

A photograph of a deep coral reef ecosystem. The foreground shows a variety of coral species, including large, flat, brownish corals and smaller, more colorful ones in shades of orange, red, and purple. The background is a deep blue, suggesting a deep-water environment. The text is overlaid on the right side of the image.

Deep Coral Reef Ecosystem Studies

Deep Mesophotic Coral Ecosystems (DMCEs > 50 m = 165 ft)

Caribbean Coral Reef Institute
NOAA's Center for Sponsored
Coastal Ocean Research

An underwater photograph of a coral reef. The left side shows a rocky reef structure covered in diverse coral species, including large brown plate corals, orange and red sponges, and smaller branching corals. The background is a deep, clear blue water. The text is overlaid on the right side of the image.

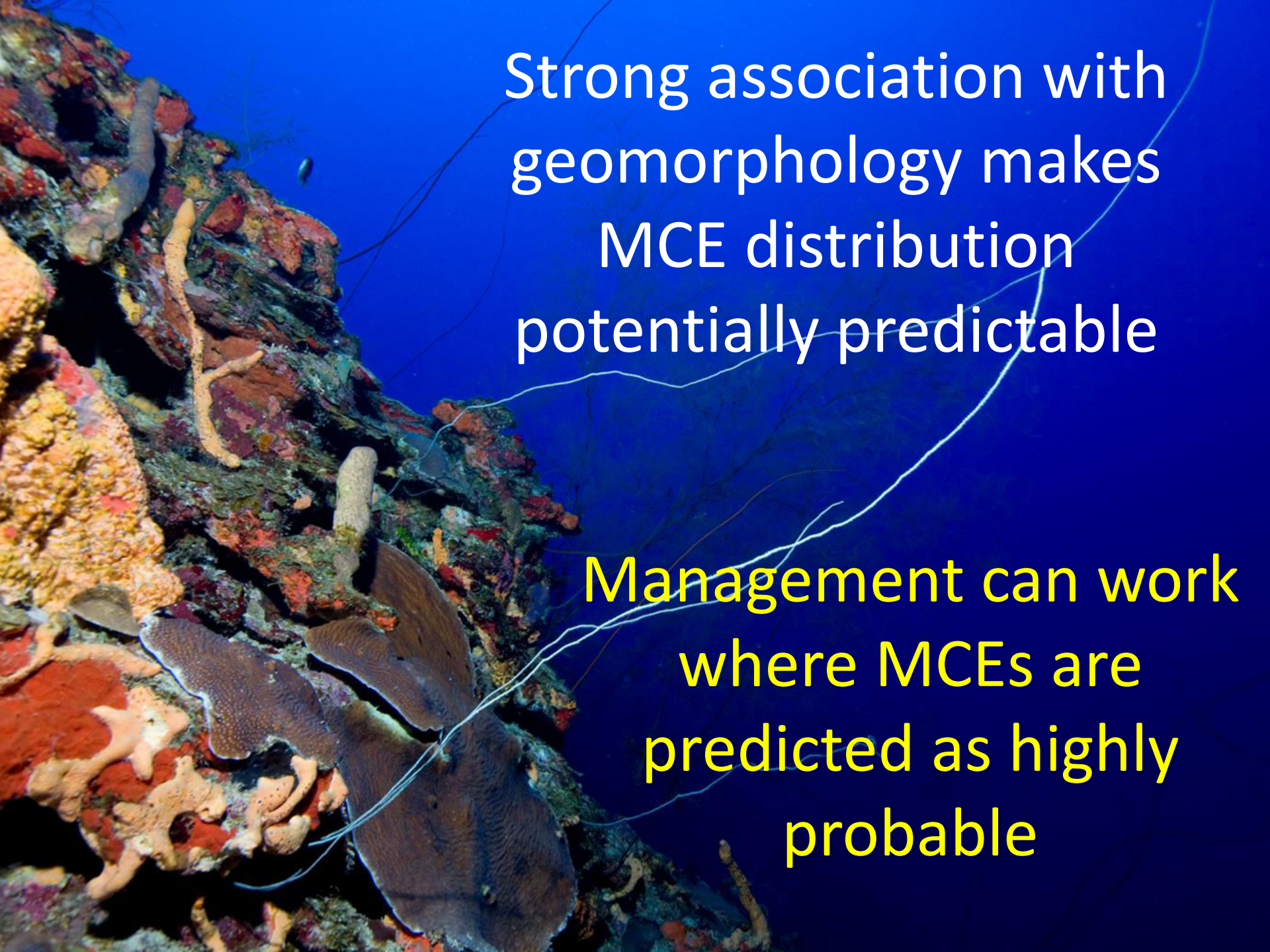
MCEs are unique and diverse communities

MCEs deserve protection to maintain biodiversity

An underwater photograph of a coral reef. The left side shows a diverse and colorful reef structure with various coral species, including branching and plate corals. The right side shows a deep blue water column with a few thin, white, wavy lines overlaid on it, possibly representing a boundary or a specific scale of observation. The text is overlaid on the image.

MCEs are patchily distributed at
several scales

Management must
work where MCEs
actually occur



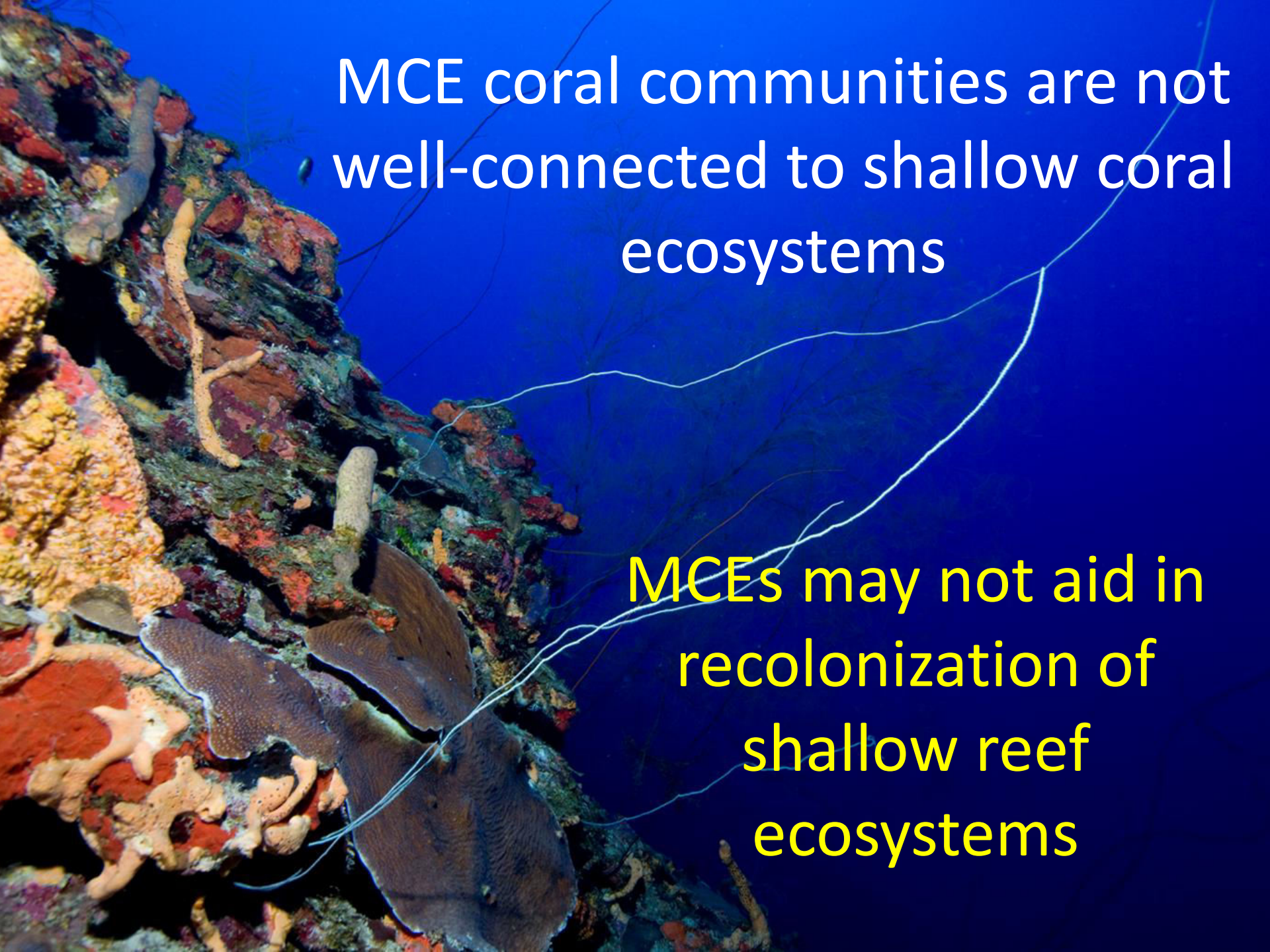
Strong association with
geomorphology makes
MCE distribution
potentially predictable

Management can work
where MCEs are
predicted as highly
probable

An underwater photograph of a coral reef. The foreground shows a variety of coral species, including large, flat, brownish corals and smaller, colorful ones in shades of orange, red, and yellow. The background is a deep blue ocean. The text is overlaid on the right side of the image.


Fish communities are connected
to shallow coral ecosystems

Spatial management of
MCEs should link to
shallow reef ecosystems




MCE coral communities are not well-connected to shallow coral ecosystems

MCEs may not aid in recolonization of shallow reef ecosystems

An underwater photograph of a coral reef. The reef is covered in various types of coral, including large, flat, brownish corals in the foreground and more colorful, branching corals further back. A fishing net is visible in the foreground, partially obscuring the view of the reef. The water is clear and blue. The text is overlaid on the image.

MCEs serve as refugia for large
overfished species

Spawning stock within MCE
depths may help replenish
overfished shallow
resources



MCEs serves as essential habitat
for threatened species

- sleeping

Protection of MCEs can
aid in the conservation of
rare and threatened
species

MCEs are vulnerable

Protection of MCEs is warranted, especially from local threats

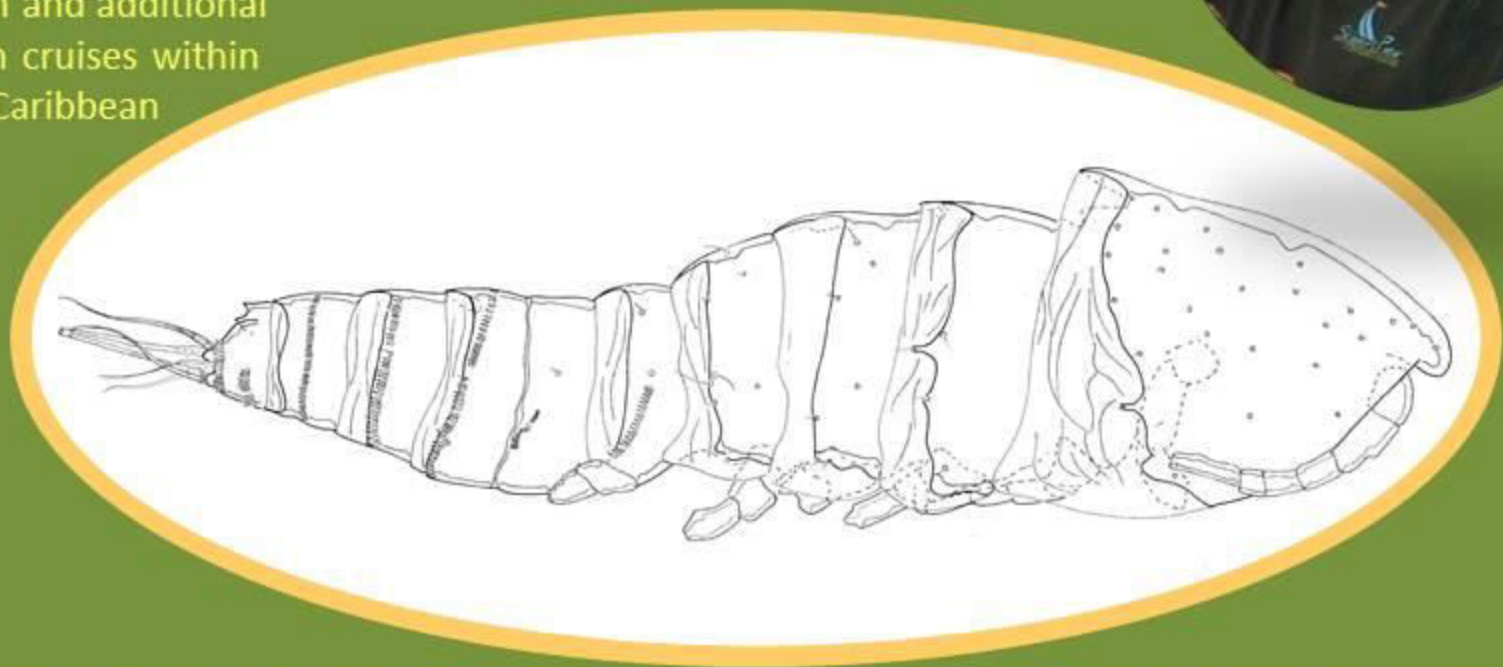


This study would not be possible without a sustained effort and adequate resources



Atergopedia dowgialli n. sp.

The species epithet is in honor of Dr. Michael Dowgiallo, Branch Chief, Regional Ecosystem Research Branch, NOAA/NCCOS/Center for Sponsored Coastal Ocean Research, who was one of the key protagonists initiating research and management on mesophotic coral ecosystems through NOAA's Deep Coral Reef Ecosystems Studies program and additional research cruises within the US Caribbean



Corgosinho PHC, NV Schizas, M Alfaro Lozano (2016) A new species of *Atergopedia* (Copepoda: Harpacticoida: Novocriniidae) from a Caribbean mesophotic reef. *Marine Biodiversity*