NSW GOVERNMENT | Environment, Climate Change & Water

Hunter River Salinity Trading Scheme: 2008–09 performance

What's the scheme about?

The Hunter River Salinity Trading Scheme allows a range of industries, such as agriculture, mining and electricity generation, to operate side by side, sharing the use of the river while keeping its water clean and fresh.

The scheme aims to balance the needs of water users for good water quality in the Hunter River with the need by industry to discharge its salty wastewater. When the scheme is operating, salinity in the Hunter River is managed by only allowing discharges during high flows or floods and balancing the amount of salt that industry can discharge with the levels that occur naturally in the river.

The Hunter River is inherently salty as a result of groundwater inflows and monitoring under the scheme ensures that industry only discharges when these natural salinity levels are low. This improves the health of the river and the surrounding environment and allows local primary producers to continue to use the water for irrigation.

How does the scheme operate?

The Hunter River Salinity Trading Scheme uses a system of salt credits which industry can buy and trade, allowing it to discharge salty wastewater when the river contains enough fresh water to dilute the salt and maintain water quality.

Flow is measured at a series of monitoring points along the river. When flows are low, no industrial discharges are allowed; during high flows, limited discharge is permitted using salt credits; and when floods occur, unlimited salt discharges are allowed up to an agreed salinity goal.

The NSW Department of Environment, Climate Change and Water (DECCW) administers the scheme with guidance from an operations committee that includes representatives from the State Government, industry and the community.

How did the scheme perform in 2008–09?

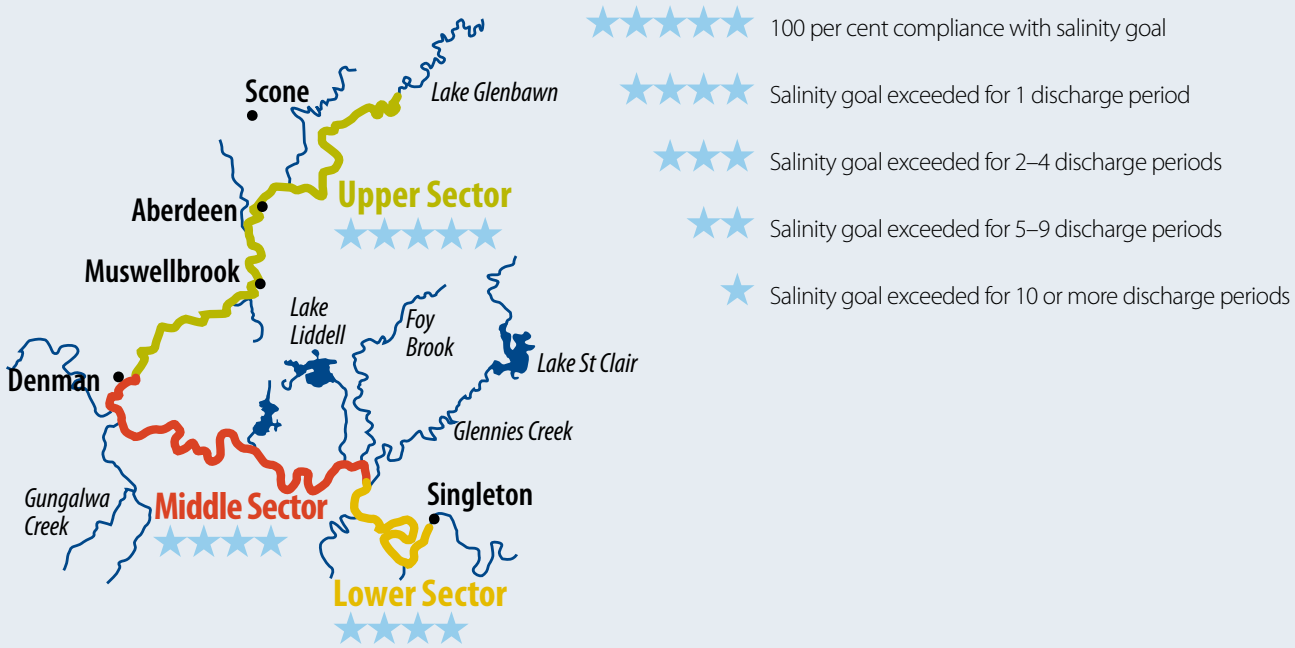

Figure 1: Compliance with salinity goals achieved by the three sectors of the Hunter River catchment

The Hunter River Salinity Trading Scheme achieved excellent results during 2008–09. Salinity goals were met in the Hunter River at all times in the Upper Sector of the river when discharges were allowed under the scheme. The salinity goal was exceeded just once for a short (9-hour) period in the Middle and Lower Sectors of the river although, importantly, salinity remained suitable for irrigation and within the range for drinking water quality.

In 2008–09, the Hunter River catchment experienced wetter conditions than in the previous year. This resulted in higher flows and allowed industry to make greater use of the scheme to safely discharge its salty water into the river.

Five discharge periods were called this year, providing 32 discharge opportunities for various industries. This compares with seven discharge periods during 2007–08 and 30 discharge opportunities.

The scheme allowed up to 115,669 tonnes of salt to be discharged to the Hunter River, but only 14,790 tonnes was discharged over the year. This was just 13% of the total entitlement and less than 9% of the annual total salt from natural sources carried by the river as measured at Singleton.

This meant that average salinity levels during all discharges throughout 2008–09 were kept well below maximum prescribed salt levels, ensuring that the Hunter River remained healthy and that the water was suitable for irrigation.

Salinity is measured by determining the electrical conductivity (EC) of water, which is measured in microsiemens per centimetre (µS/cm). EC estimates the amount of total dissolved salts (TDS) in the water. Salt water has an EC of around 55,000 µS/cm. Drinking quality water usually has an EC of between 600 and 1200 µS/cm.

The Hunter River contains naturally high levels of salinity that can peak above the scheme's high flow salinity goal as shown in the graphs below. This is a result of naturally salty groundwater flow and is not related to industry discharges.

The scheme's performance in each sector of the Hunter River over the year is summarised in the following sections.

Upper Sector: Hunter River upstream of Denman

During 2008–09, the Hunter River Upper Sector achieved 100% compliance with its high flow salinity goal of 600 µS/cm and flood flow salinity goal of 900 µS/cm during allowed discharge periods.

In total, there were five periods during the year when mines in the Upper Sector were allowed to discharge salty water. However only one mine used its credits to discharge on a single day. During this discharge period, the salt level in the river remained well below the high flow salinity target ensuring that the water was suitable for local irrigation.

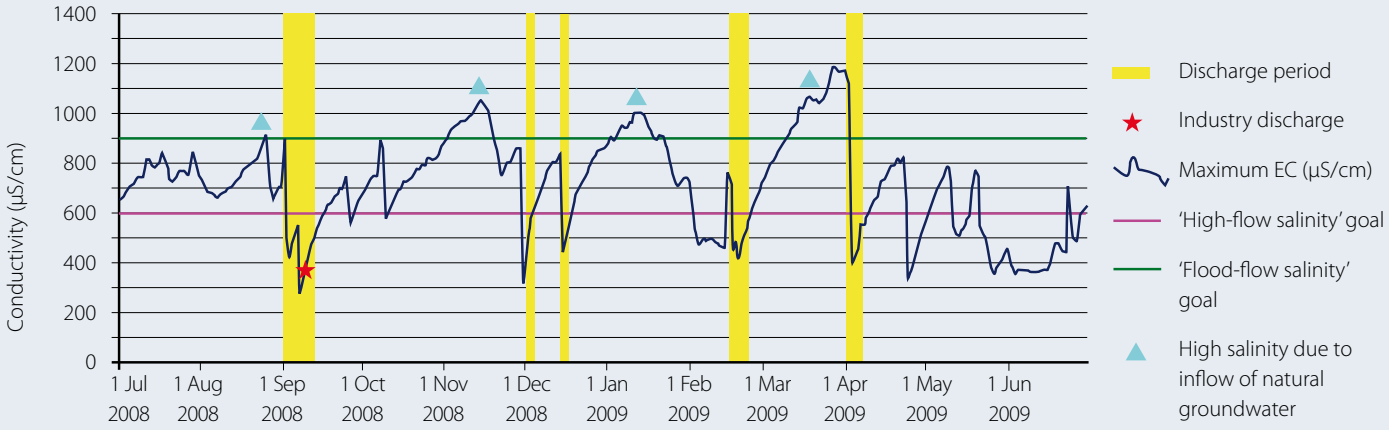

Figure 2: Scheme performance 2008–09 – Hunter River at Denman (Upper Sector)

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

During 2008–09, the salinity goal of 900 µS/cm was exceeded once in the Hunter River Middle Sector. Salinity was measured at between 908 and 1022 µS/cm for a short period (9 hours) during one discharge period.

In total, there were five periods during the year when industries in the Middle Sector were allowed to discharge salty water. Over all these discharge periods, three mines and one power station used their credits to discharge over a total of 21 days. While the salinity goal was exceeded for 9 hours during one discharge period, the water at all times remained suitable for local irrigation and within the range for drinking water quality.

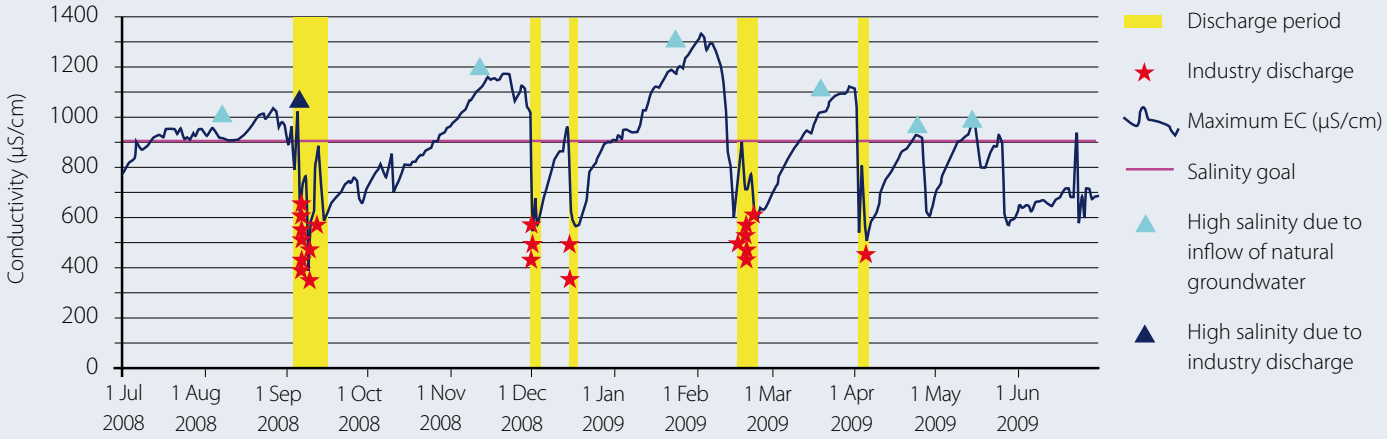

Figure 3: Scheme performance 2008–09 – Hunter River upstream of Glennies Creek (Middle Sector)

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

During 2008–09, the salinity goal of 900 µS/cm was exceeded once in the Hunter River Lower Sector. Salinity was measured at between 913 and 957 µS/cm for a short period (9 hours) during one discharge period.

In total, there were five periods during the year when industries in the Lower Sector were allowed to discharge salty water. During all these periods, three mines used their credits to discharge over a total of 27 days. While the salinity goal was exceeded for 9 hours, at all times the water remained suitable for local irrigation and within the range for drinking water quality.

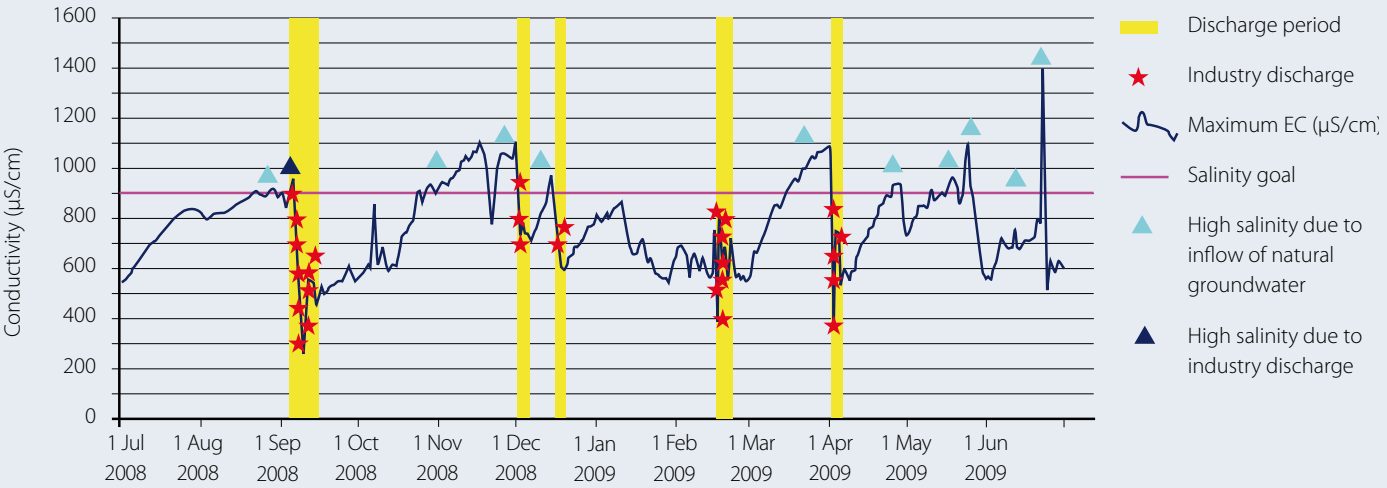

Figure 4: Scheme performance 2008–09 – Hunter River at Singleton (Lower Sector)

Improvements to the scheme

All licensees must discharge their total salt load evenly throughout the discharge period to avoid short periods of elevated salinity in the Hunter River. In 2008–09, some licensees may not have discharged their salty water evenly. DECCW has reminded all scheme members who hold a discharge licence of the importance of evenly distributing their discharges to avoid spikes in salinity levels in the river over short periods during discharge events.

Further information

Further information on the operation of the Hunter River Salinity Trading Scheme is available from the DECCW website: www.environment.nsw.gov.au/licensing/hrsts/index.htm. Follow the links from this website for information on river flow and electrical conductivity conditions in the Hunter River.

Inquiries about the scheme may also be directed to DECCW's Newcastle office by phoning (02) 4908 6800 or by email to hrsts@environment.nsw.gov.au.

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