Environment and Ecology presents

Underwater Soundscape Ecology

Dr. David B. Eggleston
North Carolina State University
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To schedule a meeting with Dr. Eggleston, please contact Shelby at sziegler@live.unc.edu
Underwater Soundscape Ecology

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Soundscape ecology is an emerging field that includes (1) characterizing spatial and temporal variation in sounds of an environment, (2) investigating how those sounds affect organisms living in that environment, and (3) using characteristics of the soundscape to infer habitat quality and biodiversity. Recent research by our group has (1) described habitat-specific soundscapes associated with estuarine oyster reefs, coral reefs, and unstructured bottom, and (2) enhanced larval settlement by oyster and coral larvae in response to sounds from oyster reefs and coral reefs, respectively. Use of passive acoustic hydrophones has also identified the timing and location of spawning by estuarine fish in complex estuarine habitats. Our current research is determining whether or not the enhanced settlement of oyster larvae in response to hearing the sounds of oyster reefs in a laboratory setting can be scaled-up to increase oyster larval settlement under commercial hatchery operations. Additional research is examining the relationship between the diversity of the soundscape, and the biodiversity of sound producing organisms and the complexity of their habitat in oyster reef and coral reef systems. If existing soundscape diversity metrics developed primarily in terrestrial systems prove to be sensitive to species composition and diversity, or habitat complexity in marine systems, this approach could provide an important tool for understanding marine ecosystem health.