



THE RIVER DERWENT – HUON’S INTERACTION

- Huon Aquaculture’s Meadowbank Hatchery is just one of more than 15 sites approved by the EPA to operate and discharge into the River Derwent.
- Most of the sites that operate under an EPA Environmental Protection Notice (EPN) on the River Derwent are TasWater facilities, which discharge treated wastewater into the river, mostly within the lower Derwent estuary.
- Other major industrial companies that discharge into the River Derwent are the Norske Skog Paper Mills at Boyer and the Nyrstar Hobart Smelter at Lutana.
- As with any waterway, there are also many inputs to the River Derwent from naturally occurring sources, such as creeks, rivers and stormwater.
- In addition, all waterways, including the River Derwent, are subject to unregulated inputs from small industrial operations, such as agriculture, forestry and other operations that impact groundwater, as well as private residences (septic systems and domestic garden fertilisers).
- Huon’s Environmental Compliance team closely monitors our freshwater sites to ensure compliance with all regulatory conditions and to identify potential areas where we can improve our environmental performance.

THE RIVER DERWENT

The River Derwent flows from Lake St Clair, generally southeast, for 187 kilometres to New Norfolk and, from there, the Lower Derwent Estuary extends a further 52 kilometres, emptying into Storm Bay and out to the Tasman Sea.

Flows average in range from 50 to 140 cubic metres per second and the mean annual flow is 90 cubic metres per second (*Source: State of the Derwent Estuary 2020 Update, Derwent Estuary Programme*), this is comparable to the River Darling (average 100 cubic metres per second). By way of comparison, Huon’s Meadowbank hatchery diverts 0.520 of cubic metre per second from the river.

Huon’s Meadowbank Hatchery is just one of more than 15 sites approved by the Environmental Protection Agency (EPA) to operate and discharge into the River Derwent below New Norfolk.

Each of the 15 approved sites is regulated by an Environmental Protection Notice (EPN), and each EPN authorises varying allowable levels of inputs, such as nitrogen, ammonia and phosphorous.

The map over page indicates the sites covered by an EPN in the lower Derwent estuary.



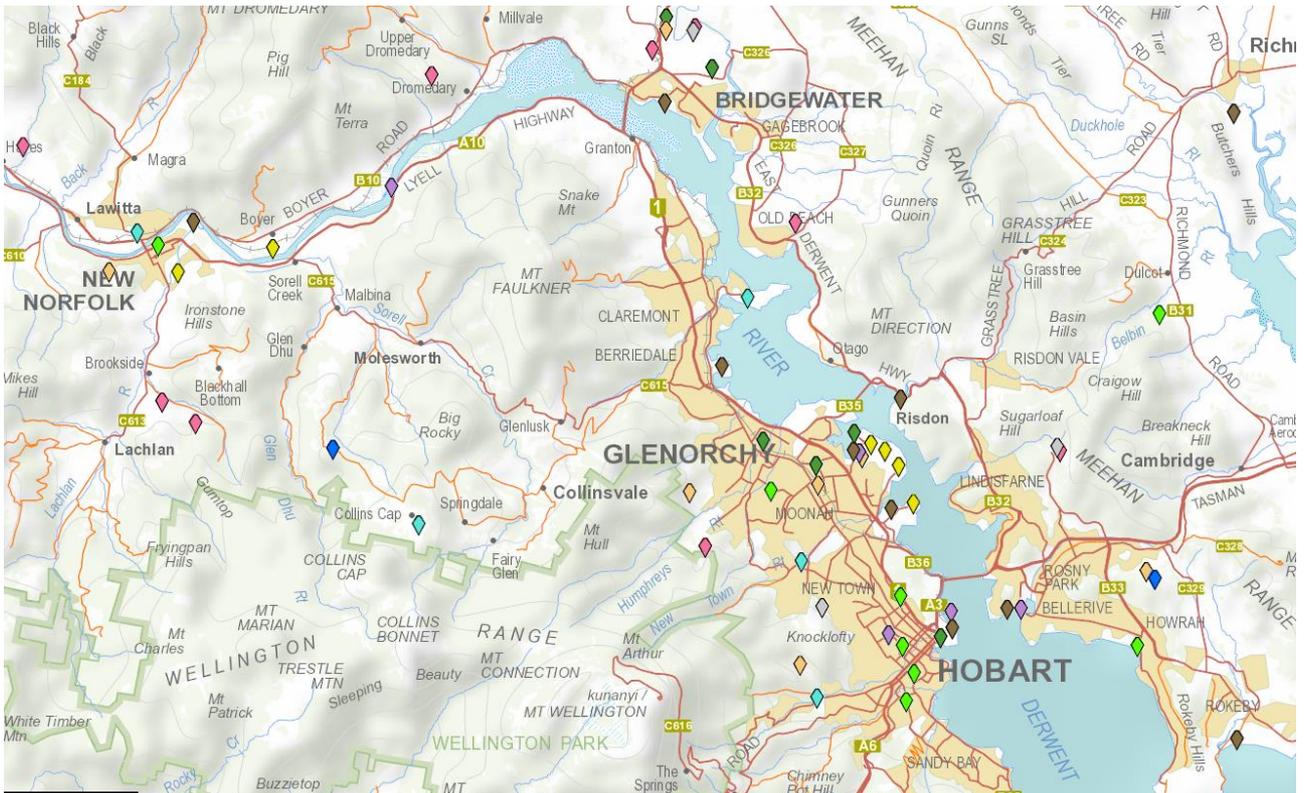


Figure 1: EPA regulated facilities (Listmap) approved municipal discharge sites in brown.

INPUTS TO THE RIVER DERWENT

(All input allowances are sourced from EPA EPNs)

Most of the sites covered by an EPN in the lower Derwent are TasWater facilities, which discharge treated wastewater into the River, however other major contributors to river inputs are the Norske Skog Paper Mills at Boyer and the Nyrstar Hobart Smelter at Lutana.

Not all operations which generate inputs to the River Derwent are regulated by an EPN, and there are many agricultural smallholdings, privately operated small scale forest operations, other small businesses and even private properties located along the banks of the River Derwent and its tributaries which may contribute to completely unregulated river inputs.

In addition, as with all river systems, there are a number of natural inputs to the River Derwent from tributary rivers and creeks, as well as stormwater.

Huon Aquaculture strongly supports scientific management of the River Derwent and supports the Derwent Estuary Programme in its goal to improve the river's management through increased sampling to fully understand all inputs into the river system.

SUMMARY OF INPUTS

The four major inputs into the River Derwent that are monitored by the EPA are Total Nitrogen, Total Ammonia, Total Phosphorous and Total Suspended Solids.

Huon's Meadowbank Hatchery contributes around 1% of allowable Total Nitrogen, 1% of allowable Total Ammonia, 1% of allowable Total Phosphorous and 1% of allowable Total Suspended Solids approved for discharge into the River Derwent.



MEADOWBANK HATCHERY

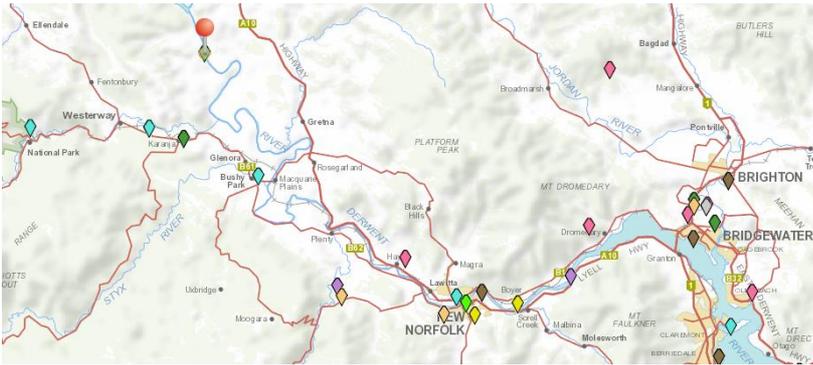


Figure 2: Location of Meadowbank (Listmap).

Huon's Meadowbank Hatchery is located on the banks of the Derwent River at Glenora and took its first delivery of fish in October 2013.

Meadowbank is primarily a flow-through system, with management of the discharge water occurring through the removal of particulate matter using microstrainers.

The filtered water then enters a settlement dam, passing into a constructed wetlands system, before discharging back into the River Derwent.

The Meadowbank Hatchery is upstream from the major municipal sewage treatment plant discharges, the Norske Skog Paper Mills discharges and the Nyrstar Hobart smelter discharges.

The Nyrstar EPN references significant allowable input concentrations however, total discharge volumes are unknown, making it impossible to calculate mass loadings, therefore we are unable to include their contribution to total inputs in this analysis.

Water flow, pH and Dissolved Oxygen are measured inhouse daily at the Meadowbank Hatchery, while wastewater is tested by a NATA accredited laboratory monthly, with reporting forwarded to the EPA.

- Total Nitrogen discharge from Meadowbank Hatchery sits at around 1% of the total approved by the EPA (excluding Nyrstar), with Macquarie Point Wastewater Treatment Plant (26%), Norske Skog Paper Mills (23%) and Prince of Wales Bay Wastewater Treatment Plant (17%) holding the majority of the total approved allocation.
- When it comes to Total Ammonia allowable discharge, Macquarie Point Wastewater Treatment Plant (30%), Prince of Wales Bay Wastewater Treatment Plant (23%) and Rosny Park Wastewater Treatment Plant (14%) are the big contributors, while Meadowbank Hatchery again contributes around 1% of the total allowable (excluding Nyrstar).
- It is the same story with Total Phosphorous; Meadowbank holds 1% of the total approved discharge, while Macquarie Point Wastewater Treatment Plant is allowed 24%, Prince of Wales Bay Wastewater Treatment plant gets 17% and Cameron Bay Wastewater Treatment Plant gets 15% (excluding Nyrstar).
- Maintaining the pattern, Meadowbank Hatchery contributes 1% of the total allowable Total Suspended Solids (excluding Nyrstar), while Norske Skog Paper Mills makes up the vast majority of the total allowance, at 76%.
- Total Nitrogen and Total Phosphorous already existing in the River Derwent (as recorded above the Meadowbank Hatchery) is also a major contributor to the totals, making up 34% of Total Nitrogen and 65% of Total Phosphorous in 2020.

