Marine regime shifts around the globe: theory, drivers, and impacts

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Abstract

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Abstract: Regime shifts - abrupt changes in the structure and function of ecosystems - have been reported worldwide in many different marine biomes. Understanding the drivers and consequences of these phenomena is of great importance since regime shifts may cause dramatic changes in ecosystem services and have substantial impacts on human economies and societies. Furthermore, because of their abrupt and unpredictable nature, regime shifts are difficult to anticipate and costly to reverse, if at all possible. Despite numerous studies showing their prevalence in the marine realm, major questions surrounding marine regime shifts are still unsolved. This session will involve several speaker presentations that will address and discuss some of these critical issues, such as (i) novel ways to extract empirical evidence of alternate stable states and regime shifts in marine ecosystems, (ii) what the key global drivers are and if they act synergistically, (iii) if there is a world-wide synchronicity in marine regime shifts, (iv) what are management implications and social-ecological consequences of regime shifts and v) whether we can anticipate such events.

Format of session: 5 x 10 minute presentations

Speakers:

- Henrik Österblom*, Carl Folke – "Global adaptive capacity of a fishing actor reduces vulnerability to ecological regime shifts"
- Jean-Baptiste Jouffray*, Magnus Nyström, Albert V. Nyström, Ivor Williams, Lisa Wedding, John N. Kittinger, Gareth J. Williams – "Human and natural drivers of multiple coral reef regimes across the Hawaiian archipelago"
- Jean Carlos Rocha*, Reinette Biggs, Thorsten Blenckner, Garry Peterson, Johanna Yletyinen – "Networks of drivers and ecosystem services consequences of marine regime shifts"
- Vasilis Dakos*, Steve Carpenter, Egbert van Nes, Marten Scheffer – "Mythbusters: when will early warnings for critical transitions work and when not?"
- Nicholas AJ Graham*, David R Bellwood, Joshua E Cinner, Terry P Hughes, Albert V Norström, Magnus Nyström – "Managing resilience to reverse phase shifts in coral reefs"

*Speaker
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