

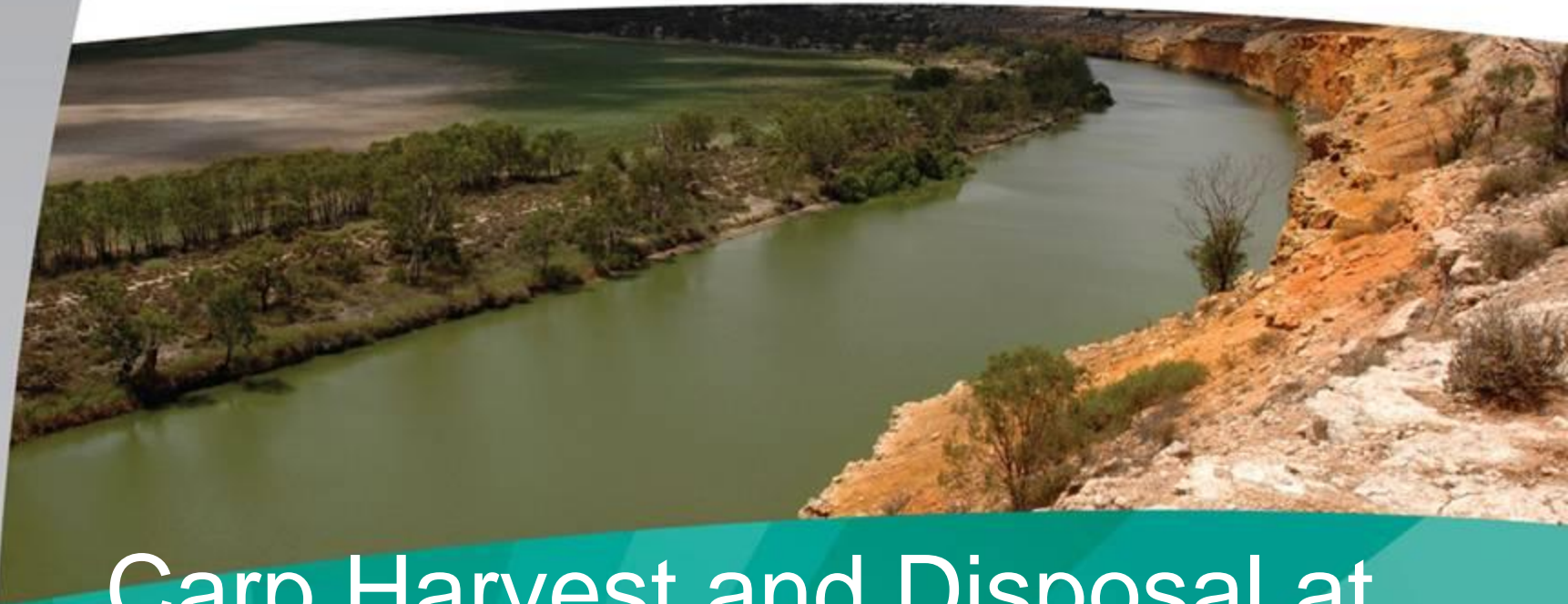


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MURRAY-
DARLING

BASIN AUTHORITY



Carp Harvest and Disposal at Murray River Fishways

Managing Carp Cage Technology

P.D. Jackson

Objectives

- Options for Ethical and Cost Effective Removal of Carp using separation cages.
- Identify issues.
- Provide recommendations for deployment of cages and disposal of Carp at River Murray Fishways.

Carp in the Murray River

- Throughout the River
- Large accumulations (Locks 1,2 and 3).
- Pre-spawning migrations (commencing mid-August).
- “Hotspots of spawning and Recruitment (e.g. Barmah/Millewa, Darling Junction).

Carp Control

- Integrated Carp Management – Harvest at Fishways one “tool”.
- Reduce impact not just numbers.
- Monitor Response.
- Adaptive management.

Principles for Murray Fishways

- Part of Integrated Carp Management.
- Target pre-spawning adults.
- Link to “hotspots” or other Achilles heels where possible.
- No significant impact on native fishes.

Carp Harvest- Williams' Cages

- Numerous refinements since 2000.
- Mark V cage prototype can be used at any fishway.
- Continuous improvement program.
- Relate to increasing knowledge of Carp biology.
- Design/construction and maintenance program. (multidiscipline).

Carp Harvest (outside fishway)

- Impact of high Carp biomass in fishway?
- Capture before fishway (traps/active nets etc.).
- Impacts of capture methods on native fishes?

Carp Disposal (Commercial)

- Commercial Fishery marginal.
- Crayfish bait and fertiliser market can expand.
- Commercial fishers will not be engaged on a cost/resource neutral basis.
- Lock staff involvement (e.g. harvesting and holding carp in freezers).

Carp Disposal - Other

- Burying
- Cremation
- Composting
- -Biobin Example (Bins can be hired and can compost up to 10 tonnes before being replaced).

Ethical Treatment of Carp

- Primarily state legislation
- National Guidelines for scientific research .
- Need manuals for handling, holding and euthanasia.
- Ice slurry vs anaesthetic.

Lock 1 Trials

- November 2007 – ongoing.
- Have not experienced “normal” flows.
- Successful removal of 80 tonnes of carp so far.
- Commercial fisher collects Carp.
- Lock staff harvest Carp and store in freezer.

Implementation of Program - Basics

- Coordinator
- Design Team
- Manuals
(Design/Maintenance/OHS/Animal Ethics etc.).
- Research and Monitoring Plan.
- Communications Plan.
- Cage construction linked to fishway construction program.

Implementation of Program -On-ground Roll-out.

- Staged roll-out with trials.
- Engage Commercial Fishers first.
- Continue Lock 1 trials (including downstream capture).
- Expand in SA initially.
- Look at options at key sites where no commercial fishing (cost /benefit)

Selection of Sites

- Expected biomass of Carp.
- Attraction flows.
- Commercial (travel distance/access/infrastructure/resources)
- Control (fate of migrating fish/likely upstream recruitment “hotspots”/ access to tributaries/linkages with other management/research).

Lessons for Carp Cage use

- A good tool for carp control.
- Needs ongoing continuous improvement program.
- Link to integrated carp management programs – not just random deployment.
- Recognition of resource requirements (maintenance/ handling/holding and euthanasia and disposal of Carp).
- Cost/benefit analysis



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