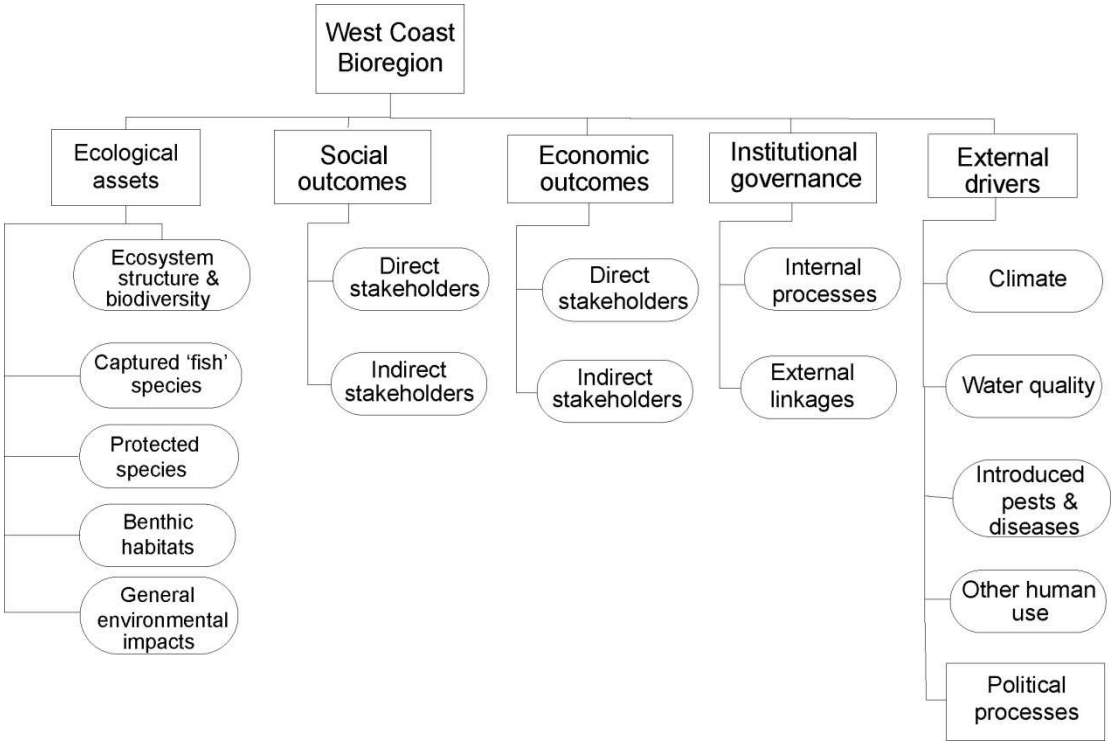
4.2.1 Bioregional level assessments of community structure - fishery dependent

Norm Hall and Brent Wise

Two FRDC projects

- FRDC 2000/311 - Development of research methodology and quantitative skills for integrated fisheries management in WA
- FRDC 2005/063 - Development of an ecosystem approach to the monitoring and management of Western Australian fisheries
  - Assessing whether catch structure has changed
  - Modelling to assess key data, management strategies, critical changes in exploitation or environment that would affect management

FRDC 2000/311 – addresses Ecosystem structure & biodiversity – West Coast Bioregion



Fitted cpues – real question is do cpues reflect biomass?

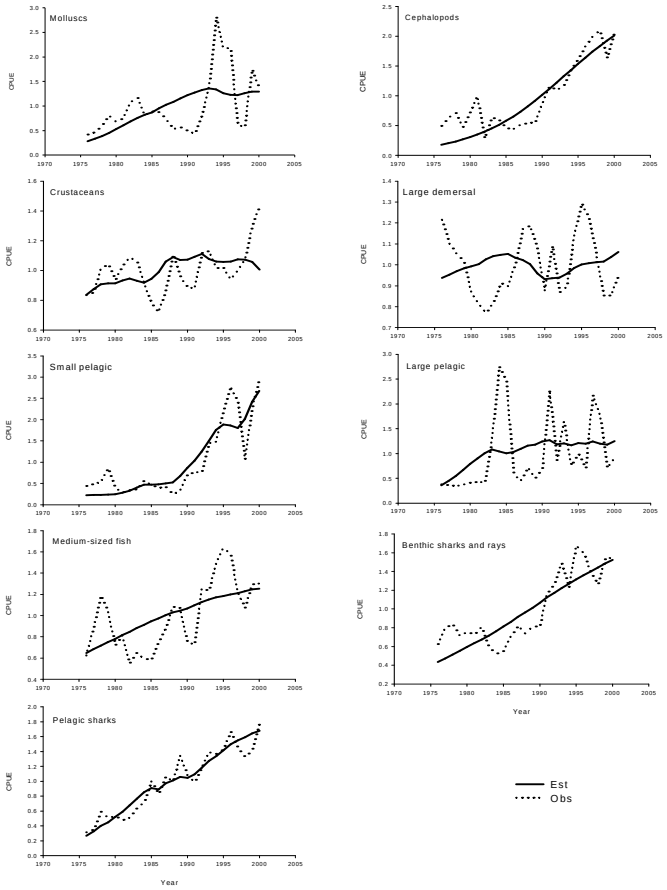


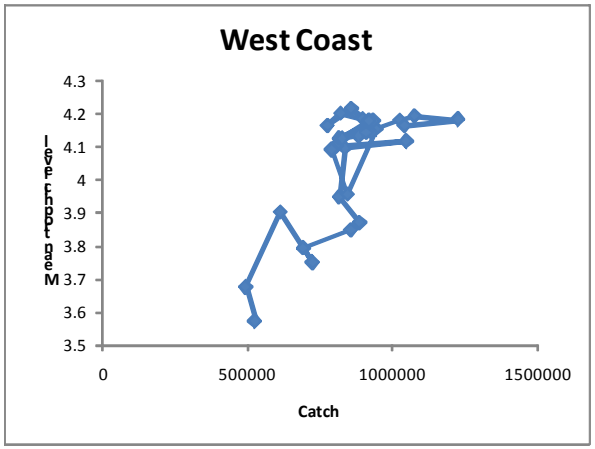
Figure 6. Results of fitting the marine ecosystem model for the West Coast Bioregion of Western Australia.

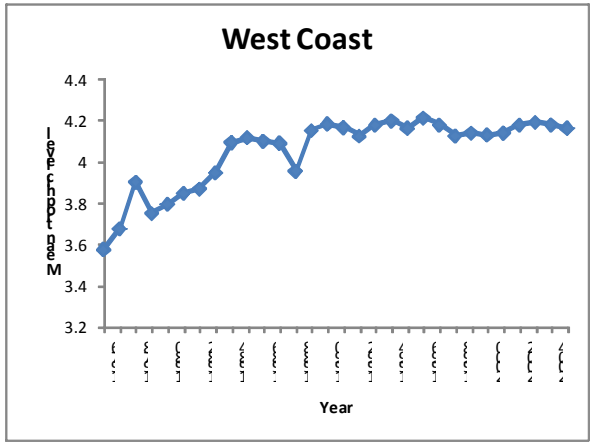
Ecosystem-based indices

- **Mean trophic level** of species in catch
  - catch biomass-weighted mean
- **Mean of maximum lengths** of species in catch
  - catch-biomass-weighted mean
- **Fishery-in-Balance** (FIB) Indicator – a measure of total catch adjusted to account for changes in trophic level of the catch of different species.

West Coast Bioregion – Combined dropline, gillnet, handline and longline

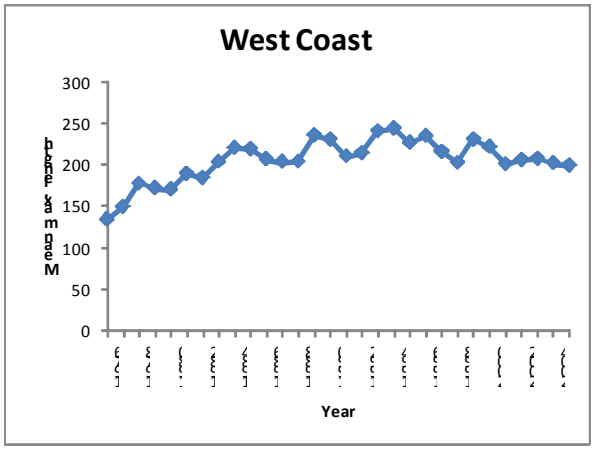
Mean trophic level versus catch

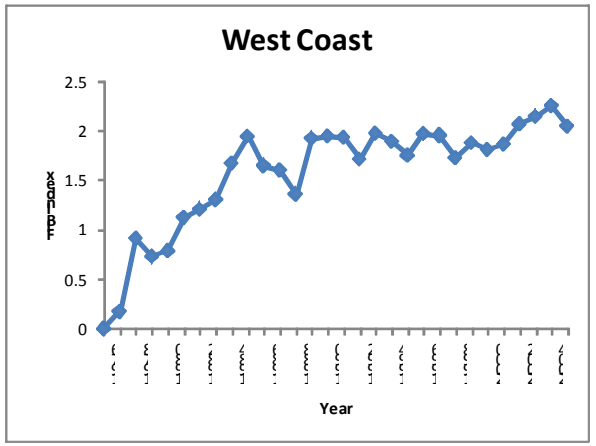




Mean trophic level versus year

Mean maximum length versus year





FIB versus year