8th Indo Pacific Fish Conference and 2009 Australian Society for Fish Biology Workshop & Conference

Ongoing research and management for the long-term sustainability of demersal scalefish on the west coast of Australia

David Fairclough, Brent Wise, Rod Lenanton and Ian Keay

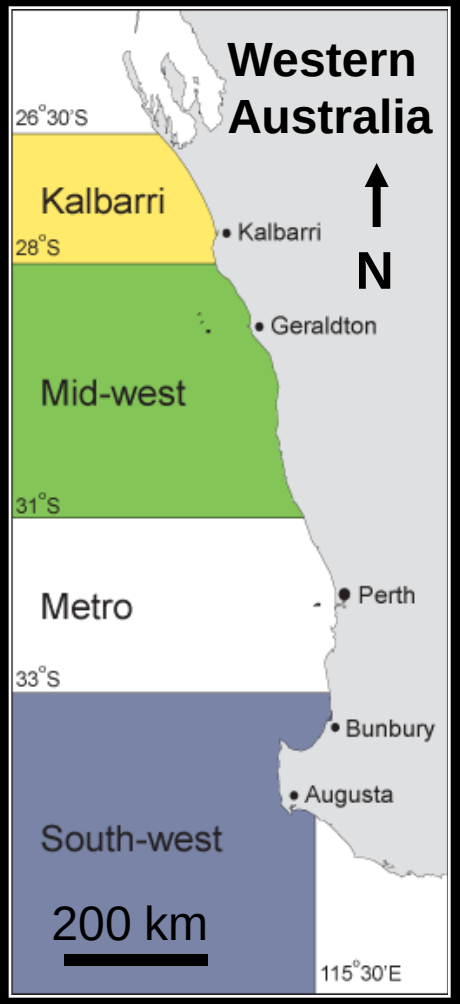
Government of **Western Australia**
Department of **Fisheries**

Contributors: Brett Crisafulli, Paul Lewis, Chris Bird, Jan St Quintin and Lee Higgins

Background

The West Coast Demersal Scalefish Fishery (WCDSF)

The West Coast Bioregion



The WCDSF

- Multi-sector line fishery
  (Commercial, charter and recreational sectors)

- Multi-species

W. A. Dhufish
Glaucosoma hebraicum

Pink snapper
Pagrus auratus

Background

History of management and research in the WCDSF

- 1990s/2000s - Increasing catches and fishing efficiency
  = increased concern about stock status
  - review of management of fishery and
  - biological studies of important species:
    - WA dhufish (Hesp *et al.*, 2002),
    - Pink snapper (Wakefield, 2006),
    - Baldchin groper (Fairclough, 2005; Nardi *et al.*, 2006).
- Commercial - open access prior to 2008.
- Charter - licenses in 2001, cap on licenses
- Recreational - no license
- All sectors - limited by MLL and catch limits

Background

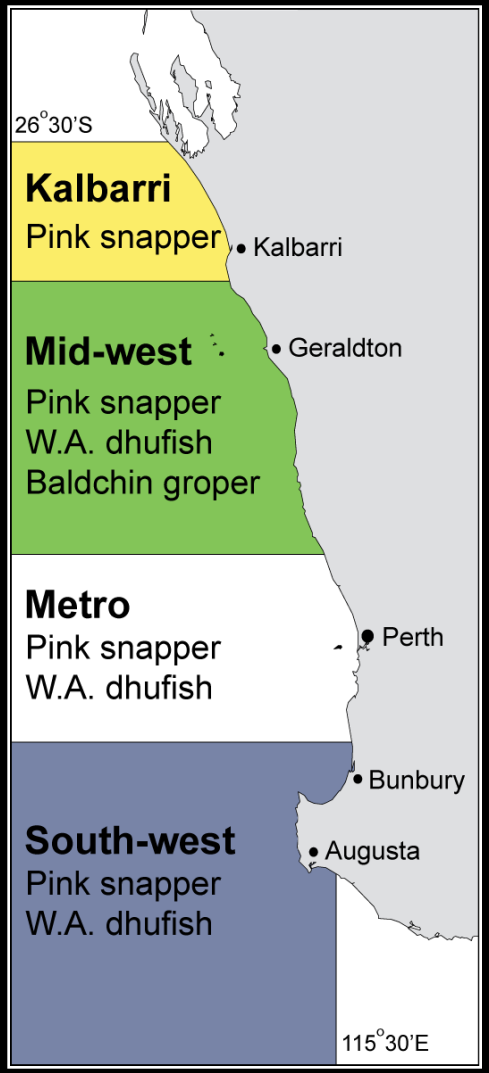
History of management and research in the WCDSF

- Integrated Fisheries Management
  - appropriate catch shares and TAC
- Indicator species for status of stocks

Pink snapper
Pagrus auratus

W. A. Dhufish
Glaucosoma hebraicum

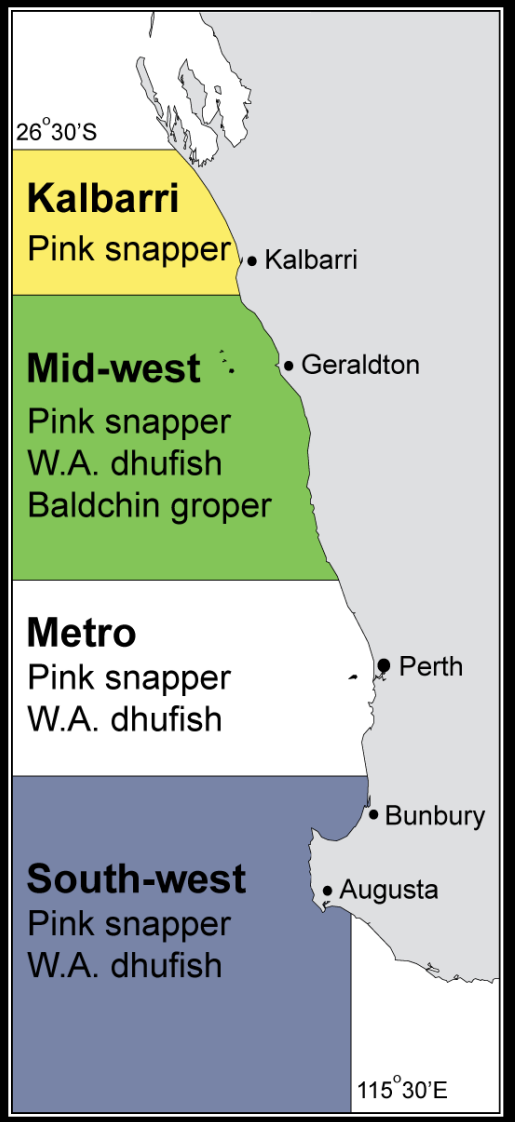
Baldchin groper
Choerodon rubescens



Previous research findings

Stock assessment of the three indicator species, WA Dhufish, Pink Snapper and Baldchin groper across bioregion.

- Estimates of fishing mortality
- Overfishing was occurring
- No biomass estimates
- Weight of evidence – biological factors that influence recovery rate following depletion, e.g. reproductive complexity, recruitment strength variability.
- End result - ≥ 50% reduction required in effort/catch of fishery



Changes to management

Following management review:

- Formal management for commercial sector in 2008

  - put limits on access, effort & TAC, gear, daily logbooks

- Commercial sector - preliminary catch data indicates that 50% reduction should be achieved with the cap on effort and a ban on fishing in metropolitan zone

- Recreational sector - raft of changes to recreational fishing rules, *e.g.* reduced bag limits, effect unclear

- Charter sector - mgt under review

- Need for a monitoring program - to ascertain stock recovery or further depletion

Monitoring program

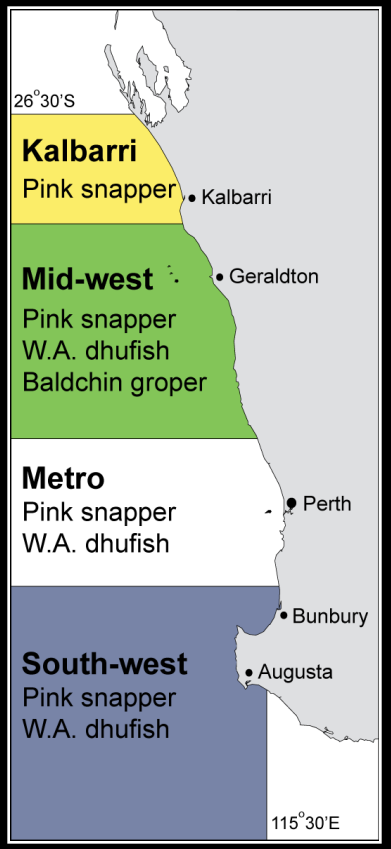
- Commenced in 2007/08, until 2010/11
- Sampling design based on stock assessment

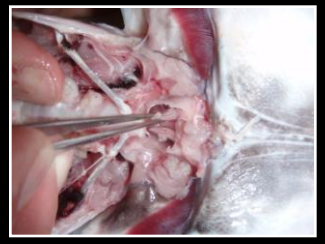
Aims

- Collect 500 fish frames of each indicator species (by sector/ zone). Total = 6,500 samples

- Determine age composition of each species and estimates of *F* (by sector and zone)

- Compare *F* to benchmarks

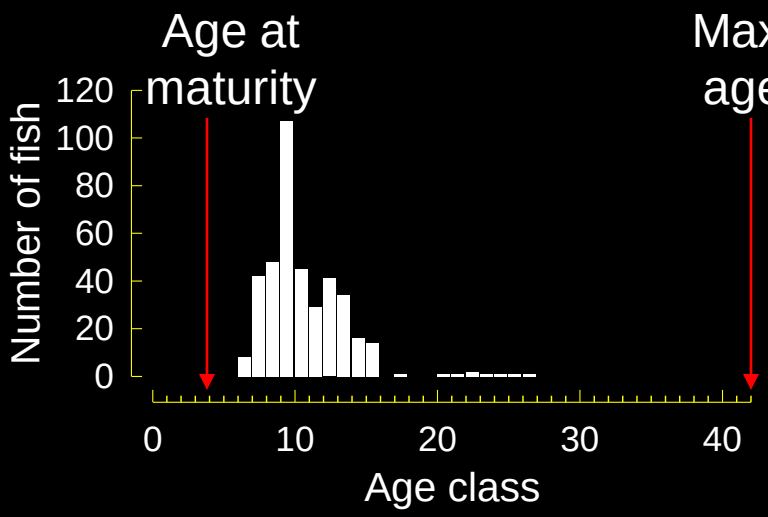




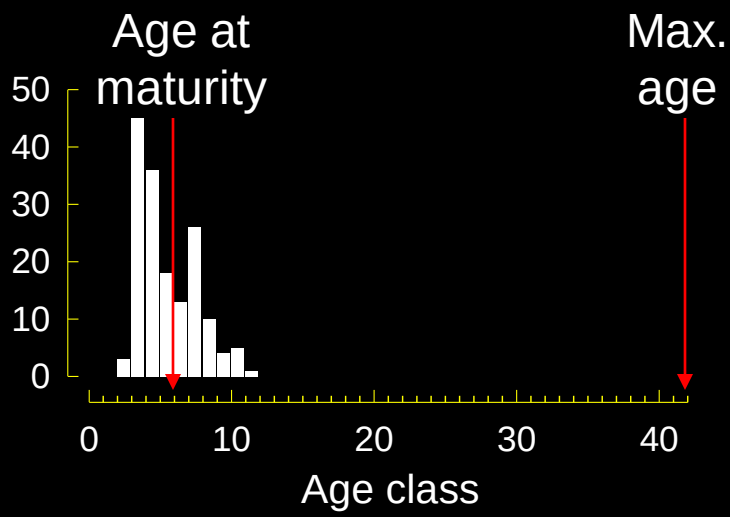
Monitoring programme - Results

- In 2007/08, over 3,700 samples collected

West Australian Dhufish



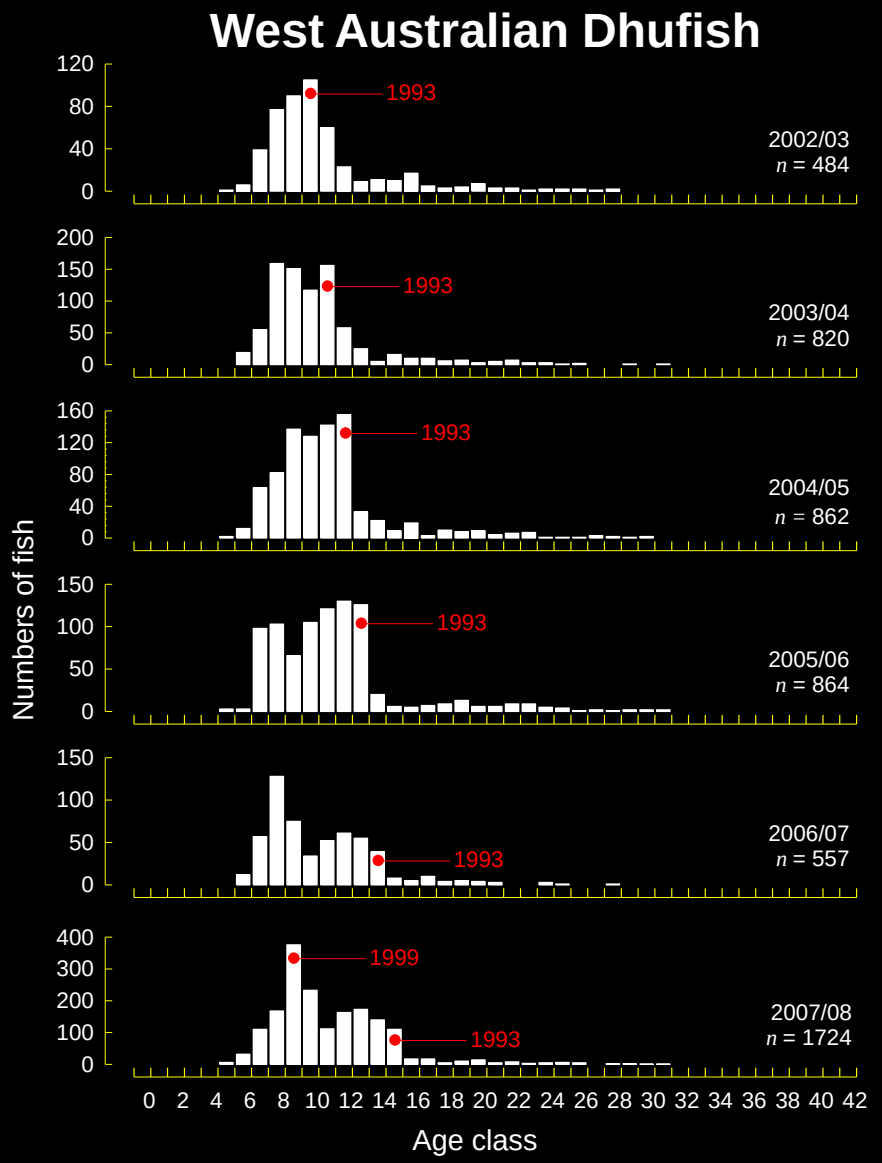
Pink Snapper



- Truncated age distributions
- Estimates of fishing mortality indicate overfishing is still occurring
- Reinforcement of findings of stock assessment

Monitoring programme - Results

- Spatial and temporal age composition data
- Detection of strong recruitment events
- Stock recovery or further depletion in relation to management



Monitoring programme - challenges

- Obtaining the required sample size
  - mgt aims to decrease effort/catch in commercial/ recreational sectors
  - no onboard sampling
  - reluctance
- Staff resources
- More efficient options
  - Rotation of indicator species may reduce some lab costs
  - Only monitor one sector?
  - Buy whole fish?
- Stock structure – genetics/otolith microchemistry

Thank you