

Dec 13th, 11:00 AM - 12:40 PM

Control of globally invasive common carp: a 10 year commercial trial of the Williams' carp separation cage in a Murray River fishway

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Conallin, Anthony J. and Stuart, Ivor G., "Control of globally invasive common carp: a 10 year commercial trial of the Williams' carp separation cage in a Murray River fishway" (2018). *International Conference on Engineering and Ecohydrology for Fish Passage*. 26.
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Local Land
Services
Murray



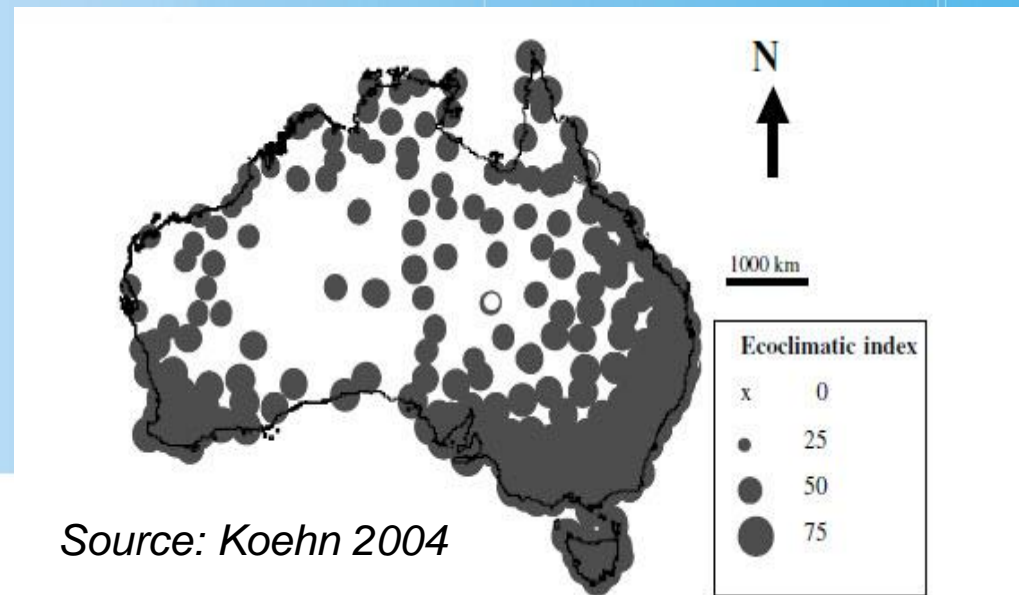
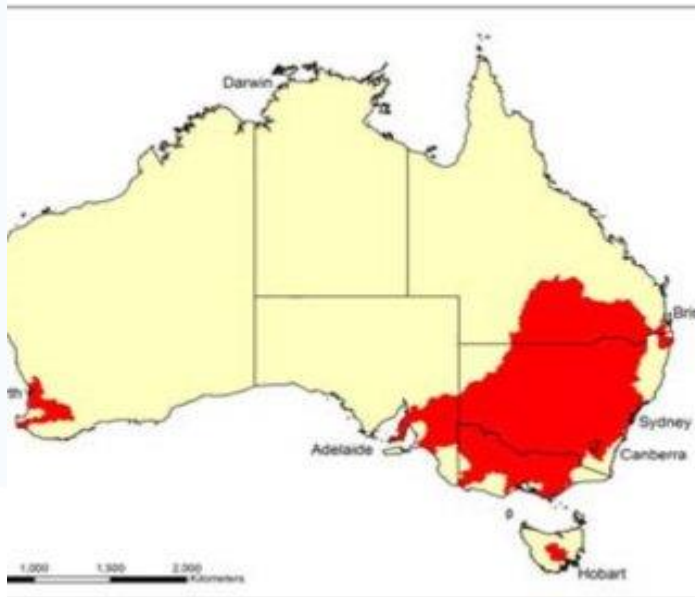
Native Fishways Not... Feral Ways!!!

11 years of Williams Cage success at Lock 1

**Anthony (Rex) Conallin - Murray Local Land Services
NSW Office of Environment and Heritage**

Ivor G. Stuart – Arthur Rylah Institute

Common Carp (*Cyprinus carpio*)



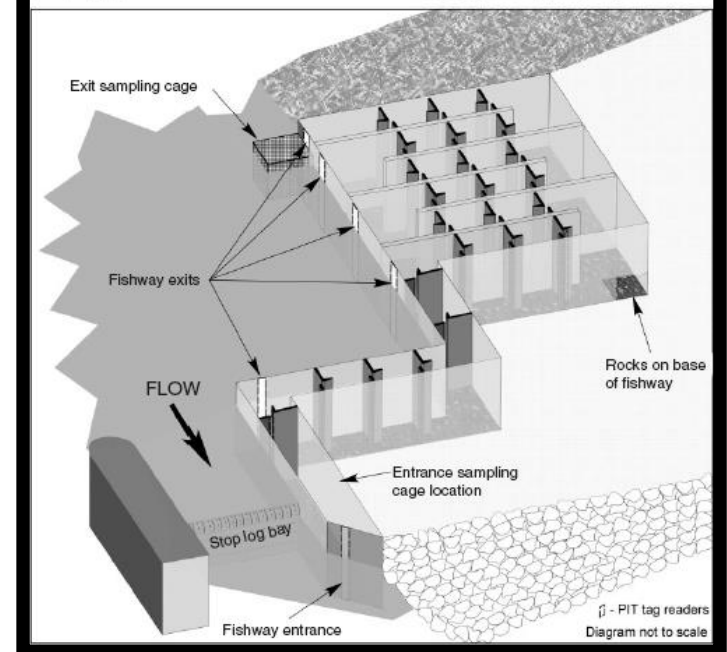
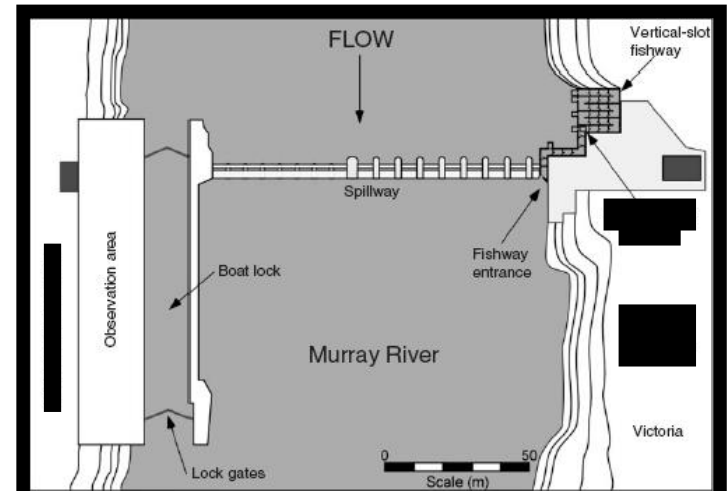
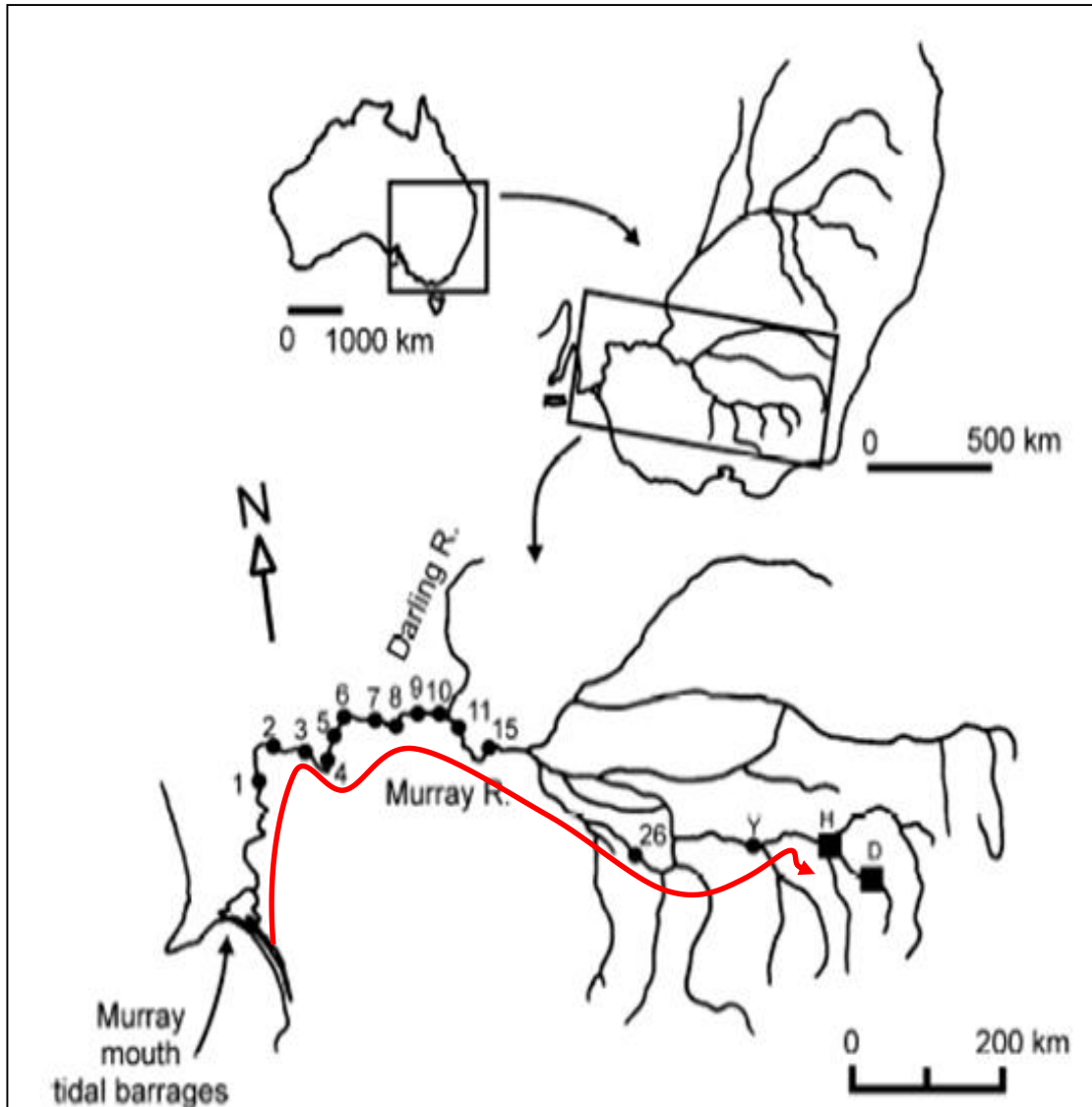
Source: Koehn 2004

Highly Migratory





Sea to Hume Dam Fishway Program



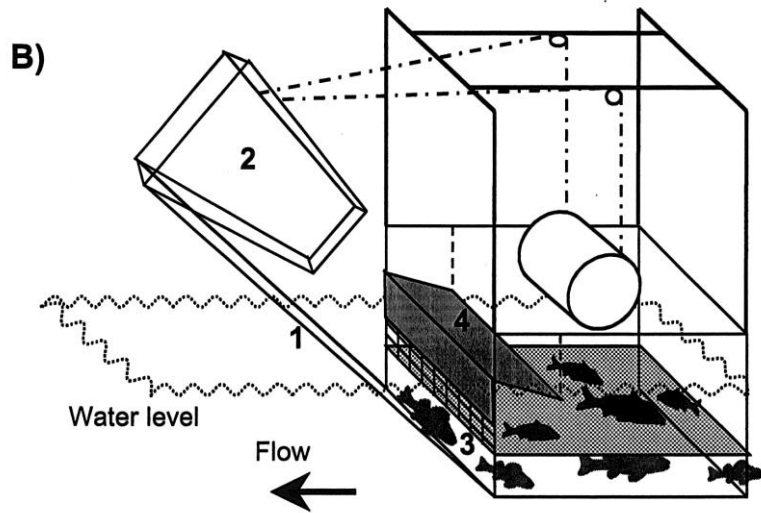
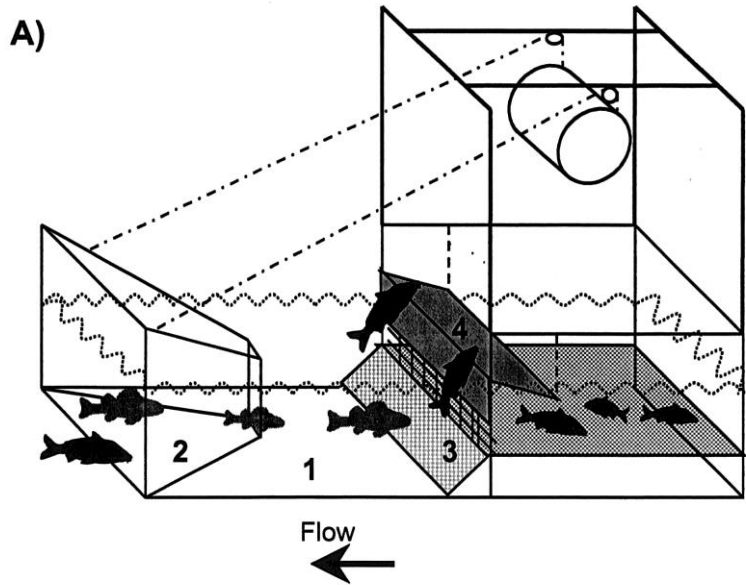
Houston, we have a problem!

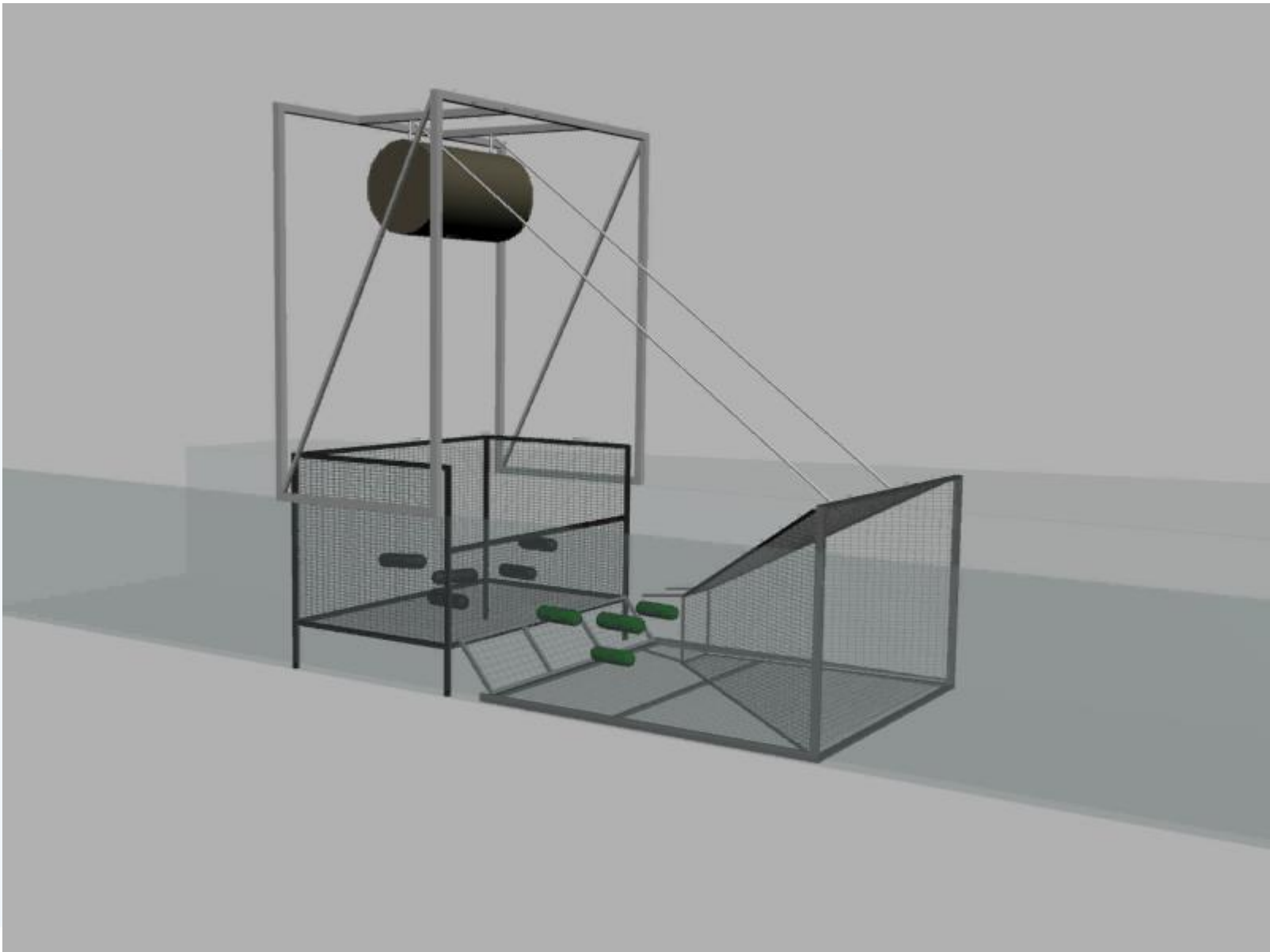


The Williams Carp Separation Cage



Williams' Cage Operation

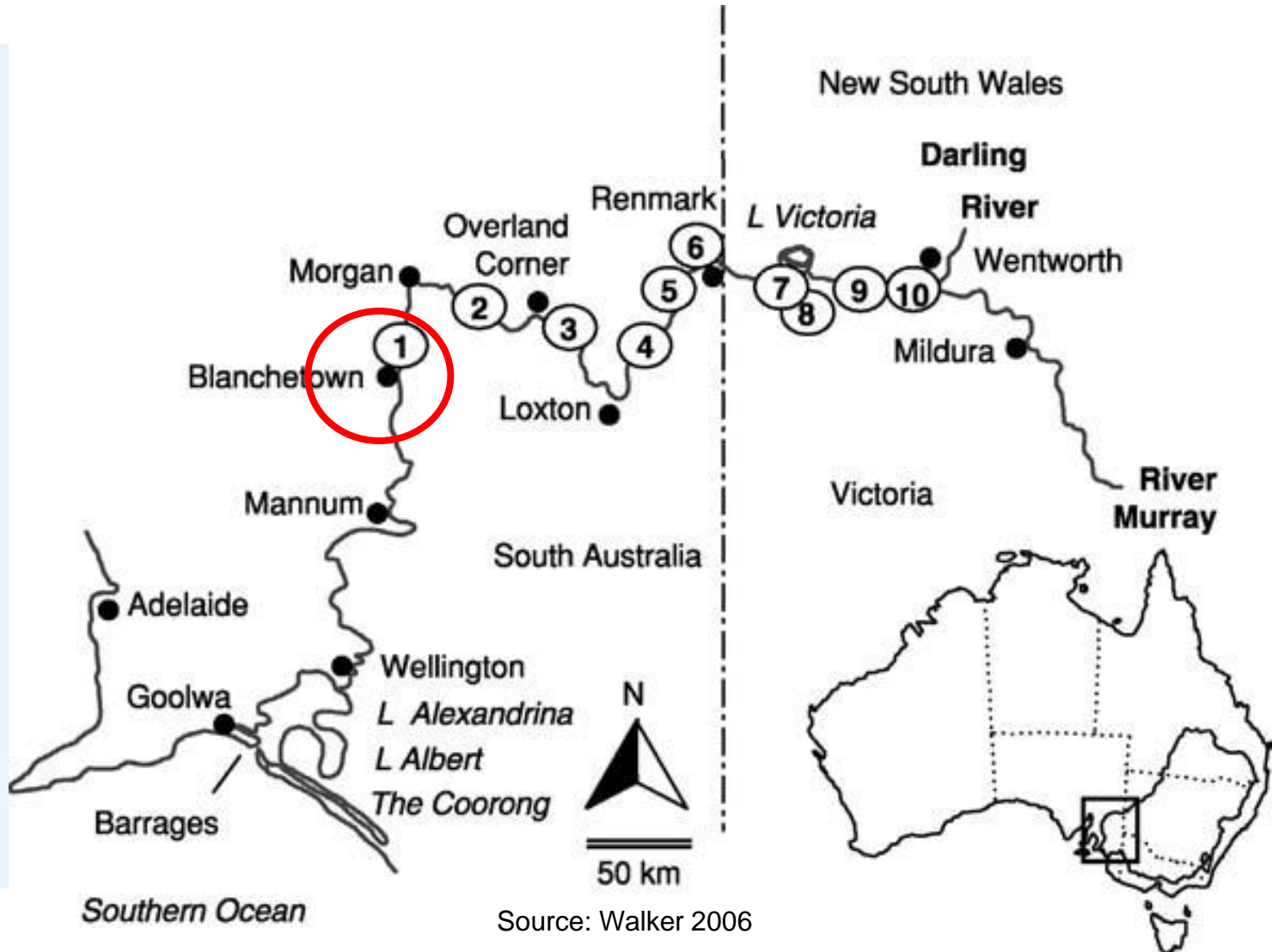




Lock 1 Objectives

- To evaluate the effectiveness of the Williams' cage under conditions of high carp biomass.
- Examine the biophysical conditions related to fish migration and separation at Lock 1.
- Use findings to improve cage management to maximise carp harvest and minimise impact on native fishes.
- Hand over operation to Weir Keepers and Pro Fisherman
- Apply knowledge gained from Lock 1 to new fishways

Study Site



Source: Walker 2006

Weir and Lock 1 Blanchetown SA

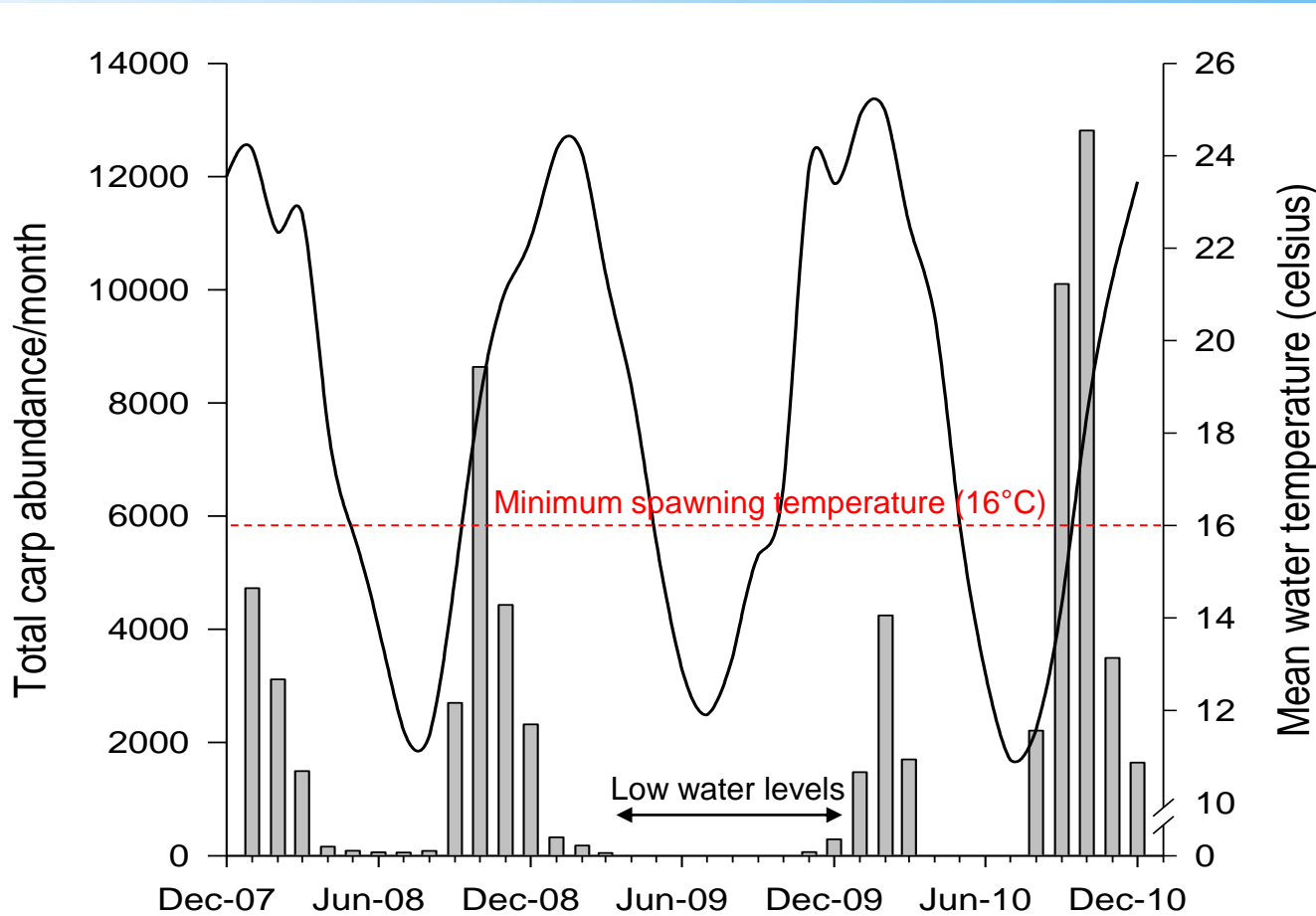




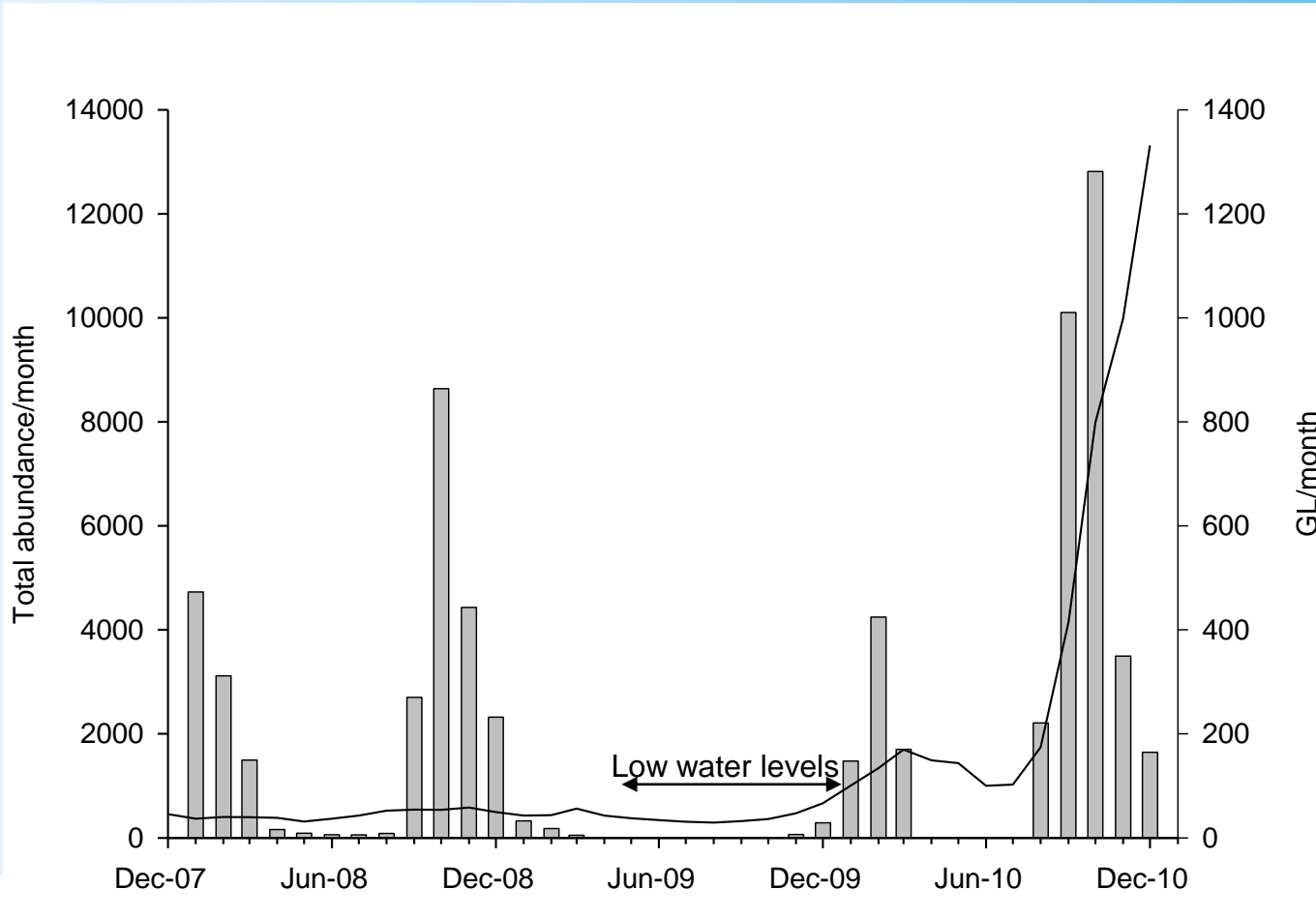
Results

- 3 years of intensive study 2007-2010
- 8 years of operation by Lock Keepers and Professional Fisher 2010-2018

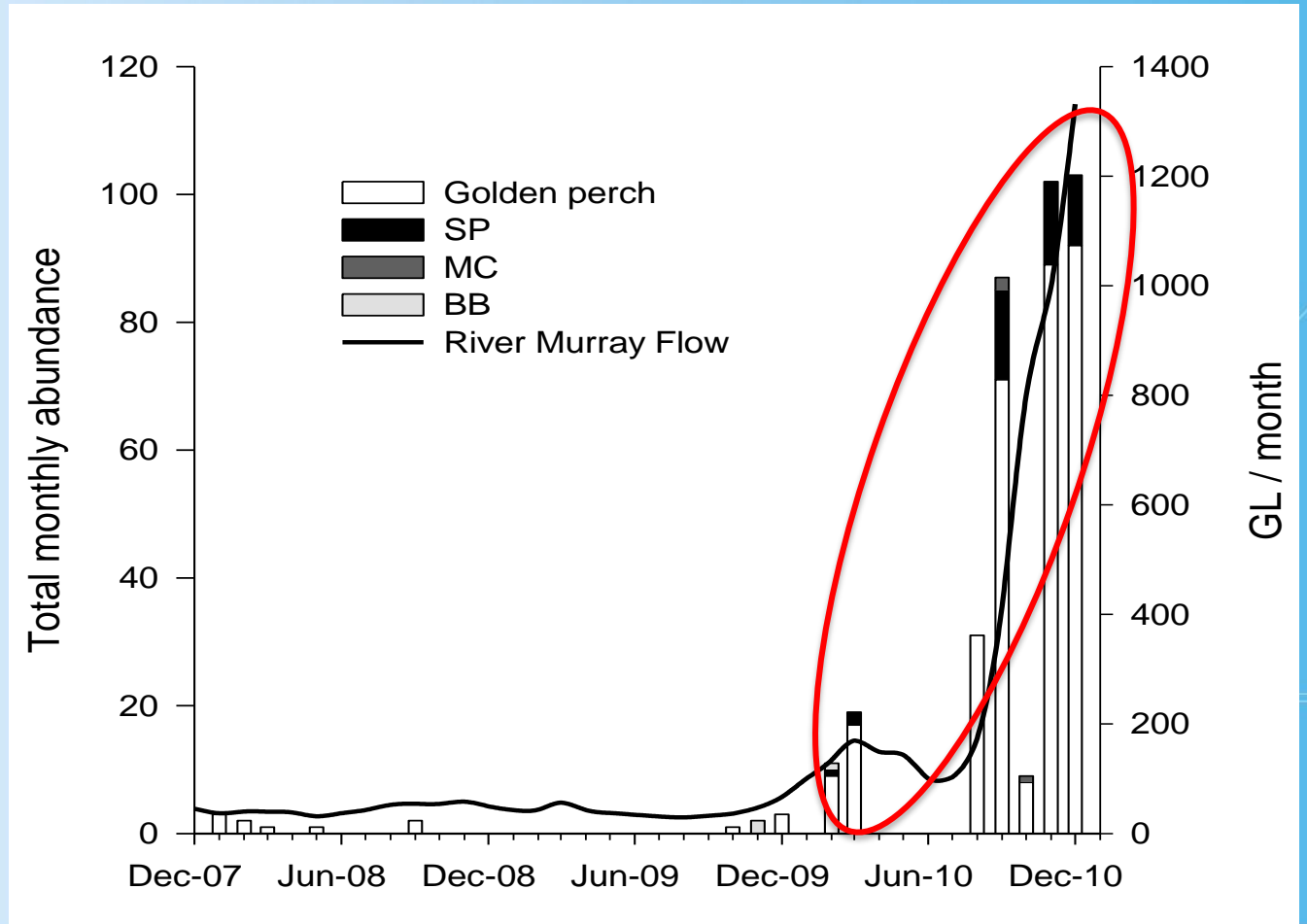
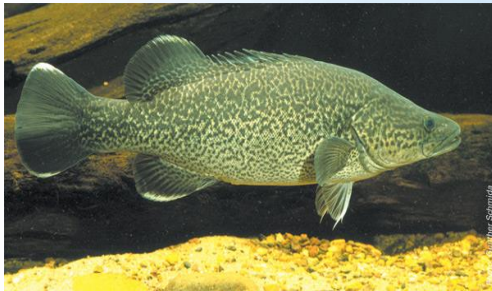
Water Temperature



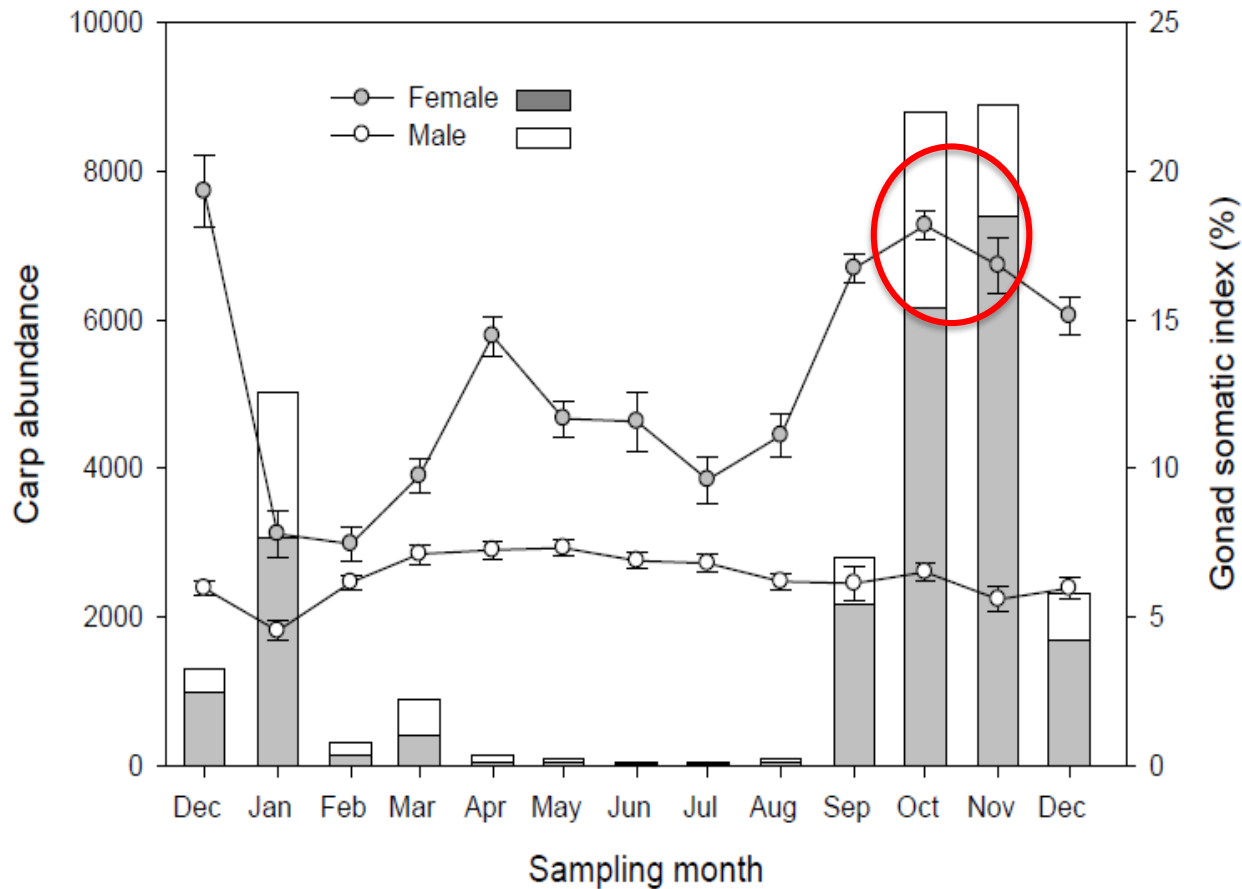
Murray River Discharge



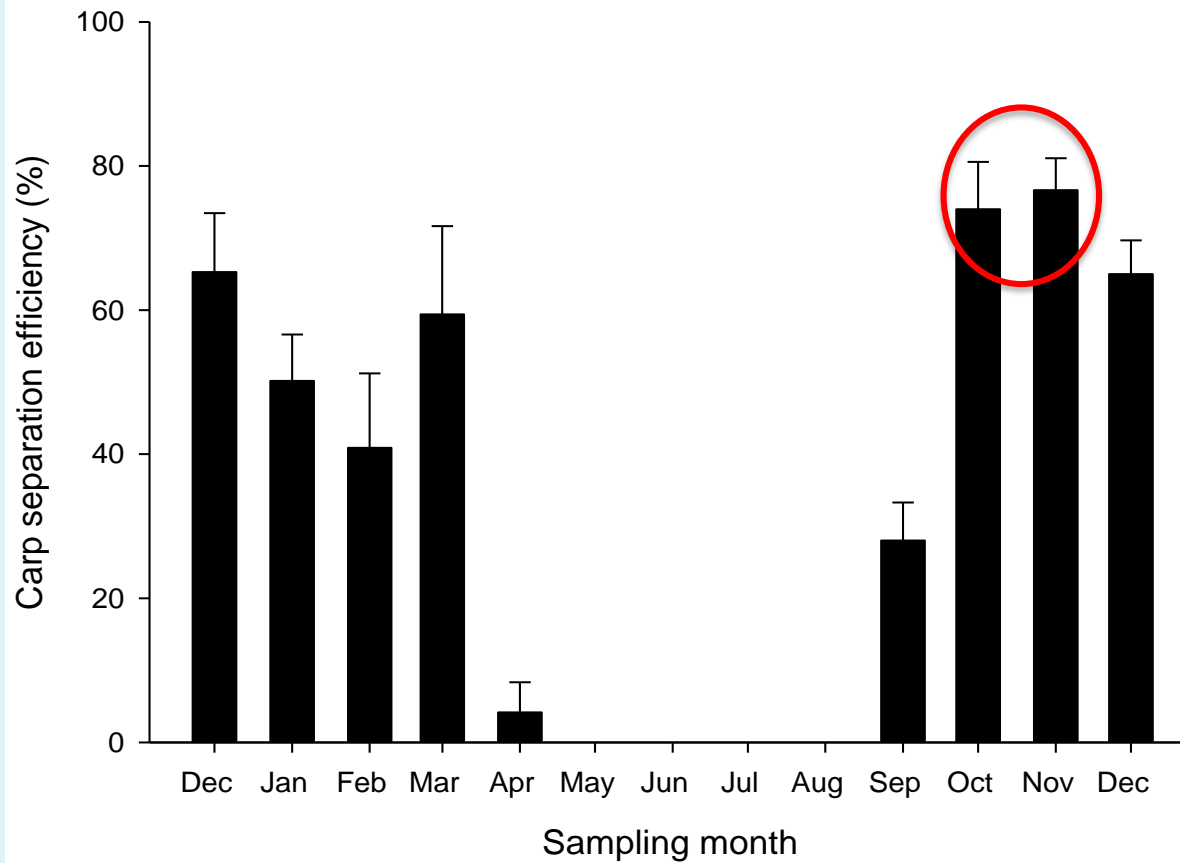
What about native fishes?



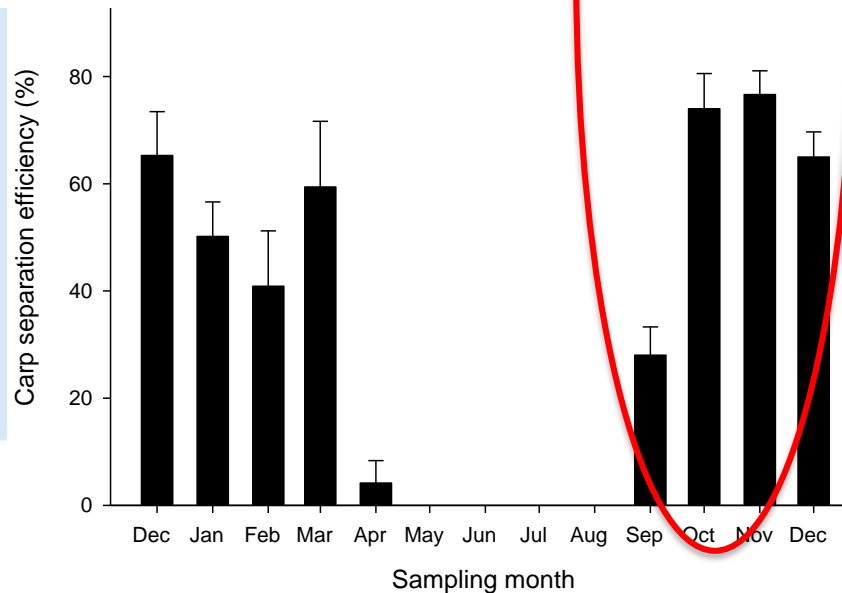
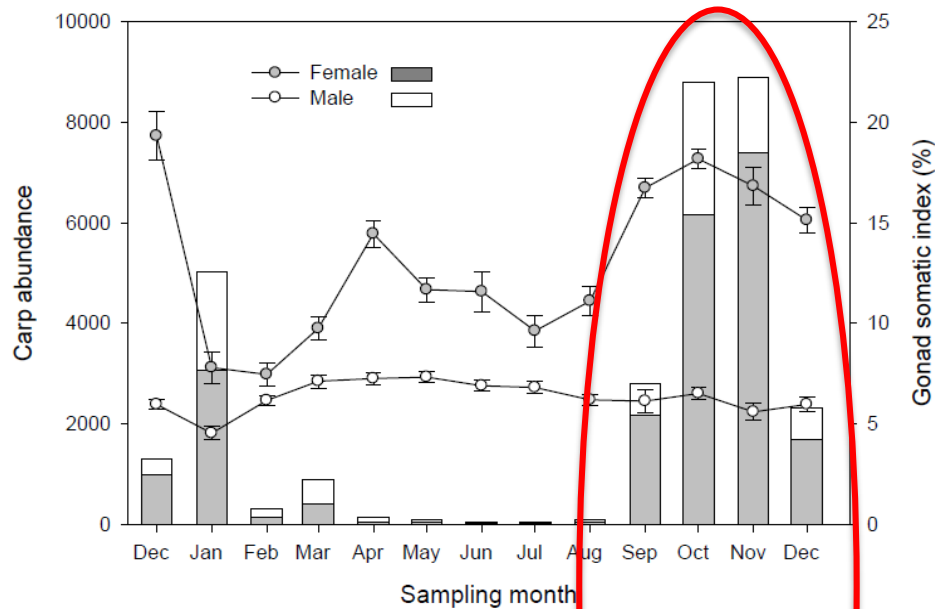
Carp Biology 2007-08



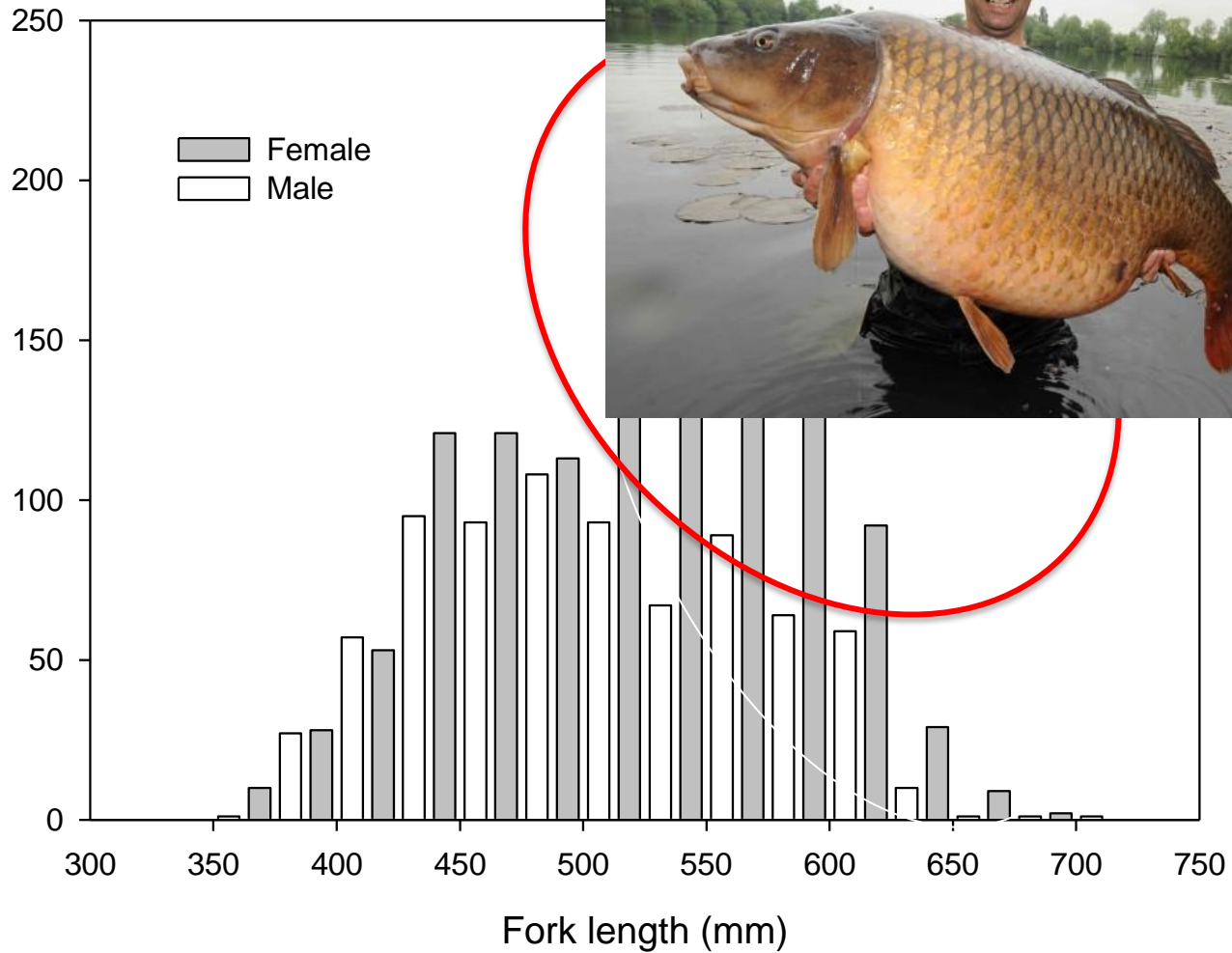
Separation Efficiency



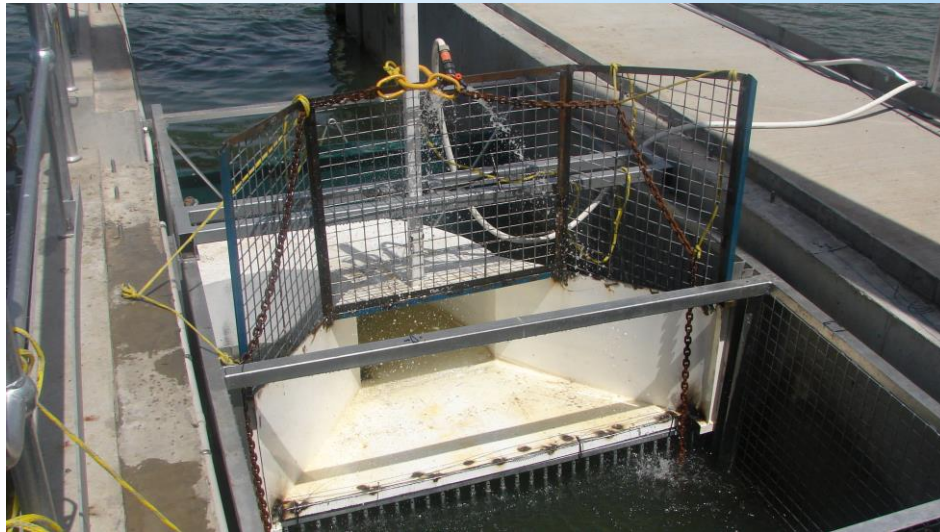
Carp Biology / Separation Efficiency



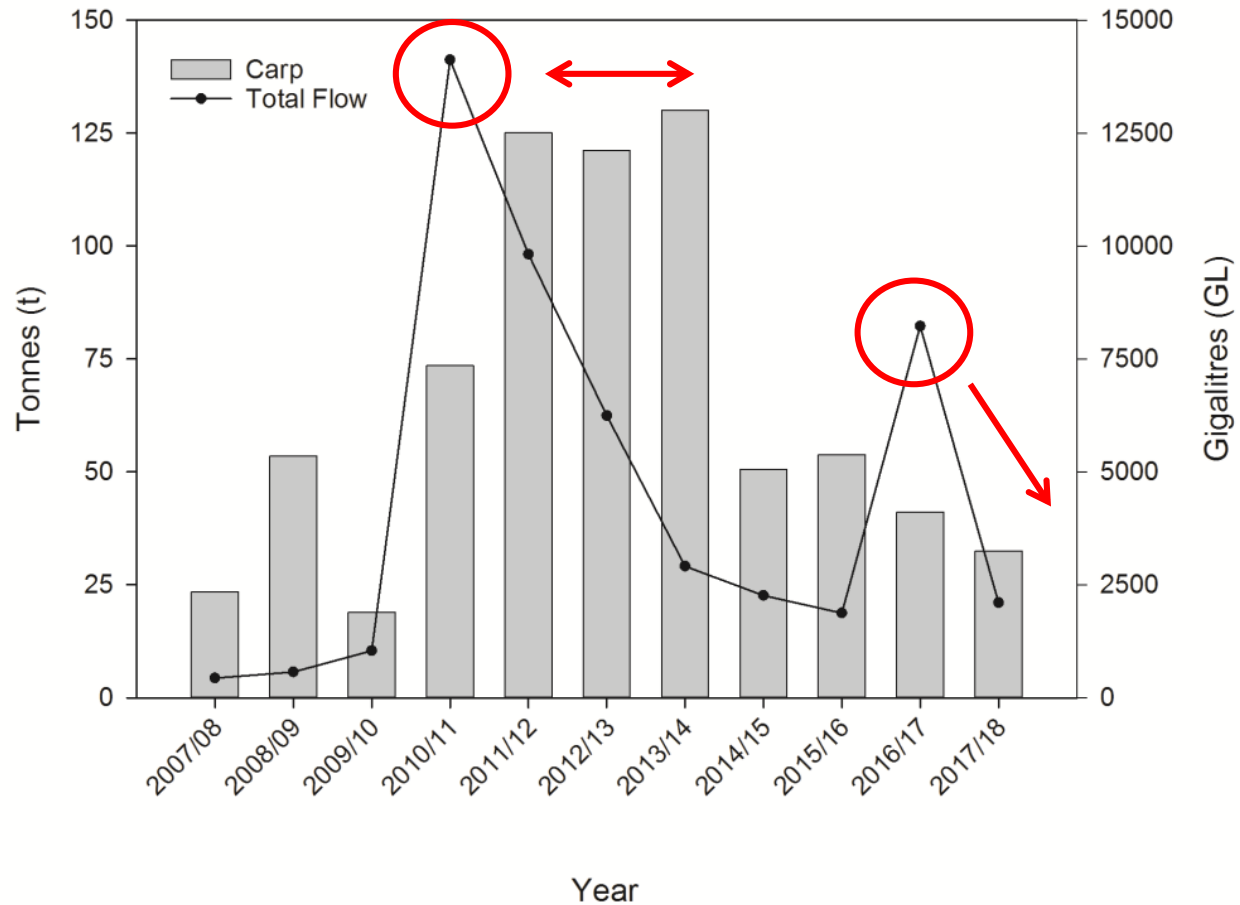
Carp Size Range 2007-08



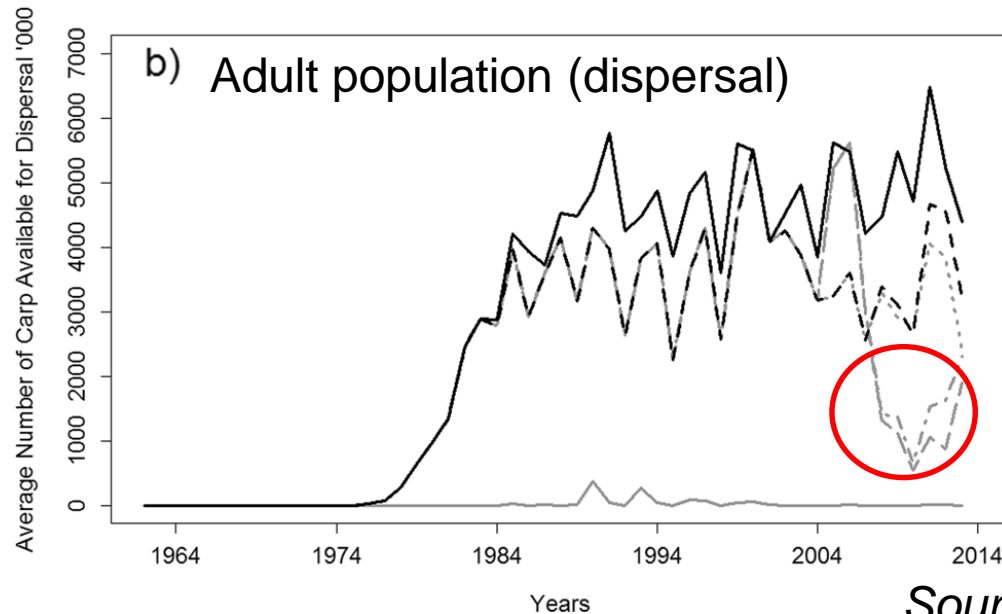
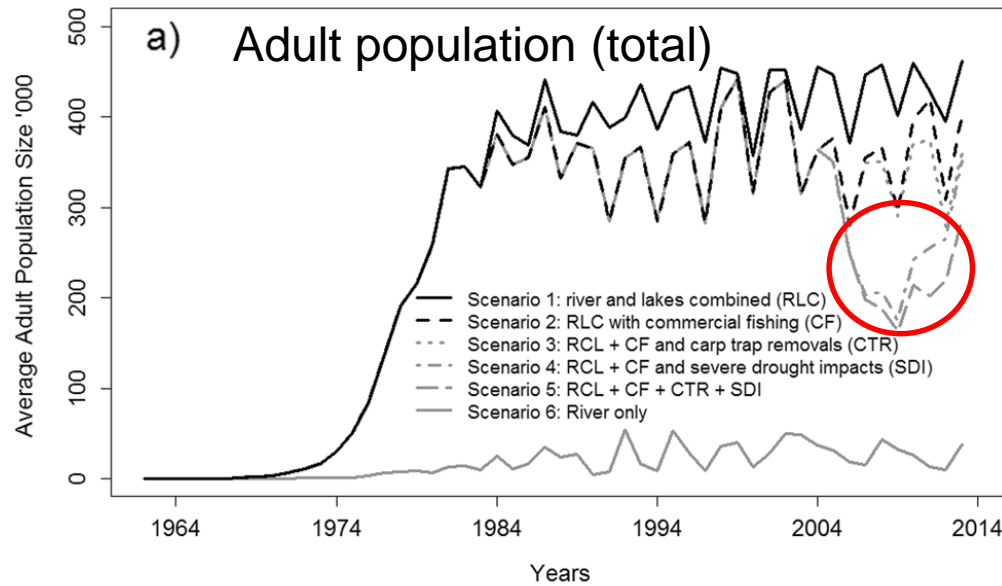
Modifications



The last 11 years (2007-2018)



Are we making a difference?



Take Home Messages!

- Cage has been successful!
- Having an impact (modelling + obs)
- Carp movements and motivation predictable
- Collaborative partnerships
- Cost neutral (Fish value \$1million Aus)
- Potential at other sites
- Part of an integrated solution
- Effects on native fish passage???

Acknowledgements

- Barry Cabot, Ron Simpfendorfer & Graeme Tregenza (SA Water, Lock 1)
- Jim Rishworth & Brenton Erdmann (SA Water, Adelaide)
- John Prentice & Jim Barret (Murray-Darling Basin Authority)
- Jason Higham (SA Department of Environment and Heritage, Adelaide)
- Gary Warwick & Damian Wilks (Professional fisherman)
- Richard Staehr, Tim Kruger and Greg Staehr, (SA Water Engineering Technologies, Berri).
- Alan Williams (Goulburn Murray Water, Lock 26)
- University of Adelaide
- SARDI Aquatic Sciences
- Playford Trust SA

Any Questions?

