Natural Resource Management in Western Australia
The Salinity Strategy

BUILDING THE FUTURE

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OVERVIEW

- 2.5 million hectares of Australia are saline. 1.8 million of these hectares are in Western Australia.
- The Western Australian Government is developing partnerships through agreements with community based Regional Natural Resource Management (NRM) Groups.
- The State Salinity Strategy provides the blueprint for addressing dryland salinity. Regional strategies need to be implemented to address dryland salinity and related natural resource management problems.
- The most appropriate means to implement these strategies is through a Commonwealth-State compact and State-Regional partnership agreements, which are currently being established.
- The State Government currently funds $40 million each year in salinity mitigation projects, including biodiversity conservation, water resource recovery, commercial farm forestry, native vegetation management and revegetation and knowledge building.
- Community groups and individual land managers invest approximately $200 million each year in salinity mitigation, mostly through farm and catchment planning, improved pasture and cropping techniques, revegetation, protection and enhancement of natural vegetation, agro-forestry, saline agriculture and engineering works.
- It is proposed that the Commonwealth provide funding totalling $106,479,000 over five years, which will allow the implementation of key activities under the themes of data and information collection, new alternative land uses, developing self-reliance (including support to regional NRM groups), management and enhancement of native vegetation and protection of regional infrastructure.
- Western Australia has an existing accountable framework for the allocation of these funds through the State Salinity Council and Regional Natural Resource Management Groups.

The attached documents provide the following:

1. An overview of the proposal
2. Five schedules detailing each of the proposed funding initiatives
3. A copy of the State Salinity Strategy
4. A submission from the Regional Natural Resource Management Groups for funding
5. A copy of the Western Australian Government framework to assist in achieving sustainable natural resource management in Western Australia

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A proposal to the Commonwealth Government from Western Australia
A partnership between the State Government, State Salinity Council and Regional Natural Resource Management (NRM) Groups

INTRODUCTION

Western Australia has a remarkable diversity of natural landscapes, ecological communities and species in a land area covering about 2.5 million square kilometres. The State is rich in natural resources ranging from forests, woodlands and shrublands, water and minerals to vast agricultural and pastoral lands. About 40 per cent of the land area is managed by agricultural industries.

The State is one of the most biologically diverse places in the world and comprises 26 of the nation's 80 bioregions. About half of Australia's known flowering plants, ferns and cycads are found in Western Australia. The number of flowering plant species alone is estimated at more than 12,000 and a high percentage of them are found nowhere else in the world. There are more than 2,700 vertebrate species in Western Australia and many tens of thousands of invertebrate species.

Nine Western Australian wetland systems are listed under the Ramsar Convention on Wetlands of International Importance. In addition, Western Australia has 110 other wetland systems listed as nationally important. Western Australia has 208 recognised rivers totalling some 25,000 kilometres in length. Twenty-seven of these are listed as wild and scenic.

Agriculture in Western Australia has an annual gross value of production of about $4.5 billion (about 17 per cent of the national total). Western Australia produces almost half of the nation's wheat, one quarter of the nation's wool and two-thirds of the nation's pulse (grain legume) crops.

Western Australia has, therefore, a significant and unique natural capital that should be maintained for the benefit of all Australians.

THREATS TO THE NATURAL CAPITAL

Salinity is the greatest environmental threat facing Western Australia. At present, 1.8 million hectares are affected by dryland salinity (72 per cent of Australia's total) and projections demonstrate that this could increase to 6.2 million hectares within the next 50 to 100 years unless there is rapid, large-scale intervention. Most of the salinity problems occur in the south-west agricultural region, which covers 18 million hectares. Salinity could potentially affect 30 per cent of this area in the future.

The area of salt-affected land has already had a serious impact on biodiversity, current and future water supplies, agriculture and regional infrastructure, including roads, rail, water and wastewater facilities, public and private buildings. The impact is potentially enormous if the area at risk is allowed to become saline. Without intervention, 450 plant species endemic to the region will become extinct and three-quarters of the region's waterbird species will severely decline.

Up to $400 million per year could be lost in agricultural production by 2050. There will be increased flood risk in many areas and sealed road life expectancy will be reduced by up to 75 per cent. Around 40 rural towns are affected by rising saline groundwaters and will need to invest in remedial treatments of significance to protect infrastructure.

Salinity will also affect the State's social capital. The magnitude of this effect is difficult to quantify but includes the cost to rural communities of declining population, loss of business, the cost of rural restructure as farms become unprofitable and increased health problems due to stress on families affected by change.

A considerable amount of effort has gone into addressing our environmental problems. Since 1990, the Commonwealth Government has invested in improving the natural resource base through the National Landcare Program and a range of environmental programs, more recently through the Natural Heritage Trust. The State Government currently allocates around $40 million per year to salinity mitigation projects and investments from community groups and individuals, both financially and in terms of effort and other resources, are estimated at over $200 million.

WESTERN AUSTRALIA'S INSTITUTIONAL FRAMEWORK

Regional approaches to natural resource management offer a framework for planning and action that enable the social, economic and environmental dimensions to be considered in an integrated way. The regional scale is recognised as the most suitable scale for addressing regional landscape issues, negotiating trade-offs and resolving conflict, determining priorities and shared investment arrangements.

In the past 15 years, Landcare and community environmental and catchment groups have developed into significant and important stakeholders in Natural Resource Management (NRM). During this time, a framework for a coordinated and integrated approach to the management of the State's natural resources has developed in Western Australia. This framework builds on empowered communities. It recognises State commitment to providing a structure that supports a regional approach to natural resource management and strengthens regional community/agency partnerships.

The State Government provides the authority for this structure through the Cabinet Standing Committee on Salinity Management, which comprises the Ministers of the NRM agencies (the Department of Conservation and Land Management, Agriculture Western Australia, Water and Rivers Commission and the Department of Environmental Protection). The Cabinet Standing Committee is Chaired by the Deputy Premier, who is also the Minister for Regional Development. The Chairman and Deputy Chairman of the State Salinity Council also contribute to the Standing Committee deliberations.

In December 1999, the Cabinet Standing Committee on Salinity Management endorsed a framework to assist in achieving sustainable natural resource management, which had been jointly developed by the chairpersons of the five regional NRM groups in the agricultural region and the Chief Executive Officers of the four NRM Government agencies.
This framework sets out the State directions in natural resource management and articulates the principles for engaging with community groups to achieve sustainable natural resource management.
This process includes the development of partnership agreements between each regional NRM group and relevant State Government agencies that include agreed outcomes and relative roles, responsibilities and accountabilities. These partnership agreements are currently being developed and one has already been signed.

This framework also allows for the formal endorsement by the Cabinet Standing Committee on Salinity Management of regional strategies, once they have been developed and finalised by the regional groups and State Government agencies. It also recognises the relationship between regional strategies and State NRM strategies (for example, the Salinity Strategy) and the need for these to be consistent. In respect of this proposal, the regional groups are the South Coast Regional Initiative Planning Team, the Avon Working Group, the Swan Catchment Council, the South West Catchments Council and the Northern Agricultural Integrated Management Strategy.

This institutional framework provides a robust and positive partnership between the community groups and government. The chairpersons of the five regional NRM groups in the agricultural region are also members of the State Salinity Council, whose role is to oversee the implementation of the State Salinity Strategy. Many of the activities in this strategy are being undertaken at the regional level through the regional strategies.

This process is allowing the regional NRM groups to evolve into mature, responsible entities that have considerable support and respect from the local and sub-regional communities. The chairpersons of the regional organisations have taken on a leadership role at the State level and work in close cooperation with State Government organisations.

The State Salinity Strategy developed by the State Salinity Council was launched in April 2000. This strategy builds on the Western Australian Government Salinity Action Plan, which was launched in November 1996. The new salinity strategy was developed through consultation with relevant community groups and individuals and is neither developed as, nor perceived as, solely a Government strategy. It is considered as a coordinated strategy based on partnerships and shared investment by all beneficiaries.

The State Salinity Strategy aims to reduce the impact of salinity in the south-west agricultural region of Western Australia. It has as its goals:

- To reduce the rate of degradation of agricultural and public land, and where practical recover, rehabilitate or manage salt-affected land;
- To protect and restore key water resources to ensure salinity levels are kept to a level that permits safe, potable water supplies in perpetuity;
- To protect and restore high value wetlands and natural vegetation, and maintain natural (biological and physical) diversity within the region;
- To provide communities with the capacity to address salinity issues and to manage the changes brought about by salinity; and
- To protect infrastructure affected by salinity.

Actions in the strategy that aim to achieve these goals are based on three fundamental principles:

- Salinity needs to be addressed by treating the causes of the problem, focussing on managing recharge and rising watertables;
- Developing practical and environmentally sound methods that mitigate the impact of salinity by managing the discharge; and
- The strategy needs to be implemented in a partnership approach between all stakeholders at the regional and catchment scale.

THE WAY FORWARD

The future management of natural resources in Western Australia will depend on the development and implementation of effective partnerships among all stakeholders, to ensure maximum public benefits from coordinated natural resource management at that level. Partnership Agreements between the State Government of Western Australia and the Regional NRM Groups will be a formal mechanism that recognises the respective roles, responsibilities and interests of each party, and will align all stakeholders towards agreed NRM goals. These partnerships will facilitate and support the development of self-reliant communities.

The State Salinity Strategy details the actions that are required to address salinity. It is proposed that these actions be funded on a three-way basis between the Commonwealth, the State and the community, with well-defined areas for each.

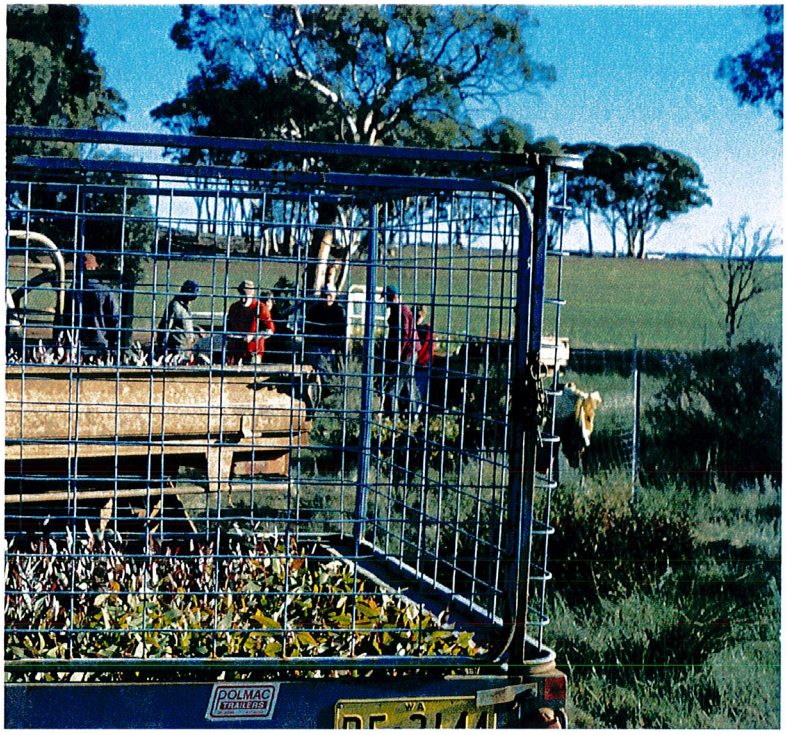
The framework for these activities to occur can be developed through the following mechanisms:

1. A **compact** between the Commonwealth and State governments, setting out the principles by which the Commonwealth will help fund the Salinity Strategy and what the proposed outcomes would be. It is proposed that the compact be developed for a period of five plus five years.
2. **Partnership agreements** between the State government and the regional NRM groups, outlining roles and responsibilities and quantifiable outcomes based on the investments to be made by the Commonwealth and State governments on activities, as agreed to in the Salinity Strategy and regional strategies.

Most of the funding and on-ground activities are currently, and will continue to be, undertaken by community groups and individuals. The State Government continues to contribute to vegetation protection, revegetation and reafforestation and activities related to high water use farming systems as well as protecting and rehabilitating water resources and areas of high biodiversity values and protecting rural towns.

A key new initiative of the State Government, through the State Salinity Strategy, is to undertake assessments at the catchment scale across the whole of the south-west agricultural region, in order to provide groups and individuals in each catchment with a reasonable picture of the issues they face in regard to salinity.

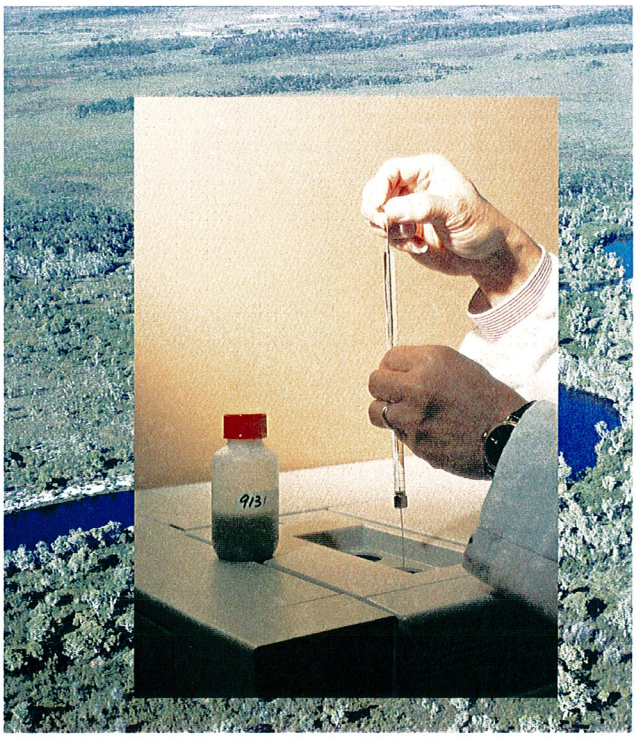
Additionally, the State and the Salinity Council have initiated a $3 million Community Support Scheme to facilitate change towards sustainable land management practices to address salinity. A native vegetation working group has also finalised a report outlining actions to achieve improved vegetation management and revegetation rates, which builds on the decline, since 1995, in land clearing in Western Australia. Today, there is virtually no clearing in the south-west agricultural region.



Many of the initiatives that have been developed in Western Australia have application at the national level so investment will return good results. It is proposed that the Commonwealth Government could assist by funding five initiatives that are fundamental to the success of the Salinity Strategy, as follows:

1. **Data and information collection** (for example geo-physical data). This initiative would build on work already undertaken through the National Land and Water Resources Audit, and would assist in keeping that information up to date. It would also help in improving interpretation of the data, which is a primary consideration. It could also include activities such as developing a GIS-based catchment model to determine priorities for action and the cost-effectiveness of solutions.

2. **New alternative land and water uses.** This initiative would encourage innovation and identify new ways of managing land that is either saline, or in a way that will help mitigate salinity, that will, in many instances, be part of national programs.



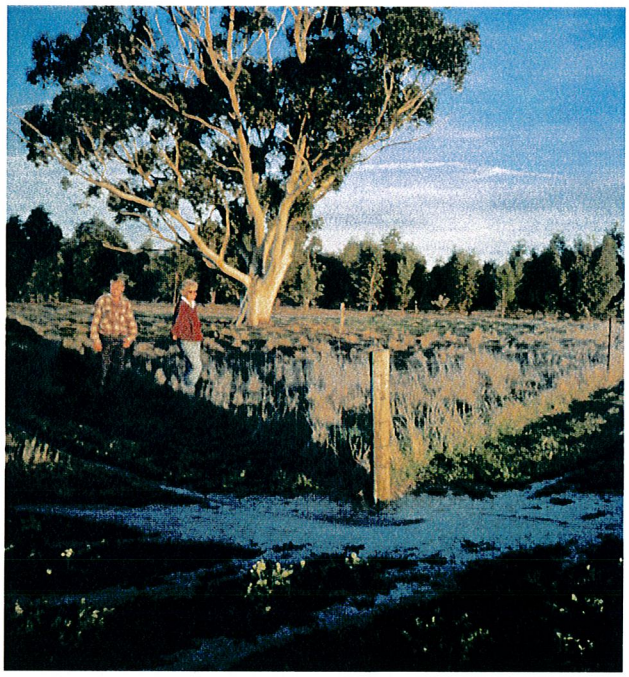
Innovations need to be considered and evaluated in the farming system and a landscape approach taken on a catchment basis. The economic and social aspects need to be an integral part of this systems approach.

Possible funding areas could include:

- Improving the range of commercial perennial plants available for agricultural situations, and helping overcome barriers to commercial perennials (eg harvester for oil mallees, treating sawn timber, reconstituted woody product development)
- Additional support for national breeding/hybrid/selection programs for commercial woody and herbaceous perennials for dryland sites
- Integrated engineering solutions, such as evaluation of palaeochannel pumping, Sal-Proc trials in WA (rural towns, Dumbleyung, Collie Recovery Catchment, Lake Toolibin, mobile plant), desalination trial associated with rural towns, Recovery Catchments
- Saline aquaculture (rainbow trout, brine shrimps)
- Developing integrated water and vegetation management options for Wheatbelt catchments.

3. **Developing self-reliance.** This initiative will empower, and enable the regional NRM and catchment groups and individual land managers in the catchments, through the provision of skills, resources, networks and information, to develop strategies, and plan and implement actions to manage salinity in a timely and effective manner. Implementation funding will be delivered through the State Salinity Council and the Regional NRM Groups. The initiative would also provide a network of community support officers, based in the regions and supported by regional groups, to assist the community groups and individuals in developing their knowledge and solutions to address salinity, and increase their self-reliance. It would help ensure on-ground activities were more coordinated and linked to the regional strategies.

   Self-reliance needs to be developed in two ways. This initiative should help communities both to combat salinity and to learn to adapt their systems to cope with the effects of salinity, where remedial work will not be possible.



4. **Management and enhancement of native vegetation.** Severe restrictions on clearing of native vegetation in the south-west agricultural region have been in place since April 1997, and less than 500 hectares of vegetation was allowed to be cleared in 1999–2000. This provides an opportunity to ensure sustainable management and enhancement of native vegetation for both its biodiversity values and the critical role vegetation plays in addressing salinity. Initiatives would include "Living landscapes", including improved vegetation management and revegetation activities and recovering natural diversity in high priority catchments and the "Land for Wildlife" program.

5. **Protection of Regional Infrastructure.** This initiative aims at providing on-ground action in regional areas to protect against a rising watertable and salinity and mitigate the effects of these problems, particularly in rural towns and regional roads.

SCHEDULE 1

Data and information collection

1. Expand the SS2020 project to cover the remaining 15 million hectares of the south-west agricultural region, including an estimation of salinity risk and cost of salinity for each catchment, and the cost effectiveness of options within five years.
2. Airborne magnetic and radiometric data collection over nine million hectares over five years.
3. Eight catchment assessment teams consisting of hydrologists, soils specialists, agronomists, economists, biologists, GIS analysts and extension specialists, set up to undertake rapid catchment assessment in all catchments in the south-west agricultural region. This work to be completed within five years and undertaken on a priority basis. This includes the identification of priority environmental assets.
4. Water management plans designed and modelled for all catchments in the south-west agricultural region over the next five years.

Year 1	Year 2	Year 3	Year 4	Year 5
2,459,000	3,040,000	4,290,000	4,490,000	4,490,000

Total for Schedule 1: $18,769,000

SCHEDULE 2

New alternative land and water uses

1. Development and implementation of wetland management plans for high priority wetlands located outside the conservation estate.
2. Development of a range of new woody perennial crops and industries, focussing on the commercial use of native species in low rainfall areas.
3. Development of a system for classification of salt-affected land, information package for management of salt-affected land, examination of alternative uses for salt-affected land and establishment of eight salt-affected land demonstration sites.
4. Work on sub-surface drainage to reduce salinity effects and increase farm productivity; monitoring the quality of water flowing through the south-west irrigation area; and undertake salinity mapping to delineate and prioritise areas of salinity risk.

Year 1	Year 2	Year 3	Year 4	Year 5
1,250,000	1,440,000	1,390,000	1,390,000	1,390,000

Total for Schedule 2: $6,860,000

SCHEDULE 3

Developing self-reliance

A. Enhancement of community capacity to undertake salinity management and sustainable resource use through community-based facilitation and technical support, including training support to staff and management committees and implementation of on-ground activities at the regional and sub-regional levels.

Year 1	Year 2	Year 3	Year 4	Year 5
2,000,000	5,000,000	10,000,000	16,000,000	19,000,000

B. Support to Regional NRM Groups to ensure development and implementation of Regional NRM Strategies and coordination and management of on-ground activities at the regional and sub-regional level.

Year 1	Year 2	Year 3	Year 4	Year 5
1,760,000	1,760,000	1,760,000	1,760,000	1,760,000

Total for Schedule 3: $60,800,000

SCHEDULE 4

Management and enhancement of native vegetation

1. Implementation of a "Natural Diversity Recovery Program" in six catchments within five years, based on biological survey findings.
2. Encouragement of native vegetation management and address inequities associated with the severe restrictions on clearing of native vegetation in the south-west agricultural region.
3. Long-term storage facility for seeds of rare and threatened plant species located in saline environments and collection/analysis of threatened priority flora taxa of the region.
4. Land for Wildlife Program.

Year 1	Year 2	Year 3	Year 4	Year 5
1,810,000	2,310,000	3,310,000	3,810,000	3,810,000

Total for Schedule 4: $15,050,000

SCHEDULE 5

Protection of regional infrastructure

1. On-ground action in regional areas to protect infrastructure from rising saline watertables, particularly rural towns and regional roads.

Year 1	Year 2	Year 3	Year 4	Year 5
1,000,000	1,000,000	1,000,000	1,000,000	1,000,000

Total for Schedule 5: $5,000,000