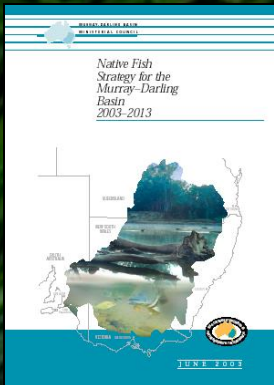


Emergency response

The development of a protocol document for emergency response to ensure native fish survive emergencies and a framework for prioritisation



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Emergency response

How do we ensure that at the end of the drought or other emergencies that threatened and protected native fish species still exist in the basin for us to restore them and achieve the MDBC Native Fish Strategy's long-term goal?

To put it another way...

If the fish are all dead, what good are fishways, snags, protected habitats and a basin free of pest species?

Outline for today's talk

- ✦ **MDBC emergency response workshop & protocol**
 - ✦ Principles for emergency response, triggers, decision making frameworks and the need for planning
 - ✦ Recommendations
- ✦ **So how do you implement a response to an emergency?**
 - ✦ How do you ID populations and work out what to do?
- ✦ **How do you prioritise populations for action when you don't have a blank cheque?**
 - ✦ The SA Rescue to recovery plan
 - ✦ Development of matrices to prioritise sites within sp

What might cause an Emergency event?

Fish can be affected by a range of events such as:

- ✦ *Drought/reduced water availability*
 - ✦ *Bushfire*
 - ✦ *Point source pollution*
 - ✦ *Reduced water quality*
 - ✦ *Invasion by alien species*
- ✦ These events often necessitate a response by government agencies to mitigate this threat to avoid the loss of a species or population

How have we responded in the past?



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Thanks Bomber



Emergency response workshop

- ✦ MDBC emergency response workshop
 - ✦ *Held in Adelaide: November 21-22, 2007*
- ✦ A series of presentations provided summarising:
 - ✦ *Emergency responses undertaken in jurisdictions to prevent the loss of fish populations*
 - ✦ *Planned v unplanned actions*
 - ✦ *Genetics and how many fish need to be rescued*
 - ✦ *A bio-security perspective of fish rescues*
 - ✦ *Considerations for emergency response in recovery planning*
 - ✦ *Informed the development of a protocol that outlined 8 high level principles for future responses*

The Principles of action

The following principles should guide the decision making of all actions in response to emergencies affecting native fish populations requiring intervention:

1. In situ conservation measures should be formally considered before considering ex situ measures.
2. Translocation of native fauna is a valuable tool in efforts to recover extinct or threatened species and restore degraded ecological systems.
3. Re-introduction and re-stocking of indigenous Australian species of fauna can have adverse impacts on the target species, other species and ecological communities if planning and site preparation are inadequate.

The Principles of action

4. Other management actions associated with translocation programs may have adverse impacts on the target species, other species and ecological communities e.g. predator baiting may lead to increased herbivore numbers which may result in overgrazing
5. Translocation proposals should consider the ethical implications as they relate to animals released and animals present at the release site.
6. Captive husbandry has the potential to alter the genetic composition and behavioural response of populations and individuals (founder effects, predator naivety, boldness etc)
7. The decision making process must be documented and a formal review undertaken on completion
8. It is essential that all approvals and permits required are obtained prior to undertaking interventions

Types of interventions

Various options are available for the maintenance of populations in the face of a crisis event, including:

- ✦ *Do nothing/monitor only*
- ✦ *in situ maintenance of refuge sites presently supporting at risk populations or direct intervention at specific sites*
- ✦ *removal of at risk populations and translocation to more secure sites*
- ✦ *removal of at risk populations (or a sub-set thereof to act as an insurance policy) and*
- ✦ *captive maintenance/breeding with later re-introduction to site of origin*

Triggers for action

The need to respond is not always an emergency – some responses can be in response to planned works ie:

- 🐟 De-watering of a weir or irrigation channel
- 🐟 Wetland disconnection

Others responses may be due to problems with a longer lead time ie:

- 🐟 Deterioration in water quality
- 🐟 Drought (declining water level)

Then there is the true emergency ie:

- 🐟 Establishment or incursion of alien species
- 🐟 Bushfire (sedimentation and ash)
- 🐟 Chemical spill

Decision making framework

- ✦ Major theme was the lack of preparation and planning to respond to planned and unplanned events
 - ✦ An action plan template was developed
 - ✦ Documents all the relevant details
- ✦ A Framework of questions was developed to determine the response required for a given emergency
 - ✦ Determines appropriate action beginning with in-situ and escalates to captive breeding and re-introduction
- ✦ Did not detail how to prioritise between sites only how to determine whether to act and how or who...

Recommendations

The workshop produced 20 recommendations – some of which were:

- as a priority, a task force be convened reporting to the IWG to develop specific, interim advice to identify and prioritise at risk populations, species and sites in the Murray-Darling Basin and ensure this information is provided to relevant agencies – via contact officers and NFS coordinators
- strategy 7 of MDBC Native Fish Strategy ‘**To create and implement management plans for all non-threatened native fish species and communities**’ be implemented to support emergency responses by allowing as much pre-planning as possible for events to ensure emergency responses are integrated into wider management or recovery of the species/populations and that the actions are rapid, effective and timely
- a communication and education plan be developed and implemented,

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Recommendations

The workshop produced 20 recommendations – some of which were:

- ✦ all jurisdictions identify, catalogue and protect refugia for native fish (including compliance)
- ✦ for drought or planned events that place populations at risk, detailed trigger levels, factors or measurables ie a water level that corresponds to the loss of key habitat should be identified to base management response frameworks upon
- ✦ in all cases, in situ interventions to maintain populations or species in present sites should be formally assessed before considering ex situ interventions or translocations as an emergency response.
- ✦ the objectives of any emergency response be clearly stated for any intervention undertaken
- ✦ species specific or endangered aquatic community recovery plans should include provisions for response to emergency events

The next step

- ✦ We have a series of high level principles and concepts
 - ✦ We know how to respond and when
 - ✦ We know what information should be collected and what should be recorded when we respond
- but
- ✦ how do you implement it?

The Drought Action Plan...

Drought Action Plan

- SA had previously been rescuing fish & responding with poorly coordinated and resourced responses – Thunderbirds...
- How do we know if looking after all that is needed?
- Following November workshop SA attempted to improve its preparedness response to drought by developing a plan
- Initiated development of a response plan called the Drought Action Plan or ‘Rescue to Recovery’

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Drought Action Plan

- Expert panel established to identify species at risk due to drought and their locations
- Collected information on
 - Site
 - Population
 - Threats
 - Options
- Held a second workshop with relevant representatives to:
 - Assess information
 - Determine possible actions and triggers for response – in-situ and ex-situ
 - Problem was resources not enough for all the populations

Now we know what is at risk and where they are, how do we look after as many of these populations as possible within the resources available?

Or

How do you prioritise sites for action when you don't have a blank cheque

SA Drought Action Plan

- ✦ Following workshop using information collated and field sampling matrices developed to rank sites
 - ✦ Matrix 1: Risk and consequence
 - ✦ Matrix 2: Cost and feasibility
- ✦ Aim is to prioritise not only the sites most at risk but also those assessed as most feasible to maintain the population and
- ✦ Balance against available resources (people, \$\$ and equipment)
- ✦ 3 principles:
 1. Maintain at least 1 population of each species.
 2. Maximise maintenance of genetic diversity of species- maintain each genetic unit.
 3. Maintain maximum number of sites within each genetic unit.

Risk and consequence

- Matrix 1: Risk and consequence
 - Present habitat condition
 - Predicted habitat condition
 - Water quality
 - Current population status
 - Present conservation status
 - Distribution/number of locations
 - Can the population recover naturally
 - Result of no action

Feasibility & cost

- ✦ Matrix 1: Feasibility and cost
 - ✦ Number of species of interest present at site
 - ✦ Likelihood of action success
 - ✦ Infrastructure requirements
 - ✦ Cost
 - ✦ Staff requirements
 - ✦ Is water required to maintain the site
 - ✦ Legislative impediments/permits
 - ✦ Time required to instigate response
 - ✦ Duration of the action

Process summary

1. Collate relevant information about sites/population
 2. Determine risk and consequence to each population within each conservation unit (assuming do nothing)
 3. Determine which populations need immediate action
 4. Propose various options for population and determine likelihood of success in addressing threats
- ID & mitigate risks, ID permits & policy gaps

Process summary

5. Assess feasibility of action and resources to undertake
6. Re-prioritise at risk populations using risk, consequence and feasibility information within available resources
7. Develop drought action plans for each site
8. Monitor sites for breaches of triggers
9. Undertake actions in priority order using available funds

Where to from here?

- 🐟 This process is still a work in progress
- 🐟 Input welcomed on matrices

Preparation takes time but...

Organisation and planning increases the chances of successful action

Acknowledgments – MH, AH, RS, BZ, workshop attendees

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QUESTIONS????



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