

Committee Secretary
Mr Ian Dundas
Standing Committee on Agriculture,
Fisheries and Forestry
House of Representatives
Parliament House
CANBERRA ACT 2600



SUBMISSION NO. 97

Friday, 25 October 2002

Dear Mr Dundas

Re:- Inquiry into Future Water Supplies for Australia's Rural Industries and Communities

The Eyre Peninsula Catchment Water Management Board (the Board) thanks you for the opportunity to contribute to the Federal Inquiry into Future Water Supplies for Australia's Rural Industries and Communities.

On Eyre Peninsula there are numerous issues of past and future husbandry of water resources, social equity in water supply, provision of water of various qualities for various uses, water resource management and water pricing. This submission aims to provide the Standing Committee with discussion on these issues in the hope that not only Eyre Peninsula, but all rural communities will receive equitable and adequate water supplies in the future whilst conserving the local water and 'water dependent' resources. **Fifteen Recommendations** are made that if implemented by the Commonwealth and/or throughout the States, may be able to facilitate better water resource management for rural water supplies.

The Board and its Role

The Board was established under the SA Water Resources Act 1997 in March 2001. Its responsibilities include preparing and implementing a Catchment Water Management Plan, providing advice on water resources to the State Minister for Environment and Conservation and constituent Local Government Councils, and educating the community regarding water related issues. The Board is funded entirely through community levies. Its membership is eight local, skills based Members and an independent Presiding Member.

At the establishment of the Board, for the first time, a single authority became responsible for planning and control of all of the Eyre Peninsula water resources. It however came after decades of natural 'warnings' that bulk water for the public water supply system could no longer be relied upon to remain of potable quality or adequate quantity to provide existing or potential needs. It also came at a time when the community was expressing strong concerns about the management of water in the environment.

Tod Reservoir

Tod Reservoir is the only surface public reservoir in the Eyre Peninsula water supply system. It was built in the 1920's and was pivotal in the 'development' of much of Eyre Peninsula for grazing and general agriculture. The reliability and low cost of this supply was so good that over 100 water sheds and local catchments of many kinds were abandoned.

Tod Reservoir in the Koppio Hills of Southern Eyre Peninsula is built on Toolillie Gully and weirs on Pillaworta and Upper Tod creeks divert water through an inlet aqueduct to the

Reservoir. Whilst the catchment was naturally slightly brackish, winter and spring flows were fresh enough to dilute the more saline summer flows down Toolillie Creek (stored in the Reservoir) and fill the remainder of the storage with potable quality water.

Salinity in the Tod catchment has changed the quality of the water supply. The catchment used to supply six to nine Gigalitres of potable water per year. (Eyre Peninsula currently uses less than 10 GL per year.) Currently less than one GL of quite saline water is harvested into Tod Reservoir annually. By freshening the catchment through salt interception and Landcare works and changing land use practices, it is possible to reduce salinity of the water supply. Side benefits will also include decreasing farmland salinity and protecting creek-lines from water logging, acid sulphate soil problems and erosion. In turn there will be environmental, social and economic benefits.

Human pathogens (including Cryptosporidium) are also a problem in the Tod Reservoir. Unless desalination infrastructure is installed, (which also removes the pathogens) this source can no longer supply potable water. With desalination however, Tod Reservoir can reliably supply about half of all of Eyre Peninsula's water requirements.

The State Government water resource agencies have not undertaken to remediate the catchment salinity problem or weed invasion, acid sulphate or erosion problems that also threaten the catchment. The Board believes that no Government has the right to allow a catchment to degenerate to the detriment of present or future generations or the environment.

The corporatised SA Water is seen by the community to have a large responsibility to contribute to catchment management to protect the resource. After all, the selling price of the water potentially able to be harvested from the Reservoir annually is approximately \$6 million to \$9M. However, no effort has been made to halt or reverse processes of salinisation because for many years of above average rainfall, sufficient water was available from groundwater. Whilst the Government subsidises the development of new sources of water but not the sustainable management of existing supplies, there is little incentive for a commercial water supply entity to contribute to catchment management. It is believed that this is not a problem specific to South Australia and for reasons of fair competition, it is considered that Nation-wide coordination is appropriate.

Recommendation One:- The price of public water supplies should reflect the cost of supply on a State-wide basis and that cost should include the cost of proper management of the catchments from which it comes.

Salinity of the Tod catchment is rising due to land clearance in the past and low-till farming practices currently being undertaken. There is a potential to either acquire some of the catchment or more desirably, to pay landholders to implement farm management practices that improve the quality and quantity of runoff. A National strategy for such agreements would improve equity between catchments and States and ensure that all communities recognise the social, economic and environmental benefits achievable through land management agreements.

Recommendation Two:- Guidelines be prepared for the establishment of land management agreements and their financing to enhance the quality, quantity, flow characteristics and sustainability of rural water catchments.

NHT and NAP

Access to Natural Heritage Trust (NHT) funds for the management of Tod Catchment has been minimal to date. Whilst the landholders in the catchment have done more than most communities in fencing off about 70 kilometres of creek lines and revegetating them, they don't receive access to the piped water supply and see that the responsibility for its protection to any higher order should be a responsibility of the whole of society, not just themselves.

Salinity is a large and growing problem on Eyre Peninsula that has caused more than half of the public water supply to become non-potable. Eyre Peninsula is not considered a salinity priority area and hence does not have access to National Action Plan for Salinity and Water Quality (NAP) funding. As more farm dams and a number of groundwater basins salinise, the demand for public water supply will grow, further challenging its current floundering ability to cope.

Recommendation Three:- Eyre Peninsula should be given access to NAP or sufficient other funds to adequately address the burgeoning salinity problems before they become irreparable and affected communities no longer have the resources to contribute to remediation.

Southern Basins

Since the Tod Reservoir has been declining, increasing demand has been placed on the Southern Basins water supply aquifers to meet domestic supply needs. The main production aquifers in the Southern Basins Prescribed Wells Area are Uley Wanilla, Uley South, Lincoln Basin lenses and Coffin Bay lenses. They are located on the southern tip of Eyre Peninsula near to Port Lincoln. This water is now used to supply about 85 percent of all of Eyre Peninsula's water needs and is pumped over 450 kilometres through many towns in central and western Eyre Peninsula to the Nullarbor, beyond Ceduna. It also supplies communities for over 200 kilometres almost to Whyalla along the east coast.

The public water supply is used by most people and industries on Eyre Peninsula and as you may know, Eyre Peninsula produces about 40 percent of the agricultural and over 60 percent of the fishery produce for South Australia; a very significant export earner for Australia.

Eyre Peninsula had about thirty years (to 1993) of well above average rainfall (10 year rolling average) and this meant that there was very high groundwater recharge. In fact, sufficient recharge was received to supply all of Eyre Peninsula's water from the Southern Basins in some years. As Tod Reservoir declined, nothing was done to address the problems because there was still water in the Southern Basins.

For many years Eyre Peninsula has suffered a form of water restrictions in that there have been few industrial and reduced domestic metered services approved due to the unavailability of water.

Since 1993, Eyre Peninsula has had slightly below average rainfall and the groundwater recharge has fallen to about average, which is now only able to provide about 90% of Eyre Peninsula water needs and **there is a deficit of about 10%**. History shows it is most likely that the sine curve of long term average rainfall will continue to fall below average and remain so for up to 30 years. **It is therefore likely that recharge will fall a further 20% or more.**

Government agencies have asked to be allowed to withdraw up to 10% more water than the sustainable yield of the main (Uley South) aquifer; the main supply source. Meanwhile some pumps are running dry at nearby sites and aquifer levels are falling almost universally on Eyre Peninsula.

The 'bottom line' is that Eyre Peninsula requires new water to meet its needs.

Recommendation Four:- Public water supply agencies must be required to provide for future water needs on a sustainable basis and not allowed to neglect the needs of the raw resource and the environment that depends on it.

Recommendation Five:- Water Licences must include conditions for the sustainable management of the resource and the Licence cost must reflect the cost of any public resource management.

Desalination

The Eyre Peninsula Water Supply Master Plan was recently prepared by SA Water. It recommends urgent augmentation of the Eyre Peninsula water supply via a desalination plant possibly using Tod Reservoir water. This site has particular advantages in that it is elevated and has adequate brackish water available adjacent the existing reticulation infrastructure. Brackish water is normally significantly cheaper to desalinate by reverse osmosis than sea water. The saltier the feed water, the higher is the percentage of waste brine; 15 percent waste from Tod and 60 percent waste from the sea. All however has to be processed at extremely high pressure which is very power hungry.

In response to the Master Plan, the State Government has committed to build a desalination plant to provide the current shortfall in Southern Basins capacity; however this does not provide sufficient water for supply during times of reduced groundwater recharge, nor sufficient water to provide for historic livestock levels, should they return.

A tenuous connection exists between climate change and coal fired power production. Climate change may further reduce water availability on Eyre Peninsula. Wind power is potentially available for desalination on Eyre Peninsula. There is potential to demonstrate congruence in policy between greenhouse and water supply sustainability via requiring desalination to use renewable energy sources.

Water Saving Campaign

A water saving campaign has been run by the Board and SA Water for some months and is being escalated. Water use demand has been suppressed for many years due to refusal of many new water service applications. As the Eyre Peninsula community already uses less water per capita than the rest of the State, new water is urgently needed. Funding for this campaign is largely collected via local levies.

Recommendation Six:- Commonwealth assistance be provided to assist rural communities in public education on water demand reduction and in the development of adequate supplies.

Alternative Supplies

Across Eyre Peninsula there are numerous communities that collect water shed from town streets, sewage and industrial effluent and from graded, sheeted and silo catchments. In most

cases, they have access to the public water supply mains but would prefer to “do their bit” to reduce the demand on the public supply and save the environment that depends on its source.

Whilst primary producers receive substantial tax concessions for water supply works, the greater rural community cannot access these advantages. Removal or reimbursement of the tax on water supply facilities would assist rural people to conserve more water. Actively subsidising water saving initiatives in rural communities would assist them to further develop alternative sources.

Scientific opinion indicates that water from rainwater tanks seldom meets WHO quality targets for potable supplies. Never-the-less, many rural communities use this resource almost exclusively. For those communities with access to public water supplies, they should still be encouraged to catch rainwater for some use; perhaps for pets, livestock, gardens etc. if not for drinking.

The provision of a simple, low cost rainwater filter able to deliver water to WHO standards would encourage more people to catch and drink rainwater. CSIRO may perhaps be able to progress such an option?

Currently an estimated 97 percent of all public water supplies are used for purposes that could utilise water of a lesser quality.

In many rural communities the price of water is subsidised by the State. In corporatised public water supply agencies, there is no incentive to encourage customers to use less potable water because this would mean sales were reduced and the unit price would rise. If however, the price of managing the whole water cycle and catchments was reflected in the price of water, it would become an important incentive to more wisely utilise the potable resource. In turn, this would raise the value of non-potable supplies and encourage careful matching of the quality of water available to the industry that can use it. That is, rather than the current costly and wasteful ‘one size fits all’ approach to water supply that takes all public water supplies to the highest standard to suit only about three percent of the use.

The Eyre Peninsula community has shown its willingness to install rainwater tanks and local stormwater harvesting and reuse schemes. In most cases tiny seed funds have been utilised in projects where community resources have provided in the order of ten local to one seed dollar. Further tax incentives and access to grants will encourage many more communities to make better use of their water resources and reduce demand on potable supplies.

Recommendation Seven:- National and State Policy is required to encourage the better matching of water resource quality to use.

Recommendation Eight:- Better subsidy schemes are required to encourage local communities to match the quality of water used to the requirements of the use to which it is put, thereby reducing the community reliance on potable water supplies.

There is a conundrum regarding how much public water supply is a right and how much should be made available for what purposes. Currently the aim on Eyre Peninsula is to ensure that all towns having a population of over 100 will receive a public water supply. There is no determinant regarding for what purpose the water may be used, other than that commercial irrigation is not allowed. The lack of policy disadvantages some communities. In the case of Eyre Peninsula, a highly productive and low water using community, additional water supply availability would increase productivity and have significant financial benefits for Australia.

An essential element for consideration in improving the availability of rural water supplies is that the improvement in living standards it provides is one small step in encouraging the rural people and therefore the workforce, to remain in rural communities.

Recommendation Nine:- Fair competition should be facilitated via a standard policy regarding the volume of water available where, for what purposes and at what price.

Effluent Reuse

On Eyre Peninsula, most Local Councils have effluent reuse schemes, but mostly only for non commercial uses such as wood lots. As such, they don't reduce the town demand on potable water supplies.

The City of Port Lincoln is currently embarking on a program of effluent reuse, jointly funded by industry and the Coast and Clean Seas Fund. Stage One will see most of the ovals and public gardens watered with A class effluent. Stage Two will water a golf course and possibly some viticulture. The price of this water will be in the order of 65 cents per kilolitre.

The City will have to buy the effluent water from SA Water, yet SA Water is able to discharge the effluent to the sea for free as it has done until now. It would appear illogical that low cost discharge to the marine environment should stand in the way of effective reuse which would cut down on the current use of potable water. Meanwhile the Government is setting out to build a desalination plant to augment potable supplies. What is required is a suitable fee for marine discharge (or other wasteful discharges) that makes it cheaper for SA Water to recycle effluent. Recipients of sewerage services should pay the whole cost of effluent disposal and this cost balancing to polluter pays principles, would make effluent reuse programs cost effective.

This discussion in no way is intended to criticise the above entities, however it represents a changing paradigm in public expectation. A standardised National approach to the productive reuse of effluent may provide significant social, economic and environmental benefits. Such changes may see not only marine discharges but also discharges to non-commercial woodlots becoming a lower order of choice.

Effluent used for viticulture in the Southern Eyre Peninsula, high rainfall district would be applied at a rate of 0.6 megalitres per hectare, less than one tenth the amount used in the Riverland and Sunraysia districts. This would produce about one quarter the crop per area, but it is currently bringing about four to five times the price of Riverland and Sunraysia grapes due to the superlative local juice character. This effluent at \$650 per megalitre is about 1000 times the cost of higher quality irrigation water supplied for example, to Murray and Darling irrigators. Whilst still viable to use for irrigation, the appropriate pricing of marine or other wasteful discharge and its reflection in the price of effluent water, would further improve the ability of local irrigators to compete in the market place.

Recommendation Ten:- Strict policy is required to prevent wasteful processes of effluent disposal being allowed to inhibit wise use of rural water resources.

Social Equity and Catchment Levies

South Australian Catchment Water Management Boards are funded through a levy system collected from local land and water users. This fund is collected and spent in each catchment. There is however a serious social inequity in this process.

A City Catchment may have a population of 300 000 in an area of 200 square kilometres and have very little natural catchment to manage. Arguably, most of the catchment issues therefore are a result of poor planning, design and construction and are the responsibility of the developers and Local Government to fix. Meanwhile, Eyre Peninsula has a population of about 30 000 and an area of 55 000 square kilometres to manage. The water resource and water dependent environment of the catchment is not owned by the local community, but shared by the whole country.

It is clearly the responsibility of every citizen to do their bit to ensure that their use of the environment is sustainable, however there must be a matrix applied to ensure that rural communities are not held responsible for the management of the whole water environment to a greater degree per-capita than the urban community. Needless to say, an Adelaide city Catchment currently manages approximately one 250th of the area and pays less levy per-capita and still has five times the budget and ten times the population of the Eyre Peninsula Catchment and the community has to travel one twentieth the distance to do the work. City people also have possibly 10 times the public servants per-capita to help do the work.

Social equity needs to be addressed throughout all areas of Australian life to ensure that rural communities have equitable financial resources to manage local natural and social resources. Rural water supplies are no different.

Recommendation Eleven:- A social justice policy is required Australia-wide to address the current inequity faced by rural communities in natural and social resource management, including water supplies.

Harvestable Rights

Some States have addressed the issue of harvestable rights to runoff water. That is sadly lacking in South Australia and State to State competition in the market place sees some States reticent to properly address the situation. Meanwhile, the water dependent environment suffers.

Recommendation Twelve:- A National standard is required to ensure that harvestable rights to runoff are appropriate to the specific area (rainfall, slope and soil type) and the dependent ecosystems.

Wastage of Stored Water

Most forms of surface water storage in Australia lose close to half to evaporation annually, resulting in at least a doubling of the remnant water's salinity and changes to its nutrient status. Efficient storage of water would see significantly more water left to feed the riverine processes and dilute salt loads whilst increasing the productivity of the water that is retained. Conversely, the use of inefficient and larger storages also affects the flood hydrograph and seriously affects the over bank flows and breeding triggers for numerous species.

Recommendation Thirteen:- National research is needed to ensure that the most efficient possible methods of water storage are available and practised, to the benefit of river systems and rural water supplies.

Aquifer Modelling

Two-dimensional groundwater models are commonly used in the management of groundwater storages. Many of the near coastal aquifers in Australia lie in stranded (buried) stream courses

that have been filled in by marine sands or in some cases gravels. Two-dimensional models presume flat bottomed and square sided aquifers and therefore typically over estimate the volume of these aquifers. This may result in damage to these valuable resources due to over extraction and the incursion of seawater. Modern three dimensional digital terrain modelling using active or passive remote sensing techniques would provide better prediction of aquifer capacity and critical depth triggers to be used in determining management guidelines.

Recommendation Fourteen:- In the interest of sustainable aquifer management, National research is required to develop modelling guidelines and cost effective methods of capacity measurement for aquifers known to have an irregular shaped basement.

Weed Strategy

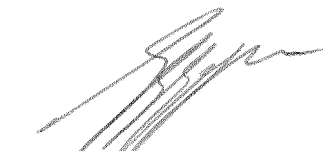
The proliferation of woody weeds is reducing runoff, altering stream morphology and harming natural riverine environments, to the detriment of rural water supplies.

Recommendation Fifteen:- Federal pressure, guidelines and assistance are required to ensure that States protect streams and water supplies from the effect of woody (and other) weeds.

Summary

The Eyre Peninsula Catchment Water Management Board thanks you for the opportunity to express the above views and offer its fifteen Recommendations. You are invited to contact the Board for any further clarification or discussion on these issues. The Board would be delighted to have the opportunity to show the Standing Committee around its Catchment and discuss the issues. It would also be happy to make a presentation direct to the Committee.

Yours Sincerely

 G.M.
Wayne Cornish
Presiding Member

