Are Western Australian waters the least productive waters for finfish across two oceans?

A review with a focus on finfish resources in the Kimberley region and North Coast Bioregion


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WA and Finfish Fisheries

- ~12,800 km coastline
- ~2 million km² ocean
- 10 – 40ºS
- 19 State managed finfish fisheries
- Rec fisheries
- AFMA
- IOTC tuna fisheries
WA Total Finfish Production

(Thanks to Eva Lai)

- Relatively stable since 1999/99
- ~10-15,000 mt; 80-120 mt/100 km coastline
Commonwealth Fisheries also low

Sources: Wilson et al. (2010) and www.daff.gov.au/__data/assets/image/0009/1373292/Relative-catch-levels.jpg
How large are WA Fisheries relative to other locations?

Kimberley and Pilbara; ~ 4,000 km
Since 1999: Barra
WA: 27 – 60 t;
NT: 558 – 665 t;
QLD: 880 – 1,071 t
WA order of magnitude lower than NT or QLD
Other examples

**Pink Snapper:**
Total WA < 600 t;  
NZ SNA1 – 7,500 t TAC  
(Total NZ TAC > 10,000 t)

**Small pelagics:**
WA annual catch taken in a single day off Peru
Further examples - comparisons with High Productivity areas

Spanish mackerel, WA TAC – 410 t,
   Kimberley TAC – 205 t
   cf. – Oman – 27,834 t (1988); 3,158 (2007)

North Coast Finfish ~ 4,000 t per annum
   West Africa – Mauritania to the Congo
   Total fishery production in 2006 – > 3,000,000 t
Why the low finfish productivity?

WA has the oldest continental crust
Weathered-poor soils
Little terrestrial input
  e.g. No tropical forests

Source: en.wikipedia.org/wiki/Natural_history_of_Australia.
Why the low finfish productivity?

Few significant river systems
Few wetlands

Relatively low levels of terrigenous input
Implications for Fisheries and Fisheries Management in WA

- Modest total sustainable fishery production (catches)
- Few single stocks can sustain catches above 500 t/ year
- Unlikely to identify significant new finfish resources
- Most resources are likely to be fully utilised
- Resources are vulnerable to impacts (many long lived > 25+ yrs); long time to recover (order of decades)
- High diversity – fisheries composed of multiple species - Can’t monitor all stocks and species
  ⇒ select indicator species
- Stakeholder aspirations must be consistent with the potential of the finfish resources and the ecological systems that support them – no room for large scale new fisheries
Additional Challenges for Fisheries and Fisheries Management in the Kimberley and North Coast Bioregion

- Almost all waters are of low productivity (Class III)
- Catches in North Coast Bioregion ~ 3-4,000t
- Macro-tidal environments
- Limited baseline information
- Remote – logistically difficult to monitor and assess
- Increasing coastal and sea-based industry activity; competition, displacement and impacts
- Increasing populations to support industry – increases in recreational fishing effort; high boat ownership
- Increasing marine park planning, both State and Commonwealth; May reduce areas able to be fished.
- Fisheries production – modest but sustainable.
Any Questions?