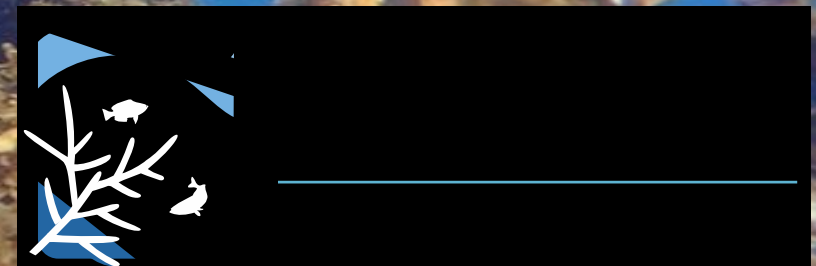


Coral Restoration & EbA: Unlocking Private Sector Investment in Ecosystem Services



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Background & Caribbean context,
Ecosystem services restoration baseline/goal: 1980

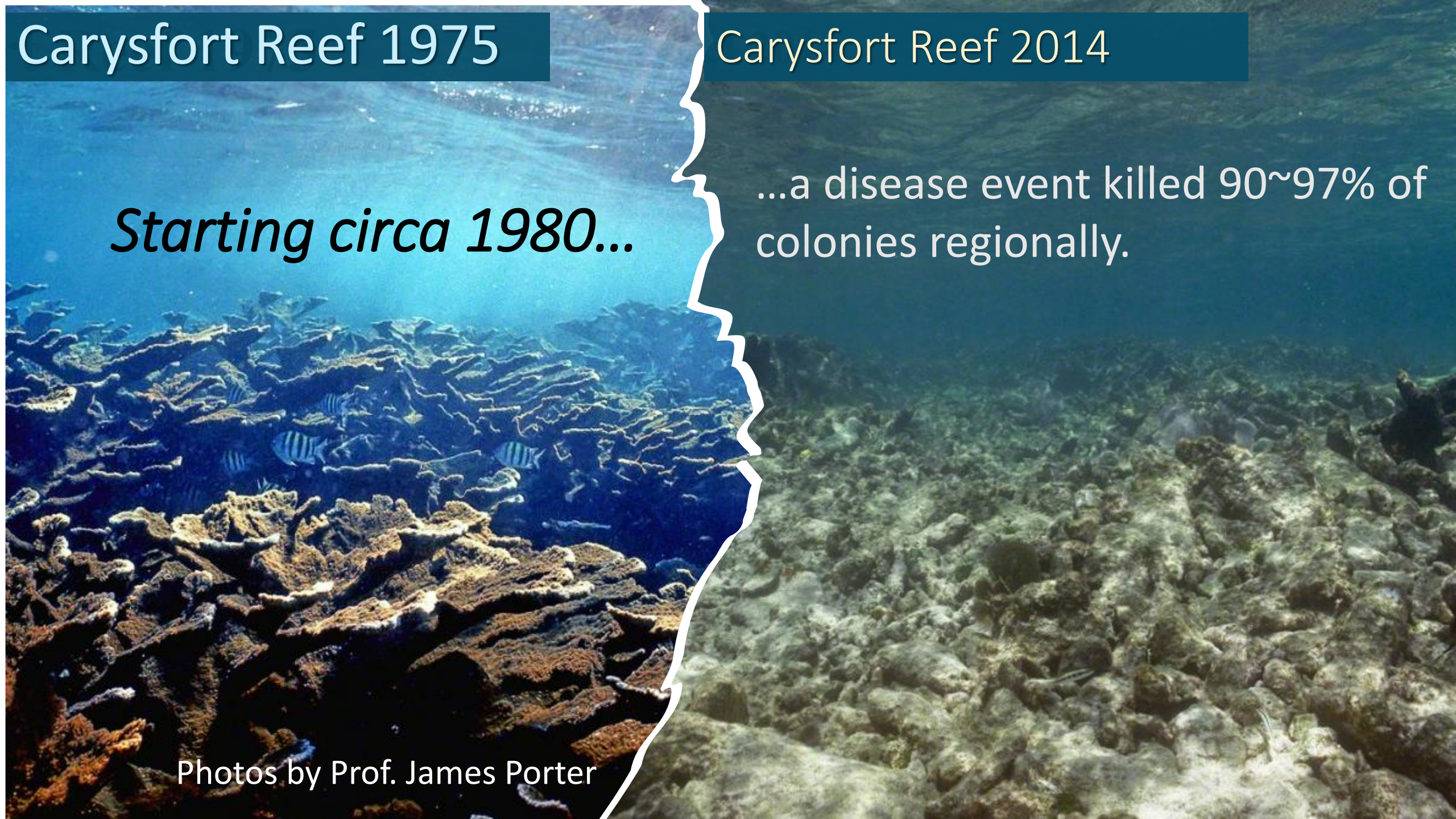
Caribbean shallow fore-reef/crests were dominated by the golden
course-branching elkhorn coral, *Acropora palmata*



Define “dominated”?

- Filled the water-column with branch-fronds toward & to the surface from as deep as 3m.
- Colloquial name “*Pond-Tile*” as children walked about on the pretty fronds.
- Golden is the Caribbean’s natural reefscape/seascape hue or colour,
as reflected from the clouds





Carysfort Reef 1975

Carysfort Reef 2014

Starting circa 1980...

...a disease event killed 90~97% of colonies regionally.

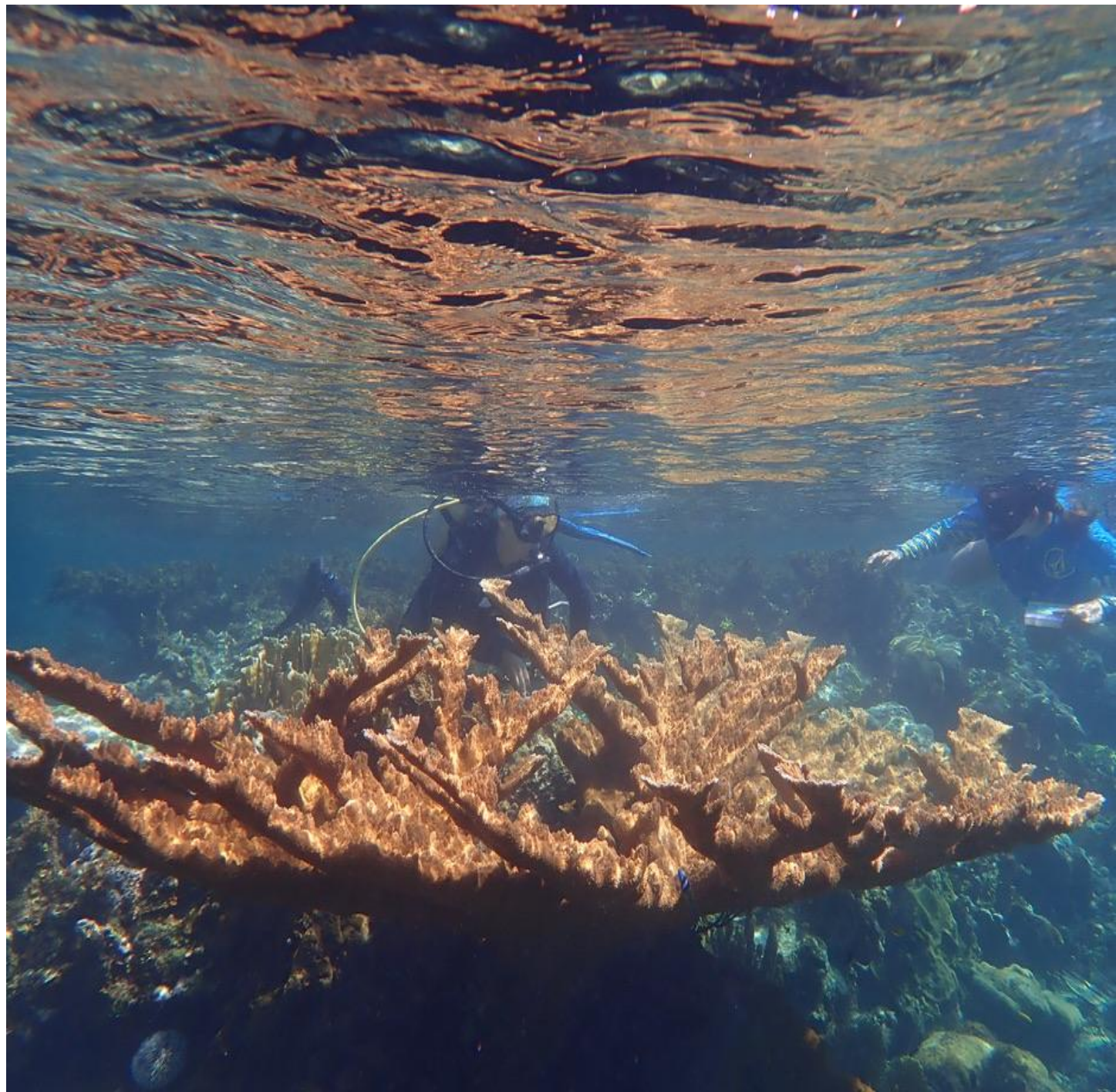
A shifted baseline:

If you didn't see it, you won't know
what was, including
what's possible.

These keystone reefscapes have
been missing for more than a
generation.

Even Caribbean-born investor-
stakeholders don't remember...
Foreign investors have no idea.

So how do we incentivise and
convince them to invest?



April 2018



Aug 2020



Coastal Protection: the Primary EbA Value Proposition

Theory:

- An interlocking lattice of branches to the low-tide surface attenuated pulsed, damaging wave energies without reducing water volumes through the structure including carried sediments.
- Sediments dropped from the water, accumulating in the back reef into seagrass meadows, sandy beaches and dunes.

However...

- These structures' hydrodynamic processes were dead & degraded before the computers required to understand them were invented.
- Alternative NBS/EbA restoration investments/investors require hydrodynamic models parallel to those of traditional grey engineering.

Project:

Wave Attenuation: Natural Solutions with Elkhorn Coral (WANSEC)

A project of the Caribbean Biodiversity Fund, co-financed by the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection through KfW.

Supported by:



based on a decision of
the German Bundestag



WANSEC intends to demonstrate and model

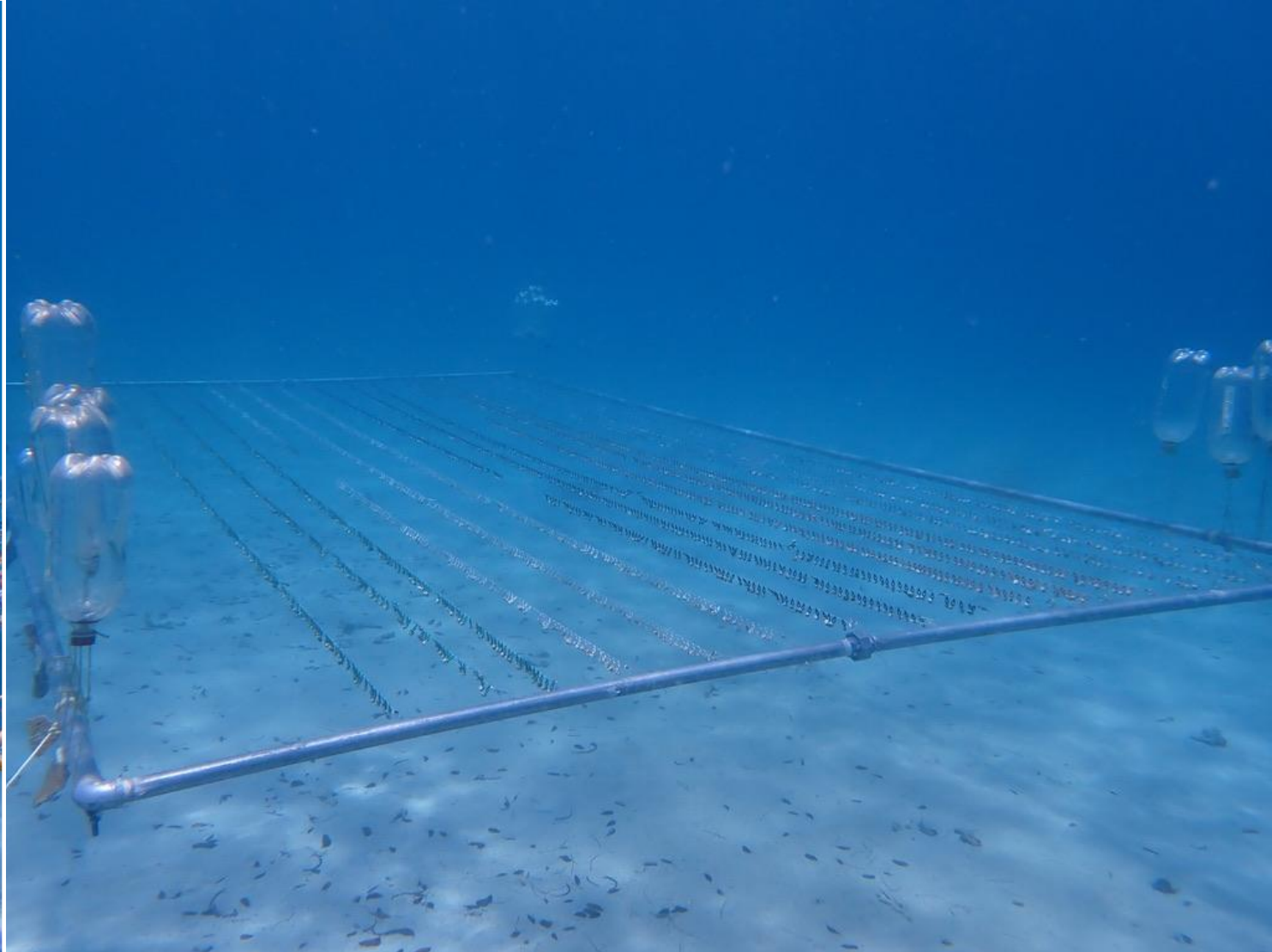
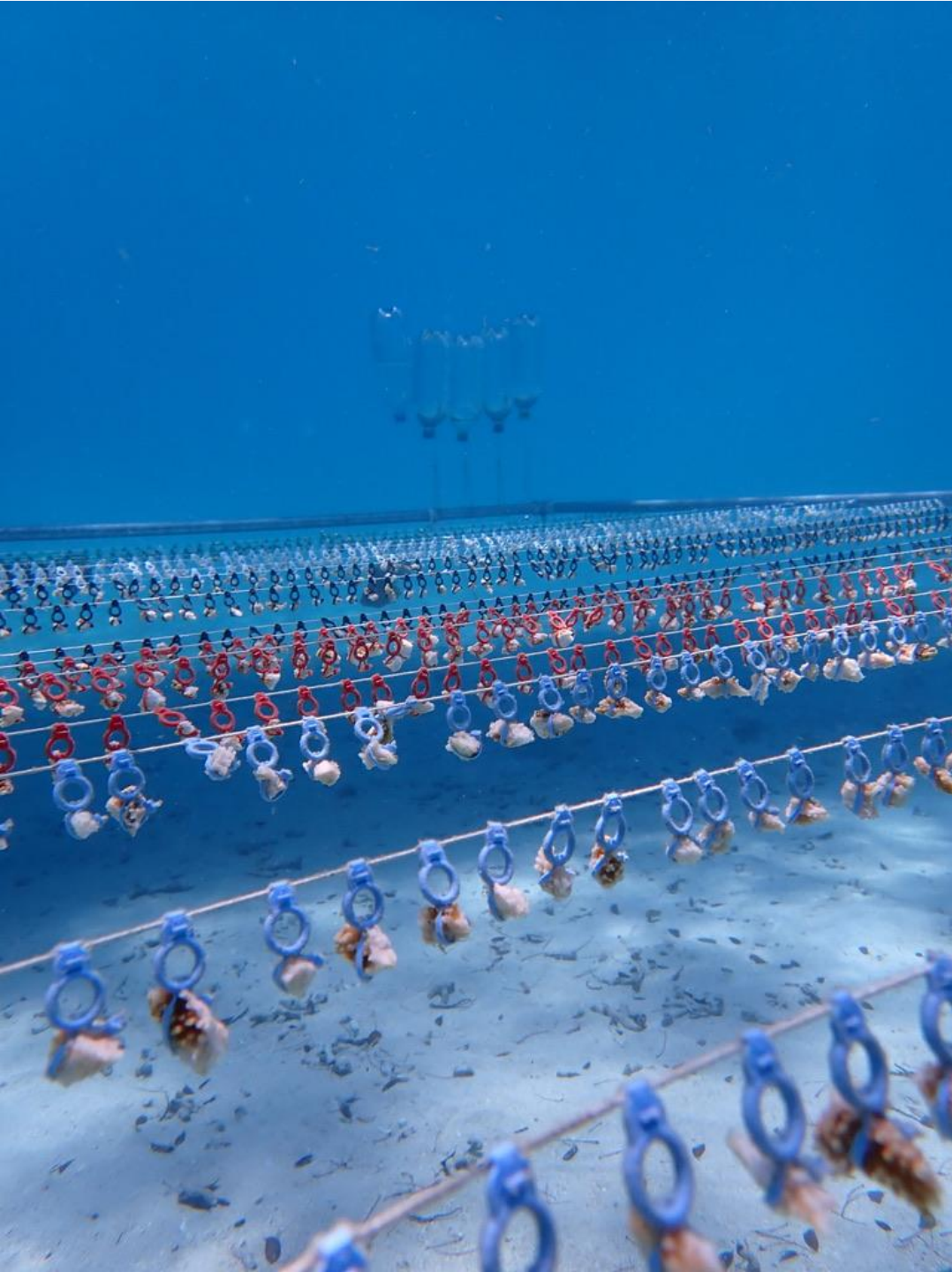
- * the **wave attenuation** functions, processes and efficacy of a historic elkhorn coral lattice/thicket including coastal protection and accumulation of sediments including beach sands, *and*
- * the **capacity** to (re)develop such living structure through coral culture/restoration under adaptations to Rinkevich's silvicultural themes.

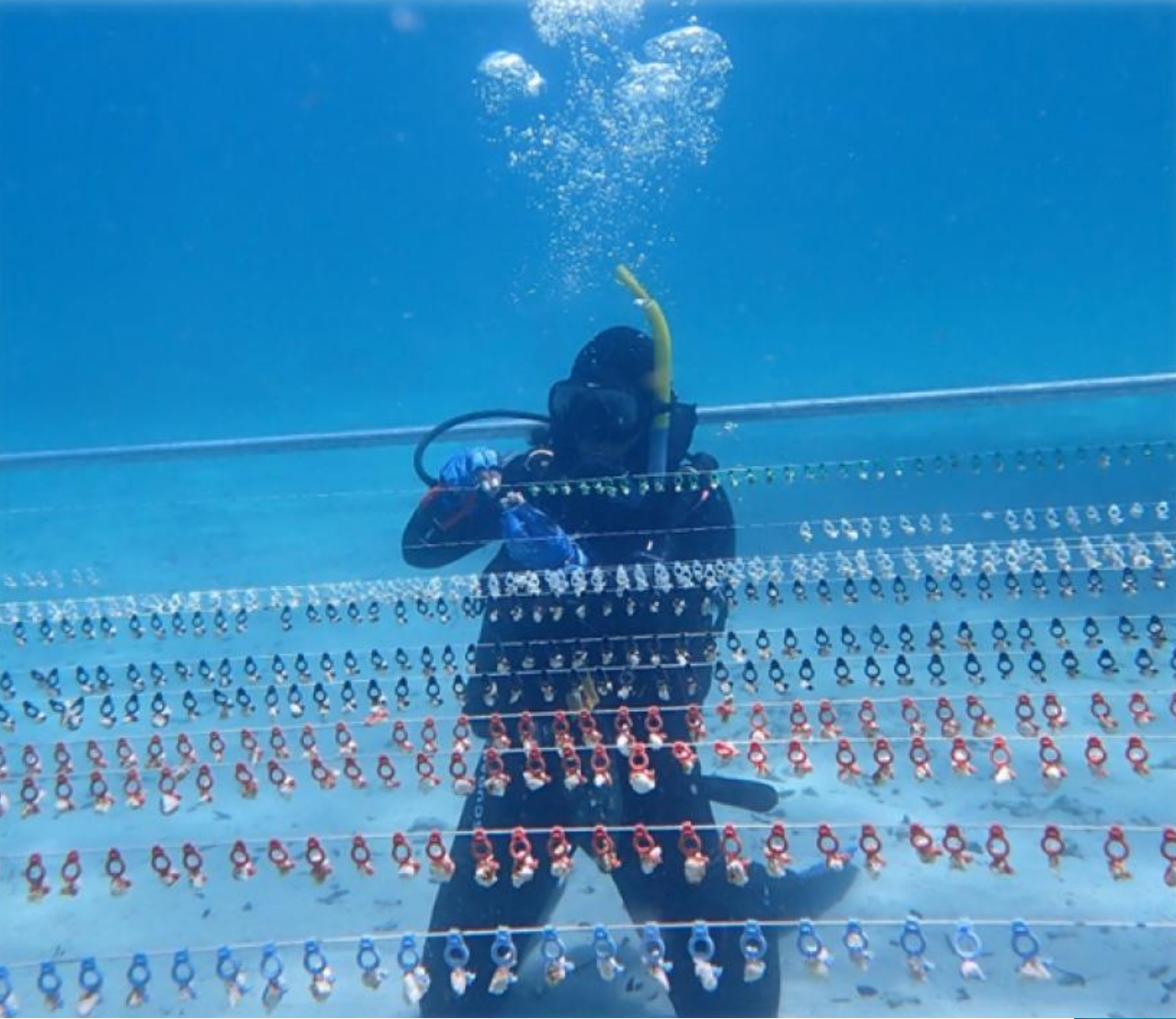
It is a multi-campus, multi-island project by the University of the West Indies to

Nursery-culture, plant and establish

- * two (2) 2500m² plots with 2500 nursery-headstarted *Acropora palmata* nubbins to
- * shallow (~1m depth) high-energy hard-bottom habitats *at*
- * each of Jamaica, Antigua and Barbados (N=15,000)
- * over three years, *with*
- * hydrodynamic modelling is by the
University of California, Santa Cruz' Center for Coastal Climate Resilience

The resulting published, open-source models are to support and/or found proposals for insurable public and private investments into hybrid and/or all-coral coastal protection solutions for reefscape and coastline scales.

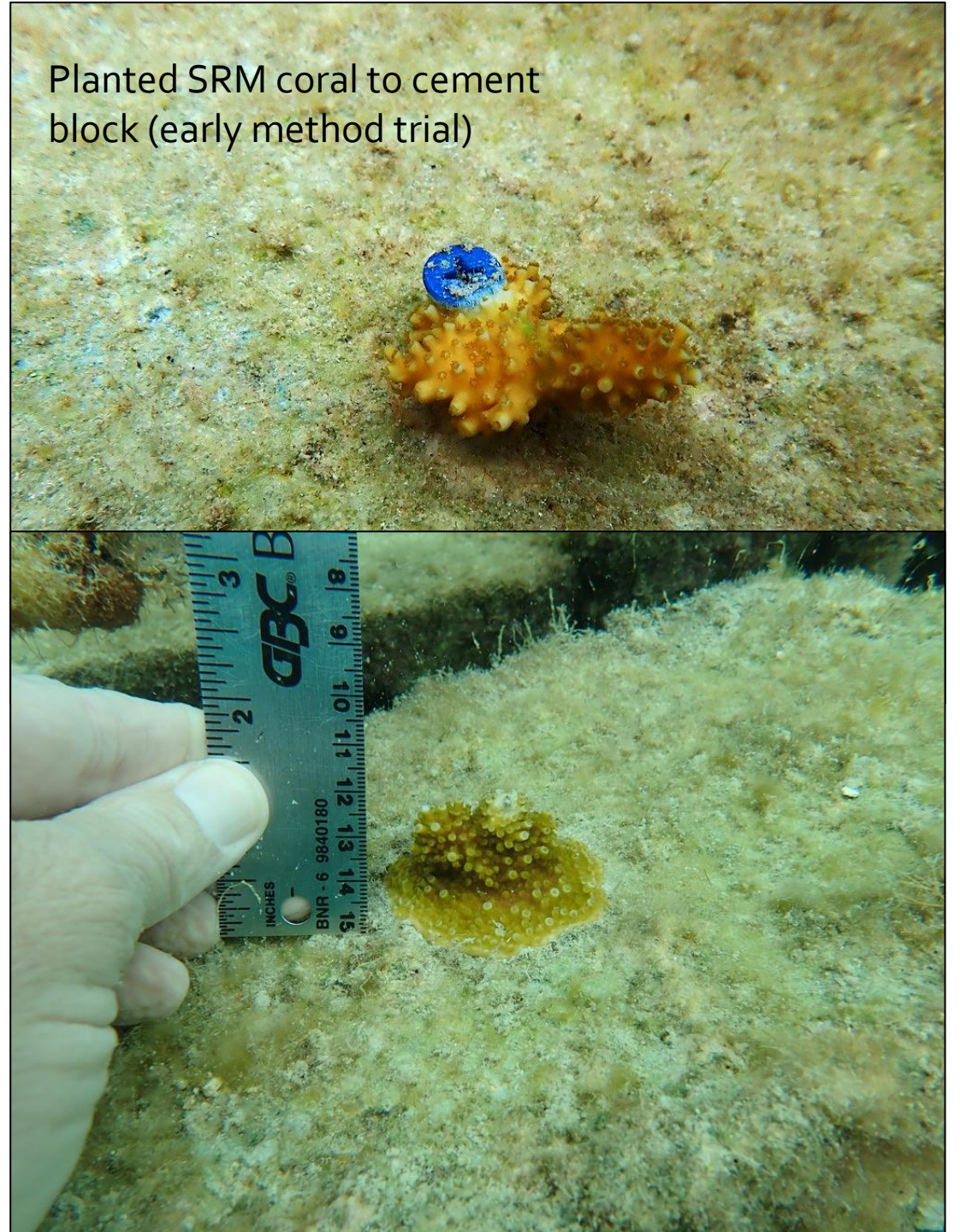




Site preparation method development workshop,
prototype trials in Montego Bay



Planted SRM coral to cement
block (early method trial)





Questions?

