation, which includes scaling up coral restoration, advancing coral science and improving management of MPAs
  - promote policy frameworks that facilitate innovative finance mechanisms for ongoing, reliable coral conservation funding and that reduce drivers of coral reef degradation
  - raise awareness about opportunities for the private sector and government to invest in long-term coral reef conservation
- Communication objectives globally—elevate these policy frameworks and innovative finance mechanisms as a model that can be replicated globally to support MPA management effectiveness and large-scale coral reef protection and restoration, including reducing drivers of degradation

2. Messages

Audience	Message	Desired Action	Communicator
BAHAMAS			
Policymakers and technocrats	Coral reefs are essential to Bahamian communities, economies and livelihoods, but they are in grave decline because of a number of threats. Lack of reliable, long-term funding is a major barrier to scaling up coral protection and restoration, advancing coral science and effectively managing MPAs. TNC and partners have developed a suite of innovative finance mechanisms to close this funding gap, including debt conversions, reef and mangrove insurance, blue carbon and	• Endorse the BahamaReefs project with no objections • Support ongoing, reliable funding for long-term coral conservation, which includes scaling up coral protection and restoration and advancing coral science • Support policy frameworks that will facilitate innovative finance mechanisms for ongoing, reliable coral conservation funding and that reduce drivers to degradation of coral	TNC and partners

Audience	Message	Desired Action	Communicator
	resilience credits, conservation trust funds, and sustainable tourism-based revenue streams.	reefs and mangroves • Advocate for ongoing, sustainable financing for effective management of MPAs	
Local communities, with a particular focus on those adjacent to or most impacted by MPAs and important coral/mangrove systems	Coral reefs are essential to Bahamian communities, economies and livelihoods, but unsustainable/illegal fishing, marine pollution and climate change are causing serious degradation of coral reefs and other vital marine ecosystems. The effective management of MPAs plays an important role in protecting endangered corals and coral refugia. Communities have the power to reduce these threats while still relying on coral reefs and other marine habitats for livelihoods related to fishing and tourism.	• Understand the importance of coral reef health • Reduce drivers of degradation • Support effective management of MPAs, including pilot management projects • Support coral restoration efforts	TNC and partners; policymakers and technocrats
Reef-positive businesses (businesses that rely on marine habitats to generate revenue and have committed to practices that avoid harming or that actively support coral reefs; can be dive centres, hotels, commercial fishers, aquaculture farmers or other)	Coral reefs are essential to Bahamian communities, economies and livelihoods, but unsustainable tourism activities and coastal development are causing serious degradation of coral reefs and other vital marine ecosystems. Businesses have the power to reduce these drivers of degradation while still relying on coral reefs, other marine	• Understand the importance of coral reef health • Reduce drivers of degradation • Support effective management and sustainable funding of MPAs, including pilot management projects • Support coral restoration efforts • Support innovative finance mechanisms for ongoing, reliable	TNC and partners; policymakers and technocrats

Audience	Message	Desired Action	Communicator
	habitats and MPAs for revenue and business continuity/growth.	coral conservation funding	
Domestic financial sector (e.g., Bahamas Development Bank, Bahamas Small Business Development Center, venture capital funds)	Coral reefs are essential to the stability and prosperity of economies and businesses throughout The Bahamas, but they and other vital marine habitats are in serious decline. By investing in innovative finance mechanisms that fund coral conservation, financial institutions will not only generate a return on their investment but also promote economic growth and business development that will benefit them and communities in the longer term.	Match funding and serve as partner for technical assistance, financial analysis and business development services	
Multilateral organisations (e.g., Global Environment Facility, Inter-American Development Bank, Green Climate Fund)	Coral reefs are essential to Bahamian communities, economies and livelihoods, but they and other vital marine habitats are in serious decline. By supporting and investing in innovative finance mechanisms that fund long-term coral conservation, on-the-ground coral action and the effective management of MPAs, multilateral organisations can leverage funding and resources to create greater impact through unified efforts.	Help pilot/test-proof innovative finance mechanisms and efforts to scale up and advance on-the-ground coral action and the effective management of MPAs via multilateral funding, counterpart funding and collaborative or complementary projects	TNC and partners

Audience	Message	Desired Action	Communicator
NGOs, including those managing MPAs (e.g., Bahamas National Trust, Friends of the Environment, Bahamas Reef Environment Educational Foundation)	Through collaboration with TNC and partners, resources and networks can be leveraged to advance and accelerate coral conservation, promote policy development and innovative finance mechanisms, and raise community awareness about the need and solutions for protecting coral reefs.	• Collaborate with TNC to advance on-the-ground coral action and effective management of MPAs • Help prioritize coral reef areas for protection and monitoring, scale up restoration efforts, and develop policy frameworks and innovative finance mechanisms • Support the effective management of MPAs, • Educate communities about the importance of healthy coral reefs and MPAs; encourage them to become champions of coral reefs and MPAs by playing a larger role in reducing threats and by following fisheries regulations and environmental legislation	TNC and partners; policymakers and technocrats
REGIONAL			
SCTLD Regional Working Group	Through collaboration with TNC and partners, resources and networks can be leveraged to scale up coral conservation, cultivate funding sources and spread awareness about coral conservation solutions based on innovative finance mechanisms.	• Promote large-scale coral conservation efforts • Research potential funding sources to scale • Amplify TNC and partners' innovative finance mechanisms as unique case studies to replicate	TNC and partners

Audience	Message	Desired Action	Communicator
Atlantic and Gulf Rapid Reef Assessment	Through collaboration with TNC and partners, resources and networks can be leveraged to scale up coral conservation, cultivate funding sources and spread awareness about coral conservation solutions based on innovative finance mechanisms.	• Encourage the long-term monitoring of coral reefs and other key marine habitats and fish species • Promote large-scale coral conservation efforts • Research potential funding sources to scale • Amplify TNC and partners' innovative finance mechanisms as unique case studies to replicate	TNC and partners
GLOBAL			
International Coral Reef Initiative	TNC is a global leader in innovative finance mechanisms to advance and scale up long-term coral conservation, including protection and restoration.	• Encourage initiative partners (governments, NGOs, funders) to support TNC in scaling up coral reef protection and restoration through innovative finance mechanisms	TNC and partners
Coral technical practitioners and networks (e.g., Reef Resilience Network, Coral Restoration Consortium)	Innovative finance mechanisms can be implemented to provide sustainable funding for long-term coral reef conservation. Through collaboration with TNC and partners, resources and networks can be leveraged to scale up coral conservation, cultivate funding sources and spread awareness about coral conservation solutions based on innovative finance mechanisms.	• Educate and engage global coral conservation practitioners so they can amplify innovative finance mechanisms as unique case studies to replicate • Promote large-scale coral conservation efforts • Research potential funding sources to scale	TNC and partners

Audience	Message	Desired Action	Communicator
NOAA	Through collaboration with TNC and partners, resources and networks can be leveraged to scale up coral conservation, cultivate funding sources and spread awareness about coral conservation solutions based on innovative finance mechanisms.	• Promote large-scale coral conservation efforts • Research potential funding sources to scale • Amplify innovative finance mechanisms as unique case studies to replicate	TNC and partners
UN agencies (UNEP, UNDP)	Through collaboration with TNC and partners, resources and networks can be leveraged to scale up coral conservation, cultivate funding sources and spread awareness about coral conservation solutions based on innovative finance mechanisms.	• Promote large-scale coral conservation efforts • Research potential funding sources to scale • Amplify innovative finance mechanisms as unique case studies to replicate	
International financial sector (e.g., Pegasus Capital Advisors, BNP Paribas, Sustainable Ocean Fund)	Coral reefs are essential to the stability and prosperity of economies and businesses throughout The Bahamas, the Caribbean and beyond, but they and other vital marine habitats are in serious decline. TNC is a global leader in the development and implementation of innovative finance mechanisms. By investing in innovative finance mechanisms that fund coral conservation and effective management of MPAs, financial institutions will not only generate a return on their investment but also promote regional/global	• Invest in innovative finance mechanism models and incorporate them into portfolio planning • Provide testimonials to help amplify TNC and partners' work as unique case studies to replicate	TNC and partners

Audience	Message	Desired Action	Communicator
	economic growth and business development that will benefit them and local communities in the longer term.		
International donors to coral conservation (e.g., Prince Albert II of Monaco, Oceans 5 Tiffany, Bloomberg, Oceankind, Waitt, Vulcan, Wyss)	Coral reefs are essential to the stability and prosperity of economies and businesses throughout The Bahamas, the Caribbean and beyond, but they and other vital marine habitats are in serious decline. TNC is a global leader in the development and implementation of innovative finance mechanisms. By investing in innovative finance mechanisms that fund coral conservation and effective management of MPAs, financial institutions will not only generate a return on their investment but also promote regional/global economic growth and business development that will benefit them and local communities in the longer term.	• Invest in innovative finance mechanism models and incorporate them into portfolio planning • Provide testimonials to help amplify TNC and partners' work as unique case studies to replicate	TNC and partners
Ocean Risk and Resilience Action Alliance	With the escalating impacts of climate change, it's more important than ever to have safeguards in place that can help restore coral reefs and the critical benefits they provide to communities in the event of catastrophic storms or other major damage.	• Promote coral reef insurance solutions that help protect communities and vital reef ecosystems in case of catastrophic events, particularly with more frequent and intense hurricanes related to climate change	TNC and partners; policymakers and technocrats

Audience	Message	Desired Action	Communicator
Scientists/academia	To create meaningful, long-term impact for coral reefs around the world, and for the people who depend on them, the science and academia community must help scale up coral conservation and demonstrate the viability and ROI of coral conservation solutions based on innovative finance mechanisms.	• Collaborate with TNC and partners to accelerate science that can scale up coral protection and restoration (focusing on the latest areas of coral science research, like climate refugia) • Increase research quantifying the viability and ROI of innovative finance mechanisms that support reefs by assessing ecosystem services and other key metrics	TNC and partners

3. Audiences
See **2. Messages** and **B. Communication activities**
B. Communication activities

Communications Deliverable	Audience(s)	Channel	Objective
Promotional toolkit: BahamaReefs logo, factsheet, infographics, photographs	Potential investors and donors, local communities, fishers, reef-positive businesses, government agencies, science/academic institutions, financial institutions	Community outreach events; investor, donor and partner meetings/events; serve as foundation for storytelling/other communications deliverables	• Introduce BahamaReefs and associated logo/branding to audiences • Make the case for why long-term coral conservation is needed in The Bahamas and how innovative finance mechanisms can help scale up conservation by removing funding barriers
Two promotional videos	Potential investors/donors, local communities, fishers, reef-positive	TNC/partner web pages, YouTube and other social media; investor, donor and partner	• Video 1: Share vision for project • Video 2: Celebrate success of project

Communications Deliverable	Audience(s)	Channel	Objective
	businesses, government agencies, science/academic institutions, financial institutions	meetings/events, digital newsletters	
Two written stories with an on-location photo shoot to accompany each story	Potential investors/donors, local communities, fishers, reef-positive businesses, government agencies, science/academic institutions, financial institutions	TNC/partner web pages, YouTube and other social media; investor, donor and partner meetings/events, digital newsletters	• Story 1: Illustrate the need for coral conservation from on-the-ground POV, through the lens of a fisher, tourism-dependent business or other primary stakeholder • Story 2: Illustrate one or two ways in which innovative finance mechanisms translate to coral conservation and how they both promote economic/business growth and help people on the ground, from financial institution POV
Social media campaign	Potential investors/donors, local communities, fishers, reef-positive businesses	TNC and partner social media platforms, including (depending on the organisation) Facebook, Instagram, Twitter and LinkedIn	• Garner support for large-scale conservation of Bahamian coral reefs by illustrating the need to protect the benefits reefs provide to people and businesses • Introduce the concept of innovative finance mechanisms to fund coral conservation • Use as a platform to present or link to other comms products like videos, blogs, photos, infographics • Establish a "social community" of partner organisations supporting BahamaReefs
Press release; articles in four media outlets		Science and business journals (e.g., Harvard Business Review, Nature) and mainstream conservation publications (e.g.,	• Highlight TNC and partners' coral conservation solutions based on innovative finance mechanisms as unique case studies and amplify their success • Demonstrate the viability and ROI of these solutions

Communications Deliverable	Audience(s)	Channel	Objective
		Cool Green Science, Mongabay)	
Series of local community events hosted by TNC and partners	Local communities, fishers, reef-positive businesses	Public outreach events held in five to seven key locations near MPAs or critical reef sites	• Garner support for large-scale conservation of Bahamian coral reefs by illustrating the need to protect the benefits reefs provide to people and businesses • Introduce the concept of innovative finance mechanisms to fund coral conservation • Bring together NGOs, policymakers, scientists, financial institutions to connect with local communities and businesses and answer questions about coral conservation and innovative finance mechanisms
OTHER DELIVERABLES: TOOLS TO SUPPORT EFFECTIVE MESSAGING			
Create a powermap to identify those policymakers and technocrats we need to reach, other local leaders who influence change and how best to engage them			
Conduct focus groups, stakeholder interviews and/or public surveys with local communities, multilateral organisations and/or science/academia organisations to assess areas of support or opposition for coral conservation and willingness to pay for it, which will help refine messaging and test strengths and weaknesses of our case for innovative finance mechanisms			

4. Content production

TNC and partners' staff will oversee production of all content, joining efforts and expertise from marketing, communications, media relations, conservation finance and science teams. Videos, photography, logo, infographics, social media assets and some written content will be produced using experienced contractors that have been vetted by TNC and, in many cases, have worked with TNC on communications campaigns in the past.

5. Channels

See B. Communication Activities

6. Monitoring and evaluation

To effectively tell the story of BahamaReefs, our communications products will:

- Demonstrate, by sharing pilot results/case studies, that innovative finance mechanisms raise sustainable funding for long-term coral reef conservation (Indicator 1)
- Illustrate, by sharing pilot results/case studies, how resolution of funding barriers allows coral reef protection and restoration to be advanced and scaled up (Indicator 2)

- Spotlight, by sharing case studies/testimonials, reef-positive businesses, community members and financial institutions that are benefitting from investment in coral conservation solutions based on innovative finance mechanisms (Indicator 3)

7. Provisions for feedback (when applicable)
TNC and partner staff, including marketing, communications, media relations, conservation finance and science experts, will evaluate the BahamaReefs communications products for clarity of message, suitability for channel and target audience, and fulfilment of objectives. In addition, feedback from experienced contractors will be incorporated.

C. Resources

8. Human resources
- Person/days required to implement the communication activities

  For the lifetime of the BahamaReefs project (five to eight years):
  - .50 TNC FTE dedicated solely to BahamaReefs communications management
  - .20 TNC FTE for Caribbean regional communications support
  - .20 TNC FTE for global communications support
  - .25 FTE across multiple sub-awardees (estimating five sub-awardee organisations with.05 FTE for each one)

9. Financial resources
The resources dedicated to communication, knowledge management and outreach totalize USD 636,360 (or 7.5% of the total GFCR budget) being:
- USD 117,960 for 25% of a permanent communication officer
- USD 518,400 for knowledge exchange, local events and outreach (Activity 2.2.3)

10. Partnerships
- Global Fund for Coral Reefs
- UN Capital Development Fund
- Access Accelerator/Small Business Development Center of The Bahamas
- Others TBD

Annex XI: Project Administrative Arrangement for Recipient Organisations

On behalf of the Recipient Organisations, and in accordance with the UNDG-approved "Protocol on the Administrative Agent for Multi Donor Trust Funds and Joint Programmes, and One UN funds" (2008), the MPTF Office as the AA of the GFCR will:

- Disburse funds to each of the Recipient Organisations in accordance with instructions from the GFCR Global Team. The AA will normally make each disbursement within three (3) to five (5) business days after having received instructions from the GFCR Global Team along with the relevant Submission form and Project document signed by all participants concerned;

- Consolidate the financial statements (Annual and Final), based on submissions provided to the AA by Recipient Organisations and provide the GFCR annual consolidated progress reports to the donors and the GFCR Global Team;
- Proceed with the operational and financial closure of the project in the MPTF Office system once the completion is completed by the Recipient Organisations. A project will be considered as operationally closed upon submission of a joint final narrative report. In order for the MPTF Office to financially closed a project, each RO must refund unspent balance of more than USD 250, indirect cost (GMS) should not exceed 7% and submission of a certified final financial statement by the recipient organisations' headquarters); and
- Disburse funds to any RO for any cost extension that the GFCR Global Team may decide in accordance with the GFCR rules and regulations.

Accountability, transparency and reporting of the Recipient Organisation:

Each Recipient Organisation will establish a separate ledger account under its financial regulations and rules for the receipt and administration of the funds disbursed to it by the Administrative Agent from the Fund Account. That separate ledger account will be administered by each Recipient Organisation in accordance with its own regulations, rules, policies and procedures, including those relating to interest.

The Recipient Organisation will assume full programmatic and financial accountability for the funds disbursed to them by the Administrative Agent. Such funds will be administered by each recipient in accordance with its own regulations, rules, directives and procedures.

The Recipient Organisation will have full responsibility for ensuring that the Activity is implemented in accordance with the signed Project Document;

In the event of a financial review, audit or evaluation recommended by the Executive Board, the cost of such activity should be included in the project budget;

Ensure compliance with the Financing Agreement and relevant applicable clauses in the Fund MOU.

Reporting:

Each Receipt Organisation will provide the Administrative Agent and the Fund Secretariat with:

Type of report	**Due when**	**Submitted by**
Bi-annual project progress report	15 June	Convening Agent on behalf of all implementing or recipient organisations and in consultation with/ quality assurance by the GFCR Global Team, where they exist
Annual project progress report	15 November	Convening Agent on behalf of all implementing and recipient organisations and in consultation with/quality assurance by the GFCR Global Team, where they exist

End of project report covering entire project duration	Within three months from the operational project closure (it can be submitted instead of an annual report if timing coincides)	Convening Agent on behalf of all implementing or recipient organisations and in consultation with/ quality assurance by the GFCR Global Team, where they exist
Annual progress report, which may contain a request for additional GFCR allocation if the context requires it	15 December	Convening Agent on behalf of all implementing or recipient organisations and in consultation with/ quality assurance by the GFCR Global Team

For the preparatory grant financing, the full programme document will be considered as the annual reports. The GFCR Global team might request a summary of the preparatory activities.

Financial Reports and timeline

The financial reporting requirements for the below follow the 8 UNDG budget categories.

Timeline	Event
28 February	Annual reporting—Report **Q4 expenses** (Jan. to Dec. of previous year)
30 April	Report **Q1 expenses** (January to March)
31 July	Report **Q2 expenses** (March to June)
31 October	Report **Q3 expenses** (January to September)
Certified final financial report to be provided at the quarter following the project financial closure	

Unspent Balance exceeding USD 250 at the closure of the project would have to be refunded and a notification sent to the Administrative Agent, no later than three months (31 March) of the year following the completion of the activities.

Ownership of Equipment, Supplies and Other Property

Matters relating to the transfer of ownership by the Recipient Organisation will be determined in accordance with applicable policies and procedures defined by the Fund.

Public Disclosure

The Fund Secretariat and Administrative Agent will ensure that operations of the GFCR are publicly disclosed on the GFCR website (https://globalfundcoralreefs.org) and the Administrative Agent website (http:www.mptf.undp.org)

Final Project Audit for recipient organisation projects (Not Applicable to Preparatory Grant)

An independent project audit will be requested by the end of the project (For multi-year projects the GFCR Executive Board might request add. audit reports). The audit report needs to be attached to the final narrative project report. The cost of such activity must be included in the project budget.

Special Provisions regarding Financing of Terrorism

Consistent with UN Security Council Resolutions relating to terrorism, including UN Security Council Resolution 1373 (2001) and 1267 (1999) and related resolutions, the Participants are firmly committed to the international fight against terrorism, and in particular, against the financing of terrorism. Similarly, all Recipient Organisations recognize their obligation to comply with any applicable sanctions imposed by the UN Security Council. Each of the Recipient Organisations will use all reasonable efforts to ensure that the funds transferred to it in accordance with this agreement are not used to provide support or assistance to individuals or entities associated with terrorism as designated by any UN Security Council sanctions regime. If, during the term of this agreement, a Recipient Organisation determines that there are credible allegations that funds transferred to it in accordance with this agreement have been used to provide support or assistance to individuals or entities associated with terrorism as designated by any UN Security Council sanctions regime it will as soon as it becomes aware of it inform the head of Fund Secretariat, the Administrative Agent and the donor(s) and, in consultation with the donors as appropriate, determine an appropriate response.

Annex XII: Provisions Related to the Prevention of and Response to Sexual Harassment (SH) and Sexual Exploitation and Abuse (SEA) involving Implementing Partners (IPs)

1. The Implementing Partner acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the Implementing Partner, and each of its responsible parties, their respective sub-recipients and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.
    a. In the implementation of the activities under this Project Document, the Implementing Partner, and each of its sub-parties referred to above, shall comply with the standards of conduct set forth in the Secretary General's Bulletin ST/SGB/2003/13 of 9 October 2003, concerning "Special measures for protection from sexual exploitation and sexual abuse" ("SEA").
    b. Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, **the Implementing Partner, and each of its sub-parties referred to above, shall not engage in any form of sexual harassment ("SH").** SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment.

2. A) In the performance of the activities under this Project Document, the Implementing Partner shall (with respect to its own activities), and shall require from its sub-parties (with respect to their activities) that they, **have minimum standards and**

procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, the Implementing Partner will and will require that such sub-parties will take all appropriate measures to:

i. Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;
ii. Offer employees and associated personnel training on prevention and response to SH and SEA, where the Implementing Partner and its sub-parties have not put in place its own training regarding the prevention of SH and SEA, the Implementing Partner and its sub-parties may use the training material available at UNDP;
iii. Report and monitor allegations of SH and SEA of which the Implementing Partner and its sub-parties have been informed or have otherwise become aware, and status thereof;
iv. Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and
v. Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. The Implementing Partner shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties referred to in with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the Implementing Partner shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.

2. B) The Implementing Partner shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the Implementing Partner, and each of its sub-parties, to comply with the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.