CCMI
CENTRAL CARIBBEAN
MARINE INSTITUTE

ANNUAL REPORT 2020

www.reefresearch.org

WHY SUPPORT CCMI

CCMI is headquartered on Little Cayman and our research field station is surrounded by stunning, unique reefs, which are among the most biologically diverse ecosystems in the Caribbean. The reefs on Little Cayman are also unique in that they are showing coral regeneration on a positive trajectory. The island, therefore, offers rich prospects for solutions to the global decline of coral reefs. Our work is rooted in discovering and understanding how some reefs are capable of recovery when coral reefs are degrading globally. Research topics that are ongoing at CCMI include climate change and ocean acidification, marine protection, threatened and endangered species and coral reef resilience. In addition to our research activity, we continue to put scholarships for local students at the top of our priority list, along with providing early career opportunities via internships and an active outreach programme. What makes CCMI stand apart from other research institutions is our focus on increasing capacity and capability from primary students to the general public, engaging everyday people in the fight to save coral reefs.

CONTENTS

INTRODUCTION

Investigating the ocean and its ecosystems is one of the most pressing and important challenges of our time. Water temperatures are rising and anthropogenic stressors such as marine plastics, pollution and invasive species are being felt across the marine environment. Coral reefs directly support 25% of the world's marine life, and we rely on healthy reefs for sustenance, recreation and protection from storms.

At CCMI, we believe the time is now, to investigate how coral reefs can be resilient in a changing climate. Hand in hand with empirically informed education and outreach, marine research is critical to informing how we can live more sustainably. Our focus in 2020, despite the global disruption caused by Covid-19, has been to progress our impact in all three areas of research, education and conservation, to sustain our vision of a world with vibrant reefs and healthy oceans.

In 2020, CCMI made some significant changes to 'up our game' in terms of our research impact, as well as developing better systems and support structures, to ensure we are sustainable as an organization. The new Reef Ecology and Evolution Lab at CCMI (REEL) has a clear focus, which sums up CCMI's research objectives to:

> "Promote resilience of coral reefs ecosystems through increased understanding of adaptation and acclimatization potential of ecosystem engineers, protection of key ecosystem functions, and identification of areas of refuge".

In 2020 Little Cayman, the home of our marine research facility, was championed as a Mission Blue Hope Spot. There is hope for reefs, as our 2020 Healthy Reef surveys indicate, in Little Cayman 27% were in "very good" health in 2020, versus only 16% in 1999 and 17% in 2010. Fish abundance has also increased and algal cover has decreased, creating a unique and very rare finding, of a reef ecosystem that is indicating it can be resilient in the face of global challenges and increased stressors.

We hope you enjoy our annual report – there is always so much to talk about but we want you to take away one key fact: now is the time to protect our ocean. We believe that investigating tangible solutions to the challenges facing the marine environment is worth all our time and effort.

THE CCMI MANAGEMENT TEAM

GRETCHEN GOODBODY-GRINGLEY
Director of Research & Education

ROB HEDGES
Business Manager

KATE HOLDEN
Director of Advancement

PRESIDENT'S MESSAGE

Thanks to the gracious support of core donors, stakeholders, and our local government, we have had an extraordinary opportunity to continue our work, in the field and lab throughout the year. In fact, many labs around the world remained closed during 2020, so we are fortunate to be in this position.

CCMI started the year on track with solid research and education grant funding. By the end of the year, we renewed most support and even generated new funding that allowed us to welcome more domestic students. Our core staff kept focus on the Vision 2025 strategic goal of being a premiere marine research institution by unlocking the clues to coral reef resilience and bringing relevant science to society. We explored how reefs were potentially benefiting from a "Quiet Ocean", **P. 16.** No doubt, coral reefs have had a respite. However, our challenge remains, we urgently need to discover solutions that can lead to healthy oceans and vibrant reefs.

We hope you will help reinforce the positive changes to nature from reduced human activity. We are extremely grateful for everyone's encouragement and help in navigating this year.

DR CARRIE MANFRINO
Founder, President
& Senior Scientist

CHAIRMAN'S MESSAGE

In March 2020, the impact of the global pandemic was felt across the world and the Cayman Islands was no exception. Operating on a small, remote tropical island can be challenging and Covid-19 certainly added to this complexity. The Cayman Islands closed the international borders on March 22nd, and the team at CCMI continued to operate on skeleton staffing and taking on many different roles during the pandemic. The flexibility of the staff and their ability to 'roll their sleeves up' enabled us to quickly stabilise the organisation and see how the year developed.

The team not only managed to navigate the issues of Covid-19 but they progressed important projects, as outlined in the research section, **P. 9-18**. Remaining dedicated to the science and education was a core focus and the organisation has managed to progress all its core projects.

In 2020, we also further developed the Board, bringing in seasoned Directors, both new and time served with CCMI, at a time when increased governance and support was needed. We know that the impacts of Covid-19 will be far reaching and we felt a more engaged and impactful board to help support the team on the ground will be hugely beneficial.

Thank you to our supporters and stakeholders, who have continued to support us, especially during these times a of change and upheaval.

CHRIS HUMPHRIES
CCMI Chairman

CCMI BOARD

CCMI has adapted, in recognition of the rapid loss of global biodiversity and the increasing need to protect the marine environment. In 2020 the Cayman Islands and US board at CCMI evolved to ensure the organisation can continue to progress their work of understanding which coral reef species can be resilient for the future.

The current board at CCMI includes new and returning members, who share a collective intent to embrace ethical and accountable management and governance to support the team at CCMI and their stakeholders. With a range of skills, the Board has been formed to well-equip CCMI in a world of change and uncertainty, to support Vision 2025 and to protect coral reefs for the future.

NEW CCMI BOARD

Chris Humphries – Chairman
Sydney Coleman (joined September 2020)
Dr Tom Frazer (rejoined September 2020)
Peter Hillenbrand (rejoined September 2020)
Tim Kary

Sydney Coleman, who worked in the offshore financial industry and has a wealth of experience with non-profits in the Cayman Islands, believes that now is the right time to be expanding board competencies for non-profits:

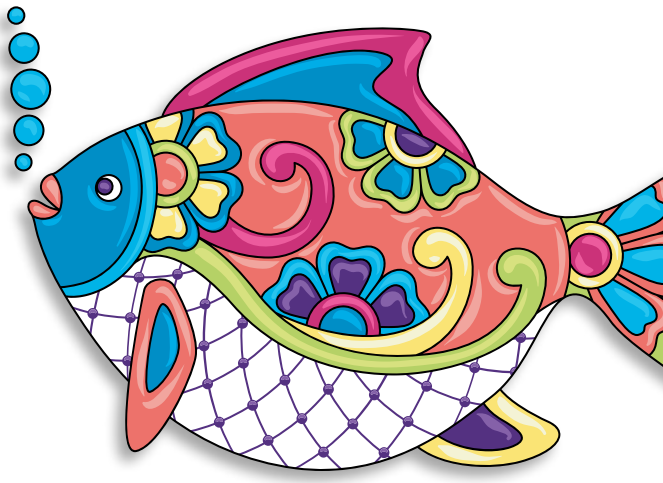
"During this time of unprecedented global disruption, there is huge pressure on organisations to adapt and keep their focus on delivering their vision, against a backdrop of change. For non-profits, this pressure is even more keenly felt and the role of the board really comes into play during challenging times like these. CCMI has a very topical and important mandate to protect coral reefs for the future via innovative and explorative research and conservation. I am delighted to join CCMI's Board to help guide them on their important environmental journey".

Peter Hillenbrand, CCMI's chairman of the Board from 1998 - 2016 has recently returned as a board member. Peter brings with him a wealth of knowledge as an international businessman and local tourism ambassador, as well as being an active supporter of marine conservation and education:

"What makes CCMI unique is the relationship between science and education. There are few organisations that offer tropical marine research in situ, alongside residential and digital (live!) education programming. I believe we have a small window of time to protect coral reefs, improving our knowledge of these precious yet (still) secretive ecosystems and CCMI has the opportunity to make a tangible contribution to marine sustainability".

Current Chairman of the Board, Chris Humphries, who has been a Board Director since 2006 has evolved the board profile to reflect the current and future needs of CCMI, against a backdrop of environmental risk vs global chaos, to help stabilize the charity and strengthen the organisational commitment to making a difference:

"This is the first phase in CCMI's board development, we will also be seeking more advisory roles and look to diversify the board even further in the not too distant future, to help the team develop the organisation into a region-leading institution."



IMPACT HIGHLIGHTS

Even in such an unusual year, the support from our amazing network of friends, colleagues, donors, supporters, and advisors has been the foundation for our achievements in the first half of 2020, which include:

- Arrival of Dr Gretchen Goodbody-Gringley as the Director of Research to CCMI and the launch of the Reef Ecology and Evolution Laboratory (REEL)
- Construction and installation of 60 coral dome structures, and outplanting of more than 650 staghorn coral fragments on reefs around Little Cayman
- Successfully championed Little Cayman as a Mission Blue Hope Spot
- Release of "Coral Reef Resilience Over Two Decades at Little Cayman Island" technical report and key findings in our "Reef Report Card"
- Identifying the first Women in Ocean Science Award (WIOSA) Scholar, Dr Sarah Gignoux-Wolfsohn, and WIOSA Intern, Federica Manca, both of whom will begin their work in Little Cayman as travel restrictions allow them to travel to Cayman
- Launching the 'Quiet Ocean' study, where CCMI researchers conduct coral reef surveys to track the impact of ocean use by humans on typically heavily trafficked sites
- Completion of the Darwin Plus Herbivory project, resulting in the publication Dell, C. L.A., Longo, G. O., Burkepile, D., & Manfrino, C. (2020). Few Herbivore Species Consume Dominant Macroalgae on a Caribbean Coral Reef. Frontiers in Marine Science, 7:676. doi: 10.3389/fmars.2020.00676
- Hosting public outreach activities through online venues in our popular Reef Lecture Series to communicate information and results to interested members of the public
- Launched and developed the Ocean Science Scholar internship programme, which includes 4-6 interns per year, an experience ranging from two weeks to nine months. We have a goal of hosting three Caymanian interns minimum per year
- Raised funds to support more than 100+ scholarships for local students to attend residential, fully free of charge courses at the Little Cayman Research Centre
- Engaged more than 65,000 viewers globally in our Reefs Go Live activity (Jan – May 2020), including linking to all local schools in Cayman, streaming real-time from the beautiful reefs in Little Cayman

HOPE SPOT LAUNCH

In June 2020, CCMI championed Little Cayman as a Mission Blue Hope Spot. The Hope Spot initiative was launched in 2009, and it now includes some of the world's most precious ecosystems:

> "Hope Spots are special places that are critical to the health of the ocean — Earth's blue heart. Hope Spots are about recognizing, empowering and supporting individuals and communities around the world in their efforts to protect the ocean."

Little Cayman is an ideal Hope Spot…
Just off the western point of Little Cayman is a site which is protected by the Cayman Islands Government, and is one of the last remaining large spawning aggregation sites for the endangered Nassau grouper. Little Cayman's biodiversity both on land and in the ocean are significant, and CCMI's scientific discoveries continue to grow our knowledge of these key ecosystems, alongside key organisations such as the Cayman Islands Department of Environment, the National Trust, the Sister Islands Tourism Association (SITA, the Grouper Moon Project and the host of engaged patrons and stakeholders who reside on Little Cayman. Keystone species reside and reproduce on/around Little Cayman, supported by the conservation legislation, which has influenced protection measures in the Cayman Islands.

CCMI is actively engaged in research and conservation work with critically endangered stag horn (Acropora cervicornis) on Little Cayman, following a disease outbreak and die-off in the 1980s. Staghorn is a crucial reef-builder that used to be prevalent throughout the Caribbean, and is extremely important to the resiliency of healthy coral reefs. The wild reefs of Little Cayman are also indicating resilience, and we know healthy reefs lead to healthy lives. Since 1999, the scientific team at CCMI have completed field expeditions using the Atlantic & Gulf Rapid Reef Assessment (AGRRA) protocol to get a snapshot of the status of the reefs in the region, **P. 17**. Little Cayman's reefs continue to show resiliency, creating genuine hope for the future. For the last three years, CCMI has shared the results with the public via our Healthy Reefs outreach campaigns to improve knowledge and ocean stewardship.

CCMI championed Little Cayman as a Hope Spot, to not only create international awareness about the approach to sustainable living here but also to create a local focus on the extremely important marine ecosystem... Little Cayman still has healthy reefs and a vibrant ocean. The work undertaken locally by a plethora of committed organisations and individuals is at the heart of this healthy ecology. Unfortunately, Little Cayman's example of a healthy reef is becoming less and less prevalent throughout the Caribbean. We believe there is HOPE for the future of reefs, if we learn how to reduce anthropogenic impacts and protect our oceans.

COVID-19

On March 22nd 2020, the Cayman Islands closed its international borders and soon entered a 3 month lockdown. CCMI was awarded a 'business critical' exemption, allowing us to continue operating, albeit for the facilities team in Little Cayman, this meant living on site and working and living as a 'bubble'. Our team(s) were displaced from their families, some of our colleagues left to be closer to home and lockdown thousands of miles away, and the border closures had negative impacts on both staff wellbeing and our international education programmes.

However, despite Covid-19, despite the challenges of lockdown and reduced staffing levels, the team at CCMI pulled together to deliver our commitments to our research, local education and conservation programmes. The restoration programme rolled out the successful dome structure and continued to test coral resilience to temperature and disease, with great success, **P. 14**. CCMI's REEL lab was designed and installed (early 2021), to facilitate the newly awarded NSF grant assessing the mechanisms of molecular and morphological adaptation by corals to extreme environments and the long-term monitoring programme continued in earnest, **P. 17**. The education and outreach team also improved our digital resources and the Reefs Go Live programme continued, delivering researchers in the ocean directly to students in their homes and classrooms, as well as the Healthy Reef Lecture series which evolved to a webinar series. Many of the team at CCMI took on new or different roles, to help us get through the emergency pandemic situation and adapt to a new way of operating, in a world with Covid-19.

Covid-19 invariably impacted CCMI's fundraising, **P. 25**, and earned revenue, **P. 28**, due the cancellation of events and programmes but the global pandemic also offered a rare opportunity to study the Quiet Oceans, **P. 16**, supported by a Covid-19 response grant from the Darwin Plus Initiative. The outlook still remains unclear, as the global pandemic continues to cause issues and the team at CCMI, like many of us around the world, will have to continue to adapt and reprioritise.

Yet – the global pandemic has highlighted several key factors that are poignant:

- We can cut global carbon emissions successfully.
- As one, intrinsically connected global community, we can adapt and create quick and meaningful change.
- The ocean and the natural environment remain a priority and sustainable development must become the new norm, alongside improved protection laws and conservation practice for the common seas and global marine life.

RESEARCH SNAPSHOT 2020

MESSAGE FROM THE DIRECTOR OF RESEARCH

Since our inception in 1998, CCMI has strived to understand how we can ensure that corals not only survive but thrive in our changing world and to educate our youth about the oceans and what they, as individuals, can do to help. Our long-term monitoring studies suggest that the coral reefs in Little Cayman are more resilient than others in the region, but as the world continues to warm and our impacts to the ocean continues to increase, putting a focus on resilience, restoration, and education will be critical to maintaining these vital communities. CCMI is proud to champion this cause, and through our growing research programmes we are beginning to unlock the keys to reef resilience.

Joining CCMI in 2020, I established the Reef Ecology and Evolutionary Laboratory, that focuses on how ecosystem function is maintained through adaptation and acclimatization to a changing world. We now have the capacity to test resilience in the laboratory and determine how genomic and physiological responses to environmental change dictate an organisms' capacity to survive. The importance of this work was confirmed when we received our first major U.S. National Science Foundation (NSF) research grant, as the lead institution, to examine how corals adapt to extreme environmental conditions, which was initiated in July of 2020 and will continue into 2024.

While no one could have predicted how 2020 would unfold, securing the NSF funding set the research programme on a clear path towards success, while maintaining focus on the Vision 2025 strategic plan. In August 2020, we successfully completed our 22nd year of Healthy Reef monitoring which showed stable fish and coral communities on Little Cayman. We also developed a new experiment to test our coral restoration outplanting success, establishing 6 new areas of restored reef and planting over 500 coral fragments. This particular project showed great success, with an average of 80% survival after 6 months. Although our collaborators were unable to travel to Cayman to continue their research, they communicated protocols with our team that enabled us to complete several experiments on their behalf, highlighting the flexible and expert skill set of the CCMI research team. As the ramifications of COVID-19 became clear, we were able to adapt and take advantage of opportunities presented by the changing situation, initiating a study investigating the impacts of a quieter ocean on fish populations in George Town Harbour, which showed an immediate rebound of fish populations in response to the lockdown. However, despite this respite from human activities, a new disease appeared on our reefs, emphasizing the continued urgent need to discover solutions that can lead to healthy oceans.

As we continue to grow the research programme at CCMI, we envision expanding our studies of reef resilience through examinations of temperature and disease tolerance, reproductive plasticity, and assisted evolution, as well as exploratory work characterizing areas of the reef yet to be described, such as deeper regions of the forereef and offshore seamounts. We aim to become a driving force in Caribbean marine research and grow a strong staff of scientists and technicians while providing hands on training to early career researchers and students. Our dreams are big and we could not achieve them without the continued support of all our stakeholders in the Cayman Islands and across to globe.

DR GRETCHEN GOODBODY-GRINGLEY
Director of Research

COLLABORATORS

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OHIO STATE UNIVERSITY
Susan Jones, Ph.D., entomologist

UNIVERSITY OF IDAHO
Amanda Bentley Brymer, Ph.D., environmental social scientist

PAPERS & REPORTS

CCMI LED RESEARCH

Goodbody-Gringley, G and Manfrino, C (2020) Coral Reef Resilience Over Two Decades at Little Cayman Island. Technical Report from the Central Caribbean Marine Institute. 20201: 11 pp.

Dell, C. L. A., Longo, G. O., Burkepile, D., & Manfrino, C. (2020). Few Herbivore Species Consume Dominant Macroalgae on a Caribbean Coral Reef. Frontiers in Marine Science, 7:676. doi: 10.3389/fmars.2020.00676

Dell, CLA, Longo, GO, Manfrino, C, Burkepile, D (2020) Why do certain species dominate? What we can learn from a rare case of Microdictyon dominance on a Caribbean reef. Marine Ecology, 41: e12613. https://doi.org/10.1111/maec.12613.

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Scucchia, F, Nativ, H, Neder, M, Goodbody-Gringley, G, Mass, T (2020) Physiological characteristics of Stylophora pistillata larvae across a depth gradient. Frontiers in Marine Science, 7:13. doi:10.3389/fmars.2020.00013

RELATED WORK BY COLLABORATORS

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Tebbett, SB, Hoey, AS, Depczynski, M, Wismer, S, Bellwood, D (2020) Macroalgae removal on coral reefs: realised ecosystem functions transcend biogeographic locations. Coral Reefs 39, 203–214. https://doi.org/10.1007/s00338-019-01874-w

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Ushijima B, Meyer JL, Thompson S, Pitts K, Marusich MF, Tittl J, Weatherup E, Reu J, Wetzell R, Aeby GS, Häse CC and Paul VJ (2020) Disease Diagnostics and Potential Coinfections by Vibrio coralliilyticus During an Ongoing Coral Disease Outbreak in Florida. Frontiers in Microbiology, 11:569354. doi: 10.3389/fmicb.2020.569354.

CCMI LAUNCHES REEL

The newly formed Reef Ecology and Evolution Laboratory (REEL) at the Central Caribbean Marine Institute is focused on understanding how ecosystems function in order maintain biodiversity. Using a combination of large-scale in situ ecological surveys, small-scale laboratory experiments, and molecular ecology, we examine population structure, reproductive ecology, and genetic connectivity on tropical coral reef ecosystems, ranging from shallow inshore reefs to the mesophotic zone.

CCMI would like to thank Anthony & April Darr for their support in launching the REEL lab. The projects outlined, **P. 13-18,** will utilise the Reel Lab. REEL is central to CCMI's research objectives and company vision.

Supported by: Anthony & April Darr, the U.S. National Science Foundation.

REEL'S MISSION IS TO

Promote resilience of coral reefs ecosystems through increased understanding of adaptation and acclimatization potential of ecosystem engineers, protection of key ecosystem functions, and identification of areas of refuge.

RESILIENCE & RESTORATION

RESILIENT REEFS

Assessing the mechanisms of molecular and morphological adaptation by corals to extreme environments, funded by the National Science Foundation.

The project aims to assess this through a comprehensive investigation connecting three research questions:

- Are changes in the morphology, physiology, and gene expression of scleractinian corals across depth gradients consistent in different geographic locations with different environmental conditions?
- Are morphological, physiological, and genetic features intrinsically or extrinsically controlled?
- Are morphological, physiological, and genetic features associated with depth passed on to the next generation and how does this impact recruitment success?

2020 initial data are beginning to highlight the importance of plasticity for the ability of corals to survive under a broad range of conditions. This project, still in its initial stages, is well on its way to discerning the mechanisms underlying plasticity and adaptation that enable corals to thrive along a broad depth gradient therefore. These results will ultimately assist in our understanding of the capacity of corals to tolerate changing environmental conditions in the future, such as global climate change induced ocean warming. As such this work will contribute to the conservation and management of global coral reef ecosystems. Whilst Covid-19 did disrupt travel plans for this project in 2020, all partners were able to progress their project deliverables and this work has already resulted in four publications:

Martinez et al. 2020;
Scucchia et al 2020;
Gould et al. 2021;
Malik et al. 2021;

With an additional two publications currently under review Nativ et al.; Goodbody-Gringley et al.

In addition, initial results have been shared by PI Goodbody-Gringley at two virtual scientific symposia (Assemble Plus Conference: Marine biological research at the frontier, 2021; RESEMBiD OCT Community of Practice Forum, 2021). Both PIs and students will schedule appropriate conferences and dissemination of project results, once world-wide travel is accessible.

Supported by: the U.S National Science Foundation

COMPLEX ECOSYSTEMS

Enhancing Ecosystem Complexity to Promote Sustainable Fish Communities

This project seeks to understand if creating enhanced complexity reef (ECR) habitats through transplantation of adult coral colonies to 3-dimensional structures (our restoration sites) will not only impact fish population diversity and abundance on the ECR itself but also on adjacent degraded reef sites. Creating ECRs, therefore, may offer a scalable mitigation strategy to restore fish populations, for both herbivorous and commercially important species.

These results will indicate 1) if the presence of increased reef complexity affects fish community composition, 2) how long it takes for the presence of the ECR to have an impact, 3) long-term trends in this impact.

The density of certain fishes that reside among coral branches has been observed to decrease with reduction of reef complexity (Sano et al. 1984, Adams & Ebersole 2002), simply, when a coral reef ecosystem becomes degraded or loses complexity, this will negatively impact fish communities. Corals facilitate both processes of recruitment (Buchheim & Hixon 1992) and biomass production (Carr & Hixon 1997) by providing space for settlement, growth and reproduction.

This project builds on the work accomplished to date over the last 3 years, thanks to support from an anonymous donor. To date we have: completed our research to further understand the dynamic interactions between the fish living on and around the coral reefs; and elucidated which species are maintaining the health of the reefs and therefore may need additional protection. We also completed a 20-year survey, which tells exactly how the various corals and fish species are performing over time, **P. 17**.

The next phase of this project will take our understanding of the key ecosystem processes in the Cayman Islands and the role of coral habitats on fish densities to incorporate how we can promote sustainable fish communities for the future. The role of restoration techniques, which provide complex reef ecosystems, lends itself to an ideal habitat to restore important fish species.

Supported by: an Anonymous Donor

REWILDING REEFS

Variations in Nursery Coral Out-Planting Success on Raised 3-Dimensional Domes Across a Depth Gradient.

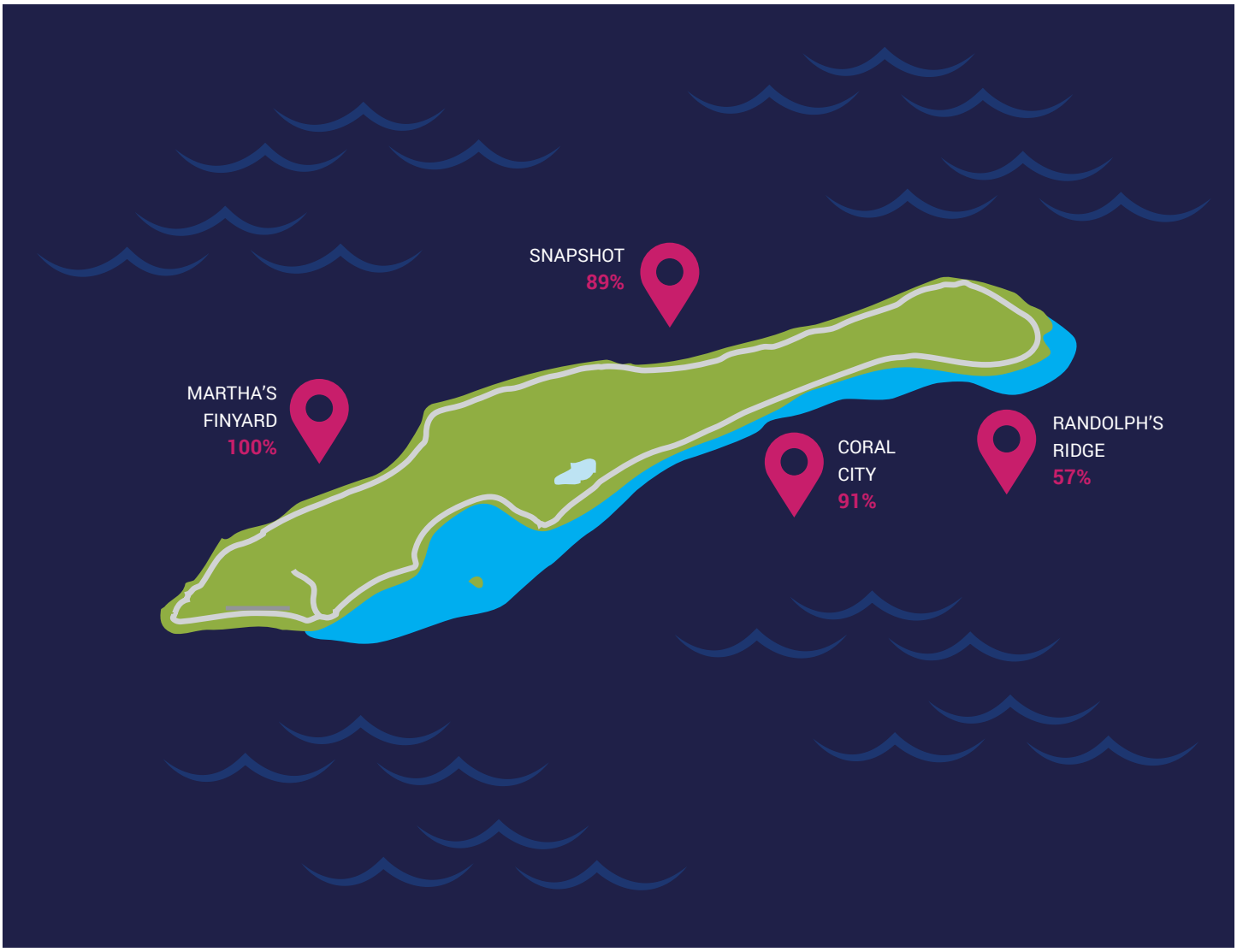
CCMI's 2020 restoration objectives were to:

- Expand our understanding of resilience
- Further improve the outplanting success

The restoration project results from 2019 indicated that certain genotypes (individuals in the population with the same parent) are more resilient to high temperatures and disease outbreaks. Conducting experiments and observations involving corals that have: already been capable of withstanding prolonged episodes of high sea water temperature; and have responded positively to disease and bleaching, provide an excellent opportunity to establish a new generation of corals for the future.

In 2020 we undertook several studies to further explore what makes corals resilient and how can we manage this in the coral nurseries. We examined how orientation of coral fragments within the nursery affects growth and survival, and determined methods for growing more robust individuals capable of withstanding stronger wave action. We also assessed how environmental history impacts survival and found that the site of outplanting was critical for long-term growth and survival of a restored community (FIG 1). In 2021, the team aims to work collaboratively with experts from the University of North Carolina to assess metabolic differences in thermal tolerances of corals in the nursery and how those difference affect long term survival of our restored communities.

FIG 1. Percent survival of outplanted corals of 5 different genotypes and 4 different sites showing higest survival at Martha's Finyard compared to all other sites.



OUTPLANTING SURVIVAL

A significant success for 2019 was our dome structure, which indicated a greatly improved survival rate (80%+) in comparison to traditional outplanting methods directly to the reef substrate (less than 9% survival). It is thought that by elevating coral outplants from the substrate, we are reducing the impact of competition and predators, creating a more successful outcome for growth and survival.

In May 2020, CCMI further developed our outplanting strategy by testing a recently proven 'dome' technique, installing 60 domes across 6 sites (10 domes per site) with over 650 coral fragments on the reef. Because of COVID-19 travel restrictions, CCMI relied heavily on assistance from the local resident community of Little Cayman in spring/summer 2020 to participate in the expansion of our coral dome project and to assist with nursery maintenance. Initial assessment of project success took place in October 2020, in which every coral was assessed for survival status and presence of disease noted. The use of domes for outplanting again showed great success with 89% overall survival of the outplanted corals. Likewise, the importance of location was reinforced with significant differences in disease presence and coral survival among the outplanting sites (FIG 2). Overall, our combined studies on restoration have shown that site selection for rebuilding and restoring reefs is critical. In 2021, we hope to expand these trials to Grand Cayman to find suitable sites at which we can successfully replant and restore these complex reefs.

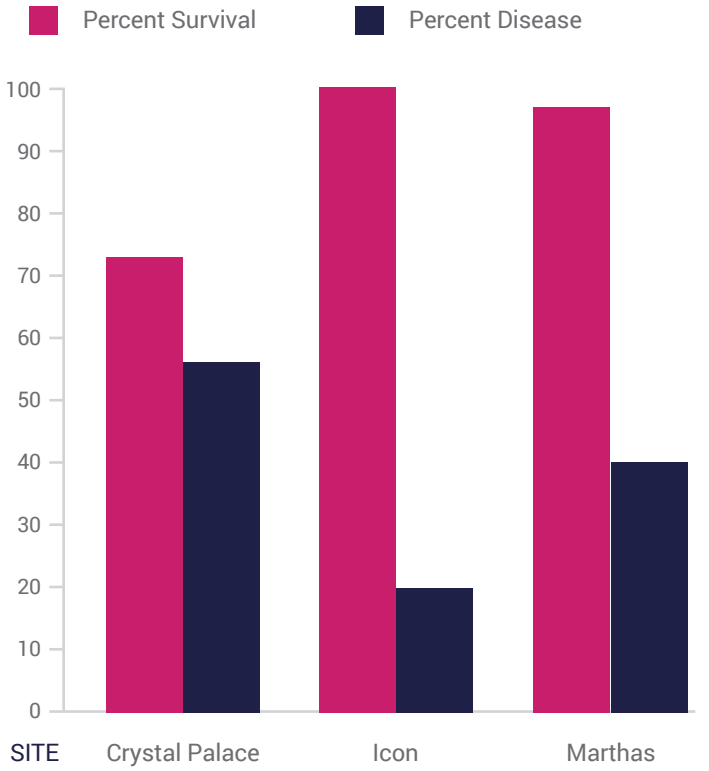


FIG 2. Percent survival of outplanted corals across 3 sites showing hower survival at Crystal Palace compared the the other sites. Percent disease presence on outplanted corals accross 3 sites showing high disease prevalence at Crystal Palace compared to the other sites.

Supported by: The AALL Trust Foundation, The Cayman Water Company (CWCO), Dart Cayman Islands, The Ernest Kleinwort Foundation and Stewarts Walker Hersant Humphries

QUIET OCEANS

In July 2020, following 3 months of lockdown in the Cayman Islands, Dr Gretchen Goodbody-Gringley and her research team began surveying the fish populations at busy dive and snorkel sites, on the West side of Grand Cayman, close to the George Town Harbour. This unique time in our history, as the oceans became quiet and international travel ceased, provided CCMI the opportunity to investigate how the local coral ecosystem would respond to limited human activity. The hypothesis was that fish abundance and biodiversity will increase as human interaction has ceased. This project received funds to support a pilot from Walkers, and received a Darwin Plus Covid-19 Rapid Response grant to further the pilot in early 2021. *Supported by: Walkers*

HEALTHY REEFS

LONG-TERM MONITORING

Using the Atlantic and Gulf Rapid Reef Assessment (AGRRA) protocol and collecting additional recruitment data, results from this work will help generate an understanding of the mechanisms that are driving reef resilience.AGRRA data on the benthic habitat and fish populations surrounding Little Cayman has been collected regularly since 1999. As CCMI researchers continue to collect this data annually, notes, reports, and peer reviewed journal articles are available online to scientists, policy-makers, and the general public. These surveys document patterns of local change over the last two decades and enable regional comparisons through the Healthy Reef Framework developed for evaluating the Mesoamerican Barrier Reef.

In August 2020, the surveyed reefs were in a period of recovery, with their health status improving overall compared to 2019. Of the reefs surveyed, 27% were in "very good" health in 2020, versus only 16% in 1999 and 17% in 2010. At the bottom end of the health spectrum, we had no surveyed reefs listed as in "poor" health, and only 18% of the reef classified as "fair", compared to 36% the year before.

The report also indicated that the composition of the coral community on the reef has shifted over time, from reefs dominated by massive boulder corals, such as Orbicella spp., to smaller corals such as Agaricia spp. and Porites spp. The size of corals surveyed has decreased overall, which may indicate that the reefs are less structurally robust and capable of providing some of the important services we depend upon them for, such as storm protection and complex habitats for a variety of marine life.

Our surveys show a cyclical pattern of decreasing and increasing coral cover from 1999 to 2020, which may represent periods of disturbance, recovery, and recruitment. However, the current trend is towards increasing abundance, which suggests the reefs of Little Cayman are in a period of recovery.

Fish abundance has increased overall since 1999, indicating a rebounding fish population. This is a positive sign of the efficacy of protections enacted by the Cayman Islands Department of Environment. Specifically, we've seen a significant trend of an increase in parrotfish populations across all sites surveyed.

The 20 year data indicates that whilst Little Cayman reefs are not immune to the impacts of local and global change, they have remained stable over time and appear to be more resilient than other Caribbean coral reef systems. Data provides a window into the longterm trends for key coral and fish species.

Supported by: Foster's, Ogier, Aureum Re, the Cayman Islands Department of Tourism, Dart Cayman Islands and Knighthead.

WOMEN IN OCEAN SCIENCE AWARD (WIOSA)

In 2019, the Brian Melito and Jessica Colker Trust helped CCMI launch WIOSA. This programe has a goal to facilitate the advancement of women in ocean sciences so they become world-leading professionals. By establishing a network and providing mentorship, funding, and field access for a cohort of women in ocean science coming through the ranks to push the frontiers of science, WIOSA seeks to make a difference to women in science with outstanding capabilities. The award will be enacted by granting 2 scholar awards and 4 intern awards over 4 years.

In 2020, CCMI announced the first WIOSA Fellow, Dr Sarah Gignoux-Wolfsohn. Dr. Gignoux-Wolfsohn's winning application, which was selected by the WIOSA panel, outlined a project to examine the effects of coral reef community diversity on coral health. Dr. Gignoux-Wolfsohn, as the first WIOSA scholar, has set a high bar. She said, "I am very excited to be the first recipient of the WIOSA. I am honoured to have been chosen by the amazing scientists at CCMI and WIOSA advisors. I am looking forward to contributing to the amazing woman-led research programmes at CCMI and to help mentor the next generation of female scientists. This award will greatly advance my research programme, integrating theory and ideas from other systems with my PhD work on coral health and disease. Infectious disease is one of the greatest threats to corals and the coral reef ecosystems they build. By testing methods to improve the resilience of coral communities, my work at CCMI will advance our understanding of community ecology, disease, and microbial community composition with implications for coral restoration and the creation of resilient coral reefs." Sarah will be joined by intern Federica Manca, when travel permits. There is a Stony Coral Tissue Loss Disease outbreak across the Caribbean, which was identified in Grand Cayman in 2020, so Sarah's work and her planned time in the Cayman Islands is not only poignant but timely.

The WIOSA Advisory is: Dr Sylvia Earle (Mission Blue), Dr Gretchen Goodbody-Gringley (CCMI), Dr Christine Ferrier-Pages (Centre de Scientifique Monaco), Dr Carrie Manfrino (CCMI) and Dr Hollie Putnam (University of Rhode Island)

Supported by: Brian Melito and Jessica Colker Trust

EDUCATION & OUTREACH SNAPSHOT

In 2020, Covid-19 had a significant impact on CCMI's ability to run education programmes. Whilst many of our international courses were cancelled, CCMI did deliver (and expand) local scholarships but the paid programming was heavily restricted. To help offset this, CCMI also developed increased digital programming, to support local and international education.

NEXT GENERATION

PRIMARY TO TERTIARY REEF EDUCATION

CCMI continues to work closely with local schools to deliver a range of programmes for students aged 9 to 18 years old. Our Ocean Literary goal is for every child in the Cayman Islands become ocean literate by the age of 12. We want to empower and engage the next generation, so they can become better ocean stewards, via hands on experiences with the marine environment. Programmes include tropical marine biology, marine ecology and coral reef conservation at one of the world's most beautiful coral reefs. CCMI's aim is to shape students' attitudes and behaviours about the ocean whilst having fun exploring Little Cayman.

MARINE ECOLOGY - COURSES (MEC)

MECs provide a 3-day, 2-night immersive residential course for primary and secondary students. In 2020, CCMI hosted 2 government school groups, 100% free of charge, thanks to generous support from the BODA Charitable Star Trust. Providing scholarships has been an integral part of the MEC strategy since its inception and remains core to CCMI's education strategy today.

CCMI'S OCEAN SCHOLARS PROGRAMME

In 2020, ocean science interns included Sabrina Weber and Rickeem Lashley, who supported CCMI by working on key research projects, including the launch of the Quiet Oceans Project, **P. 16.** CCMI also ran our week long Caribbean Marine Ecology Course, with 5 full scholarships for local students, supported by the Edmund F. and Virginia B. Ball Foundation. In August 2020, the R3 Foundation also supported 13 full scholarships plus 2 course interns.

CCMI'S YOUNG ENVIRONMENTALIST LEADERSHIP COURSE (YELC)

This course saw the successful training and mentorship of 6 students in 2020. Whilst Covid-19 meant there was limited time with the students in comparison to previous years (due to lockdown), none the less, the energy, impact and positivity from this course and its participants was not diminished in any way. YELC takes students from open water to rescue diver, provides work experience opportunities and introduces the students to the basics of marine ecology and the importance of coral conservation methodology.

Thanks to the continued support of Foster's and Cayman National Bank for sponsoring YELC.

REEFS GO LIVE

In 2020, Reefs Go Live was well received due the increase in home schooling both in the Cayman Islands and globally. The Reefs Go Live programme helps CCMI teach directly to students, from ocean to classroom, building on all the residential courses and curriculum learning. 6 livestreamed lessons were delivered in 2020, reaching over 45,000 viewers on YouTube and Facebook and we updated the programme teacher support resources. Reefs Go Live garnered wider media coverage than in previous years, including featuring in articles on prominent news sites (including Forbes, Today, and MSN), parenting sites, and travel pages.

Thanks to the Edmund F. and Virginia B. Ball Foundation and Appleby for supporting Reefs Go Live.

GLOBAL REACH

VISITING COLLEGE PROGRAMMES

A normal year sees a busy visiting University calendar. In 2020, we had the pleasure of hosting Dartmouth University and then the Cayman Islands closed it's international borders. We look forward to welcoming back our visiting Universities in 2022.

EMPOWERING COMMUNITIES – CITIZEN SCIENCE

Unfortunately, 2020 saw the cancellation of our field courses with citizen scientists. However, 2020 was a huge year of volunteering in Little Cayman, as we relied upon many different people to help with keeping the research and local education projects on track, with limited staff. Residents of Little Cayman and Grand Cayman, thank you for your unwavering and dedicated support, especially for the significant effort in building and installing our coral restoration domes.

HEALTHY REEFS & HOPE

Each year, CCMI sets a campaign theme, linked to the current research programme, to amplify results and engage local stakeholders. The Healthy Reefs Programme, **P. 17,** was supported by the outreach campaign "We Need Healthy Reefs". Healthy reefs remains the core driver of our online and in person outreach and despite Covid-19, CCMI delivered a full reef lecture series, plus webinars for our stakeholders abroad. The Healthy Reefs outreach helps create a vehicle for communicating important research updates, as well as supporting the long-term monitoring programme. This programme helps provide an important bridge between CCMI's research and education activity, creating dialogue within the local community and the CCMI scientists.

Supported by: Foster's, Ogier, Aureum Re, the Cayman Islands Department of Tourism, Dart Cayman Islands and Knighthead.

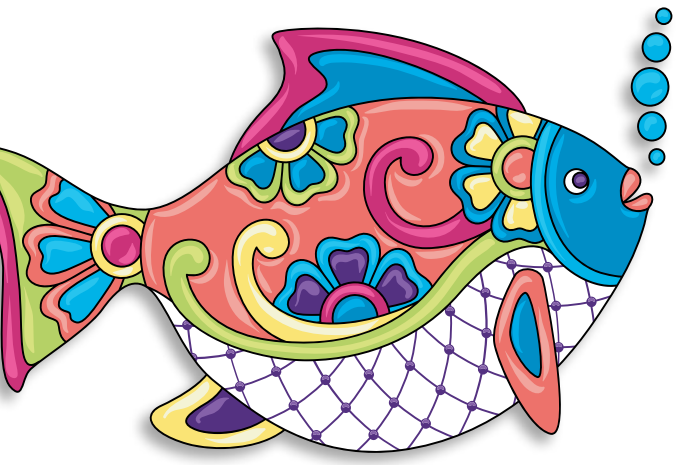
ADVANCEMENT SUMMARY 2020

MESSAGE FROM THE DIRECTOR OF ADVANCEMENT

The word 'unprecedented' has been used significantly, in describing the Covid-19 pandemic. This is definitely the case when considering the strategic development and revenue driving aspects of an international non-profit like CCMI. Overnight, our business model had to change, we shifted from 'grow' to 'maintain' and our fundraising strategy had to be reinvented with immediate effect. The future is still uncertain, as borders remain closed and the pandemic continues to rage. Planning, for events in particular, has turned into a quagmire. Over the last 10 years, CCMI has developed a stable revenue stream that does not over-rely on one particular funder or funding mechanism, and we carefully try to balance our long-term vision objectives with the practicalities of ensuring financial and operational stability and sustainability for the everyday, as well as the future.

Early in 2020, the advancement team secured key funding from long-term or repeat donors for both education and research, as part of our standard revenue driving process. Local sponsorship is integral to CCMI and Q1 in 2020 was one of the most successful in CCMI's history, in terms of sponsorship support.

Then Covid-19 created global chaos and CCMI had to adapt quickly. The revenue raised in Q1 helped stabilise the organisation for the remainder of 2020, despite the turbulence of Covid-19.



Partnerships became increasingly important to CCMI during 2020. As the crisis unfolded and CCMI's revenue concerns became apparent, the advancement team worked with key stakeholders to secure core funding that ensured we could continue operating. I want to mention the Edmund F. and Virginia B. Ball Foundation very specifically at this point, as their adhoc 2020 operational grant was so important to us. Our Royal Patron, the Earl of Wessex, included CCMI in several communications, including a Zoom call with a group of his patronages, enabling us to gain incredible feedback and helpful insight from a range of non-profits across the UK.

Fundraising can be a bit fraught at the best of times, and with all international events cancelled, we focused on two big events in 2020, World Oceans Day (June) and the Festival of Seas (November). For World Oceans Day, CCMI championed and launched Little Cayman as a Hope Spot. For Little Cayman, this is an incredible accolade and speaks to all the local efforts, for a more sustainable future. This endeavour also began an exciting new partnership between CCMI and Mission Blue. The Earl of Wessex introduced our World Oceans Day video and Dr Sylvia Earle also contributed, celebrating a genuine opportunity of hope, when much of the western world, including the UK and the Cayman Islands, was in lockdown. This launch also brought in USD$50k in sponsorship (thank you Bank of Butterfield, Dart Cayman and Aureum Re) and funds from an online photography auction, which boosted unrestricted funding at a time of great need. I'd like to thank our professional photographers: Chris Alpers, Cathy Church, Jullie Corsetti, Ellen Cuylaerts, Jacqui Mance, Amanda Nicholls, Sherri Noonan, Tiago Peixoto, Diana Schmitt and Jeff Varga, many of whom were also severely impacted by Covid-19 and supported us regardless. I'd also like to thank Giacomo Santoro for his amazing World Oceans Day video production.

The end of year fundraiser, the Festival of Seas, was reconfigured as a set of two smaller events, without the pomp and circumstance of a full gala. Instead, the Fiesta Del Mar, was a laid back, fun, cocktail evening for a limited number (due to social distancing) of VIPs. CCMI benefits from a core set of supporters that came out in force to the Fiesta Del Mar. We raised over USD$100k - and whilst this is less than a 'normal' Festival, because costs were significantly less, the net result was over USD$85k and this is on par with a normal gala event. Thank you to all those who attended and supported us at such an important time.

What many people do not know about CCMI, is that the advancement team deliver the majority of the communications, PR, fundraising and donor management in house. The team is incredibly skilled in terms of their ability to develop and deliver all the science communications, marketing and fundraising, that supports the organisation and projects. This year however, Beth Chafin and Robyn Larkin of the advancement team, deserve to be recognised for their work in 2020, for CCMI. In addition to being highly responsive to the changes that were needed to keep CCMI financially viable, developing and delivering a new marketing plan, as well as growing local and international funding opportunities, the team covered many additional roles (including delivering education courses, which they are both well qualified to do). Not only did they do this to the best of their ability but they took the changes and demands of the organisation in their stride, and for this positive approach and their professionalism, I am extremely grateful.

As an organisation, we have changed, regrouped, assessed and continue to strive forward, towards our Vision 2025 goals. I would like to thank the CCMI Board of Directors and our advisors for their commitment and support, it has been invaluable, especially in helping us navigate these turbulent times. I would also like to reiterate the professionalism and valued partnership of my fellow management team, Gretchen Goodbody-Gringley and Rob Hedges, both of whom excel in their respective fields and helped steer CCMI to a positive conclusion in 2020.

KATE HOLDEN
Director of
Advancemenet

FUNDRAISING OVERVIEW

CCMI raises funds through 3 core revenue-generating activities:

- **Earned revenue** – fees from education courses and visiting scientists at the Little Cayman Research Centre.
- **Unrestricted fundraising events** – this includes the annual Festival of Seas Gala, the Navigator's Council and private donations from trusts, companies and individuals.
- **Restricted funding** – project specific revenue raised via donations and grants.

Covid-19 has shifted CCMI's tried and tested fundraising formula. As outlined in the Financial Summary, **P. 28**, CCMI's earned revenue was greatly reduced (by USD$270,000). Despite this, we sustained all other fundraising revenue, as originally planned/budgeted.

International events were interrupted, and we cancelled a Royal Event and Navigators meeting but a reduced yet impactful (scaled down) Festival of Seas, plus an unrestricted grant from the Edmund F. and Virginia B. Ball Foundation and Navigator support helped stabilise unrestricted fundraising. Several large donations, including a generous donation from the Bill Wyman auction and a number private family gifts made a significant difference to our unrestricted donations.

Grants remained a stable revenue stream for CCMI, as Dr Gretchen Goodbody Gringley was awarded a three-year National Science Foundation grant. Foundation and local sponsorship support for both research and education, including valuable support from the Ernest Kleinwort Charitable Trust, the AALL Trust Foundation, Foster's, Ogier, Aureum Re, Knighthead , Walkers, the Bank of Butterfield, Dart Cayman, Cayman National Bank and the Cayman Islands Department of Tourism was also strong in 2020, underpinned by CCMI's ability to continue operating throughout the year, thanks to being certified as 'business critical'. CCMI's commitment to providing scholarships for local students was in fact buoyed during 2020. The newly formed R3 foundation was incredibly efficient at supporting CCMI, via local scholarship provision. The BODA Charitable Star Trust was also integral to CCMI's local support, facilitating local primary school residential courses.

CCMI leveraged our ability to deliver digital communication, education resources, webinars, lectures and project updates throughout 2020. Whilst digital has always been a platform we utilise, especially via our successful Reefs Go live Programme, we improved and increased our digital presence in 2020, which allowed and enabled us to complete many of our project commitments and keep progressing our deliverables, regardless of issues with international travel and increased social distancing measures.

FINANCIAL SUMMARY

MESSAGE FROM THE BUSINESS MANAGER

Q1 2020 started well financially and operationally, with a fully booked schedule for research and education programmes but then the pandemic hit in March. Earned income plays a crucial role in supporting CCMI's core operational overhead and enables us to maintain the research station and facilities - and this important revenue flow was instantly affected by COVID 19 due to cancellations and border closures, wiping out $270k in revenue. In response, CCMI streamlined our operational and company expenses, developed new operational protocols and ways of working to limit cost and raised $102k in core funding, to help stabilise the organisation. Our work programmes, apps and platforms were also improved and integrated streamlining workflow and reducing expenditure.

Key grants and sponsorships remained stable during 2020, and renewals or replacement funds were sustained, ensuring our research and funded local programmes could continue. A new multi-year grant from the US National Science Foundation also boosted restricted funds for research income for the year, underpinning our core research programme.

A new strategy for fundraising during COVID 19 was developed and proved successful with the net income from unrestricted fundraising and contributions, including the events and core funding (USD$370k), exceeding our original 2020 budget (USD$352k).

Controlling cashflow through the pandemic was key to ensuring both our survival and our ability to fulfil our commitments to our stakeholders. We overhauled how we track cashflow and implemented a business action plan with a full COVID 19 risk analysis, both of which improved our cashflow control. This strategy allowed us to factor in new expense controls, helping us to mitigate delays in grant payments due to offices being closed and the general impact from COVID 19, as it progressed.

Due to the great efforts and continued support from all our staff, board members and donors we ended the year with a net income of $57k and increased our operational reserve to $250k.

ROB HEDGES
Business Manager

ANNUAL FINANCIAL REPORT SUMMARY

2020 started strong in Q1 but then the pandemic hit, so we had to adapt our revenue and expenses model:

- Our 2020 earned income was instantly affected by Covid-19, with USD$270k of programme cancellations. Earned revenue continues to play an important role for CCMI, ensuring a stable income, providing unrestricted funds that can support operational overhead and management of the asset.
- Key grants and sponsorship remained stable and were renewed or replaced ensuring our research and funded local programmes could continue, with a total revenue of USD$956k, in comparison to a budget of USD$825k.
- Core funding via unrestricted fundraising and contributions revenue, which supports the core business was also received which also helped increase our operational reserve, came in at USD$403k, vs a budget of USD$456k. Large and international events were not possible, hence a slight reduction in expected revenue.
- Strong operational and fundraising expense controls due to increased protocol implementation and tighter financial management have been achieved .

2020 FINANCIAL SUMMARY

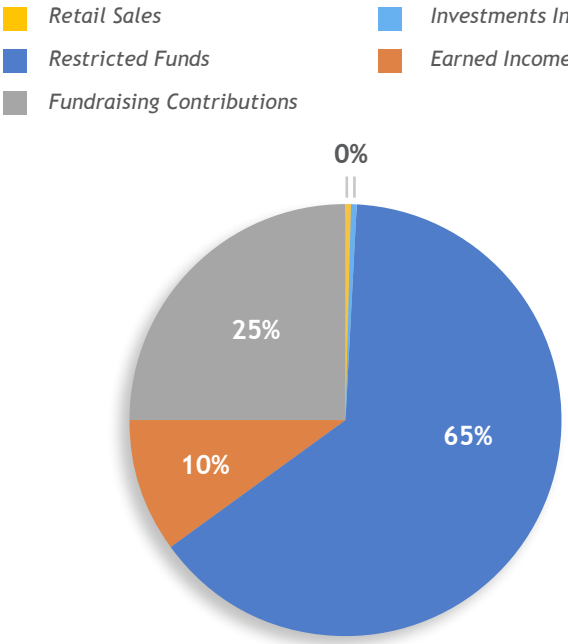
CCMI made a net profit of $57K in 2020 (2019: 41K). The increase in year-on-year net profit was due to our expenses $1.343m (2019: $1.632m) being reduced more than the reduction of income at $1.400m (2019: $1.673m). The reduction in both expenses and revenue for 2020 was due to the impact of the global pandemic and the changes CCMI made in response. In 2020, 12.8% of total costs were for support services (2019: 11.1%), and the remaining 87.2% was spent on the delivery of programmes (2019: 89.9%). This rise in support costs was a short-term response to the cancellations of paid courses, due to Covid-19.

Consistent with prior years, CCMI's planned earned income in 2020 should have been largely from university bookings, local courses, visiting scientists, retails sales and interest income. However, earned income finished the year $200k down in comparison to 2019 ($351k), due to no international groups from March 2020 (until present) and a lockdown from March-June 2020, which meant local groups could not visit. CCMI's final revenue from earned income was USD$150k, in comparison to a pre-Covid-19 expectation of USD$420k.

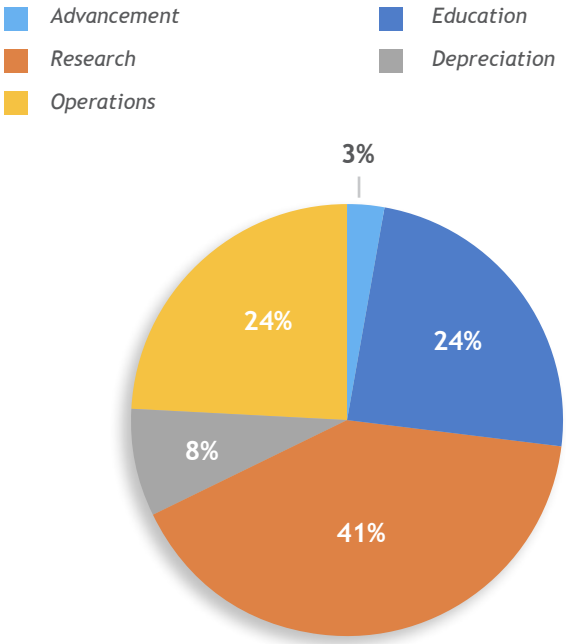
A increase in 'temporarily restricted' donations for multi-year grants by $129K and a net profit of $57K resulted in an increase in equity for the 2020 year of $186K (2020: $2.867m; 2019: $2.681m).

Contributions receivable as of 31 December 2020 increased by 12% compared to 31 December 2019, mainly due to the new $500k research grant due over 2020 to 2024.

2020 CCMI REVENUE SOURCES



2020 CCMI EXPENSES



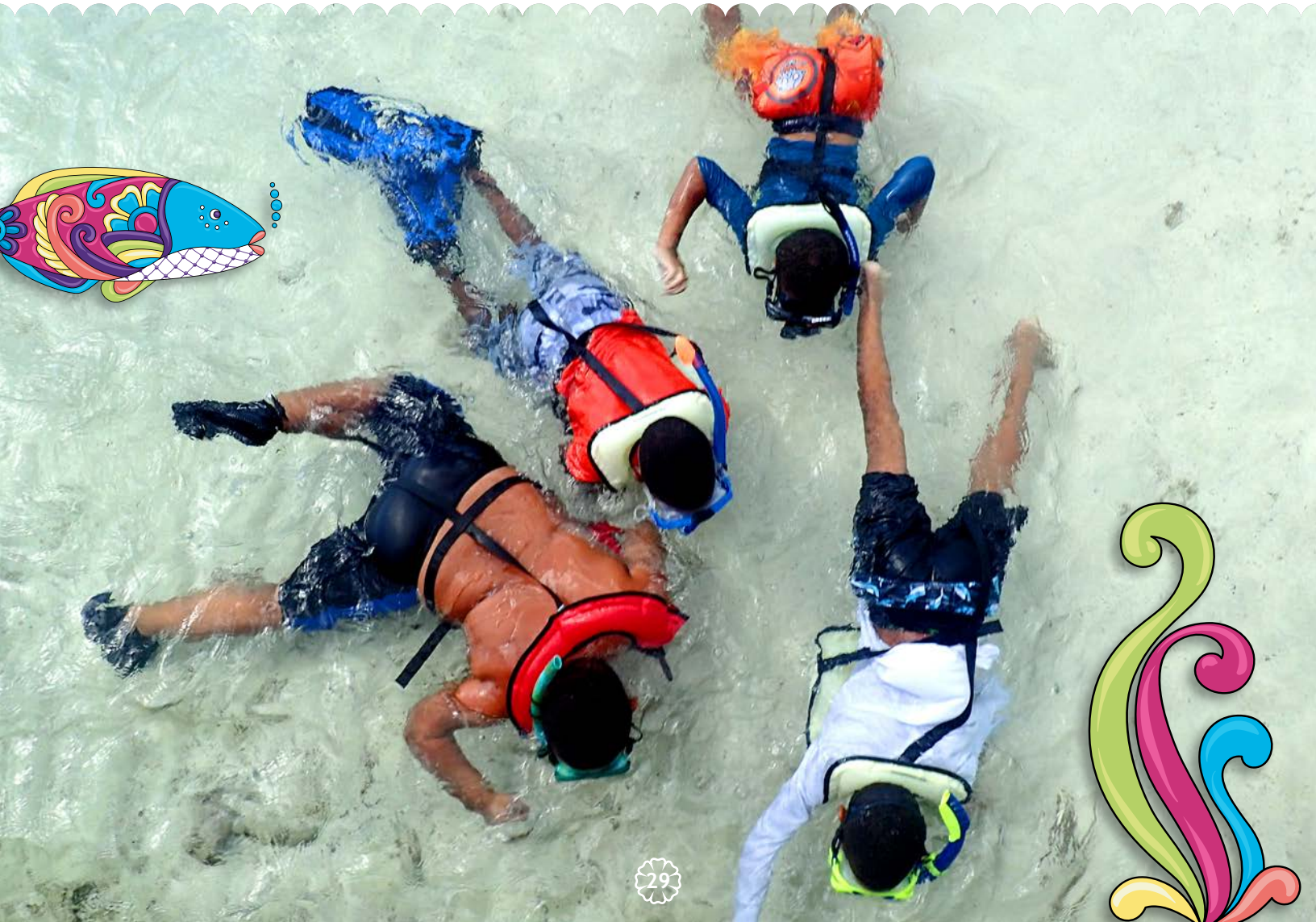
IN KIND SUPPORT

In kind support remains a bedrock of CCMI's operation. We would like to thank the many professional firms who have supported us in 2019, including: BDO for the annual audit, Stuarts Walkers Hersant Humphries for legal services, Berman Fisher for accounting support services, Copper Blue Communications Ltd for PR, communications and brand development support, Douglas Ziegler LLC for US accounting support, SALT Technology Group for IT support and Frans de Backer for videography support, as well as the Board of Directors and Officers who give their personal time in support of CCMI's mission. CCMI would also like to thank the project technical advisors who donated many in-kind hours in expertise, specifically Pauline Simpson, Susan Guilmette, David Guilmette and Greg Locher.

2020 OPERATIONAL RESERVES

CCMI aims to maintain an operational reserve to meet basic operational costs (salary, insurance, mortgage, etc) for a period of six months. In 2020, CCMI increased the operational reserve to **USD$250k** from **USD$189k**.

Restricted Contractual Reserves for program delivery following year	**$302,376**
Operational reserve	**$250,000**
Deferred Revenue	**$19,414**
Unrestricted free cash	**$11,144**
Total End of Year cash on hand	**$582,934**



GOVERNANCE

HOW WE ARE GOVERNED

CCMI leadership has a strong, demonstrable track record in research and conservation and in 2020, CCMI bolstered the team providing governance and support at the Board/professional level. The organisation is governed by a Board of Directors/Trustees in the Cayman Islands and USA, and by the Trustees of the UK Charity (outlined below).

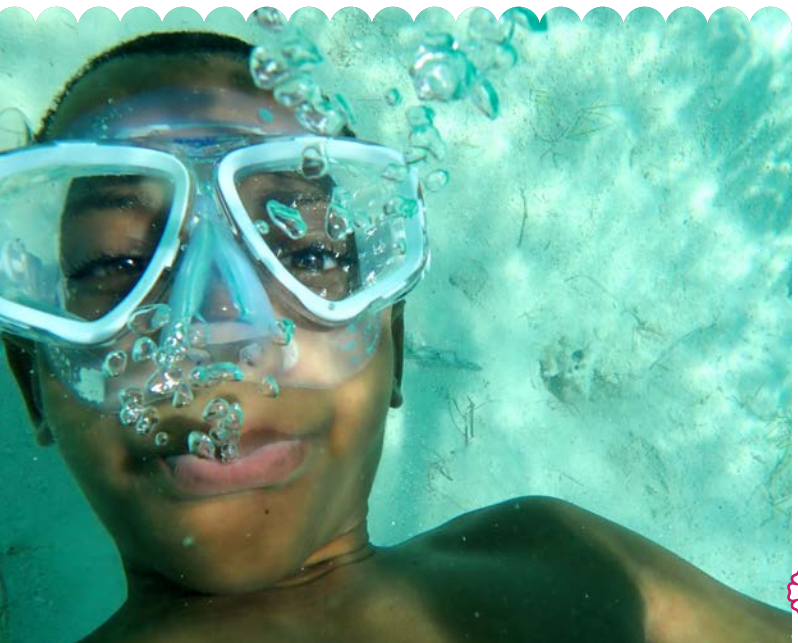
The Board of Directors/Trustees is also supported by a group of special advisors, who specialise in areas of need, such as research, human resources (HR), technological development (specifically education related) and company governance.

STATUS

The Central Caribbean Marine Institute/CCMI has charity status in the Cayman Islands (CCMI Cayman – NP#3), is a UK registered charitable organisation (#1104009) and a US 501 (C)3 non-profit (#22-3609293).

GOVERNANCE CODE

As a company operating within multi-jurisdictions, CCMI has a strict code of governance that complies with the UK, US and Cayman Islands requirements. CCMI has an engaged board of trustees and management team all aligned and engaged with the company's very clear mandate, to protect coral reefs for the future. The shared mission and culture within CCMI therefore aligns with the Charity Commission's Governance Code (2017), the 501 (C) 3 governance checks (IRS) and the Cayman Islands non-Profit Organisations Law 2016.



COMPANY REGISTRATION DETAILS

United States
Central Caribbean Marine Institute, Inc
501 (c) 3 Registration: 22-3609293
Mailing Address: 1 Airport Place, Suite 3, Princeton NJ 08540

Cayman Islands
CCMI
Non-profit registration: NP- 3
Mailing Address: PO Box 37, Little Cayman, Cayman Islands, KY3 2501

United Kingdom
CCMI UK
Charity Registration: 1104009
Mailing Address: Farrer & Co, 66 Lincolns Inn Fields, London, WC2A 3LH

CCMI BOARD

2020 Board of Trustees (US) and Directors (Cayman)
Dr Carrie Manfrino – Founder and Senior Scientist (resigned November 2020)
Chris Humphries – Chairman
Sydney Coleman (joined September 2020)
Dr Tom Frazer (rejoined September 2020)
Dr Martina Koniger (resigned September 2020)
Peter Hillenbrand (rejoined September 2020)
Tim Kary

J.S de Jager – Treasurer
Secretary – Pauline Simpson

2020 UK Board
Dr Carrie Manfrino (resigned November 2020)
Chris Humphries
Tim Ecott
Andrew Hersant
Kate Holden
Dominic McCahill

Principal Professional Advisors
Accounting – Berman Fisher
Audit – BDO (2019 audit)
Solicitors – Stuarts Walker Hersant Humphries/ Broadhurst LLC
Bankers – Bank of America, Fidelity, UBS, Cayman National Bank, Bank of Butterfield, HSBC UK.

POLICIES

PUBLIC BENEFIT

CCMI was established in 1998 to protect the future of coral reefs through research, conservation, and education. We opened the Little Cayman Research Centre in 2005 and the facility has become a pre-eminent Caribbean marine institution, working on one of the most pressing issues facing the region: the protection and conservation of coral reef biodiversity. Our work benefits the scientific community regionally and around the globe, as well as children who we engage in ocean literacy programmes and international students who we empower to reduce their impact on and improve the vitality of our oceans. We have a research agenda that includes actionable projects that are essential to advance the science and deliver solutions needed to inform coral restoration efforts around the globe. What makes CCMI different, however, is our commitment to transforming knowledge into impactful educational outreach.

RESERVES POLICY

CCMI's reserves policy outlines three areas of reserve:

- Contractual reserves – where CCMI has a contract that specifies how funds must be utilised (a grant, for example). These funds are treated as restricted funding and reported on accordingly.
- Board and Management Initiatives – in accordance with the goals and objectives of the organisation, the board and management periodically set up reserves (restricted funds) for particular initiatives that they feel are key to the organisation
- Operational reserves – the organisation aims to maintain an operational reserve to meet basic operational costs (mortgage, salary, insurance, utilities etc) for a period of six months.

RISK MANAGEMENT

In 2019, CCMI identified areas that require further development in the areas of HR, financial management and IT infrastructure. As part of the Vision 2025 process, the executive team further developed the company sustainability protocols, looking at needs for the future to support CCMI's expansion and longevity. A third-party review of our systems has begun and the organisational structure is also being developed to accommodate required strategic changes. In 2019, CCMI hired a new business manager, who works closely with the president and our external accounts firms, to better manage CCMI's financial policies and responsibilities to our US 990, company audits and fiscal management required to manage restricted grants.

CCMI has grown consistently since 2010. The company structure and governance requirements are also therefore evolving.

CORPORATE SPONSORS


AGGRESSOR
ADVENTURES


ALEXANDRIA


APPLEBY


Aureum Re


BDO
CAYMAN
ISLANDS


BALBOA
MANAGEMENT LTD


HLB BERMAN FISHER


BROADHURST
LLC
ATTORNEYS-AT-LAW


Butterfield


DEPARTMENT OF
ENVIRONMENT
CAYMAN ISLANDS GOVERNMENT


Cath Church


CAYMAN
ISLANDS
Grand Cayman • Cayman Brac • Little Cayman


CAYMAN
NATIONAL


CONSOLIDATED
WATER


CopperBlue


DART


DARWIN
INITIATIVE


Disney
CONSERVATION
FUND


EY
Building a better
working world


Ernest Kleinwort
Charitable Trust


FOSTERS
Better because we care

GoPro
Be a HERO.

Island Heritage

Jacques Scott Wines & Spirits

KPMG

National Gallery Cayman Islands

NSF

OCEANX

Ogier

R3FOUNDATION
READINESS | RELIEF | RECOVERY

red sail sports
GRAND CAYMAN

Reef Divers Valet Diving
Little Cayman Beach Resort

Rotary Club of Grand Cayman

Rotary Central Cayman Islands

SALT
Technology Group

STUARTS WALKER HERSANT HUMPHRIES
Attorneys-at-Law

Swanky International

THE RITZ-CARLTON
GRAND CAYMAN

WALKERS

AALL TRUST FOUNDATION | BODA CHARITABLE STAR TRUST | EDMUND F. AND VIRGINIA B. BALL FOUNDATION | THE HARTFORD FAMILY
THE HUMPHRIES FAMILY | SUSAN OLDE OBE | OLIVER S. AND JENNIE R. DONALDSON TRUST | SUREFINE FUND LTD.

VOLUNTEERS & SUPPORTERS

VOLUNTEERS & SUPPORTERS

AIDA VAN WEES
AMANDA GOODWIN
ANDREA & STEVE HUGHES
ASH MCKNIGHT
BRIGITA NEMET
BRIAN MELITO AND THE JESSICA COLKER TRUST
CATHERINE CHILDS
CATHY CHURCH
CHRIS & JOANNA HUMPHRIES
DEBBI TRUCHAN
DIANA SCHMITT
DOMINIC MCCAHILL
ELLEN CUYLAERTS & MICHAEL MAES
ERIN QUIGLEY
FIONA, BOB AND JEN MOSELEY
FRANS DE BACKER
GREG LOCHER
JEFF JAKUBIAK
JOE & SUSAN PLOPLYS
JS DE JAGER
LAUREN CHRISTIE
MARY JONES
MAGGIE JACKSON
MELISSA WOLFE
MIKE & MEREDITH GUDERIAN
MIKE & WENDY MANNISTO
MYRA & JAMES COWAN
NADIA HARDIE
NATALIE URQUHART
NICOELA MCCOY
PAULINE SIMPSON
PETER HILLENBRAND
SIMON & CANDY WHICKER
SUE AND DAVE GUILMETTE
SUSAN OLDE OBE
SUZY SOTO
WILLIAM WAGGOTT

TIMELINE

1998 – CCMI was founded by Dr Carrie Manfrino, as a US non-profit. CCMI began our coral reef monitoring programme, that tracks changes in coral reef and fish health.

2002 – CCMI was incorporated as a registered Cayman Islands Charity (#NP-3)

2003 – CCMI was determined as a US 501 (C) 3 (#22-3609293)

2004 – CCMI was incorporated as a UK registered charity (#1104009)

2005 – HRH The Earl of Wessex, CCMI's Royal Patron, breaks ground on the Little Cayman Research Centre, which has been developed into an award-winning research facility, specialising in coral reef resilience.

2007 – A flourishing research and education programme was established, including visiting scientists and groups from Dartmouth, University of Florida, Welsley College, Rutgers University, Keane University, University of North Carolina etc. CCMI was awarded our first $500k multi-year grant.

2009 – CCMI partnered with the United States National Oceanographic and Atmospheric Administration (NOAA) to launch the Coral Reef Early Warning System (CREWS) as part of the Integrated Coral Observation Network (ICON). CCMI launched our Ocean Literacy programme.

2012 – CCMI was awarded a US National Science Foundation facilities grant to develop the climate change labs at the Little Cayman Research Centre. CCMI also established the first ever coral nursery and coral restoration research programme in the Cayman Islands, in partnership with the Cayman Islands Department of Environment.

2016 – CCMI held the "Can we Save Coral Reefs" International Symposium in London, convened by HRH the Earl of Wessex, hosting scientists, policy makers and advocates from all over the world. HRH the Earl of Wessex also visited the Little Cayman Research Centre.

2017 – CCMI attended the Fourth International Workshop on Bridging the Gap between Ocean Acidification Impacts and Economic Valuation, in Monaco, hosted by Prince Albert II of Monaco. CCMI also held a Navigator event, hosted by our Royal Patron, HRH the Earl of Wessex, at Windsor Castle.

2018 – CCMI launched our Reefs Go Live programme, teaching students from under the ocean. 2018 also saw a 20-year coral reef monitoring follow up study across all three of the Cayman Islands. We celebrated the International Year of the Reef via a range of public outreach events, including a Royal Hosted event at St James's Palace, London.

2019 – CCMI hosted HRH the Prince of Wales at the Little Cayman Research Centre, including a Reefs Go Live broadcast. CCMI also launched the Women in Ocean Science Award (WIOSA), to support early-career professionals. CCMI launched Vision 2025, as part of our strategic planning.

2020 – CCMI hired new Research Director, Dr Gretchen Goodbody-Gringley, to further establish and develop CCMIs research and education strategy, expanding our work on climate change and reef resiliency. Dr. Goodbody-Gringley was awarded a National Science Foundation grant, CCMI's first as lead PI/Institution. CCMI championed Little Cayman as a Mission Blue Hope Spot, as well as seeing 89% success with a new coral restoration outplanting concept.

2021 – CCMI provides the most local scholarships in one year since our inception and expands the Reef Ecology and Evolution Lab (REEL). CCMI's reef monitoring indicates 27% coral cover in Little Cayman, indicating a 'healthy' reef ecosystem that can be resilient to changing climate, with limited anthropogenic impact.

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