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Department of Environment,  
Water and Natural Resources

# **From drought to flood: fish assemblages in the Coorong**

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**SOUTH AUSTRALIAN  
RESEARCH AND  
DEVELOPMENT  
INSTITUTE**

# Fishes of the Coorong and Lower Lakes

## Estuarine

- Jumping mullet
- Yellow-eye mullet ■
- River garfish
- Black bream ■
- Bridled goby
- Smallmouth hardyhead
- Tamar goby
- Bluespot goby
- Greenback flounder ■
- Lagoon goby

- Liza argentea*
- Aldrichetta forsteri*
- Hyporhamphus regularis*
- Acanthopagrus butcheri*
- Arenigobius bifrenatus*
- Atherinosoma microstoma*
- Favonigobius tamarensis*
- Pseudogobius olorum*
- Rhombosolea tapirina*
- Tasmanogobius lasti*



## Diadromous

- Common galaxias
- Climbing galaxias ●
- Pouched lamprey ●
- Short-headed lamprey ●
- Shortfin eel ●
- Estuary perch ●
- Congolli ●

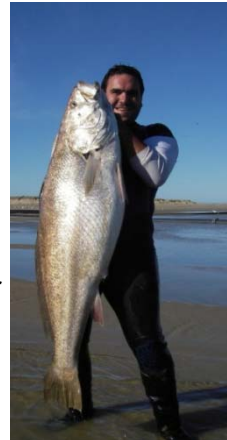
- Galaxias maculatus*
- Galaxias brevipinnis*
- Geotria australis*
- Mordacia mordax*
- Anguilla australis*
- Macquaria colonorum*
- Pseudaphritis urvillii*



## Marine

- Mulloway ■
- Sea mullet
- Australian herring ■
- Australian salmon ■
- Old wife
- South Australian Cobbler
- Blue rock whiting
- Sandy sprat
- Southern sea garfish ■
- Brownstriped leatherjacket
- Trevally
- Australian pilchard ■
- Yellowtail horse mackerel

- Argyrosomus japonicus*
- Mugil cephalus*
- Arripis georgianus*
- Arripis truttaceus*
- Enoplosus armatus*
- Gymnapistes marmoratus*
- Haletta semifasciata*
- Hyperlophus vittatus*
- Hyporhamphus melanochir*
- Meuschenia australis*
- Pseudocaranx dentex*
- Sardinops neopilchardus*
- Trachurus novaezelandiae*



## Freshwater

- Flathead gudgeon
- Silver perch ●
- Goldfish
- Murray hardyhead ●
- Fly specked hardyhead
- Carp ■
- Carp gudgeon complex
- Golden Perch ■
- Southern Pygmy perch ●
- Bony bream ■
- Dwarf flathead gudgeon
- Australian smelt
- Freshwater catfish ●
- Murray cod ●
- Redfin perch ■

- Philypnodon grandiceps*
- Bidyanus bidyanus*
- Carassius auratus*#
- Craterocephalus fluviatilus*
- Craterocephalus stercusmuscarum fulvus*
- Cryprinus carpio*#
- Hypseleotris* spp.
- Macquaria ambigua*
- Nannoperca australis*
- Nematolosa erebi*
- Philypnodon* sp.
- Retropinna semoni*
- Tandanus tandanus*
- Maccullochella peelii peelii*
- Perca fluviatilis* #

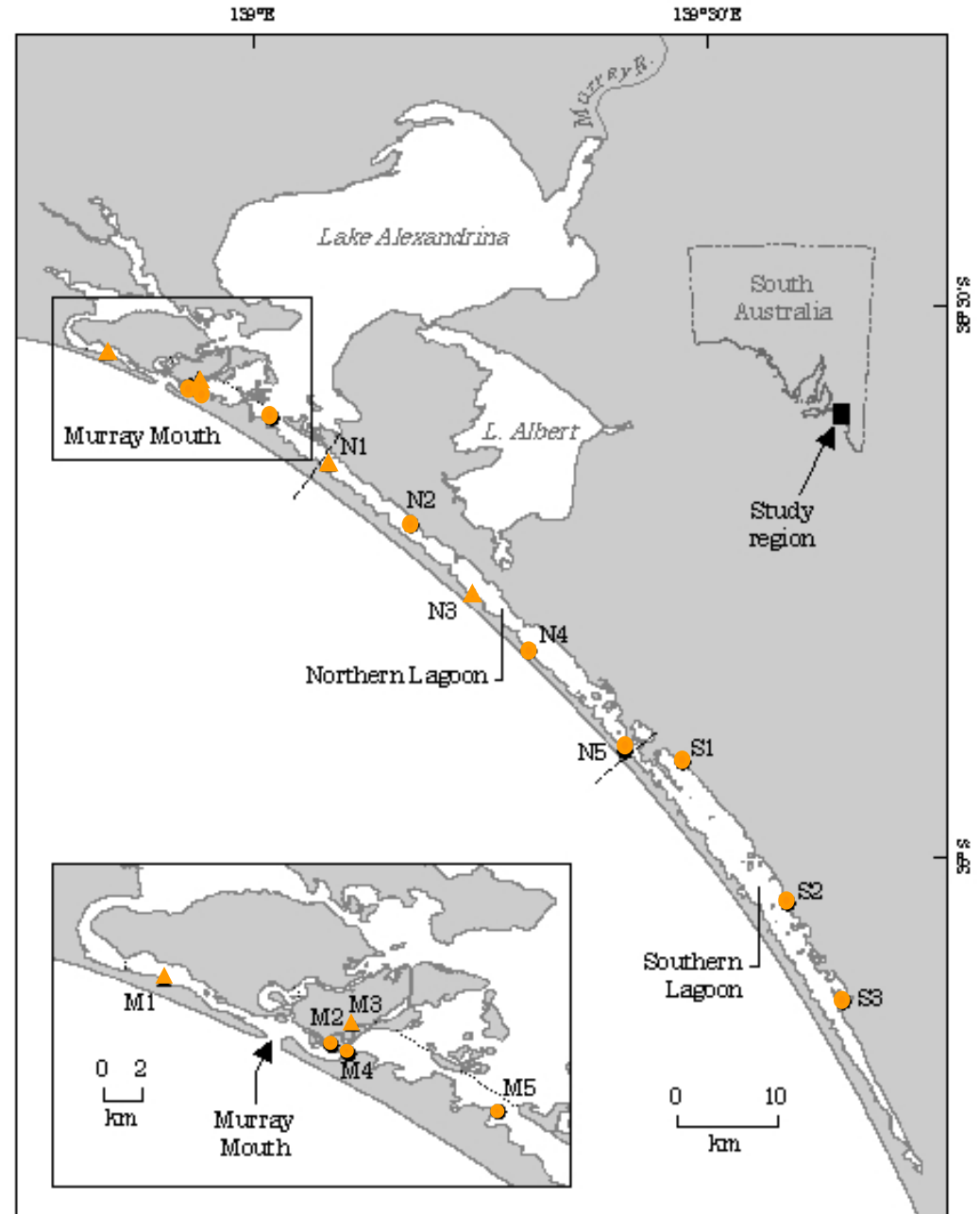


# Fish monitoring in the Coorong

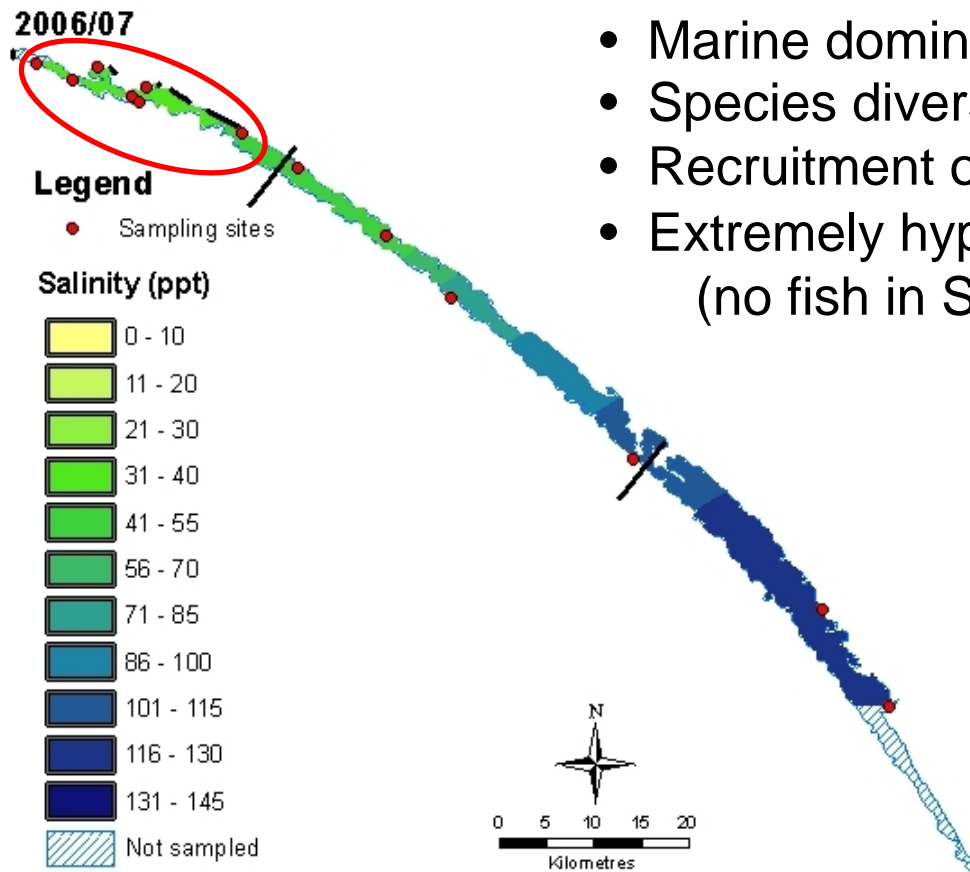
TLM condition monitoring (2008-2013)

Flow response monitoring (2010-2013)

CLLAMMecology/FRDC project (2006-2013)



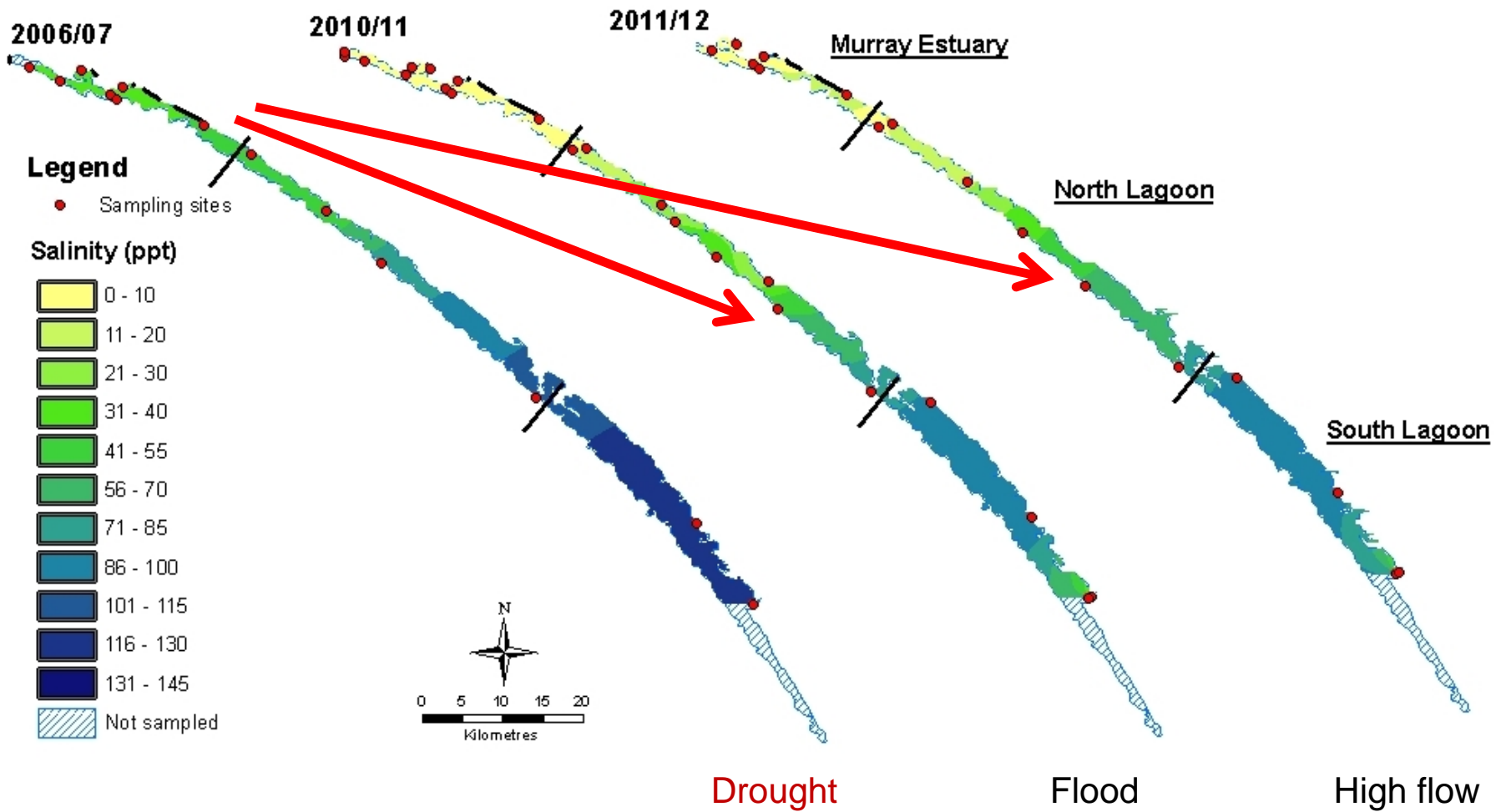
# Fish assemblages under stress during the drought



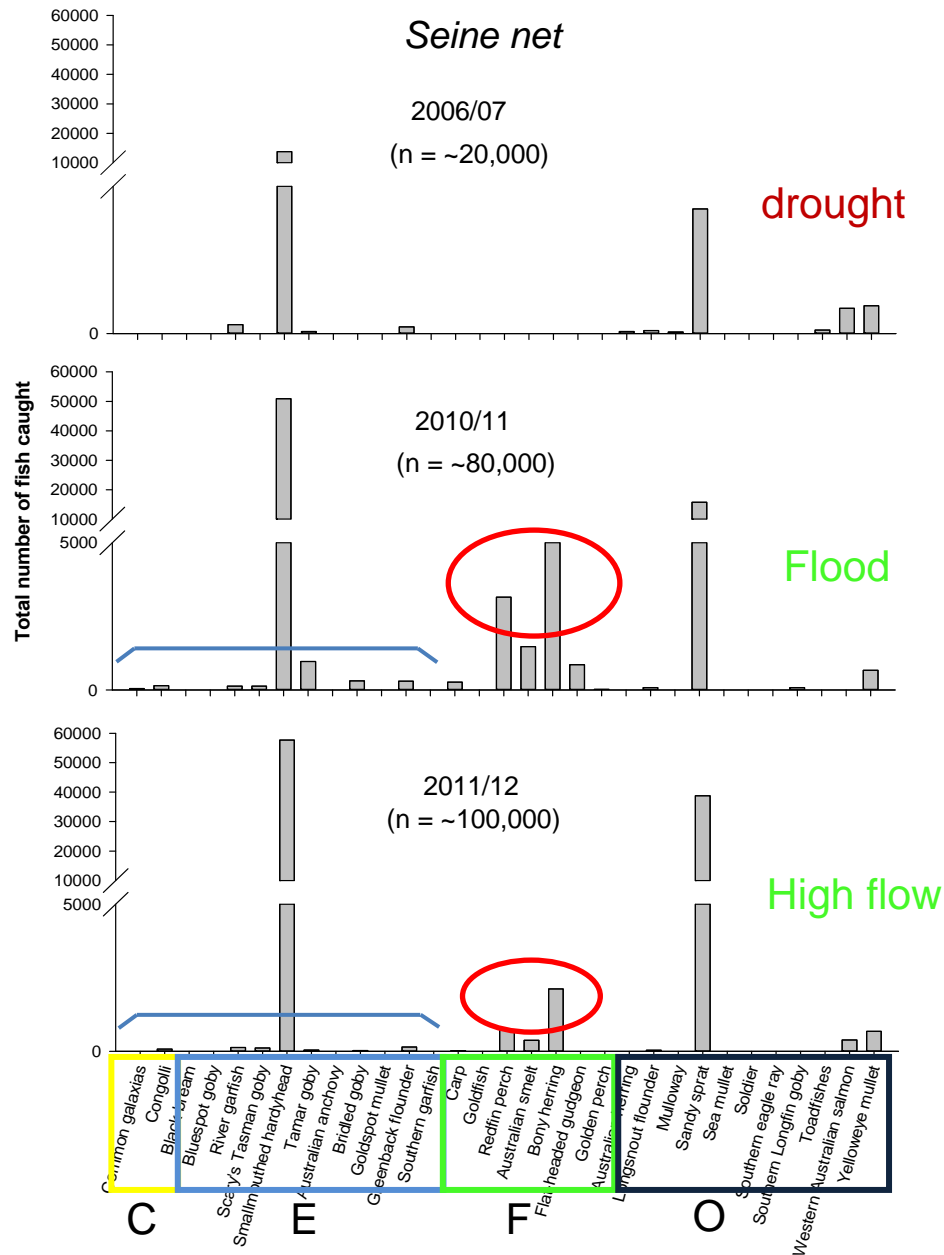
- Estuarine habitat ↓
- Marine dominated fish community
- Species diversity and abundance ↓
- Recruitment of estuarine and diadromous species ↓
- Extremely hypersaline conditions  
(no fish in SL)



# Salinity gradient along the Coorong



# Fish assemblage change post drought



- Abundance ↑
- Species diversity ↑
- Recruitment (estuarine & diadromous) ↑



- Distribution ↑  
SL: SM hardyhead, black bream, YEM, congolli, bony herring, gobies



**No new recruits detected !**

# Key messages

- Freshwater flow, salinity and connectivity – key drivers
- Early signs of recovery
  - small to medium- bodied estuarine fish
  - diadromous species
- Recovery of large-bodied, long-lived species and the ecosystem may take years
  - e.g. no signs of black bream population recovery
- Long term commitments are needed for ecosystem restoration (incl. eFlow)
- Science and long term data are required



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