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## SUBMISSION TO THE STANDING COMMITTEE ON NATURAL RESOURCE MANAGEMENT

Thank you for this opportunity to comment on the sustainable management of natural resources. I sincerely hope this is a genuine attempt to come up with practical & common sense outcomes that may be instituted without the heavy handed, air headed and divisive efforts attempted so far.

As a contractor my work has taken me from Colarenebri to Delungra in the Northwest down to Trundle & Parkes in the Central West and this has given me an excellent grasp of the extent & variation of natural resources in most of inland NSW.

This submission will address issues in order of the terms of reference:

a) Disincentives to sustainable management in this state take numerous forms

i) Government Legislation:

The myriad of acts that contradict & conflict with each other combine to discourage land managers from seeking government assistance as the assistance that may be provided under one act is most likely illegal under another.

This can be seen from the inconsistencies when trying to make sense of what constitutes acceptable management under the NVA Act in conjunction with what is permissible under the Threatened Species Act.

Whether this was intentional or not is debatable but the outcome is not a positive one for natural resource management as land managers tend to find means to circumvent or defy Acts that they feel are unreasonable or drafted by pie eyed idiots.

ii) Bureaucracy:

The former government departments of the DLWC & NPWS have managed to destroy any faith land managers had in perceived government ability to manage natural resources. The DLWC's arbitrary & dictatorial implementation of the NVA Act should be studied by bureaucracies everywhere as the ultimate guide on how to alienate the constituents they serve. When farmers refer to vegetation officers as "Gestapo" & actively avoid seeking help from the department something is drastically wrong.

The NPWS was no better in their management (or lack of) of national parks as can be seen with their genocidal destruction of biodiversity by wildfire. If local volunteer fire fighters withdraw their help & landowners can't destroy wild dogs/ dingoes because of impractical requirements then biodiversity is headed for destruction.

Until government departments take a practical approach to, and provide leadership in natural resource management there can be little or no progress.

iii) Lack of Genuine Consultation

Consultation means to "seeking advice from" not "ignoring advice from".

Unfortunately natural resource management has been railroaded by interest groups having no practical knowledge of the resource base & very little regard for the views of those that have managed & lived with those natural resources.

Without respect for, or acknowledgement of, the role land managers play in resource management there will be no worthwhile outcomes to any government efforts.

Land managers are responsible for the ultimate outcomes of any endeavours to improve resource management.

b) Options for the removal of disincentives and any consequences of doing so:

i) Legislation could without much trouble be modified to make management of natural resources far less convoluted or bureaucratic. As a result Land managers would be more likely to co-operate.

ii) Clearing Restrictions infringe on land managers freedom to manage the land as they wish. The great majority of clearing is for economic viability & not simply a bloody mindedness to see no native vegetation.

The result of having sensible and workable clearing restrictions combined with real incentives and compensation would not lead to Armageddon for native vegetation as some extremists think. Whatever laws governments enact, those that work best are the simplest.

iii) Government, State & Federal, must realise that without economic viability there is no incentive to retain or enhance existing natural resources.

Whether governments have the political fortitude to tax the majority of the population to ensure that the economic viability of land managers is ensured is a question that will ultimately have to be addressed.

An environmental tax would be more acceptable than say the GST. To arrest the decline in natural resources governments cannot afford to avoid giving consideration to directly taxing the majority of the population that want good environmental outcomes.

c) Approaches to reduce salinity and mitigate drought

The bogey of salinity has been flaunted by Federal & State governments, complete with political grand standing, unsubstantiated claims and incomplete research, to terrorise land managers into believing disaster is at hand.

Is it any wonder, land manager's regard much of this propaganda as drivel designed to keep and justify jobs.

Granted salinity is a growing concern and will be an ongoing challenge from here on and into the future but spreading speculative science and fairy stories will not impress land managers who can see through much of the illusion.

i) Keep land managers informed on the latest peer reviewed research so they can judge for themselves the validity of any claims.

ii) Maintain Landcare but direct its efforts into more strategic on ground works that actually target salinity hotspots.

For too long Landcare has taken the shotgun approach in tree planting, which is aesthetically pleasing but may in actual fact be contributing to salt loads in rivers. Recent studies have shown that tree planting needs to be researched more before any actual planting.

iii) Encourage clearing in areas that will contribute to non-saline subsurface drainage so the water table is maintained so that creeks and rivers & ultimately the Murray River benefits.

iv) Encourage land managers when building on-farm water storages to build them with greater depth rather than area. This will reduce evaporation losses.

d) Ways of increasing the uptake of land use management practices.

i) Lead by example in government administration of public lands.

ii) When governments wish to encourage native vegetation retention they must do it with figures that show genuine economic benefit or offer to make up the loss from public funds.

iii) Showcase family farms that can prove economic benefit of natural resource management. Proof must be in dollar return per hectare not just aesthetics.

iv) All presentations to Vegetation Committees, Irrigation Committees & Catchment Boards must only be with peer reviewed data that is not open to interpretation or edited to suit a perceived government view

e) Management systems for the sustainability of natural resources.

i) Unfortunately many of the government agencies that have a direct bearing on resource management have been gutted e.g. Agriculture or politicised e.g. DLWC

ii) Catchment Boards were presented with salinity audits based on oversimplified preliminary analysis that purported potentially high salinity levels.

A more realistic method was used for the Hunter & showed substantially lower levels. Why wasn't this done for all the other catchments or was it politically expedient to let those boards carry on in ignorance of the facts.

If management systems cannot get these facts right who are we as land managers to rely on?

iv) Because of conflicting messages from government agencies land managers are becoming confused. As a result many are backing away from seeking the assistance of government agencies

f) The impact of water arrangements on the management of salinity.

Adding more water to river systems does not reduce salinity in those systems. On the other hand ensuring that the water that enters those systems is low in salts is far more likely to reduce the salinity lower down in the system. In effect we must allow clean non-saline water to enter river systems by targeting only those areas that contribute significantly to salinity.

The Committee should also take the following comments on board:

a) The past landscape history of the state has not been taken into account in any recent legislation. The government has erroneously assumed that NSW was once completely covered in trees.

All early accounts by explorers & settlers tell us that the majority of inland NSW was open grassland not the mass of box, pine, belah & other species present now.

The Murray Darling Basin did not have the same salinity problems then so it is obvious that today's problems may not be associated with timber clearing but with timber retention.

To get Natural Resource Management back on keel Historical records, interviews with older lifetime residents & photographs must be collected to obtain a more objective view of our past landscape

b) Good outcomes for Natural Resource Management can only be achieved through genuine consultation, cooperation, just compensation & good legislation. The coercive & intransigent method used so far is a recipe for Natural Resource Management disaster.

c) Recent research is telling us that the way we've been handling salinity is a bit off the mark. A small portion of recent published research is listed below.

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There is new research awaiting review or available that puts a different light on the ways to combat salinity

d) The Wentworth Report at first glance looked promising but has many areas that are inadequately explained.

Also the interpretation of parts of the report requires more fine-tuning otherwise the end result will be a repeat of the same mish mash of a system we have now

I wish you luck in your deliberations

Yours faithfully

Bob Swain



Gullbraith

Delungra

P.S. The overview of two papers are attached



# The effects of large-scale afforestation and climate change on water allocation in the Macquarie River catchment, NSW, Australia

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Widespread afforestation has been proposed as one means of addressing the increasing dryland and stream salinity problem in Australia. However, modelling results presented here suggest that large-scale tree planting will substantially reduce river flows and impose costs on downstream water users if planted in areas of high runoff yield. Streamflow reductions in the Macquarie River, NSW, Australia are estimated for a number of tree planting scenarios and global warming forecasts. The modelling framework includes the Sacramento rainfall-runoff model and IQQM, a streamflow routing tool, as well as various global climate model outputs from which daily rainfall and potential evaporation data files have been generated in OzClim, a climate scenario generator. For a 10% increase in tree cover in the headwaters of the Macquarie, we estimate a 17% reduction in inflows to Burrendong Dam. The drying trend for a mid-range scenario of regional rainfall and potential evaporation caused by a global warming of 0.5°C may cause an additional 5% reduction in 2030. These flow reductions will decrease the frequency of bird-breeding events in Macquarie Marshes (a RAMSAR protected wetland) and reduce the security of supply to irrigation areas downstream. Inter-decadal climate variability is predicted to have a very significant influence on catchment hydrologic behaviour. A further 20% reduction in flows from the long-term historical mean is possible, should we move into an extended period of below average rainfall years, such as occurred in eastern Australia between 1890 and 1948. Because current consumptive water use is largely adapted to the wetter conditions of post 1949, a return to prolonged dry periods would cause significant environmental stress given the agricultural and domestic water developments that have been instituted.

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**Keywords:** salinity management, water availability, afforestation, integrated assessment.

## Introduction

The natural resource base of Australia has been placed under considerable pressure since European settlement, 210 years ago. Large tracts of forest and woodland have been cleared for cropping and grazing, rivers have been impounded to supply water for downstream irrigation and urban use,

and nutrient and sediment loads have increased as a result of erosion of upland catchments. In recent years, State and Commonwealth governments have worked together to institute national policies, aimed at ameliorating the worst of this environmental degradation. Many of these policies have identified a role for the re-establishment of trees within the landscape. Incentives to encourage greater tree replanting are currently being evaluated, and include, in addition to the obvious timber production value, carbon trading, biodiversity and salinity management schemes.

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# ENGINEERING OUR WAY FORWARD THROUGH AUSTRALIA'S SALINITY CHALLENGE

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## Abstract

Salinisation of Australia's landscape has progressed at a rate and extent that significant built and natural assets are at immediate or imminent risk of damage or loss. The dominant national paradigm regarding our response to this challenge can be summarised as: if deforestation caused the problem, then reafforestation (or new farming systems that behave hydrologically like forests) is the solution. This view underpins the majority of R&D and dryland salinity management investment, whether through community-based approaches such as Landcare or through the development and establishment of commercial silvicultural or agricultural alternatives. However, over the recent past a number of analyses have been published that reveal the general inadequacy of revegetation approaches for the protection of assets at risk to salinity, given the limitations of time, scale, economics, water yield tradeoffs and in some cases the hysteretic nature of the phenomenon.

While the revegetation paradigm apparently drives much of the public debate and intent, in practice there are a set of engineering approaches aimed at salinity control that have been developed and adopted, often extensively, that have not featured prominently in the sights of NRM agencies, NGO's or R&D providers. These approaches include surface water control, deep open groundwater drains, groundwater pumping, disposal basins, and regional arterial drainage and flood mitigation structures. It is apparent, at least in Western Australia (where the majority of Australia's secondary salinity is at present), that stakeholders with assets at immediate risk are electing engineering options to protect those assets. The collective failure of the technical community to direct adequate R&D and commercial investment in this direction has created a vacuum between need, intent and capacity. Expensive earthworks and pumping are going into the Australian landscape with highly uncertain on-site benefits and off-site impacts, largely without the participation of the engineering or scientific professions. Lack of adequate guidelines, design principles, and regional planning will likely lead to uneven performance, elevated risk, unexpected externalities and wasted resources. This paper argues that the technical community has a serious and pressing challenge to bring our minds to bear on the development and extension of proper engineering solutions to Australia's salinity problem. The commercial potential involved in some of these solutions is explored.

**Key Words:** salinity, Australia, engineering

## Introduction

*When one looks back over human existence however, it is very evident that all culture has developed through an initial resistance against adaptation to the reality in which man finds himself. — Carl Jung (1875 - 1961)*

The profound and enduring environmental changes wrought as a result of widespread land clearing for agriculture in Australia are due, in large part, to changes in underlying hydrological and hydrogeological processes on a grand scale

in space and time. These processes include rising groundwater levels, increased waterlogging and flooding, and salinisation.

The impacts of agricultural clearing (especially salinisation) extend across the continent, and are particularly severe and extensive in the southwest (the wheatbelt) of Western Australia, where over 1.8 million hectares is currently salt-affected (Anon, 1996) with up to 8.8 million hectares (33%) at risk by 2050. Associated with this risk is up to 1.8 million hectares of remnant vegetation, 80,000 hectares of important wetlands, 2665