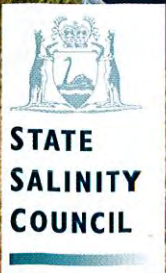
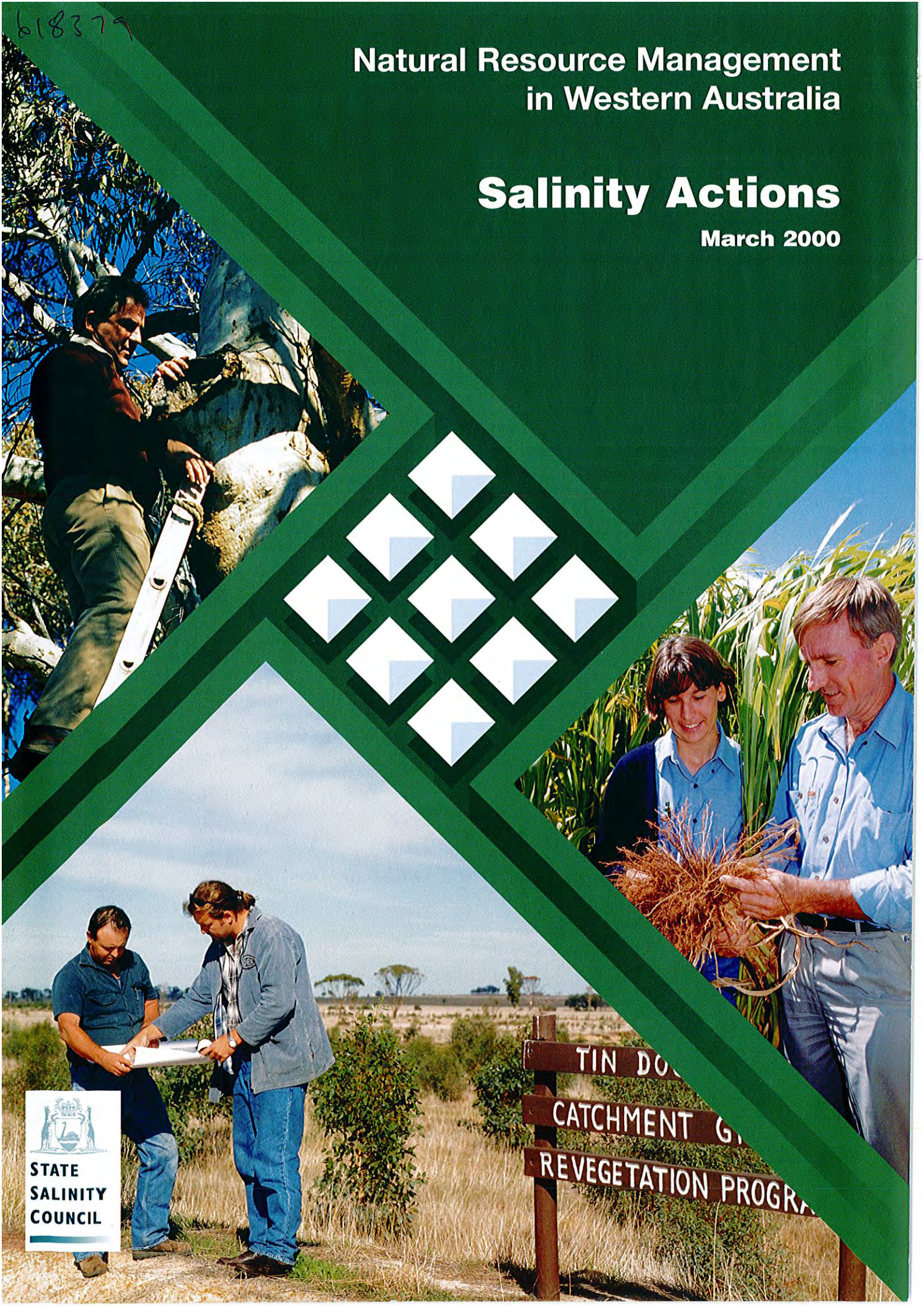


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Natural Resource Management in Western Australia

Salinity Actions

March 2000

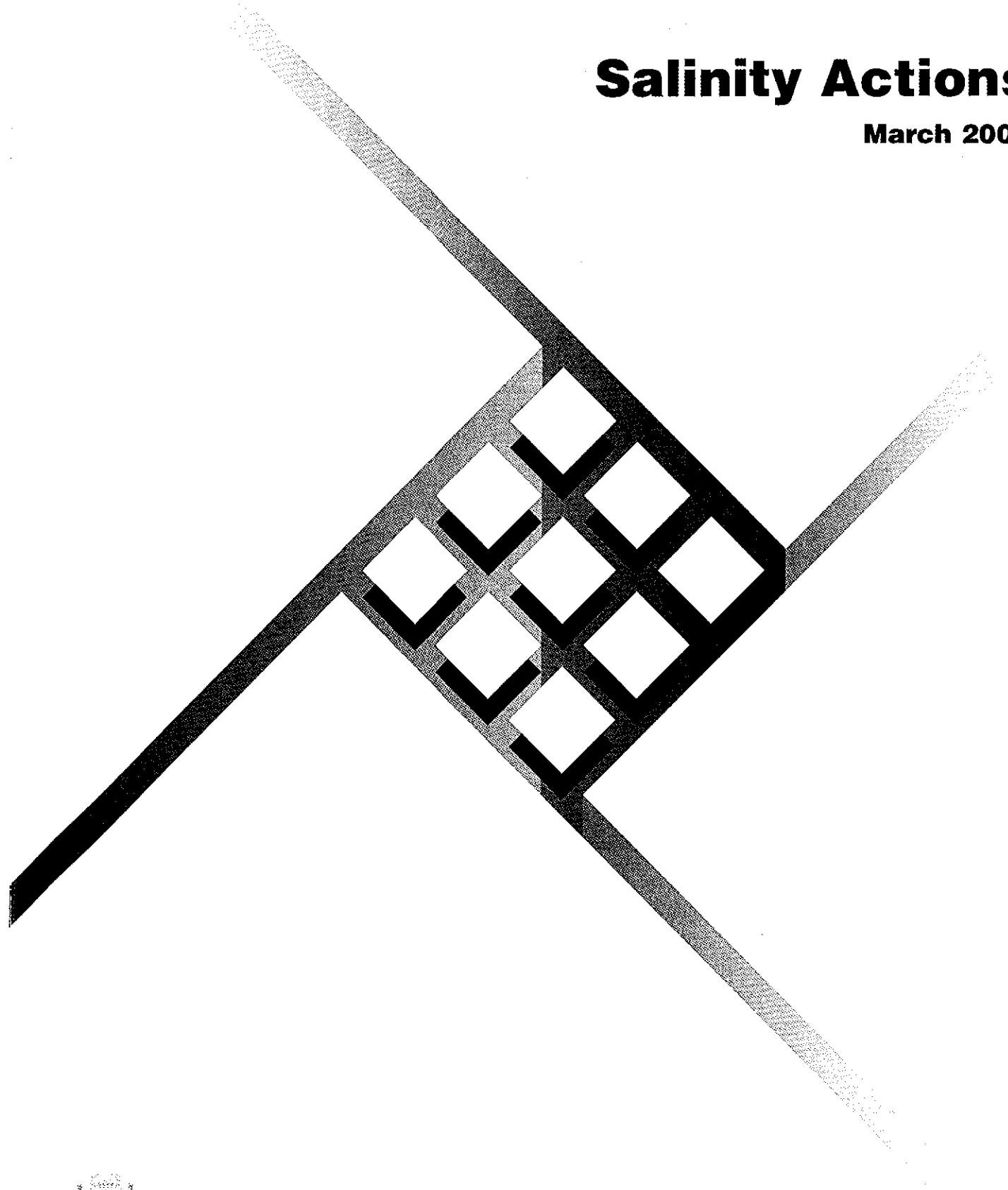


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**Natural Resource Management
in Western Australia**

Salinity Actions

March 2000

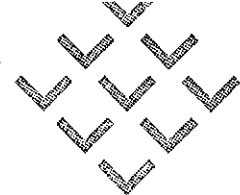


**STATE
SALINITY
COUNCIL**



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Preface



This document sets out current actions to combat salinity as well as recommended actions under The Salinity Strategy (March 2000), which was prepared by the State Salinity Council and endorsed by the Government of Western Australia.

Actions introduced under the 1996 Western Australian Salinity Action Plan and the 1998 Draft Update of the plan are listed, together with details of their source of funding and the date by which each action is due to be completed. Some of the short-term actions listed in the 1996 Plan have already been completed and no longer appear in this document.

Salinity Actions also includes the funding recommended by the Council for new initiatives proposed under the 2000 Strategy. The Council recognises that these funds, totalling \$8.9 million in the first year and rising to \$31.5 million by year five, should come from a range of sources, including the State and Commonwealth Governments.

	1st year 2000/01	2nd year 2001/02	3rd year 2002/03	4th year 2003/04	5th year 2004/05
Total funding recommended	\$8,914,000	\$14,515,000	\$21,765,000	\$28,715,000	\$31,555,000

The Council acknowledges the huge contribution made by the community to funding salinity projects. In 1999-2000, for example, community groups in Western Australia successfully applied for \$8.7 million in funds from the Natural Heritage Trust for salinity-related projects. On a conservative estimate, the community matched these funds dollar for dollar, as well as two-to-three times that amount for their time and effort. The Alcoa Landcare Vision catchments demonstrated a five-fold matching of funds by local groups. Many other farmers are funding all their own landcare works privately.

The activities of local landholders and groups are important to the implementation of salinity management plans on individual farms and local catchments. Any State strategy will not succeed if action at the local level is not supported.

The capacity of these individuals and groups to achieve change is increasing through a learning process that occurs in the company of their neighbours. There is less risk for individual landholders in trying new approaches for salinity management if they have the involvement of their neighbours, readily available locally-based technical support and the opportunity to learn from other farmers' successes and failures. This locally-based technical expertise needs continuing support by governments and includes CLCs, Bushcare (both through Greening Australia and the Department of Conservation and Land Management), Rivercare, Land for Wildlife and other workers and their management committees.

Regional natural resource management groups have evolved in recognition of the need for an integrated, coordinated and "systems" view of natural resource management issues. They provide an umbrella network for the smaller landcare, environmental and catchment groups, and open the possibility of regionally-developed and implemented strategies to address a variety of environmental issues.

As identified in the strategy, the aim is to reduce the impact of salinity in the south-west agricultural region of Western Australia. To do this, the strategy 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 south-west region of Western Australia;
- 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.

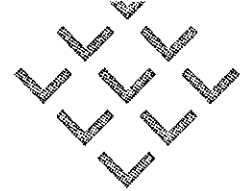
Each of these goals applies across the south-west agricultural region. However, the degree to which each goal is pursued will depend on the relative importance of the range of public and private assets under threat in individual catchments. Input at the regional level will help determine these priorities.

The proposed actions 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 water tables;
- developing practical and environmental 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.

A strategic approach is essential to manage salinity on the scale facing Western Australia. The key elements of such an approach are:

- working in partnerships that involve all stakeholders;
- analysing risk in different areas over time to allow appropriate priorities to be set;
- retaining native vegetation and protecting the remaining biodiversity values;
- adopting an appropriate mix of the tools available to manage salinity;
- helping the farming community to make the transition to more sustainable production systems and building their capacity to do so;
- addressing equity concerns that arise;
- promoting research and development to improve salinity management;
- planning to address shortfalls in actions where priority biodiversity and other public assets remain at an unacceptable risk, or are significantly affected; and
- developing continuous monitoring and evaluation of salinity management actions.



New initiatives and additional funding requirements proposed by the Salinity Council under the strategy are highlighted throughout this document. Current actions are funded from several sources, including existing programs or activities and the Natural Heritage Trust. These sources are listed, together with the allocation of the additional \$10 million committed by the State Government under the 1996 Salinity Action Plan.

Salinity Actions should be read in conjunction with The Salinity Strategy, and has been set out under the same headings as the strategy.

Alex Campbell
Chairman, State Salinity Council

Glossary

Agbores	Agricultural bores
AgFax	Facsimile-based information retrieval system run by AGWEST through 1902 990 506
Aqwabase	Database of groundwater and hydrogeological data for bores, wells and water points
AGTAG	Airborne Geophysics Technical Advisory Group
AGWEST	Agriculture Western Australia
CALM	Department of Conservation and Land Management
CLC	Community Landcare Coordinator
Combores	Community bores
CSIRO	Commonwealth Scientific, Investigation and Research Organisation
DEP	Department of Environmental Protection
DOLA	Department of Land Administration
EPA	Environmental Protection Authority
Farmbis	Farm Business Improvement Scheme run by AGWEST
GIS	Geographic Information System
GRDC	Grains Research and Development Corporation
Landsat TM	Land satellite terrain model
LCDC	Land Conservation District Committee
NHT	Natural Heritage Trust
NLWRA	National Land and Water Resources Audit
R&D	Research and development
REX	Revegetation expert system
SS2020	Salt Scenarios 2020
TAFE	Technical and Further Education
WAPC	Western Australian Planning Commission
WRC	Water and Rivers Commission

	Funding	Completed by
Regional planning		
AGWEST, CALM, WRC and DEP will continue to develop the State natural resource management framework approved by the Cabinet Standing Committee in conjunction with interested groups.	Existing activity	Ongoing
AGWEST will coordinate the agencies to develop a framework between the Government and the community that formalises cooperative relationships with the management committees of CLCs and other similar community-based personnel.	Existing activity	Ongoing
AGWEST will coordinate the agencies to compile a directory of government and non-government assistance available to community groups and this will be widely publicised and distributed.	Existing activity	Ongoing
With advice from the Salinity Council and government agencies, the State Government will seek a commitment from the Commonwealth Government to ongoing funding assistance for the community and agency-based support and advisory services necessary to implement the Salinity Strategy.	Existing programs	Ongoing
The State Government will work with and assist regional and catchment groups to develop their role and skills in setting regional goals and strategies to coordinate actions to address salinity and other natural resource management issues.	Council recommends funding of \$150,000 per annum	Ongoing
The Western Australian Planning Commission will address salinity management in regional strategies and promote measures to address salinity through regional strategies and planning schemes.	WAPC will incorporate this into its existing programs	Ongoing
The State Salinity Council will be restructured to reflect the broader community and regional roles and responsibilities in salinity management.	Council will accommodate this change within its operating budget	December 2000
Priority setting		
DEP will work with agencies and communities to develop environmental objectives and criteria for identifying priority environmental assets when planning salinity action at property, catchment, regional and State level scales.	Council recommends funding of \$200,000 in first year and \$350,000 for next 4 years	June 2005
Catchment assessment		
AGWEST will work with other agencies and the community to: <ul style="list-style-type: none"> continue to refine a common methodology for planning and implementation in focus catchments; provide coordinated planning and advisory services (including biodiversity expertise) to focus catchments for a limited period under partnership agreements; and coordinate the development of selection criteria and selection of focus catchments. 	\$220,000 per annum and funding from existing programs	Ongoing
Focus catchment groups will develop partnership agreements that specify technical and economic information from the Government and the best practice activities to be implemented by individual landholders. The terms of the agreement, (to be no longer than one year) will also be defined.	Existing activity	Ongoing



	Funding	Completed by
<p>The State Salinity Council will:</p> <ul style="list-style-type: none"> • evaluate the Blackwood Basin Group zone strategy and its applicability in furthering the focus catchment concept; • monitor progress in focus catchments and work with the Government and its agencies to optimise the effectiveness of the process. 	Salinity Council operating budget and existing agency programs	Ongoing
AGTAG will advise landholders on the application of airborne geophysics in conjunction with other information for mapping and managing salinity at the catchment level.	\$50,000 (AGWEST), \$200,000 (WRC)	Ongoing
Clear objectives and target outcomes for salinity management which specify the relative importance of protecting the land and water resource base, minimising financial losses to the individual and the State, and conserving natural diversity need to be established with catchment groups in the agricultural regions over time. This will be carried out in partnership with the regional and district catchment groups.	Existing programs	Ongoing
The SS2020 project will be expanded 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.	Council recommends funding of \$850,000 over 3 years starting in 2001/02 with \$250,000	June 2004
The results of CALM's biological survey of the south-west agricultural region will be examined in light of the results of the SS2020 project to help determine biodiversity conservation priorities.	CALM will incorporate this into its existing programs	June 2005
Airborne magnetic and radiometric data collection will be undertaken over a further nine million hectares in the next five years.	Council recommends funding of \$1,500,000 split over first 2 years, and a further \$7,000,000 over the next 3 years after a satisfactory review	June 2005
Eight catchment assessment teams consisting of hydrologists, soils specialists, agronomists, economists, biologists, GIS analysts and extension specialists will be set up to undertake rapid catchment assessment in all catchments in the south-west agricultural region. This work will be completed within five years and undertaken on a priority basis.	Council recommends funding of \$6,204,000 over 5 years with \$1,044,000 in 2000/01	June 2005
Water management plans will be designed and modelled for catchments in the south-west agricultural region over the next five years.	Council recommends funding of \$1,615,000 over 5 years with \$215,000 in 2000/01	June 2005
Biodiversity conservation		
CALM will establish and maintain a long-term storage facility for seeds of rare and threatened plant species located in saline environments.	Council recommends funding of \$160,000 per annum	Ongoing
Work will continue through a number of mechanisms including the Sustainable Seed Banks project run by Greening Australia (WA) to ensure adequate seed supply to satisfy large-scale revegetation requirements.	Existing programs	Ongoing
Further data will be collected and analysed by CALM on priority flora taxa of the south-west agricultural region that may be threatened by increasing salinity.	Council recommends funding of \$50,000 per annum for 8 years	June 2009

	Funding	Completed by
Biodiversity conservation (continued)		
CALM will implement a program to save threatened species such as Carnaby's cockatoo in cooperation with landholders.	Council recommends funding of \$15,000 for 1 year	June 2001
A database of threatened and priority fauna in saline areas of the south-west agricultural region will be completed by CALM.	Council recommends funding of \$25,000 for 1 year	June 2001
CALM will:		
<ul style="list-style-type: none"> continue to implement recovery plans for the Toolibin Lake, Lake Muir-Unicup system, Lake Warden system and Lake Bryde-East Lake Bryde natural diversity recovery catchments; 	\$2,500,000 per annum	Ongoing
<ul style="list-style-type: none"> give priority to locating commercial woody perennial plantings in areas which also generate significant nature conservation benefits, such as Toolibin Lake; 	Covered in above	Ongoing
<ul style="list-style-type: none"> release its draft Wheatbelt Regional Management Plan for public comment in 2000; 	Existing program	December 2000
<ul style="list-style-type: none"> complete and publish the results of its biological survey of the agricultural region, begun in 1997, with an emphasis on low-lying areas that are vulnerable to salinity, to identify nature conservation priorities and to identify plant species that are likely to be of value in revegetation for both commercial production and land conservation; 	\$500,000 per annum	Ongoing
<ul style="list-style-type: none"> use the results of the biological survey, and following consultation with peak advisory bodies and affected community groups, progressively select additional recovery catchments and develop and implement recovery plans; and 	Covered in above	Ongoing
<ul style="list-style-type: none"> conduct more detailed biological surveys needed at catchment and local scales. 	Covered in above	Ongoing
CALM will implement a Natural Diversity Recovery Program targeting at least six more recovery catchments by 2005, based on biological survey findings.	Council recommends additional funding of \$500,000 for first year increasing to \$1,000,000 in second year, \$2,000,000 in third year and \$3,000,000 per annum from July 2003	Ongoing
CALM will continue to appoint Land for Wildlife and Bushcare officers in key areas to provide nature conservation advice.	\$150,000 per annum plus \$100,000 redistributed by CALM	Ongoing
	Council recommends additional funding of \$200,000 per annum for Land for Wildlife in saline areas	Ongoing
As its current biological survey work proceeds, CALM will ensure that saline lands of high biodiversity value are identified for improved management.	Existing programs	Ongoing
Potential and actual corridor values of saline lands will be identified and, where appropriate, developed by CALM, AGWEST and WRC in the management of focus and recovery catchments.	Existing programs and NHT	Ongoing



Funding

Completed by

AGWEST, DEP and WRC will develop information and management recommendations for ensuring that the flood mitigation, nutrient stripping and discharge values of saline lands are better recognised and protected.

Existing programs and NHT

Ongoing

CALM and AGWEST will establish protocols to ensure that there is improved screening of introduced saline-tolerant plants to prevent damage to environmental and production values.

Existing programs and NHT

Ongoing

Through the Low Rainfall Revegetation Group, CALM and AGWEST will seek Bushcare funding to develop guidelines for improved management of saline systems to conserve their biological and physical values.

Existing programs and NHT

Ongoing

WRC, in partnership with the community, will develop and implement management plans for high priority wetlands located outside the conservation estate.

Council recommends funding of \$1,500,000 over 10 years

June 2011

Water resources

WRC will:

- develop plans in partnership with the community to reduce salinity to potable water supply levels in the Collie River Recovery Catchment by the year 2015. The public and private benefits of catchment water management practices, including high water use farming systems, will be assessed to determine the level of financial support for implementation;
- evaluate the current level of private reforestation in the Denmark catchment with respect to it being sufficient to achieve potable water supply levels by the year 2020, and recommend additional actions if required;
- evaluate options to reduce the salinity of Mundaring Reservoir and establish catchment plans to achieve salinity targets; and
- prepare integrated catchment plans for the Kent and Warren catchments in partnership with catchment groups according to management principles established by recovery teams with the target of achieving potable water supply levels by 2030.

\$500,000 per annum

Ongoing

Covered in above

Ongoing

Covered in above

Ongoing

Covered in above

Ongoing

To support these actions and to help with other recovery catchments and focus catchment groups, WRC will:

- provide additional regional support for salinity management, particularly to service the planning and implementation of catchment restoration programs; and
- establish and maintain demonstrations of salinity processes and management.

Covered in above

Ongoing

Covered in above

Ongoing

Furthermore, WRC will:

- arrange implementation of plans based on a cost-sharing framework that considers public benefit; and
- encourage and facilitate the fencing of remnant vegetation.

\$1,600,000 per annum

Ongoing

	Funding	Completed by
<p>Infrastructure protection</p> <p>AGWEST will continue to implement the Rural Towns Program in partnership with local government. As part of this program AGWEST will liaise with agencies and organisations such as Main Roads WA, Westrail, Department of Land Administration, Water Corporation and Cooperative Bulk Handling to develop salinity management strategies to protect their assets.</p> <p>The Rural Towns Program will service 30 towns for the next three years, with additional towns supported progressively over the following four to 10 years.</p>	<p>\$1,000,000 per annum and a further \$1,000,000 from NHT</p> <p>Council recommends additional funding of \$1,000,000 in 2001/02 and thereafter to 2024</p>	<p>2024</p>
<p>Flood risk assessment</p> <p>WRC will:</p> <ul style="list-style-type: none"> increase awareness of hydrologic impacts by undertaking further study on the impact of waterlogging on flood risk and vice versa. This study will assess the increase in flood risk for the Avon, Murray, Collie and other southern rivers from catchment land use and the full impact of land clearing and waterlogging; provide advice on the optimum use of vegetation and/or drainage to control waterlogging; and provide advice on drainage design to achieve flood mitigation. 	<p>Council recommends funding of \$800,000 over 5 years with \$150,000 in 2000/01</p>	<p>June 2005</p>
<p>Research and development</p> <p>Community groups, research organisations and agencies will develop, cooperatively, research and development project requirements, outputs and proposals in accordance with these agreed priorities, and will develop funding strategies to achieve the necessary outcomes. Project applications with the backing of the Salinity Strategy and the support of Council will be submitted to funding organisations.</p> <p>The State Salinity Council, through its Salinity Research and Development Committee, will coordinate and facilitate submissions for external research and development funding opportunities in salinity for Western Australia.</p> <p>AGWEST, in conjunction with the other agencies, will support the Research & Development Committee, and coordinate and support a Salinity Research and Development Technical Committee and a broader network to advise the Committee.</p> <p>Agencies, production groups, academic institutions and community groups will pursue research and development funds to address salinity issues.</p> <p>The Salinity Council's Research and Development Committee will lobby to have some research conducted in Western Australia so that results and outcomes can be readily transferred for adoption or for recommendations to State and Commonwealth Governments.</p> <p>Government agencies will expand their capacity to host and attract research activity to this State.</p>	<p>Existing programs and new R&D grant opportunities</p> <p>Salinity Council operating budget and existing agency programs</p> <p>Existing activity</p> <p>Existing programs</p> <p>Salinity Council operating budget</p> <p>Agencies to arrange through existing programs</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>



Funding

Completed by

Changing agricultural practices

AGWEST will work with existing industry research and development corporations and industry associations such as the Western Australian No Tillage Farmers' Association, the Western Australian Lucerne Growers' Association and the Saltland Pastures Association to evaluate, develop and extend higher water using agricultural cropping and pasture systems.

Existing programs

Ongoing

The Western Australian No Tillage Farmers' Association is targeting warm season cropping over 15 per cent of the potential cropping area within five years.

Existing activity

Ongoing

AGWEST will expand research and development into new ways of managing current perennial grasses and herbs, and into adding new species to pastures in the low rainfall areas.

Existing activity with external funding

Ongoing

The State Salinity Council will promote the need for research and development in perennial vegetation options and will establish a mechanism and process to coordinate research in this area.

Salinity Council operating budget and existing agency programs

Ongoing

AGWEST will continue to work with farmer groups to investigate the efficacy and suitability of remedial measures such as an increased use of deep-rooted perennial species and appropriate drainage systems.

Existing programs and GRDC

Ongoing

AGWEST and CALM will provide research and development extension support for production groups such as the Western Australian No Tillage Farmers' Association, Western Australian Lucerne Growers' Association, the Oil Mallee Association and the Saltland Pastures Association as a means of promoting new, innovative farming systems.

Existing programs

Ongoing

AGWEST, WRC and CALM will adopt a "water use evaluation" approach. Each technology they promote must improve or maintain water use in the landscape, and each farming system will be assessed according to its water use potential.

Existing programs

Ongoing

Commercial farm forestry

The State Salinity Council will pursue a target of more than three million hectares of woody tree crops in the south-west agricultural region, at an accelerated rate and will continue to review this target in the light of new information.

Existing programs

Ongoing

CALM and AGWEST will undertake development of a range of new woody perennial crops and industries, which will focus on the commercial use of native species in low rainfall areas.

Council recommends funding of \$750,000 in the first year increasing to \$1,050,000 per annum thereafter

Ongoing

The Oil Mallee Association is targeting one million hectares of commercial mallee plantings by 2015.

Existing programs

Ongoing

Opportunities for commercial public investment in large-scale projects will be supported through business planning and feasibility studies.

Existing programs

Ongoing

The Government will continue to seek funds from the Natural Heritage Trust and other programs, to conduct feasibility studies on a range of new woody perennial crops and industries.

Existing agency programs and external sources

Ongoing

CALM will continue to implement a major maritime pine program in the 400 to 600 mm rainfall region.

Existing agency programs and external sources

Ongoing

Tools to manage salinity (Section 5, Strategy)

	Funding	Completed by
Commercial farm forestry (continued)		
<p>CALM will continue to support the developing eucalyptus oil industry in conjunction with the Oil Mallee Association and the Oil Mallee Company.</p>	Existing programs	Ongoing
<p>AGWEST and CALM will develop protocols that prevent the introduction of significant environmental or agricultural weeds.</p>	Existing programs	Ongoing
<p>Government in partnership with the community will actively pursue emerging opportunities for carbon credit and greenhouse emission trading in accordance with relevant developing international and national greenhouse policies and strategies. Within Western Australia, strategies for industrial development project offsets will also be pursued.</p>	Existing programs	Ongoing
<p>AGWEST and CALM in association with external research groups will collaborate to carry out research and development into the major design factors affecting woody perennial water use and recharge control in agricultural systems.</p>	Existing programs	Ongoing
Using saline lands productively		
<p>AGWEST, CALM and the Saltland Pastures Association will contribute to the development of new technology for the productive use and rehabilitation of saltland. Activities will be focused in three major areas:</p> <ul style="list-style-type: none"> • training landholders and extension workers in best practice in the productive use of saltland; • developing and promoting saltland pastures, shrubs and trees; and • developing new industries for saltland (in collaboration with relevant community groups). 	Existing programs and NHT – additional funding will be sought from R&D corporations	Ongoing
<p>The Saltland Pastures Association has already demonstrated great potential for saltland pasture and is targeting one million hectares of productively-managed saline land over the next decade.</p>	Existing activity	2010
<p>AGWEST will help landholders with salt-affected land by:</p> <ul style="list-style-type: none"> • developing a system for classification of salt-affected land; • developing an information package for management of salt-affected land; • examining alternative uses for salt-affected land; and • establishing eight salt-affected land demonstration sites. 	Council recommends funding of \$460,000 over 5 years with \$210,000 in 2000/01	June 2005
Productive use of saline water		
<p>Fisheries WA and AGWEST will continue to manage the Outback Ocean Project to help small-scale producers accessing customers and markets, and to provide information on risks and returns for larger commercial projects.</p>	Existing program	Ongoing
Irrigated agriculture		
<p>AGWEST and WRC will continue to work with irrigation communities and irrigation system cooperatives to develop land and water management plans which include the provision of advice on best management practices to improve drainage and monitoring.</p>	Existing activity	June 2005



Funding

Completed by

AGWEST will continue to work with landholder groups to develop methods to map soil salinity variations accurately to underpin farm planning and land and water management practices.

Existing program

Ongoing

AGWEST and South West Irrigation will undertake work on sub-surface drainage as a means of reducing salinity effects and increasing farm productivity; monitoring the quality of water flowing through the south-west irrigation area; and undertaking salinity mapping to delineate and prioritise areas of salinity risk.

Council recommends funding of \$140,000 per annum for 5 years

2005

Native vegetation management and native revegetation

Native vegetation management

The Government is:

- developing legislation which will enable individuals to place voluntary covenants on their land titles to protect nature conservation values including remnant vegetation in perpetuity;
- developing legislation to establish an independent fund-raising foundation to support nature conservation, including land acquisition for conservation reserves;
- ensuring retention and better management of remnant vegetation on Crown land including conservation reserves;
- investigating a wide range of adjustment actions that attract additional capital into land purchases and remnant vegetation protection and management;
- undertaking regional native vegetation assessments to define the amount and distribution of native vegetation which must be retained to meet salinity control and biodiversity needs, as a context for evaluation of clearing proposals and a guide to conservation and revegetation requirements; and
- reviewing and refining the Memorandum of Understanding on Protection of Remnant Vegetation in Agricultural Areas.

Existing activity

Existing activity

\$1,250,000 per annum (CALM)

Ongoing

Existing programs

Ongoing

Existing programs

Ongoing

Existing activity

DEP and EPA will refine criteria for assessing land clearing proposals and undertake regional native vegetation assessments jointly with CALM.

\$50,000 per annum

Ongoing

Council recommends additional funding of \$40,000 in the first year and \$50,000 thereafter for EPA for assessment

Ongoing

AGWEST will review the guidelines used by the Commissioner for Soil and Land Conservation to evaluate land degradation risks.

Existing activity

2001

CALM will:

- promote and support the conservation of remnant vegetation on farms in partnership with AGWEST, through the Land for Wildlife Scheme, through collaboration with Commonwealth programs such as Bushcare, through voluntary nature conservation covenants and through its regional ecological and advisory services; and
- promote remnant vegetation conservation along roadsides and other transport and utility corridors through the work of the Roadside Conservation Committee.

Land for Wildlife covered in earlier action; otherwise covered by existing programs

Ongoing

Existing programs

Ongoing

Tools to manage salinity (Section 5, Strategy)

	Funding	Completed by
Native vegetation management and native revegetation		
Native vegetation management (continued)		
<p>WRC will ensure that remnant vegetation on private land in the priority water resources catchments of Mundaring Weir, Wellington Reservoir, Warren, Kent and Denmark rivers is managed to ensure their long-term retention.</p>	<p>Covered in earlier action on water resource recovery catchments</p>	<p>Ongoing</p>
<p>Additional measures to encourage native vegetation management and to address inequities associated with clearing bans will be addressed through recommendations of the Native Vegetation Working Group in conjunction with the Salinity Strategy.</p>	<p>Council recommends funding of \$3,500,000 over 5 years with \$900,000 in the first year</p>	<p>June 2005</p>
Native revegetation		
<p>The Government through its agencies and with community groups and landholders, will continue to seek up to \$30 million per year from the Natural Heritage Trust and other programs to complement State and private investment in revegetation with deep-rooted perennials.</p>	<p>Existing community and agency programs</p>	<p>Ongoing</p>
<p>Government in consultation with the private sector, the community and regional catchment groups will actively pursue carbon credit and greenhouse emission trading opportunities to further benefit revegetation options.</p>	<p>Existing programs</p>	<p>Ongoing</p>
<p>AGWEST will maintain the Revegetation on Farms project to meet revegetation information needs of agency and community advisers.</p>	<p>\$315,000 per annum and NHT</p>	<p>Ongoing</p>
<p>CALM and AGWEST will complement the high rainfall Farm Forestry Advisory Service by providing an integrated and advisory service on revegetation in medium to low rainfall areas, with an initial focus on centres where CALM and AGWEST have a presence, for example Narrogin, Katanning, Merredin and Moora.</p>	<p>Existing programs</p>	<p>Ongoing</p>
<p>Revegetation technology research and development will be supported, and delivered through partnerships between government, industry and community organisations.</p>	<p>Existing programs</p>	<p>Ongoing</p>
<p>The Salinity Council will investigate a targeted program of research and development including those low rainfall areas where direct seeding presently has poorest results.</p>	<p>Salinity Council operating budget</p>	<p>Ongoing</p>
<p>Further research and development will be undertaken to determine the corridor requirements of different threatened fauna species and the opportunities that exist for the development of corridors with dual roles.</p>	<p>Existing programs</p>	<p>Ongoing</p>
<p>A program for the establishment and management of seed nurseries of suitable local revegetation species will be developed in cooperation with relevant community organisations such as Greening Australia (WA) and local community groups.</p>	<p>Existing programs</p>	<p>Ongoing</p>



Funding

Completed by

Engineering options

Surface water control for recharge management

AGWEST, WRC, DEP and CALM will collaborate to develop and communicate design principles and best environmental practices for surface water management.

Existing activity

Ongoing

AGWEST and WRC will help provide improved methods for planning the safe management of surface and shallow sub-surface waters.

Existing activity

Ongoing

Deep drainage

Best practice drainage package

AGWEST, WRC, DEP and CALM will evaluate the effectiveness of drains, to provide a best practice drainage package to farmers containing information on:

\$90,000 per annum (AGWEST)
\$50,000 per annum (DEP)
\$100,000 per annum (WRC)

Ongoing

- how to calculate components of the salt and water balance in catchments;
- how to evaluate whether there is a need for drainage, including a means of evaluating all water management practices at catchment and property scales and integrating drainage as one of a number of options;
- drainage design, construction and maintenance;
- acceptable methods for the disposal/storage of drainage water;
- acceptability criteria for the receiving environment; and
- training and contractor accreditation.

New drainage regulation

AGWEST, WRC, DEP and CALM in conjunction with the EPA, will develop a new drainage assessment and regulatory process that establishes a more efficient and integrated authorisation process for drainage proposals.

Council recommends funding of \$40,000 in the first year and \$50,000 thereafter for EPA assessment

Ongoing

Memorandum of Understanding

AGWEST, WRC, DEP and CALM will sign a memorandum of understanding (a whole of government agreement), on the development and implementation of this new approach to drainage and its regulation.

Existing activity

December 2000

AGWEST is streamlining the administration of the drainage regulations and will provide initial planning advice and drainage best practice information as part of this.

Existing activity

June 2001

WRC is conducting a review of riparian and water-related legislation.

Existing activity

June 2001

The Soil and Land Conservation Council with AGWEST will review legal and other arrangements relating to water management practices which cross property boundaries, and will recommend options for catchment management.

Existing activity

June 2001

Groundwater pumping is being evaluated at Toolibin Lake and in some rural towns.

Existing programs

Ongoing

AGWEST and WRC are supporting the Gordon River Focus Catchment in an evaluation of relief wells and syphons.

AGWEST and WRC are incorporating into existing programs and seeking NHT funds

December 2001

Tools to manage salinity (Section 5, Strategy)

	Funding	Completed by
<p>Social impact management</p> <p>AGWEST, through Farmbis, will provide grants to assist landholders, including those in focus and recovery catchment groups, to improve business skills, risk management, strategic planning and information management; contribute towards the cost of attending business management training courses and for professional preparation of farm business plans.</p>	Existing programs	Ongoing
<p>AGWEST, CALM, WRC and DEP and committed community groups will continue to promote the landcare ethic and sustainability of agricultural land through educational material available to schools and communications strategies.</p>	Existing programs and research organisations	Ongoing
<p>AGWEST will coordinate agencies and other groups in undertaking research and development on understanding the type of support required by landholders for improved decision making and adoption of salinity management options.</p>	Existing programs	Ongoing
<p>AGWEST through Better Business will deliver strategic whole-farm planning and other related training to farmer groups.</p>	Existing programs	Ongoing
<p>The Salinity Council will commission studies to determine the social impacts of salinity and provide support and resources for existing social services to deliver appropriate financial, personal and family counselling.</p>	Council recommends funding of \$160,000 in 2000/01 and \$80,000 for 4 years thereafter	June 2005



Funding

Completed by

State Salinity Council

The State Salinity Council will receive government funding support and will make arrangements with the agencies for secretarial and executive support.

Council recommends funding of \$370,000 in the first year and \$350,000 thereafter

Ongoing

Council recommends funding of \$60,000 per annum for development of a communication strategy and implementation of communication activities

Ongoing

Regional catchment groups and the Salinity Council will continue to investigate and develop ways to implement the Salinity Strategy effectively within the regional natural resource management framework at the catchment level.

Existing programs

Ongoing

Community and government partnerships

Government agencies with the coordinating role on each type of priority catchment (AGWEST for focus catchments and rural infrastructure recovery catchments, WRC for water resource recovery catchments and CALM for natural diversity recovery catchments) will continue to work cooperatively with the community and other agencies to develop and implement criteria for selecting priority catchments.

Existing programs

Ongoing

DEP and the EPA will work with the coordinating agencies and the community to develop broad environmental objectives for priority catchments, as well as criteria for monitoring and evaluating progress.

\$50,000 per annum (DEP) plus existing programs

Ongoing

A memorandum of understanding will be developed between AGWEST, CALM, WRC and DEP for the delivery of services to priority catchments.

Existing programs

Ongoing

The Government will recognise regional natural resource management groups. Partnership agreements that clearly set out the roles and responsibilities of all parties to the agreement will be established between the regional groups and government agencies.

Existing programs

Ongoing

Options for cost sharing

The State Government will continue to consult regularly with the Commonwealth Government and peak councils in Western Australia to achieve effective delivery systems for State and Commonwealth programs.

Existing programs

Ongoing

A coordinating agency will be identified and widely known for each priority catchment and will facilitate the development of integrated salinity management projects, and joint investment by external funding.

Existing programs

Ongoing

There will be an agreed level of investment and government support for each focus and recovery catchment.

Existing programs

Ongoing

The Government will continue to support the Commonwealth in making Income Equalisation Deposits and Farm Management Bonds more attractive and better used.

Ongoing

The Government will continue to support the tax rebate concept and endeavour to have the present rate of 34 cents increased to nearer the company tax rate.

Ongoing

Community action to address salinity (Section 6, Strategy)

	Funding	Completed by
Public contributions		
Public contributions to salinity through a voluntary levy, to be held by the Western Australian Landcare Trust and administered jointly by the Trust and Salinity Council, will be investigated. The allocation of all funds collected through voluntary contributions will be reported publicly on an annual basis.	Existing programs	June 2001
The State Government will establish a significant ongoing funding source for implementation activities aimed at combating or adapting to salinity.	Council recommends funding starting at \$2,000,000 in 2000/01 and increasing up to \$19,190,000 in 2004/05	Ongoing
A marketing strategy will be developed to raise the urban community's awareness of and participation in the Salinity Strategy.	Salinity Council operating budget and existing agency programs	Ongoing
Landholder contributions		
The Soil and Land Conservation Council will investigate the option of differential levies on landholders and, where appropriate, will promote and encourage their adoption.	Existing programs	December 2001
A support scheme will be developed and implemented by the State Government to help landholders in: <ul style="list-style-type: none"> • developing innovative land/water use systems; • community capacity building; and • planning and implementing catchment management projects. 	Covered in earlier action under public contributions	December 2000
The Salinity Council will work with the Western Australian Planning Commission and regional groups in order to optimise the potential of market-based land trading solutions.	Existing programs	Ongoing
Knowledge building		
A collaborative project between the CSIRO and AGWEST will prepare information in useful and readily accessible forms and ensure the coordination and quality of information from State Government sources. Landholders will be able to access information on best management practices through new communication technologies such as AgFax and REX, through regional information networks such as the Avon Catchment Network and Landcare Vision, and through access to technical expertise. Landholders will be able to store and retrieve salinity data using Combos.	\$160,000 per annum (AGWEST)	Ongoing
AGWEST will carry out a detailed assessment of groundwater trends in areas where components of high water use systems have been implemented.	Existing programs	Ongoing
WRC will continue the groundwater salinity investigative program and extension efforts with farmer and catchment groups.	\$450,000 per annum	Ongoing
As part of a National Land and Water Resources Audit case study, AGWEST and other agencies will continue to evaluate a number of scenarios to address salinity in the Great Southern. Data on salinity extent from the Land Monitor project and groundwater rises will be used to estimate future extent.	\$95,000 per annum including funds from the NLWR Audit	April 2000
Joint extension activities between AGWEST, CALM and WRC will promote consistent messages to landholders on salinity issues.	Existing programs	Ongoing



Funding

Completed by

In support of the Salinity Strategy, Land Monitor will provide for the agricultural area of Western Australia, the following products:

- Digital Elevation Models capable of generating maps showing accurate two-metre contours, water flow models, slope and aspect for individual farms and whole catchments;
- orthophotos (digitally corrected air photographs at a range of scales from 1:5,000 to 1:25,000) which can be overlaid with two-metre contours;
- maps showing the current extent of salinity, its encroachment during the past decade, and areas at risk of becoming saline over the next 20 years if ameliorative actions are not taken; and
- maps showing the changes to the extent and condition of remnant native vegetation and the rate of establishment of deep-rooted perennial vegetation.

\$4,000,000 from State Government agencies and CSIRO over the 3-year life of the project –
 \$1,500,000 (DOLA)
 \$1,200,000 (CSIRO)
 \$1,100,000 (AGWEST – redistributed funds)
 \$80,000 (CALM – redistributed funds)
 \$50,000 (WRC)
 \$50,000 (DEP) and \$3,900,000 from NHT

December 2000

Universities, CSIRO and State Government agencies will seek funds from the National Dryland Salinity Program to develop efficient ways of using Land Monitor data, as well as groundwater data and trend analysis and airborne geophysics data to help farm and catchment planning.

Existing programs

Ongoing

An inter-agency working group will work with educational institutions to produce a register of existing training programs available in Western Australia suitable for agency advisers, other professional landcare personnel, bushcare workers, advisers from agricultural service organisations and the community, including LCDCs and catchment networks.

Existing programs

June 2002

The State Salinity Council will work to develop the concept of peer advice and investigate the development of a Master Land and Water Managers course.

Salinity Council operating budget and capacity building program

2002

A memorandum of understanding on training will be developed between natural resource management agencies and Greening Australia WA (because it employs Bushcare workers). This will identify shared objectives and working relationships with respect to coordination and delivery of staff training requirements.

Existing programs

2002

Agencies and committed community groups will continue to promote the landcare ethic and sustainability of agricultural land through educational material available to schools and communications strategies.

Existing programs

Ongoing

AGWEST will coordinate agencies and other groups in undertaking research and development on understanding the type of support required by landholders for improved decision making and adoption of salinity management options.

Existing programs

Ongoing

AGWEST will provide advice and training on the use of Combosres and in the analysis of bore data.

Existing activity

Ongoing

The Salinity Council will approach TAFE to coordinate, co-develop and implement technical courses for community landcare technicians.

Salinity Council operating budget and capacity building program

2003

AGWEST will conduct courses on Salinity as a Landscape Problem throughout the agricultural area.

Existing activity

Ongoing

The Salinity Council will initiate a feasibility study, and subsequent development if appropriate, of a Land and Water Managers course.

Salinity Council operating budget

2003

Leadership development

The Rural Leadership Programs initiated by the Minister for Primary Industry will continue to develop leadership skills in the community.

Existing activity

Ongoing

Monitoring and evaluation (Section 7, Strategy)

	Funding	Completed by
DEP will provide technical and administrative support to the monitoring and evaluation sub-committee of the State Salinity Council in developing a framework for monitoring and evaluating the Salinity Strategy, coordinated and integrated with Western Australia's State of the Environment reporting, the National Land and Water Resources Audit and Natural Heritage Trust monitoring and evaluation.	Existing programs and NHT	Ongoing
	Council recommends additional funding of \$410,000 per annum to implement the monitoring and evaluation framework (\$110,000 to DEP and \$100,000 each to AGWEST, WRC and CALM)	Ongoing
The Government will:		
<ul style="list-style-type: none"> support the Land Monitor Project which will refine techniques for monitoring the extent and degree of salinisation and the condition of remnant native vegetation in the agricultural areas of the State, using Landsat TM imagery, soil survey data and field-work; 	\$65,000 per annum (AGWEST)	December 2000
<ul style="list-style-type: none"> through AGWEST and supported by WRC and CALM, maintain long-term groundwater monitoring stations to document trends in groundwater levels throughout the region; 	Existing programs	Ongoing
<ul style="list-style-type: none"> through AGWEST, further develop and maintain the database (Agbores) to coordinate the long-term monitoring of groundwater bores; 	\$100,000 per annum (AGWEST) and NLWRA	Ongoing
<ul style="list-style-type: none"> through AGWEST, provide the community with a database to manage and analyse data from its own long-term monitoring bores (Combores); 	Covered in above	Ongoing
<ul style="list-style-type: none"> liaise through AGWEST with agricultural communities over the security and ownership of collected groundwater data (for example from Combores); 	Covered in above	Ongoing
<ul style="list-style-type: none"> establish an electronic interface between WRC's Aqwabase and Agbores. 	Covered in above	Ongoing
WRC will:		
<ul style="list-style-type: none"> maintain, and where necessary upgrade, its stream gauging and salinity monitoring program to ensure that long-term trends can be reliably determined; and 	\$250,000 per annum	Ongoing
<ul style="list-style-type: none"> evaluate the results of its stream gauging and salinity monitoring program, and regularly report on the effectiveness of actions to prevent further stream salinity deterioration and to lower salinity levels in recovery catchments. 	Covered in above	Ongoing
CALM will monitor a sample of wetlands, and their associated flora and fauna, throughout the south-west to determine long-term trends in natural diversity and provide a sound basis for corrective action.	\$250,000 per annum	Ongoing
The monitoring and evaluation sub-committee of the Salinity Council will produce a Monitoring and Evaluation Work Plan.	Existing agency programs and Salinity Council operating budget	December 2000
The State Government will continue to support projects such as Land Monitor, Saltwatch and Ribbons of Blue.	Existing programs	Ongoing
Salinity Council and government agency support for farm monitoring tools, such as those developed by the Land Management Society, will be maintained.	Existing programs	Ongoing

