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# Stranded within the Intertidal: Species-Specific Responses to Environmental Change

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### Friday, April 1ˢᵗ , 2022
3:00 – 4:00 PM
Zoom virtual meeting room

As anthropogenic activities continue to drive climatic shifts, species are exposed to environmental conditions that may or may not fall within their current niche, in which case individuals can either disperse to other suitable habitats or locally adapt. My research program investigates the impact of abiotic conditions on range shifts and local adaptation. Here, I will discuss my recent work regarding how climate change affects the suitability of mangrove forest habitats for a fish endemic to these environments. New world mangrove trees are foundation species projected to expand northward with climate change. Foundation species are often prioritized for conservation and, by doing so, it is thought that umbrella protection would be provided to all resident community members. However, no studies have evaluated the potential for mangrove-dependent species to track the expansion of New World mangrove forests. I use the mangrove rivulus fish, *Kryptolebias marmoratus*, to investigate potential shifts in habitat suitability under various climate change scenarios (Representative Concentration Pathways 2.6, 4.5, 6.0, and 8.5) with a novel Geographic Information Systems (GIS) pipeline that integrates both traditional climatic (e.g., temperature, precipitation) and marine (e.g., salinity) variables. Contrary to expectation, my data show that rivulus will likely experience range contraction, not expansion. My models suggest that conservation focused on foundation species could overestimate habitat availability and resilience of affiliated communities while underestimating species local extinction risk.



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Meeting ID: 845 4387 7621
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