

# The diets of Snapper (*Chrysophrys auratus*), Silver Trevally (*Pseudocaranx dentex*) and the construction of a food web for demersal species in south-western Australia

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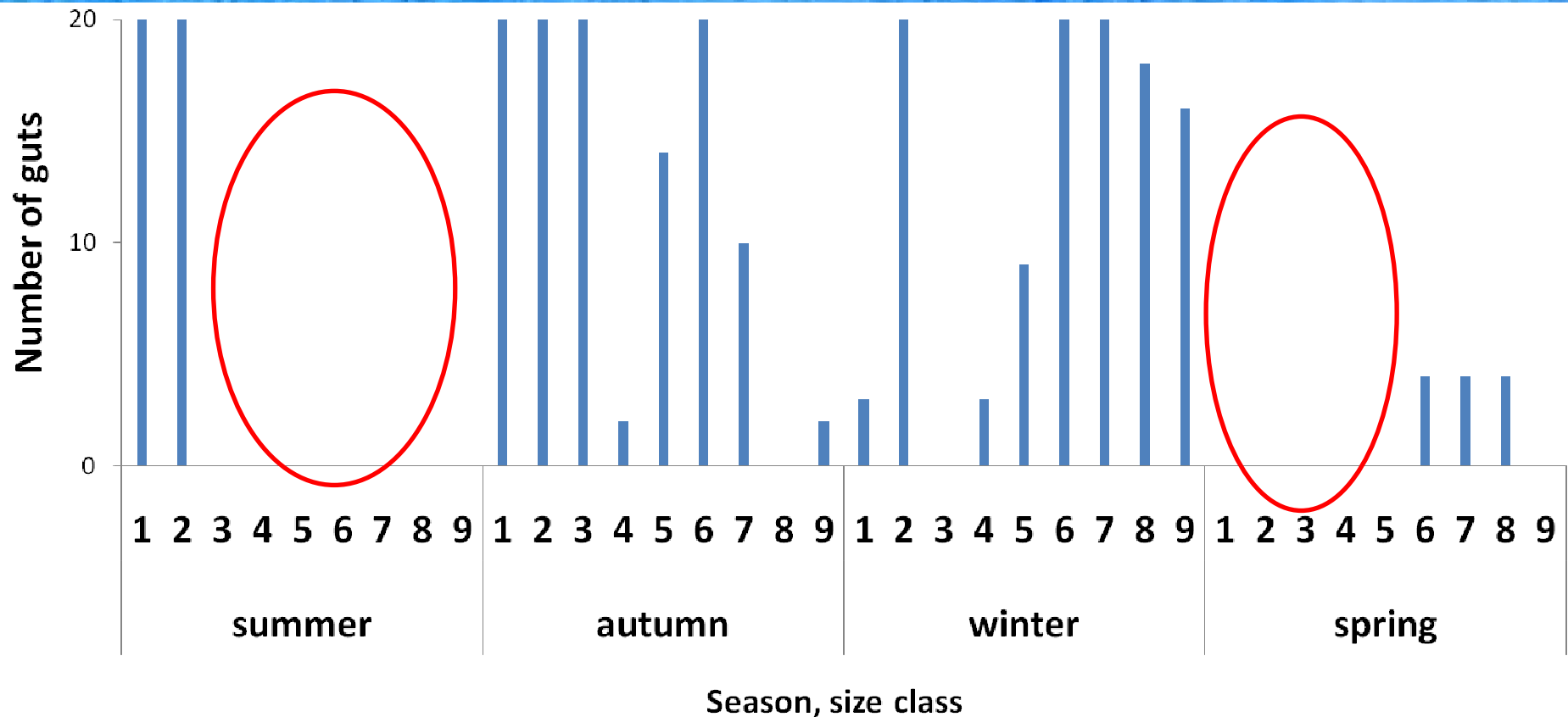


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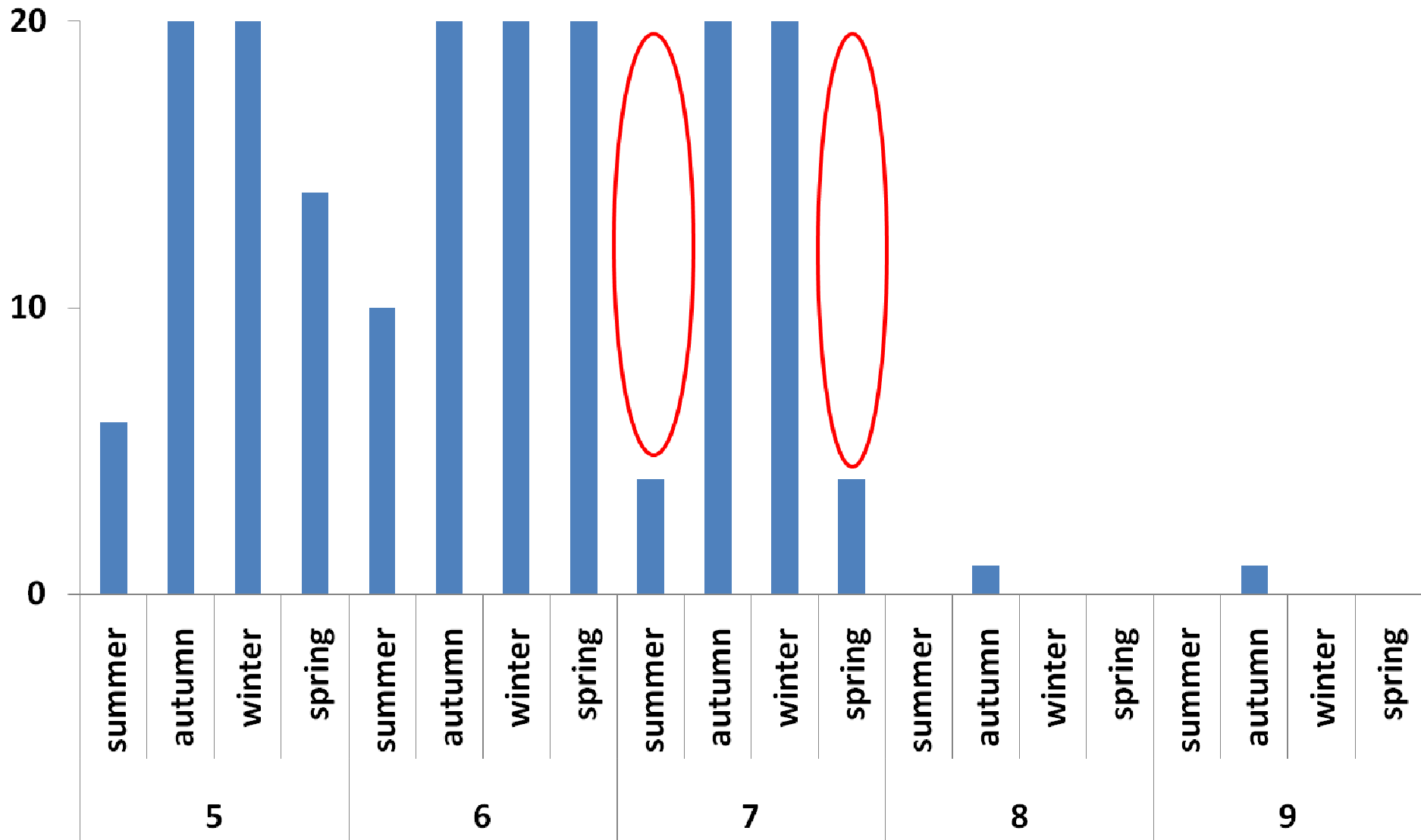
## Specific assets relative to this project:

- Ecosystem structure and biodiversity
  - Marine: inshore demersal (Risk: moderate)
  - Embayments and estuaries: Cockburn sound (risk: high)

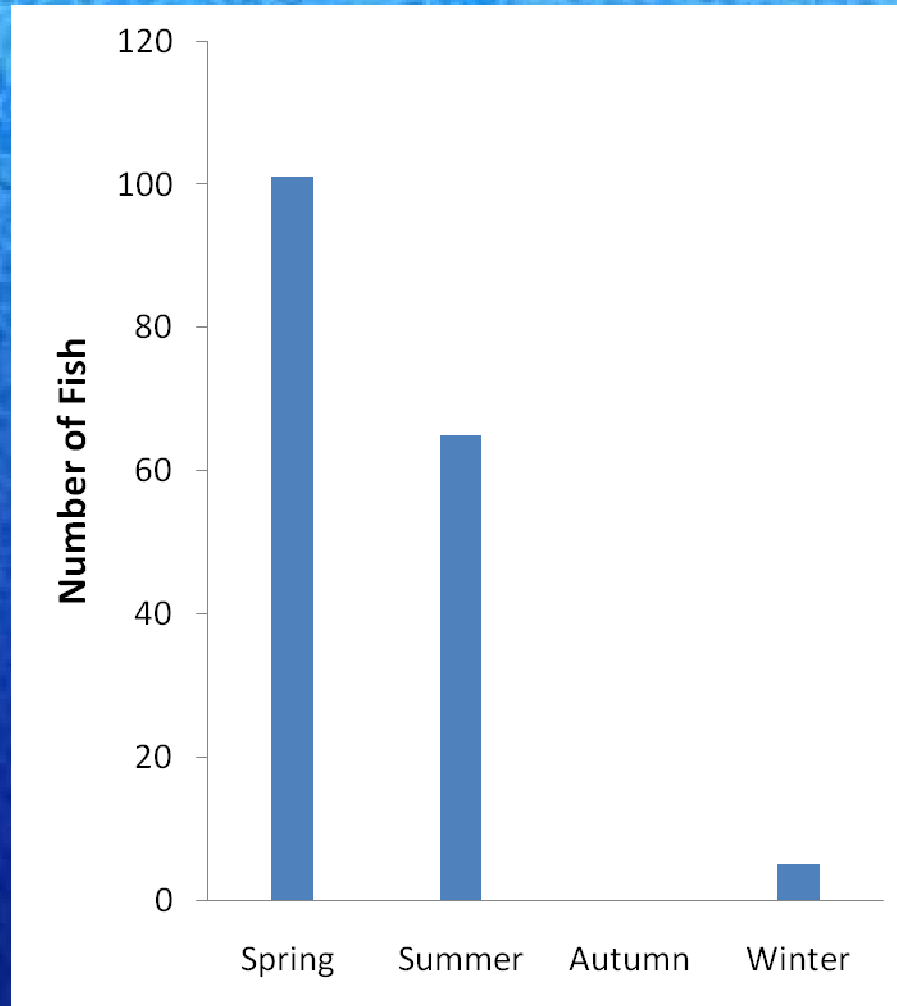
# Stomachs collected and data gaps. Metro region (snapper)



# Stomachs collected and data gaps. Kalbarri (Snapper)

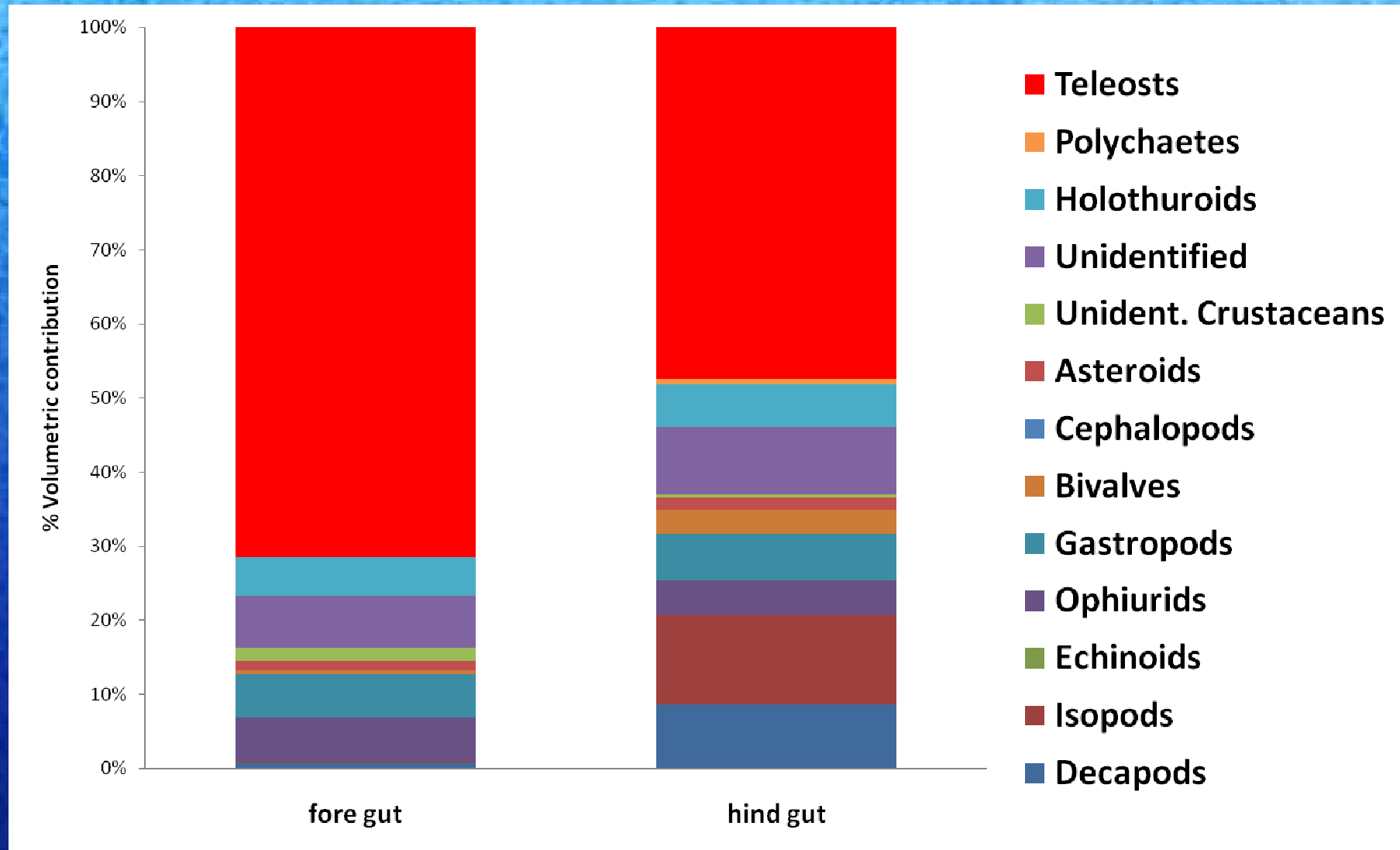


# Stomachs collected and data gaps. Metro region (Silver Trevally)



- 170 fish processed
- More from recent collections
- Approx 150 juveniles to process
- No large off-shore individuals

# Fore gut vs hind gut (28 paired samples)

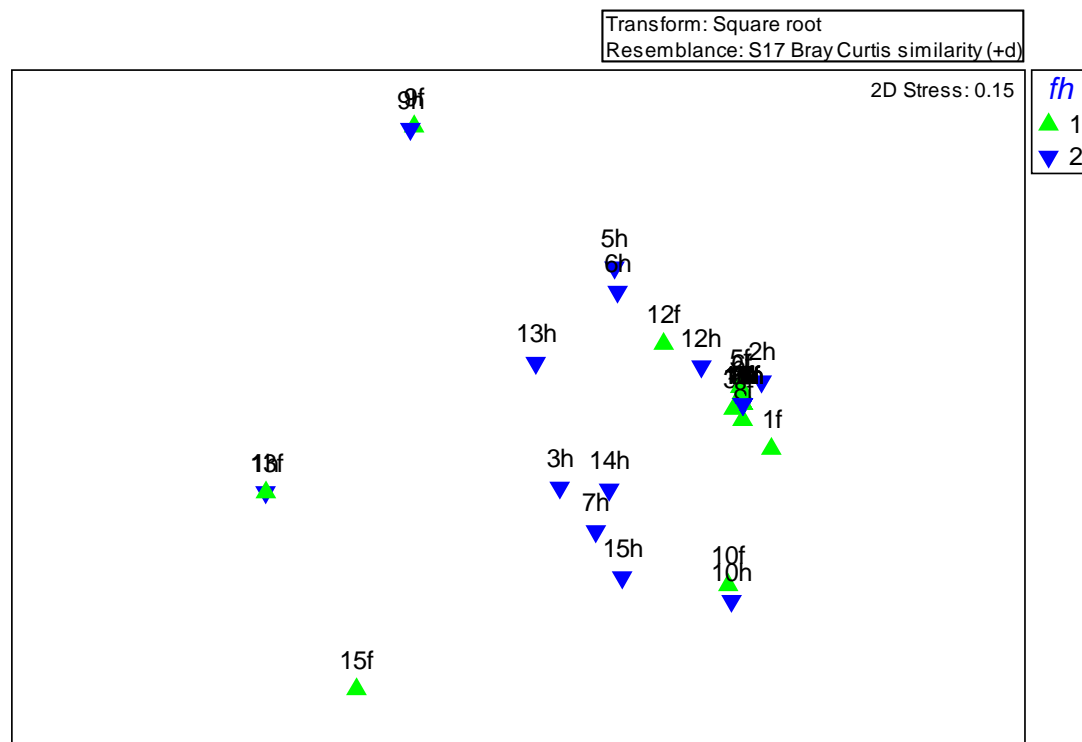


# Fore or Hind guts?

- Empty guts: 32 %
- Useable fore guts: 35.4%
  - 10 size classes, 4 seasons, 10 samples per category: 400 stomachs in total
  - 1130 stomachs must be analysed at 35.4% return rate
- Guts with either fore and or hind guts useable: 68%
  - 580 stomachs must be analysed at 68% return rate

# IS THERE A DIFFERENCE between different gut regions?

- No significant difference between fore and hind gut



ANOSIM: R=0.004, P=33.9%

- Data for both gut sections can be pooled
- Increases return rate for usable stomachs from 35 to 70%
- All fish greater than 500mm
- Repeat again after 500 stomachs processed

# Unidentified teleosts

- Necessary to identify key dietary categories susceptible to negative anthropogenic influences
- 50% to 70% UID Teleost.
- Therefore higher taxonomic resolution required in this dietary category
- Standard ID methods not sufficient, prey items highly digested in most examples, otoliths only occasionally present and often highly degraded

# Otolith ID

- Established method for identifying fish species

- Biodegradation of whole fish in lab allows matching of otoliths and vertebrae

- Furlami *et al.* (2007), Rivaton and Philippe (1999).



# Vertebrae Identification

- Skeletal structure, indigestible

- Requires at least one example of whole fish with all vertebrae and otoliths



# Risk status effects

- Changes in Risk status of Snapper as a result of impacts on their food source cannot be considered until specific groups of teleost prey are identified
- Snapper and Trevally diets will be amalgamated into a food web once completed.
  - Food web will provide further insight into trophic relationships and stability of these species, their competitors, prey and predators.