

## Hunter River Salinity Trading Scheme 2012–13 performance

## What is the Hunter Salinity Trading Scheme?

The Hunter River Salinity Trading Scheme (HRSTS) involves a system of salt credits which industries can buy and trade in. Industries use these credits to discharge their by-product salty water into the Hunter River when the river contains adequate fresh water to dilute the salt and maintain water quality. The HRSTS allows industries, such as agriculture, mining and electrical generators, to operate side-by-side and share the use of the river while maintaining an appropriate level of water quality and freshness.

River flow is measured at a series of monitoring points along the river. When flows are low, no discharges are allowed; when flows are high, limited discharge is allowed using salt credits; and when flood flows occur, discharges are allowed to an agreed salinity goal. River registers are issued for high-flow and flood-flow periods. These registers alert industry to the time periods when they can discharge saline water to the Hunter River.

The scheme is administered by the NSW Office of Water under a service agreement with the NSW Environment Protection Authority and guided by an operations committee that includes representatives from the State Government, industry and the community.

## What is the purpose of the Hunter River Salinity Trading Scheme?

The HRSTS has been designed to balance the need for good water quality for users of Hunter River water with the discharge needs of industry. 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 with the naturally occurring salt in the river.

The Hunter River naturally contains high levels of salt as a result of salty groundwater inflows and the HRSTS monitors these levels to ensure that industry discharge only occurs when natural salinity levels are appropriately low. By balancing the amount of salt that industry can discharge with the naturally occurring salt in the river, the scheme improves the health of the river and the surrounding environment and ensures that the water is suitable for local primary producers to use for irrigation purposes.

## How did the Hunter River Salinity Trading Scheme perform in 2012–13?

During 2012–13, HRSTS participants had three opportunities to discharge under the scheme. Flood events in July 2012 and January–February 2013 provided all sectors with opportunities to discharge saline water.

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

The HRSTS has established salinity goals to be maintained in the three sectors of the Hunter River identified below. The maximum salinity recorded was 1300  $\mu\text{S}/\text{cm}$ . All elevated salinity levels recorded were natural occurrences and not attributable to any failure by industry to comply with the requirements of the HRSTS.

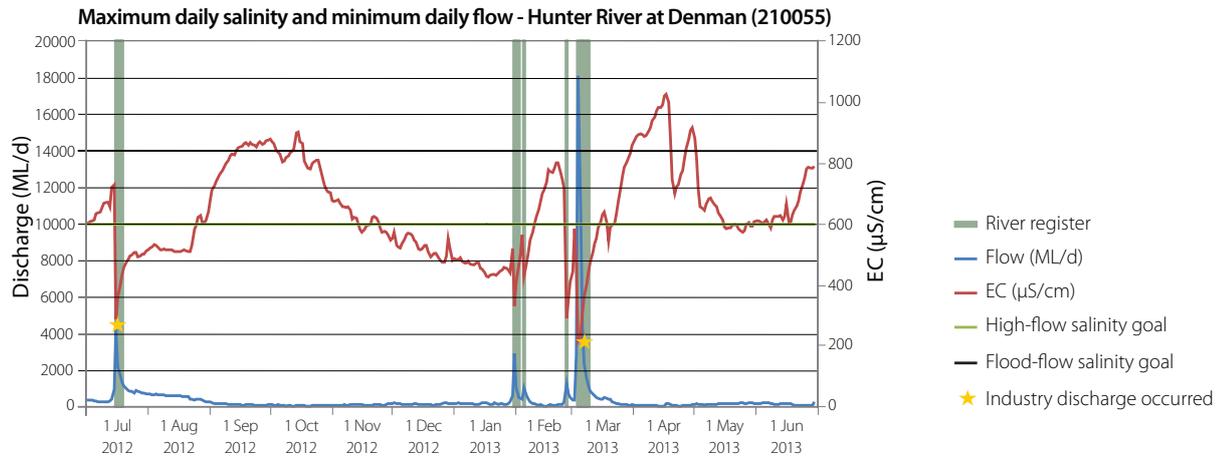


The Hunter River contains naturally high levels of salinity that can peak above the HRSTS High Flow Salinity goal as demonstrated in the graphs below. This is a result of naturally salty groundwater flow and is not related to industry discharges.

Below are summaries of salinity in the upper, middle and lower sectors of the Hunter River over the year.

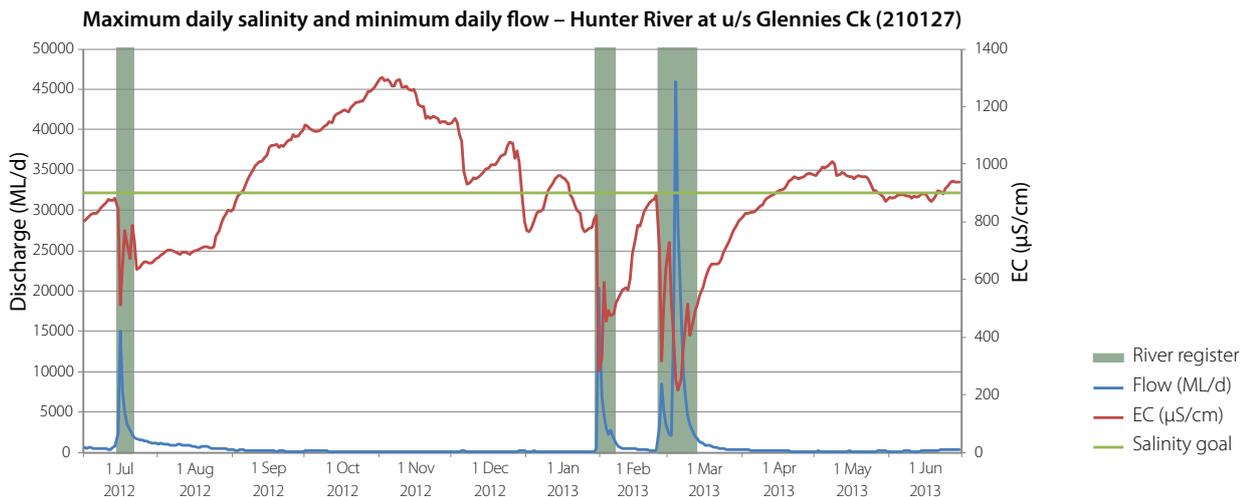
## Upper Sector: Hunter River upstream of Denman

The salinity goal for the Upper Sector is 600  $\mu\text{S}/\text{cm}$  during high flows (shown below as a solid green line) and 900  $\mu\text{S}/\text{cm}$  during flood flows (shown below as a solid black line). The elevated levels shown are not related to any discharge from the coal mining or power generation industries but are instead due to naturally salty groundwater flow.



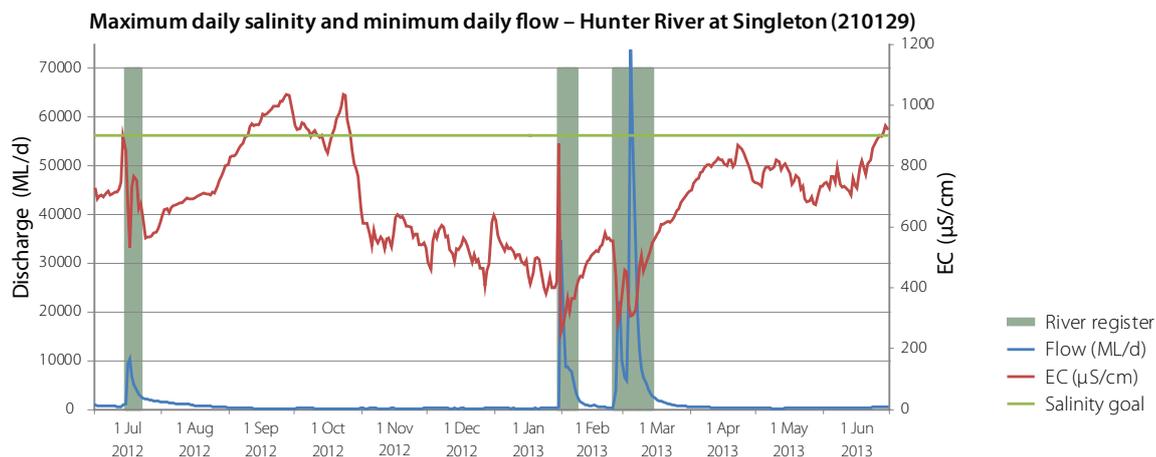
## Middle Sector: from Denman to the junction of the Hunter River and Glennies Creek

The salinity goal for the Middle Sector is 900  $\mu\text{S}/\text{cm}$  and is shown below as a solid green line. The elevated levels shown are not related to any discharge from the coal mining or power generation industries but are instead due to naturally salty groundwater flow.



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

The salinity goal for the Lower Sector is 900  $\mu\text{S}/\text{cm}$ , shown as a solid green line below. The elevated levels shown are not related to any discharge from the coal mining or power generation industries but are instead due to naturally salty groundwater flow.



## Salinity model improvements

The salinity model used to predict discharge opportunities has been upgraded and continues to be further refined as understanding increases about the ways a natural and highly variable river system operates.

### Further information

Further information on the operation of the Hunter River Salinity Trading Scheme can be obtained online from the NSW Office of Water [website](#) and the EPA [website](#). 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, phone (02) 4908 6800 or email [hrsts@epa.nsw.gov.au](mailto:hrsts@epa.nsw.gov.au)

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