

Underlying assumptions for the stock assessment of south coast rock lobster

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An age-structured production modelling (ASPM) approach is used to assess the south coast rock lobster resource. To date advice has been based upon the consideration of posterior modes of a Bayesian analysis, given priors for certain parameters (i.e. effectively penalised-ML-estimation).

Key assumptions of or queries concerning recent implementations are:

- A Beverton-Holt stock recruit relationship with a strongly informative prior on steepness h .
- A resource at pre-exploitation equilibrium when exploitation commenced in 1993.
- Logistic selectivity, asymptotically flat at large ages; allowances for variability over time have been made, but these raise questions about how best to (effectively) renormalise catchability q .
- CPUE is proportional to (the exploitable component of) abundance, though the hypothesis of effort saturation has been advanced.
- The representativity of limited scientific catch-at-size sampling, and the reliability of the cohort-slicing method used to transform this catch-at-age for model fitting purposes.
- The reliability of the series of past catches (although more recent misreporting is reasonably well understood, there is the matter of possibly substantial under-reporting during the early phase of the fishery).