SALMON OUT OF LONG BAY:

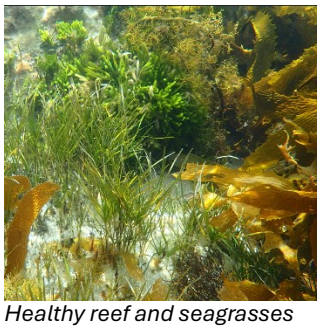
THE CASE FOR SCIENCE

JUNE 2025

Tasmanian Independent
Science Council

For the past seven years, open pen salmon farming in Long Bay, Port Arthur has caused serious pollution, algal blooms, seagrass loss and damage to reef ecosystems. Based on an independent scientific review, we believe that this lease and the associated licenses should not be renewed.

WHY LONG BAY IS NOT SUITABLE FOR SALMON FARMING



Healthy reef and seagrasses

Long Bay is a small, shallow, poorly flushed bay located directly north of Port Arthur. This bay is highly diverse, with extensive seagrass beds and rocky reef ecosystems that provide a haven and breeding area for flathead, crayfish, abalone and other species targeted by recreational and commercial fisheries. Long Bay is also an important recreational and tourism asset, and a sheltered access point for boaters and anglers. For these reasons, Long Bay would not be considered suitable for finfish aquaculture based on the marine spatial planning tools recently developed by IMAS.

Furthermore, the double row of sixteen salmon pens installed at the seaward end of the bay has significantly reduced flushing by clean seawater, further compounding the impacts of pollution generated by the fish in the pens.

A BRIEF HISTORY

Tassal recommenced salmon farming in Long Bay in 2017; 12 years after a smaller, unsuccessful operation ceased. Fourteen pens were installed, as a double row of seven 120m circumference pens, with another two pens installed in 2018. Salmon were initially grown out to full size but operations then shifted to grow-out of smolt to stock the Okehampton lease. Other infrastructure at the site include a desalination plant to produce freshwater for bathing fish, a feed barge to supply the automated feeding system, and a supplementary oxygen supply system. The Aqua Spa – an 84m long well boat regularly visits the lease to bathe or transfer fish.

EVIDENCE OF ENVIRONMENTAL HARM

Since 2017, Long Bay has been chronically polluted by salmon farming wastes, resulting in unacceptable environmental degradation in areas well beyond 35 metres from the lease boundaries, in contravention to Environmental License Condition 1.1. This bay is simply not suited to open pen salmon farming which both physically reduces water circulation while releasing vast amounts of damaging nutrients and organic wastes. The result has been water pollution, persistent nuisance algal blooms (as shown in photos below) and damage to fringing reef and seagrass communities.

Pollution from untreated fish urine and faeces results in poor water and sediment quality in the vicinity of the lease, and pens are frequently cleaned of accumulated biofouling, further adding to the pollution load. The break-down of the accumulated wastes and algae continues to impact the bay even after the fish have been transferred, resulting in periodic low oxygen levels in the bay. For example, the EPA's 2023 report on sensors deployed near the lease demonstrated periods of alarmingly low oxygen levels and elevated phytoplankton that are linked to farming operations at the lease.

Excess nutrients have stimulated chronic nuisance algal blooms in the bay. This algae grows over seagrass beds and fringing reef ecosystems and periodically washes up in thick mats on shorelines. The extensive webs of filamentous and encrusting algae shade the underlying seaweeds and seagrasses, depriving them of the sunlight needed for healthy growth.

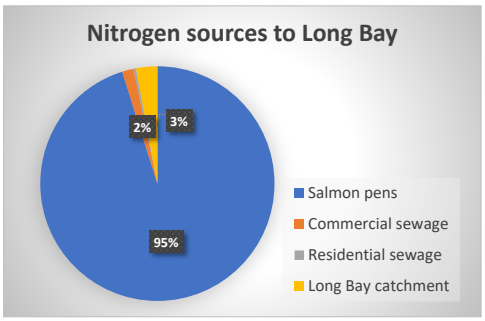
Regular monitoring of one of the largest seagrass beds in Long Bay between 2019 and 2023, has documented a catastrophic decline in cover by 75 to 100%. Given the essential role seagrass ecosystems provide as fish nurseries and food sources for swans and other water birds, this is a serious concern.

Similarly, surveys of fringing reef communities by IMAS in 2021 and 2022 found that reefs adjacent to the lease, and in the poorly flushed areas of Long Bay to the north of the lease, showed extensive signs of eutrophication, including the proliferation of nuisance algae and a lower reef canopy cover. These impacts were shown to be persistent, without the typical seasonal recovery that normally occurs. Analyses of stable isotope 'fingerprints' confirmed that salmon wastes were an important source of the nitrogen that stimulates this nuisance algae growth.

Other problems with salmon farming operations in Long Bay include fish escapes, disease and mortality events, use of limited freshwater supplies, and discharges of toxic desalination brines. The Aqua Spa also discharges large quantities of used and potentially contaminated freshwater from bathing diseased fish, as well as disinfectants. These desalination and well boat discharges are unregulated and not monitored.

YES - SALMON FARMING REALLY IS THE PRIMARY SOURCE OF POLLUTION

Nitrogen is a known pollutant in marine systems, causing algal blooms where it is discharged at high levels over extended periods of time. While nitrogen is produced by multiple sources including sewage, fertilisers and livestock, a detailed nitrogen loading analysis undertaken by the TISC clearly identified salmon wastes as by far the largest source to Long Bay. Even under the most conservative scenario, the salmon pens in Long Bay accounted for 95% of the human-derived nitrogen inputs. This is the equivalent of the sewage discharged by more than 25,000 people.



Source: TISC 2023

IN SUMMARY, as demonstrated by the evidence detailed in our recent report and correspondence, the Tasmanian Independent Science Council maintains that Long Bay is not a suitable location for salmon or other finfish farming. We strongly recommended that the current operations be removed from the bay, the current Environmental and Marine Farming Licenses not be renewed, and that the Tasman Marine Farm Development Plan be modified to exclude finfish aquaculture as a permissible use at this lease.

The Tasmanian Independent Science Council (TISC) is dedicated to science-based policy reform to ensure the long-term health of Tasmania's environment. We seek to inform public debate and influence legislative reform to improve outcomes for terrestrial, freshwater and marine ecosystems.

For further details and references see the TISC report ' Why salmon farming should be removed from Long Bay: a multiple lines of evidence science review, July 2023', along with recent correspondence between the TISC and the Tasmanian EPA, published on our website at tassciencecouncil.org