

The “science dimension” of fisheries management

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Abstract

Science plays a crucial role in environmental management, and politics. Fisheries science, and fisheries management is no exception to this point, with the academic and the applied intersecting quite closely in this area. Scientific knowledge represents the “intellectual machinery” that underpins fisheries management. Given this, it seems fairly reasonable to suggest that this is an area that merits close consideration – not only with respect to its circulation and uptake, but also its *formation*. Further, we contend here that this is an area that warrants attention, not only from those seeking to understand fisheries management and its outcomes, but also by those engaged in the production of this knowledge (in the form of self-reflection). Thus, this paper seeks to open a space for the consideration of the “science dimensions” of fisheries management, by starting a discussion with respect to the *how management and science co-evolve*, resulting in fishery “systems”. To this end, given that models – from population and bio-economic to increasingly complex integrated ecological-economic and socio-ecological models – abound within the space of fisheries science, we highlight some of the challenges that can arise when building scientific models under influence from fisheries management, and subsequently when analysing and making inferences from them. This is illustrated by an exploratory agent-based simulation showing how modellers can be deceived by their own models, and how both fisheries management and science can become intertwined and co-dependent.

Keywords: agent-based model, fisheries science, fisheries management, complex models, socio-ecological complex adaptive systems, complexity, reflexivity, science dimensions, human dimensions.

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