



UCT-SANCOR Seminar

Investigating the past and future states of
marine ecosystems using
numerical modelling

By

Dr. Nicolas Barrier

MARBEC (Marine Biodiversity, Exploitation and
Conservation Research Unit), France

Monday,
21 September 2026

13h00 SAST

UCT Oceanography
Seminar Room or Online

Overview

Numerical modelling is a valuable tool for improving our understanding of how marine socio-ecosystems respond to global changes such as climate change, pollution and overfishing. It enables us to grasp the mechanisms behind this response, conduct sensitivity experiments and predict the future trajectories of marine socio-ecosystems. First, an overview of the modelling platforms developed at the MARBEC research institute will be presented. Then, studies involving these modelling tools will be presented. The main focus will be on the results from the FishMIP consortium (<https://fishmip.org/>), which aims to combine marine ecosystem models to improve our understanding of the long-term impacts of climate change on fisheries and marine ecosystems, and to inform policy.

About the speaker

Nicolas Barrier is a research engineer specialising in numerical ocean and ecosystem modelling at the MARBEC research institute. He completed his PhD in Physical Oceanography under the supervision of Anne-Marie Tréguier, Christophe Cassou and Julie Deshayes, whose research links include work in South Africa. His work focuses on ecosystem and climate modelling through projects such as APECOSM, OSMOSE, ICHTHYOP and FishMIP, which assess the long-term impacts of climate change on fisheries and marine ecosystems to support informed policy and management decisions.

Dr Barrier will be hosted by the Nansen Tutu Centre at the UCT Oceanography Dept, and will work on marine passive dispersal connectivity modelling, in collaboration with Dr Issufo Halo from the DFFE as part of the NRF-funded SIOMPA-MERMOZ Project. He will be available to engage with students and researchers and provide any training on marine ecological connectivity modelling.