

Gorae West,  
Via Portland. 3305  
27<sup>th</sup> July 1999

House of Representatives Standing Committee on Environment and Heritage.  
Inquiry into Catchment Management.  
Chairman :- Honorable Ian Causley, MP.

Dear Sir;

We, as a group, would like to place before you some facts based upon scientific evidence, and in addition, our personal reasons for disapproval of the setting up of the CMA's, and the lack of research upon which they are acting.

For example, according to a paper released by the Murray Darling Basin Authority, and quoting the diary notes of the explorer Charles Sturt, in the dry season of 1829, Sturt discovered the Darling River quote, "too salty to drink". A year later also at the Darling River, he (Sturt) found the water, and again I quote, "Sweet, turbid and it had a taste of vegetable decay, as well as a slight tinge of green". High turbidity levels and blue-green algae (or cyano-bacteria) are an indication of natural water problems. The Murray-Darling basin is a naturally occurring saline basin. This is the situation in much of Victoria, (since a very large portion of Victoria is within the boundary of the Murray Darling Basin), and in all probability, most of Australia.

**Therefore the value of management in the catchment must rely on the value of the flow** which is restricted by e.g. the Rocklands dam on the Glenelg River in Western Victoria.

There is a clear relationship between river flow and salinity levels, i.e. the lower the flow, the higher the level of salinity. According to Dr. Ian Webster of the CSIRO's Center for Environmental Mechanics, one way to control blue-green algae blooms is to increase river flows. Competition for light is the most important factor affecting which type of algae dominates the weir pool. Top to bottom mixing of the pool drives toxic blue-green algae down out of the light, while at the same time lifting other species from the bottom layer into the light. These other species can then out-compete the blue green algae.

Based upon the above facts, blue-green algae and salinity have been in this country and been a fact of life for a very long time. In reality, they have been a problem here since long before the popularly promoted theory of European population and farming methods were employed.

With regard to the matter of looking into the effects of fertilizer within the catchment area, what chance has the board of management of the CMA's got of solving any related problem when Dr. John Williams, Deputy Chief of CSIRO Land and Water states, and I quote, "Little or nothing is known of the ultimate fate of nutrients in the landscape". Further to this, Hans Paerl of the Institute of Marine Sciences of the University of North Carolina says, and I quote, "Nitrogen carried in a river can travel only a limited distance, but nitrogen in the air can move hundreds of miles, depending on wind currents". This nitrogen in the air comes from industries

burning fossil fuels, auto emissions and emissions from large farms which have pits of animal waste. Hans Paerl goes on to say that industrial and auto emissions have been a known source of atmospheric nitrogen for years, but agriculture is a more recent source.

Victorian Agriculture and Natural Resources Minister, Pat McNamara's office released a press statement saying, and I quote, "All Victorians need to take stewardship of the waterways". We also have it on record that Pat McNamara says that the rivers and streams belong to "each and every Victorian", to quote him, yet only the owners of rateable properties have been billed. As Victorians, we contend, as Pat McNamara apparently does too, that the rivers belong to all Victorians, and arguably, all Australians. If the rivers and creeks belong to land holders, why do we need a fishing license or a pumping license to pump from, or to fish in our own water ways?. Surely we don't need the government's permission to either fish in or pump from our own water.

In the Autumn 1999 edition of Ground Cover (a paper put out by the Grains Research and Development Corporation [GRDC]) - there is an article on dryland salinity which is an edited reprint of an article from the CSIRO paper ECOS. The article states, and I quote, "Areas where rainfall enters ground water systems (recharge zones) are often in elevated parts of catchments, well away from the visual impact of salinisation. Discharge zones are where water tables are close enough to the soil surface for water (and dissolved salts) to be drawn upwards by evaporation and capillary rise. Discharge can occur many kilometers from the source of the recharge, and its costs, in addition to reduced farm productivity, are spread across the wider community. As a result, efforts aimed at reducing recharge would not necessarily benefit the land holders required to make them". In view of this statement from our leading research organization, the CSIRO, how can planting riparian areas with "Green Corridors" rectify the problem?.

Planting riparian areas is the popularly promoted panacea for repairing discharge areas. According to John Passioura, a scientist with the CSIRO Plant Industry – he is also Deputy Chairman of the Southern Panel of the GRDC– we would need to replant 75% of cleared agricultural land with trees for this action to be effective in lowering the water table – not really an adequate solution. Indeed, in a paper presented by John Passioura, the question was posed, "Are trees the best way to stop the spread of salinity in our crop lands?". The answer in short is no, he says. Refer to the paper by John Passioura at the end of this submission, under the heading, "Dryland Salinity – a Subterranean Viewpoint". Trees are definitely part of the answer, but we need to see more and better action than just planting trees.

At best, planting riparian areas will reduce siltation, admittedly a start, but a long way from the final answer. It could be seen as a waste of time and taxpayers money, particularly in view of John Passioura's statement, "The problem is that water will not move sideways for more than a meter or so to the roots of the trees, unless the roots are already below the watertable". The CMA's appear to be endeavoring to treat the problem at the wrong end. Logic would tell you that you must identify the source of the problem and fix that, to rectify this situation. How to identify and rectify recharge areas would seem to be the problem. Again, this issue is addressed in John Passioura's paper. The question begs an answer, why isn't more research being done on identifying and repairing these recharge areas?.

It is grossly unfair that people refusing to pay the CMA tax on principal, have a charge levied against their properties. Recently it was learnt that a person who, having sold his property and bought another, had the experience of having the Titles

Office refuse to stamp the relevant documents until the CMA tax was paid, and a completed section 32 form was presented. How dare the CMA's put a caveat on someone's property and hold that person to ransom. This sort of action only makes for animosity and totally fails to gain the confidence of the community. This has created conflict within the communities.

The Federal Government has moneys available from the sale of Telstra to be invested in the environment. Why isn't that money being used to support the CMA's, instead of the CMA's billing ratepayers, when the CMA's are being upheld as such important bodies?. When all is said and done, surface and sub-surface water belongs to all of us, **not** the CMA's. At best, the CMA's charter is to manage that resource for us. At this time I would like to make the point that the Government makes cut backs because of a shortage of finance, yet it taxes the landowner. In these difficult financial times, when commodity prices are at almost an all time low, where does the landowner, who is also short of cash, find the money?

Further to this, the Natural Heritage Trust is saying that the loss of native vegetation has significantly altered the conservation status of many of our native species. Retention of appropriate habitat requires the involvement and assistance of landholders in the regions in which it is still found. With the current stand-over tactics employed by CMA's, it is most unlikely that this co-operation will be forthcoming. At this point I should also ask, who is to be responsible for the maintenance of these corridors which the CMA is planting?. Will it fall to already overburdened land holders?. As a group, land holders seem to be a "milking cow" for any "green" group wishing to raise a few dollars to implement their latest idea on how to save the country. It is an old cliché, but true. Those who can, do, and those who can't, preach.

At least two board members of the Glenelg Hopkins Catchment Management Authority (GHCMA) have rivers running either through, or adjacent to their farming properties. It is a fact that one of these board members pumps from the river running adjacent to his property to irrigate his dairy farm. There is a weir on the river which rises and falls as the irrigators pump. Farmers with frontage to the river are able to pump from it until the weir level drops to an agreed point. This particular board member is a large volume user, to the detriment of other irrigators. This is creating real animosity, and it is alleged that there is some conflict involved. We can supply an informant to verify this claim..

Several board members of the GHCMA are also on the board of Southern Rural Water. Surely this is a conflict of interest, and incestuous. Why is this case of double standards allowed to exist?. It should not be permitted.

When formed, the GHCMA proposed to do what was considered "environmentally friendly and beneficial work" on Fawthrop Lagoon and Wattle Creek in the Portland (Vic.) area. At the time of writing this submission, nothing has been done in this regard. We imagine that this is an example of the "modus operandi" of the CMA's generally. At formation meetings of the GHCMA, a board member stood up and publicly stated that, quote, "The CMA board and staff will be lean and mean", and yet we see staff numbers continually increasing. Surely this is a matter which should be taken into account.

Another question which needs to be asked is how a couple without any land, but negotiating to purchase, can acquire approximately 33% of an area's shallow groundwater reserves - the remaining permissible annual volume allowed to be pumped from that aquifer. Why is this allowed? Why have existing landholders been denied access to permanent water rights, as opposed to the temporary permits which

they hold at this time, and will lose as the people with the 33% allocation come on line?

In the past, landholders were encouraged to conserve water and there were tax incentives for this. Now they are being taxed for the privilege of sinking bores and building dams, all of this under the guise of CMA management.

In conclusion, this is a one sided situation which discriminates against the landholder, who has little or no alternative but to object in the strongest manner possible, as long as this unfair and discriminatory tax exists, along with the impositions which are imposed on the landholders right to farm. An example of this is the control of pest animals and weeds on private land while these are allowed to proliferate on public land.

Respectfully yours,

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### **Dryland salinity - a subterranean viewpoint**

*By John Passioura, a scientist with CSIRO Plant Industry and Deputy Chairman of the Southern Panel of the grower-supported Grains Research and Development Corporation (GRDC). The article appeared in the Science and Technology section of The Canberra Times on June 6.*

Are trees the best way to stop the spread of salinity in our croplands? The answer, in short, is no.

The background to this question is that water tables are rising in many grain-growing areas of Australia, and as they rise they often bring with them salt that has accumulated deep in the soil. The reason that water tables are rising is that annual crops allow many times more water to escape their root systems each year than did the original native vegetation, thereby adding something like 30 mm of water per year to the groundwater.

While 30mm does not sound very much, its effect on the watertable can be enormous. There is not much space in the soil to fit this extra water into, and a watertable might rise by more than 20 times the amount of water added to it. Thus, adding 30mm of water will typically raise the water table by at least half a metre. When it eventually reaches the surface the water evaporates, leaving any salt behind, thereby creating patches of very salty soil.

To prevent the spread of dryland salinity we will have to reduce greatly the amount of water reaching the water tables, perhaps by as much as three-quarters. This can only be done by deep-rooted perennial plants - plants that, unlike our annual crops and pastures, continue to grow and use water during the summer.

The widespread planting of trees to control the problem has often been suggested but, unfortunately, that on its own is not the complete solution. The problem is that water will not move sideways for more than a metre or so to the roots of trees, unless the roots are already below the watertable.

Thus, we would have to plant enough trees for their roots to colonize over three-quarters of the land area if we wanted to catch three-quarters of the water that escapes the roots of annual crops and pastures, which would not fit in with arable agriculture. This is not to say that trees are not part of the solution. Some types have great capacity to use fresh groundwater, and are well suited to planting in areas of fresh water discharge. For example, Mussolini used Australian red gums to drain the Pontine swamps. Closer to home, trees, with some strategic foresight, could be used to mop up freshwater seeps at breaks of slope, preventing that water from flowing further down slope where it might eventually lead to dryland salinity.

But if the groundwater is not fresh, the trees will eventually run into difficulties. The problem is that plants cope with salinity by excluding almost all of the salt from the water that is taken up by their roots. Even if the water table is only slightly saline, the salt will build up to toxic concentrations, eventually killing the trees.

If trees are not a viable way of catching water that escapes the roots of annual crops before it reaches the groundwater, what alternatives are available? There are several that offer promise:

**Phase farming**, in which several years of pasture are rotated with several years of crop, can make tactical use of deep-rooted pasture plants such as lucerne to dry the deep subsoil episodically, thereby creating a temporary buffer zone to hold any water that escapes the crops.

**Improving** the vigor and general health of the crops, so that they use more water during their growing season. Average crop yields in Australia are still less than half what we would expect if the crops used their water supply most effectively. While the variability of the seasons make it difficult to achieve highly effective use of water every year, we can take heart from the performance of the farmers in the Harden, Cootamundra and Junee shires. These farmers, using clever management, have doubled their yields during the last 40 years and have thereby much reduced the amount of water escaping the crops roots.

**Identifying** substantial areas of consistently poor yield on given farms and excluding them from cropping. Such areas are especially prone to allowing water to escape. Modern harvesters can now measure yield on the run, and tell where they are at any time by using signals from satellites. Thus the techniques are at hand for identifying these areas, which could be given over to perennial plants.

There are increasingly loud calls, both nationally and internationally, to monitor and minimize land degradation. Issues of sustainability, though, must cover not only environmental issues but also economic and social ones.

European commentators are often inclined to be sanctimonious about the clearing of native vegetation on other continents, possibly being unaware that their ancestors drastically changed their own landscape by the large scale clearing of trees. The Romans, for example, sent large parts of their forests to the bottom of the Mediterranean as the timbers of sunken ships during their many naval battles. Yet who would want to depopulate the Italian countryside and return it to pervasive forest? Our challenge is to create a managed, peopled and productive agricultural landscape that mimics the ability of the native vegetation to use water. It can be done.

URL [http://www.affa.gov.au/agfor/landcare/pub/update/update59\\_8.html](http://www.affa.gov.au/agfor/landcare/pub/update/update59_8.html)