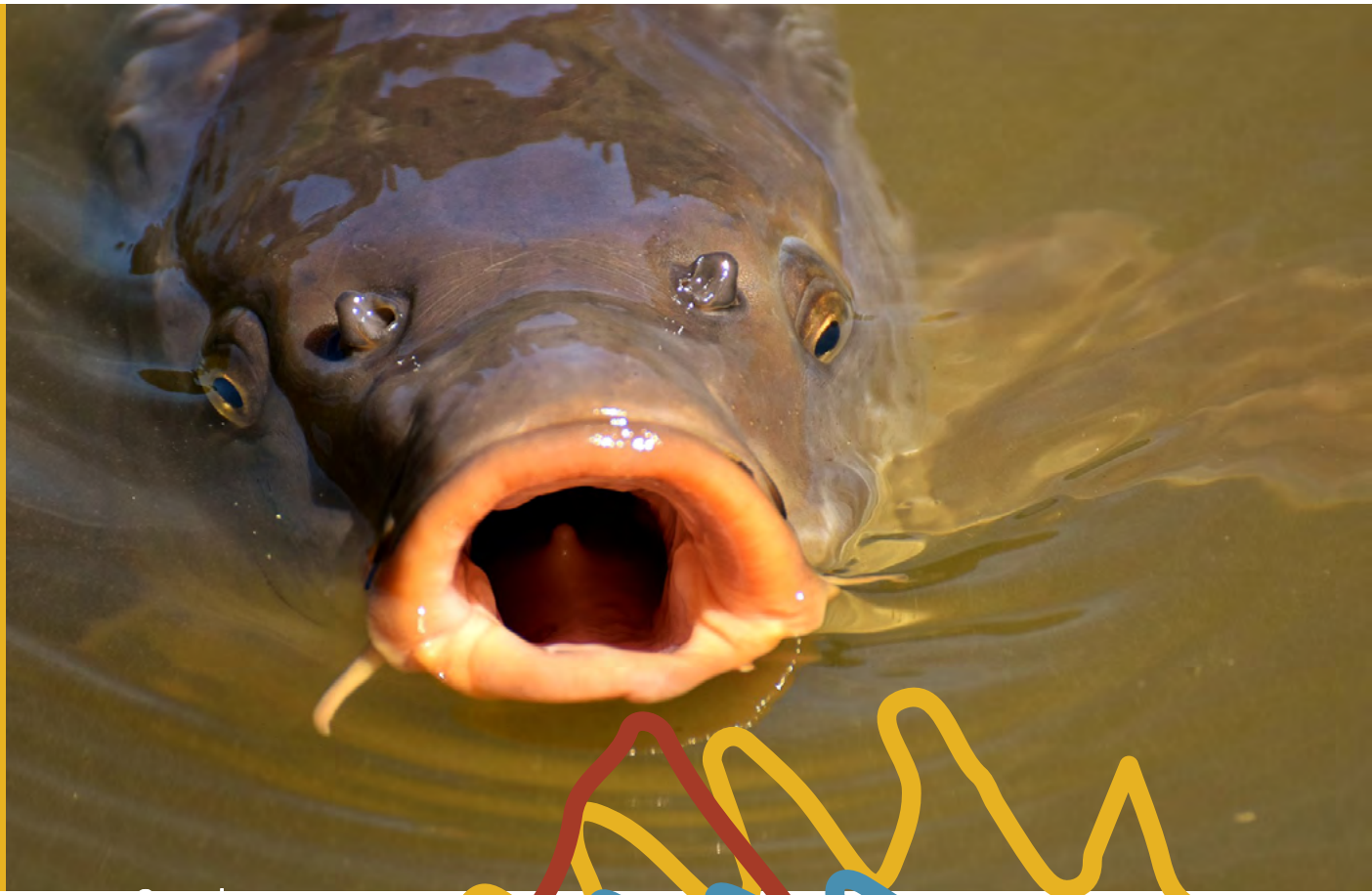
TECHNICAL PAPER 7

NATIONAL CARP CONTROL PLAN

NCCP engagement report



This suite of documents contains those listed below.

NCCP TECHNICAL PAPERS

1. Carp biocontrol background
2. Epidemiology and release strategies
3. Carp biocontrol and water quality
4. Carp virus species specificity
5. Potential socio-economic impacts of carp biocontrol
6. NCCP implementation
7. NCCP engagement report
8. NCCP Murray and Murrumbidgee case study
9. NCCP Lachlan case study

NCCP RESEARCH (peer reviewed)

Will carp virus biocontrol be effective?

1. 2016-153: Preparing for Cyprinid herpesvirus 3: A carp biomass estimate for eastern Australia
2. 2018-120: Population dynamics and carp biomass estimates for Australia
3. 2017-148: Exploring genetic biocontrol options that could work synergistically with the carp virus
4. 2016-170: Development of hydrological, ecological and epidemiological modelling
5. 2017-135: Essential studies on Cyprinid herpesvirus 3 (CyHV-3) prior to release of the virus in Australian waters
6. 2020-104: Evaluating the role of direct fish-to-fish contact on horizontal transmission of koi herpesvirus
7. 2019-163 Understanding the genetics and genomics of carp strains and susceptibility to CyHV-3
8. 2017-094: Review of carp control via commercial exploitation

What are the carp virus biocontrol risks and how can they be managed?

9. 2017-055 and 2017-056: Water-quality risk assessment of carp biocontrol for Australian waterways
10. 2016-183: Cyprinid herpesvirus 3 and its relevance to humans
11. 2017-127: Defining best practice for viral susceptibility testing of non-target species to Cyprinid herpesvirus 3
12. 2019-176: Determination of the susceptibility of Silver Perch, Murray Cod and Rainbow Trout to infection with CyHV-3
13. 2016-152 and 2018-189: The socio-economic impact assessment and stakeholder engagement
    Appendix 1: Getting the National Carp Control Plan right: Ensuring the plan addresses community and stakeholder needs, interests and concerns
    Appendix 2: Findings of community attitude surveys
    Appendix 3: Socio-economic impact assessment — commercial carp fishers
    Appendix 4: Socio-economic impact assessment — tourism sector
    Appendix 5: Stakeholder interviews
    Appendix 6: Socio-economic impact assessment — native fish breeders and growers
    Appendix 7: Socio-economic impact assessment — recreational fishing sector
    Appendix 8: Socio-economic impact assessment — koi hobbyists and businesses
    Appendix 9: Engaging with the NCCP: Summary of a stakeholder workshop
14. 2017-237: Risks, costs and water industry response
15. 2017-054: Social, economic and ecological risk assessment for use of Cyprinid herpesvirus 3 (CyHV-3) for carp biocontrol in Australia
    Volume 1: Review of the literature, outbreak scenarios, exposure pathways and case studies
    Volume 2: Assessment of risks to Matters of National Environmental Significance
    Volume 3: Assessment of social risks
16. 2016-158: Development of strategies to optimise release and clean-up strategies
17. 2016-180: Assessment of options for utilisation of virus-infected carp
18. 2017-104: The likely medium- to long-term ecological outcomes of major carp population reductions
19. 2016-132: Expected benefits and costs associated with carp control in the Murray-Darling Basin

NCCP PLANNING INVESTIGATIONS

1. 2018-112: Carp questionnaire survey and community mapping tool
2. 2018-190: Biosecurity strategy for the koi (*Cyprinus carpio*) industry
3. 2017-222: Engineering options for the NCCP
4. NCCP Lachlan case study (in house) (refer to Technical Paper 9)
5. 2018-209: Various NCCP operations case studies for the Murray and Murrumbidgee river systems (refer to Technical Paper 8)

NCCP Technical Paper 7: NCCP engagement report

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1. About this paper

A virus called Cyprinid herpesvirus 3 (CyHV-3, hereafter 'the carp virus', or 'the virus') has been proposed as a biological control agent for European Carp or common carp (*Cyprinus carpio*, hereafter 'carp'), an invasive pest fish widespread in south-eastern Australia. The Australian Government has provided $10.211 million since 2017 for development of a National Carp Control Plan (NCCP) assessing the feasibility of carp biocontrol using the virus. This paper describes and discusses NCCP feedback from stakeholder and community feedback provided through a range of NCCP activities.

2. Introduction

This report provides an overview of NCCP engagement activities. The NCCP implemented an extensive range of stakeholder and community consultation activities, including stakeholder and community presentations, social research surveys, field trials and workshops, industry events, and targeted engagement with impacted industries. Achieving best-practice engagement involves documenting stakeholder discussions and feedback, and transparently informing stakeholders about how their input has been considered. Changes to the NCCP program meant a community consultation phase on the draft NCCP was not undertaken. Consultation on the draft will be undertaken by government. Community consultation was undertaken during 2018 before NCCP research was completed, as described below.

This report does not report on communications activities or mass audience media. These activities have been reported separately through milestone reporting.

3. NCCP communications and engagement planning

The NCCP Communications and engagement plan 2019 is shown at Attachment 1.

It contains the following objectives

- consult with key stakeholders to obtain views, understand concerns, discuss potential actions for which feasibility is being assessed as part of the plan, discuss impacts and mitigation measures and overall inform development of the plan,
- communicate key messages about the development of the plan,
- communicate research outcomes including integration and synthesis of research outputs to inform cost-benefit analysis and risk assessment, and
- build trust in the planning process by openly engaging and communicating, and responding to issues raised.

NCCP engagement was consistent with best practise engagement as recommended by a NCCP research project 10 undertaken by the University of Canberra. This review identified the importance of engaging with specific stakeholder groups that are impacted by or highly interested in the NCCP.

4. NCCP community consultation

The NCCP completed a major consultation with the general community through 2017 and 2018. Seventy-three stakeholder workshops and community meetings were held throughout carp-affected areas in Queensland Qld), New South Wales (NSW), the Australian Capital Territory (ACT), Victoria Vic), and South Australia (SA) during 2017 and 2018. Dedicated research into stakeholder and community attitudes to the possible release of the carp virus was undertaken as part of these workshops.

A full report on these consultation events is shown at attachment 2. The report also indicates how NCCP research and investigations respond to the issues raised through the community consultation.

The NCCP's stakeholder consultation events provided opportunities for communities, industries, and user groups potentially affected by carp biocontrol to communicate about the risks, concerns and opportunities they have identified. These information exchanges have enabled those developing the NCCP to work with stakeholders to manage risks and maximise opportunities.

Meetings were hosted in 40 locations (see table following) by jurisdictional natural resource management (NRM) groups, in collaboration with the NCCP and state and territory government departments. Almost 1,500 people participated in the stakeholder workshops and community meetings. Participants included:

- community and recreational users,
- environmental advocates,
- farmers/irrigators, water authority representatives,
- commercial and recreational fishers,
- business owners, tourism operators,
- traditional owners,
- natural resource management representatives, and
- local, state and federal government representatives.

The most common issues of interest or concern nationally included:

- the impact the release of the carp virus could have on water quality
- the economic impact on industry, and
- the proposed clean-up strategies being considered as part of the plan

Figure 1 shows issues of concern raised at stakeholder workshops/meeting. The stakeholder workshops and community meetings held in late 2017 and early 2018 were generally well attended. They were effective conduits for updating stakeholders on processes under the NCCP and provided useful opportunities for stakeholders to contribute their views on issues, questions and risks. This information helped shape the Plan's development.

Many of the issues raised by stakeholders, community members and industry representatives during NCCP consultative meetings were also acknowledged as important by the NCCP scientific group. This confirms that the NCCP is focussing on the right areas and helps those working on the program to further refine research and planning.

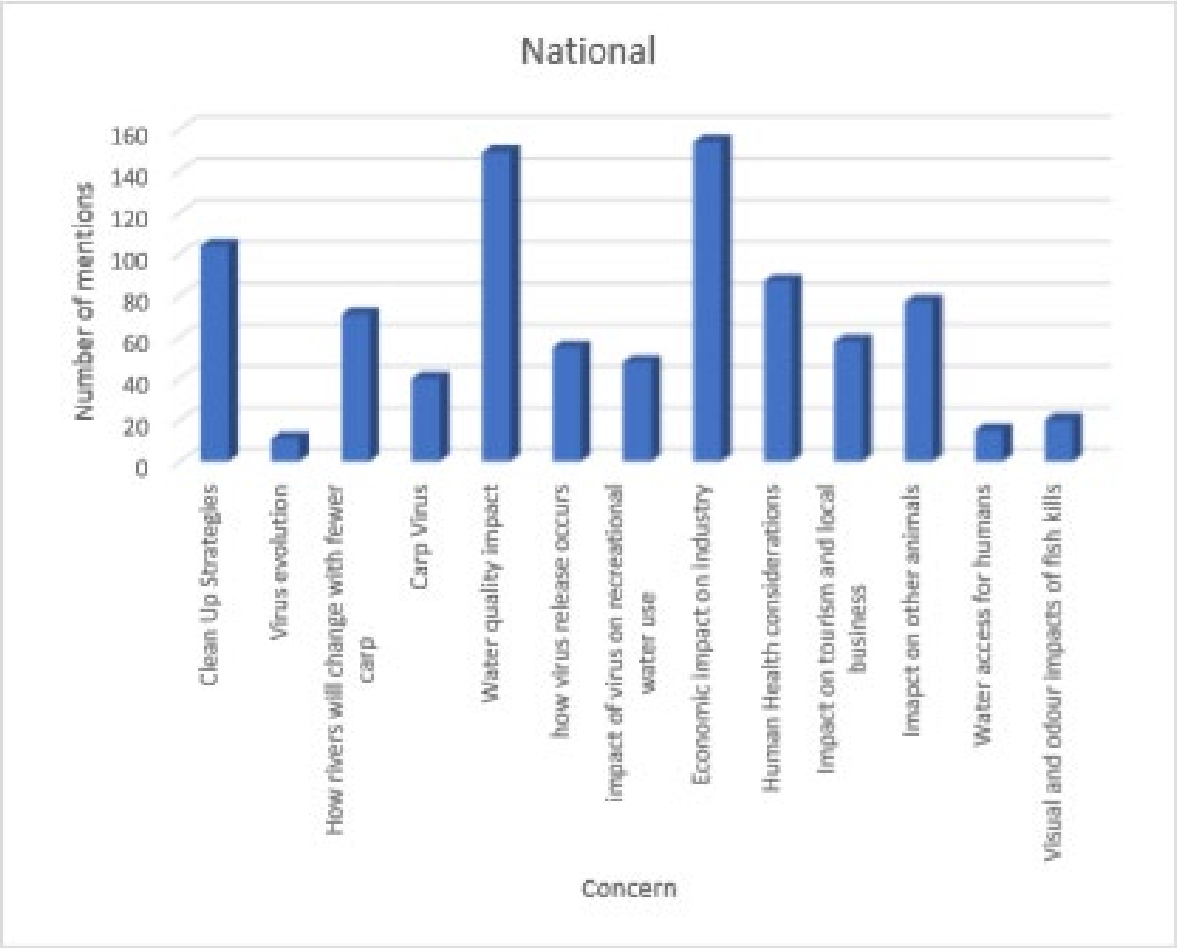

Figure 1. National summary of key themes of interest from community workshops

5. NCCP stakeholder meetings

The table below summarises stakeholder meetings through 2019 and how the NCCP has responded.

Table 1. NCCP stakeholder meetings in 2019

Stakeholder meeting	Details	Topics discussed	Issues raised related to NCCP	Response/NCCP implications
Commercial Fishers meeting	18 May 2018	Impacts on Industry	See NCCP social impact report	See report and follow up emails. Completed
Native Fish Breeders workshop	18 October 2018. Wagga Wagga. 15 participants	Impacts on Industry	See NCCP social impact report	See NCCP social impact report. Completed
Riverland case study	24/25 July. Waikerie. 40 participants	Release and clean up in the Lachlan	See workshop report	Follow up meeting with stakeholders. Completed
Lachlan case study	14 Feb 2018. Forbes. 40 participants	Release and clean up in the Lachlan	See workshop report	Follow up meetings with the Lachlan EWAG. Completed
Clean up Workshop	26 June 2018. Mildura. 30 participants	Clean up options in case study area	Challenges with certain waterbodies, technology. Suit of technology methods required Possible at local and regional scale	Documentation included in NCCP report to government
NCCP Research and Stakeholder meeting	12 December 2018 Canberra. 40 participants	Review of NCCP research to date: Epidemiology Risk assessment Water quality Biomass NTS	Concern about Non target species Risks not yet identified. Virus resistance Uncertainty and knowldege gaps in science Carp ability to re-populate not addressed	Full report completed and incorporated into NCCP documentation for government consideration
NSW Lachlan Catchment Advisory Committee	15 March 2019. Forbes. Presentation and feedback. 20 participants	Overall program Early results on water quality in the lower lakes.	Concern about group being seen to endorse virus release Uncertainty with some of the science Community engagement is critical	Small group of stakeholders/experts finalise draft then Follow up workshop with stakeholders

VRFish (Victorian Recreational Fishing)	State Council meeting. Melbourne. 13 April, 2019. 50 participants	Overall program Early results on water quality in the lower lakes.	Concern that the NCCP is not proceeding or has stalled Non target species impacts are not confirmed	Return visit if required. Follow up consultation completed.
Murray-Darling Basin Authority Native Fish Strategy	15 May 2019. Sydney. 50 participants	Native Fish Strategy	Overarching fish strategy and how it relates to pest species management	Native fish strategy unlikely to be developed in time for NCCP context. Attended follow up workshop.
SA Lower Lakes Fisheries Advisory Committee	20 May 2019. Mannum. Presentation, Advisory group. 12 participants	Overall program Early results on water quality in the lower lakes.	Offshore impacts at Murray mouth. Impact on local fisheries	NCCP to assess offshore risks in the Lower Lakes. Completed
SA Fisheries Advisory Committee	21 May 2019. Adelaide. Presentation, Advisory group. 12 participants	Overall program Early results on water quality in the lower lakes.	Offshore impacts at Murray mouth. Consultation on draft Replacement with other alien species Size of clean up Unbiased communications Involvement of SARDI experts	NCCP to assess offshore risks NCCP to present draft and provide feedback. Completed
RSPCA	31 May 2019.Meeting with Diane Edgar	Overall program. Previous ethical work.	Concern about the number and type of fish kill.	NCCP to draft ethical section and recommendations as part of a technical paper and send to RSPCA for review. Completed
National Koi breeders Associations (numerous)	4 June 2019. Sydney. 6 participants	Biomass Virus transmissibility	Concern about impacts on Koi Sector including hobby and commercial. KOI shows will likely cease. Manual removal better than virus KOI sector is not an industry hard to co-ordinate	Undertake biosecurity strategy. Completed
Feathers Fish and Flows Community forum	6 June 2919, Renmark. 80 attendees from local community	Fish of the MDBA, Bird research and impacts, Carp control, environmental flows	Concern about NTS, especially from indigenous representatives Concern about resistance of virus over time	Input to NCCP engagement report

			Given the low biomass is the virus release still viable	
NCCP Stakeholder workshop	20 and 21 June Canberra. 80 stakeholders	NCCP research. NCCP feasibility assessment.	See stakeholder meeting report	Respond back to stakeholders based on their feasibility input. Science communication meeting completed Alternative fish down methodology meeting (not completed)
Lachlan case study workshop	June 26, 2019. 12 attendees	Integrating the NCCP science into release and clean-up operations	See meeting report or minutes	NCCP to finalise the Lachlan case study and report back to stakeholder group. Completed
MILDRIN, NBAM	July 4, 2019. 8 participants	Indigenous engagement and processes	Agreed on a meeting on July 25 at Dubbo.	Work with contractor to provide recommendations for government on future NCCP engagement. Partially completed.
Mid Murray case study	July 10 and 11 2019. 12 attendees	Mid Murray case study based on the NCCP science	See meeting notes and report	Integration into NCCP as an attachment. Additional study to develop release strategy for the whole Murray and Murrumbidgee systems
Loch 1 – Loch 3 case study workshop	Aug 5 10 Attendees	Risks in cases study area and throughout SA	See meeting notes and case study report. Substantially social risks. Degraded ecological area	Report included into NCCP Case studies technical paper.
LAKES & COORONG FISHERY MANAGEMENT ADVISORY COMMITTEE	Nov 7th Adelaide 12 attendees	NCCP risk assessment research and water quality impacts	Offshore impacts of dead carp on commercial fisheries such as pipis	Integration of issues into NCCP recommendations

6. Major stakeholder meeting (June 2019)

A major stakeholder meeting was completed in June 2019. A report on this workshop is shown at Attachment 3.

Participants were asked to discuss emerging research findings, with a focus on identifying their views about what they mean for developing recommendations about the future control of carp, with a focus on feasibility of the carp virus (carp virus) as a method for carp control.

Workshop attendees discussed different aspects of the NCCP and carp control more broadly. Not all key messages listed below were agreed to by all attendees; unless otherwise stated they were agreed to by multiple workshop participants. Several other topics of discussion were also raised at the workshop with less evidence of agreement amongst attendees; these are documented in the report from the workshop but are not being presented as key messages.

Key messages related to three themes:

1. Communication and engagement
2. Developing recommendations from NCCP research
3. Future development of a comprehensive carp control strategy

Theme 1: Communication and engagement

- Meaningful Traditional Owner engagement is needed
- Stakeholder communication and engagement
- Need for improved partnerships for future work on carp control
- Clear communication is needed about decision-making processes that will occur after the Plan is submitted to government

Theme 2: Developing recommendations from NCCP research

- The benefits being sought need to be clearly articulated in the Plan
- Acceptable levels of risk need to be clearly identified
- 'Best case' and 'worst case' scenarios that reflect uncertainties in estimates should be explicitly used to inform the recommendations made about any future use of the virus
- Feasibility criteria should include consideration of impacts and feasibility of mitigating the impact, effectiveness of the virus and over both short-term and long-term, and opportunity costs over time
- Some stakeholders seek use of a wider range of estimates of carp biomass when examining potential impact of virus release

Theme 3: Future development of a comprehensive carp control strategy

- There is strong support for investing in carp control

- Carp control should be accompanied by complementary strategies to improve environmental health
- Carp control strategies should be integrated with other actions to improve health of freshwater and estuarine systems
- Multiple carp control measures should be considered
- The feasibility of the carp virus should not be considered in isolation of other carp control and environmental recovery measures
- Several stakeholders feel the terms of reference for the NCCP are interpreted too narrowly and/or should be broader

7. Stakeholder and public surveys views

Two NCCP Social research projects investigated the views of the general community and particular stakeholder groups about carp virus biocontrol. Detailed analysis of these results is provided on those specific final reports.

These surveys highlighted that stakeholders have a wide range of views about whether the virus should be released and under what circumstances. These views are all conditional on the recommendations eventually included in the Plan, meaning they may change depending on the content of the specific recommendations made. Stakeholder views included:

- Outright (unconditional) support for virus release is uncommon, although a small number of stakeholder have relatively unconditional support for use of the virus
- Conditional support is common, with the conditions for support commonly including that virus release occur as part of an integrated set of multiple actions to control carp, and that complementary actions be invested in to support ecological recovery, potential for negative impacts on water quality can be suitably minimized, suitable resourcing is made available, and carp control is governed appropriately with clear accountability for actions. Amongst this group there is willingness to accept some short-term negative impacts of virus release, as long as the longer term benefits clearly outweigh these impacts.
- No position or mixed views are common, with many of the same queries raised as those listed above
- Conditional opposition is somewhat common, in which the stakeholder is opposed to the virus release but would reconsider if some conditions were met, such as putting in place actions to mitigate key negative impacts
- Outright opposition is somewhat common, with some stakeholders not supporting virus release under any circumstances.

Amongst the general public, multiple surveys (University of Canberra) have shown similar findings:

- Typically more people think virus release is acceptable than find it unacceptable (usually twice as many find it acceptable as unacceptable) – in recent surveys,

around 44-46% found it acceptable to some degree compared to 19% who found it unacceptable

- Uncertainty is high, with a further 36% to 37% being unsure whether they would find virus release acceptable or not.

Similar proportions of people would prefer to release the virus (34%), not release the virus (29%) or are unsure what they would prefer (37%).

Those living in rural areas, farmers and recreational fishers are more likely to support use of the virus than those living in large urban areas. Younger people are less likely to support use of the virus than older people, due to higher levels of uncertainty amongst younger age groups.

Overall, there is strong public support for carp control in general, with 65% agreeing the government should invest money in controlling carp.

Key concerns held about virus release include concerns about transmissibility of the virus to fish or animals other than carp, the virus having unintended effects that weren't predicted, the potential for water quality problems, the challenges of cleaning up dead fish, and concerns about whether the virus could be transmissible to humans. Much of the NCCP research has involved investigating these issues to enable provision of data to respond to these types of concerns. Despite these concerns, 50% of people felt any short-term problems caused by virus release would be worth it if there were long-term benefits, while 38% felt the virus should only be released if it wouldn't cause short-term problems.

The table below summaries social perceptions around risks impacts and benefits of virus release (NCCP Project 13 Social risk assessment).

Theme	Description
Perceived problem	• The 'carp problem' is a complicated problem with interrelated causes and effects. • It is widely believed that broader environmental change (e.g. effects of drought); intensive agricultural activity; basin regulation (e.g. environmental flow and allocations) and; climate variability have all impacted on current state Australian waterways. • These conditions favour carp proliferation.
Existing social and economic benefits (of carp)	• Carp assist in mosquito control (SA). • Food source for humans, especially multicultural groups (city and country). • Food source for native birds (e.g. pelicans). • Source of livelihood (formal and informal markets). • Contributes to local economy (e.g. tourism). • Provides cultural and recreational amenity.
Values (linked to decision-making about acceptability)	• Biodiversity (fragility of ecosystems). • Indigenous cultural connection to Country. • Environmental stewardship.

	• Responsibility to future generations. • Important role of integration (of management strategies post release) and careful long-term planning. A measured response to a complex problem.
Impact of previous experiences and events	• Past events (and their outcomes) impact on decision-making about acceptability especially levels of trust in virus effectiveness and safety. This is irrespective of relevance to the current problem. For example: • previous biocontrol failures (e.g. cane toads) – bad outcome - ineffective; • history of virus mutation (human influenza) – bad outcome – mutations continue; • local blackwater events – bad outcome - scale of clean-up and effort required absence of government assistance; • Myxomatisis – good outcome - resulted in increased porcupine populations – bush tucker; • previous local council failures – bad outcome – e.g. threat to potable water quality due to negligence; • federal government scandals – bad outcome – poor handling of MPs Citizenship saga; and • existing tensions between government and Indigenous groups – ongoing
Trust and confidence (in institutions*) ***Institutions are the cultures, ideas, norms, practices, processes, interactions, etc., between individuals and organisations.**	• Least trusted organisations are local councils. Low levels of trust relate to capacity (to manage/implement/act), integrity, and transparency. Flow and accuracy of information from councils is poor. • Low levels of trust in government (at all levels) to implement in general. • Most trusted organisations include CSIRO and other science organisations (but they are not infallible). Track record contributes to trust. • Some media organisations for information (e.g. ABC and SBS). • Trust can relate to confidence in information provision, implementation of program, procedural fairness, trust in science. • Trust in peers and professional networks typically high.
Perceived Benefits (of virus release)	• Cleaner water. • Clearer water. • Increased native fish populations – reduced predation on native fish – recreational amenity improved (benefit for fishers especially). • Preservation of Indigenous cultural practice. • Spiritual connectivity between People and Country restored. • Livelihood security (formal and informal trade). • Local tourism security.
Perceived Risks (of virus release) - General	• Virus mutation/evolution and potential impact on humans, animals and environment. • Cross-species transmission (fish and birds). • Risks for human consumption of carp.

	• Water quality and security – for human and livestock consumption, recreation, irrigation, trade and health (e.g. skin disease).
Other - Biosecurity and trade risks	• Perceived risk of damage to international trade (virus is notifiable disease). • Current movement of carp for human use may pose biosecurity risk (existing cultural and livelihood practices). • Movement of virus through food web (e.g. birds). • Unknown food web changes. • Unknown ecosystem effects. • Selling of potentially infected carp (formal and informal markets).
Information (needs and preferences)	• From trusted sources (e.g. CSIRO). • Widely available. • Easily accessible. • Containing helpful messages (where, when and who). • Consistently delivered. • Localised to context.
Program implementation issues (General)	• Careful planning essential. Tailored to local and seasonal conditions. • A comprehensive plan, with detailed infrastructure and dedicated resourcing must exist prior to program commencement. • Discrete dams and private waterholes will provide challenges for release. • Integrated management plan post-release is important. • Environmental regeneration will not be immediate.
Deal Breakers* ***described as "circumstances in which release would be totally unacceptable"**	• Transmission risk to flora, fauna and livestock. • Risk to humans (water security, safety). • Negative ecological effects (e.g. pelicans, hawks, eagles). • Protracted clean-up. • Release occurs despite known risks.
Engagement	• Deliberative and deep (inclusive; face-to-face) engagement identified as essential for Indigenous groups and rural and regional communities. • Current NCCP 'consultations' not generally visible. • Existing cynicism in relation to NCCP motivations. • For Indigenous and rural communities, local knowledge and youth unemployment provide opportunities for involvement. • Voice – for Indigenous groups especially, speaking with the right people and hearing the right people is critical. Relevant traditional custodians, tribal owners and elders must be approached – the government does not always engage with rightful custodians of land and knowledge.
Biomass kill and clean up* ***Issue largely for fishers and other water users. Not an issue readily identified by others.**	• Largely accepted as inevitable BUT regional and rural areas seek involvement in management of clean-up. • Local knowledge identified as critical for effectiveness. • Large kill could attract predators (e.g. feral pigs) – potential impact on riverbanks.

****Clean-up issue almost always connected to other indicators of acceptability (trust; engagement)**	• Contractors and others with an economic incentive to complete task effectively and efficiently are best placed to undertake clean-up.

8. Bang the Table stakeholder feedback

A feedback opportunity was provided to the general public using "Bang the Table". The feedback opportunity was advertised through 4 email newsletters to all people who had registered to receive further information about the NCCP. Feedback was allowed between September and December 2019.

The issues paper advertised for feedback included:

1. Background
2. Epidemiology and virus release
3. Virus specificity
4. Social impacts
5. Carcass management
6. Utilisation

The feedback is shown at Attachment 4. It includes approximately 100 comments. Of these comments more than 60% were negative, 20% were neutral and 20% were positive. These results do not statistically represent general community levels of support as they are likely to be biased.

Not all NCCP research was provided. Most comments relate to issues or research topics that were provided and advertised.

Common feedback themes included:

- Commercial use is preferred
- There is too much uncertainty
- Concern about water quality and other environmental impacts
- Further community consultation is important.

9. Summary of major issues from stakeholder engagement

The major stakeholder engagement issues summarised from all the engagement activities include:

- Concern about impacts on non–target species and the results from previous non-target species testing.
- Uncertainty about how the clean-up of dead carp is possible.
- The strong desire to have extensive community consultation on the final NCCP before a decision is made to release the carp virus.

- Some stakeholder groups (commercial fishers, tourism sector, Koi fishers, native fish breeders) are adversely impacted and these impacts need to be acknowledged and further consultation undertaken with these affected groups.
- Specific consultation and engagement needs to happen with traditional owners or Aboriginal communities at both the Nations scale and community scale addressing social enterprise and social license considerations arising from carp virus biocontrol.
- There needs to be clear communication to communities informing them of carp biocontrol if it proceeds to implementation.
- Regional communities should be engaged and involved in implementation where appropriate.
- Carp virus biocontrol needs to done in an integrated way which uses a range of methods to control carp.

The NCCP has made community relations recommendations to address these major issues.

10. Community and stakeholder recommendations

The general community and specific stakeholder groups have a high level of interest in the NCCP. Some stakeholders may be impacted. If governments choose to proceed towards implementation, ongoing community consultation and stakeholder engagement is important.

All stakeholders have indicated that they would appreciate continued communications and engagement through the approval and implementation periods.

Traditional Aboriginal owners have an important connection to inland waterways and carp control. In NCCP workshops, Traditional Owners have expressed a strong desire to not only be informed about progress towards biocontrol implementation, but also to be actively involved in decision making. The NCCP has begun the process of engaging with Traditional Owners on carp biocontrol. Ongoing dedicated engagement is recommended as planning towards implementation proceeds.

Communications recommendations include:

- Continuation of NCCP science communications through the decision making phase including: maintenance of the NCCP website as a repository of NCCP research; journal publications; and conference presentations.
- Development of a comprehensive communications and engagement plan which includes: specific strategies for specific stakeholder groups listed in the NCCP; all stages of carp virus implementation; and integration with jurisdictions and regions.
- If the Australian Governments decides not to proceed with carp virus biocontrol a communication strategy should explain the reasons for not proceeding.

Community consultation recommendations include:

- Publish the NCCP and undertake community consultation as soon as possible following NCCP submission to follow through on consultation commitments and to achieve public transparency.
- Undertake specifically designed and more extensive consultation with the indigenous community.
- Undertake specifically designed consultation with other stakeholders groups identified by the NCCP.

Stakeholder engagement recommendations include (should a decision be made to proceed with implementation):

- Actively engage with indigenous organisations and communities in decision making and enterprise development about possible carp virus biocontrol and its management
- Engage local knowledge and stakeholders in regional implementation planning
- Acknowledge possible stakeholder impacts, including anticipatory impacts.

Stakeholder impact mitigation activities include (should a decision be made to proceed with implementation):

- Identify, develop, and promote opportunities for affected stakeholders to be involved in carp control and any subsequent ecological restoration activities.
- Active communication with potentially impacted businesses and local government areas before, during, and after implementation.
- Specific communications strategies developed for the tourism industry to reduce the risk of long-term reduction in visitation from carp biocontrol.
- Review and develop strategies to assist mitigation of possible regulatory implications of carp biocontrol on certain stakeholder groups.
- Should a decision be made to proceed develop a support program for those experiencing major impacts.

Attachment 1—The NCCP communications and engagement plan 2019

Submitted previously and published

Attachment 2—NCCP community consultation report

Submitted previously and published

Attachment 3—NCCP Stakeholder workshop report (June 2019)

Submitted as part of 2018-189

Attachment 4—Bang the table feedback

Shown below

Attachment 4 – Bang the table feedback

Issues paper	Comment	How informative ?(Rating 1 to 7) (7 is very informative).	Sentiment	Major issues
	From my own perspective, from someone who fishes a lot in the Goulburn River around Shepparton and the lower Broken Creek, carp numbers are far less than compared with 5 years ago, particularly so in the Broken Creek. Over the last years the Cod fishing in the lower Broken Creek are easily the best I have experienced, and I would be greatly concerned the introduction of the virus would put that at jeopardy.	5	negative	
	The data was inaccurate and biased. NCCP haven't investigated any carp control measures other than CyHV-3. The impact of millions of dead Carp in our waterways has been conveniently downplayed, and the worst case scenario ignored. Claims around carp distribution, Densities and biomass are not backed up with scientifically sound data. There is little or no reference to alternative uses of carp such as export, fish meal or cheap protein. Just a flippant comment about "why we can't just eat them". This far into the project and so close to releasing the report to government, NCCP lacks any credible evidence. Release your data immediately for scientific scrutiny.	1	negative	Carp density and biomass
	I am still totally against this virus all countries that have it are busting themselves trying to find a way to kill it.	7	negative	
	Very careful consideration needs to be given to releasing a virus. The complications seem insurmountable... not least the clean up of 100s of tonnes of dead fish!	7	negative	
	Crazy stupid idea, do not release the virus, look at what all the leading scientists say.	1	Negative	
	Eradication of any pest virtually impossible.....need to include aspects such as ongoing maintenance strategies and resourcing / ensuring no re-introduction / plan B strategies if virus not working. Remember - we generally only gain $$ for pests when they are in plague proportions whereas the BEST times to control are when the animal is already stressed [e.g. drought etc]. Looking also for some easy wins - e.g. eradication in smaller NON Murray Darling systems to demonstrate benefits and gain more community support. Too focused on the virus strategy whereas it will probably be a kitbag of tools	5	negative, more info needed	

	The emphasis on research is on killing the carp rather than use this valued resource commercially. (vi) Social and economic impact assessment is listed in paper topics (page 1) but not properly presented A research on commercial use of the carp is not presented. Once again, we deal with situation where the intensions are on wasting money and damaging the struggling Australian and possibly the World economy on a focus instead of investing money in the valued food resource and having the rich dividends almost instantly.	1	negative	Commercial use preferred
	Releasing a virus or using poison is destructive. It would be the wrong idea and will only damage the environment. It would be better to try and achieve a balance of the different species. This has occurred in many places overseas, but is not well studied. Spend the money on this kind of research instead.	3	negative	
commercial exploitation	Extraordinarily poor report. Focusing on Commercial fishing where Carp are utilised as a food source rather than other important areas such as Job creation, fertiliser etc. The conclusions as to why carp numbers would supposedly not reduce by commercial fishing methods apply equally to using the Virus. I note also that one of the co-authors is a key advocate for releasing the virus, so the bias seen in this report is not surprising.	1	negative	Commercial use preferred
commercial exploitation	With drought always being part of aussie history, carp could play a vital role in growing fodder and grain to feed the nation. Anyone who uses it to balance soil fertility see increased production. Its only an additive to balance biology not a replacement and that is why a lot of farmers had bad results with it. Would be a major waste to kill that much biomass and just let it rot in rivers already under stress	6	negative	
NCCP in genaral	It would seem that a way to reduce the FISH Stress issues would be the selective removal of the offending CARP that places additional burden on the limited resources available.		negative	Manual removal
water quality	I honestly do not think for one minute the you realize what the release of this virus will do to the natural ecological environment. It will create black water events that has never been seen before. just think of the not thousands but millions of tonnes of rotting flesh in the water ways, destroying anything and everything in it,s path, including all native species of aquatic life. PLEASE DONT DO IT..!!!!...	1	negative	
water quality	We drink this water! We bath in this water (often untreated in some areas)! We live from this water! This is a bad idea! Wake up! We do not want this to go ahead!	1	negative	
water quality	I think this will be a huge mistake.	5	negative	
clean up	And who and you propose is going to clean up the dead fish. And how much are you going to pay us. I'm not doing it for you for free	4	negative	

clean up	This is the most flawed part of this ridiculous plan. If small pockets of fish die and you're there you can remove the fish no problem (but you want to kill large amounts of fish so not worth it) If you kill large amounts of fish then half will remain sunk so hypoxic issues etc. YOU CAN'T HAVE IT BOTH WAYS Also 80% of the Murray is inaccessible to large trucks and boats to remove the dead fish that die where you don't expect them to "This information will be provided to the government anonymously" !!! Why say that when no negative information will be released by you ???	2	negative	
clean up	You are living in dreamland. You have no idea of the amount of work involved in a cleanup of this scale.	3	negative	
Clean up	I have not had time to read this - there was not enough time to read, digest and comment. I forgot to ask in response to discussion paper 5: when Carp die, do they first sink and then float to the top or is it the other way around. I would assume they would float first because of the swim bladders, and then sink as the Carp decomposed. The reason I ask is that some in the Canberra Fisherman's Club believe that the Carp will sink first when they die, then float to the surface a few days later and that this will cause problems in terms of water quality, because you are not retrieving the dead carp until after they have polluted the waterways. I apologise if this is already addressed in this paper I was not had time to read but knowing the answer to this will influence th extent to which people support the release of the Carp virus.		neutral	
ecological outcomes	Juvenile carp have largely replaced small native fish in the diet of larger native fish such as Murray cod. A sudden collapse in carp numbers may well cause a major disruption to the food chain. A more gradual approach such as that provided by the daughterless carp project would allow time for the ecosystem to rebalance.	3	negative	
ecological outcomes	What a crock! We say NO to the virus release! It's not necessary! Listen to the people!	1	negative	
ecological outcomes	I think they are there as bottom cleaners to prevent overgrowth of vegetation that would clog motors and rob water of oxygen needed to sustain fish. I think it is better to let them be. Some people eat them.	5	negative	
Ecological outcomes	This study is essentially an opinion piece that assumes the virus would be far more effective than the science shows it can be, elimination of 70% to 100% of carp populations has never been seen in any CyHV3 affected population. Even in controlled NCCP lab studies, where fish were injected and bathed in the virus, as little as 40% of the adult carp died. It is all very well to get a room full of		negative	

	people together and ask them what they think the impacts might be if all or most carp were removed, but that is not remotely possible by the use of the virus and fails to take into account the significant negative effects the mass fish kills would cause. Finally, the study seems to operate on the assumption that the effects of carp are worsening over time, this too has been shown to be false, carp have expanded to their current range and approximate densities over a long period of time, but these expansions and densities are for the most part stable, rising and falling in flood and dry conditions. Doing nothing will not mae the situation worse, however, the virus itself has many negative effects and risks which may make the situation significantly worse for out native species and waterways.			
Ecological outcome	This paper highlighted that the control of Carp alone was not enough to help stream health it failed to tackle the issue of Carp population rebound and play with if only in magically could stay suppressed? It is of very limited value with less than half the invited experts bothering to participate in the floored survey	2	negative	
Ecological outcome	In May 2016, the Canberra Fisherman Club voted in favour releasing the virus, subject to the Government adequately funding the clean-up of waterways of dead and dying carp, habitat restoration and restocking of native fish. I am not providing these comments on behalf of the Club, but I am endeavouring to reflect the club's views as much as possible. This paper will help our members assess the adequacy of habitat restoration and restocking of native fish efforts proposed following the release of the Carp virus. I believe this paper will reinforce the views of many in our Club that it seems pointless to remove the carp and not do anything to ensure native fish species will return. If the native species don't fill the void left by Carp, Redfin, Tilapia and other introduced pests will take their place instead. While Carp are a major cause of the environmental damage to our waterways, the paper makes clear that removing Carp is not enough to reverse that damage. A big investment in habitat restoration and restocking must be part of the National Carp Control Plan. Otherwise, this paper suggests that the ecological benefits of removing Carp from our waterways will not be realised to the full extent possible.	7	neutral	

	The development of immunity is a noteworthy concern, specifically at what rate will the population become immune. Would it not favor the NCCP to explore the effects of two viral introduction events within a narrow time scale to both further reduce populations of little resistance and reduce populations of higher resistance to the first viral introduction. If the method of viral introduction is ignored and the virus is implemented, could the NCCP benefit from closed system experiments where a viral strain is allowed to adapt species to identify the composition of species resistance. From this point a secondary strain could be developed to reduce these populations. Could the modelling also be run to incorporate the effect of introducing a staged viral introduction to cause a collapse in population or the promotion of an inbreeding depression?	7	neutral	Immunity
	this paper gives some insight into the difficulties with introducing a virus into a new ecology and climate it gives research into how it maybe effective in the carp ecosystem but no incite as to how the virus may react to a new environment or what it may develop into	6	neutral	
commercial exploitation	Carp is a sought after fish for its sport fishing overseas, when I suggested to Fisheries Vic that we consider the potential this fish has for attracting international fishermen to Australia, i just got laughed at and ridiculed. This is not as stupid as it sounds considering the economical benefits this can bring small towns such as Nathalia in VIC.	5	neutral	Commercial use
commercial exploitation	If carp are being taken out of waterways by commercial fishing isn't that a bonus as long as native fish aren't being impacted	7	neutral	
Commercial exploitation	This paper is extremely biased in settling the success level at 100% elimination. Your previous paper just stated 100% elimination of Carp with the virus release is not realistic yet in the next paper you have set it as the benchmark to state it would be unsuccessful this is yet another example of the NCCP agenda of virus lease is the only way ahead you are looking unprofessional and quite frankly a joke. Of course commercial fishing alone won't cause eradication that is a ludicrous benchmark however artificially assisting the market for Carp with a fraction of the fund you would waste on a short term virus clean would go a long way to the long term ongoing 70% reduction referred to in your last paper. Please stop treating the public as if we are idiots	1	negative	
Utilisation	Would the process of using carp to produce fertilizer, be equally applicable if live carp were caught by professional fishermen? In other words without having to first kill carp with a virus.	6	neutral	
clean up	This paper remarks on the difficultly in created a holistic approach due to the variability of sites where removals will need to occur. Further, the NCCP has remarked that the difficultly to gain commercial interest is hindered by the interaction of effort increase when populations decline which will lead to commercial collapse. These reports have provided a method of assessment through amber/red lights to indicate areas where cleanups are needed. I suggest, that the NCCP explores the simulation that promotes commercial efforts while the populations are high, and provide the open market structure indicated by the report. Once these areas are exhausted of resources, the commercial effort should be re-geared to an incentive program to keep areas within amber or green light thresholds. This would generate the commercial interest in the short term, generate long term employment through control, however, at the cost of ongoing regulation, review and assessment of stocks. This similarly would allow the technological barrier to be explored through	7	neutral	Commercial use preferred

	commercial partners and allow the site specific technologies to be developed at a rate greater than the NCCP. The monetary structure would require significant effort and consideration, however, it may be a solution to the issues facing this report and several others presented. - Oskar Sebben (University of Wollongong)			
ecological outcomes of carp reduction	There is no logical reason not to release the carp virus. To do nothing would be a blight on the future of this nations river ecosystems a waste of the money and effete of some very learned people. The risks are very small but there are some challenges to archive something that this nation is in desperate need to do so take a leap of faith in us the Australians who care and just do it.	7	poitive	
	It is good that the modelling seems to confirm what we had been told at the workshops last year.It seems positive that the virus will reduce populations of carp substanitially at targeted release points and times, but is hoped that transission will be greater than indicated away from the release sites. Climate change and low runoff and low flows puts more pressure on the native fish and their ability to compete with carp. This paper shows the virus can reduce carp numbers for positive environmental benefits to our waterways. Water temperatures will be reflected in flow regimes and more runoff is needed in most of the MDB to reduce the incidence of high temperature waters. It is hoped a greater water volumes in the system will be seen in 2020 ahead of the virus release.	5	positive	
	Well done, very comprehensive.	6	positive	
	i found this paper explaining what we have been discussing, we have been thinking that this virus would need to be released at the same time everywhere to be effective, but as is noted we now understand that it cannot, i am finding these papers so informative and more anglers should be making themselves aware of the work in progress instead of making their own deductions which are incorrect	7	positive	
	These pests have to be eradicated or at least heavily controlled	7	positive	
	Both the 1st and 2nd paper are very good and explain the biology and your process.	7	positive	
	well researched , informative for the layman and critical to a productive outcome	7	positive	
commercial exploitation	1.commercialization will only work in a few areas 2. there is no large commercial market at present and none in the foreseeable future. 3.The time lost in not controlling carp now is not worth the wait. 4. The sooner we clear out the carp the sooner the water will clean up. 5. The tourism increase in the future will out weigh any short term loss. There is only a WIN WIN in virus relace	2	positive	
	Not much science in this paper, just a load of guesswork. Has climate change been factored into the research? it would be foolish to let out this virus in a year of reduce water flow due to drought and with elevated temperatures.		negative	

clean up	Does the government really think that we have enough people, boats, and equipment to handle the clean-up required for the mess? And the bottom end of the river and lower lakes will likely end up with the biggest biomass of dead carp which will contaminate and therefore decimate the areas around the lakes and lower end of the river. Once the dead carp are in the lakes they will almost be impossible to clean up. It is simply too dangerous for small boats a lot of the time and inexperienced personnel would be putting lives in danger just trying to collect dead fish. Dead fish will ultimately float to the end of the river so this area is going to be the worst affected, no matter how hard you try to stop this. Why are the huge carp that are already trapped behind locks, weirs and dams already along the river not collected and used for food now, instead of leaving them there?	5	negative	Clean up
clean up	I cannot believe that the issue as important as this cleanup is being left volunteers. Are you kidding the risk of personal ill-health from handling dead fish is really high clearly whoever gets involved in this process will need significant training and health and safety and safety gear appropriate to the events. I cannot imagine any community already under pressure through drought water problems having the money to participate in such a cleanup. What I can imagine happening is large legal claims made against the government and whichever company applies the kill for everything from botulism to infected cuts. Much more planning and process will need to be put in place for the cleanup long before the kill takes place	4	negative	Clean up
	'- I tend to think people are underestimating the community workforce available to clean up carp. - Environmental water managers can play a key role in flushing or spreading the virus as needed, but will need notice (2+ years ideally) to secure carryover for use.	6	neutral	Community involvement
utilization	I am very sceptical of any proposal to use the biomass from a mass Carp death event. Here are my reasons: 1/ The collection of thousands of tonnes of biomass in a short time frame of a few weeks does not appear to be a real possibility. 2/ A processing plant would need to be constructed to process 1000's of tonnes in a short time frame and then be decommissioned after the rush which would not be economical in any sense. 3/ Transport of the rotting stinking mass of dead carp from all over the MDB would be a nightmare. 4/ Who would organise, run and staff the required organisation?	1	negative	Clean up
utilization	We have a site situated 8km from the old bridge to accept dead carp biomass. Our machinery, method and process to compost the carp is thru compost mounded worm decomposition. Please send EPA biomass security forms if necessary. Omegaman	7	Positive	Disposal
utilization	This is the only option as a future sustainable food resource, something that our friends in China have been practising with aquaculture over hundreds of years. Is it that they are more smarter than our researchers?		negative	commercial use
1	Release of the virus is probably the most stupid idea that I've ever heard.	1	negative	
1	Someone had a lot of time on their hands to put that together. Your taking too long to act on this issue	4	negative	

1	The emphasis on research is on killing the carp rather than use this valued resource commercially. (vi) Social and economic impact assessment is listed in paper topics (page 1) but not provided A research on commercial use of the carp is not present. Once again, we deal with situation where the intentions are on wasting money and damaging the struggling Australian economy instead of investing money in the valued food supply and having the rich dividends almost instantly.	1	negative	Commercial use preferred
1	There is plenty of habitat for Carp in the large rivers. Instead of taking a negative view about introduced animals and fish we should try and consider how the different species can co-exist and invest more in these kinds of studies instead of spending millions on destroying the river and then cleaning up the mess.	3	negative	
1	You are making a big mistake, we all going to suffer if you release the virus, carp is not the problem	1	negative	
1	This whole idea is an unnecessary waste of time and money! Listen to the people... It's a big fat NO! Do not release this ridiculous virus!	1	negative	
1	It is highly recommended to stop the funding to NCCP and to divert the money to establish the medianimalcare equivalent to Medicare to end animal exploitation and to assist Pensioners and low waged income earners for all veterinary treatments and surgeries to be bulk billed, COST FREE. Dr Paula Reynolds is horrified that you would ignore not only her advice but the entire profession who have advised you not to contaminate Australian waters with Herpesvirus 3 that also causes black water and mutations. Animal Welfare is also a big issue that I quoted from Dr Paula's letter that shows the suffering it causes to the Carps and other species that are also effected. Dr Paula Reynolds from the UK who strongly warned against releasing this CyHV-3 virus in Australian waters because it can't be controlled with many new strains emerging and that CyHV-3 does infect other species including humans. The CyHV-3 does not kill the Carp cleanly that causes the Carp to sink to the bottom and bleed from necrotic lesions in the gills while open sores erupt all over their bodies. "The fish bleed and rot as they die with their bodies being rapidly overtaken by colonies of secondary infections including Aeromonas, Clostridium botulinum (responsible for fatal botulism), E.coli to name a few. The degraded bodies often float after a few days spreading the impacts further downstream exposing the dead bodies to consumption by wildlife which are in turn impacted by these secondary infections." "The secondary diseases are disfiguring and fatal if left untreated. These diseases are a very real threat to agricultural livestock, clean up crews and native wildlife in both aquatic and animals depending on using the waterways as their water source." The link to my correspondence urging to withdraw the funding to NCCP: https://www.facebook.com/nora.preston.16/posts/10209507958529714?comment_id=10209934006780654¬if_id=1525240736200093¬if_t=feed_comment&ref=notif	1	negative	Animal welfare

1	I see the need for a control program, I was raised on the Murray Darling system & saw the damage these fish do first hand. Having worked on cotton farms, I know many people don't know the scale of the problem. We had heard little detail about how this control measure, or any others, may be implemented. The studies conducted so far look rushed & far from complete. Our native fish are under considerable presssure & our rivers are used as conduits for irrigation & open sewers, further exacerbating the carp problem. Carp are an important resource overseas, we would be reckless to destroy that resource before we tried to utilise it.	2	negative/neutral	
1	Virus found by accident, and no way of telling if it will mutate.	4	negative/neutral	
1	Still a bit vague as to whether it will be effective long term and there is still unexplained deaths in native species used in trials which must be determined what caused the mortalities.	6	neutral	
1	* Lots of detail - could do with a "At a Glance" summary up front * Like to see more on impacts - estuary and river * Figures and maps of carp abundance / breeding biology etc would be useful	6	neutral	
1	I felt that additional definitive information on the results of the virus trial would be beneficial in particular the researchers conclusions on the effects to native species. Would also like to see an attempt to articulate benefits / costs of eradication. I think it is worthwhile but there will be detractors wishing to use $$ elsewhere. So broad economic analysis + list of unpriced benefits and costs useful	6	neutral	
1	Very informative. Adding personal observations over the years to this paper, it is clear to me that, although concerns exist, the best way forward is to implement measures other than go beyond human physical capabilities. We have had the opportunity to attempt to decrease thew population to satisfactory levels by other means, but this has been unsuccessful.	7	neutral	
1	There is not enough information about the environmental problems that cause the Carp numbers to rise including runoff from farming activities and cold water being released from dams into river systems that do not allow the native fish to breed and subsequently eat the baby Carp	7	neutral/negative	Environmental impacts
1	i found this paper very interesting, so many people i know have been talking about this virus for some time now in a negative manner, after having read this paper i am impressed with the content in it and the measures that have been investigated, i have certainly gained a lot more information from this and all those who are involved in trying to eradicate this pest from our waterways need to be commended	7	positive	
1	this paper gives a very good and clear intro and history of carp in Australia and the many issues related to them hopefully it gives enough information and education to those who want a magic bullet there are too many thinking that the virus will be a total fix and everything will go back to pre carp	7	positive	

1	Thorough & informative	7	positive	
1	excellent content easy to read and understand congratulations to the author	7	positive	
1	There is not enough information about the environmental problems that cause the Carp numbers to rise including runoff from farming activities and cold water being released from dams into river systems that do not allow the native fish to breed and subsequently eat the baby Carp	2	negative	Enviornmental impacts
1	This is a very vague paper, there are lots of may and could but no will and shall. which means that the writers are not confident in the subject matter. It also does not state what triggered the urgency to use a virus which could be detrimental to the health of Australian waterways. The virus must not be released unless it can be controlled. Why is Australia trying to release a virus when the rest of the world is trying to stop it. It makes no sense.	3	negative	
1	What could possibly go wrong! Scientists have never stuffed up before hey? Stay with electronics eradication, just increase the budget	5		
1	Do it now....need to get rid of the carp	7	positive	
1	My family have lived on and fished the Murray river since the 1930's, I caught the first carp seen in the area in 1974, they then exploded in the river. They decimated the river, cleaning out the weed growth, shrimp and general native life within, exactly the same as the redfin had done in the 50's. I can still remember my grandfather throwing 3lb reddies up the bank in disgust when fishing for blackfish, but nature controlled them after a period of time. They then became just another fish in the river and the cod got fat. People at the time blamed the carp for the degradation of the river banks and water quality and to some degree, they were correct. The biggest problem was the introduction of ski boats on the river, these boats (and now along with wakeboard boats) have taken meters of bank away from the river. I now fish the river with my grandchildren, we catch 10 native fish to 1 carp, something I was never able to do as a child, our fishing now, is outstanding. I believe this is due in part to the carp !!! yes carp, nature has taken it's course here in this area and our native fish gorge themselves on carp, growing big and fat. I now see more large cod caught than I did as a child in the 60's. Lets not forget the other wildlife that have grown to depend on the carp such as water rats, pelicans, cormorants and king fishers, all of which are now abundant again. There is now weed back in the river, gudgeon and other small fish have returned, we are once again heading toward a very sustainable fishery, especially if water control can be handled in a wise manner. I feel there are other avenues in today's world to explore regarding carp control than biological. Please do not release the virus, we have so much to lose if something goes wrong.		negative	Environmental impacts

1	Carp has only been described as the problem, but problem from what? Just as humans that do not have enough vitamin c, the problem is scurvy. If we look after the human body (environment), we will deal with the scurvy. Carp is the problem as we have mistreated the environment, turbidity in the water from runoff, low oxygen, low water flows & cold water releases from dams (to name a few) are conditions that favour carp over native fish. Carp will reproduce more than and out-compete native fish for resources. We need to focus on looking after the environment.	1	negative	Environmental impacts
1	Please release the virus as soon as possible...please!!!	6	positive	
2	Behavioural fever should be discussed and analysed in more detail, a particularly important consideration is that carp that migrate to warmer waters, have been shown to be able to "cure" themselves of the virus, gaining a life long immunity to its effects while remaining carriers of the virus. Australia's waterways, especially muddy waterways have huge temperature variations in a single body of water, given that carp have been shown to migrate to the warmest available water when infected, it is reasonable to assume that significant proportions of carp infected in Australian waters will be able to migrate to waters with temperatures sufficient to render the virus permanently ineffective and allowing large portions of infected individuals to survive despite being infected in permissive temperatures.	5	negative	Behavioural fever
2	It appears from this paper that there are many unknowns and many negative possibilities in the release of the carp virus. These include the very limited water temperature range in which the virus is effective, the very likely outcome that an initially large number of carp will die in a small area causing a blackwater event, and then the surviving carp having an immunity to the virus which they would pass to their off-spring as they rapidly re-populate the area. The likely survivors will be the largest carp who are also the most prolific breeders. The overall outcome does not appear to be useful in the longer term.	5	neutral/negative	Uncertainty
2	The paper is interim at incomplete and references other work to be done it rehashes generalities on bio control and is of little additional information	1	neutral	
2	The paper gives a general overview of numerous opinions of what may or may not happen. Improving the conditions for native fish through improved water quality and decreasing the release of cold water from dams is not mentioned, as it is probably not in the scope. How can an informed decision be made?	1	neutral	

2	The history of Biological control of pest species in Australia leaves me very sceptical of any success ,Yes the virus to control the rabbit population in this country has decimated the population however I feel that the release was ill intended and thought through my main concern was and still is that the wrong animal was targeted first ,primary control should've been in the populations of foxes , feral cats and dogs which have increased their effort predating upon the already stressed populations of native animals . As science knows "viruses can and do mutate so it is not inconceivable that the carp virus will mutate to attack other species, also another concern is that with the bio mass collapsing so rapidly that the decomposition of the ungathered fish will result in not only algal blooms but the de-oxygenation of an already stressed environment thereby killing all other life in the system . I would be more in favor of a small medium term sustainable fishery and commercial industry that only targeted the European Carp	5	negative	Uncertainty
3	The statement " Given this complexity, there can be no absolute guarantees that CyHV-3, or indeed any other virus, will never switch hosts to infect a new species" pretty much sums up my thoughts. Lab tests will never be sufficient to model all the unknowns regarding release into the wild - especially at the moment with so many of our ecosystems in a state of flux due to higher and higher temperatures. What affects will this have on accelerating mutations of viruses. It is utterly crazy that we think releasing a virus into the wild, that has ANY POTENTIAL to switch species, could be considered safe. We simply do not know enough about our ecosystems to do this effectively-especially now. There are clearly still risks associated with it, and I think this paper downplays the potential harm this could cause. How would we deal with it if it was to jump species and cause a massive outbreak!? What measures would we be able to put in place to protect our native species. I think these are questions that should be asked, and if we have no answers to that, then the risk is too high.	5	negative	Species switching
3	You admit that the survey was only "brief", that only 5 factors were considered and that the survey was inconclusive so how does that justify the release of the virus	1	negative	
3	"Unlikely" is not good enough for me. Whilst ever there is the smallest possibility that this virus could spread to other species, it should not be released.	4	negative	

3	Dr Paula Reynolds is horrified that you would ignore not only her advice but the entire profession who have advised you not to contaminate Australian waters with Herpesvirus 3 that also causes black water and mutations. Animal Welfare is also a big issue that I quoted from Dr Paula's letter that shows the suffering it causes to the Carps and other species that are also effected. I received a response from, Secretary, Biosecurity Policy and Response that falsely states that the herpes virus does not kill or effect other species. I refer you to a letter from Lincolnshire Fish Health Laboratories and Research, UK that can be read at this link: https://www.facebook.com/photo.php?fbid=1981126831961027&set=pcb.840428429484083&type=3&theater Dr Paula Reynolds from the UK who strongly warned against releasing this CyHV-3 virus in Australian waters because it can't be controlled with many new strains emerging and that CyHV-3 does infect other species including humans. The CyHV-3 does not kill the Carp cleanly that causes the Carp to sink to the bottom and bleed from necrotic lesions in the gills while open sores erupt all over their bodies. "The fish bleed and rot as they die with their bodies being rapidly overtaken by colonies of secondary infections including Aeromonas, Clostridium botulinum (responsible for fatal botulism), E.coli to name a few. The degraded bodies often float after a few days spreading the impacts further downstream exposing the dead bodies to consumption by wildlife which are in turn impacted by these secondary infections." "The secondary diseases are disfiguring and fatal if left untreated. These diseases are a very real threat to agricultural livestock, clean up crews and native wildlife in both aquatic and animals depending on using the waterways as their water source." The link to my correspondence urging to withdraw the funding to NCCP: https://www.facebook.com/nora.preston.16/posts/10209507958529714?comment_id=10209934006780654¬if_id=1525240736200093¬if_t=feed_comment&ref=notif It is highly recommended to withdraw this funding to NCCP and use it to establish a medianimalcare, equivalent to medicare instead, free bulk billing veterinary consultations treatments surgeries for Pensioners and low waged income earners.	1	negative	

3	Not enough time has been allowed for public comment and feedback on this paper, scientists and groups of scientists of which I am a member have been requesting the data and outputs from these studies for well over a year to allow sufficient time to analyse and provide useful feedback, a couple of weeks is far from sufficient. This paper overlooks key studies including recent studies demonstrating replication and viability of CyHV3 in trout. It also fails to mention studies that have demonstrated replication in fat head minnows and other species. A discussion on the number of known strains of this virus, which currently exceeds 40 and the implications in terms of mutation and changes to the virus in recent times. Further, the generalisations of Ken Mccolls work in making statements that "no evidence of viral replication" was found in dead fish is misleading. A more accurate description would be that the threshold determined by McColl for his testing as indicative of viral replication was not exceeded, although this value is contentious, not universal and in several of the tests the results approached or exceeded even this value. There was plenty of evidence of viral replication, a more accurate description would be to state that the researchers did not accept the levels seen were indicative of infection based on their chosen criteria. This is not to say that replication was occurring, but that is not the point of the study, the study is attempting to demonstrate that viral replication is not occurring and due to several issues including positive results, sample contamination and significant unexplained mortalities of non carp species, this study cannot provide a high degree of confidence that this is the case. Overall this paper understates the risk.	1	negative	
3	This topic has been a concern to some members of the Canberra Fisherman's Club and I sought to address this in a Q & A on the Carp virus (http://www.canberrafishos.com/news-and-articles/312-koi-herpes-virus-q-a). However, I understand if some of our members continue to express concerns about the virus jumping species. The information I was able to find back in 2016 is that experiments on Carp and native fish did not result in a tank full of Carp going belly-up and tanks full of native fish remaining alive and healthy at the end of the experiments. I was hoping that this paper would have provided more information about why there were high mortality rates for some of the native fish species tested, as this would have provided more reassurance for those who still have concerns about the virus affecting other species. The information about the different ways in which the virus could mutate and jump species was useful. However, I think this paper may increase the level of uncertainty associated with a species jump for some people because the paper was not able quantify the level of risk involved with each scenario. Accordingly, this paper will probably serve to reinforce existing views held by our members on this topic.	7	neutral	Species switching

3	The carp control program based on the release of a virus is misguided. This expensive strategy will cause environmental and ecological problems. It will threaten native fish populations and will almost certainly fail to control carp numbers in the future. The release of the virus can not be undone. This will likely make it difficult or even impossible to fix the serious problems that will occur as a direct result of this plan. Lighten and van Oosterhout (2017) outlines the problems associated with introducing koi herpesvirus (KHV) to act as a biocontrol of common carp (Cyprinus carpio) in the Murray–Darling river system. Tests on carp mortality were carried out at 13°C. The virus is is unlikely to be completely effective if the water too cold or above 28°C. Carp mortalities were reported at 13°C and potential reduction of mortalities above 28°C., so virus will not be effective if water is too cold or too warm. Obviously water temperatures at the time of first exposure cannot be controlled. Survival of even a few carp could potentially lead to carp resistance to the virus. Resistance in individuals within a population can result in herd immunity as a larger proportion of the population becomes immune. This would stop or reduce the spread of disease. Fish may become immune after if the virus is injected when the temperature is inappropriate or changes immediately after the injection. Given the high fecundity of carp, the survival of even small proportion of the fish can be expected to result in in the complete recovery of carp populations. Once the virus is introduced into the natural environment it will be impossible to contain or eradicate. The virus will become endemic. It is possible that KHV will evolve and become infectious to Australian native fish. This would also likely effect farmed freshwater fish as well as wild populations of freshwater fish. While the virus is effective, it will kill large numbers of carp. There are animal welfare issues related to mass killing of vertebrates that have not been properly considered. Dead, rotting carp pose an environmental risk in their own right. Apart from anything else, the release of nutrients can result in nutrient pollution, reduced dissolved oxygen levels, serious damage to local ecosystems and toxic algal blooms. The Sydney University website (Becker et al 2018) lists useful background information about KHV and the carp problem: In some areas of Australia's largest river catchment – the Murray-Darling Basin – carp are reported to dominate fish communities, comprising 80 to 90 percent of the biomass. Common carp are an introduced species in Australia. Carp show a range of ecological characteristics that provide a competitive advantage over most Australian native fish species. A hallmark of carp is prolific breeding; the species is highly fecund, with 80,000 eggs for fish of 1.25 kg and up to 1.5 million for fish of 6 kg.	1	negative	Control will be ineffective

	Common carp is the third most farmed fish species in the world. In 2016, the Australian Government Department of Agriculture and Water Resources announced the National Carp Control Plan based on the use of Cyprinid herpesvirus 3 (CyHV3) to reduce carp densities. CyHV3 is host specific and natural infections have only been detected in common carp and varieties of the species such as koi carp. Infection with CyHV3 causes koi herpesvirus disease (KHVD), a high mortality disease in common carp affecting all age classes of both wild and farmed fish. KHVD is exotic to Australia, as no outbreaks have been recorded. KHVD is characterised by irregular patches on the skin and severe gill necrosis and inflammation. CyHV3 infections occur in water temperatures between 16°C and 26°C with optimal transmission and development of viremia between 22°C and 24°C. Surviving carp develop anti-CyHV3 antibodies and can have enhanced resistance to the disease but can also become persistently infected carriers and shed CyHV-3. From experimental challenge, 25 to 65 percent of carp develop anti-CyHV3 antibodies, which persist for at least 65 weeks. The proposed strategy does not appear to take many of these facts into account. Boutier et al. (2019) states that "... there is no environmental justification to rush the release of a viral biocontrol agent", and that before the virus was released there should be further assessments to show that native species will not be at risk. The National Carp Control Plan has no effective plan to prevent the recovery of carp populations after mortality events that may result from the release of the virus (Boutier et al. 2019). Kopf et al. (2019) suggests that a more detailed cost-benefit analysis is essential before urging the release of CyHV-3 (i.e. KHV). We agree, given the apparent failure of the National Carp Control Plan to take many obvious issues into account. It is clear from even a brief review of existing literature that the proposal to release KHV as part of the National Carp Control Plan is fundamentally flawed. If initially effective, it will likely result in widespread pollution and damage to the environment. It is unrealistic to expect that KHV will completely eliminate carp from Australian waterways, and in the longer term it is very unlikely that the virus will remain an effective control on carp numbers. Most significantly, there is the potential for the virus to mutate and threaten wild populations of native fish that are already under pressure from drought and climate change. This is completely unacceptable. Given existing information, the plan to introduce the exotic virus KHV into Australian waterways should be rejected at this time. Jon Bryan Tasmanian Conservation Trust			

	References Becker, J. A., Ward, M. P., and Hick, P. M. (2018). An epidemiologic model of koi herpesvirus (KHV) biocontrol for carp in Australia. Australian Zoology, doi: 10.7882/az.2018.038. Boutier M, Donohoe O, Kopf RK, Humphries P, Becker JA, Marshall J and Vanderplasschen A (2019) Biocontrol of Carp: The Australian Plan Does Not Stand Up to a Rational Analysis of Safety and Efficacy. Frontiers of Microbiology, doi: 10.3389/fmicb.2019.00882 Kopf, R. K., Boutier, M., Finlayson, C. M., Hodges, K., Humphries, P., King, A., et al. (2019). Biocontrol in Australia: can a carp herpesvirus (CyHV-3) deliver safe and effective ecological restoration? Biological Invasions, doi: 10.1007/s10530-019-01967-1. [Lighten, J. and van Oosterhout, C. (2017) Biocontrol of common carp in Australia poses risks to biosecurity. Nature, Ecology & Evolution, doi: 10.1038/s41559-017-0087			
3	All the information in the paper saying how the virus won't ever affect native species cannot be guaranteed especially as when you tested it more than half of the native species died in the lab. If you were serious you would have retested all of them again ??	2	neutral	Species switching
3	The threats to non-target species are multiple not just virus species switching, but to deal with that first. The paper says "host-switching by the carp virus seems unlikely" and that is the most optimistic the pro-virus release could hope to be. The facts are that the virus so far has not switched hosts to any Australian native species but once released the virus will have FOREVER to switch hosts. The time scale makes the switch very likely, we just don't know when. The second threat to non-target species comes through the potential blackwater events which a large scale carp kill would inevitably produce. We have seen many times the effect of a blackwater event on our native fish and particularly the older larger fish, our breeding stock. The third threat to non-target species is from Botulism in dead fish, either Carp or other species killed by blackwater, spreading to birds and other wildlife who would eat the carcasses of the fish, and drink the contaminated water. This could even extend to stock water. The fourth threat to non-target species is from high nutrient loads in the waterway as a result of dead fish. This in the past has lead to serious algal blooms which affect drinking water, stock water and the marine environment with deadly effect. Given the seriousness of these effects and the high likelihood of the last 3 occurring I believe release of the CyHV-3 virus would be far more than reckless, it would be criminally negligent.	1	negative	Species switching

3	We are being told that it is improbable or unlikely for the virus to switch species and/or infect humans. Improbable or unlikely for a disease of this magnitude does not sit well with me! The slimmest chance that we can contaminate even further our rivers to the point where even as humans we cannot swim or bathe in the water for fear of the disease seems to me to be enough to stop the idea of release!	5	negative	Species switching
3	Human health is much more than whether the actual virus itself can switch hosts. One of the major issues is that the dead biomass itself is likely to host a number of pathogens that are of human health concern. Commonly, toxins such as botulism can cause mass bird kills as well as impact on cattle and human health after mass fish kills. This literature review was decidedly shallow.	2	negative	Human health
3	The paper does not count out host switching at all is tries to state the reasons why it low but admits this is subjective. McColls work does not deal with sub clinical or latency is other species and is therefore floored in its findings this work is not rigours and does not support an appropriate basis for a safe release of the virus	1	negative	Species switching
3	Healthy Rivers Dubbo (HRD) is a community grass roots group dedicated to providing a strong voice for our local rivers, aquifers, wetlands, and for the Murray-Darling Basin as a whole. HRD pays our respects to the Traditional Owners, past, present and future, of the land we live in. We acknowledge First Nations continuing connection to land, water and culture, and that this Country was never ceded. HRD welcomes the opportunity to make a submission to the National Carp Control Plan (NCCP). The science is well explained. I know a few scientists and recreational fishers who have been stakeholders in the NCCP since the outset, and I trust their faith in the science. I don't, however, trust the political motivations behind the NCCP. The ridding of carp from the water ways of the Murray Darling Basin should not justify the taking of environmental water from tax payer accounts, and making that water available for irrigation. Natural Resource Management (NRM) projects have been rebranded 'complementary measures', and are only promised as accompaniments to deals when there is a transfer of water from the environment to the irrigation market. NRM projects should be approved and funded in their own right, regardless of whether there is water claw back involved. This includes the NCCP – as well as fishways, cold water pollution, willow control and fish screens on pumps. Since 2011, the Macquarie River has been owed three fishways, at: • Gin Gin • Gunningbar Offtake • Marebone Break. These three fishways are projects mandated by ministerial order s218. They are offsets for the impact of reduced Planned Environmental Water spilling from the dam, following the height of Burrendong being increased by 1.8 meters. The environment has paid its share of the deal, yet the mandated fishways remain undelivered by WaterNSW. Australia is 100 years behind the USA in the use of fish screens on irrigation intakes. Tens of millions of native fish are pumped out of the Murray Darling Basin every year. It would save irrigators' time and money to not have to pull pulverised native fish out of their systems. For such a well-rewarded industry as irrigation to be so reluctant to do the right thing by the environment is an international	6	negative	Environmtnal impacts

	embarrassment, and a telling insight into a culture long used to a sense of entitlement. Water is the source of all life, and while NRM is essential, rivers without water are just long holes in the ground. Irrigation gets more than enough water as it is, while the environment is in ecological collapse with the Darling River dying from the bottom up. In the Macquarie Valley, releases from Burrendong in the two years to 30 June 2019 were for: • Operational/towns/high security/stock was about 310 GL (of which Dubbo took less than 16). • Licenced environmental for native fish breeding and the Ramsar listed Macquarie Marshes 261 GL. • General security irrigation was approx. 450 GL. Despite attempts to conceal the real picture by using Long Term Annual Average Extraction Limits (averaging out water use over 100 years, so that huge floods skewer the figures i.e. irrigation only takes 6%), it is clear irrigation gets the lion share of water in the Basin. Hydrological drought was most likely bought forward 3 years in the Lower Darling/Barka by the implementation of the 2012 Water Sharing Plan, which allowed irrigation take from critical low flows. Irrigation is over allocated in the Murray Darling Basin as it is. It is vital that the NCCP not be contingent on environmental water being taken from public hands and made available for irrigation.			
3	Not enough time has been allowed for public comment and feedback on this paper, scientists and groups of scientists of which I am a member have been requesting the data and outputs from these studies for well over a year to allow sufficient time to analyse and provide useful feedback, a couple of weeks is far from sufficient. This paper overlooks key studies including recent studies demonstrating replication and viability of CyHV3 in trout. It also fails to mention studies that have demonstrated replication in fat head minnows and other species. A discussion on the number of known strains of this virus, which currently exceeds 40 and the implications in terms of mutation and changes to the virus in recent times. Further, the generalisations of Ken Mccolls work in making statements that "no evidence of viral replication" was found in dead fish is misleading. A more accurate description would be that the threshold determined by McColl for his testing as indicative of viral replication was not exceeded, although this value is contentious, not universal and in several of the tests the results approached or exceeded even this value. There was plenty of evidence of viral replication, a more accurate description would be to state that the researchers did not accept the levels seen were indicative of infection based on their chosen criteria. This is not to say that replication was occurring, but that is not the point of the study, the study is attempting to demonstrate that viral replication is not occurring and due to several issues including positive results, sample contamination and significant unexplained mortalities of non carp species, this study can not provide a high degree of confidence that this is the case. Overall this paper understates the risk.	4	negative	Community consultation, species switching. Risk
4	You are making a big mistake, we all going to suffer if you release the virus, carp is not the problem	1	negative	
4	The parameters of this study is flawed and biased. Ignoring the world specialists in fish health and the warnings that the virus can and will jump to our native species and leave carp immune to the disease due to the various habitats in our ecosystem where affected carp can recuperate in waters non conducive to the affective temperature range for the desease to work with the efficacy your paper falsely claims will control this pest species. In the rivers in our region are showing a great decline in carp numbers where large cod are	1	negative	Species switching

	present thanks to catch size regulations. Release of the virus is unwarranted and a virus is threat to native species that if under environmental stress can and will contract the virus and eventually spread through the population. Just as the pilchard herpes virus has done in recent years.			
4	HI THE WATER WE GET AT OUR PLACE IS STRAIT OUT OF THE MURRAY THERE FORE UN TREATED SO CAN YOU 100% STATE THAT THAT THIS WATER AFTER BEING THROUGH A HOT WATER SERVICE WILL NOT SMELL OR NOT BE HARMFUL ST WASH DISHES IN OR SHOWER AND BRUSH TEETH WITH IF NOT DON'T DO IT	2	negative	Water quality
4	"Appear" "Unlikely" All too wishy washy for me. Get specific. If you are not sure what is going to happen, then dont do it.	3	negative	
4	Too little time has been allowed for public comment and independent scientific review. The paper relies far too heavily on existing studies of Botulism in Australia, a lack of existing studies is not an indication of a lack of outbreaks. It is common for large fish kills and resultant large bird kills not to be studied in detail due to funding and priority, once the kills have occurred it is usually too late to do anything about it. Evidence from vets treating cattle for botulism has been raised many times with the NCCP who have chosen to cite a lack of studies indicating that botulism was wide-spread as evidence that it had not occurred. The reality is that no one has done the research, that is no indication at all and should not be interpreted as supporting the idea that the risk of botulism is somehow lower than the available feedback from vets suggests. This paper focuses on botulism in terms of secondary effects and pathogens, but this is just one of the many, many secondary infections and issues that are associated with mass fish kills and anoxic conditions. A much wider study of potential pathogens, inlcuding those which have been known to cause significant harm to humans attempting to intervene in clean up activities or water studies, such as haemoralgic e.coli should also be addressed and in detail. The NCCP program refused to acknowledge these risks from the outset of the program, no actual practical research has been done as part of the program, an over reliance on literary reviews after the issue has been raised by independent scientists is far from sufficient, especially given that very little research into this area has been conducted in Australia.	3	negative	Water quality (botulism risk)
4	In May 2016, the Canberra Fisherman Club voted in favour releasing the virus, subject to the Government adequately funding the clean-up of waterways of dead and dying carp, habitat restoration and restocking of native fish. This paper will help our members assess the adequacy of any proposed clean activities following the release of the virus. While the	7	positive	

	paper tells what many suspected and feared (that dead carp will impact on water quality), it quantifies the risks involved and puts a number on what amount of dead carp in the waterways would result in an unmanageable risk to water quality. Unlike discussion paper 3, this paper provides more concrete analysis of the risks involved.			
4	I'm all for the control of carp, and the NCCP is doing some great work. My only comment is this: have you considered the impacts on water quality for households outside major towns? Many households do not have access to treated water. As such, they rely on river water for shower/laundry/dishes. Having substantial amounts of dead and rotting carp could be a health risk to them.	6	neutral	
4	My concern lies with the water quality once the virus is released. I am a resident in a regional area (13kms from Murray Bridge), where there is not mains water available to the property. I therefore rely on a water supply direct from the River Murray. This water is pumped directly from the river to a holding tank for use in the home and garden. I rely on this water for washing and all other domestic duties, personal hygiene, etc. I do not cook with, or drink, this water but rely on a rainwater supply, albeit in short supply. I regularly swim in the river. My concern lies therefore with the quality of the water I will be using, once the impacts of the virus, being dead/decomposing carp are in place. Namely, reduced oxygen levels in the water causing algal blooms and changes in the water chemistry. These two possible, and likely, outcomes are of particular concern as I understand there have been no other countries where results of any trials on communities can be verified and substantiated to prove there will be no risks to human use of the river water. I do not wish for the River Murray communities to be the objects of trials in this regard.	5	negative	Water quality
4	Will there be a release/paper outlining the effectiveness by stages? There may be some ramifications but I'm sure this will be monitored closely. There may be some pain in order to gain the overall benefit for the long term. Kill them all. Then wild cats & cane toads.....please	6	positive	
4	This paper states that gaps remain and that the results are not readily transferable only one site was selected across the whole darling system not one in the whole of nsw, why how is this representative. The work does not account for current below average water quality conditions resulting in black water events and fish kills. It does not address the cumulative impact of the Carp kill on top of the existing or add in the ecosystem crash that will occur one native and non native fish start to die off. The treatment section of this report is in stark contrast with paper 3 which requires and seeks out high density aggregations to release the virus into and this paper states these are exactly the locations the water would be untreatable and uAOXis not even checked at all treatment locations. The papers work in the area of botulism is in its own words of dubious utility and therefore is not a basis for allowing a release of herpesvirus	1	negative	Water quality

4	Too little time has been allowed for public comment and independent scientific review. The paper relies far too heavily on existing studies of Botulism in Australia, a lack of existing studies is not an indication of a lack of outbreaks. It is common for large fish kills and resultant large bird kills not to be studied in detail due to funding and priority, once the kills have occurred it is usually too late to do anything about it. Evidence from vets treating cattle for botulism has been raised many times with the NCCP who have chosen to cite a lack of studies indicating that botulism was wide-spread as evidence that it had not occurred. The reality is that no one has done the research, that is no indication at all and should not be interpreted as supporting the idea that the risk of botulism is somehow lower than the available feedback from vets suggests. This paper focuses on botulism in terms of secondary effects and pathogens, but this is just one of the many, many secondary infections and issues that are associated with mass fish kills and anoxic conditions. A much wider study of potential pathogens, including those which have been known to cause significant harm to humans attempting to intervene in clean up activities or water studies, such as haemoralgic e.coli should also be addressed and in detail. The NCCP program refused to acknowledge these risks from the outset of the program, no actual practical research has been done as part of the program, an over reliance on literary reviews after the issue has been raised by independent scientists is far from sufficient, especially given that very little research into this area has been conducted in Australia.	3	negative	Community consultation, water quality, botulism
5	You have absolutely no idea the amount of biomass this will produce, or when or where. It will be impossible to deal with and will be an ecological disaster, the likes of which we have never seen.	3	negative	Biomass concerns
5	More chemicals is causing more pollutants in the water ways and more deaths. Dr Paula Reynolds is horrified that you would ignore not only her advice but the entire profession who have advised you not to contaminate Australian waters with Herpesvirus 3 that also causes black water and mutations. Animal Welfare is also a big issue that I quoted from Dr Paula's letter that shows the suffering it causes to the Carps and other species that are also effected. The funding for this must immediately stop and put towards establishing medianimalcare equivalent to Medicare for free bulk billing for Pensioners and low waged income earners for free veterinary consultations treatments surgeries to end animal exploitation. I received a response from, Secretary, Biosecurity Policy and Response that falsely states that the herpes virus does not kill or effect other species. I refer you to a letter from Lincolnshire Fish Health Laboratories and Research, UK that can be read at this link: https://www.facebook.com/photo.php?fbid=1981126831961027&set=pcb.840428429484083&type=3&theater Dr Paula Reynolds	1	negative	

	from the UK who strongly warned against releasing this CyHV-3 virus in Australian waters because it can't be controlled with many new strains emerging and that CyHV-3 does infect other species including humans. The CyHV-3 does not kill the Carp cleanly that causes the Carp to sink to the bottom and bleed from necrotic lesions in the gills while open sores erupt all over their bodies. "The fish bleed and rot as they die with their bodies being rapidly overtaken by colonies of secondary infections including Aeromonas, Clostridium botulinum (responsible for fatal botulism), E.coli to name a few. The degraded bodies often float after a few days spreading the impacts further downstream exposing the dead bodies to consumption by wildlife which are in turn impacted by these secondary infections." "The secondary diseases are disfiguring and fatal if left untreated. These diseases are a very real threat to agricultural livestock, clean up crews and native wildlife in both aquatic and animals depending on using the waterways as their water source." The link to my correspondence urging to withdraw the funding to NCCP: https://www.facebook.com/nora.preston.16/posts/10209507958529714?comment id=10209934006780654¬if id=15252407362000 93¬if t=feed comment&ref=notif It is highly recommended to withdraw this funding to NCCP and use it to establish a medianimalcare, equivalent to medicare instead. https://wildlifecarersgroup.wordpress.com/2019/01/13/wildlife-carers-group-submission-animal-welfare-legislation-amendment-bill-2019-closes-7-2-19/ https://wildlifecarersgroup.wordpress.com/2017/05/15/submission-amended-draft-animal-welfare-and-management-strategy-2017-2022-closes-wednesday-24-may-2017/			
5	As many studies have concluded, the issue Australia has is water quality and the lack of water running through the river systems. Carp is just one of the species that survive in this bad river system. The solution is to fix the river systems and improve the water NOT by killing the massive amount of carp which only will cause further degradation to the water quality .. it's absolutely crazy, short term thinking and narrow vision from the government and the researchers that are pushing this idea. Look and fix the big picture. Everything is connected in the natural world and you cannot alter one expecting it will not impact others. Please DO NOT RELEASE THE KHV VIRUS	5	negative	
5	The actions described in this paper need plenty of PR. Whether a clean up was planned was probably about 50% of the concern of the general public. Can't stress enough. Publish this intention and then do it again and again. Then let the virus go.	7	neutral	
5	What are those strategies? Have they been effectively implemented? If implemented where and when?	1	neutral	
5	Where is the money going to come from to clean this mess up. And is this as safe as the cane toad release	3	neutral	

5	The paper spends a lot of words talking about alternative clean up methods which would be required prior to a potential virus release in a lame attempt to mitigate the horrendous effects of mas Carp deaths. The paper skips over the methods of collection of rotting carcasses. Typically a dead Carp will sink to the bottom and remain there for 48 to 72 hours and by the time it floats to the surface it is in a state of disintegration, requiring a fine net to remove it from the water without the carcass falling apart. Needless to say a carcass in this condition is not suitable for processing into fertilizer and can only be disposed of in a landfill. Where are these huge landfills? How will stinking messy carcasses be transported to these landfills? The paper talks about using people with local knowledge to assist with the cleanup. Where are thousands of these people going to be found? Where are the hundreds of thousands of other workers going to be recruited for the cleanup which would be for possibly a job lasting 4 or 6 weeks? Who is going to supply all the boats, kayaks, nets, trucks and other equipment required? Let me tell you I will not be using my tinny to haul rotting fish around. I would never get the stink out of it. The paper acknowledges that electro-fishing and netting can be effective and these methods do not have any significant side effects let alone the potential disasters associated with the release of the virus. I'd suggest this approach be tried over a trial period of 3 years to determine the effectiveness of the approach.	3	negative	Clean up
5	We have an area ready to dispose of the dead carp. We are situated no more than 5 km from the river along the B55 HWY, 8 km from the old bridge and will accept all dead fish. Please send us an EPA and or bio risk form so as to move forward in disposing of the carp on our property. Omegaman.	7	negative	Clean up

6	Dr Paula Reynolds is horrified that you would ignore not only her advice but the entire profession who have advised you not to contaminate Australian waters with Herpesvirus 3 that also causes black water and mutations. Animal Welfare is also a big issue that I quoted from Dr Paula's letter that shows the suffering it causes to the Carps and other species that are also effected. The funding for this must immediately stop and put towards establishing medianimalcare equivalent to Medicare to end animal exploitation. I received a response from, Secretary, Biosecurity Policy and Response that falsely states that the herpes virus does not kill or effect other species. I refer you to a letter from Lincolnshire Fish Health Laboratories and Research, UK that can be read at this link: https://www.facebook.com/photo.php?fbid=1981126831961027&set=pcb.840428429484083&type=3&theater Dr Paula Reynolds from the UK who strongly warned against releasing this CyHV-3 virus in Australian waters because it can't be controlled with many new strains emerging and that CyHV-3 does infect other species including humans. The CyHV-3 does not kill the Carp cleanly that causes the Carp to sink to the bottom and bleed from necrotic lesions in the gills while open sores erupt all over their bodies. "The fish bleed and rot as they die with their bodies being rapidly overtaken by colonies of secondary infections including Aeromonas, Clostridium botulinum (responsible for fatal botulism), E.coli to name a few. The degraded bodies often float after a few days spreading the impacts further downstream exposing the dead bodies to consumption by wildlife which are in turn impacted by these secondary infections." "The secondary diseases are disfiguring and fatal if left untreated. These diseases are a very real threat to agricultural livestock, clean up crews and native wildlife in both aquatic and animals depending on using the waterways as their water source." The link to my correspondence urging to withdraw the funding to NCCP: https://www.facebook.com/nora.preston.16/posts/10209507958529714?comment_id=10209934006780654¬if_id=1525240736200093¬if_t=feed_comment&ref=notif It is highly recommended to withdraw this funding to NCCP and use it to establish a medianimalcare, equivalent to medicare instead, free bulk billing for Pensioners and low waged income earners for free veterinary consultations treatments surgeries. https://wildlifecarersgroup.wordpress.com/2019/01/13/wildlife-carers-group-submission-animal-welfare-legislation-amendment-bill-2019-closes-7-2-19/ https://wildlifecarersgroup.wordpress.com/2017/05/15/submission-amended-draft-animal-welfare-and-management-strategy-2017-2022-closes-wednesday-24-may-2017/	1	negative	
6	The SEIA failed to carry out a quantitative assessment due to a total lack of understanding the scale of impact this renders the document little more than a academic theory exercise and should not be considered as in anyway being useful in the decision making process. The surveys and consultations referred to by this paper are based on the propaganda the NCCP spouted which in part where now understood as incorrect (personnel Comms). Therefore the community and stakeholder attitude's are base on being informed on falsehoods.	1	negative	

6	Unfortunately, I was not able to finish reading this discussion paper prior to the close of comments on 12 December 2019. There were a lot of papers published on the Your Say Carp website in the two weeks prior to the close of comments, and this did not provide enough time to read, digest, seek feedback from the members of my fishing club (Canberra Fisherman's Club) and write a more considered response to each discussion paper. I probably should have mentioned in my comments on discussion papers 1-5 that I was not commenting on behalf of the Canberra Fisherman's Club although I have endeavoured to capture how our members might feel on those topics. During the time I spent reading the materials and discussion papers on the Your Say Carp and the NCCP websites, I keep thinking the National Carp Control Plan will form an excellent case study on how to conduct a co-design process between governments, scientists, industry, and the community. Reading discussion paper 6 reinforced those thoughts. I had a quick read of the socio-economic impacts on recreational fishing and feel that it is a good reflection of the views of many recreational anglers. However, not all recreational anglers support the virus and it can be a divisive topic. I have had some members message me at late hours of the night to suddenly discuss a range of concerns they have, or had rather impolite email exchanges. I am glad to see that Traditional Owners are listed as an important stakeholder, as I was finding that there was very little mention of their views and concerns in previous discussion papers and progress reports.	7	positive	
6	Carp numbers have to be greatly reduced if not eradicated. With this drought affecting so many areas it would seem to me a golden opportunity to release the virus where the carp are congregating	4	positive	
6	We understand the social and local impacts of the carp eradication scheme. We have set aside an area to accept the dead carp biomass on our land, situated conveniently in the area, that will afford cheap disposal, quick degrading of carcasses with kudos for all involved. Please contact us for a meeting. Omegaman	7	Positive	Disposal

NATIONAL CARP CONTROL PLAN

The National Carp Control Plan is managed by the
Fisheries Research and Development Corporation

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