



Australian Government



MURRAY-DARLING  
BASIN AUTHORITY



# Progressing Monitoring and Evaluation in Demonstration Reaches

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# Why is M&E essential to the success of DRs?

- Enhance public awareness
- Refining guidelines for the rehabilitation of rivers elsewhere in the Basin (i.e. adaptive management )



# Why has M&E been inconsistently applied?

- Inadequate funding
- Insufficient lead times – lack of pre-intervention data
- Difficulties in implementing reliable designs in river systems – e.g. finding controls, defining reference condition, sampling in large rivers
- Inertia or resistance to adopt new approaches to monitoring in freshwater systems
- Lack of accord and communication between different interest groups regarding what constitutes effective river rehabilitation

# A step forward



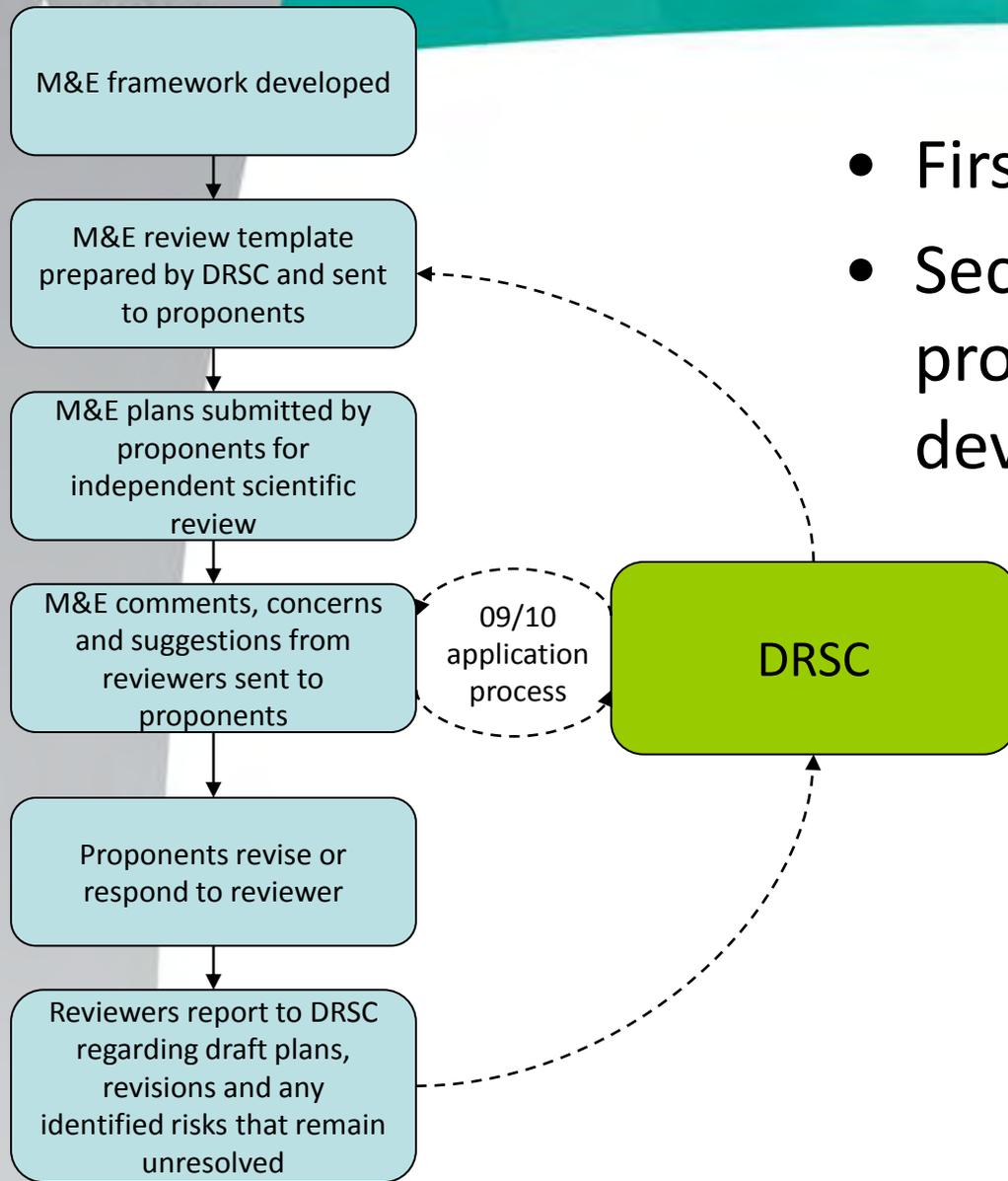
Framework for developing and implementing ecological monitoring and evaluation of aquatic rehabilitation in demonstration reaches

C.A. Boys, W. Robinson, A. Butcher, B. Zampatti and J. Lyons

July 2008

- Basin-wide M&E framework:
  - Conceptual modelling
  - Experimental design
  - Issues of scale
  - Hypothesis generation
  - Indicator choice
  - Sampling and statistical methods
- Not a generic M&E plan, but a framework to assist developing reach specific plans

# Adoption/implementation the next step

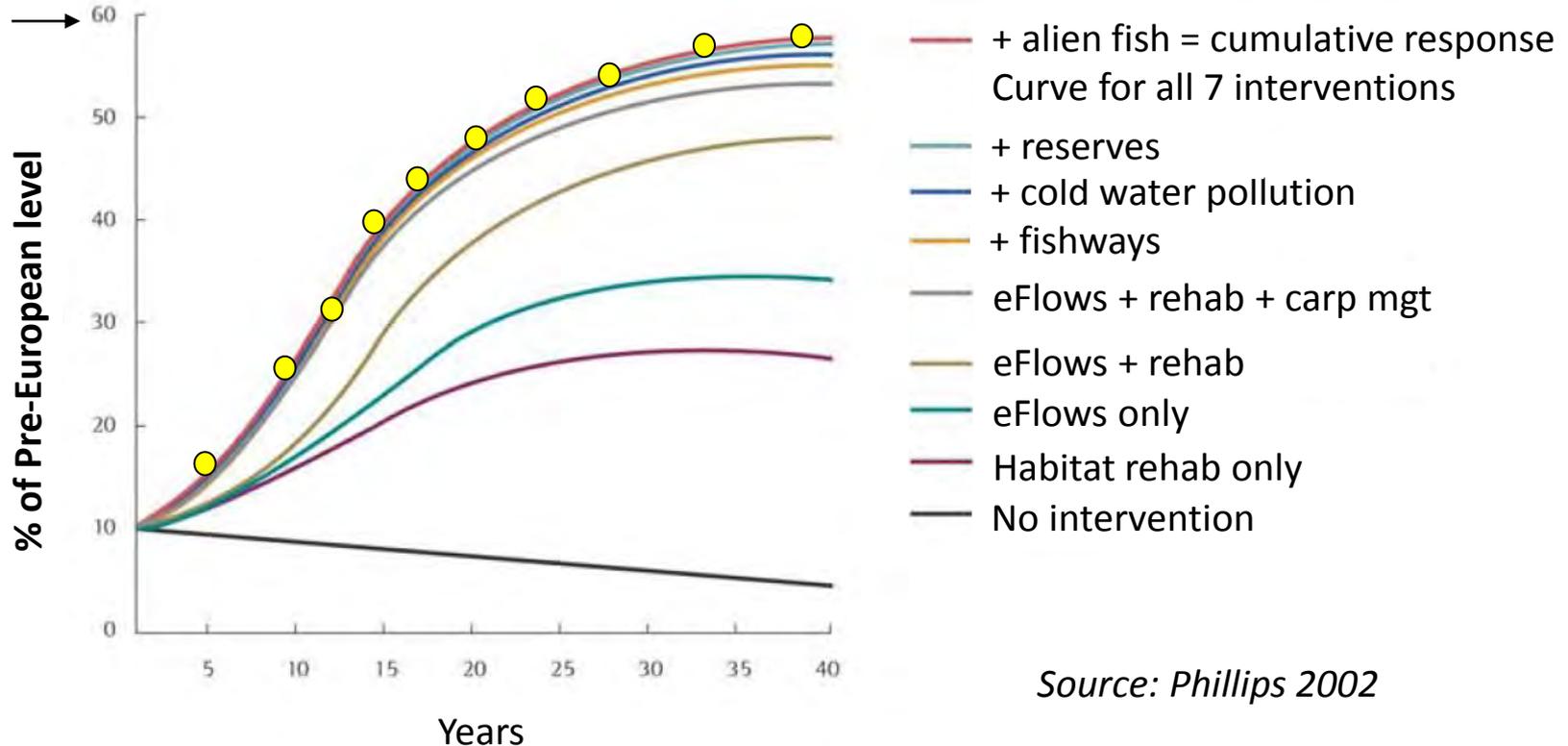


- Firstly get the report published
- Secondly work with the proponents of DR to assist developing/revising M&E plans
- Peer review and iterative process

# Condition and Intervention M&E

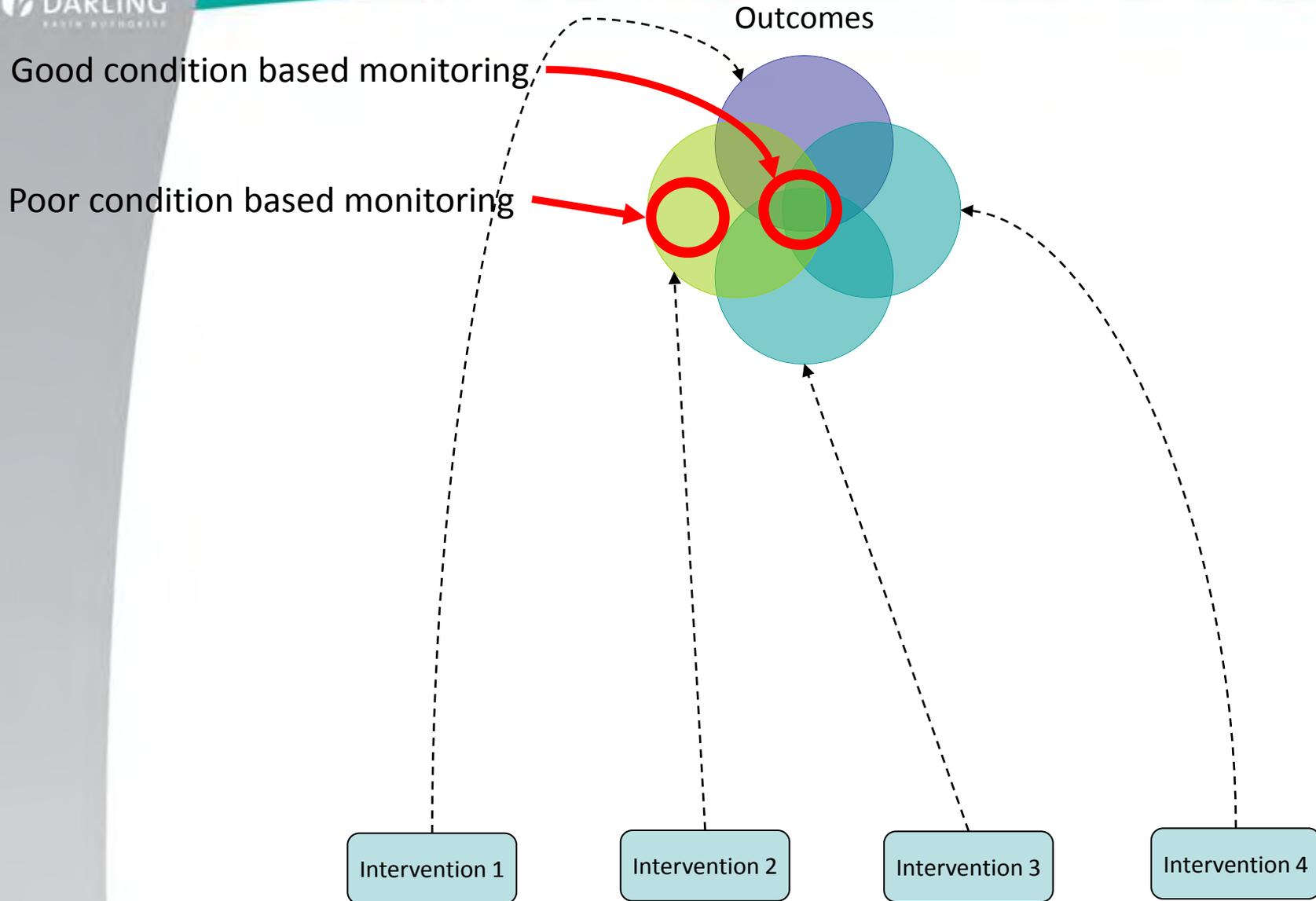
- Condition M&E measures reach scale cumulative responses
  - But can tell you very little about how or why this response has occurred

60% NFS target →



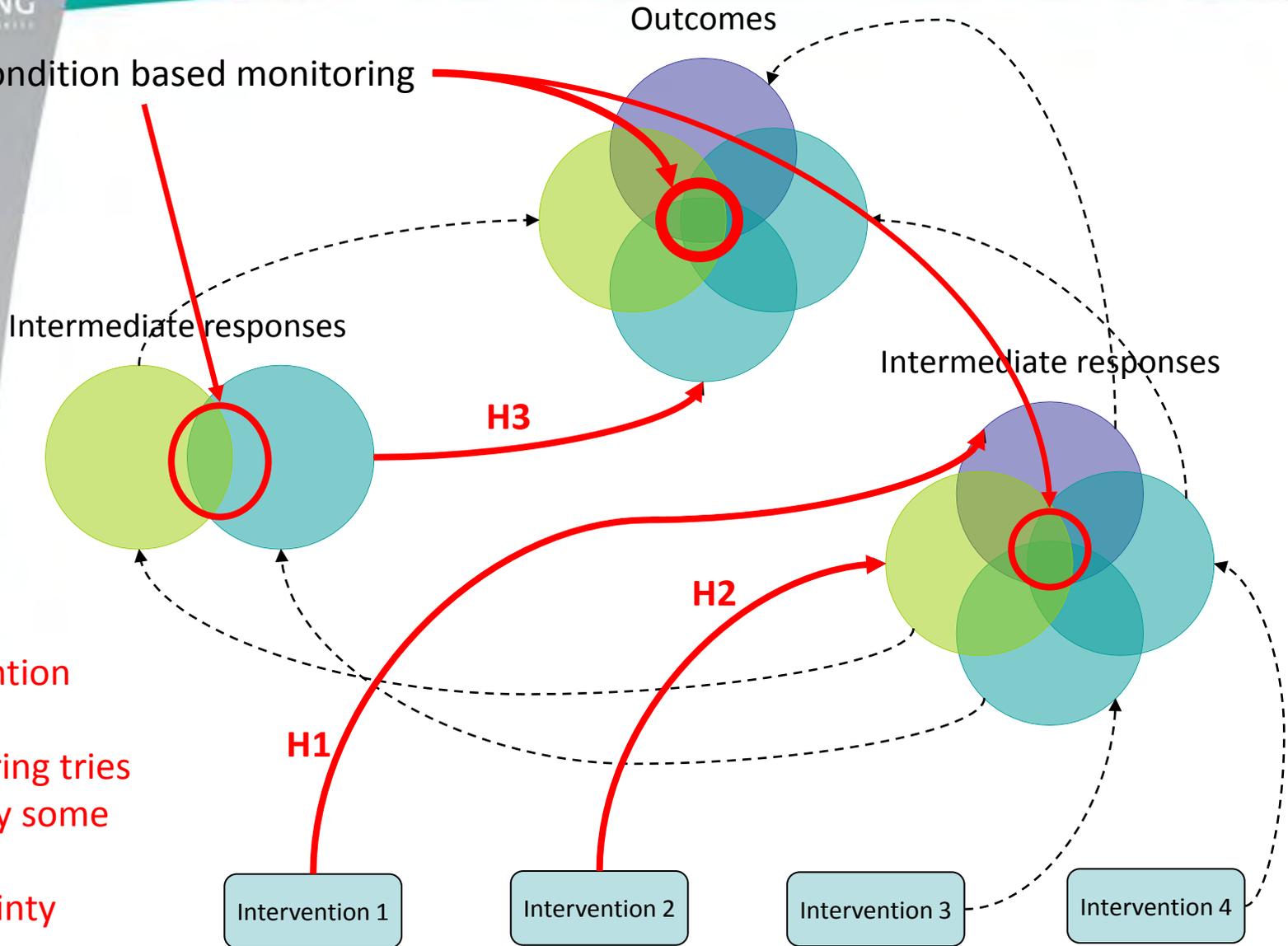
Source: Phillips 2002

# Condition and Intervention M&E



# Condition and Intervention M&E

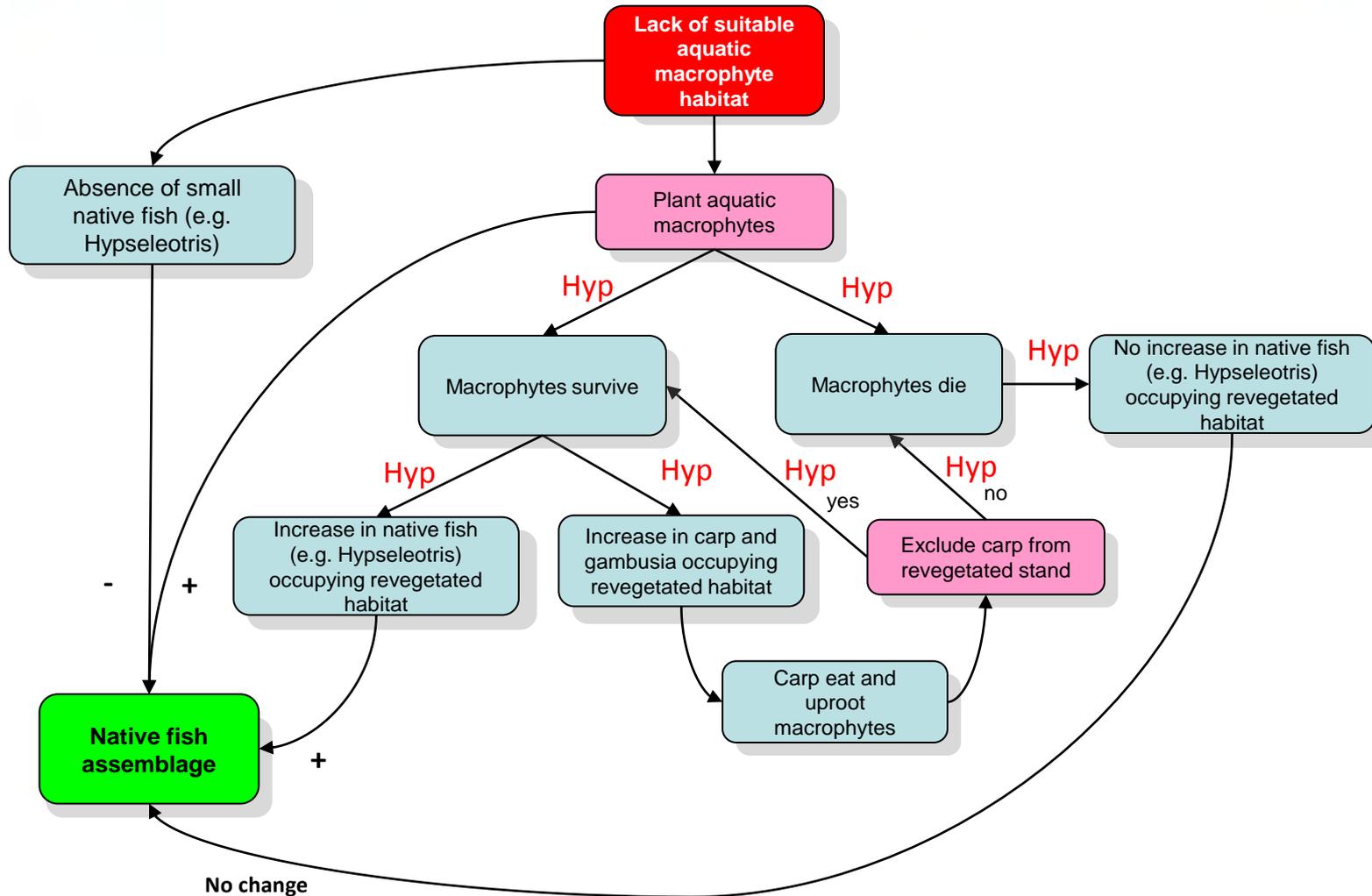
Good condition based monitoring



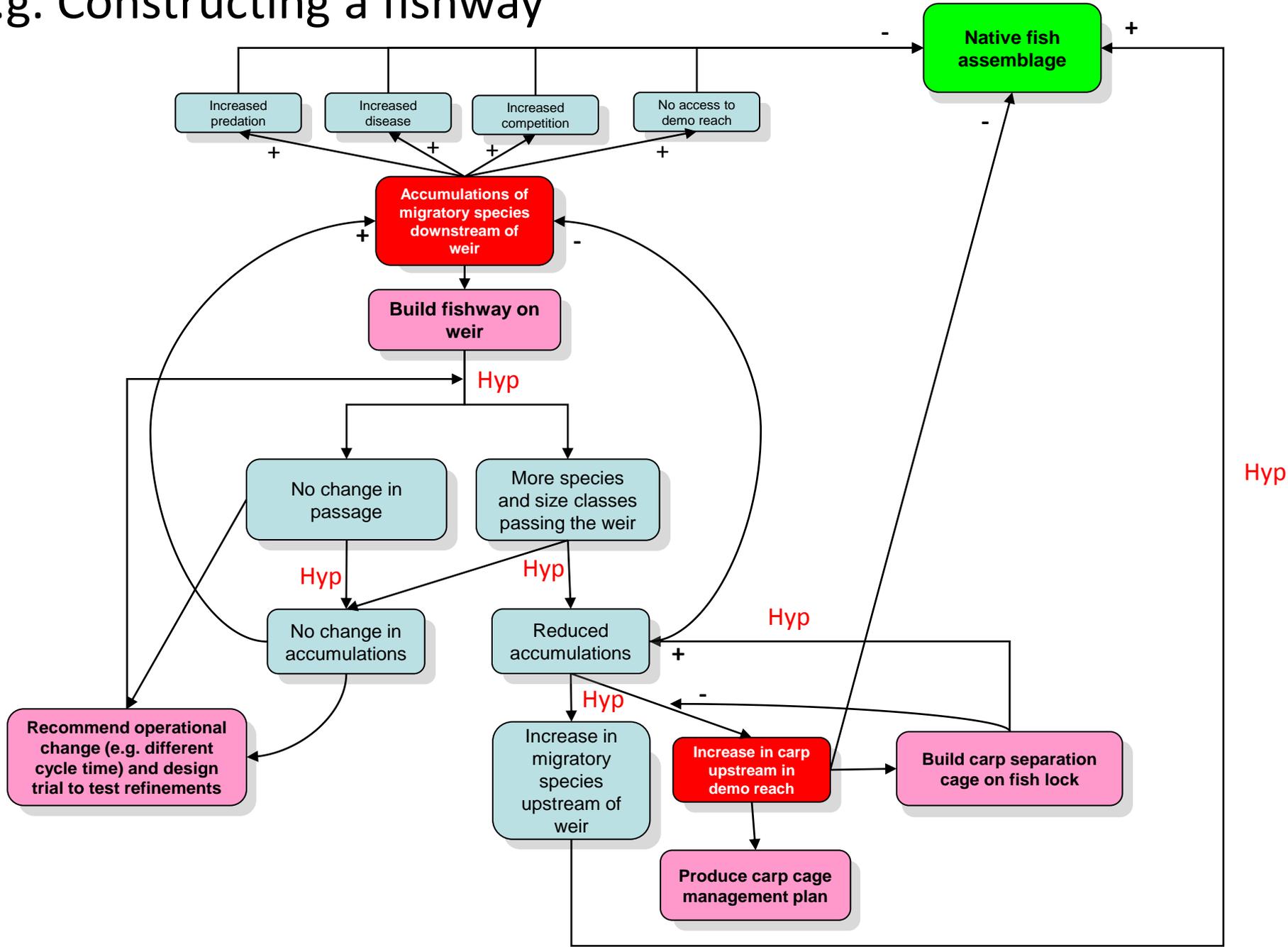
Intervention based monitoring tries to clarify some of this uncertainty

# Requires a good conceptual basis

E.g. Aquatic Macrophyte planting



# E.g. Constructing a fishway



# Condition and Intervention M&E

- Best monitoring outcomes will come from using intervention based monitoring alongside condition monitoring
- But this will require skill & cunning from researchers
  - A good conceptual model and understanding of scale, hypotheses & indicators
- The dividends are worth it:
  - More info to stakeholders, more publishable, furthers rehab science
- But may not always be possible (e.g. inappropriate scales?)
  - Be realistic, DON'T INFLATE STAKEHOLDERS EXPECTATIONS

# Intervention **M&E** at MDBA DR's

<b>NFS Driving Action</b>	<b>Intervention Based M&amp;E</b>
Aquatic & riparian habitats	<b>Willow removal; re-snagging; bank stabilisation; riparian fencing; off-stream watering; aquatic macrophytes</b>
Wetlands	<b>Regulate inundation with regulator</b>
Water quality	<i>Storm water runoff</i>
Flow regulation	<b>Regulate flows and drying with regulator; irrigation offtake screening</b>
Fish passage	<b>Vertical slots, rock ramps, Deelder fishlock</b>
Recovery plan threat sp	-
Management plan other sp	-
Carp	<b>Integrated carp mgt (harvest, Judas, carp cages); carp sep cage on fishway; Bio-bin composting trial</b>
Disease	-
Sustainable fisheries	-
Translocation & stocking	<b>Restocking</b>
Safe aquaculture	-
Community ownership	-

# Where to now?

- Continue iterative/peer review development of M&E plans
- Look at plans as a strategic Basin-wide cohesive whole:
  - Redirect intervention M&E efforts, fill gaps, cross fertilise and standardise approaches?
  - Demo Reach workshop early 2010?
- Aspirational goals → quantitative targets
- Benefit in encouraging new NFS S&R to be undertaken in DR's – community extension point of view
- Community based monitoring still lacking

# DR success will be gauged by:

