NSW EPA

Hunter River Salinity Trading Scheme: 2010–11 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's water while keeping it clean and fresh.

It does this by using a system of credits which industries can buy and trade in order to discharge their salty wastewater at times when the river has enough fresh water to dilute the salt and maintain water quality.

River flow is measured at a series of monitoring points along the Hunter River. When flows are low, no discharges are allowed; when they are high, limited discharges are permitted using salt credits; and when floods occur, unlimited salt discharges are allowed to an agreed salinity goal. The River Register indicates when discharges can occur and is available to both industry and the general public at www.hits.nsw.gov.au/rr/rrindex.htm

The NSW Environment Protection Authority (EPA) administers the scheme, guided by an operations committee that includes representatives from the State Government, industry and the community.

Why was the scheme introduced?

The scheme is designed to balance the needs of water users for continuing good water quality in the Hunter with the needs of industry to discharge its salty by-product wastewater. Overall salinity in the river is managed by only allowing discharges during high flows or floods and balancing the amount of salt that industry can discharge with the naturally occurring salt levels in the river.

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

How did the scheme perform in 2010–11?

The scheme has established salinity goals to be maintained in the three sectors of the Hunter River (upper, middle and lower) shown in Figure 1 below.

Scheme participants had nine opportunities to discharge their salty wastewaters during 2010–11. Floods in the Goulburn River in December 2010 allowed for discharges in the middle and lower sectors of the Hunter River, while a flood event in June provided discharge opportunities in all sectors.

The salinity goal was exceeded on one occasion in the middle and lower sectors due to problems with the operation of the scheme's predictive model. The exceedence was not attributable to any non-compliance by industry and all industry discharges occurred in accordance with the requirements of their discharge licence.

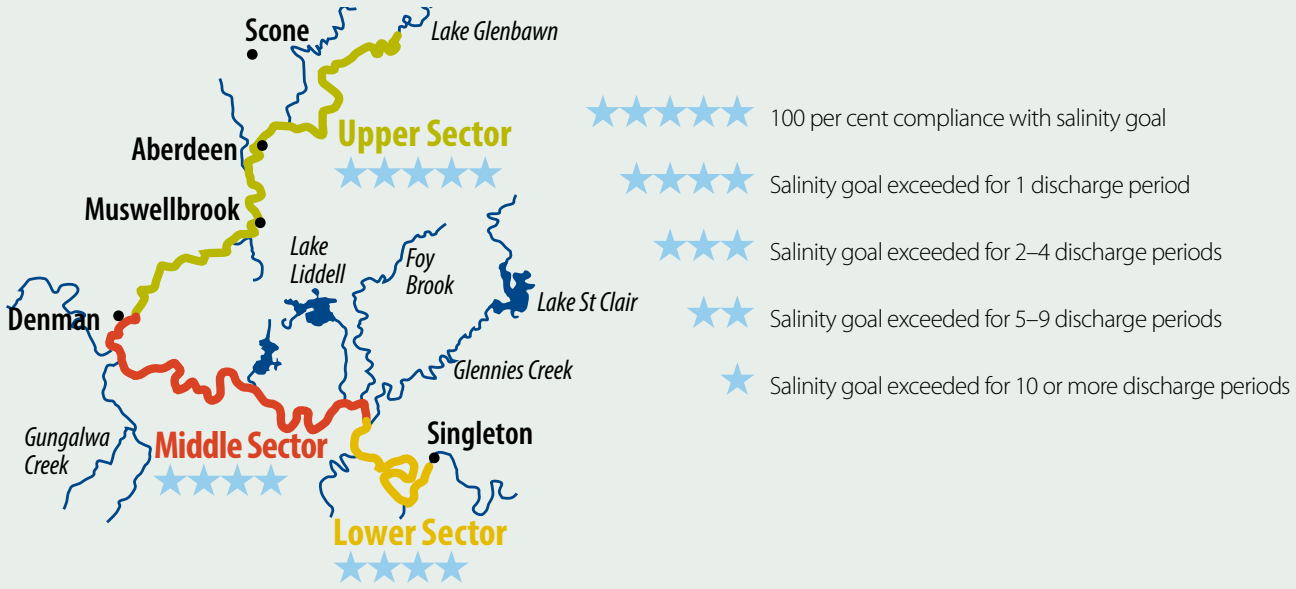

Figure 1: Compliance with salinity goals achieved by the three sectors of the Hunter River catchment

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 salt that sometimes peak above the scheme's high flow salinity goal as the graphs below show. This is a result of natural salty groundwater flow and is not related to industry discharges.

The following sections report on salinity levels in each of the scheme's sectors during 2010–11.

Upper Sector: Hunter River upstream of Denman

The salinity goal for the Upper Sector is 600 µS/cm, lower than the 900 µS/cm standard set in the other two sectors.

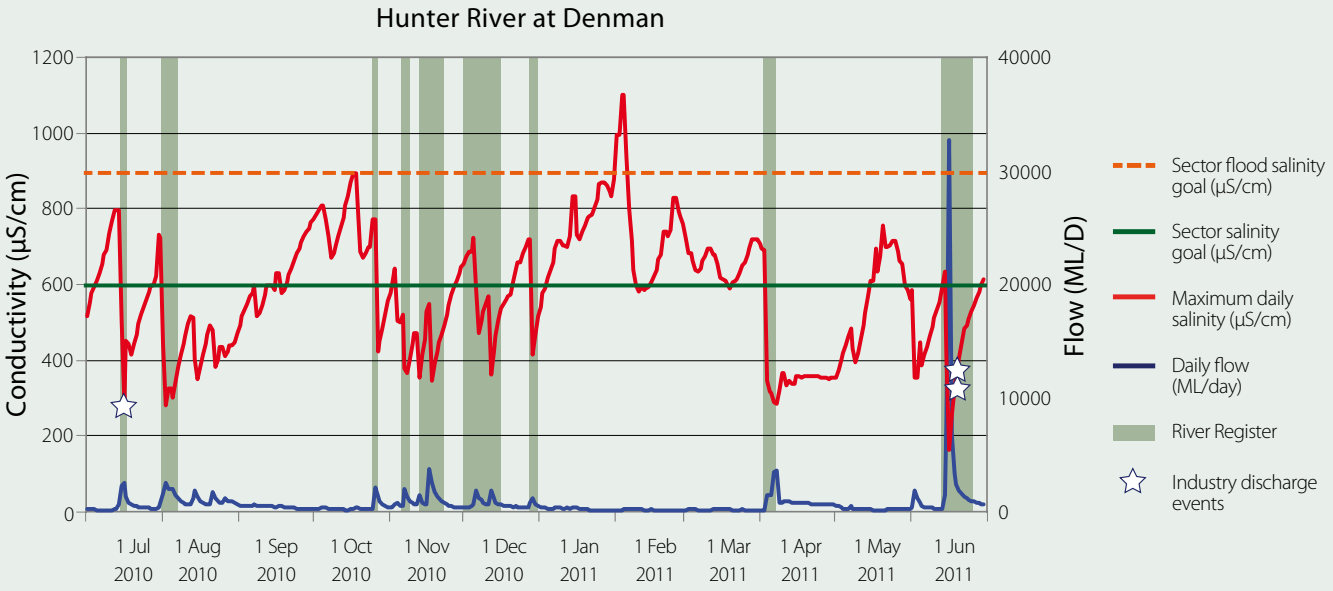

Figure 2: Scheme performance 2010–11 – Hunter River at Denman (Upper Sector)

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

Figure 3 highlights one salinity goal exceedence: the July 2010 event was related to unexpected conditions in Bayswater Creek which affected the accuracy of the scheme's predictive model.

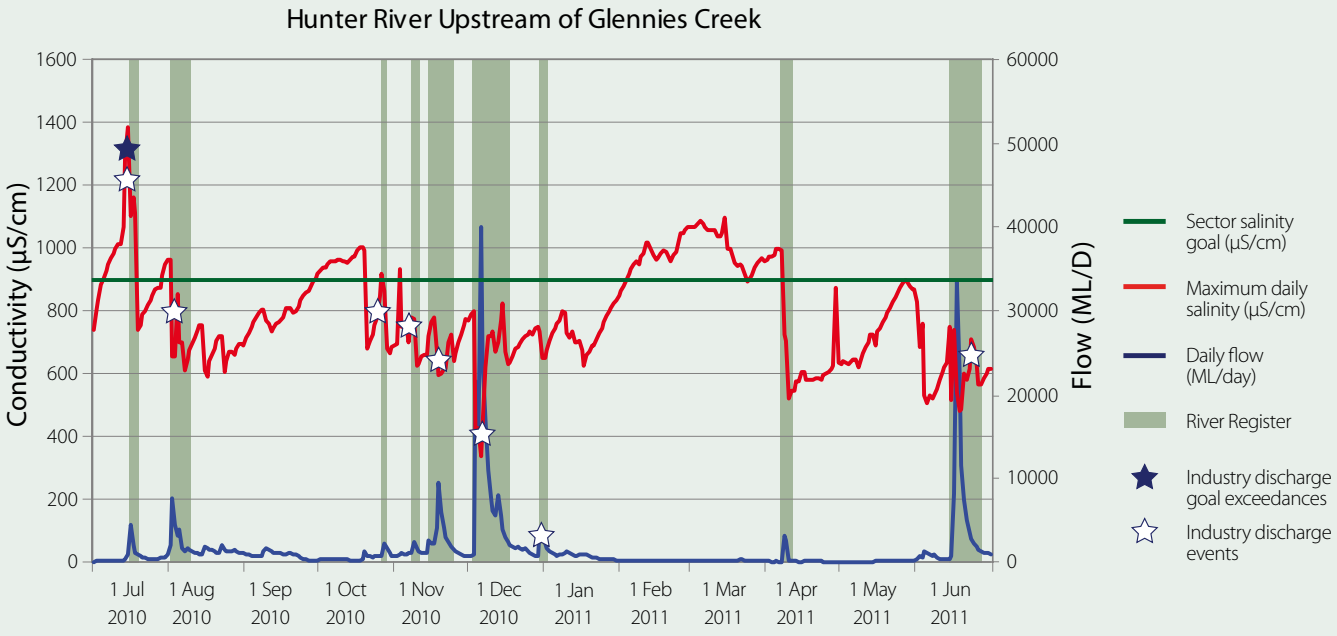

Figure 3: Scheme performance 2010–11 – Hunter River upstream of Glennies Creek (Middle Sector)

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

Figure 4 highlights one salinity goal exceedence: the July 2010 event was related to unexpected conditions in Bayswater Creek which affected the accuracy of the scheme's predictive model.

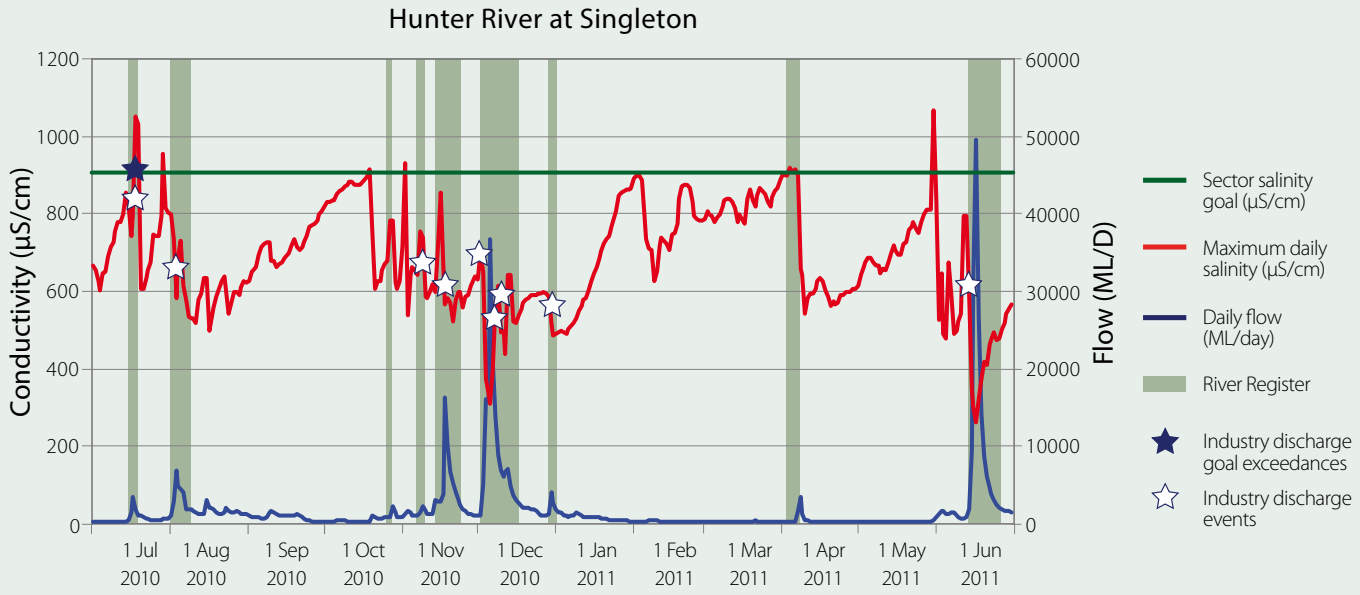

Figure 4: Scheme performance 2010–11 – Hunter River at Singleton (Lower Sector)

Improvements to the scheme

The NSW Office of Water completed a review and updated the salinity model used to predict discharge opportunities under the scheme.

Further information

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

Inquiries about the operation the scheme can be made to the EPA's Newcastle office by phoning (02) 4908 6800 or by email to hrsts@environment.nsw.gov.au

Published by:
Environment Protection Authority
59 Goulburn Street, Sydney NSW 2000
PO Box A290, Sydney South NSW 1232
Phone: (02) 9995 5000 (switchboard)
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ISBN 978 1 74293 506 5
EPA 2012/0115
August 2012