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Conservation Council SA

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David Williamson
Major Projects Manager
South East NRM Board
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Sent via e-mail: reception@senrm.sa.gov.au

Dear David

The Conservation Council of South Australia Inc (Conservation SA) is the peak environment and conservation body in South Australia. Conservation SA represents over 50 member groups and their 60,000 supporters and has been a voice for the protection of South Australia's environment since 1971.

As the peak conservation body for South Australia, the Conservation Council of South Australia (CCSA) has a good understanding of the likely impacts of climate change on South Australia's future environment.

That understanding was expressed recently in CCSA's "South Australia in a Changing Climate: A Blueprint for a Sustainable Future" (http://www.conservationsa.org.au/blueprint.html). This document sets out, at a strategic level, policy positions in six key environmental areas.

Conservation SA welcomes this opportunity to comment on the draft Tintinara Coonalpyn Water Allocation Plan and we thank the Board for also allowing us to provide some additional comments later next week which may be considered when reviewing the plan.

For further information please contact Conservation SA's NRM Facilitator, Jill Woodlands on (08) 8223 5155.

Yours sincerely,

Tim Kelly

Tim Kelly
Chief Executive

Introduction and General Comments

Conservation SA acknowledges that the groundwater assets of the South East maintain a range of human based activities and vital ecological functions. The aquifers provide a source of water resources for agriculture, industrial and urban use with irrigation and forestry being the main water users across the region. These and other human interactions with groundwater can be in direct competition with the water necessary to sustain ecological processes especially in wetland environments.

The South East contains some significant environmental assets including key areas of biodiversity, native vegetation and wetlands. There are a range of indicators that urgent action is needed, not only to halt environmental decline but to actively restore the systems to health.

The environment is the resource base that underpins a range of industries in the South-East and can no longer be progressively eroded through ongoing decision making; it is a pre-requisite for much of the social and economic activity in the South-East. Therefore sustainable management of the water resource must be a standard not a point for compromise.

Conservation SA advocates strongly for environmentally sustainable levels of water provision that protect the integrity and environmental health in the South East. Our response is predominantly targeted at the ecological part of the plan.

Irrigation Discussion

Ideally the affects of a range of farming enterprises in the area should not damage native ecosystems, including wetland ecosystems. Rising groundwater levels and salinity are additional threats to ecosystems caused in part by vegetation clearance and cropping. Measures to combat these threats, which are preferable to drainage, are the use of perennial pastures, clay spreading to improve the texture of the soil and reduce infiltration, and dryland farming (without irrigation). Conservation SA welcomes measures such as these which are beginning to be undertaken in this Prescribed Wells Area, as part of specific projects. If these measures were used more widely in this area, allocations for groundwater extraction for irrigation could be (further) reduced.

Tree planting with native phreatophytes such as River Red Gums would also be helpful, as they are deep-rooted and able to tap into the water table, keeping it at a safer, lower level.

Surge irrigation can be considerably better than flood irrigation, with the appropriate soil type. Surge irrigation provides water in bursts rather than continuously. In this way, water is fully taken up by the soil before the next burst. This reduces infiltration of water to the water table.

There is also the fact that the groundwater in the Unconfined Aquifer is already saline in the western parts. Extensive extractions of groundwater in this aquifer may cause a reversal of groundwater movement, so that the saline water would move to

the east. This would be a disaster for groundwater dependent ecosystems in the east. Therefore, extractions should be limited.

Aquifer recharge from deliberate entry of water into wells, while positive in the appropriate circumstances, may here raise the level of shallow water tables to dangerous amounts, unless care is taken. This kind of recharge, as well as diffuse drainage from irrigation may pollute the aquifer with pesticides and nutrients.

Our response is predominantly targeted at the ecological parts of the plan.

Specific Comments

1.1 Water Use

Before European settlement, this area was covered with wetlands. Drainage was undertaken with the aim to transform the land into a suitable condition for agriculture known as the Upper South East Drainage Scheme (not mentioned in this plan). This obviously artificial intervention is in competition with the natural environment and it is also debatable whether it has been effective.

However, dryland salinity is an ongoing problem. It is known that irrigation causes dryland salinity, among other problems such as waterlogging, as does the removal of native vegetation. Both of these processes have taken place in this area.

Among the different kinds of irrigation, flood irrigation has the worst effects, and is responsible for 34% of the irrigation in this area.

As well as dryland salinity, irrigation in this area is known to be flushing salt into the Unconfined Aquifer. This is expected to significantly degrade the aquifer over the next ten years, reducing the usefulness of the water for stock and domestic use, agriculture and the maintenance of underground water dependent ecosystems.

Given these issues, including the high proportion of centre pivot use, Conservation SA would expect to see any methods the Board is undertaking to inform land holders about other sustainable irrigation methods, to be included in this section.

2.2 Ecosystem Water Requirements

Conservation SA acknowledges that there is currently no definite determination of the availability and timing of water to ecosystems in the Tintinara Coonalpyn PWA, and agrees with the Board that this data is required. We see this as being a high priority in order to both maintain and improve ecological processes in this region and would urge the Board to prioritise this for future funding.

2.2 Identification of Ecosystems of High Ecological Importance

Conservation SA queries whether there is currently work underway (or planned) to identify the specific ecosystems of high ecological importance in the WAP region given the plan proposes to protect them once identified (pg 20)? Conservation SA

considers this to be a high priority as until then the WAP could be having damaging effects on these ecosystems.

4. Capacity of the Resource to Meet Demands

4.1 Demands

Conservation SA supports the Board in its aim of addressing the over allocation in the Tintinara and Tolmer areas with the aim of reducing the number of licenses to ensure more sustainable management of the resource. What indicators will be used in order to track the decline of the resource?

Water needs of Aboriginal people for social, cultural and spiritual purposes

Conservation SA supports the Board in determining the current and future needs for water by Aboriginal people and acknowledges the Board is working with representatives of the traditional owners in the south-east region.

4.4 Climate Change

Conservation SA acknowledges the Board's concern for the significant challenges that climate change presents in South Australia and the recognition of the critical importance of on-going monitoring and technical investigations during the life of the Plan in order to review the ongoing sustainability of the underground water resource.

The expected changes attributed to climate change will increase the demand for water, and reduce its availability due to projections of less rain and run off to recharge the Unconfined Aquifer. Therefore the longer term impacts of climate change on plausible emissions scenarios need to be factored into decision making now for activities such as forestry that feature decadal life spans.

5. Definitions

The definition of a sustainable level of groundwater needs to include a quota which allows for seasonal variation.

6. Allocation Criteria

Hydrogeological effects and assessment

There should also be no exemptions from provisions for hydrogeological effects and assessments or from protection of underground water dependent ecosystems unless these provisions have already been made. This includes water for industry, energy generation, recreation and public water use.

Piping of water for a distance greater than two kilometres

Conservation SA would like to see all transport of water for irrigation in enclosed vessels, not only when the distance involved is over 2 kms in order to protect the water from spills and evaporation.

10. Permits

Principles

Principles 70, 73 and 202 refer to possible desalination of water. It should be noted that any such desalination plant should be small-scale, powered with renewable energy and create no pollution such as increased salinity or chemical concentration. The disposal of concentrated brine solution that may also contain a variety of anti-scalants and chemicals must be managed so that thes are not discharged or leaked into aquifers.

11. Monitoring

11.4 Monitoring of the Water Needs of Ecosystems Dependent on Underground Water

Conservation SA queries if a monitoring framework has been established ready to be associated with this WAP, why is this monitoring not being planned or implemented until the review process is undertaken? Conservation SA is concerned that a detailed monitoring framework must be implemented to monitor ecosystem health parameters and to provide information about specific needs of different species and ecosystems.