



Press Release

George Town

12th September 2019



CCMI Urges Close Look at Downstream and Long-Lasting Impacts to the Island by Proposed George Town Dock Whilst There is Still Time

The Cayman Islands and its gorgeous beaches have been built over tens of millions of years, by the stony limestone skeletons of millions of coral reef organisms. It is these corals and skeletal organisms that break down from natural physical and biological processes to produce the sand on our beaches. The longer-term impact of the proposed George Town dock construction and the removal of sand, corals and bedrock is, therefore, an extremely important aspect to consider. Any removal of depositional material, which is an important part of the overall sand budget and contributes to the formation of the beaches, Cayman's most iconic tourism product, is detrimental.

CCMI urges special consideration to protecting sources of sand, as critically important for businesses that rely on coastal tourism, for local residents who enjoy the beach, as well as the cultural and natural heritage of the islands. Home and resort owners on Seven Mile Beach, and everyone who enjoys Seven Mile Beach (in particular) should think seriously about the impacts of this proposed dock project on reefs, and the part corals play in contributing to Cayman's tourism product and healthy ocean ecosystem. The downstream and lasting risks of dredging/coral relocation not only include the long-term loss of coral and tens of thousands of other species living within the reef, but also a gross reduction in the capacity for the reef organisms to produce the skeletal sand that makes up the beach.

The full details on the coral relocation have not been released. But for simplicity, if we conceptualise that only one foot is removed off the top of the proposed twelve acre dock site, we are moving a half a million cubic feet of limestone, coral and sand. Imagine taking a stroll down Seven Mile Beach, for a mile. Now imagine a one hundred foot (wide) slice of beach being scooped up (one foot deep) and removed, all the way along your walk. This is just over half a million cubic feet of sand removal... and this is what is being proposed for the twelve acreage of coral relocation alone. We recognize that there are many complex processes contributing to Seven Mile Beach's sand budget but what is proposed will undoubtedly affect Cayman's most famous beach.

Positive results from coral regeneration and relocation practice also continue to be challenging, with corals across the Caribbean region typically suffering 80% mortality* within two years of relocation. Little hope for replenishing the sand on Seven Mile Beach in the long-term exists, due to the limited proven success of coral relocation as a mitigation strategy. The proposed dock construction will disrupt an entire ecosystem by removing the corals and sand. CCMI is concerned about the detrimental impacts to Seven Mile Beach and the coral reef ecosystem in the George Town area, and urges all stakeholders to really take stock whilst there is still time.

RELEASE ENDS



Statement Statistics and Facts Verified

*Mortality rates in coral relocation:

1. Increasing survival and robustness of *Acropora cervicornis* outplants using dome structures Paul Maneval¹, Dagny-Elise Anastassiou³, Sophia MacVittie³, Carrie Manfrino², Tom Frazer¹. 2020, International Coral Reef Symposium, Breman (Submitted Abstract).

80% mortality is currently the average loss CCMI's nursery-reared corals currently experience after 2 years of coral restoration, which is a common mortality rate being seen across the Caribbean region. Please see section below on coral relocation and restoration for further explanation on types of corals which respond well to relocation.

Sand budget

1. Beach erosion management in Small Island Developing States: Indian Ocean Case Studies. V. Duvat. 2009 WIT Transactions on Ecology and Environment, Vol 126.

Calculating the Dredging/Relocation Volume:

Assuming 1 foot dredging on average over entire 12 acre area but the dredging depth is unknown at this point and could be far greater in a focused area.

Area: 12 acres = 522,720 ft²
Total Volume: 522,720 ft² x 1 foot = 522,720 ft³

Seven Mile Beach Volume:

To draw a visual comparison of the dredging volume:
We have estimated a general (generous) width of 100 feet.

Total Beach Walk of 1 mile = 5,280 feet
Area (length x width) : 528,000 ft²
Volume for sand depth of 1 foot (length x width x depth): 528,000 ft³



Statement Justification

Here are a few scientific facts which have resulted in the released CCMI statement:
We need coral reefs to exist sustainably:

- Coral reefs are most threatened ecosystem on earth
- Reefs are the most diverse ecosystem in the ocean, containing invaluable ecosystem services for example:
 - Reef diversity offers the greatest potential for drug and disease discovery.
 - Green fluorescent proteins (GFP) from corals have been used to trace the progression of Alzheimer's disease.
 - Harvard scientists working at CCMI are using genetics of flying fish, halfbeaks and needlefish to understand the genesis of skeletal disorders in humans.
- Therefore, the role of reefs extends beyond the simple fact that we rely upon them for coral/ocean ecosystem health and a buoyant tourism product

20 Years of Monitoring

We have culminated 20 years of research with a 20 Year Healthy Reef Report that we hope will reiterate why we need to protect coral reefs. The good news is that fish populations, in general, around all three islands have not changed much in 20 years. CCMI's 20 Year Healthy Reef Report will be released in Sept 2019 via our website www.reefresearch.org.

Coral Decline

Unfortunately, corals have not fared as well as fish populations in our 20 year surveys. We have lost nearly half of the corals on Grand Cayman and the amount of seaweed has increased and is characterized as "critical". Therefore, the decline of coral reefs in the Cayman Islands is a critical threat.

Coral Restoration & Relocation

Since 2012, CCMI established coral restoration as a focal area of our research. CCMI, as well as local dive companies on Grand Cayman and Cayman Brac, have become successful at growing new corals in our nurseries - but relocating our nursery grown corals back to the reef is not successful long-term**. We are working hard to find the answers but are not there yet. Therefore, notwithstanding the impact of the build itself and the degradation of the surrounding reefs, the reliance upon the relocation of 12 acres of coral as a mitigation strategy to this project is a misnomer.

CCMI has been growing coral for 8 years in the Cayman Islands, using specific coral (from the *Acropora* genus) that is known to grow quickly and has shown some limited success with relocation in global restoration practices. The wholesale relocation of coral being proposed as a mitigation strategy within the dock proposal is not proven, includes many slow growing corals and does not address the widescale habitat loss at an ecosystem level.

** 80% of our nursery-reared corals eventually die when outplanted (meaning removed from the nursery and planted in the wild environment to establish itself). This mortality happens within 2 years and is a well-known barrier to coral regeneration and restoration around the globe. If it was that easy to relocate corals, everyone would have done it successfully already and reefs would not be critically endangered.