



Beyond The Reef

2024 Impact

Report



EXECUTIVE SUMMARY

Coral Reef Management:

Reef Cleanups:

- 25 cleanups
- 19,073.3 lbs of debris recovered from BVI coastlines and reefs
- 14,086.23 lbs of ALDFG (abandoned, lost and discarded fishing gear) recovered
- Travelled 773.47 miles and cleanup up 6.68 miles of coastline

Stony Coral Tissue Loss Disease Treatment:

- 668 coral colonies treated for SCTLD
- 84 treatment trips comprising of 180 dives
- 41 sites treated around the BVI
- 5 new strike team members

Youth Educations Days:

- 5 youth education days
- 90 children

Cetacean Research:

- 17 expeditions
- 108.35 survey hours
- 1697.81 miles travelled
- Cetaceans documented: 62 humpback whales, 143 bottlenose dolphins, 30 spinner dolphins and 1 Cuvier's beaked whale
- 11 humpback whale matches

Shark Research:

- 122 sharks tagged from 7 species
- 45 adult sharks tagged
- 77 juvenile sharks tagged
- 41 sampling days
- 9 drone surveys
- 25 BRUVS deployed

PART I – CORAL REEF MANAGEMENT

A. Reef Cleanups

1. Project Overview

Throughout 2024, Beyond The Reef completed 25 reef cleanups around the British Virgin Islands (BVI). Beyond The Reef's primary goal with these cleanups has been to remove abandoned, lost or discarded fishing gear (ALDFG) from our reefs. ALDFG poses multiple threats to reef health in the BVI such as smothering coral colonies, damaging and breaking structures and trapping or entangling marine species.

Our team of dedicated divers use both freediving and scuba diving along the reef to locate ALDFG, carefully cutting and removing nets and line to protect our precious coral. Frequently, ghost gear finds its way through our reef systems and onto our beaches, and so our team also swims ashore to collect these nets and prevent them from returning to the ocean during storm surges. We always remove any plastic or other waste that we can carry. Back at base, the team weighs the gear and then separates it into recyclable and non-recyclable items, carefully documenting which type of debris was collected from where. This data assists in creating predictive models for how and where ghost gear accumulates within BVI's waters. We stockpile any nets we collect that are of high enough quality for recycling and plan to send them abroad for recycling and repurposing in 2025.

2. Project Impact

Beyond The Reef completed 25 cleanups across 2024. Throughout these cleanups, the team collected a total of 19,073.3 lbs of ALDFG, plastic and other waste and debris from the ocean (Table 1). We conducted cleanups across 13 different islands within the BVI (Table 2, Fig. 2-7). The most visited location for reef and shoreline cleanups was Anegada, with eight reef and three shoreline cleanups carried out. Over the course of 2024 the Beyond The Reef Team travelled 773.47 miles (672.13 nautical miles) and the length of shoreline covered during beach cleanups was 6.68 miles.



Figure 1. BTR team packing nets recovered by divers to be shipped to Bureo.

This year, we have focussed on analysing the data we collected on our cleanups to help us better understand which areas are in greatest need. We discovered that, on average, the location with the highest volume of debris recovered was Ginger Island with 1662.2 lbs collected per cleanup and the smallest volume of debris was recovered at Cooper Island with 258.6 lbs on average per cleanup (Fig. 8). ALDFG was the dominant debris type collected at the majority of locations, accounting for 100% of debris recovered at Peter Island and 94% of debris on Anegada (Fig. 9). Cooper Island had the highest occurrence of plastic debris collected at 78% of total debris recovered. This data will help us to strategise our cleanups in the future by assisting us in predicting which areas will need cleaning and how often to return.

Over the course of 2024, Beyond The Reef has removed 14,086.23 lbs of ALDFG from the reefs and beaches of the BVI. That's around seven tonnes, which is roughly the weight of an average adult male elephant.

Table 1. Table showing the weights of debris collected. Blue rows indicate reef cleanups and white rows indicate shore cleanups.

Date	Location	Weight of ALDFG collected (lbs)	Weight of plastic collected (lbs)	Weight of other debris collected (lbs)	Total weight collected (lbs)
29/01/24	Biras Creek, Virgin Gorda	854.95	785.95	0	1640.9
10/02/24	Scrub Island	748.25	0	0	748.25
07/03/24	Great Thatch	532.64	197.53	0	730.17
13/03/24	Great Camanoe and Little Camanoe	457.46	785.73	0	1243.19
14/03/24	Peter Island	300	0	0	300
17/03/24	Great Camanoe and Cooper Island	114.20	403	0	517.2
25/03/24	Wedgeo Bay, Ginger Island	1189.17	499.12	0	1688.29
26/03/24	Wedgeo Bay, Ginger Island	1104.52	531.53	0	1636.05

04/05/24	East End Anegada	366.41	0	0	366.41
21/06/24	Windlass Bight, Anegada	102.29	40.56	0	142.86
07/07/24	Anegada	29.54	0	0	29.54
28/07/24	East End Anegada	102.29	0	0	102.29
07/08/24	South Sound and Joe Bay, Virgin Gorda	1,420.22	0	14.99	1,435.21
28/08/24	Great Dog	538.89	263.96	47.60	850.45
30/08/24	East End Anegada	896.39	123	0	1,019.39
04/09/24	Norman Island	918.88	296.30	0	1,215.18
09/09/24	Norman Island	1,132.74	437.18	0	1,569.91
17/09/24	Horseshoe Reef,Anegada	294.54	0	0	294.54
18/09/24	Soldier's Wash,Anegada	424.61	37.04	0	461.65
19/09/24	Table Bay,Anegada	544.98	0	34.39	579.37
21/09/24	Mother Hagal Bay,Great Camanoe	296.74	252.65	109.79	659.18
08/10/24	East End, Anegada	320.99	12.79	0	333.78
09/10/24	Setting Point, Anegada	947.99	0	0	947.99

16/10/24	Pomato Point, Anegada	176.81	52.25	0	229.06
07/11/24	Paraquita Bay, Tortola	270.73	48.94	12.35	332.02
TOTAL		14,086.54	4767.54	219.12	19,073.3

Table 2. Table of each island where cleanups occurred and the total number of cleanups at each location.

Island	No. of cleanups
Anegada	11
Cooper	1
Ginger	3
Great Camanoe	3
Great Dog	2
Great Thatch	1
Little Camanoe	1
Norman	2
Peter	1
Scrub	1
Seal Dog	1
Tortola	1
Virgin Gorda	2



Figure 2. Map of cleanups on Anegea during 2024. Red pins indicate reef cleanups and yellow lines indicate shore cleanups.

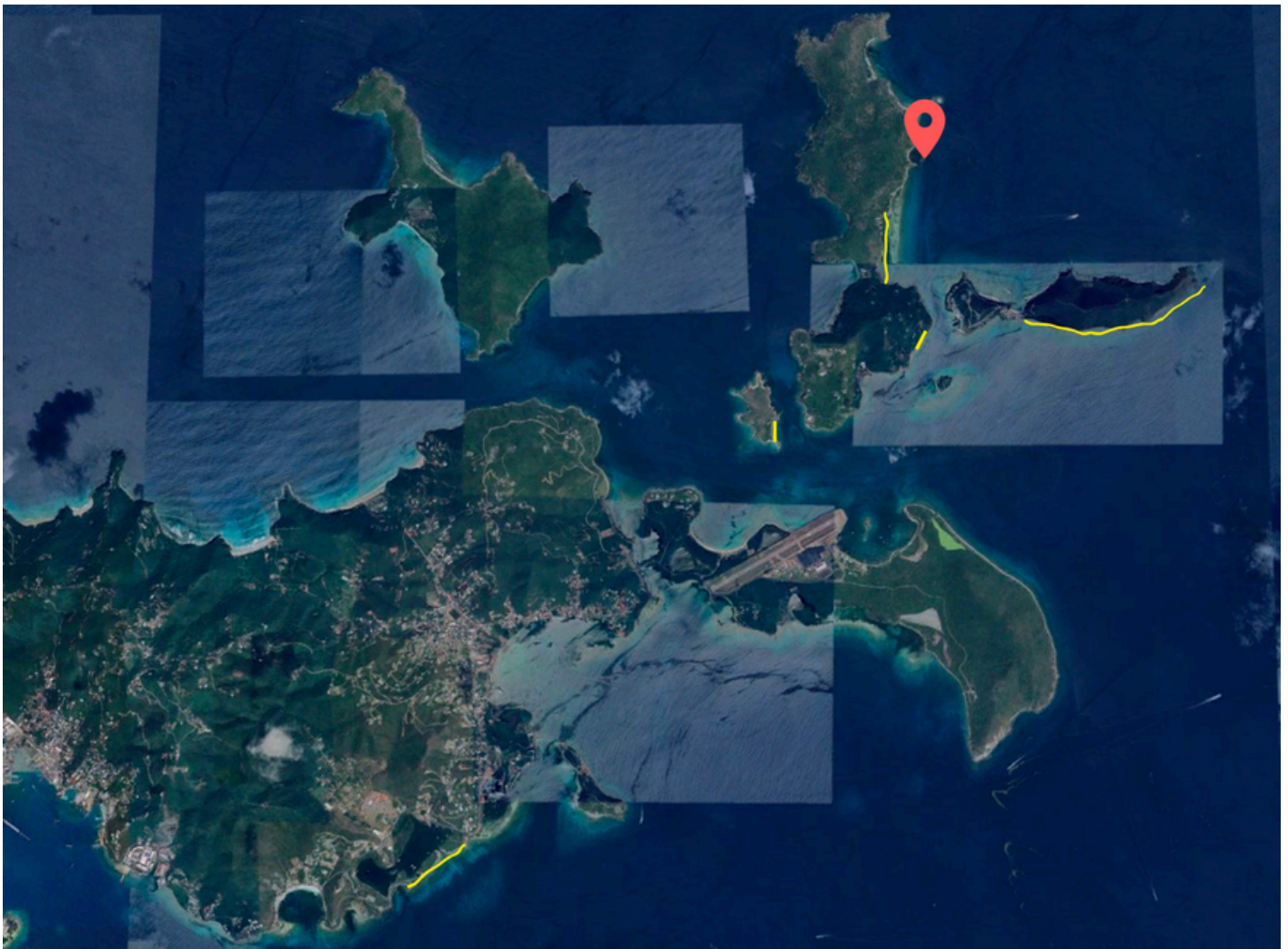


Figure 3. Map of cleanups on Tortola and surrounding islands during 2024. Red pins indicate reef cleanups and yellow lines indicate shore cleanups.



Figure 4. Map of cleanups on Great Thatch during 2024. Yellow line indicates shore cleanups.



Figure 5. Map of cleanups on Virgin Gorda and The Dogs during 2024. Red pins indicate reef cleanups and yellow lines indicate shore cleanups.



Figure 6. Map of cleanups on Norman and Peter Island during 2024. Red pins indicate reef cleanups and yellow lines indicate shore cleanups.



Figure 7. Map of cleanups in Cooper and Ginger Island during 2024. Red pins indicate reef cleanups and yellow lines indicate shore cleanups.

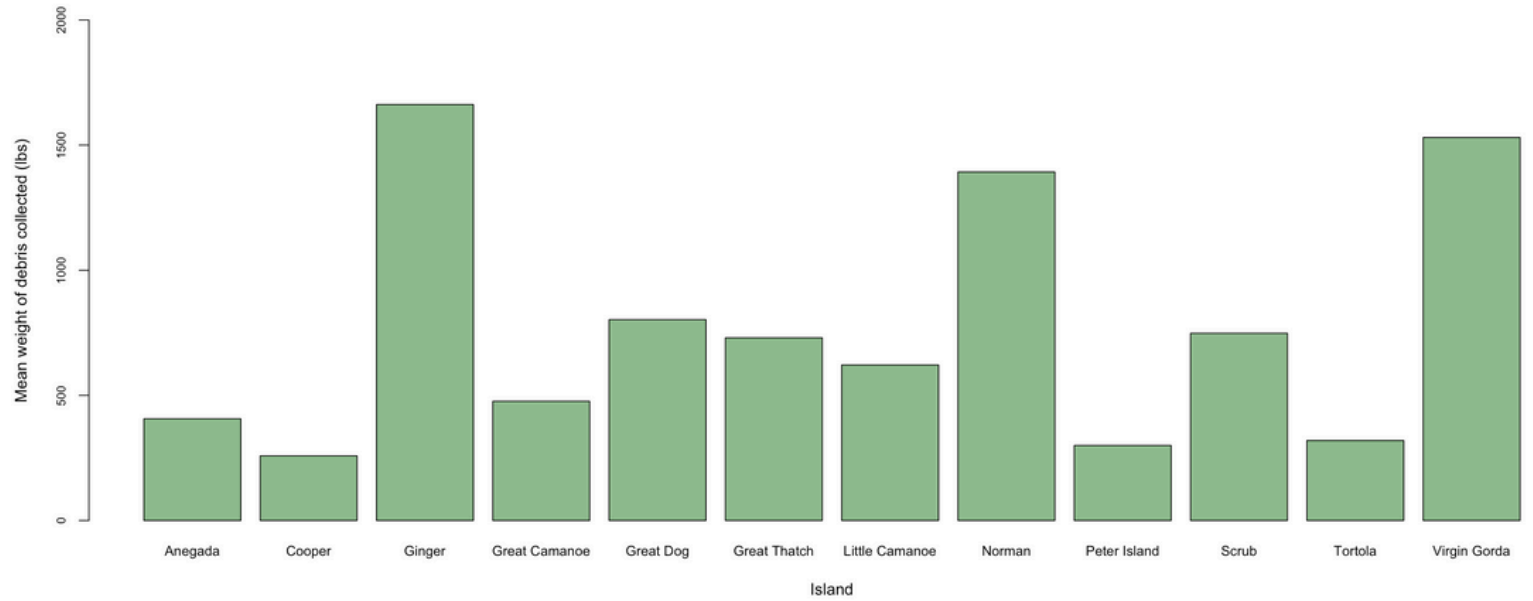


Figure 8. Mean weight of debris (ALDFG, plastic and other debris) collected (lbs) by Beyond The Reef across the different British Virgin Islands where cleanups took place during 2024.

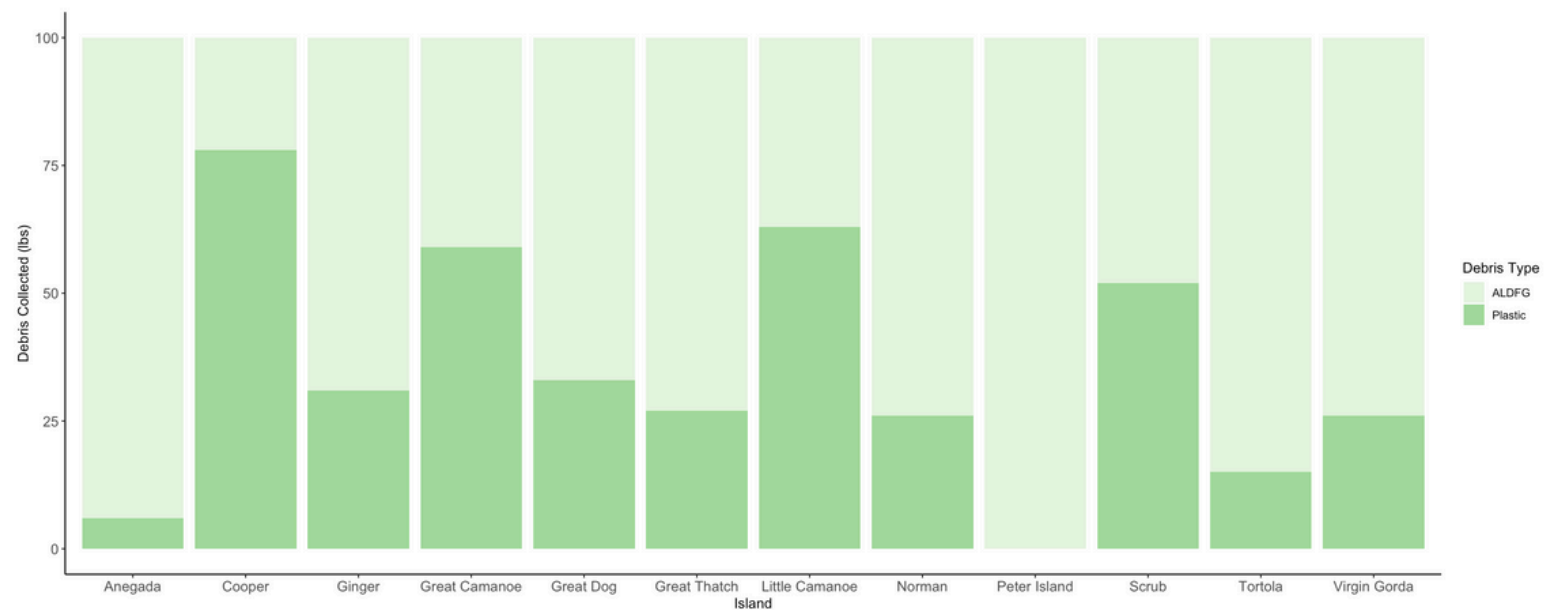


Figure 9. Percentage composition of debris collected at different islands across cleanups conducted by Beyond The Reef within the British Virgin Islands during 2024.

3. Future Goals

The team at Beyond The Reef feel incredibly proud of both the immediate and long term impacts our cleanups have on our marine environment. Removing ghost gear from our reefs and other debris from our beaches is a hugely rewarding endeavour for our team members, and in the future we hope to share this with the wider community. Engaging community members in our larger scale beach cleanups would significantly increase our yield and therefore our impact whilst also spreading awareness for the issues facing our oceans.



Figure 10. **Top left:** Staff member removes net from Anegada Conch Pile. **Top right:** A diver passing a large net onto the boat. **Bottom left:** Net found on a beach on Anegada. **Bottom middle:** Founder Chris Juredin removing a net from the reef. **Bottom right:** Little Whale after a one day cleanup on Anegada.

B. Stony Coral Tissue Loss Disease Treatment

1. Project Overview

It is imperative that Stony Coral Tissue Loss Disease (SCTLD) is effectively and efficiently treated across the British Virgin Islands reefs, due to the devastating impacts it can have in such short time periods. Every reef that is treated with the antibiotic paste is re-visited every 6-8 weeks to ensure consistent treatment. Coral health surveys categorize the state of corals depending on if they are healthy, bleached or diseased. Treatment of SCTLD was reinstated in January 2024 after a hiatus due to the bleaching event in September 2023.

From the beginning of 2024, SCTLD treatment was the primary focus of Beyond The Reef's coral reef management trips. However, due to a severe increase in bleaching observed across the reefs in October 2024, at the same time as a decline in the occurrence of SCTLD, treatment was once again halted on 12th November 2024 and coral health surveys became the focal activity.

In addition to treatment by the Beyond The Reef team, Sunchaser Scuba (a dive operation based at Bitter End on Virgin Gorda) has been assisting in our SCTLD treatment efforts. From the 28th April 2024, Sunchaser Scuba conducted one treatment trip per week, which includes three treatment dives per trip. They cover sites from The Dogs and the northside of Virgin Gorda. They also halted treatment as of 12th November 2024.

2. Project Impact

A total of 84 SCTLD treatment trips were carried out, consisting of 180 dives. Beyond The Reef ran a total of 70 trips with 138 dives, while Sunchaser Scuba conducted 14 trips comprising 42 dives. A total of 41 sites across the British Virgin Islands were treated for SCTLD, 28 of which are managed by Beyond The Reef (Fig. 11 and 12) and 15 by Sunchaser Scuba (Fig. 13). Coral health surveys took place at 28 sites across 61 dives (16 of which occurred after 12th November 2024 when SCTLD treatment was halted). During 2024, five new members of the Beyond The Reef SCTLD strike team were trained and certified: Amy Morrison, Emily Buchalter, Justin Seigel, Lewis Crone and Stacey Law.

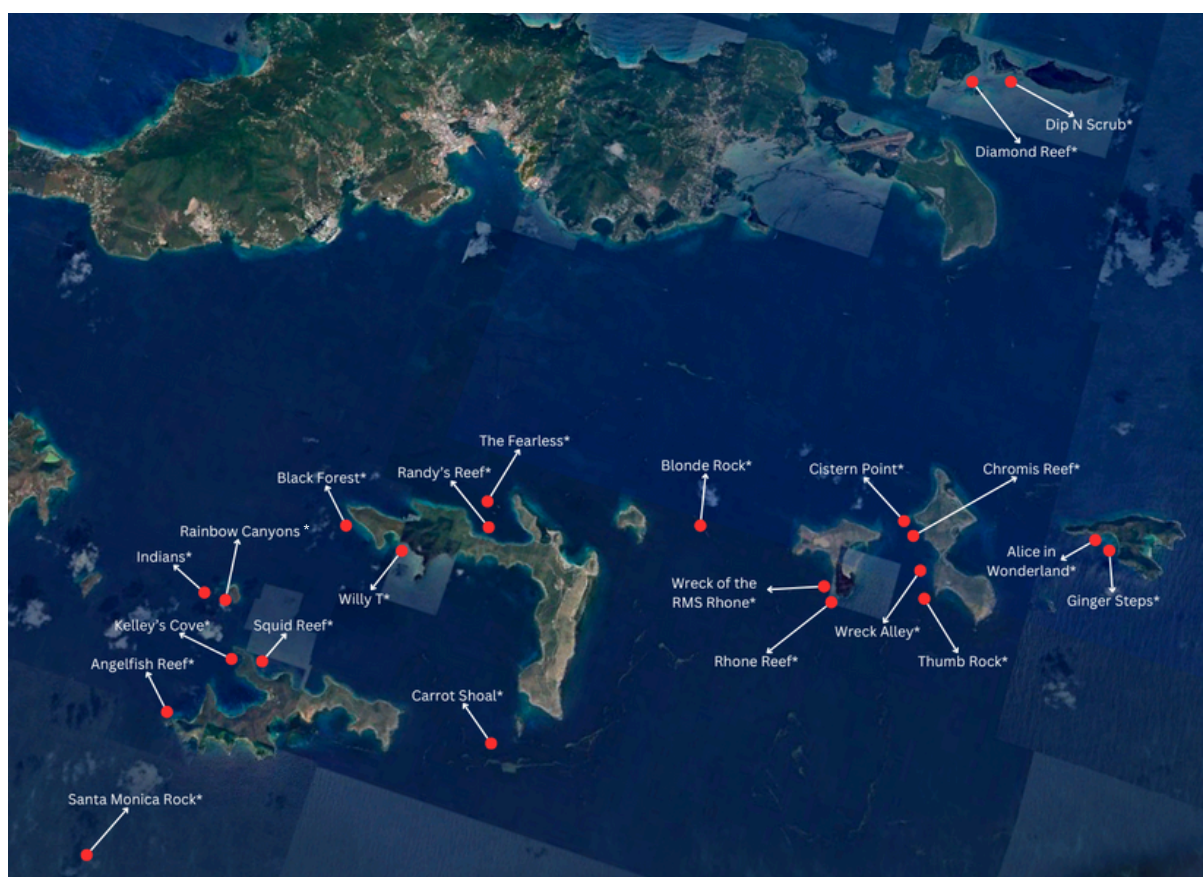


Figure 11. SCTLD sites around Tortola and surrounding islands. Asterisk indicates coral health survey sites.

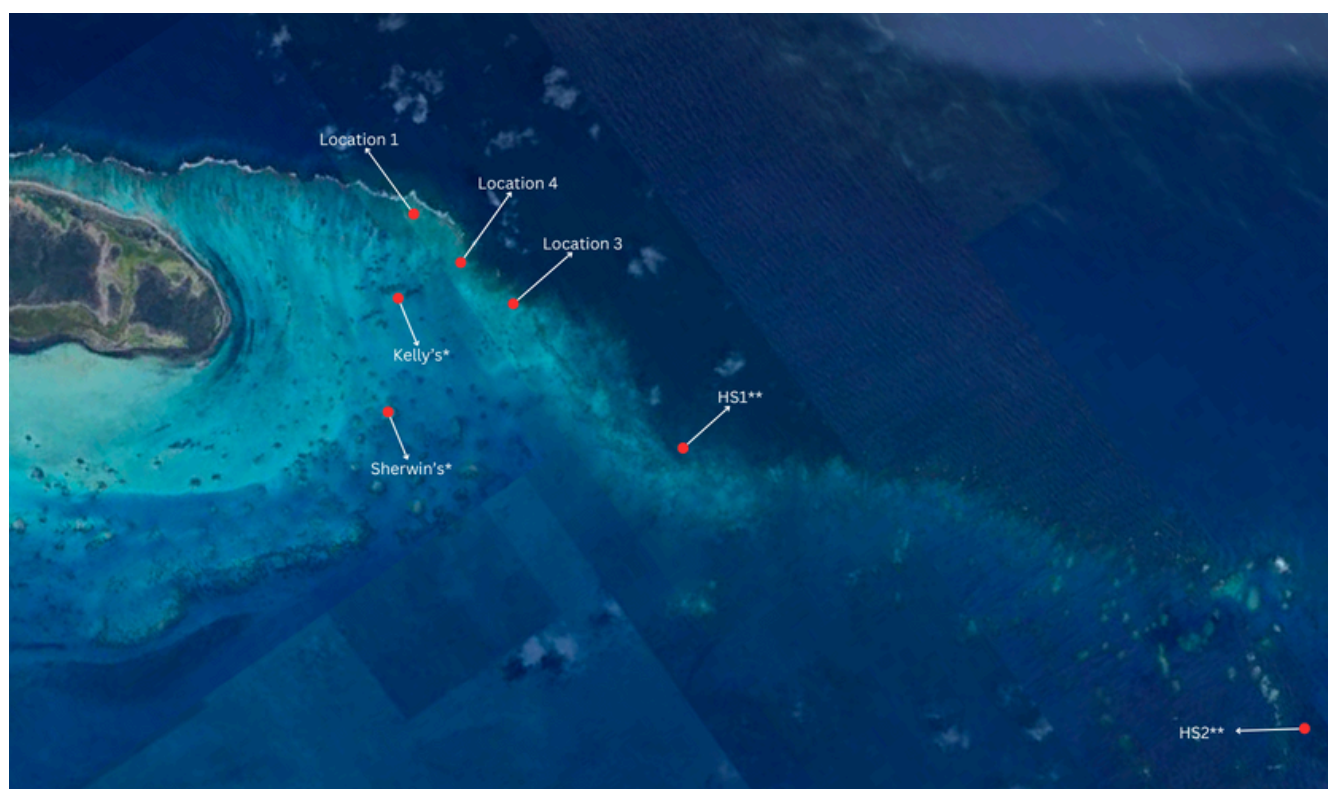


Figure 12. SCTLD sites around Anegea. Asterisk indicates coral health survey sites. Double asterisk indicates sites where only coral health surveys took place, but no SCTLD treatment.

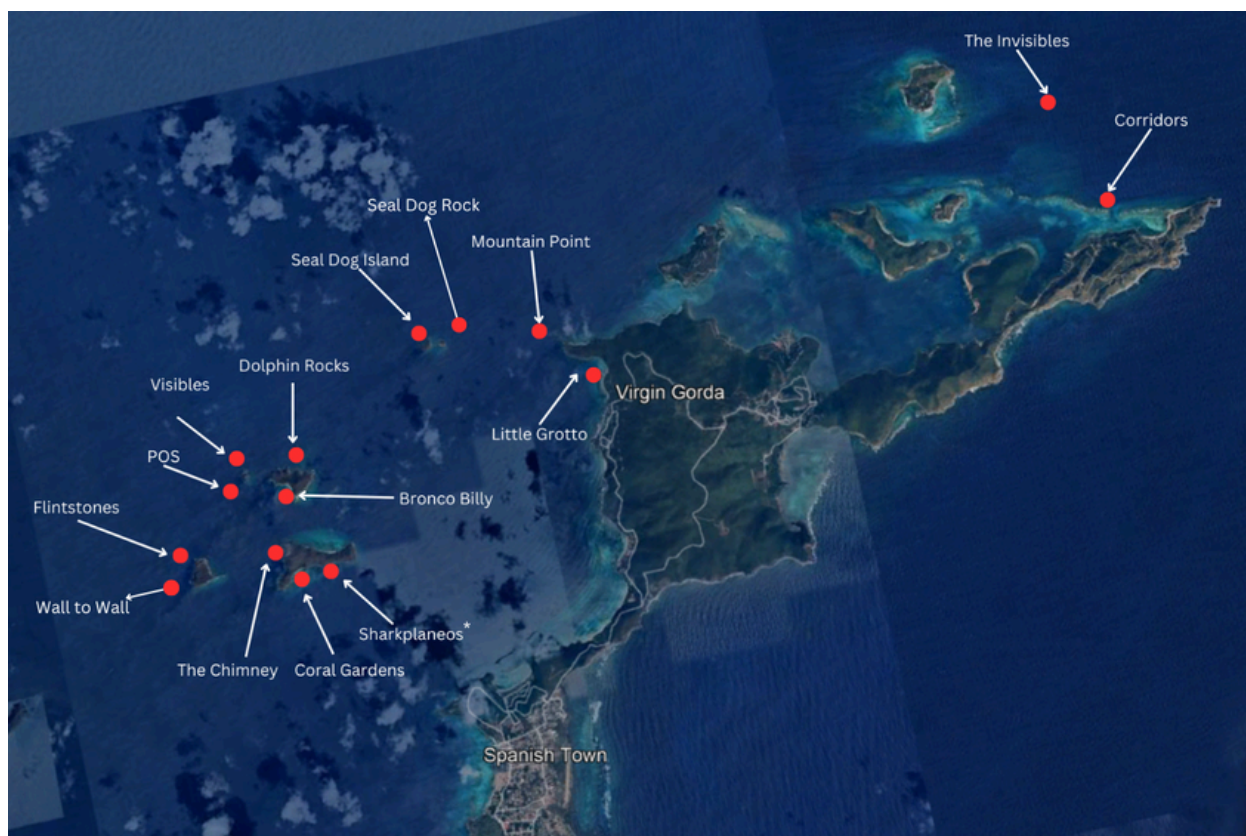


Figure 13. SCTLD sites around Virgin Gorda, The Dogs and surrounding islands. Asterisk indicates coral health surveys sites.

During 2024 a total of 668 individual coral colonies were treated for SCTLD, 441 by Beyond The Reef and 227 by Sunchaser Scuba. The site with the most coral colonies treated for SCTLD by Beyond The Reef was Wreck Alley (77 colonies treated), then Rainbow Canyons (43 colonies treated). In total Sunchaser Scuba treated the most coral at Mountain Point (39 colonies treated), then Little Grotto (36 colonies treated). The most frequently treated coral species were boulder star coral (257 treated) and lobed star coral (148 treated). A total of 4445 ml of SCTLD treatment paste was used. Through collection of SCTLD treatment data Beyond The Reef has been able to document the changes in the quantity of colonies being treated (Fig.14).

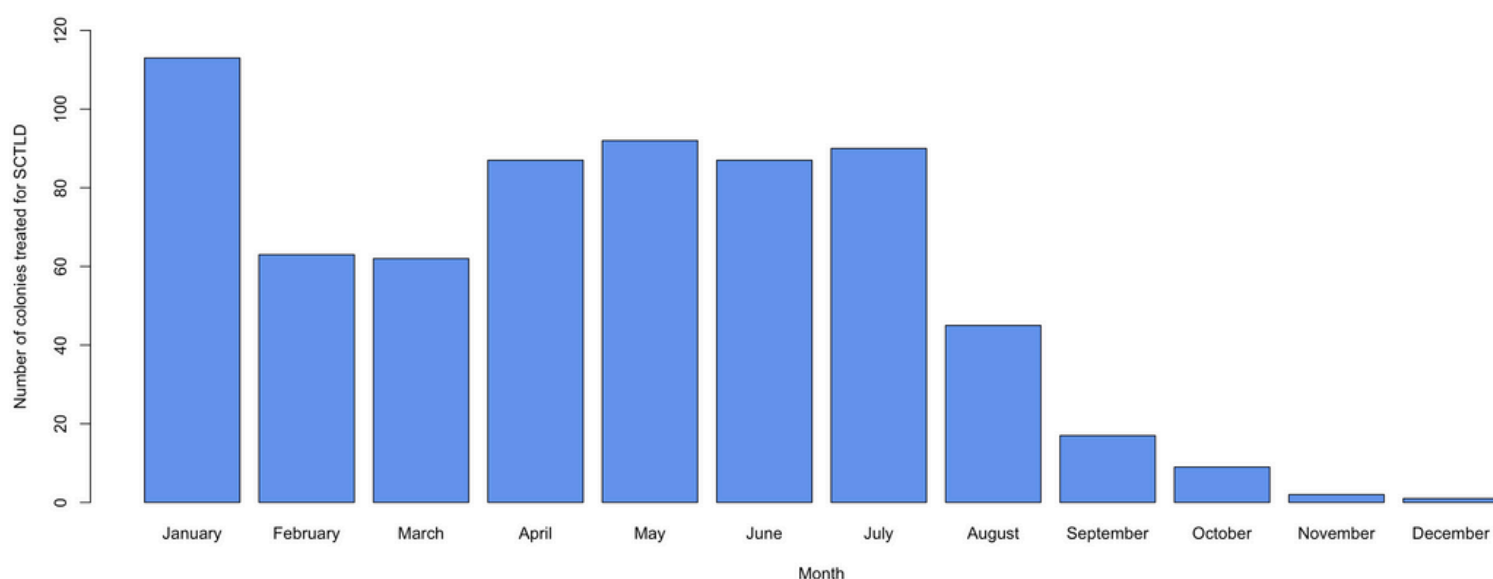


Figure 14. Total number of coral colonies treated for Stony Coral Tissue Loss Disease across 2024. The increase from April is likely due to the start of Sunchaser Scuba treating. Very little coral was treated in November and December due to treatment being halted, however it is still representative of the amount of SCTLD that was seen on the reefs during coral health surveys.

Throughout coral health surveys, a total of 20,797 coral colonies were observed across 30 sites, with an average of 341 individual colonies observed per survey. On average (taking into account the number of surveyors on each survey) the most commonly observed species was mustard hill coral (4,449 colonies observed), followed by important reef-building species such as boulder star coral (1,272 colonies) and mountainous star coral (1,091 colonies), as well as massive starlet coral (1,065 colonies). Through conducting coral health surveys, we have also been able to document the recovery of our reefs after the 2023 bleaching event and react to the 2024 bleaching event (Fig. 15).

3. Future Goals

In the future, we will continue to monitor the reefs of the British Virgin Islands following the 2024 bleaching event, in order to observe the recovery of the reefs, and react quickly and efficiently to any increases in occurrence of SCTLD. We also aim to grow our group of dedicated volunteers to be able to simultaneously run SCTLD treatment and coral health surveys during every dive.

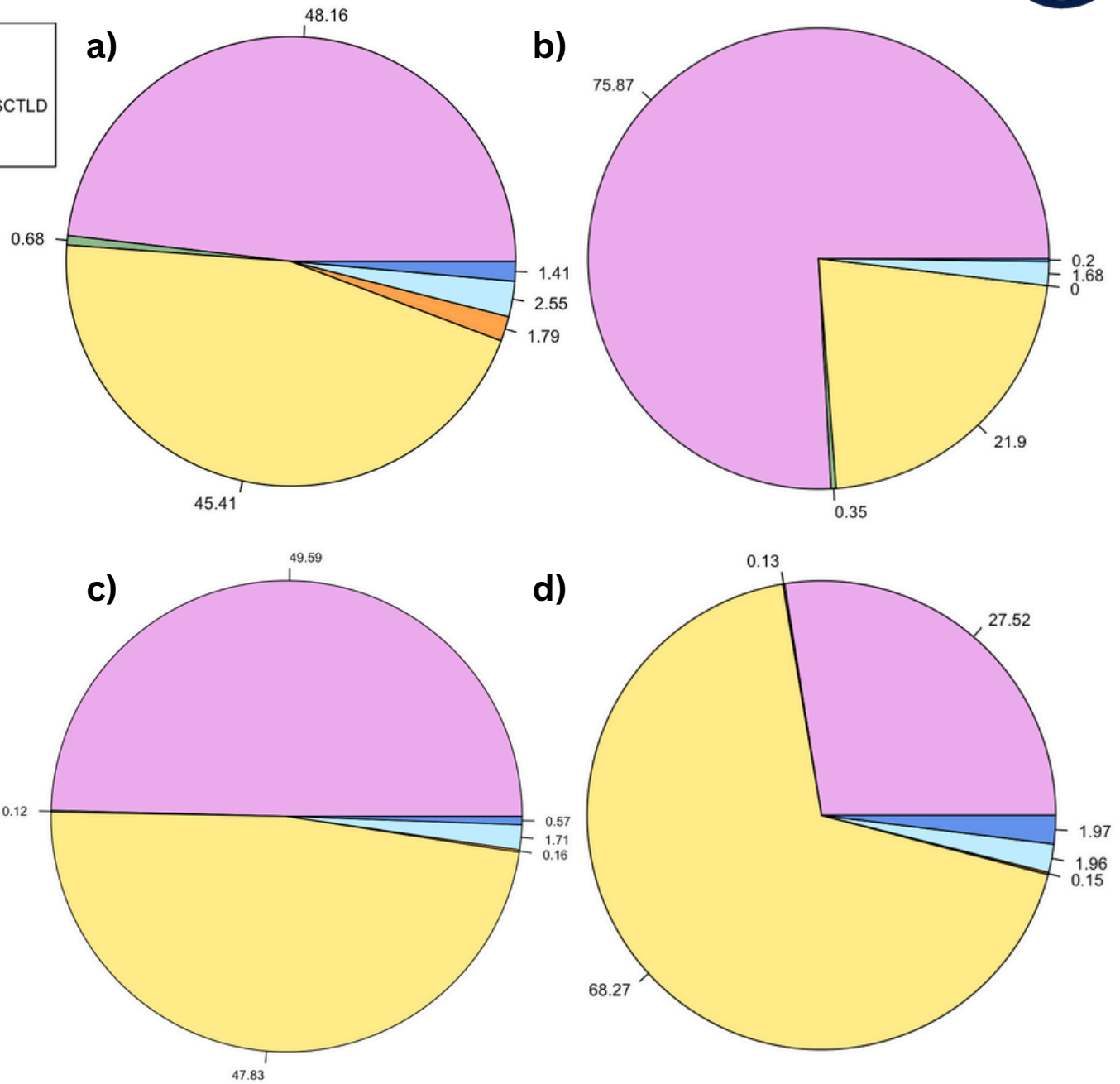
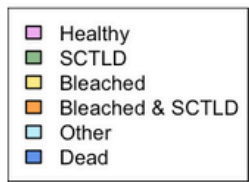


Figure 15. Pie charts showing the percentage composition of coral health states throughout 2024, collected through coral health surveys. a) January - March 2024; b) April - June 2024; c) July - September 2024; d) October - December.



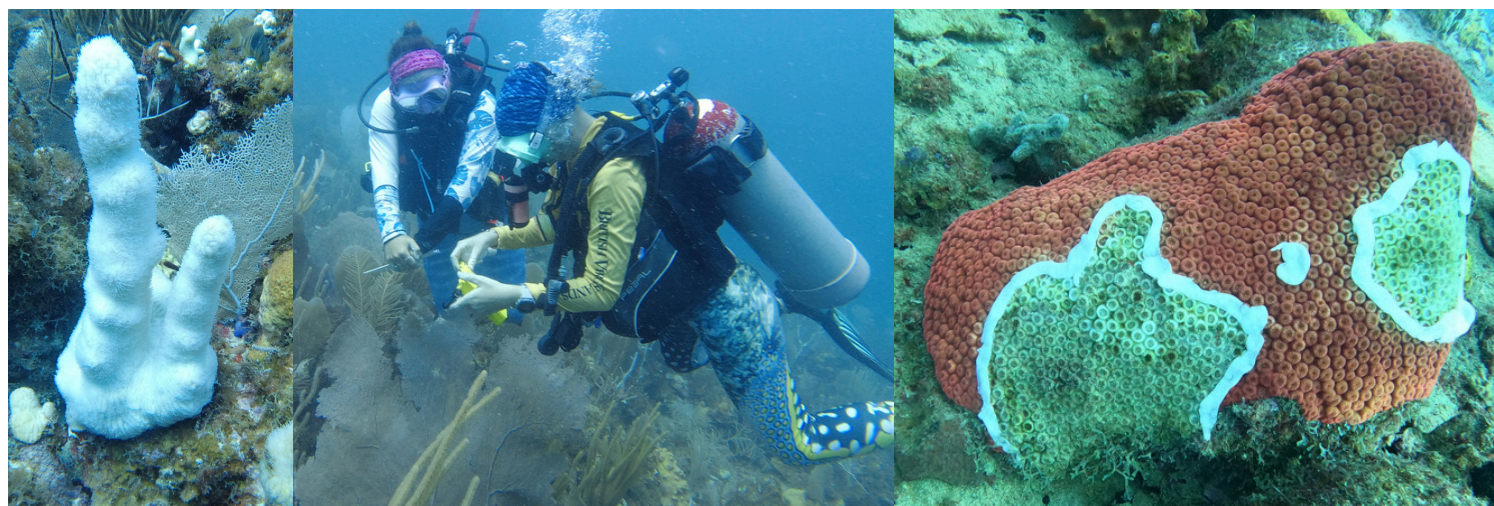


Figure 16. *Top left:* Staff member treating a coral during the first treatment dive of 2024. *Top right:* Staff treating a mountainous star coral on the Willy T reef. *Bottom left:* Fully bleached pillar coral at Black Forest. *Bottom middle:* Staff training a new volunteer in coral health survey methodology. *Bottom right:* Large cup coral treated for SCTLD at the RMS Rhone bow.

PART II – YOUTH EDUCATION DAYS

1. Project Overview

The aim of this project was to carry out Youth Education Days in Anegada and Virgin Gorda, that would educate children from across the territory about the history, culture and marine and terrestrial environments of the islands. We believe that learning about their environment will inspire these youth and help to foster a sense of connection and respect for the ocean and land, creating ocean stewards who will protect our marine life and the heritage of these islands in the future.

2. Project Impact

During 2024, Beyond The Reef hosted five youth education days, four on Anegada and one on Virgin Gorda, engaging a total of 90 local youth in the history, culture and ecology of their territory (Table 3). Including youth of Jost Van Dyke and Anegada was a priority for Beyond The Reef, recognizing that children from the sister islands often face barriers to accessing these opportunities.

In Anegada, the youth groups learned about the island's rich history and unique ecosystem. The students explored the island in two separate groups. Jim's Island Tours taught the youth about the terrestrial environment and island's heritage through visits to the flamingo lookout, Anegada rock iguana sanctuary and fisherman's wharf. Students also helped with a beach cleanup at Windlass Bight and visited Beyond The Reef's whale sculpture classroom to learn about our cetacean research projects. Finally, they experienced a tour of the famous Anegada conch pile and reef with Sherwin's Sea Adventures. They learned more about the fishing history of the island, specifically conch harvesting, and about the anatomy and life cycle of the conch. The children were able to explore around the conch pile and snorkel a nearby reef to dive for conch on their own. The day ended with a demonstration from Sherwin about how to shell a conch and a taster of fresh conch ceviche.

A particular highlight of one of the days was an encounter with another Beyond The Reef team conducting juvenile shark tagging. This expansion of our schedule allowed participants to observe a hands-on demonstration of our conservation work, sparking curiosity and excitement about marine science and conservation.

Date	Location	Participants
20th January 2024	Anegada	20 children (10 from Robinson O’Neal Primary, 10 from Cedar International School)
27th January 2024	Anegada	20 children (Sea Turtle Aquatics)
25th March 2024	Virgin Gorda	20 children (Claudia Creque)
25th May 2024	Anegada	10 children (Claudia Creque)
7th July 2024	Anegada	20 children (10 from Jost Van Dyke community, 10 from Sea Turtle Aquatics)

The group that visited Virgin Gorda learned about the cultural heritage of the island through an island tour conducted by local historian Paul Anson Fenty. They learned about the slave trade and fishing history of the island, as well as human impacts on the environment. They visited the coppermines and sugar mill, South Sound beach and searched for breaching whales from the viewpoints. The afternoon was spent at The Baths National Park, discovering the history and formation of the caves, including the geology of the volcanic structures.

3. Future Goals

Since we feel that youth education and empowerment is such an important component of conserving and protecting the BVI’s natural environment, we hope to continue our youth education days and improve on them, perhaps adding extra activities such as a Discover Scuba Diving component.

To keep the days fresh and exciting for the kids, we would also consider creating different themes. For example, a “Youth Coral Education Day”.

Participants would experience a day tailored around learning about different coral species, how to identify them, different diseases, issues that threaten the coral reef, and about our own coral reef management projects. We would also include an in-water portion where the kids would get the chance to snorkel on the reef and put their new knowledge to the test!



Figure 17. Anegada youth education days. **Top left:** Sherwin demonstrating how to shell a conch. **Top middle:** Youth group snorkeling at the conch pile. **Top right:** Examining a lobster trap at fisherman's wharf. **Bottom left:** Beyond The Reef staff presenting about our whale research in the whale classroom. **Bottom right:** Youth day group learning about shark tagging being conducted by another Beyond The Reef team.



Figure 18. Virgin Gorda youth education day. **Left:** Youth group touring the Virgin Gorda sugar mill. **Right:** Youth group learning about the copper mine.

PART III – CETACEAN FIELD RESEARCH

1. Project Overview

This project aims to collect data on cetaceans in the BVI in order to protect them and their habitats in the region. Through this project, we focus on establishing the following ecological factors:

- Richness - How many different species there are.
- Abundance - How many of each species there are.
- Distribution - Where the species groups are found.
- Group size - How many individuals are in the species group.

In order to categorize and better understand humpback whales in the BVI, we utilize photo-ID to capture the unique markings on their tail flukes. The images are uploaded to Flukebook and Happy Whale - two online programmes that use AI software to identify and match cetacean sightings from around the world. Happy Whale has proved to be the better platform as all our matches have been from there.

2. Project Impact

The 2024 season was highly successful for our cetacean research project. We collected valuable data and insights into the cetacean species that inhabit our waters, which we believe will contribute significantly to the ongoing efforts to protect these marine mammals in the future. Over the course of the year, we conducted a total of 17 expeditions, accumulating 108.35 survey hours and covering a distance of 661.81 miles on survey effort and a total of 1697.81 miles throughout the entirety of our 2024 cetacean research (Fig. 19).

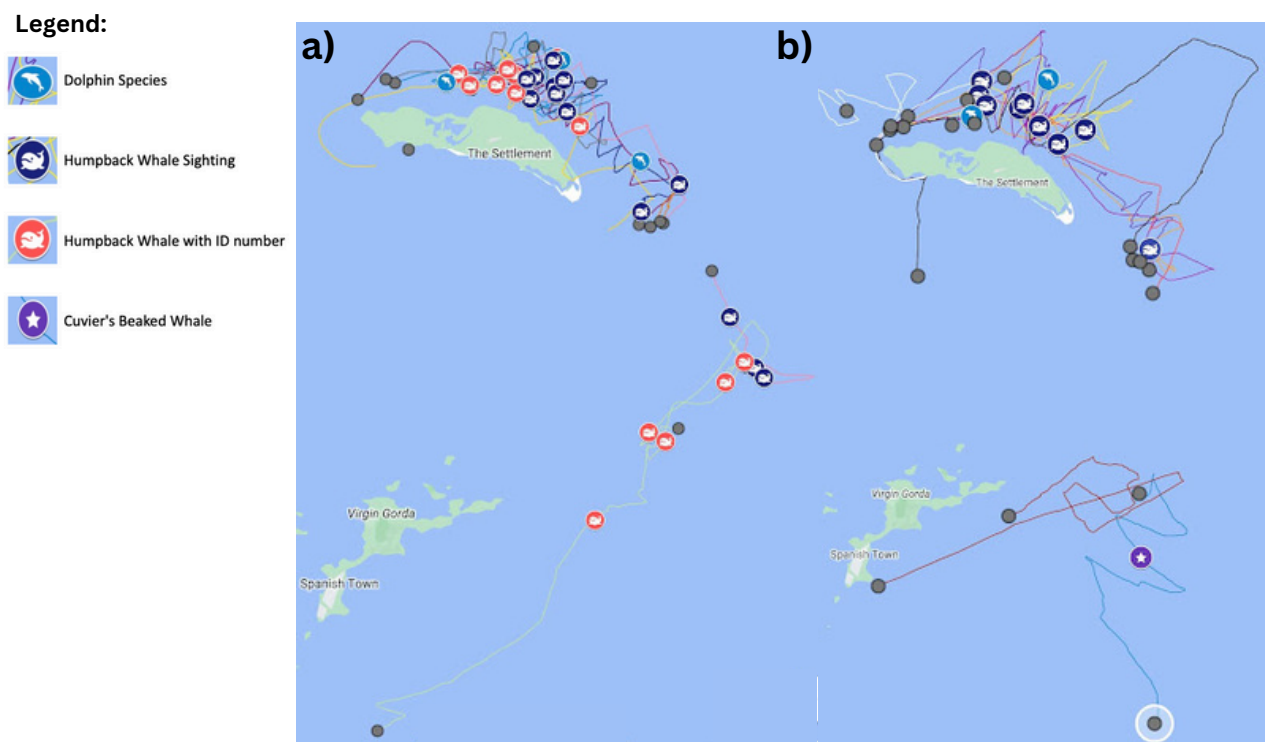


Figure 19. A map of 17 expeditions conducted around Anegada and Virgin Gorda. **a)** 7 expeditions between January and March. **b)** 10 expeditions between April and December

During these expeditions, we encountered 62 humpback whales (*Megaptera novaeangliae*), 143 bottlenose dolphins (*Tursiops truncatus*), 30 spinner dolphins (*Stenella longirostris*), and 1 Cuvier's beaked whale (*Ziphius cavirostris*).

Notably, of the 2024 humpback whale encounters, eleven individuals were previously identified in other regions, including Norway, Guadalupe, Puerto Rico, Svalbard, Iceland, the Azores, and Canada. Additionally, eleven humpback whales were identified as 'new to science' and assigned ID numbers, allowing for future tracking and potential matchings with other sightings. One particularly remarkable sighting involved humpback whale NA-9985, which was originally observed in Canada in 1993 - 31 years ago (Fig. 20). Another highlight of the year occurred on 17th November, when our team confirmed the sighting of a Cuvier's beaked whale, the first of its kind for our project. This species, also known as the goose-beaked whale, is renowned for its deep diving capabilities, with the deepest recorded dive reaching 9,816 feet (Fig. 20).



Figure 20. Left: Humpback whale NA-9985 photographed in the BVI on 29th March 2024, previously identified in Newfoundland, Canada in 1993. **Right:** Cuvier's Beaked Whale spotted on 17th November 2024.

Fifteen of our expeditions took place between the months of January and May. Since migratory cetacean populations, such as humpback whales, are known to migrate to the Caribbean during the winter months, no research was conducted during the summer period. Our research resumed on 17th November and concluded on 7th December 2024, with plans to continue into the new year.

We have utilized the information we have gained from our expeditions to educate local youth about the cetacean populations in BVI waters and the critical need for their conservation. We also encourage both locals and tourists to report any cetacean sightings in the BVI and share any photographs they are able to capture. With the data gathered throughout 2024, we aim to deepen our understanding of the cetacean populations in BVI waters, ultimately enabling us to advocate more effectively for their protection in the future.

3. Future Goals

In the coming years, we aim to continue surveying BVI waters and hope to encounter a broader range of species. Our objective is to demonstrate the significance of these waters, particularly the northern side of Anegada, as critical habitats for cetaceans. By collecting and analyzing this data, we hope to advocate for the implementation of stronger regulations that will better protect these areas, thereby enhancing the protection.

PART IV – SHARK RESEARCH

1. Project Overview

The shark research carried out in 2024 is a pilot project aimed to understand shark movement and habitat use in the region. This initiative will generate datasets to facilitate the protection and study of nurse sharks and tiger sharks in Windlass Bight, as well as the southern reef of Anegada. By partnering with the government of the BVI, collaborators in the US Virgin Islands (USVI), and other Caribbean partners, this project marks the beginning of significant collaborations to understand and safeguard sharks in the area.

2. Project Impact

A total of 41 sampling days were carried out across May, June, September and December 2024, 32 with Bryan Legare and partners from Centre for Coastal Studies and nine juvenile tagging days conducted by Beyond The Reef. A total of 45 sharks across seven species were tagged during 2024. The species diversity tagged during our 2024 research continues to be impressive, including less common sharks in the Caribbean such as the blacknose sharks. A particular highlight of our 2024 research occurred during our final sampling effort in December. During the last sampling day we caught a mature 12 ft female tiger shark; our largest shark to date (Fig. 21). A total of 77 juvenile lemon sharks were tagged in Anegada and Hans Creek (Fig. 22). This makes a total of 122 sharks tagged in 2024 in BVI waters. Nine drone transect surveys, utilizing Drone Deploy software, were conducted in Windlass Bight, Anegada. As Nurse Sharks were not aggregating at this time, these surveys were integral in determining the lack of shark congregation.



Figure 21. 12 ft female tiger shark caught on 15th December 2024.



Figure 22. Juvenile shark tagging. **Top:** Setting out longlines in Hans Creek, Tortola. **Bottom left:** Visually tagging a lemon shark. **Bottom middle:** Preparing a lemon shark for length measurements. **Bottom right:** Releasing a lemon shark after taking measurements, fin clip sample and visually tagging it.

Across 2024, Beyond The Reef deployed 25 BRUVS (baited remote underwater video systems) in the waters between Virgin Gorda and Anegada. Four species of sharks have been observed in footage from BRUVS: tiger sharks, nurse sharks, lemon sharks and Caribbean reef sharks. An exact number of sharks recorded during BRUVS deployments is not attainable due to the visual restrictions that our set up is limited to. We have no way of knowing which individuals have already been observed earlier in a recording, however this is an issue we strive to resolve in 2025.

3. Future Goals

Our overall aim with this project is to prove the importance of Anegada as a vital shark habitat, and to draw attention to the importance of a ‘corridor’ that exists between Anegada and Virgin Gorda, connecting Anegada to the southern islands (Fig. 23). We hope to highlight the importance of this corridor as a passage for sharks in order to protect this area in the near future.

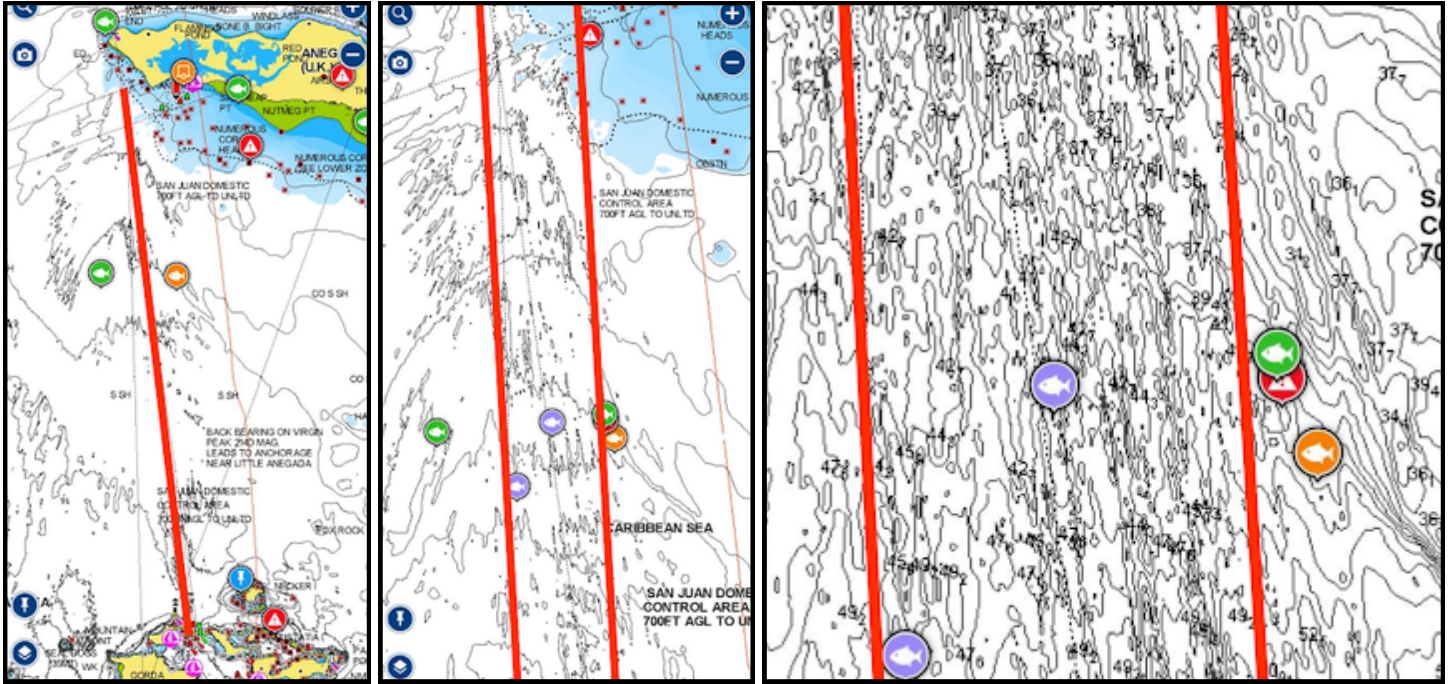


Figure 23. From left to right: Increasingly close-up maps of the 'corridor', marked by red lines. The fish icons mark locations where sharks were tagged during our efforts this year.



Figure 24. Top left: BTR and CCS staff tagging a tiger shark. Top middle: Nurse shark being tail-lined. Top right: Tagging of a great hammerhead. Bottom left: Drone survey at Windlass Bight, Anegada. Bottom right: 12 ft female tiger shark ready to be tagged.