

Fall 2025 Virtual Seminar Series

“TEMPORAL PROPERTIES OF COASTAL ECOSYSTEMS IN A RAPIDLY CHANGING WORLD”

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ZOOM LINK
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Abstract

Global climate change is dramatically altering the structure of ecosystem worldwide and these changes are projected to accelerate in the coming century. While some of these changes are obvious, such as warming winters and concordant species range shifts, other, more subtle changes have been quietly mounting and are now receiving greater attention. Among these is the recognition that the frequency, intensity, and geographic distribution of extreme weather events have been changing. There is an increasing need to understand the effects of these changes on coastal ecosystems and this issue is complicated by the fact that the species composition and intrinsic resistance and resilience of coastal ecosystems is simultaneously being altered. Here we use a combination of case studies from fish and invertebrate communities in coastal rivers of Texas and seagrass communities of Chesapeake Bay, as well as meta-analysis across coastal systems, to document the ways in which these changes appear to be manifesting. Across these analyses, we identify repeated patterns that may be indicative of processes playing out in ecosystems across the world. We find that systems in climate change driven transition states may favor organisms with more resilient life history strategies, priming ecosystems for a world of rapid swings, while depressing the reliability of ecosystem functions and services.

Biography

Christopher J. Patrick is an Associate Professor and the Director of the [SAV Restoration & Monitoring Program](#) at the Virginia Institute of Marine Science, William & Mary (2020-) where he runs [CEEL](#), [MarineGEO Virginia](#), and is lead PI for the NSF [Hurricane Ecosystem Response Synthesis Research Coordination Network](#). Chris received his B.S. from the University of Maryland, College Park (2006) and his PhD from the University of Notre Dame (2011). Prior to VIMS, he was a Research Scientist with the Smithsonian Environmental Research Center (2011-2014), an AAAS S&T Policy Fellow with EPA Office of Water (2014-2015), an Assistant Professor at TAMU Corpus Christi (2016-2019), and a National Academy of Science, Engineering, & Medicine Early Career Fellow (2018-2020). His research on coastal resilience began in the wake of Hurricane Harvey in 2017 and includes papers in [Estuaries & Coasts](#), [Science Advances](#), [Bioscience](#), [Journal of Animal Ecology](#), and [Frontiers in Ecology & the Environment](#).

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