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## TROPHIC MODELING OF THE ROSS SEA, ANTARCTICA.

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The Ross Sea, Antarctica, has been the focus of a huge multidisciplinary international scientific effort over the past 45 years. Excepting the loss of baleen whales to whaling, the Ross Sea ecosystem has so far escaped major anthropogenic alteration. However, the ecosystem today faces the dual pressures of expanding fishing of Antarctic toothfish (*Dissostichus mawsoni*), and climate variability. We describe a study to bring together existing knowledge of the components of the Ross Sea ecosystem into a carbon-budget trophic model. The ultimate aim of this research is threefold: (1) to understand the current structure of the food web of the ecosystem; (2) to investigate to what extent we can predict the future dynamics of the system in response to various management and climate change scenarios; and (3) to identify components or interactions in the ecosystem that constrain our ability to predict future changes to the ecosystem of the region. Unusually for a Southern Ocean ecosystem, fish (specifically, Antarctic silverfish, *Pleuragramma antarcticum*) rather than krill, are the key link between primary producers and top predators. Appropriate modeling of the ecosystem requires dealing with high spatial heterogeneity, high seasonality, and high interannual variability. Spatial variability is particularly marked in the benthic ecosystem. This presentation will provide a general description of the model, with a more detailed description of the benthic faunal component.