The Hunter River Salinity Trading Scheme: 2007–08 performance

What is the scheme?

Under the Hunter River Salinity Trading Scheme (HRSTS), industries such as agriculture, mining and electricity generation can operate side by side and share their use of the river while an appropriate level of water quality and freshness is maintained.

An industry can buy and trade salt credits in order to discharge its salty water when the river contains adequate fresh water for the salt to be diluted. As a result, water quality is maintained.

The scheme is administered by the NSW Department of Environment and Climate Change (DECC) and is guided by an operations committee that includes industry and community stakeholders and representatives of NSW Government agencies.

DECC measures river flow at a series of monitoring points located along the river. When flows are low, industries are not permitted to discharge their salty water; when flows are high, they are permitted to use salt credits in order to discharge a limited amount of salty water; and when flood flows occur, they are permitted to discharge an unlimited amount of salty water, up to an agreed salinity goal.

Why does DECC operate the scheme?

DECC designed the HRSTS to balance water users' need for good-quality water in the Hunter River with industries' need to discharge salty water. Overall, DECC keeps salinity at an appropriate level by permitting industries to discharge salt during only high-flow or flood events and by balancing the amount of salt they can discharge with the river's naturally occurring salt.

The Hunter River contains naturally high levels of salt because of salty-groundwater inflows. Levels of salt are monitored to ensure that the only time that industries discharge salt is when the natural-salinity levels are appropriately low. DECC uses the scheme to improve the health of the river and to ensure that the water is suitable for local primary producers to use for irrigation.

How did the scheme perform in 2007–08?

The scheme had excellent results in 2007–08. Hunter River salinity goals were achieved every time the scheme was in operation in all three sectors of the Hunter River catchment. See Figure 1.

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

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In 2007–08, conditions in the Hunter River catchment were wetter than in 2006–07. As a result, flows were higher and industries were permitted to increase their use of the scheme in order to safely discharge their salty water into the Hunter River.

This year, seven discharge periods were called during which various industries were provided with 30 discharge opportunities, whereas in 2006–07, only one discharge period was called during which 16 discharge opportunities were provided. This year, of the 48,585 tonnes of salt that industries were permitted to discharge into the river, only 4884 tonnes were discharged. This figure was only 10 per cent of the total entitlement that industries were permitted to discharge under the scheme and less than 4 per cent of the total amount of naturally sourced salt that the river was carrying at Singleton.

As a result, during all discharge events throughout 2007–08, salinity levels were kept well below maximum prescribed salt levels, the Hunter River remained healthy, and the water was suitable for farm irrigation.

Salinity is measured by determining the water's electrical conductivity (EC), measured in microSiemens per centimetre (µS/cm). EC is an estimate of the amount of total dissolved salts (TDS) in the water. Generally, water is suitable for irrigation if it has an EC below 900 µS/cm. Drinking-quality water usually has an EC of between 600 and 1200 µS/cm. Ocean water has an EC of about 43,000 µS/cm.

The Hunter River contains naturally high levels of salt that can peak above the scheme's high-flow salinity goal as shown in the line graphs in figures 2, 3 and 4. These high levels result from the inflow of natural salty groundwater and are not related to industry discharges.

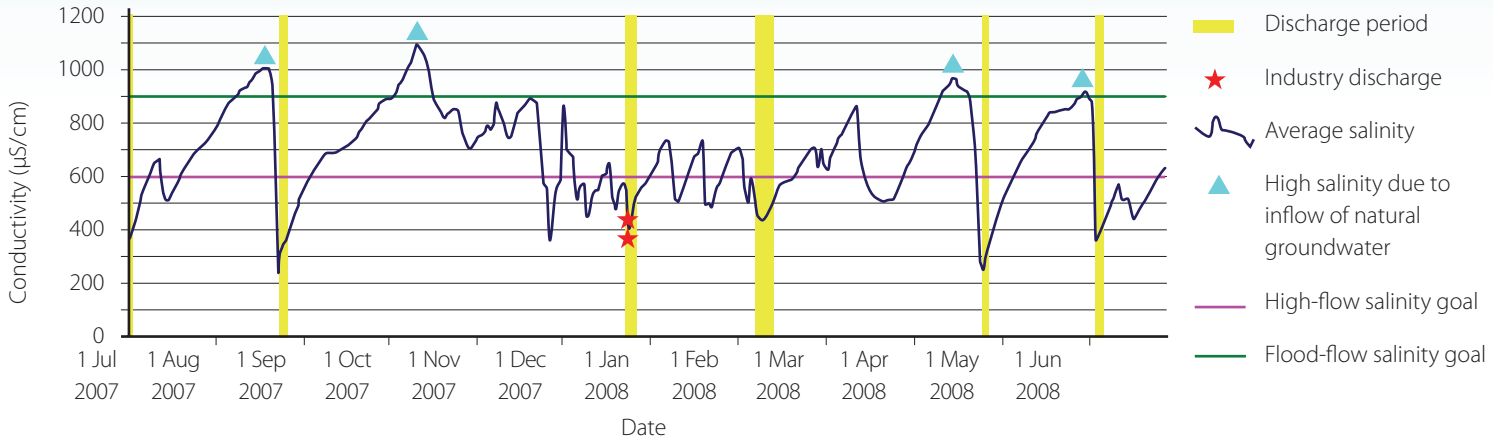
Following is a summary of how the scheme performed in each of the three sectors of the Hunter River throughout the year.

The Upper Sector: the Hunter River upstream of Denman

In 2007–08, the Hunter River Upper Sector achieved 100 per cent compliance with its high-flow salinity goal of 600 µS/cm and its flood-flow salinity goal of 900 µS/cm.

In total, there were six periods during which mines located in the Upper Sector were permitted to discharge their salty water. One mine used its credits to make two discharges during only one period. During that discharge period, the river's salt level remained well below the high-flow target, so the water was suitable for local irrigation. See Figure 2.

Figure 2 The scheme's performance in 2007–08: the Hunter River at Denman.

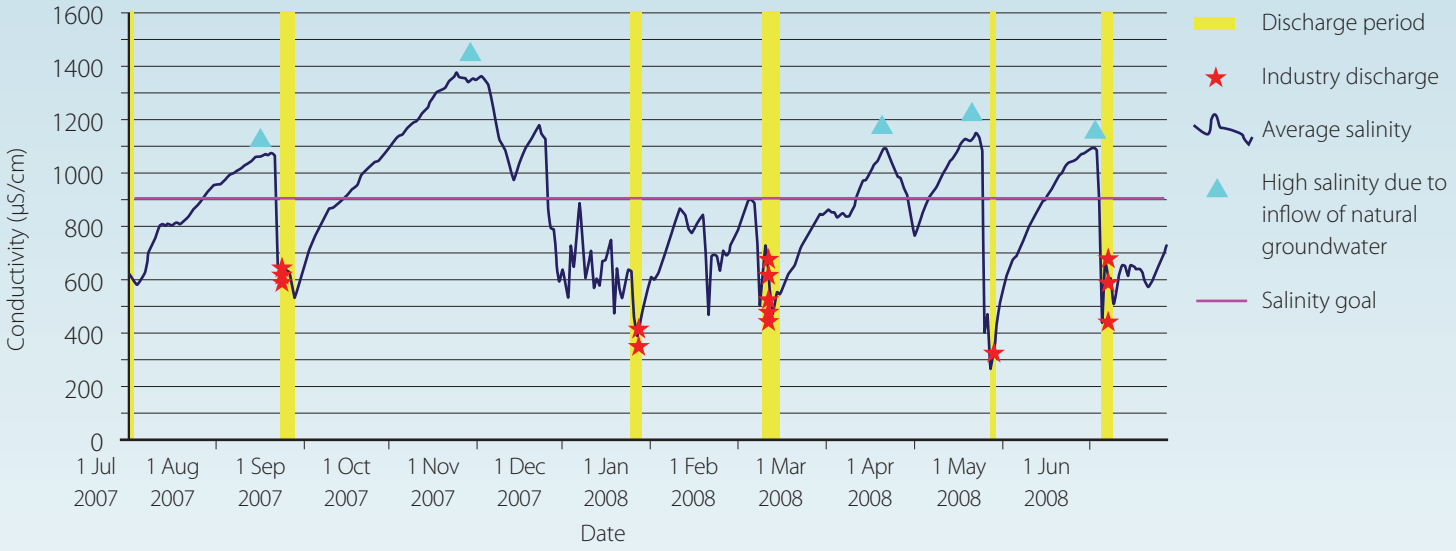


The Middle Sector: from Denman to the junction of the Hunter River and Glennies Creek

In 2007–08, the Hunter River Middle Sector achieved 100 per cent compliance with its salinity target of 900 µS/cm.

In total, there were six periods in which mines and power stations located in the Middle Sector were permitted to discharge their salty water. During five periods, three mines used their credits to make a total of 14 discharges. Throughout all five discharge periods, the river's salt level remained well below the high-flow target, so the water was suitable for local irrigation. See Figure 3.

Figure 3 The scheme's performance in 2007–08: the Hunter River upstream of Glennies Creek.

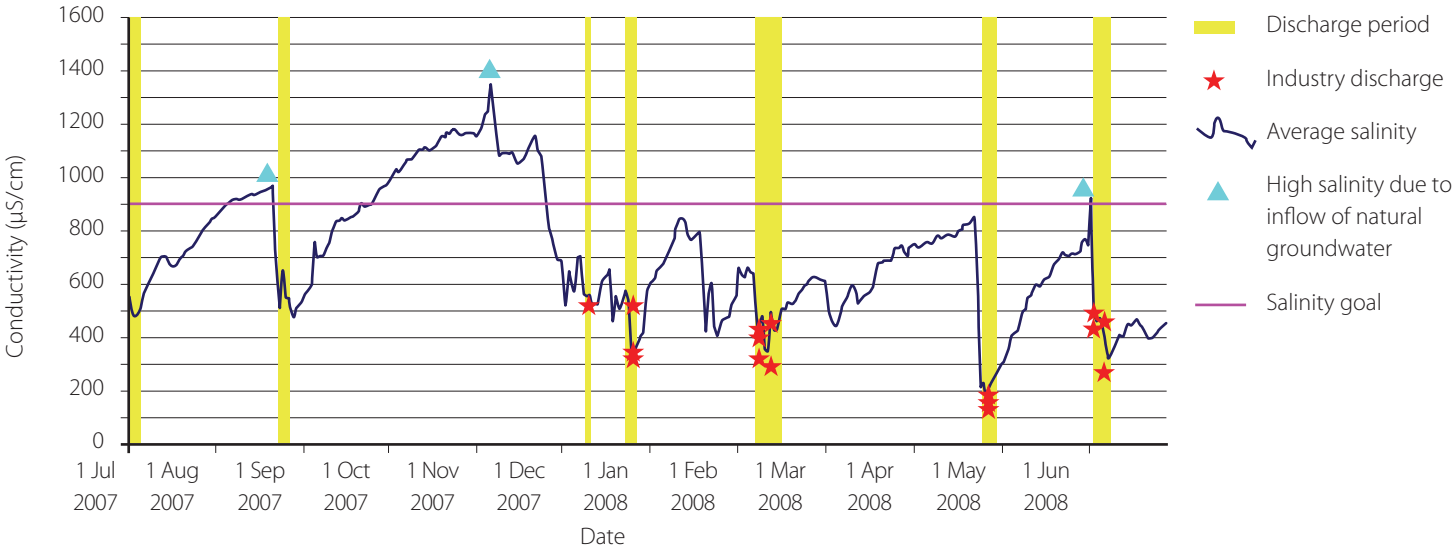


The Lower Sector: from the junction of the Hunter River and Glennies Creek to Singleton

In 2007–08, the Hunter River Lower Sector achieved 100 per cent compliance with its salinity target of 900 µS/cm.

In total, there were seven periods during which mines and a power station located in the Lower Sector were permitted to discharge their salty water. During five periods, four mines and one power station used their credits to make a total of 16 discharges. Throughout all five discharge periods, the river's salt level remained well below the high-flow target, so the water was suitable for local irrigation. See Figure 4.

Figure 4 The scheme's performance in 2007–08: the Hunter River at Singleton.



Information and enquiries

To find out more about how the scheme is operated, please visit the DECC website http://www.environment.nsw.gov.au/licensing/hrsts/index.htm. To find out more about the Hunter River's flow and electrical-conductivity conditions, please follow the links from the website.

To enquire about how the scheme is operated, please either phone DECC's Newcastle office on (02) 4908 6800 or send an email to hrsts@environment.nsw.gov.au.

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