ORANGE ROUGHY AEEF 2013 :

HABITAT COMPONENT SCIENCE INFORMATION

30 JULY 2013

1. Introduction

This paper provides an outline of the contents of benthic habitat science information from mainly New Zealand sources for the ORH AEEF 2013. There is a wide range of additional New Zealand and international literature that will be available for the AEEF but is not specifically mentioned in this document.

2. Benthic Invertebrate Catch Information

- Observer Data Report
  - The catch of benthic fauna (including protected corals, echinoderms, crustaceans, molluscs sponges and other organisms from MPI observer data for each of the four orange roughy fisheries from 2007-08 to 2011-12 is presented in Deepwater Group (2013)'s Observer Data Report.
- Anderson (2011)
  - Appendix 1 of Anderson (2011) provides estimated catch and percentage of invertebrates from the orange roughy fisheries.
- Anderson (2013)
  - Table 9 of Anderson (2013) provides regression slopes and trends for bycatch (retained and discarded) species, including some benthic invertebrates, from all Tier 1 fisheries, including the orange roughy fishery.

3. Benthic Impacts

- Althaus et al. (2009) describe impacts and recovery of trawling on megafauna of seamounts off Tasmania Black et al. (2013) provides trawl footprint information.
- Black et al (2013) Deepwater Trawl Footprint - AEBR 110
- Clark et al. (2010) provides information on trawl effects on the Graveyard complex of the Chatham Rise.
- Floerl et al (2012), Hewitt et al. (2011) and Hewitt et al. (2011a) provide results of Chatham/Challenger surveys on benthic patterns, diversity and biotic habitats.
- Kaiser et al (2006) provides information on Benthic Recovery, maintaining that "low-growing large-biomass biota such as sponges and soft corals took much longer to recover (up to 8 yr) than biota with shorter life-spans such as polychaetes (<1 yr).
- MPI (2012) Aquatic Environment and Biodiversity Annual Review (p 165) cites Williams *et al.* (2010) finding that Hard-bottom fauna is predicted to recover most slowly and concluded that hard-bottom fauna on seamounts did not show signs of recovery within 5–10 years on Australasian seamounts."
- Mormede & Dunn (2013) use population modelling to assess benthic impacts to inform risk assessment.
- O'Driscoll & Clark (2005) assess benthic fishing on seamounts.
- Rowden et al. (2005) consider the classification of seamounts using a range of physical characteristics that are biologically meaningful.
- Rowden et al (2008) describe the 'Seamount' database.
- Rowden et al (2012) provides a review of New Zealand benthic soft sediment communities
- Stewart et al. (2013) provides analysis of the orange roughy trawl footprint on the flats and UTFs within the four selected orange roughy fisheries over the past 20+ years and the last 5 years.