Fish in Irrigation Offtakes

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Why study fish in offtakes?

Irrigation is important for MDB

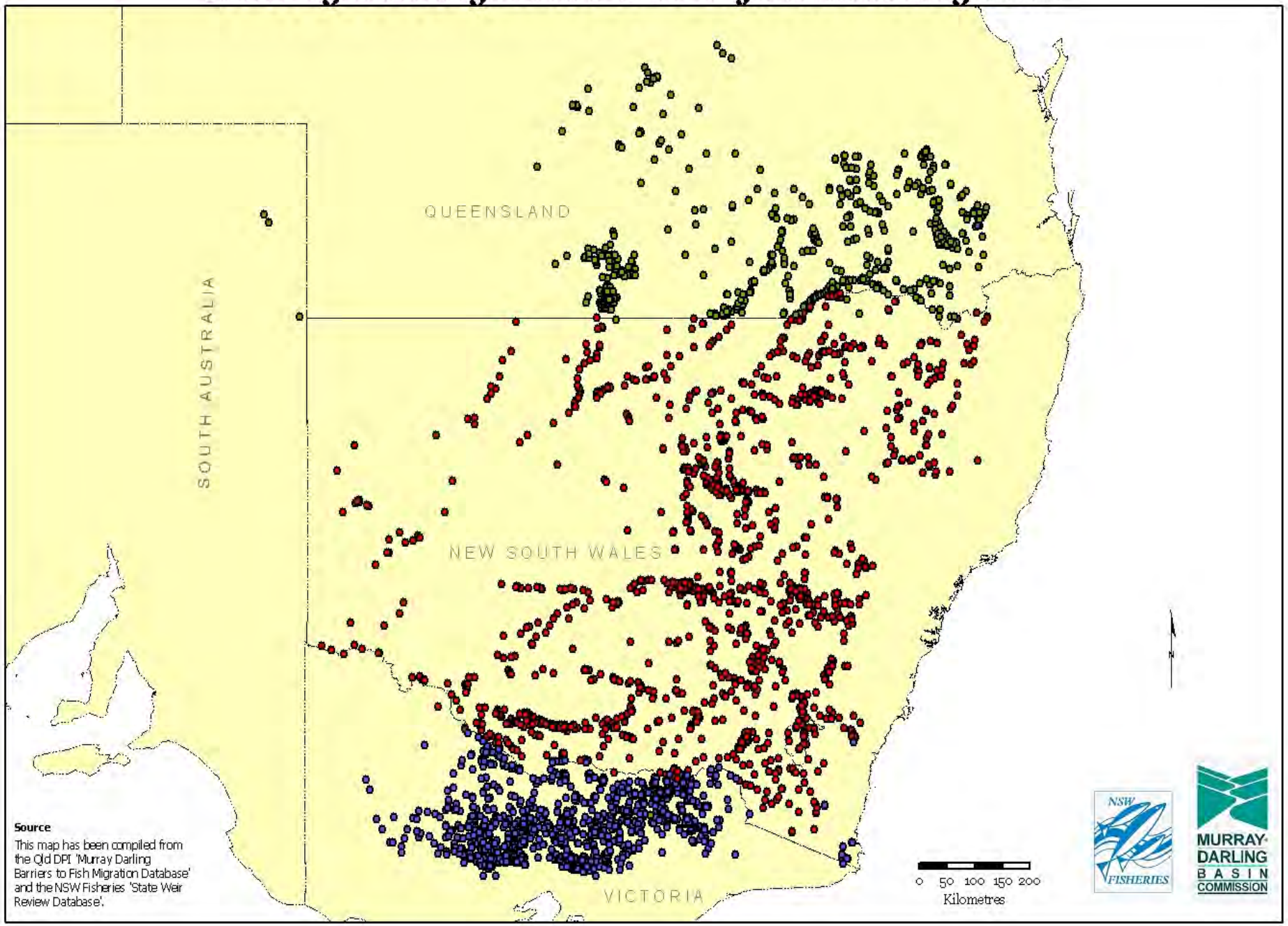
In particular, the MDB supports:

40% Australia's agricultural production

Over 2 Million people

Approx. $8.2 billion industry

Murray Darling Basin Weir Information System



Source

This map has been compiled from the Qld DPI 'Murray Darling Barriers to Fish Migration Database' and the NSW Fisheries 'State Weir Review Database'.

Water Extraction

Water extraction is one such process that could potentially impact upon aquatic fauna.

But presently:

Few studies

Effects poorly understood

Therefore, cannot be adequately mitigated!

Current Research

Diversion channels

Pump systems

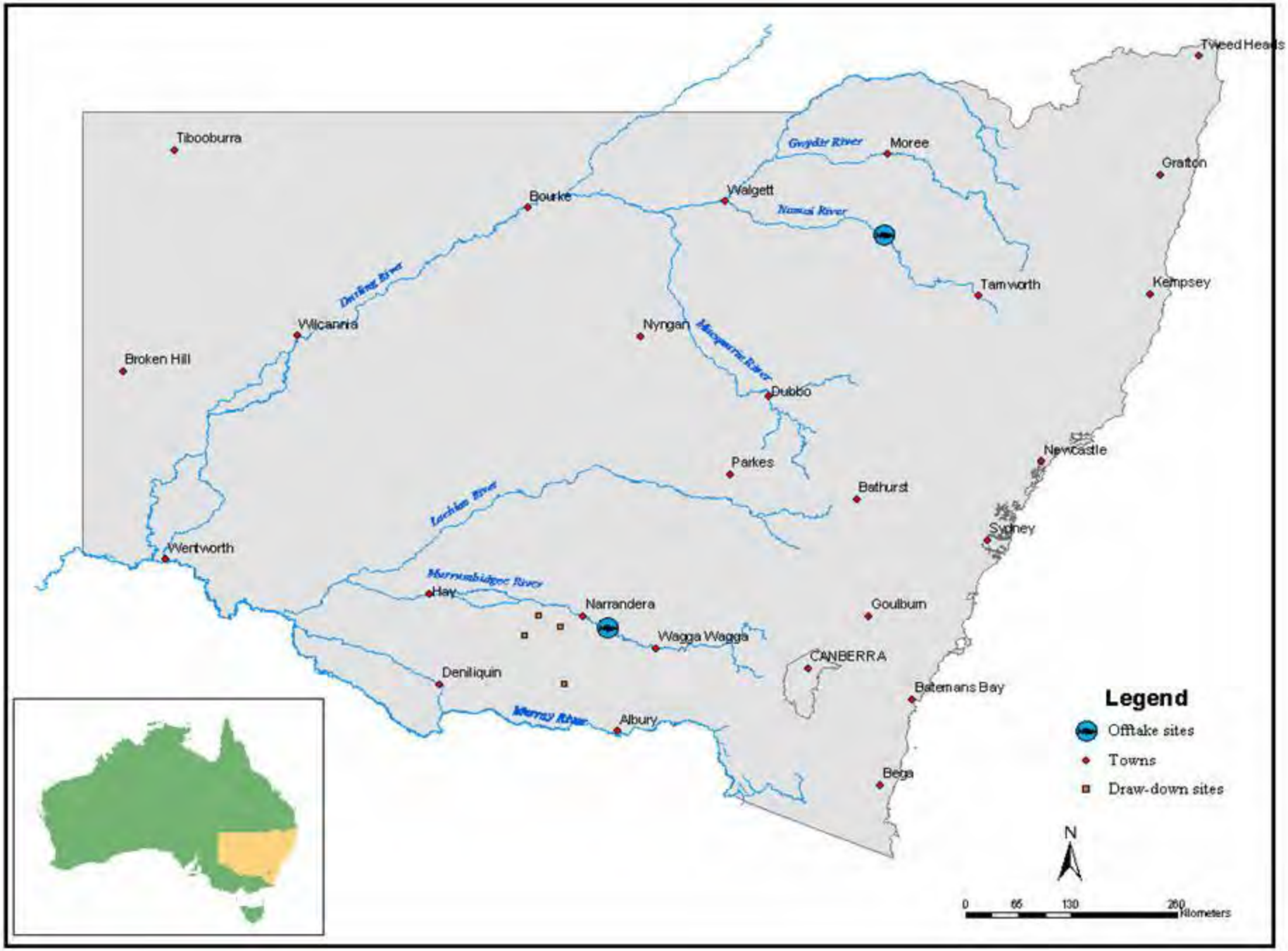
Current Research

Effects of extraction methods

What fish are affected?

When they are affected?

How to fix it!


Tweed Heads
Tibooburra
Gwydir River
Moree
Grafton
Bourke
Walgett
Namoi River
Darling River
Tamworth
Kempsey
Wilcannia
Nyngan
Macquarie River
Broken Hill
Dubbo
Parkes
Newcastle
Bathurst
Lachlan River
Sydney
Wentworth
Murrumbidgee River
Hay
Narrandera
Goulburn
Wagga Wagga
CANBERRA
Deniliquin
Batemans Bay
Murray River
Albury
Bega
Legend
Offtake sites
Towns
Draw-down sites
N
0
65
130
260
Kilometers

Research Methods

Pump outlets netted to assess fish damage

Larval sampling

Electrofishing

Pump Results

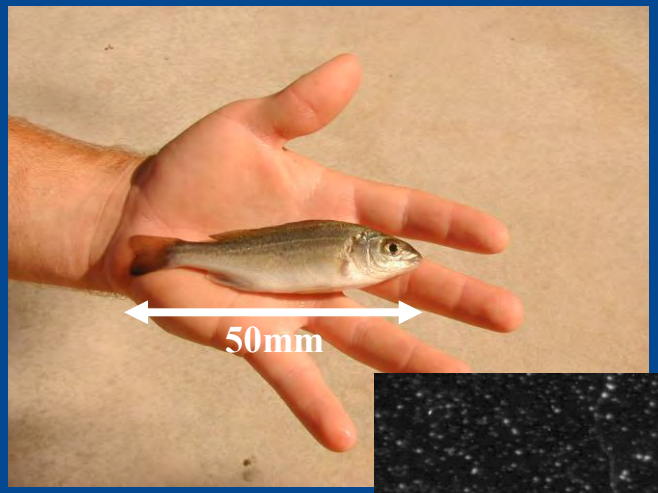
Many natives and aliens extracted and killed

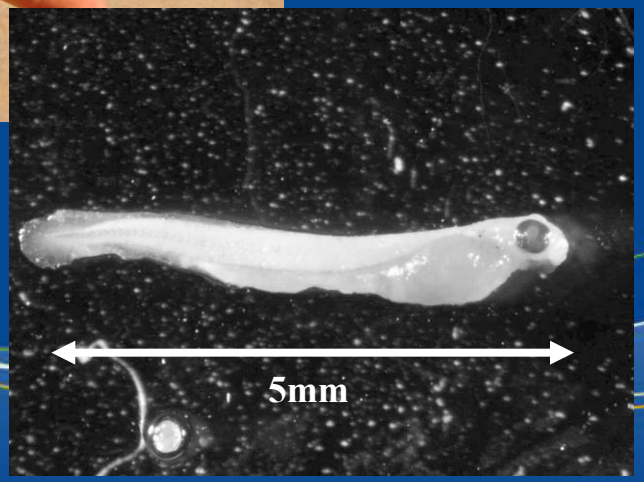
Mostly juveniles and poorer swimming species

Channel Results

Up to 50% total river flow can be extracted

Larvae and juveniles most susceptible





Channels Results

Up to 50% total river flow can be extracted

Larvae and juveniles most susceptible

Some survive, some are killed

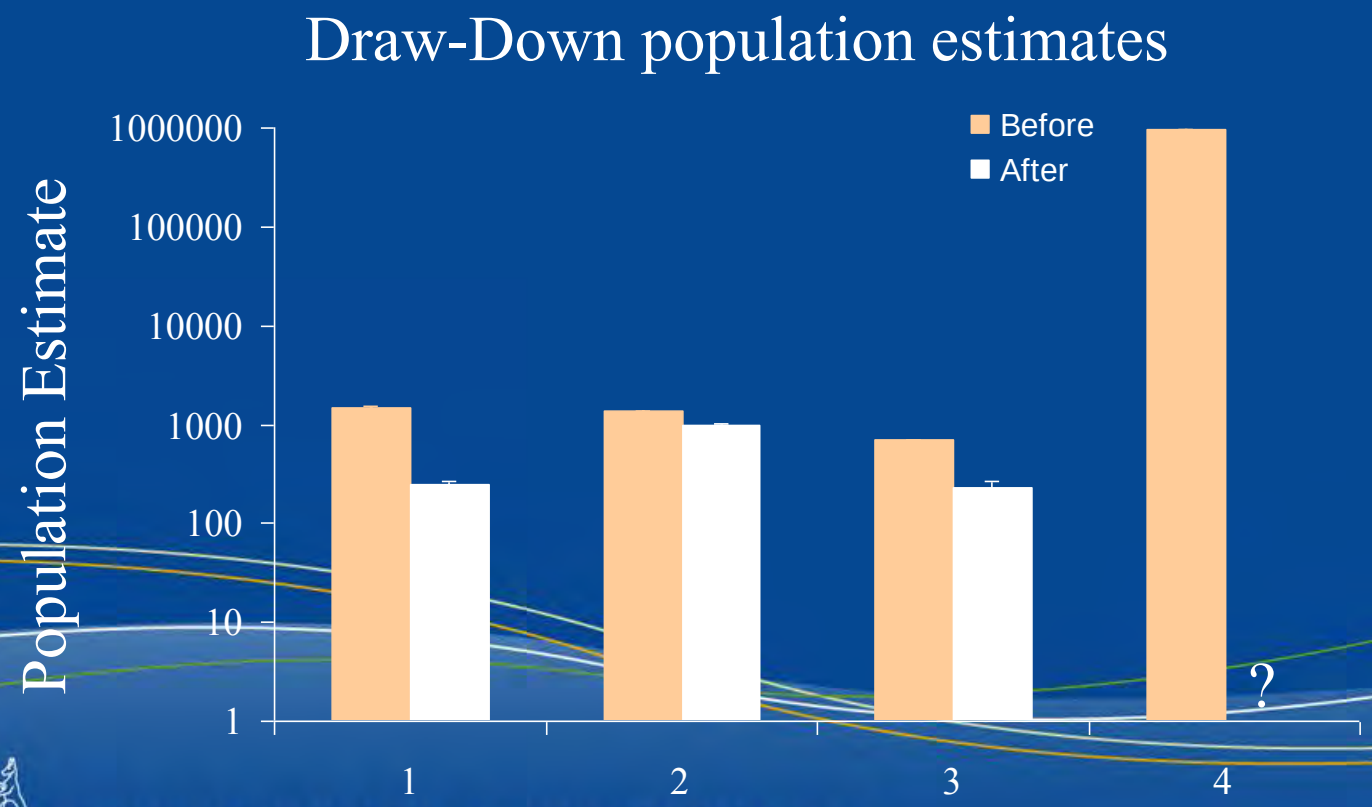
What happens to survivors?

Most channels are drawn down annually

Creates a series of fragmented pools

Many fish stranded or killed by poor water quality

What happens to survivors?



Where are we up to?

Conclude sampling in 2006

Report on initial results

Initiate research into possible solutions