Australia: Menindee fish kill incident highlights environmental degradation

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The pollution of key riverways and broader environmental degradation has again come into focus. In March, the largest in a series of mass fish kill incidents to date took place on the Darling River near the far western New South Wales (NSW) town of Menindee. The region is arid, making the Darling the lifeblood of the area.

The Darling River is Australia's third longest, flowing from northern NSW to Wentworth, where it joins the Murray River near the Victorian and South Australian borders. Menindee, located 240 kilometres north of Wentworth, has a population of approximately 500, a third of them Aboriginal people.

On March 17 the Menindee population was confronted with the sight and smell of over a million dead fish floating down the Darling. Estimates of the total are as high as 20 million fish.

The fish were mostly European carp and native species, such as Murray Cod, Silver Perch, Golden Perch and Boney Perch. Of particular concern was the Murray Cod, an endangered species, known to live for a hundred years and growing to over a metre.

Menindee resident Graeme McCrabb told the *Guardian* that "It's horrendous here today. The river is just white. I'm looking at probably a kilometre or a kilometre-and-a-half of fish and they're all dead. It's unfathomable." Residents reported a horrendous smell for days.

The town's people have been treated with contempt. NSW Health initially declared drinking water safe to drink even though it reeked from the rotting fish carcasses. At a meeting to discuss the crisis, angry residents challenged the authorities to drink the water. Although the town's water is treated, people who live out of town draw water straight from the river.

Some residents have reported getting skin rashes after washing with the river water.

At the town meeting on March 22, residents were assured by NSW deputy emergency management commissioner Peter Thurtell that the clean-up would start that afternoon, but it was delayed for several days as essential equipment had to be transported from Sydney.

Menindee local David Baker told the *Guardian* that "This happened in 2019 and they [the state government] haven't learned from that." Due to the delays, he continued "They are going to get not even 1 percent of what died in the river, it's really a waste of time. It's a political stunt to say they are doing something about it."

Thurtell dismissed the residents' concerns, saying government authorities will begin removing dead fish. He said there was "no need for community concern" about water quality as there were "multiple viable solutions to maintain water supply."

Rotting fish sank to the bottom of the river, making them impossible to collect.

River ecologist and conservation biologist at University of NSW Professor Richard Kingsford told the *Guardian* that the sinking fish carcasses would "contribute to increasing nitrogen, carbon and phosphorus in the water as the main nutrients which can also increase blue-green algal blooms."

Blue-green algal blooms are caused by highly elevated nutrient levels rendering the river water toxic. When the algal bloom dies it draws oxygen out of the water rendering it unviable for aquatic life.

The Environmental Protection Authority (EPA) on April 19 released the results of a toxicological analysis of river water samples collected just after the fish kill event. They found that there were no pesticides in the water. The EPA analysis drew heavy criticism.

Ian Wright, professor of environmental science at Western Sydney University, told the *Guardian* that he had multiple concerns with the EPA's methodology. This included that water samples were taken five days after the fish kill started. Only one sample was taken at each of six locations. Tests weren't carried out to monitor bacteria levels.

Wright reported that one of the samples collected on the Darling upstream of Menindee creek showed 50 times the Australian standard for fresh and marine water quality. Wright told the *Guardian* that in his opinion that amounts to "severe pollution," yet the EPA didn't describe it as a

pollution event.

At the same site, dissolved oxygen was 0.41mg/L. Anything below 1mg/L is considered deadly for aquatic animals.

The EPA declaration was completely untenable in the face of such criticism, forcing the New South Wales Labor government on April 19 to reverse the decision and to declare the fish kill a "pollution incident." This gives the EPA the authority to investigate and prosecute polluters.

That this is a worthless exercise was shown by the fact that the EPA already had sufficient evidence to ascertain the toxicity of the river water, information they ignored.

Fish kills in the region have occurred consistently over several years. In the largest previous incident to date approximately one million fish were estimated to have died in 2019. Several smaller fish kill incidents have occurred in the subsequent four years.

Although global warming was not the immediate cause of the fish kill events, it has made environmental conditions extremely unstable, exacerbating heatwaves, droughts and flooding.

Low levels of dissolved oxygen were the cause of the fish kill incidents in 2019 and in March 2023, but the 2019 fish kill occurred during a severe drought with extremely low river levels. Ironically the current event occurred after a major flood.

In a comment on the *Conversation*, Kingsford stated that "it's likely to be factors like the heatwave days earlier, receding floodwaters, bacteria pulling oxygen from the water—and no escape (for the fish)."

In natural river systems, fish can escape areas with low oxygen levels by accessing other parts of the river, but this is prevented in the Darling by a series of weirs and dams.

Kingsford pointed to the role of agribusinesses taking water from the upper Darling.

"Yes, fish kills have always occurred but not at this scale," he explained. "The fundamental reason the fish of the Darling keep dying is because there is not enough water allowed to flow. Since the 1980s, the Darling's tributaries have steadily shrunk... Much of their water is captured in large dams… or intercepted by floodplain harvesting…"

Floodplain harvesting occurs in the upper Darling, where agribusinesses build extensive levy systems and dams designed to capture river water during a flood, thus preventing water flowing downstream for the good of communities and the environment. This leads to a situation where large dams in the upper Darling hold billions of litres of water while the lower Darling completely runs dry or is reduced to a series of disconnected waterholes.

One of the biggest users of the upper Darling water is the cotton industry that relies on inundation to produce their crop.

Irrigation extracts 70 percent of all surface water from the Murray-Darling river basin. In 2017–18, cotton irrigators extracted some 2,500 billion litres or approximately 35 percent of all the water extracted for irrigation. Most of this occurs in the upper Darling.

The needs of river communities and the environment have been completely subordinated to the profits of the giant agribusinesses, causing an environmental disaster.

Labor's federal environment minister, Tanya Plibersek, sought to obscure this reality, responding to the latest event by stating: "It's tragic to see mass death of fish, known as fish kills, at this scale for the second time in four years. We believe the fish kills have been caused by flooding combined with high temperatures which has created low oxygen blackwater."

While it was a natural disaster, the devastating conditions have been considerably exacerbated by the rapacious needs of agribusiness.

Governments that regulate the Murray-Darling Basin are covered by an agreement signed in 2012 by the NSW, Victorian, Australian Capital Territory and South Australian governments. As part of their plan to restore environmental flows to the river system, they committed to buy back water that would be released in the rivers for the benefit of downstream river communities. The plan was to release 3,200 gigalitres of water to the environment each year. This scheme paid the agribusinesses for hoarding flood water in the upper Darling.

Due to pressure from irrigators, in 2016 the plan was amended to release less water to the environment. The buyback system was moribund from 2018 to 2022.

The new Labor premier and head of the minority NSW government Chris Minns visited Menindee on his first day in office on March 29. He offered nothing except empty platitudes and announced he would set up yet another inquiry. This is simply to buy time—the issues are well known and researched by reputable scientists.