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POEO (HRSTS) Regulation Review
Reform and Compliance Branch
Environment Protection Authority

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Submission to 10 year review of Hunter River Salinity Trading Scheme

Hunter Environment Lobby Inc. (HEL) is a regional community-based environmental organization that has been active for over 20 years on the issues of environmental degradation, species and habitat loss, and climate change.

HEL has had a long interest in the environmental health of the Hunter River system and held a position on the Hunter River Management Committee during the development of the water sharing plan for the Hunter Regulated River Water Source.

HEL is of the opinion that water quality is a significant issue for river health in the Hunter Region and welcomes the opportunity to comment on the regulation of the Hunter River Salinity Trading Scheme (HRSTS).

HEL particularly appreciates the background information provided in the Hunter Catchment Salinity Assessment Report ('the OEH report') provided by the NSW Office of Environment and Heritage.

A number of key issues have been identified in the OEH report:

1. There is inadequate temporal sampling and monitoring of groundwater to be able to conclude that electrical conductivity (EC) has not been rising. This is of particular concern in relation to base flows to the river system.

2. Salinity is an important factor affecting stream macroinvertebrate communities in the Hunter River catchment. There are areas in the catchment where macroinvertebrate 'health' is quite poor. This includes a relatively high number of samples in the Hunter Regulated Alluvial Zone that were found to be in a significantly impaired condition.

3. Simply focusing on total dissolved solids or EC does not measure the effects of differing ionic composition (eg high levels of bicarbonate) or other contaminants (eg metals/metalloids) that may be in water discharges from mines and power stations. The issue of cumulative increase of heavy metals within the catchment system has not been raised.

Knowledge gaps and mine expansion

The key message arising from the OEH report is that major knowledge gaps, due to lack of investment in comprehensive and representative assessment and monitoring programs, has caused limited understanding of the current condition and health of the Hunter River system.

The ACARP study on the source of salinity in the Hunter, conducted in 2004, identified that 10% of salt levels could be attributed to current/former mining operations. Because this study is now 10 years old and the mining industry has expanded significantly since that time, HEL believes that this figure is no longer accurate.

The discussion paper has outlined that the recent averages of the total salt load of the river at Singleton from mine and power station discharges have risen to 13 – 20%. However, this is from the use of an average of only 40 – 50 % of the opportunities to discharge.

Additional demand for saline discharge is coming from new or expanded mining operations across the catchment with a need to increase daily discharge volumes.

HEL is concerned about the management of the salt load in the river, including the variety of other possible toxins in mine and power station discharge water, if the total allowable discharge (TAD) of the HRSTS was used for closer to 100% of the time.

The report concludes that '*further assessment is required if the salt load and TAD utilization continues to increase.'* (p46)

It is of particular concern that new mines and expanding operations are being considered for approval with the limited knowledge available about the impacts of current intensive operations on the function of the groundwater systems and highly connected surface water systems.

The report recognizes that '*The detailed interaction between groundwater and surface water in many parts of the Hunter River catchment still requires further research.'* (p17).

Recent research suggests that saline discharges can impact on macroinvertebrate communities at levels lower than those being released through the HRSTS. The report recognizes that further work is needed '*to better understand existing salinity impacts on ecosystem health in the Hunter River and its catchments.'* (p44)

Answer to Focus question 1:

HEL is of the opinion that there is not enough information or adequate monitoring to assess whether the HRSTS is working to manage the impacts of saline water discharges on aquatic ecosystems in the Hunter River catchment.

The regulation could be improved by capturing other pollutants such as ionic composition of the salts and metals/metalloid contamination. If this is not possible in the timeframe of the review then HEL strongly recommends that improvements in the way these pollutants are considered through improving licencing and the transparency of the data would be an important step forward.

The reliance on dilution factors alone does not allow for the possibility of bio accumulation of heavy metals in the river system.

Answer to Focus question 2:

HEL understands that many irrigated crops perform better at salinity levels lower than 900 EC. While it is claimed that the current targets were agreed to by the irrigation industry in the Hunter, there are many water users who need water at lower EC levels.

The Pokolbin Irrigation District has a trigger set at 700 EC for pumping water to irrigate grape crops. Irrigators in the river reach between Jerry's Plains and the confluence of Glennies Creek have found salinity levels to be much higher than the HRSTS target level for much of the time.

HEL notes that the *Australian Drinking Water Guidelines* define good quality water as between 80 -500 EC and fair quality water as between 500 – 800 EC. The World Health Organisation identifies 800 EC as the maximum salt limit for drinking water.

This has implications for anyone with a stock and domestic licence.

HEL is of the opinion that any increased useage of the HRSTS could compromise the irrigation industry and other water users. Elevated river salt levels can potentially render water unpalatable for people and stock, reduce agricultural yields, cause accelerated corrosion of domestic and industrial pipework and appliances (EPA 2001)

Recommendation 1:

HEL recommends that the Regulation be amended to lower salinity targets at the confluence of Glennies Creek and at Singelton to improve ecosystem health and water quality for other water users.

Changes to discharge rules

HEL does not support the consideration of allowing some discharge under low flow conditions where the discharge EC quality is the same or better than the ambient water quality.

HEL believes that this would be too hard to regulate and ignores the issue of the impact of other pollutants in mine and power station discharge water such as the ionic composition of the salts and metals/metalloids contamination. The lowering of the discharge flow would remove the adequacy of dilution of these potential eco toxins.

Until such time as adequate research and regulation of these additional pollutants has been undertaken, HEL strongly opposes changing the definition of 'high flows'.

HEL supports the proposal to remove the flood flow exemption so that salinity trading credits are needed for all mine and power station discharge into the Hunter River.

This will improve the management of the HRSTS and enhance the value of the salinity credit system. HEL does not agree with the NSW Government providing free support to the mining and power industry in managing exempt flood flow discharges.

All users of the HRSTS should be on an equal footing.

Recommendation 2:

HEL recommends that the Regulation be amended to remove the flood flow exemption.

Improved transparency and access to data

HEL fully supports the proposal in the discussion paper under Issue 10 to make it easier for the public to access a range of information on the HRSTS.

HEL is particularly interested in the availability of all water quality data and the results of investigations into water quality and the health of the river system.

While HEL does not have a particular interest in broadening the representation on the Operations Committee, there is interest in knowing how the representatives have been selected and what reporting requirements there might be to their constituent stakeholders.

Improved monitoring and assessment of river health

HEL notes that the report identifies a number of key areas where improved monitoring and assessment would enhance regulators and decision makers knowledge of the impacts of the mining and power industry on the Hunter River catchment.

These include:

- A more comprehensive and representative groundwater monitoring program for the Hunter catchment
- Studies to fully understand the environmental effects of the different components of mine and power station discharge water (eg ionic composition, metals/metalloid contamination etc)
- Strategic real-time monitoring of flow and salinity in the upper Goulburn River catchment
- Assessment of high EC levels in Wollombi Brook at Warkworth

The OEH report identifies that it would be useful to have access to monitoring bores tapping into aquifers in close proximity to major development activities. This is especially needed around open-cut mine pits with the potential to alter aquifer flow and recharge characteristics.

Recommendation 3:

HEL recommends that the EPA use revenue generated via auctions of HRSTS credits to invest in the range of studies and monitoring programs identified by OEH to improve knowledge of the health and function of the Hunter River system and the impacts of the current scale of mining operations.

Yours sincerely

Jan Davis
President