

Vertessy Report Recommendations – Fish Deaths

DPI Fisheries Response

DPI Fisheries Response:

- The Menindee fish deaths in 2018/19 represented one of the most significant fish death events in the recorded history of the Murray Darling Basin.
- The subsequent Commonwealth Independent Report (The Vertessy Report) supported the interim findings of NSW DPI in relation to the cause of the fish deaths and made 27 Recommendations to mitigate future risks and manage subsequent events.
- Eight (8) Recommendations (Rec. 7, 8, 11, 12, 13, 14, 16 and 23) were relevant to DPI Fisheries policy and outcomes.

Vertessy Report Recommendations	DPI Fisheries Response	Status
<p>Recommendation 7 - NSW should initiate a program to remove barriers to fish movement and enhance mobility through improved passage at existing weirs and regulators.</p>	<p>NSW has finalised the development of the NSW Fish Passage Strategy, which seeks to address the 165+ highest priority barriers to fish passage in NSW over a 20 year period. Phase 1 of the Strategy seeks to address over 50 high priority barriers in the first 5 years of the Strategy. Funding from the NSW Government, Basin Plan Implementation and the Commonwealth Department of Agriculture, Water and the Environment is being used to commence Phase 1 implementation, including in the Lower Darling.</p> <p>The Lower Darling Fish Passage Program committed \$6M from the Commonwealth to restore fish passage connectivity along the Lower Darling River by refurbishing existing fishways at Weir 32, Pooncarie Weir and Burtundy Weir. The program was intended to be delivered over two phases, with Phase 1 (\$1.1M) focusing on pre-construction activities and Phase 2 focusing on construction work.</p> <p>Phase 1 of Lower Darling Fish Passage Program activities are nearing completion following delays related to persistent high flows over 12+ months that limited necessary site surveys. Investigations to date have determined that Phase 2 of the Lower Darling Fish Passage Program works should focus on rebuilding</p>	<p>In progress (Phase 1 of the Lower Darling Fish Passage Program to be completed in June 2023)</p>

	<p>Burtundy Weir fishway, with further design activities at Pooncarie Weir and Weir 32 being paused due to project outcome overlaps with the SDLAM / Better Baaka program.</p> <p>Business Case activities are progressing for Burtundy Weir fishway and are expected to be completed by the end of June 2023. The Commonwealth will review the Business Case and determine Phase 2 agreement and funding, noting that there may need to be a potential increase in the funding envelope to complete works given the expansion of activities from minor fishway refurbishment to complete fishway rebuild.</p>	
<p>Recommendation 8 - NSW, QLD and the MDBA should publish their joint plans for implementation of the northern Basin Toolkit Measures, and set an aggressive timeline for delivery. Immediate priority should be given to those measures that support native fish population recovery and connectivity.</p>	<p>NSW is progressing native fish proposals and measures as part of Northern Basin Toolkit, which is scheduled to be complete by 2024; however, progress has been hampered by persistent high flows across the Northern Basin that have limited on-ground assessments, with discussions progressing about a potential timeframe extension to allow for effective completion of viable activities.</p> <p>DPI Fisheries related projects include:</p> <ul style="list-style-type: none"> • Reconnecting the Northern Basin fish passage project (\$56M) <ul style="list-style-type: none"> ○ led by Water Infrastructure NSW in collaboration with DPI Fisheries ○ aims to address fish passage at up to 18 high priority barriers along the Barwon-Darling and Border Rivers that will improve native fish access to over 2,000 km. ○ related procurement and design activities have commenced • Fish-friendly Water Extraction diversion screening project (\$20M) <ul style="list-style-type: none"> ○ led by DPI Fisheries in collaboration with industry and water users ○ aims to screen priority pumps along the Barwon-Darling and Gwydir valleys ○ 16 sites and 49 pumps being funded through EOI process (total of 49 sites identified) with implementation and procurement activities now commenced. Approximately 1.5 million fish will be saved annually based on conservative estimates. 	<p>In progress (current completion date of June 2024 – noting possible extension)</p>
<p>Recommendation 11 – Within 1 year, NSW should continue emergency</p>	<p>In 2019, the NSW Government announced the \$10M Native Fish Drought Response (NFDR) program to address the emerging risk to native fish communities from drought and record low river flows. Over the course</p>	<p>Complete</p>

<p>responses such as the use of aerators and fish translocations, noting that these are short-term emergency measures and may not prevent additional fish death events if adverse conditions persist or re-occur.</p>	<p>of the 2019/20 season, the NFDR oversaw the installation of 47 aeration assets at high risk sites; the rescue and relocation of over 5,000 native fish (over 2,500 individuals from threatened species); upgrades to two (2) native fish hatcheries at Narrandera and Grafton Fisheries Centres and the establishment of five (5) Valley-based Technical Advisory Groups (VTAGs) to gather information, data and knowledge from a variety of local stakeholders to prioritise interventions.</p>	
<p>Recommendation 12 – Within 1 year, once the adverse environmental conditions have abated, NSW should undertake monitoring of fish populations in the Lower Darling to more fully understand the impacts of the recent fish death events on fish numbers and remaining fish population status.</p>	<p>Through funding provided by the MDBA, an ecological assessment of the impacts of the fish kills in the Lower Darling over the 2018/19 and 2019/20 has been completed by NSW DPI Freshwater Research teams. The results have been released as part of the Lower Darling-Baaka Drought Response report. Fish community monitoring in the Lower Darling-Baaka continues as part of the Recovery Reach project, as well as other NSW and Basin-wide programs, including Basin Plan Environmental Outcomes Monitoring (BPEOM) – Fish project and the MDB Fish Survey project, which will provide the opportunity for longer term assessment of native fish conditions.</p>	<p>Complete</p>
<p>Recommendation 13 – Within 1 year, NSW and MDBA should jointly undertake a risk assessment to identify parts of the Darling Basin that are most at risk of future fish death events. This information should be used to inform the development of future early warning systems and emergency response plans.</p>	<p>NSW government agencies have participated in a range of risk assessment workshops with the MDBA and subsequent post-season reviews of interventions relating to drought response.</p> <p>In addition, NSW initiated a risk assessment and mitigation workshop with the MDBA and other Commonwealth agencies around the potential for hypoxic blackwater events in the Murray-Darling Basin given the above average rainfall events in the coming Spring/Summer (across both 2021-2023). Regional based Hypoxic Blackwater Working Groups were convened by DPE Water over this period for priority areas. The primary purpose of the HBWG is to provide expert technical advice on flood management response options related to hypoxic blackwater; facilitate a timely, coordinated agency response to critical water quality events, and provide a cross-agency network for information and ensuring consistent communication.</p>	<p>Initial assessment complete and ongoing</p>
<p>Recommendation 14 – Within 1 year, NSW should review and refine the flow requirements to control stratification in</p>	<p>NSW have developed Long-Term Water Plans (LTWP) as an important step to describing the flow regimes that are required to maintain or improve environmental outcomes in NSW MDB valleys, including in the Murray–Lower Darling. The plan identifies water management strategies for maintaining and improving the long-term</p>	<p>Complete (related water management actions ongoing)</p>

weir pools deemed to be at high risk of fish deaths	health of riverine and floodplain environmental assets and the ecological functions they perform, including for native fish. This includes detailed descriptions of ecologically important river flows and risks to water for the environment and has explicit consideration of flow requirement to assist with mitigating impacts from weir pool stratification.	
Recommendation 16 – Within 1 year, Basin governments should ensure that the Basin Native Fish Management and Recovery Strategy is adequately resourced and involves authentic collaboration with government water scientists, academics and consultants, local communities and Aboriginal stakeholders. This strategy should build on efforts such as the lapsed Native Fish Strategy and current State programs.	<p>NSW has been an active participant in the development of the Native Fish Recovery Strategy through the program steering committee. This Strategy has been developed to recover native fish populations across the Basin and has provided initial investment in recovery actions in the Lower Darling River (led by NSW DPI Fisheries), including community engagement including First Nations, drought protection and recovery efforts, detailed habitat mapping to inform on ground planning, and fish community monitoring.</p> <p>Note: funding and related resources for the NFRS and related activities, including the Lower Darling-Baaka Recovery Reach is anticipated to cease in June 2023.</p>	Complete
Recommendation 23 – Within 2 years, NSW should initiate a project to establish a “demonstration reach” in the lower Darling, where multiple threats to fisheries recovery are mitigated to create beneficial conditions for long-term fish recovery. This demonstration reach should be a key feature of the Native Fish Management and Recovery Strategy and should heavily involve the local community, including Aboriginal stakeholders	<p>NSW has established the Lower Darling Recovery Reach through funding made available from the MDBA. The appointment of a Lower Darling Recovery Reach Coordinator has allowed the continuation of community engagement, on ground outcomes and fish community monitoring. The program has been running since 2019-2020, with over \$1 million invested in native fish related works, research and engagement, including:</p> <p>Stage 1, 2019-20 (complete)</p> <p>In response to the Menindee Fish Kills of 2019-20, NFRS funding to fast-track recovery activities in the Lower Darling was prioritised during the drafting stage for the NFRS to assist with immediate responses to the mass fish kills that occurred near Menindee and subsequently in the LDBR Darling Downstream.</p> <p>Stage 1 priority recovery actions were categorised in to three broad objectives:</p> <ol style="list-style-type: none"> 1. Fish community monitoring and evaluation to understand the impact of the recent fish kill events, track community status, and develop our understanding of the spatio-temporal scales at which population processes occur in response to hydrological conditions 	Complete (noting current stage to finish in June 2023)

	<ol style="list-style-type: none"> 2. Detailed mapping of aquatic habitat along approximately 200 km of the Lower Darling River 3. Recovery activities, communications, and engagement program, including a coordinated suite of activities within the LDBRR facilitated by a Lower Darling Fish Recovery Coordinator. <p>Stage 2, 2020-23</p> <p>Building on the efforts and outcomes from Stage 1, a coordinated program of activities commenced in November 2020 to progress native fish and river health in the Lower Darling River to enhance future recovery of native fish in the LDBRR. These are conducted under contractual agreement between the MDBA and NSW DPI Fisheries.</p> <p>Broad Objectives in Stage 2 include:</p> <ol style="list-style-type: none"> 1. Building on results from the fish community monitoring conducted under Stage 1 of the Lower Darling Recovery project, continue monitor the status of the fish community in the Lower Darling River post the 2018-19 fish deaths to track recovery. 2. Support Golden Perch population recovery through enhanced understanding of the spawning locations and required hydrological conditions that contribute to the dispersal and recruitment of the species in the broader Barwon-Darling River, including dispersal into the Lower Darling River. 3. Develop and implement on-ground works that assist in the protection and enhancement of native fish habitat, whilst creating a greater awareness and participation from local communities. 4. Assist with planning of flow events (environmental or operational deliveries) that support key life history outcomes for native fish in the Lower Darling Recovery reach. 5. Provide on-ground coordination across activities and groups to engage with the community, build capacity, and share results. 	
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