
Woods Hole Oceanographic Institution
Biology Department Seminar



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Diving Deep on The Reef Slopes in French Polynesia: New Insights into Mesophotic Coral Ecosystems

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Disappearing coral reefs under climate change increased attention to understudied Mesophotic Coral Ecosystems (30 – 150 m; MCEs). Despite light and knowledge decrease with depth, MCEs could act as refugia for shallow reefs because disturbances might reduce their effects with depth. Focusing on Scleractinian corals and using unprecedented data (with equal sampling effort along the reef slope) across a broad depth range (6 – 120 m) and wide spatial scale, this thesis aims at shedding light on the MCEs in French Polynesia. The thesis suggests the potential of MCEs in the region, and it raises the ecological importance of MCEs, quantitatively showing that the 40 – 60 m zone hosts: hotspots of biodiversity and cover, simultaneously shallow and deep-mesophotic communities, the most spatially variable communities, and the potential to escape a thermal bleaching event. It also displays the multidisciplinary strategies of Scleractinian corals to live along different depths, suggesting that corals might find refuge deeper, increasing the fate of species and ecosystem functions persistence in the future. Overall, it suggests MCEs are a key ecological transition zone, likely to play a critical role in the overall resilience of coral reef ecosystems and recommends their consideration in conservation planning.

HYBRID! **In person:** Clark 271 **Zoom:** <https://whoi-edu.zoom.us/j/97374388344> Meeting ID: 973 7438 8344 **By phone:** Find your local number: <https://whoi-edu.zoom.us/u/acMMWdPf2O>