



Adapting Fisheries Management to a Changing Ecosystem
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Keynote 3

Multiple interacting species and the management challenges they pose

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ABSTRACT

This talk will focus on why and how to achieve fisheries management that is Robust to Interacting Populations (RIP fisheries management) at a range of scales: (A) Whole of Ecosystem; (B) Key species or species with influential trophic connections; and (C) Selected species of conservation concern or pest/invasive species to control. I therefore propose, with justification, six categories of objectives that fisheries management should aim to meet in moving towards EBFM: (1) Not exceeding the overall limits of system productivity; (2) Protect overall ecosystem structure and function to ensure ongoing resilient ecosystems that maintain productive functioning; (3) Identify and account for key species in an ecosystem that may require more careful management because of the disproportional reliance of other species on these; (4) Account for multispecies interactions to evaluate impacts on the rest of the ecosystem and to dynamically update estimates of sustainable catch levels; (5) Meet conservation objectives for Threatened and Protected Species; (6) Manage pest or invasive species (or climate immigrant species) to achieve desired outcomes for other (target) species in an ecosystem. I briefly discuss the additional challenges as a result of climate change as well as simultaneously addressing socio-cultural objectives. Next, I summarise progress towards defining multispecies reference levels for all these objectives – including targets to aim for and limits to be avoided – for use in evaluating achievement of RIP fisheries management. I provide some examples of tools and methods that are or could be used to achieve these objectives, as well as commenting on their relative state of maturity. Next, I review progress in linking a range of management actions (e.g. limits on fishing effort, spatial and temporal management) with the need to meet the management objectives outlined above. Finally, I summarise progress made and remaining gaps to fill in our ability to collectively construct pragmatic guidelines for achieving RIP fisheries management.