

Hunter River Salinity Trading Scheme

2018-19 performance report

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More information about the Hunter River Salinity Trading Scheme

More information on the operation of the Hunter River Salinity Trading Scheme (HRSTS) can be obtained online from the EPA at www.epa.nsw.gov.au/licensing/hrsts/ and from the NSW Department of Primary Industry – Water at waterinfo.nsw.gov.au/hunter/trading.shtml.

Follow the links from these webpages for information on river flow and electrical conductivity conditions in the Hunter River.

For more information on the operations of the HRSTS, telephone (02) 4908 6800 or email hrsts@epa.nsw.gov.au.

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What is the Hunter River Salinity Trading Scheme?

The Hunter River Salinity Trading Scheme (the scheme) involves a system of salt credits that industries can buy and trade. Industries use these credits to discharge their salty water into the Hunter River, but only when the river contains adequate fresh water to dilute the salt and maintain water quality. The scheme therefore balances the amount of salt that industry can directly discharge with the background level of salt in the river.

River flow is measured at a series of monitoring points along the river. When flows are low, no discharges are allowed. During periods of high flow, limited discharge can occur; but only if the industry has sufficient salt credits. When flood flows occur, discharges are allowed up to an agreed salinity target. For the purposes of the scheme, the river is divided into three sectors, with salinity targets set for each sector.

Salinity is measured by determining the electrical conductivity (EC) of water. EC estimates the amount of total dissolved salts in the water and is measured in micro Siemens per centimetre ($\mu\text{S}/\text{cm}$). Sea water has an EC of around $55,000\mu\text{S}/\text{cm}$. Drinking-quality water can range between $600\mu\text{S}/\text{cm}$ and $1200\mu\text{S}/\text{cm}$.

The scheme is operated by WaterNSW under a service agreement with the NSW Environment Protection Authority (EPA), guided by the Hunter River Salinity Trading Scheme Operations Committee. The committee includes representatives from industry, the community and NSW Government.

What is the purpose of the scheme?

The scheme has been designed to balance the water quality needs of agricultural users with the discharge needs of mines and power stations. Overall, salinity is kept to an appropriate level by only allowing discharges during high flow or flood events and balancing the amount of salt that industry can discharge against the background salt levels in the river.

The Hunter River contains high levels of salt as a result of run-off and infiltration, weathering of the geological strata, saline groundwater inflows and a range of anthropogenic sources, such as mining, land clearing and agriculture.

The scheme monitors salt levels in the river to ensure that mines and power stations only discharge when salinity levels are appropriately low. By balancing the amount of salt that can discharge against background salt levels in the river, the scheme helps to manage the impact of these discharges on the health of the river and ensures that the water is suitable for local primary producers to use for irrigation purposes.

How did the scheme perform in 2018–19?

There were no discharges of saline water under the scheme in 2018–19. There was one opportunity for industries in the Middle and Lower Sectors to discharge. This was on 2 and 3 April 2019. However, no industries chose to discharge at that time. There were no opportunities for industries in the Upper Sector to discharge in 2018–19.

During periods of low flow, the Upper and Middle Sectors of the Hunter River experienced periods of elevated salinity. This was due to naturally salty surface water and groundwater flow and was not related to industry discharges.

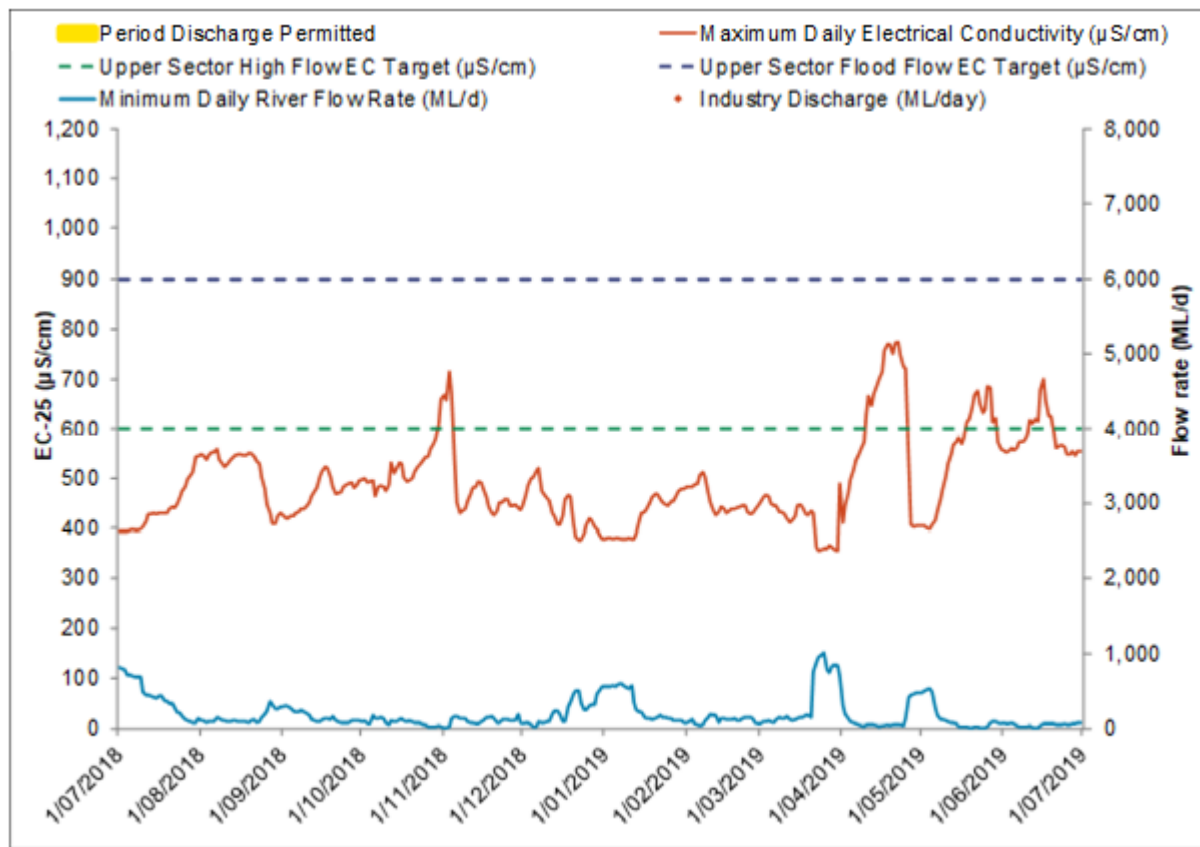
During wet weather on 30 March 2019, saline water overflowed from a dam on the Warkworth mine into Longford Creek near Warkworth in the Lower Sector. The catchment of this dam included a mining area. Saline water was not permitted to be discharged from this dam under the scheme. The EPA fined Warkworth Mining Ltd \$15,000 for allegedly discharging saline water. The Department of Planning, Infrastructure and Environment also fined the company \$15,000 for allegedly failing to implement its water management plan.

How did the scheme perform during industry discharge events?

Provided below is a summary of salinity and flow information in the Upper, Middle and Lower sectors of the Hunter River from July 2018 to June 2019. Salinity results are compared with the established salinity targets that have been set for the three sectors of the Hunter River.

Upper Sector: Hunter River upstream of Denman

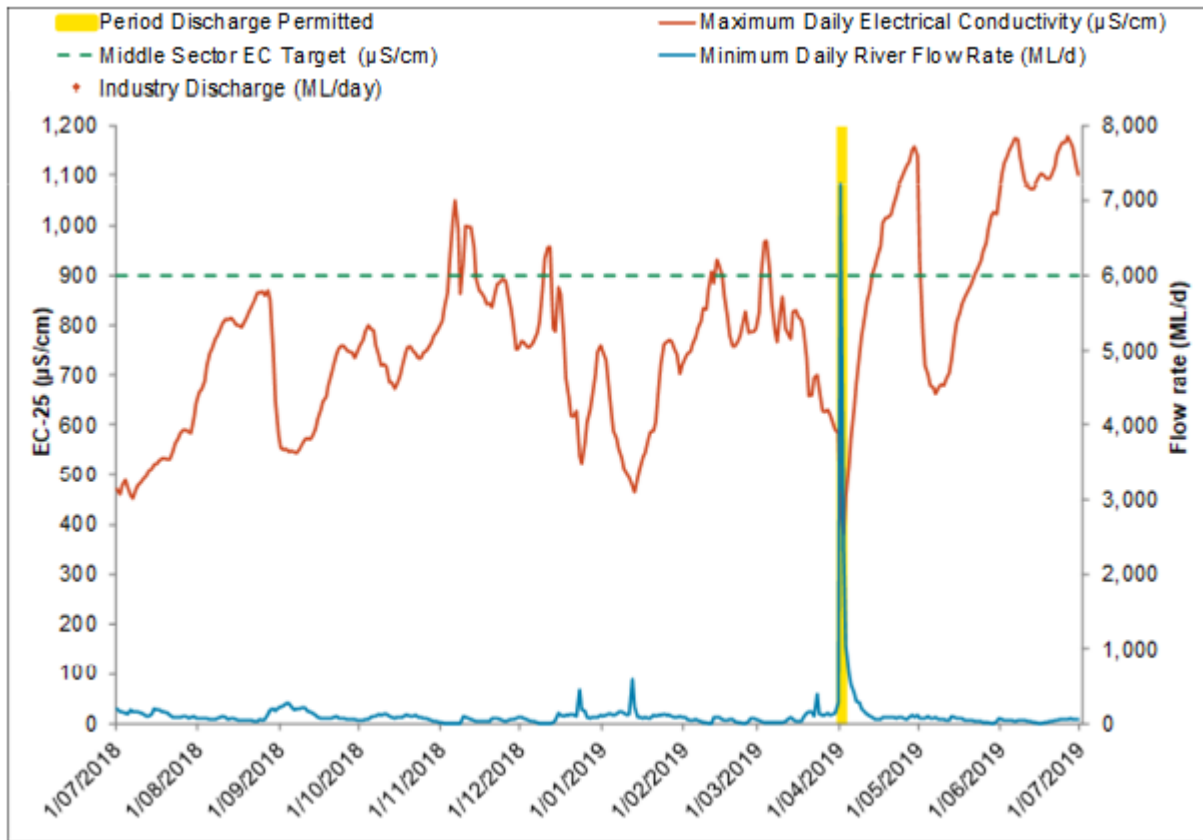
The salinity target for the Upper Sector is 600 μ S/cm during high flows (shown in Graph 1, below, as a green line) and 900 μ S/cm during flood flows (shown in Graph 1 as a dark blue line). There were no discharge opportunities permitted by the scheme in the Upper Sector between July 2018 and June 2019. The exceedances of the salinity target shown below are due to runoff from salty surfaces and from groundwater inflows.



Graph-1 → Maximum-salinity-and-minimum-flow:-Hunter-River-at-Denman

Middle Sector: From Denman to the junction of the Hunter River and Glennies Creek

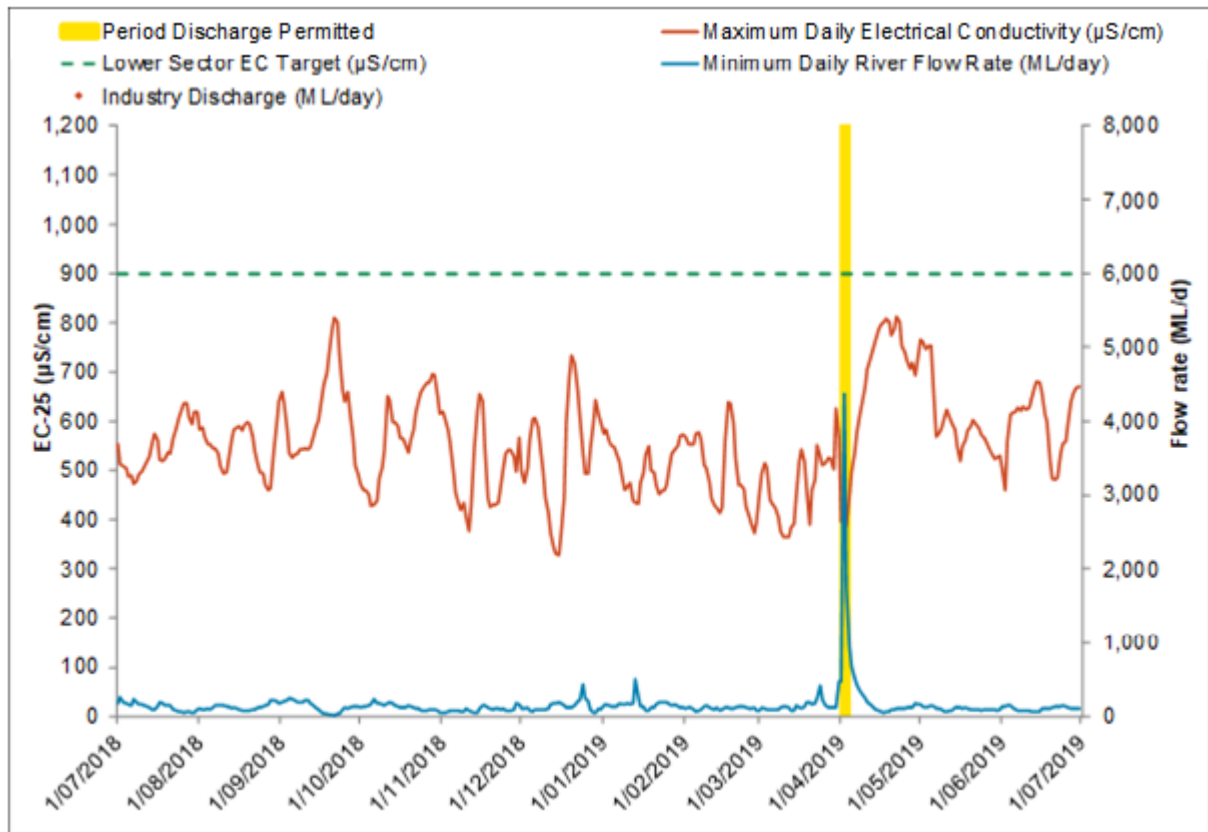
The salinity target for the Middle Sector is 900 μ S/cm (shown in Graph 2 as a green line). The Middle Sector target was not exceeded during the discharge opportunity permitted by the scheme in April 2019. The exceedances of the salinity target shown below are due to runoff from salty surfaces and from groundwater inflows.



Graph 2 → Maximum salinity and minimum flow: Hunter River upstream of Glennies Creek

Lower Sector: From the junction of the Hunter River and Glennies Creek to Singleton

The salinity target for the Lower Sector is 900 μ S/cm (shown in Graph 3 as a green line). The Lower Sector target was not exceeded at any time during 2018-19, including during the discharge opportunity permitted by the scheme in April 2019.

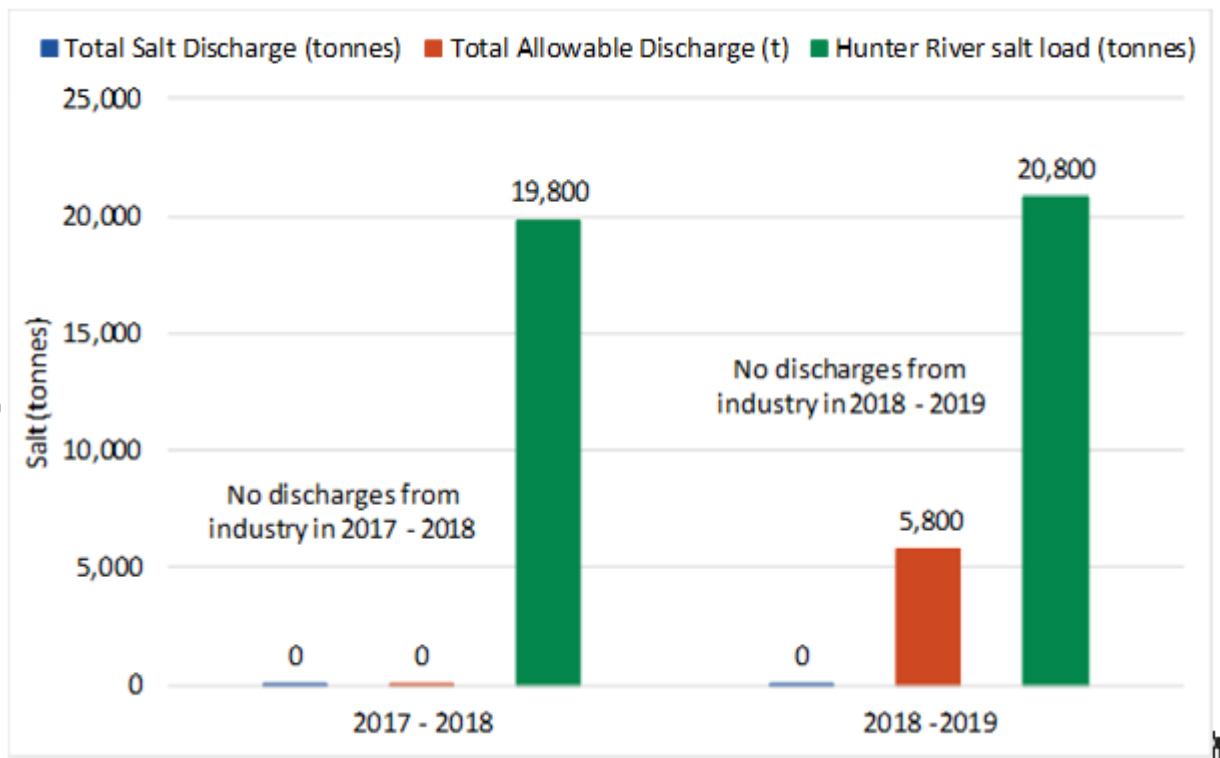


Graph 3 - Maximum salinity and minimum flow: Hunter River at Singleton

Scheme discharge compared to total salt load

The total salt load passing through Singleton during 2018–19 was 20,800 tonnes. This is similar to 2017–18 when 19,800 tonnes of salt passed through Singleton.

There was one discharge opportunity permitted by the scheme during 2018–19 in the Middle and Lower Sectors on 2 and 3 April 2019. A total of 5,800 tonnes of salt was permitted to be discharged during 2018–19. However, no industries discharged during this time. As there were no industry discharges during this time, Graph 4 shows '0' for total discharge.



Graph 4 Industry discharge compared with total allowable discharge and total salt load passing through Singleton during 2018–19

Further information

Further information on the operation of the scheme can be obtained online from the EPA at www.epa.nsw.gov.au/licensing/hrsts/ and from the NSW Department of Primary Industry – Water at waterinfo.nsw.gov.au/hunter/trading.shtml.

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