Theme: Modelling
Session: TuC3 - Biological (BRP) and Bioeconomic (ERP) Reference Points

Title: Implementation of Stakeholder Objectives Through Harvest Strategy Optimisation

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Abstract: The New Zealand Ministry of Fisheries has initiated development of fishery plans driven by management objectives. Ministry, industry and stakeholder processes will determine the management and resource needs to support sustainable fisheries. Simultaneously, the Ministry is identifying sustainable harvest strategies that will specify the resource monitoring and necessary stock assessment information to support stakeholder objectives. Implementation of a harvest strategy is subject to the research requirements to support the annual yield taken from the fishery. Implementation requires an understanding of the fishing mortality rate for which fishing capacity and overall fleet timing and effort can be assessed. In addition, biological reference points and threshold biomass estimates present opportunities to prevent overfishing of reduced stocks. This paper presents working models for two fisheries for which harvest strategies can be optimized to support fishery objectives: 1) a short lived southern blue whiting fishery where species year classes can be traced and 2) a long lived orange roughy species where fishery management is heavily dependent on trawl and acoustic data to support stock assessments. Practical application of alternative sustainable harvest strategies can assist decision makers to achieve fishery plan objectives by quantifying the necessary tradeoffs for annual yield and the research to support the annual harvest.