Sea to Hume fishways: a case study in excellence

SARDI RESEARCH AND DEVELOPMENT INSTITUTE

Arthur Rylah Institute for environmental research

SA Water

Charles Sturt University

NSW GOVERNMENT

Department of Primary Industries

Department of Regional NSW

MURRAY–DARLING BASIN AUTHORITY

Murray & Mekong

CATCHMENT AREA: 1,073,000 km^2
LENGTH: 2508 km
ANNUAL DISCHARGE: 767 m3/s

CATCHMENT AREA: 795,000 km^2
LENGTH: 4350 km
ANNUAL DISCHARGE: 16,000 m3/s

Sea to Hume objectives (from 2001-2018)

- **VISION**: restore 2,225 km of riverine fish passage at 14 low-head river weirs and 12 tidal fishways
- **Target** fish from 20-1000 mm long
- Design fish passage for 100% of time (flows)
- 100-year fishway life-span
- Evaluate and refine fishway designs
- $80M for 14 river fishways (plus barrages)
- Demonstrate value for $

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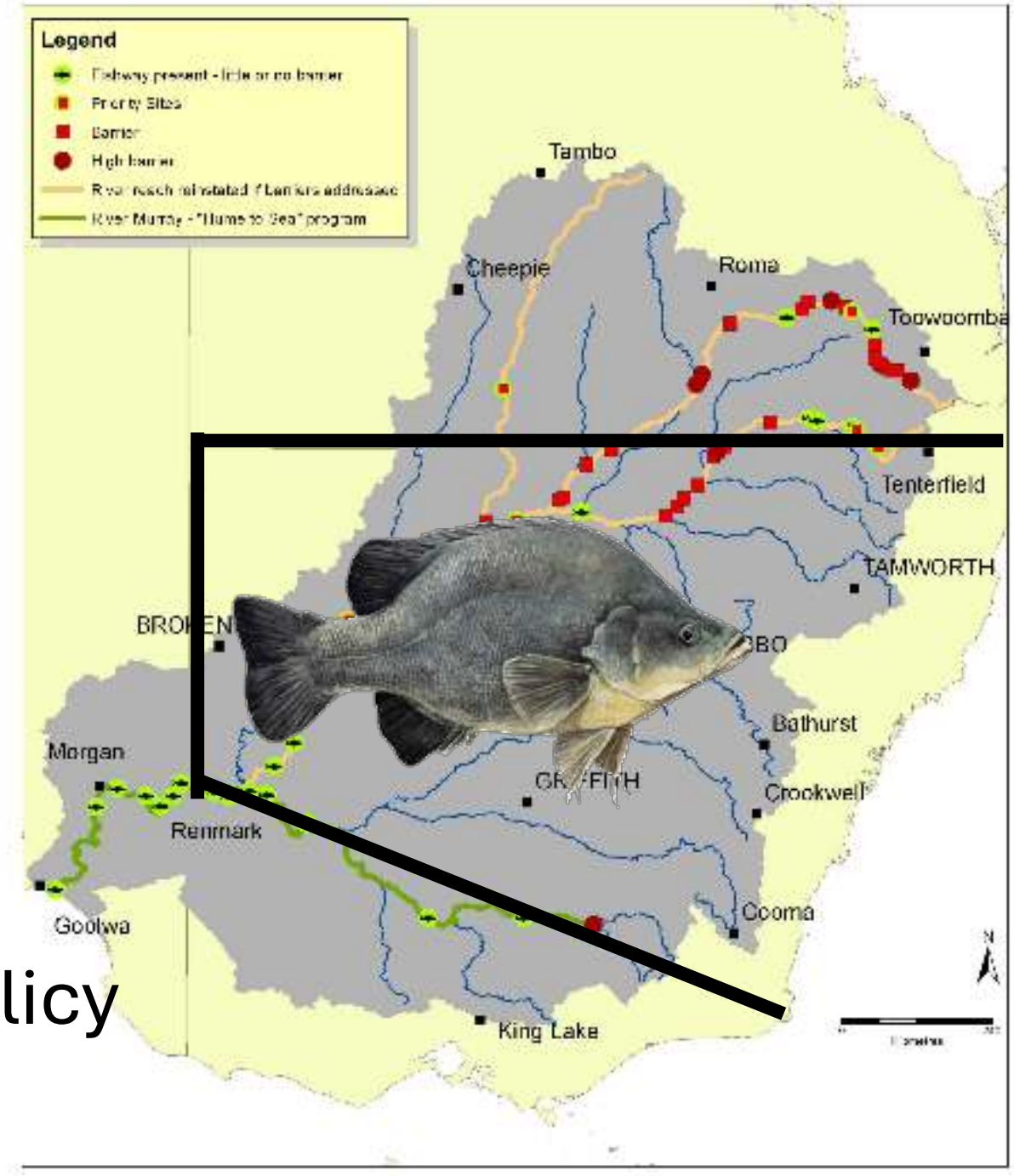
The challenge

- Fish and move across (5) state boundaries (000s km)
- Need clear goals and long-term vision
- Need leadership group from all states backed by strong policy



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The fish

Small
20-100 mm

Medium
100-600 mm

Large
600-1000+ mm

Leadership and collaboration

Strong program: clear design objectives

New technology

Physical models

CFD

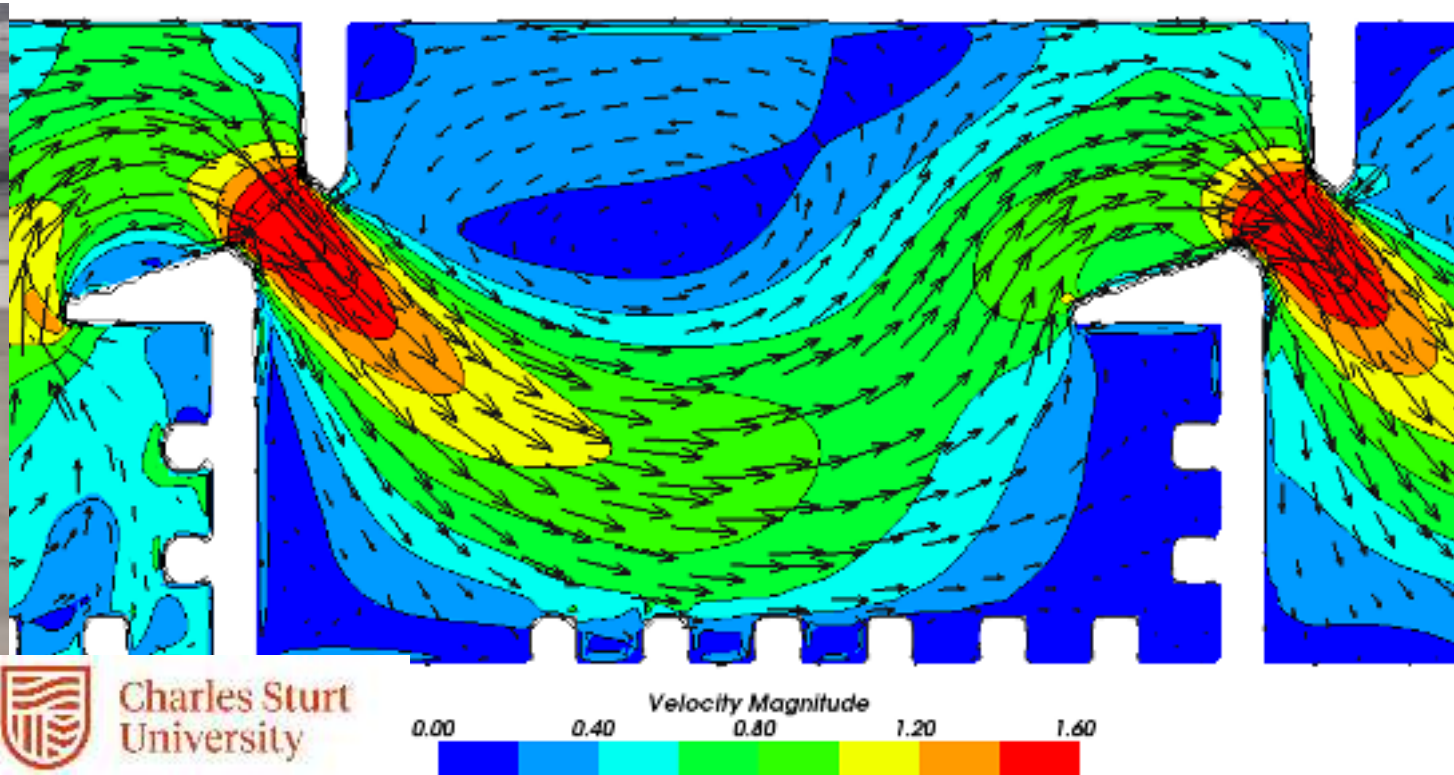
Engineering learnings

Independent review

Compelling data

Training new professionals

Unshakeable resolve



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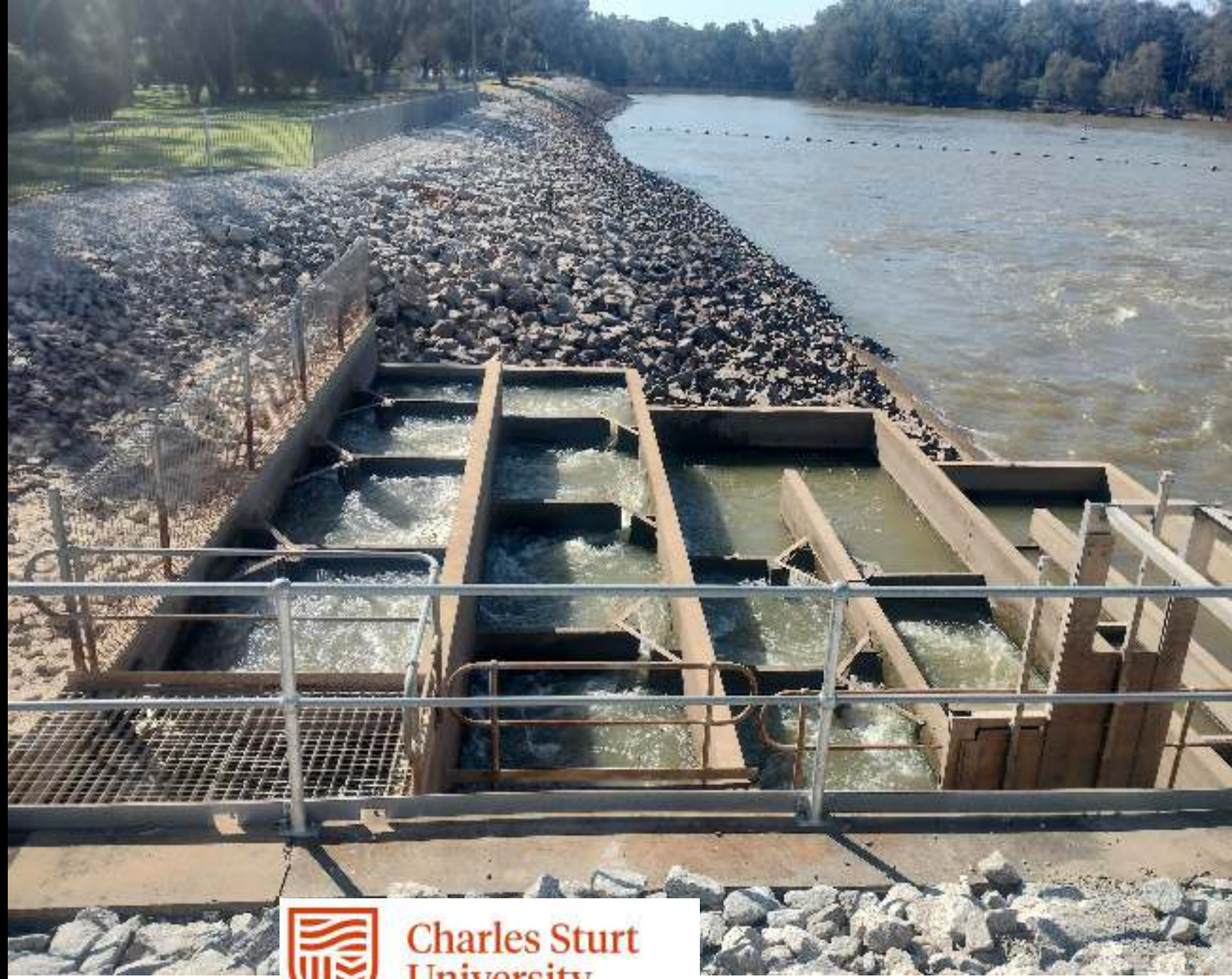

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- Millions of fish move though Australian fishways per year
- The science is demonstrating recovery of fish populations
- E-water designed to support fish migrations

Learnings and LMB uptake

- For trans-boundary issues: collaborative **leadership**, **clear vision** essential
- Sites, hydrology, always unique but the design process is **bulletproof**
- Small fish migrated – **designs** must **change** with **science** (AV and e-flows)
- Sea to Hume fishway program ($80M) was an historic project with a major environmental/social value-for-money legacy (need clear vision, leadership, resolve to bend curve)