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Theme: Modelling

Session: WeC4 - Marine Protected Areas (MPA) & spatial modelling

Title: **Managing a natural reserve with density independent species flow - a dynamic bioeconomic model**

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Abstract: A discrete-time bioeconomic model of two stocks is presented, where one of these two stocks can be partially protected by a reserve or some other hindrance to harvesting. The interaction between the two stocks is geographic, in the sense that the protected stock can migrate out of the reserve and be harvested upon in conjunction with the unprotected stock. The movement out of the reserve is migrational either in the sense of some annual or life-cycle movement. Two management regimes are presented; open access and myopic profit maximization, which are studied both in a steady state and a dynamic fashion.