

State of the  
**Environment**  
Reporting Series

Technical Paper No. 1

**Review of Government's Response to the 1998 State of the  
Environment Report**



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**Report prepared by the Department of Environment on behalf of participating  
Government Agencies for the Minister for the Environment and Heritage**



**March 2003**

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# SUMMARY OVERVIEW

## Purpose

In July 2002, the Minister for the Environment and Heritage asked the Environmental Protection Authority (EPA) to undertake preparatory work prior to formally commencing the next State of the Environment (SOE) reporting cycle. As part of this request, the Minister identified a number of priority action items to be initiated in 2002. This Report addresses one of those items:

*“reviewing the implementation of the previous Government’s ‘Environmental Action’ document.”*

This document has been coordinated by the Department of Environment, Water and Catchment Protection (DEWCP) and provided to the Environmental Protection Authority (EPA) to meet that request.

## Background

In 1998, the Western Australian State Government released its second SOE Report based on a modified version of the Organization for Economic Co-operation and Development’s (OECD) pressure-state-response model. One of the major improvements of this modified model was that it provided direction for environmental action planning for each of the key environmental issues addressed.

The SOE Reporting program was transformed into an environmental policy planning process across the State Government of Western Australia. A framework was developed that effectively merged the pressure-state-response model with an adaptive management and strategic planning model. Initially, environmental issues of state-wide importance were identified and prioritized through the SoE reporting process. Recommendations were then proposed for each issue to stimulate the policy planning process within the Government natural resource management sector.

To address these recommendations Government (representatives from 22 Government agencies) produced Western Australia’s first environmental policy plan titled *Environmental Action: Government’s Response to the State of the Environment Report*. This environmental action plan contains over 180 actions across Government on the 22 priority environmental issues identified in the 1998 State of the Environment Report.

This report identifies those actions that have been implemented, or are on their way towards being implemented, since the release of *Environmental Action*. No attempt has been made to analyse the environmental outcomes of actions/programs, or to determine their effectiveness, as this will be addressed in Western Australia’s next SOER.

## About This Report

This review was compiled by DEWCP from input from state agencies and has been signed-off by the relevant Directors’ General. It is therefore a Government document.

This review follows the format of *Environmental Action*, providing a description of each action by Government. Each action is linked to a Suggested Response<sup>1</sup> from the 1998

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<sup>1</sup> Suggested Responses are specific recommendations made on actions required for each issue described in the 1998 State of the Environment Report. Regional Focus Groups, the community through public submissions and the SOE Reference Group were key contributors in suggesting these responses.

State of the Environment Report. This approach will enable the reader to link this review document with both *Environmental Action* and the *1998 State of the Environment Report*. Accordingly, this review should be read in conjunction with both of these other documents.

Each agency provided information on their respective contribution(s) to the implementation of each action (where relevant). Within this report, this information has been summarized for each action under the heading *Supporting Activity* (see Box 1).

In many instances, several agencies have made an independent contribution to the implementation of a single action. As such and where relevant, every attempt has been made to recognize each of the separate supporting activities for each action.

The overall progress rating for each action is represented by a bar graph, ranging in degrees of completeness from not initiated through to complete (see below). The status of each action was based on information provided by agencies. An interpretation of overall progress was made according to the contribution of each supporting activity to an action, and its progress.

### Overall Progress Rating Format

Not Initiated	Initiated	Developing	Late Stages	Complete
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**Not Initiated:** No activity has occurred to address the action.

**Initiated:** Initial preparatory activity is underway. This might be background research, a project proposal has been developed, or the coordination of action groups/committees has occurred.

**Developing:** The activity to address the action is underway. For a policy, this might be the development of a draft, or for a research project, sampling might be occurring.

**Late Stages:** The action has almost been addressed. For example, the final draft of a policy might be complete, changes to an act might be in the Upper House of Parliament, or 8 out of 10 recommendations to address an action have been met.

**Complete:** The action has been fully met or implemented. For example, a regulation or act would be gazetted, a ongoing program or policy would be fully implemented; or the findings of a research project would be available.

## Format

**Suggested Response:** Recommendations on actions required for each environmental issue. The Suggested Response links back to the State of the Environment Report.

**Action X :** Specific action based on the Suggested Response, committed to by Government, to address issues discussed in the 1998 State of the Environment Report.

**Overall Progress**    **Not Initiated**    **Initiated**    **Developing**    **Late Stages**    **Complete**

Overall progress rating, derived from the level of contribution and progress of each supporting activity towards completing or implementing the action.

**Supporting Activity:** Activity undertaken by a single agency, or a collection of agencies, to address the Action. There may be a number of separate supporting activities to address a single action.

**Progress:** The status of the supporting activity, using the same rating system that defines overall progress (i.e. Not Initiated, Initiated, Developing, Late Stages, Complete).

**Nature of Activity:** The type of activity. This may be a project, policy, ongoing program, regulation, etc.

**Program Name:** Agency name for the activity, if relevant.

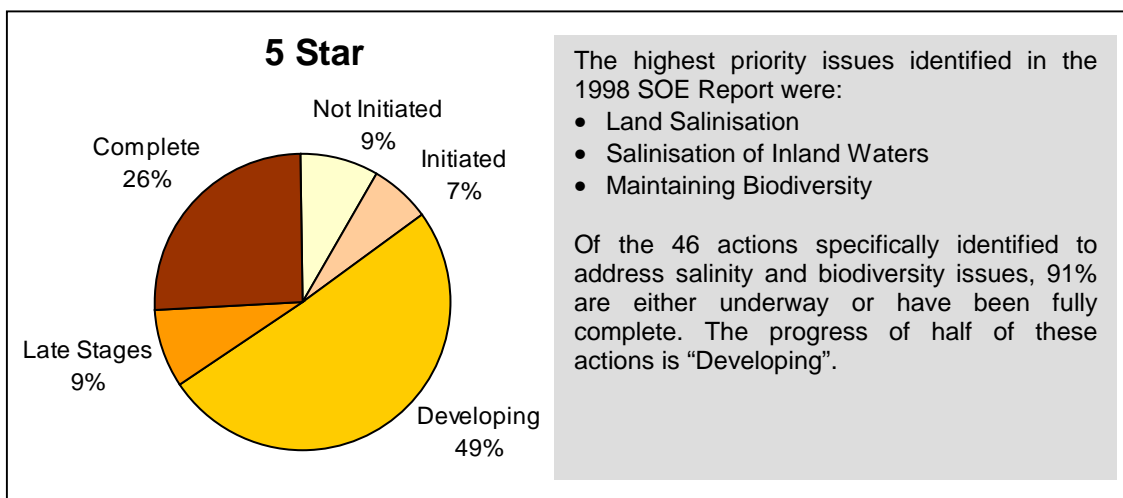
**Explanation:** Qualifying statement or information to justify the progress of the supporting activity.

**Responsible Agency:** Lead agency and other agencies responsible for the supporting activity. Where activity to address an action has not been initiated, the responsible agency has still been provided.

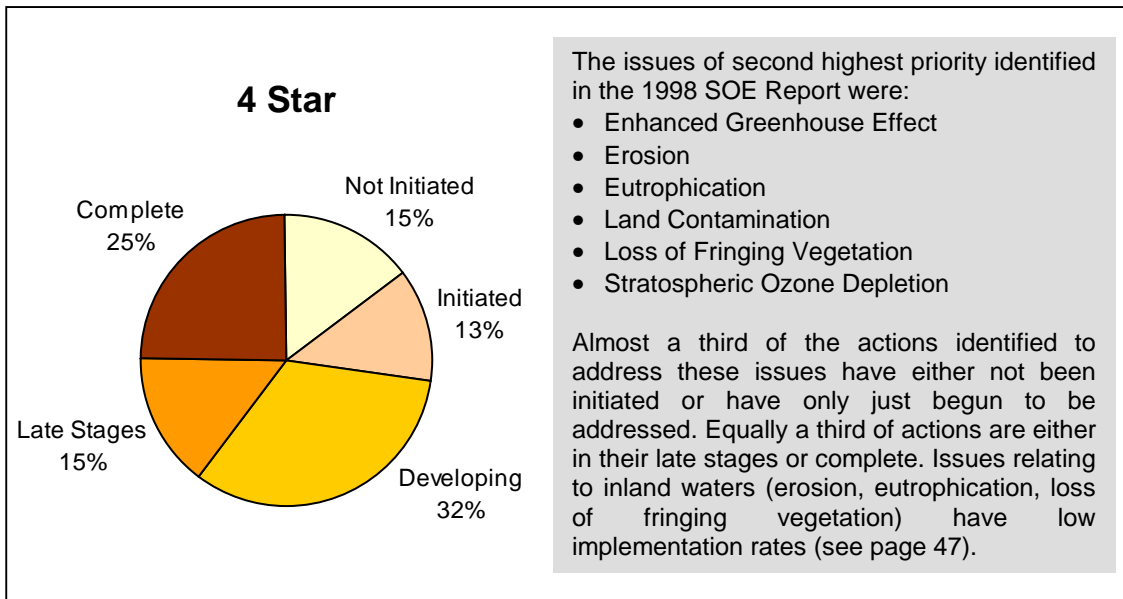
**Box 1.** Example demonstrating the process for gauging the overall progress of an Action.

## Review Findings

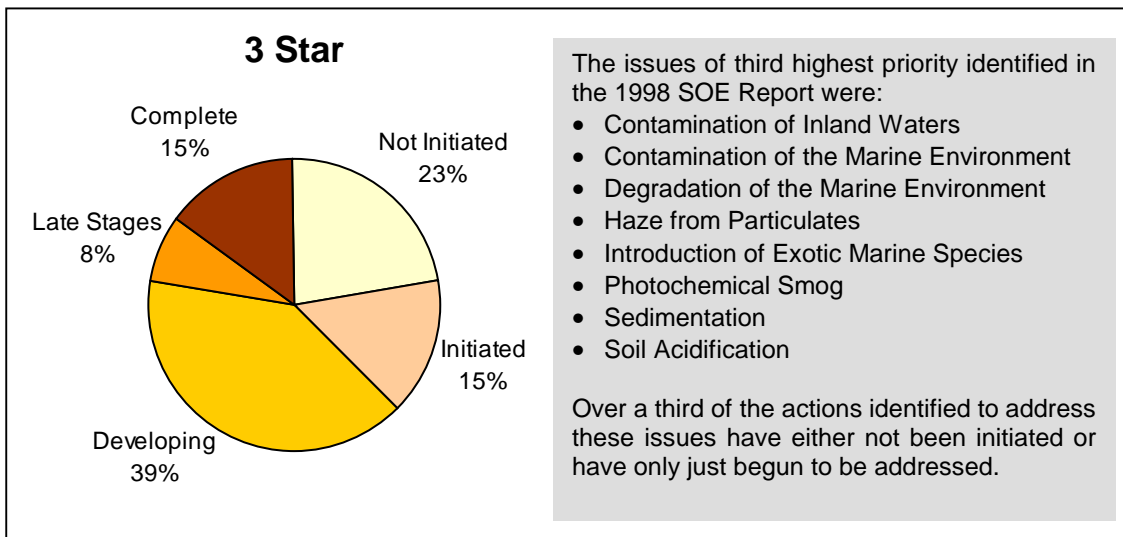
The 1998 SOE Report offered a status rating of one to five for each environmental issue discussed in the report. A rating of five indicated the highest priority for government to address (on a state scale). The following summary pie charts indicate the overall progress rating of actions to date. These have been summarized according to the level of priority assigned to the issue they are addressing in the SOE Report. (Figures 1 to 6).



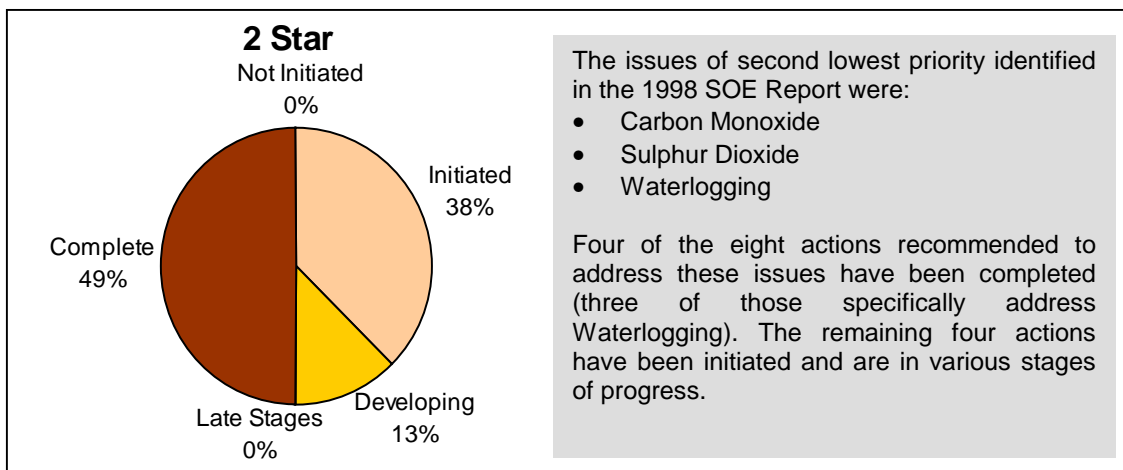
**Figure 1** Overall progress of actions addressing five star issues identified in the 1998 SOE Report.



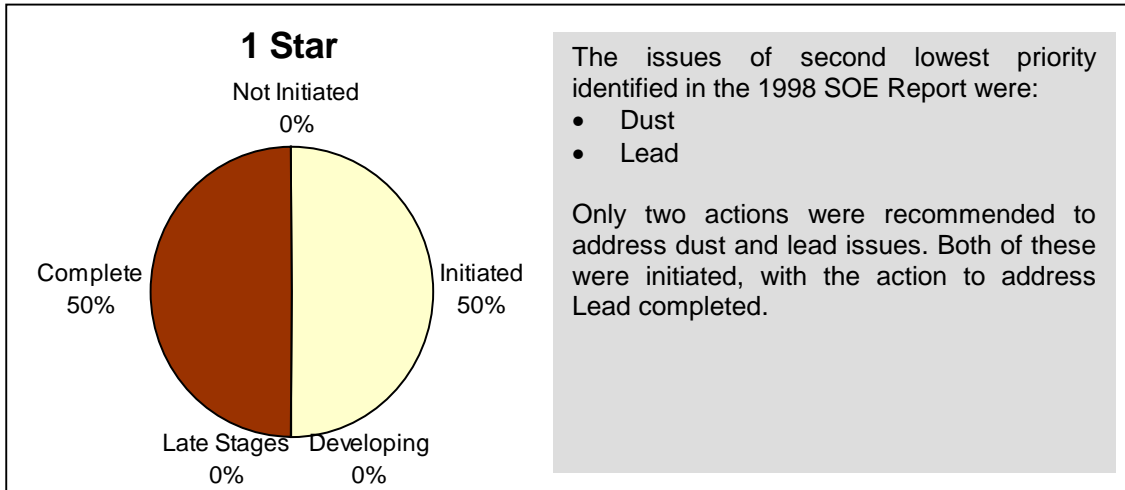
**Figure 2** Overall progress of actions addressing four star issues identified in the 1998 SOE Report.



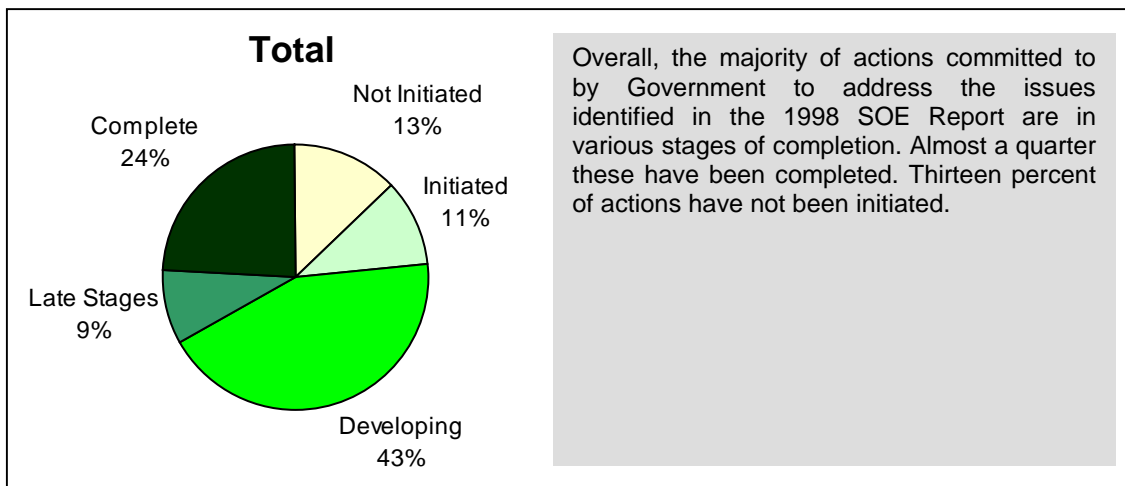
**Figure 3** Overall progress of actions addressing three star issues identified in the 1998 SOE Report.



**Figure 4** Overall progress of actions addressing two star issues identified in the 1998 SOE Report.



**Figure 5** Overall progress of actions addressing two star issues identified in the 1998 SOE Report.

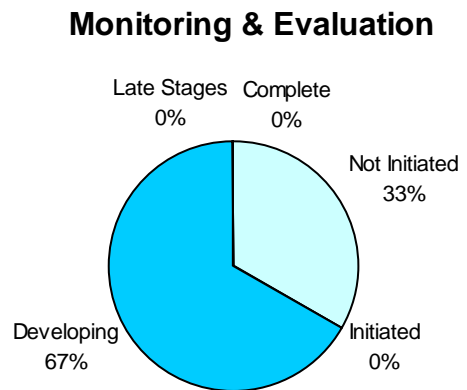


**Figure 6** Overall progress of all actions listed in *Environmental Action*.

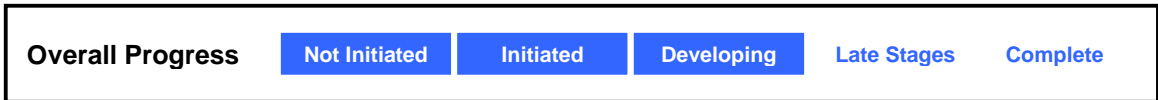
# ENVIRONMENTAL MONITORING & REPORTING IN WESTERN AUSTRALIA

There is a need for relevant State Government agencies to develop an Environmental Monitoring and Reporting Program for Western Australia which will ensure that the State of the Environment Reporting Framework is implemented. The recommended actions in this section were to help form the basis of this program (see below).

The pie chart to the right shows the proportion of actions classified according to progress, recommended to initiate an Environmental Monitoring and Reporting program for the State.



**Action 1.** Develop an inventory of and report on government, industry and community environmental monitoring programs as at 31 December 1999 using recent inventories as a basis where possible.



**Supporting Activity 1.**

**Progress:** Developing  
**Nature of Activity:** Ongoing Program  
**Program Name:** On-line NRM Monitoring Node  
**Explanation:** Online Input tool and inventory for storing information (metadata) on NRM Monitoring programs has been developed. This inventory will be progressively compiled with the next cycle of State of the Environment Reporting.  
**Responsible Agency:** DEWCP

**Supporting Activity 2.**

**Progress:** Complete  
**Nature of Activity:** Ongoing Program  
**Program Name:** National Pollutant Inventory  
**Explanation:** Year 4 data on website in January 2003  
**Responsible Agency:** DEWCP

**Action 2.** Develop and implement protocol agreements for indicators in Western Australia's State of the Environment report.



**Supporting Activity 1.**

**Progress:** Developing  
**Nature of Activity:** Project  
**Program Name:** Environmental Monitoring Protocols  
**Explanation:** A number of monitoring protocols were developed (Salinity, Fringing Vegetation, Rainfall, Temperature, Vegetation, Salinity of Inland Waters). Agencies are yet to endorse.  
**Responsible Agency:** DEWCP

**Action 3.** Based on the findings of the inventory report, develop monitoring programs to fill omissions in the Environmental Monitoring and Reporting Program. Implement arrangements for co-ordination and sharing of environmental data in the context of indicator frameworks and in priority order as outlined in the SOER.

<b>Overall Progress</b>	<b>Not Initiated</b>	<b>Initiated</b>	<b>Developing</b>	<b>Late Stages</b>	<b>Complete</b>
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**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Project

**Program Name:**

**Explanation:**

**Responsible Agency:** DEWCP

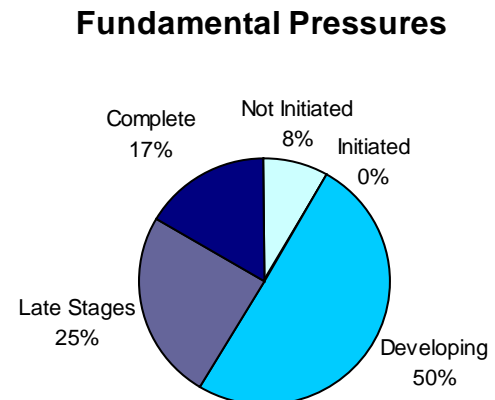
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# FUNDAMENTAL PRESSURES

## Population and the Environment

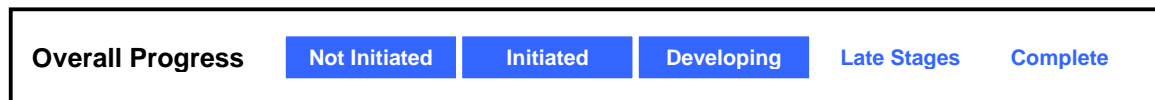
The two fundamental pressures that are addressed in this section are Population and the Environment and Consumption and the Environment. These pressures are usually the basis for many other environmental issues.

The pie chart to the right shows the proportion of actions classified according to progress, recommended to address population and consumption issues identified in the 1998 State of the Environment Report.



**Suggested Response 1.** The Western Australia Government should develop an ecologically sustainable Population and Consumption Strategy for Western Australia. This should outline plans for incorporating environmental and social costs into decision-making, and eventually into pricing mechanisms.

**Action 1.1** Develop ecologically sustainable growth strategies for WA consistent with the principles of the National Strategy for Ecologically Sustainable Development.



**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Ongoing Program

**Program Name:** State Sustainability Strategy

**Explanation:** This strategy is the overarching strategy encompassing many of the sustainability activities that are occurring within Government in Western Australia. Its scope is much wider than what Action 1.1 proposes.

**Responsible Agency:** DPC Lead

**Supporting Activity 2.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

**Program Name:** State Planning Strategy

**Explanation:** Overarching strategy and policy for regional planning. Based on sustainable development principles.

**Responsible Agency:** DPI

**Supporting Activity 3.**

**Progress:** Complete

**Nature of Activity:** Policy

**Program Name:** Environment and Natural Resources Statement of Planning Policy

**Explanation:** Policy to provide direction to the WAPC and local government in the protection and management of natural resources through the planning process.

**Responsible Agency:** DPI

**Supporting Activity 4.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Program Name:** Drought Management Strategy.

**Explanation:** Summer demand management program achieved savings of 45 gigalitres on expected, unrestricted demand. A similar program will be in place for summer 2002/03.

**Responsible Agency:** WC, WRC

Note: The Water Corporation has several other programs in place that address this action including: Water-wise Schools Program, Daytime Sprinkler Ban, Domestic Water Use Study, Domestic Appliance Water Efficiency Ratings, Water-wise Gardens Program and Tiered Water Pricing.

**Supporting Activity 5.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Program Name:** Energy Smart Home and Community; Energy Smart Business; Energy Smart Government; Solar Water Heating Subsidy; Other funding programs

**Explanation:** Provide information brochures, telephone advice, seminars, etc, on sustainable energy topics (renewable energy, energy efficiency, low greenhouse emissions)

**Responsible Agency:** SEDO & Others

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**Suggested Response 2.** At present, housing continues to be constructed in a manner that encourages high resource use patterns. A set of building standards should be implemented progressively to meet world's best environmental practice in housing design and construction.

**Action 2.1** Implement the Liveable Neighbourhoods Policy.

**Overall Progress**   **Not Initiated**   **Initiated**   **Developing**   **Late Stages**   **Complete**

**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

**Program Name:** Liveable Neighbourhoods Policy Review

**Explanation:** Policy is being used on a trial basis subject to finalisation of the review

**Responsible Agency:** DPI

**Supporting Activity 2.**

**Progress:** Developing

**Nature of Activity:** Project

**Program Name:** FirstRate Home Energy Rating software

**Explanation:** SEDO is implementing FirstRate software in WA with training, etc. NatHERS software is also supported, but not actively promoted.

**Responsible Agency:** SEDO

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**Suggested Response 3.** An analysis of the environmental and social costs of development options should be incorporated into decision-making to ensure that economic development maximises the benefits to Western Australians.

**Action 3.1** Implement the State Planning Strategy project assessment framework.

**Overall Progress**   **Not Initiated**   **Initiated**   **Developing**   **Late Stages**   **Complete**

**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

**Program Name:** Liveable Neighbourhoods Policy Review

**Explanation:** Policy is being used on a trial basis subject to finalisation of the review

**Responsible Agency:** DPI

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## Consumption and the Environment

**Suggested Response 4.** Local government authorities should develop local Agenda 21s to serve as frameworks for ecologically sustainable development.

**Action 4.1** Support the development of a strategy to increase the development of Local Agenda 21s in Western Australia.

Overall Progress   **Not Initiated**   **Initiated**   Developing   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Program Name:** Energy Smart Home and Community; Energy Smart Business; Energy Smart Government; Solar Water Heating Subsidy; Other funding programs

**Explanation:** This is only a supporting activity to the response in general terms. SEDO supports local government initiatives as much as possible by providing resources on sustainable energy topics.

**Responsible Agency:** SEDO & Others

**Suggested Response 5.** Develop and implement a State waste management strategy and associated programs.

**Action 5.1** Develop a Western Australian Waste Management Strategy.

Overall Progress   **Not Initiated**   **Initiated**   **Developing**   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Program Name:** Western Australian Waste Management Strategy

**Explanation:** Waste Management Board established by Government early 2002. Board is currently overseeing development of WA Waste Management Strategy

**Responsible Agency:** DEWCP

**Action 5.2** Develop and maintain a waste and recycling database.

Overall Progress   **Not Initiated**   **Initiated**   **Developing**   **Late Stages**   **Complete**

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Program Name:** DEP Solid Waste Database - Resource Recovery Rebate Scheme.

Recycling database with data from Perth Material Recovery Facilities (MRFs)

**Explanation:** The reporting of waste data is a condition of licence for all landfill sites and MRFs in the Perth Metropolitan Region. Landfill operators are required to quantify and categorise waste prior to disposal according to the National Waste Classification System.

**Responsible Agency:** DEWCP

**Suggested Response 6.** Develop and implement a State waste reduction and recycling strategy and associated programs.

**Action 6.1** Develop a State Waste Reduction and Recycling Policy.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Program Name:** - Western Australian Waste Management Strategy

**Explanation:** Draft Policy published 1997 - Now subsumed in forthcoming WA Waste Management Strategy (5.1 above).

**Responsible Agency:** DEWCP

**Action 6.2** Establish and implement waste reduction and recycling programs in accordance with State Waste Reduction and Recycling Policy and the principles, guidelines and objectives of the State Waste Management and Recycling Fund.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Program Name:** Western Australian Waste Management Strategy

**Explanation:** Funded programs commenced July 1998. Rebate scheme for local governments and grants for 298 waste reduction and recycling projects. Statutory review underway. Future programs will be in accordance with WA Waste Management Strategy (5.1).

**Responsible Agency:** DEWCP

**Suggested Response 7.** Develop and implement a State cleaner production strategy and associated programs.

**Action 7.1** Develop a State Cleaner Production Policy.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Project

**Program Name:** Cleaner Production Statement.

**Explanation:** This activity supports this action in part only. A number of agencies have become signatories to the WA Sustainable Industry Group's Cleaner Production Statement to emphasise their commitment to cleaner production and waste reduction. This has been subsumed by the State Sustainability Strategy. The following Agencies have submitted their action plans: DEWCP, DCLM, Dept of Education, Sport & Recreation, Dept of Training, WC

**Responsible Agency:** No Lead. WC, DEWCP, SEDO, WC, DCLM, others.

**Action 7.2** Develop a cleaner production database and baseline.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Project

**Program Name:** Western Australian Sustainable Industry Group (WASIG)

**Explanation:** Case studies in development. Refer to WASIG website.

**Responsible Agency:** WA SIG (Steering Committee includes representatives from DEWCP, SEDO, Western Power, industry and Local Government)

**Suggested Response 8.** Develop and implement a State resource conservation strategy and associated programs aimed at reducing consumption and the environmental impacts of necessary consumption. A public education program should be developed to encourage resource conservation.

**Action 8.1** Continue current efforts towards resource conservation.

**Overall Progress**   **Not Initiated**   **Initiated**   **Developing**   **Late Stages**   **Complete**

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Program Name:** State Planning Strategy

**Explanation:** These include Liveable Neighbourhoods and Statements of Planning Policy for Environment and Natural Resources and public drinking water

**Responsible Agency:** DPI

**Supporting Activity 2.**

**Progress:** Late Stages

**Nature of Activity:** Project

**Program Name:** Metropolitan Transport Strategy - Travelsmart

**Explanation:**

**Responsible Agency:** DPI

**Supporting Activity 3.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Program Name:** - Energy Smart Home and Community; Energy Smart Business; Energy Smart Government, various funding programs

**Explanation:** - SEDO provides information, advice and some funding to assist in energy resource conservation. SEDO also participates in the Greenhouse Task Force.

**Responsible Agency:** SEDO

**Supporting Activity 4.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Program Name:** - Eco-Office Program

**Explanation:** Sustainability Action Plans will be developed and implemented within all sectors to ensure sustainability in planning, decision-making, everyday activities and reporting.

**Responsible Agency:** DEWCP

**Suggested Response 9.** Based on the ecological footprint model, develop a procedure that can be used in development planning and decision-making to compare the ecological efficiency of options. This could be used as a precursor to incorporating the environment costs of consumption into pricing.

**Action 9.1** Conduct research into models to evaluate the sustainability of projects.

**Overall Progress**   **Not Initiated**   **Initiated**   **Developing**   **Late Stages**   **Complete**

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Project

**Project Name:** Ecological Footprint Analysis

**Explanation:** Methodology coupling input-output tables with Ecological Footprint analysis has been developed. Currently effectiveness testing is occurring at the Agency level.  
**Responsible Agency:** DEWCP

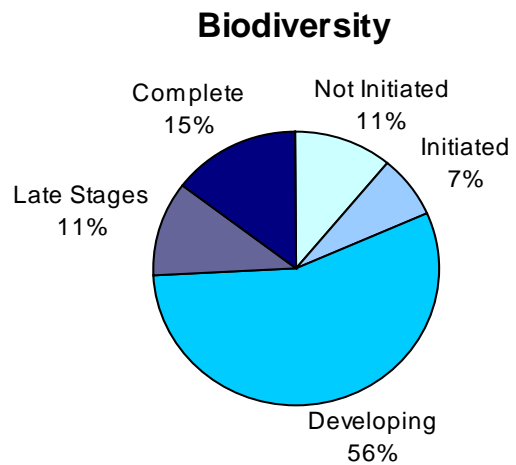
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# BIODIVERSITY

## Maintaining Biodiversity

Biodiversity is essential to human well-being in many ways. It underpins the economy and ecological processes that are vital to human health and survival and the continued evolution of life on earth. Many of the issues discussed in the 1998 State of the Environment Report affect biodiversity in some way.

The pie chart to the right shows the proportion of actions classified according to progress, recommended to address biodiversity issues identified in the 1998 State of the Environment Report.



**Suggested Response 10.** Implement The National Strategy for the Conservation of Australia's Biological Diversity and develop and implement a complementary strategy for Western Australia.

### Action 10.1 Implement the National Strategy.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

#### Supporting Activity 1.

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Program Name:** Biodiversity Conservation Strategy; programs for biodiversity inventory and conservation assessment; establishment and maintenance of a comprehensive, adequate and representative terrestrial and marine conservation reserve system; off-reserve nature conservation and sustainable use; and recovery of threatened species and ecological communities Statewide.

**Explanation:**

**Responsible Agency:** DCLM

#### Supporting Activity 2.

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

**Program Name:** Environment and Natural Resources Statement of Planning Policy

**Explanation:**

**Responsible Agency:** DPI

#### Supporting Activity 3.

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Program Name:**

**Explanation:** Restoration and conservation of urban bushland in Kings Park and Bold Park. Germplasm collection & storage of WA flora. Conservation genetics for target species.

Plant propagation for translocation & reintroduction programs for DRF.

**Responsible Agency:** BGPA

#### Supporting Activity 4.

**Progress:** Complete

**Nature of Activity:** Project

**Program Name:**

**Explanation:** Positions Statement 2 *Environmental Protection of Native Vegetation in Western Australia*; Position Statement 3 *Terrestrial Biological Surveys as an Element of Biodiversity Protection*; Position Statement 4 *Environmental Protection of Wetlands*.

Responsible Agency: EPA

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**Action 10.2** Develop a Western Australian strategy for the conservation of biological diversity.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Program Name:** Biodiversity Conservation Strategy

**Explanation:** A Biodiversity Conservation Act for Western Australia Consultation Paper was released for public comment in December 2002. The Consultation Paper seeks input to the content of the proposed Biodiversity Conservation Act. It is intended that the Act will require that a State Biodiversity Strategy be produced.

**Responsible Agency:** DCLM

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**Action 10.3** Implement the Western Australian strategy for the conservation of biological diversity.



**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Program Name:**

**Explanation:** See 10.2

**Responsible Agency:** DCLM

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**Suggested Response 11.** Inadequacies in the terrestrial and marine conservation reserve system need to be addressed, along with better management of conservation and biodiversity both inside and outside reserves. Important vegetation communities and habitats (land, marine and freshwater) need to be identified and protective measures put in place.

**Action 11.1** Identify inadequacies in the extent to which the existing conservation reserve system and complementary off-reserve measures are conserving Western Australia's biodiversity.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Ongoing via research and survey of both marine and terrestrial environments, and specific projects (e.g. Gascoyne-Murchison Strategy, Perth Bushplan, Bioregion Biological Survey).

**Responsible Agency:** DCLM

**Supporting Activity 2.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

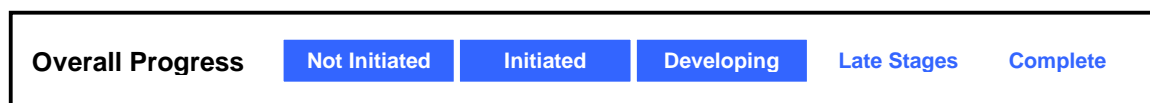
**Project Name:**

**Explanation:** Flora surveys & annual monitoring within Kings Park bushland and Bold Park.

**Responsible Agency:** BGPA

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**Action 11.2** Establish a comprehensive, adequate and representative terrestrial conservation reserve system.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing program

**Project Name:**

**Explanation:** Ongoing (the area of terrestrial conservation reserves, including leasehold property purchased for conservation and not yet reserved, managed by DCLM has increased from 18,300,000 ha at 30 June 1999 to over 20, 850,000 ha at 30 June 2002.) The formal conservation reserve system at 30 June 2002 covered 6.6% of WA's terrestrial area, compared with the 15% figure that is increasingly being seen as the benchmark.

**Responsible Agency:** DCLM

**Supporting Activity 2.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** State Planning Strategy

**Explanation:** Funding and acquisition of conservation land for regional parks and Bush Forever sites carried out by WAPC

**Responsible Agency:** DPI, DEWCP, DCLM

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**Action 11. 3** Establish a comprehensive, adequate and representative marine conservation reserve system.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing program

**Project Name:** Establishment of a comprehensive, adequate and representative marine conservation reserve system.

**Explanation:** Establishment of new marine conservation reserves underway – Jurien Marine Park to be established in 2003, followed by Montebello/Barrow Island marine conservation reserve, Dampier Archipelago/Cape Preston marine conservation reserve and extensions to the Rowley Shoals Marine Park. Consultation has commenced for the Geographe Bay Capes/Hardy Inlet marine conservation reserve and areas adjacent to Ningaloo Marine Park.

**Responsible Agency:** DCLM

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**Action 11.4** Manage terrestrial and marine conservation reserves to conserve their biodiversity values.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing program

**Project Name:**

**Explanation:** DCLM has ongoing management responsibility for over 24 million hectares of lands and waters. At 30 June 2002 46 management plans were in place covering over 3.3 million hectares and a further 33 plans were in preparation.

**Responsible Agency:** DCLM

**Supporting Activity 2.**

**Progress:** Complete

**Nature of Activity:** Ongoing program

**Project Name:** Kings Park Bushland Management Plan 1995-2005; Bold Park Environmental Management Plan 2000-2005.  
**Explanation:** Ecological restoration & conservation of A Class reserves.  
**Responsible Agency:** BGPA

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**Action 11.5** Improve conservation of biodiversity outside conservation reserves, both terrestrial and marine.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing program

**Project Name:** Land for Wildlife; Nature Conservation Covenants; Memoranda of Understanding, Agreements under section 16 of the Conservation and Land Management Act 1984 and arrangements under the Natural Heritage Trust

**Explanation:** Ongoing via above programs. At 31 December 2002 over 110,000 hectares was managed for conservation under the Land for Wildlife program involving 769 landholders.

**Responsible Agency:** DCLM

**Supporting Activity 2.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing program

**Project Name:** State Planning Strategy.

**Explanation:** Regions Schemes provision of foreshore reserves and regional open space

**Responsible Agency:** DPI

**Supporting Activity 3.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing program

**Project Name:** - Integrated Biodiversity Conservation.

**Explanation:** With industry & community groups on non-reserve land.

**Responsible Agency:** BGPA

---

**Suggested Response 12.** The *Wildlife Conservation Act 1950 (WA)* should be replaced by new legislation incorporating modern biodiversity conservation principles.

**Action 12.1** Develop new legislation for the conservation of biodiversity in Western Australia, in consultation with stakeholders, for introduction to Parliament in 2000.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Regulation

**Project Name:** Biodiversity Conservation Act

**Explanation:** A Biodiversity Conservation Act for Western Australia Consultation Paper was released for public comment in December 2002. The Consultation Paper sought input on the content of the proposed Biodiversity Conservation Act.

**Responsible Agency:** DCLM

---

**Suggested Response 13.** Ensure that land clearing in Western Australia is in line with Australia's commitment to the Kyoto Protocol on greenhouse gas emissions and climate change.

**Action 13.1** Develop (in collaboration with State and Commonwealth Governments) guidelines and policies to give effect to National principles to reverse long-term decline in the quality and extent of native vegetation cover, taking into account greenhouse issues as well as biodiversity, land capability and agricultural sustainability and other sustainability issues.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Greenhouse Task Force

**Explanation:** The Department for Premier & Cabinet participate in the Greenhouse Task Force in developing the WA Greenhouse Strategy. This supporting activity is consistent with the suggested response and only partly addresses action 13.1

**Responsible Agency:** DPC and Others

**Suggested Response 14.** Development and planning should minimise the clearing of native vegetation and encourage the development of corridors of native vegetation.

**Action 14.1** Develop and ensure the application of environmental and planning policies and procedures governing the clearing of native vegetation which specifically require comprehensive consideration of biodiversity implications and minimise the clearing of native vegetation.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Regulation

**Project Name:** Environmental Protection Act Amendments – Part 9

**Explanation:** The EP Act Amendments will help prevent the clearing of native vegetation.

**Responsible Agency:** DEWCP

**Supporting Activity 2.**

**Progress:** Late Stages

**Nature of Activity:** Policy

**Project Name:** Environment and Natural Resources Statement of Planning Policy

**Explanation:** Provides policy framework for the protection of biodiversity through the planning system

**Responsible Agency:** DPI

**Supporting Activity 3.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Water Corporation Biodiversity Conservation and Restoration Programs

**Explanation:** Planning guidelines to minimise damage to native vegetation

**Responsible Agency:** WC

**Action 14.2** Encourage the protection and effective management of remnants along with broader revegetation and development of corridors and networks of native vegetation.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

**Project Name:** Land for Wildlife; Native Vegetation Clearing Control; Nature Conservation Covenants; Urban Bushland Advisory Service.  
**Explanation:**  
**Responsible Agency:** DCLM and other agencies.

---

### Action 14.3 Implement Perth's Bushplan



#### Supporting Activity 1.

**Progress:** Developing  
**Nature of Activity:** Ongoing Program  
**Project Name:** Perth's Bush Forever  
**Explanation:** Bush Forever sites have been established.  
**Responsible Agency:** DEWCP, DPI, DOLA, DCLM and other agencies.

---

**Suggested Response 15.** The interagency Memorandum of Understanding on vegetation clearing should be progressively revised so that, by the year 2000, all proposals to clear native vegetation other than those rejected on existing criteria are assessed on biodiversity criteria.

**Action 15.1** Revise and extend the interagency Memorandum of Understanding on clearing controls to apply state-wide, based on common principles applied with geographically appropriate biodiversity criteria.



#### Supporting Activity 1.

**Progress:** Developing  
**Nature of Activity:** Regulation & Policy  
**Project Name:** Environmental Protection Act (1986) Amendments  
**Explanation:** Amended Bill is currently in Upper House of Parliament. Expected to be passed in first quarter of 2003. Existing MOU that is still operational has been reviewed and will be replaced by the EP Act.  
**Responsible Agency:** DEWCP, DCLM, DoA.

---

**Suggested Response 16.** Local conservation strategies need to be developed and should be based on The National Strategy for the Conservation of Australia's Biological Diversity and on the Western Australian strategy when developed.

**Action 16.1** Fully incorporate biodiversity conservation in statutory and strategic regional planning and in evolving regional strategies for natural resource management in Western Australia.



#### Supporting Activity 1.

**Progress:** Complete  
**Nature of Activity:** Policy  
**Program Name:** Environment and Natural Resources Statement of Planning Policy  
**Explanation:** Policy to provide direction to the WAPC and local government in the protection and management of natural resources through the planning process.  
**Responsible Agency:** DPI

#### Supporting Activity 2.

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation** In hand via regional natural resource management groups and local government.

**Responsible Agency:** DCLM, DEWCP, DoA and other agencies.

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**Action 16.2** Support localised conservation strategies (for example, Local Government Authorities) where the need and demand exist.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** DPI - Bush Forever

**Explanation:** This activity supports this action in part only. Bush Forever provides support for the formulation and implementation of local bushland strategies.

**Responsible Agency:** DPI, DEWCP.

---

**Suggested Response 17.** Build on existing partnerships between Aborigines and other land-users in biodiversity conservation.

**Action 17.1** Implement partnerships with Aboriginal groups as determined through management plans, Native Title negotiations, Indigenous Protected Areas Program projects and other forms of management agreements.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** DCLM is developing joint management strategies, and the involvement of indigenous people in conservation and land management. Examples include the establishment of a Park Council at Purnululu National Park; Memoranda of Understanding with the Ngaanyatjarra Land Council and South West Aboriginal Land and Sea Council; initiatives at Shark Bay, in the south-west and the Goldfields to increase Aboriginal employment; support for two Indigenous Protected Areas at Paruku and Ngaanyatarra lands (100,000 sq kms).

**Responsible Agency:** DCLM

**Supporting Activity 2.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation** The Botanic Gardens and Parks Authority is developing a process for discussion with local Aboriginal families to review activities at Botanic Gardens and Parks Authority.

**Responsible Agency:** BGPA

**Supporting Activity 3.**

**Progress:** Complete

**Nature of Activity:** Policy

**Program Name:** Developed a policy of engagement with indigenous people in all areas of Department operation.

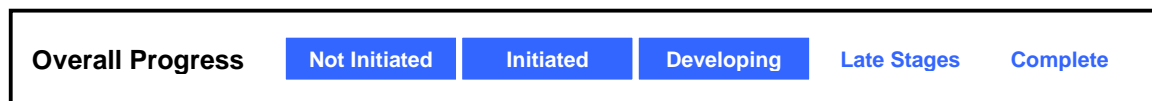
**Explanation:** Under the RIWA Act, where the agency is required to negotiate with land holders, this negotiation has been extended to Native Title claimants.

**Responsible Agency:** DEWCP

---

**Suggested Response 18.** Develop a package of measures to encourage and facilitate conservation on private lands to complement the conservation reserve system and remove disincentives to conserving biodiversity.

**Action 18.1** Expand the implementation of existing off-reserve conservation measures.



**Supporting Activity 1.**

**Progress:** Complete  
**Nature of Activity:** Ongoing Program  
**Project Name:** Bush Forever  
**Explanation:**  
**Responsible Agency:** DEWCP, DPI, others

**Supporting Activity 2.**

**Progress:** Developing  
**Nature of Activity:** Ongoing Program  
**Project Name:** Land for Wildlife; CLM Act Section 16 and 16(A) agreements; Nature Conservation Covenants  
**Explanation:** New agreements are continuing to be entered into.  
**Responsible Agency:** DCLM

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**Action 18.2** Develop additional off-reserve conservation measures including voluntary nature conservation covenants and where appropriate, link them to environmental and planning mechanisms and approvals.



**Supporting Activity 1.**

**Progress:** Complete  
**Nature of Activity:** Ongoing Program  
**Project Name:** Bush Forever  
**Explanation:**  
**Responsible Agency:** DEWCP, DPI, others

**Supporting Activity 2.**

**Progress:** Complete  
**Nature of Activity:** Ongoing Program  
**Project Name:**  
**Explanation:** Expansion of existing programs (Land for Wildlife, section 16 agreements under the CLM Act, MoU) and voluntary nature conservation covenants now available.  
**Responsible Agency:** DCLM

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**Action 18.3** Review incentives and identify and seek to remove disincentives to the conservation of biodiversity.



**Supporting Activity 1.**

**Progress:** Developing  
**Nature of Activity:** Ongoing Program  
**Project Name:**  
**Explanation:** Recommendations have been proposed by interagency working groups on land clearing controls and through the Bushplan program.  
**Responsible Agency:** DCLM, DEWCP & Others

**Suggested Response 19.** Implement the National Weeds Strategy and develop and implement a complementary strategy for Western Australia which targets control of weeds according to their environmental threat

**Action 19.1** Implement the National Weeds Strategy.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Department of Agriculture played an active role in development of national strategies for Weeds Of National Significance, continues to work on WONS including: mesquite, blackberry, gorse, alligator weed, parkinsonia and salvinia; and is also a participant on the Australian Weeds Committee.

**Responsible Agency:** DoA, DCLM

**Supporting Activity 2.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** *Kings Park Bushland Management Plan 1995-2005.*

*Bold Park Environmental Management Plan 2000-2005.*

**Explanation:** Bridal Creeper control and monitoring in Kings Park bushland & Bold Park.

Control and monitoring of other target weeds in Kings Park bushland & Bold Park.

**Responsible Agency:** BGPA

**Action 19.2** Develop a Western Australian weeds strategy in consultation with relevant government, industry and community interests.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** The State Weed Plan

**Explanation** The State Weed Plan was launched jointly by Ministers for Agriculture and Environment in October 2001.

**Responsible Agency:** DoA (Lead), DCLM, DOLA

**Action 19.3** Implement the Western Australian State Weeds Plan.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** The State Weed Plan

**Explanation** Implementation of the State Weed Plan rests with all stakeholders identified in the plan.

**Responsible Agency:** DoA (Lead), DCLM, DOLA, DEWCP

**Suggested Response 20.** Implement the Wetlands Conservation Policy for Western Australia.

**Action 20.1** Implement the Wetlands Conservation Policy for Western Australia.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Wetlands Coordinating Committee

**Explanation:** The Wetlands Coordinating Committee has been established to coordinate the implementation of the policy. The Strategy has 62 action items. DCLM is responsible for 22 of which 11 are in progress. DCLM is involved in a further 34 action with other agencies. Of these 26 are ongoing.

**Responsible Agency:** DCLM (Lead), DEWCP, DPI, DoA

**Supporting Activity 2.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Bush Forever

**Explanation:** Part of the Bush Forever project has a sub-component which addresses the implementation of the Wetlands Conservation Policy

**Responsible Agency:** DEWCP, DPI

**Suggested Response 21.** Expand feral animal control programs including the successful Western Shield program to enable larger coverage of the State with community involvement. Continue to develop and refine assessment of the translocation of live aquatic non-endemic species into or within Western Australia and ensure adherence to the Ministerial Guidance.

**Action 21.1** Expand the Western Shield program.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** DCLM baits around 3.5 million hectares of the lands it manages to control foxes and cats. Feral cat populations have been significantly reduced at Peron Peninsula and removed from Rottneest, Cocos-Keeling and Faure Island. A review of the Western Shield program has commenced.

**Responsible Agency:** DCLM

**Action 21.2** Maintain and where necessary expand control programs for feral animals other than foxes and cats, including rabbits, goats, rats, pigs, camels, donkeys and starlings.



**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:** Department of Agriculture through Animal Pest Policy and Management Project.

**Explanation:** Diminishing Government funds and increasing landholder responsibility for control of most species, with auditing by Dept. No specific control program now for goats, rats and camels, though surveillance carried out. Expansion of control as Action 21.2 seeks has not occurred.

**Responsible Agency:** DoA, DCLM, DOLA

**Action 21.3** Maintain and refine the aquatic species translocation assessment process currently managed by Fisheries Western Australia under a memorandum of understanding with the Environmental Protection Authority.

<b>Overall Progress</b>	<b>Not Initiated</b>	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

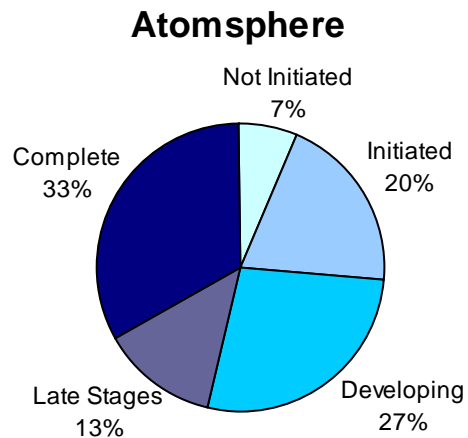
**Responsible Agency:** DoF

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# ATMOSPHERE

The condition and movement of the atmosphere affects all life on Earth, from the local and regional to the global scale. Western Australia is subject to changes in the atmosphere right throughout this range of scales.

The pie chart to the right shows the proportion of actions classified according to progress, recommended to address atmospheric issues identified in the 1998 State of the Environment Report.



# Enhanced Greenhouse

**Suggested Response 22.** The Western Australian Government should develop a Western Australian Greenhouse Strategy which is based on the National Greenhouse Strategy but takes into account regional differences and imperatives. As such, the strategy should reflect the measure included in the Prime Minister's Statement, *Safeguarding the Future: Australia's Response to Climate Change* and include agreed outcomes of the Kyoto Protocol.

**Action 22.1** Develop a Western Australian Greenhouse Strategy based on the National Greenhouse Strategy but which takes into account regional differences and imperatives.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** The Government has established the WA Greenhouse Task Force, chaired by Mr Fran Logan MLA, to develop the State's Greenhouse Strategy

**Explanation:** The Task Force has prepared an issues paper for public consultation and will complete sectoral reports in early 2003. The strategy will address four main areas: emission reduction; new economic opportunities; Adaptation to climate change; and, sequestration and land management. .

**Responsible Agency:** DPC Lead, DoA, DCLM, DEWCP, SEDO and others.

**Suggested Response 23.** The WA Government should also initiate a WA Greenhouse Council to coordinate a range of tasks.

**Action 23.1** Establish a Western Australian Greenhouse Council.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:**

**Project Name:** Western Australian Greenhouse Council (WAGC)

**Explanation:** The Western Australian Greenhouse Council was established and produced a number of technical reports. Although WAGC has since disbanded, these technical reports have been a major input to the Greenhouse Taskforce.

**Responsible Agency:** DPC

**Suggested Response 24.** Develop as part of the State Greenhouse Strategy, a Sustainable Energy Policy that specifically addresses the use of natural gas, energy conservation and renewable energy.

**Action 24.1** Develop a draft policy that is consistent with the Western Australian and National Greenhouse Strategies and the Energy Policy Framework being developed by the Australian and New Zealand Minerals and Energy Council.

**Overall Progress** Not Initiated Initiated Developing Late Stages Complete

**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:**

**Project Name:**

**Explanation:** The Greenhouse Taskforce is addressing energy related greenhouse emissions, although not in the specific form envisaged here.

**Responsible Agency:**

**Suggested Response 25.** Local Government authorities should take energy efficiency issues into account in planning decisions, conduct energy audits of city facilities and educate householders and businesses to reduce greenhouse gas emissions.

**Action 25.1** Several Local Government Authorities have conducted energy audits and some are beginning to incorporate such activities into Local Agenda 21s and other environmental policies (see Action 4.10. The State Government will continue to assist Local Government through its existing programs (see Actions in the section on page 80).

**Overall Progress:** Not Applicable - This action was aimed at Local Government

## Stratospheric Ozone Depletion

**Suggested Response 26.** Continue to implement the 1994 Australian and New Zealand Environment and Conservation Council National Strategy for Protection of Ozone by reviewing Western Australia's Environmental Protection (Ozone Protection) Policy 1993.

**Action 26.1** Design a generic framework for the statutory review of Environmental Protection Policies.

**Overall Progress** Not Initiated Initiated Developing Late Stages Complete

**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Project

**Project Name:** Best Practice EPP Planning & Development

**Explanation:** Develop and implement best practice.

**Responsible Agency:** DEWCP, EPA

**Action 26.2** Review the EP (Ozone) Policy 1993



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Policy

**Project Name:** 26.2 Review the EP (Ozone) Policy 1993

**Explanation:**

**Responsible Agency:** DEWCP, EPA

**Suggested Response 27.** Current education campaigns are focused on industry. There is a need for the DEP to expand current education campaigns to target the wider community.

**Action 27.1** Develop a draft Environmental Education Policy for WA.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Strategy

**Project Name:** Western Australian Environmental Education Strategy

**Explanation:** This strategy, although not confined to air quality management issues, will help expand current education campaigns that deal with air quality.

**Responsible Agency:** DEWCP

## Photochemical Smog

**Suggested Response 28.** Develop and implement an Air Quality Management Plan for Perth. See Appendix for more information.

**Action 28.1** Develop an Air Quality Management Plan for Perth.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Perth Air Quality Management Plan

**Explanation:** Perth AQMP released in December 2000.

**Responsible Agency:** DEWCP Lead, Health, DCLM, DPI, DLGRD, LGAs

**Action 28.2** Implement the Perth Air Quality Management Plan.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Perth AQMP Implementation Strategy

**Explanation:** Actions now underway.

## Haze from Particulates

**Suggested Response 29.** Determine appropriate legal standards for particulate haze. Implement a comprehensive community awareness campaign based on the findings of the 'Halt the Haze' trial.

**Action 29.1** Develop appropriate health-based guidelines for haze particles.

Overall Progress    **Not Initiated**    **Initiated**    **Developing**    Late Stages    Complete

### Supporting Activity 1.

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** National Environmental Protection Measure (NEPM) for Ambient Air

**Explanation:** Draft NEPM variation and impact statement currently open for public comment (finishes December 24).

**Responsible Agency:** DEWCP lead for WA, National Environment Protection Council.

**Action 29.2** Develop and implement appropriate management programs to minimise emissions of haze particles.

Overall Progress    **Not Initiated**    **Initiated**    **Developing**    Late Stages    Complete

### Supporting Activity 1.

**Progress:** Complete

**Nature of Activity:** Regulation

**Project Name:** Wood-heater Regulations

**Explanation:** Regulations Gazetted in 1999. Enforcement ongoing.

**Responsible Agency:** DEWCP

### Supporting Activity 2.

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Smoke Management Liaison Group

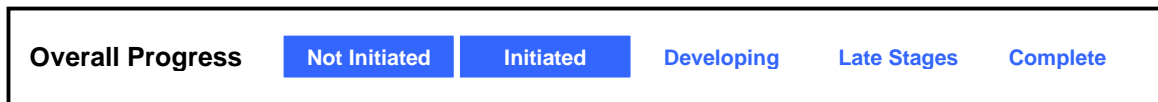
**Explanation:** This group has regularly reviewed the protocols for decision making on prescribed burning to reduce the risk of smoke accumulation over Perth. A smoke trajectory model has been developed to assist in the prediction & movement of smoke accumulation.

**Responsible Agency:** DCLM, DEWCP, Fire & Emergency Services Authority, BOM

## Sulphur Dioxide

**Suggested Response 30.** Due to the high level of sulfur dioxide emitted around Kalgoorlie, public education about sulfur dioxide emissions and environmental and health effects is needed in this region. There is concern that the Kalgoorlie EPP standard is greater than the NHMRC goal. The Kalgoorlie EPP should be reviewed before its scheduled review in 2000. The proposed NEPM and complementary State Air EPP should provide for regional differences in WA.

**Action 30.1** Develop a State-wide Air EPP including standards and attainment programs for sulfur dioxide.



**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Policy

**Project Name:** State wide Air EPP for Implementing the NEPM Ambient Air measure in WA.

**Explanation:** The EPA has initiated the development of a state Ambient Air EPP. This includes Sulphur Dioxide.

**Responsible Agency:** DEWCP, EPA

**Action 30.2** Review the EP (Kwinana) (Atmospheric Wastes) Policy and the EP (Goldfield Residential (Sulfur Dioxide)) Policy 1992.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Policy

**Project Name:** Review of the EP (Kwinana) (Atmospheric Wastes) Policy and the EP (Goldfield Residential (Sulfur Dioxide)) Policy 1992.

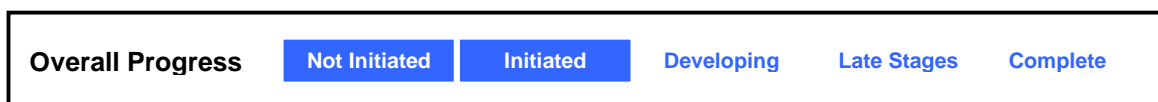
**Explanation:** Required under the EPAct

**Responsible Agency:** DEWCP, EPA

## Carbon Monoxide

**Suggested Response 31.** Responses to reduce carbon monoxide should focus on reducing the reliance on motor vehicles for personal travel and improving technology to reduce vehicle emissions and wood heater and combustion stove emissions. These responses should be developed through the Air Quality Management Plan for Perth.

**Action 31.1** Develop and implement a State-wide EP (Air) Policy adopting the NEPM standards for carbon monoxide.



**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Policy

**Project Name:** State wide Air EPP for Implementing the NEPM Ambient Air measure in WA.

**Explanation:** The EPA has initiated the development of a state Ambient Air EPP. This includes carbon monoxide.

**Responsible Agency:** DEWCP, EPA

## Lead

**Suggested Response 32.** Monitoring of ambient atmospheric lead levels should continue.

**Action 32.1** Maintain ambient lead monitoring at peak sites.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Regulation

**Project Name:** Ambient Air Quality NEPM standard for lead

**Explanation:** Monitoring site numbers have reduced since 1999 due to continuously low lead levels (i.e. no longer need to monitor).

**Responsible Agency:** DEWCP

## Dust

**Suggested Response 33.** Future development should consider dust management as an integral component of environmental management strategies. Standards concerning dust levels should be developed and enforced. Studies are needed regarding the health effects of ambient dust.

**Action 33.1** Develop and implement a State-wide EP (Air) Policy adopting the NEPM standards for carbon monoxide.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Policy

**Project Name:** State wide Air EPP for Implementing the NEPM Ambient Air measure in WA.

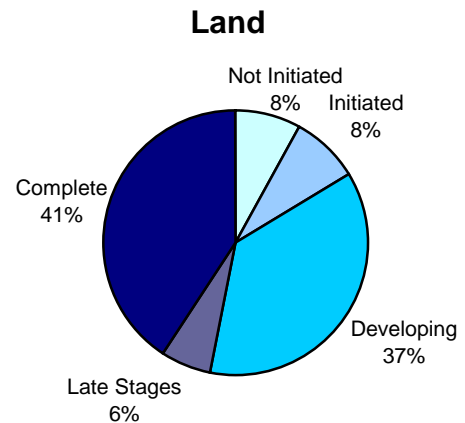
**Explanation:** The EPA has initiated the development of a state Ambient Air EPP. This includes dust.

**Responsible Agency:** DEWCP, EPA

## LAND

For the purposes of this report, 'land' is taken to mean the soil and subsoil resources that constitute the top of the Earth's surface.

The pie chart to the right shows the proportion of actions classified according to progress, recommended to address land related issues identified in the 1998 State of the Environment Report.



## Land Salinisation

**Suggested Response 34.** Re-establish large areas of deep-rooted perennial vegetation and continues to improve high water-use farming systems throughout the agricultural landscape to address the hydrological imbalance.

**Action 34.1** Research, develop and extend high water-use farming systems.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Department of Agriculture Agricultural Resource Management Program

**Explanation:** Research continues to develop a crop farming system that incorporates the perennial pasture lucerne.

**Responsible Agency:** DoA

**Action 34.2** Maritime Pine Program.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Action plan for tree farming in WA

**Explanation:** The area planted is about 15,000 ha, predominantly maritime pine. This is now the responsibility of the Forest Products Commission.

**Responsible Agency:** Forest Products Commission

**Action 34.3** Oil Mallee Program.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Oil Mallee Program

**Explanation:** The use of native vegetation species, such as the oil mallee, that can be adapted for commercial broadscale plantings continues as a tool to manage salinity.

**Responsible Agency:** Department of Agriculture, DCLM

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**Action 34.4** Natural Heritage Trust State Agency Contribution to Land Conservation/Biodiversity Revegetation Project ('Meta-Project').



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:**

**Project Name:**

**Explanation:** DCLM component ceased – not funded by Commonwealth Government in 2001/02.

**Responsible Agency:** DCLM, WRC & DoA

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**Suggested Response 35.** Implement the *WA Salinity Action Plan* in consultation with the community.

**Action 35.1** Implement the WA Salinity Action Plan.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

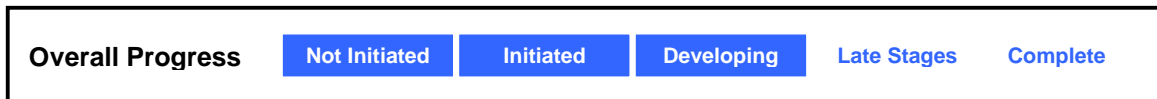
**Project Name:** WA Salinity Action Plan (now known as State Salinity Strategy).

**Explanation:** This began in 1996. Actions for biodiversity conservation include the identification and establishment of six Natural Diversity Recovery Catchments as part of a targeted approach to the recovery of biodiversity in the Wheatbelt; purchase of remnant vegetation for the establishment of a comprehensive, adequate and representative conservation reserve system; establishment of the Land for Wildlife Scheme; better protection mechanisms through nature conservation covenanting of remnant vegetation. Another development includes the formation of the NRM Council.

**Responsible Agency:** DoA, DCLM, DEWCP

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**Action 35.2** Revise authorisation and assessment procedures and provide statements of best practice for rural drainage.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Agriculture Resources Management Program

**Explanation:** Revised assessment procedures drafted for targeted community consultation in 2002. Standards for best practice design and construction of paddock scale drainage works are developed and promoted.

**Responsible Agency:** DoA

**Supporting Activity 2.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program  
**Project Name:**  
**Explanation:** Drainage and strategic water management  
**Responsible Agency:** DEWCP

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**Action 35.3** Review the WA Salinity Action Plan.



**Supporting Activity 1.**

**Progress:** Complete  
**Nature of Activity:** Project  
**Project Name:** State Salinity Task Force review and Government Response, tabled in 2002 by the Minister for the Environment and Heritage.  
**Explanation:** State Salinity Strategy produced in 2000. A review of the State's salinity program undertaken by the Salinity Taskforce in 2001. Government's response to the Salinity Taskforce report – *Salinity: A New Balance* in June 2002.  
**Responsible Agency:** State Salinity Task Force, DoA, DEWCP, DCLM

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**Action 35.4** Develop methods to accurately map soil salinity caused by irrigation and work with farmer groups to identify remedial measures. Develop land and water management plans which include the provision of best practice management advice.



**Supporting Activity 1.**

**Progress:** Developing  
**Nature of Activity:** Project  
**Project Name:**  
**Explanation:** Salinity Council and Harvey Water acquired land in the Wellington District (2000-2002). Complete Phase 1, Surveying planned for other irrigation districts, responsibility Harvey Water.  
**Responsible Agency:** DoA

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**Suggested Response 36.** Protect existing remnant vegetation on public and private lands, especially where they are at risk of the effects of rising saline groundwater.

**Action 36.1** Remnant Vegetation Protection Scheme and State Revegetation Scheme.



**Supporting Activity 1.**

**Progress:** Complete  
**Nature of Activity:** Ongoing Program  
**Project Name:** Agriculture Resources Management Program  
**Explanation:** Scheme ended in 2000. About 1300 covenants protecting 50 000 ha registered on title.  
**Responsible Agency:** DoA

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**Action 36.2** Protection of remnant vegetation in Water Supply Recovery Catchments.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Revegetation strategies in water resource recovery catchments.

**Responsible Agency:** DEWCP

**Supporting Activity 2.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Salinity Strategy – Wellington Catchment

**Explanation:** In progress. Water Corporation funding of \$3 million for the Community Support Scheme 2000.

**Responsible Agency:** WC

**Suggested Response 37.** A comprehensive education campaign should be implemented to ensure that people in urban areas are informed of the salinity threat in rural areas and its impact upon them.

**Action 37.1** Salinity Communications Office.



**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:** DoA, DEWCP

**Action 37.2** Raise awareness of urban communities about salinity issues through information and community groups networking.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Salinity Education Kit

**Explanation:** This activity supports this action in part only. Developed and distributed to all schools in WA and other interested parties.

**Responsible Agency:** DoA Lead

**Action 37.3** Rural Liaison Officer with Conservation Council of WA.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Component of ongoing project

**Project Name:** Salinity Communication

**Explanation:** The agreement between the Conservation Council and the Department of Agriculture has been satisfied. Rural Local Authorities in salinity affected areas have received widespread support including that from the Rural Towns Project.

**Responsible Agency:** DoA

---

**Suggested Response 38.** Progressively implement the recommendations of the Farm Forestry Taskforce (1995).

**Action 38.1** Farm Forestry Program.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Farm Forestry Program

**Explanation:** Completed in 1999

**Responsible Agency:** Farm Forestry Development Group, DCLM

---

**Suggested Response 39.** The WA Government should develop economic instruments and tax reform as part of the pending national review of tax arrangements to complement the WA Salinity Action Plan and initiatives addressing other environmental issues.

**Action 39.1** Continue to develop economic instruments as part of the Salinity Action Plan and other Government policies which provide incentives and remove disincentives to the protection of the environment. Continue to encourage the Commonwealth Government to initiate similar reforms.



**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

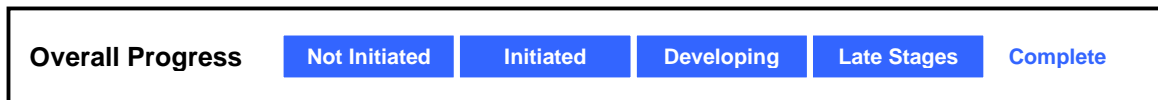
**Explanation:** Evaluate market based instruments in water resource recovery catchments; DOLA has also advised conditional purchase lessees that it is no longer a requirement of lease conditions to undertake clearing of vegetation for agricultural purposes. Recommendations have been proposed by the interagency working group on land clearing controls.

**Responsible Agency:** DEWCP, DCLM

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**Suggested Response 40.** Fines for illegal land clearing should be significantly increased.

**Action 40.1** Change legislation to allow for increased fines, and increased effectiveness of clearing controls.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Regulation

**Project Name:**

**Explanation:** Cabinet to amend the Environmental Protection Act. New legislation introduced by Minister for the Environment and Heritage, is currently before Parliament.

**Responsible Agency:** DEWCP, DoA

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**Action 40.2** Improved detection and prosecution of illegal clearing.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Agriculture Resources Management Program

**Explanation:** Methodologies for improved detection of clearing developed and applied to regularly acquired remotely sensed information. Support staff to investigate and prosecute illegal land clearing remains a serious limitation.

**Responsible Agency:** DEWCP, DoA

---

**Suggested Response 41.** Incorporate nature conservation and restoration into property management plans.

**Action 41.1** Provide nature conservation advice to landholders for incorporation into their property management plans.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Land for Wildlife; Natural Resource Management; nature conservation covenants; Agricultural Resources Management Program

**Explanation:**

**Responsible Agency:** DoA, DCLM, DEWCP

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## Land Contamination

**Suggested Response 42.** Remediation and prevention measures for land contamination should meet best practice management. A land contamination prevention strategy should be developed as part of the integrated contaminated sites management framework.

**Action 42.1** Promote best environmental management of industry through the three-tiered environmental licensing system.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Regulation

**Project Name:** EPA Act Amendments

**Explanation:** Requirements for Site decommissioning, including any remediation required incorporated into EP Act Amendments.

**Responsible Agency:** DEWCP, EPA

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**Action 42.2** Implementation of the national ban on the use of organochlorine chemicals.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Following the evidence of environmental and trade residues, all OCs were deregistered from June 1995.

**Responsible Agency:**

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**Action 42.3** Development of legislation complementary to proposed contaminated sites legislation for the protection of community health.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:**

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**Action 42.4** Assessment of current and historical land uses for the protection of water resources.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Regulation

**Project Name:** Contaminated Sites Bill (State)

**Explanation:** The proposed Contaminated Sites Bill (State) will formalise triggers for the identification and assessment of contaminated sites, it will also enable the issuing of Investigation, Clean-up and Hazard Abatement Notices for the protection of environmental and human health receptors.

**Responsible Agency:** All Agencies

**Supporting Activity 2.**

**Progress:** Complete

**Nature of Activity:** Policy

**Project Name:** Public Drinking Water Source Statement of Planning Policy

**Explanation:** Addresses land use and development in ground and surface water resource area

**Responsible Agency:** DPI, DEWCP

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**Action 42.5** Promote best practice management for remediation of contaminated land.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** EPA Guidance Not No 17; DEP Guideline "Development of Sampling & Analysis Programs, December 2001".

**Explanation:** These documents provide a hierarchy & decision framework for determining best remedial option , as well as, guidance of verification of suitability of remediation.

Responsible Agency: DEWCP, EPA

**Suggested Response 43.** Establish an inventory of contaminated sites.

**Action 43.1** Develop a register of contaminated sites.

Overall Progress   Not Initiated   Initiated   Developing   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Contaminated Sites Register.

**Explanation:** DEP has commenced work on the development of the register of contaminated sites. Awaiting ratification of the Contaminated Sites Bill and associated funding before this action can be completed. The register is a requirement of the Bill and will therefore be available once the Bill is enacted.

**Responsible Agency:** DEWCP

## Erosion

**Suggested Response 44.** Implement the State Government policy *Managing the Rangelands*.

**Action 44.1** Develop an Implementation Strategy for the *Managing the Rangelands* Policy.

Overall Progress   Not Initiated   Initiated   Developing   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Gascoyne-Murchison Strategy Board established to implement the Gascoyne-Murchison Strategy. Relevant to DCLM in terms of the establishment of a CAR reserve system and biodiversity conservation.

**Responsible Agency:** DCLM and other agencies

**Action 44.2** The Rangeways Project.

Overall Progress   Not Initiated   Initiated   Developing   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Completed.

**Nature of Activity:** Ongoing Program

**Project Name:** Rangeways Project

**Explanation:** Project report submitted to LWA. Favourable feedback.

**Responsible Agency:** DoA, DCLM, DPI and other agencies

**Action 44.3** Implement the *Managing the Rangelands* Policy.

Overall Progress   Not Initiated   Initiated   Developing   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Recommendations from the following Pastoral Board committees are also due in May/June 2003 and will impact on rangelands management issues.

1. Sustainability for Pastoralists
2. Access to Pastoral leases
3. Aboriginal access and living areas
4. Pastoral industry economic monitoring requirements
5. Alternative models of land tenure

**Responsible Agency:** PLB (DOLA)

**Supporting Activity 2.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Establishing a CAR reserve system

**Explanation:** Over 3.4 million hectares have been purchased under the Gascoyne-Murchison Strategy and the National Reserve System Program of the Natural Heritage Trust for addition to the terrestrial conservation reserve system since 1998.

**Responsible Agency:** DCLM

**Suggested Response 45.** Further develop better management practices for erosion and communicate these to land managers. Preventative measures such as revegetation with natural vegetation and farming systems that conserve soil need to be developed and applied widely.

**Action 45.1** Research, development and extension on minimum and zero tillage techniques.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Component of ongoing project

**Project Name:** Development of no-tillage sowing systems for key soil groups.

**Explanation:** The activity demonstrated that no-tillage systems could be easily adapted to all soil types. The system offered operational efficiencies. (Cheaper than conventional tillage systems, improved soil structure and soil organic carbon, and lower water and wind erosion).

**Responsible Agency:** DoA

**Action 45.2** Improving crop production in windbreak and alley farming systems.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Agriculture Resources Management Program

**Explanation:** Completed, results published in AJEA vol 42(6). Farmer oriented book being produced by JAVAP

**Responsible Agency:** DoA

**Suggested Response 46.** Integrate the need to rehabilitate eroded lands with current and proposed revegetation strategies.

**Action 46.1** Extension and demonstration of methods of stabilising soils.



**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:** DoA

**Action 46.2** Continue efforts in the Ord River Regeneration Reserve.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Rangelands & Intensive Animal Industries Program

**Explanation:** Fire management, fencing maintenance and control of feral animals continuing. Major vegetation monitoring exercise in August 2002.

**Responsible Agency:** DoA

**Suggested Response 47.** Develop more effective indicators of erosion for agricultural lands. There is an urgent need for a quantitative assessment and estimates of current annual sediment transport in key river basins including its current level of deposition along stream courses, in pools, in estuaries and out to sea

**Action 47.1** Measure sediment transport rates in selected streams and sedimentation in estuaries.



**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Although monitoring is still occurring, due to funding cuts, the number of sites where sediment transport rates is being measured has reduced since 1998.

**Responsible Agency:** DEWCP

**Action 47.2** Estimate long term soil loss rates using the radioactive fallout tracer Cs-137.



**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Ongoing Program

**Project Name:** Agriculture Resources Management Program

**Explanation:** DAWA will not be monitoring soil loss using Cs137 techniques at this stage, but will participate in Commonwealth lead efforts to develop and apply a suitable methodology.

**Responsible Agency:** DoA

**Suggested Response 48.1** Develop on 'early warning system' which can trigger land managers to take steps to prevent or ameliorate land degradation events such as wind erosion.

**Action 48.1** Implement the Vegewatch program.

Overall Progress   **Not Initiated**   Initiated   Developing   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:** DoA

## Soil Acidification

**Suggested Response 49.** Further monitoring of the extent of soil acidification.

**Action 49.1** Regular soil surveys of abundant, high risk soils, representative of the range of important environments in agricultural areas.

Overall Progress   **Not Initiated**   **Initiated**   **Developing**   **Late Stages**   **Complete**

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Project

**Project Name:** Grains Soil Management

**Explanation:** An upgrade and gathering together of available data on soil pH was completed for the National Land and Water Audit (Soil Acidity) 2002. Ongoing regular monitoring is still required.

**Responsible Agency:** DoA

**Suggested Response 50.** Further research into less acidifying agricultural systems (crops, fertilisers and management).

**Action 50.1** Evaluate the importance of the imbalance of cation-anion uptake by plants in the development of sub-soil acidification.

Overall Progress   **Not Initiated**   **Initiated**   **Developing**   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Project

**Project Name:** Grains Soil Management (GSM) Coordinating GRDC UWA259 project

**Explanation:** Part progress made under a PhD studentship

**Responsible Agency:** DoA

**Action 50.2** Determine the effect of annual and perennial species on drainage, the input, turnover and fate of legume-fixed nitrogen, anion and cation leaching, and soil acidification, for a soil in the 400mm rainfall zone.

Overall Progress   **Not Initiated**   **Initiated**   **Developing**   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Project

**Project Name:** Grains Soil Management (GSM) Coordinating GRDC UWA259 project

**Explanation:** Outputs will be reported to GRDC (Grains Research and Development Corporation) due in March 2003

**Responsible Agency:** DoA

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**Action 50.3** Test agricultural systems that are predicted to minimise soil acidification.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Project

**Project Name:** Grains Soil Management (GSM) Coordinating GRDC UWA259 project

**Explanation:** Outputs will be reported to GRDC (Grains Research and Development Corporation) due in March 2003

**Responsible Agency:** DoA

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**Suggested Response 51.** Further education about the costs of managing soil acidification and benefits of applying lime.

**Action 51.1** Conduct research to ensure adequate understanding of biophysical aspects of management of soil acidification.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Project

**Project Name:** Grains Soil Management (GSM) Coordinating GRDC UWA259 project

**Explanation:** Part progress made under a PhD studentship

**Responsible Agency:** DoA

---

**Action 51.2** Undertake a comprehensive extension program.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Project

**Project Name:** Grains Soil Management (GSM) Project Formally Soil Acidity Project (IAC)

Coordinating NHT project 983206: Developing Industry Ownership and Management of Soil Acidification.

**Explanation:** This project worked closely with the Research and Development sub-projects in UWA259 and members of the Agricultural Lime Industry.

**Responsible Agency:** DoA

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**Suggested Response 52.** A State Lime Strategy should be developed to secure lime sources and protect areas of conservation value.

**Action 52.1** Prepare a project brief to develop a State Lime Supply Strategy and submit to State Cabinet.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Project

**Project Name:** Project brief written 1998 by steering committee members from DCLM, DEP, WADA, Ministry for Planning, Dept Minerals and Petroleum Resources and DRD

**Explanation:** A brief was to indicate the need for a coordinated lime supply strategy for the state and includes supply of lime for industry, road making building and agriculture

**Responsible Agency:** DoA

**Supporting Activity 2**

**Progress:** Developing

**Nature of Activity:** Project

**Project Name:** *Towards a State Lime Strategy* produced May 2001 and distributed to stakeholders for public comment.

**Explanation:** Comments being reviewed

**Responsible Agency:** DMPR lead agency.

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**Action 52.2** Implement a project to develop State Lime Strategy.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Department of Agriculture Grains Soil Management (GSM) Project

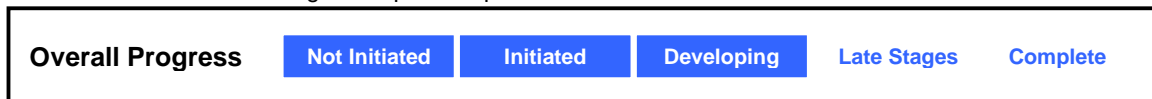
**Explanation:** Towards a State Lime Supply Strategy – A draft for stakeholder comment. May 2001 (DRD Department of Resources and Development). Review of stakeholder comments on draft prepared and modification of the document is in progress.

**Responsible Agency:** DoA

## Waterlogging

**Suggested Response 53.** Implement the WA Salinity Action Plan including surface water control measures.

**Action 53.1** Water management plans implemented in Focus Catchments.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

**Project Name:** Agriculture Resource Management Program, Engineering Water Management Project.

**Explanation:** This activity supports this action in part only. The Yilgarn demonstration project and the Dumbleyung surface drainage projects are complete. The research project at Lake Bryde is in advanced stages and new projects have been initiated at Lake Maenta, lake Toolibin and Buntine/Marchagee.

**Responsible Agency:** DoA

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**Suggested Response 54.** Develop improved soil and surface water management practices.

**Action 54.1** Improved farming systems for waterlogged soils – bedding drainage for cropped soils and farming systems for waterlogging-prone sandplain soils.

**Overall Progress** Not Initiated Initiated Developing Late Stages Complete

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Project

**Project Name:** Raised bed farming

**Explanation:** Research demonstrated that significant increases in yield could be achieved through the use of raised beds to reduce the incidence of waterlogging in agricultural soils. Farmers have experienced an average yield increase of 1 tonne/ha, and so far 40,000 ha have been converted to this management practice on the south coast.

**Responsible Agency:** DoA

**Suggested Response 55.** Develop and evaluate new enterprises requiring water harvesting and use, for example, aquaculture. These should be developed within strict environmental guidelines.

**Action 55.1** Integrated research, development and extension on engineering methods of controlling water that are linked with aquaculture opportunities.

**Overall Progress** Not Initiated Initiated Developing Late Stages Complete

**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Project

**Project Name:** ARM-Engineering Water Management Project; Rural Towns Project.

**Explanation:** - Research initiated under the Smartwater use component of the Dumbleyung Project and the Rural Towns Program. Several sites tested in the towns of Dumbleyung, Merredin and Katanning.

**Responsible Agency:** DoA

**Suggested Response 56.** Use appropriate technology, for example, satellite imagery, to monitor waterlogged and saline areas to assist in providing information for improved practices.

**Action 56.1** Continue to implement the AglImage Program.

**Overall Progress** Not Initiated Initiated Developing Late Stages Complete

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** DOLA provides various forms of satellite imagery maps for use in determining crop and pasture yields to appropriate bodies including commercial companies and farm consultants.

**Responsible Agency:** DoA (Lead), DOLA

**Supporting Activity 2.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Assessments of poorly performing cropping areas are being made using satellite and airborne imagery. The results and solutions to the management of these areas are being shared with producers through best practice farming groups across the wheatbelt.

Responsible Agency: DoA

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**Action 56.2** Implement the Land Monitor Project.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Project

**Project Name:** Land Monitor II

**Explanation:** Completed. Project covered the intensive land use zone of the south west of WA. Areas of consistently low productivity between 1988-93, and expansion areas up to 1996-99 delimited. Extent and trend of native vegetation delimited. Land Monitor will continue as a useful management tool.

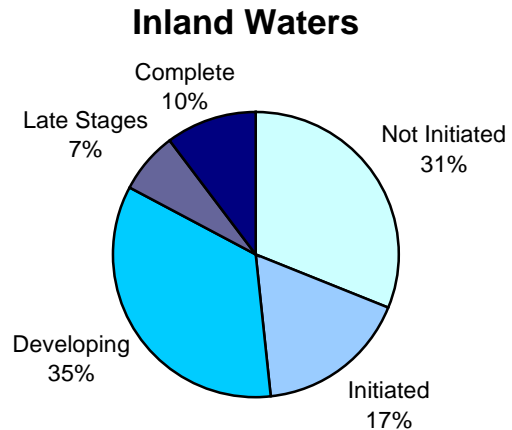
**Responsible Agency:** DoA (lead) & others.

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## INLAND WATERS

Water is a fundamental resource supporting life on earth. The quality and availability of water is critical to all living organisms. There are a range of factors that may cause one or both of these aspects to change.

The pie chart to the right shows the proportion of actions classified according to progress, recommended to address inland water issues identified in the 1998 State of the Environment Report.



## Salinisation of Inland Waters

**Suggested Response 57.** Implement the WA Salinity Action Plan by expanding programs to recover and protect catchments, which have high wetland, biodiversity, and potable water supply values, and to protect important infrastructure under threat from salinity. Support community and farmer groups in the development and implementation of catchment management plans to achieve their defined salinity targets.

**Action 57.1** Implement the WA Salinity Action Plan.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

### Supporting Activity 1.

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Water Resource Recovery Catchments

**Explanation:** This activity supports this action in part only. Recovery plans are being implemented or further refined.

**Responsible Agency:** DEWCP, DCLM, DoA and others

## Loss of Fringing Vegetation

**Suggested Response 58.** Large scale fencing and restoration of fringing vegetation is necessary to achieve the State's environmental objective for fringing vegetation.

**Action 58.1** Fencing and restoration of fringing vegetation.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

### Supporting Activity 1.

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Rivercare and River Restoration Programme

**Explanation:**  
**Responsible Agency:** DEWCP

**Supporting Activity 2.**

**Progress:** Developing  
**Nature of Activity:** Project

**Project Name:** Harvey River Restoration Trust.

**Explanation:** 750,000 approved for the Corporation's Harvey River Restoration Trust, which was established in 2000. \$450,000 has been provided to date and held in a Trust Fund. Planning for fencing, habitat restoration etc. complete; works to begin shortly.

**Responsible Agency:** WC

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**Action 58.2** Establish vegetation waterway protection corridors on at least 50% of substantial streamlines by 2010.



**Supporting Activity 1.**

**Progress:** Initiated  
**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Develop special control areas for waterways under Local Government planning schemes. This can only be undertaken every 5-10 years when the scheme is reviewed.

**Responsible Agency:** DEWCP

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**Action 58.3** Research program to determine specific widths for protection corridors.



**Supporting Activity 1.**

**Progress:** Initiated  
**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** The WRC produced a report 'Review of Stream and River Logging Buffers to ensure their adequacy in protecting waterways from salinity, degradation and turbidity'(2001). Responses to the recommendations have been developed which include trials to test buffer widths in the south-west forests.

**Responsible Agency:** DCLM, WRC,FPC (south-west forests)

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**Suggested Response 59.** Research into fringing vegetation zone restoration technologies is needed.

**Action 59.1** Conduct research into fringing vegetation zone restoration technologies.



**Supporting Activity 1.**

**Progress:** Developing  
**Nature of Activity:** Project

**Project Name:**

**Explanation:** Provide in-kind support to University and other research organisations such as the National Rivers Consortium.

**Responsible Agency:**

**Suggested Response 60.** Waterway and wetland restoration programs are necessary, as part of state strategies, regional strategies and catchment plans, linked strongly to catchment based revegetation programs.

**Action 60.1** Waterway WA – technical support and co-ordination for community groups.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** River Restoration Training And Development Programme

**Explanation:** Provide technical advice and support to community groups.

**Responsible Agency:** DEWCP

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**Action 60.2** Waterways WA – river and wetland restoration program, training and technical support.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** River Restoration Training And Development Programme

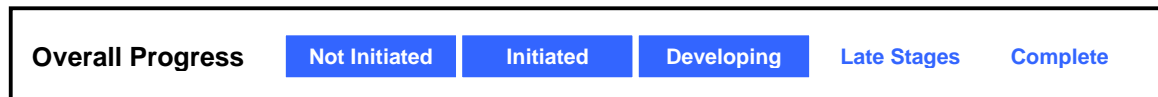
**Explanation:** 230 people trained over 10 courses. Manual. 30 water notes.

**Responsible Agency:** DEWCP

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**Suggested Response 61.** A long-term program based on the initial work of the Wild Rivers Project should be developed for mapping and assessing the northern rivers of WA in a co-operative approach with community groups. This should be designed to complement the Monitoring River Health Initiative.

**Action 61.1** Protect rivers identified in the Wild Rivers Program



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Incorporated into Statewide Waterways Management Strategy.

**Responsible Agency:** DEWCP

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**Suggested Response 62.** Specific clearing controls on fringing vegetation and measures to facilitate restoration should be introduced. Formal planning mechanisms should be used to protect existing areas of fringing vegetation to ensure that development prevents any further losses.

**Action 62.1** Introduce clearing controls.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Regulation

**Project Name:** Environmental Protection Act (1986) Amendments

**Explanation:** This activity supports this action in part only. Amended Bill is currently in upper house of Parliament. Expected to be passed in first quarter of 2003. Existing MOU still operational in interim (see 15.1).

**Responsible Agency:** EPA/DEWCP

**Action 62.2** Formal planning mechanisms.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Region Plan Program

**Explanation:** Statutory region plans provide foreshore reserves along major rivers, estuaries and important wetlands. Water Sensitive Urban Design and statements of planning policy for water resources which includes waterways and wetlands.

**Responsible Agency:** DPI, DEWCP

**Eutrophication**

**Suggested Response 63.** Develop a framework for determining environmental values and solutions to Eutrophication in WA, based on NWQMS by 1998. Determine environmental values by 2000

**Action 63.1** As a part of Waterways WA, develop a statewide River Protection Policy.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

**Project Name:** Waterways WA Coordination and Technical Support

**Explanation:** Strategy includes identification of near pristine systems (wild rivers) and the development of a river classification model.

**Responsible Agency:** DEWCP

**Action 63.2** Develop environmental targets for nutrients and associated parameters. Continue to evaluate techniques to reduce nitrogen and phosphorus in surface waters and estuaries.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Agriculture Resources Management Program

**Explanation:** Field work into the efficacy of riparian management as a nutrient management tool completed, data analysed, peer reviewed publications accepted.

**Responsible Agency:** DoA, CSIRO

**Supporting Activity 2.**

**Progress:** Developing  
**Nature of Activity:** Ongoing Program  
**Project Name:** Swan-Canning Cleanup Programme Program  
**Explanation:** Targets for Nitrogen and Phosphorus have been identified for the Swan River.  
**Responsible Agency:** DEWCP(WRC)

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**Action 63.3** State Groundwater EPP.



**Supporting Activity 1.**  
**Progress:** Initiated  
**Nature of Activity:** Policy  
**Project Name:**  
**Explanation:** Requires amendments to the EP Act before the policy can be progressed.  
**Responsible Agency:** DEWCP

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**Suggested Response 64.** Eutrophication Action Plans should be developed including restoration programs for all affected waterways. These should provide support for integrated catchment management initiatives and incorporate a community education program.

**Action 64.1** Develop and implement an Integrated Natural Resources Management Policy.



**Supporting Activity 1.**  
**Progress:** Complete  
**Nature of Activity:** Policy  
**Project Name:** Western Australian Government Framework to assist in achieving sustainable natural resource management in WA.  
**Explanation:** Developed in 1998. NRM Council will develop a state-wide NRM strategy which takes the above document further.  
**Responsible Agency:** DEWCP

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**Action 64.2** Develop and implement a Wilson Inlet Action Plan.



**Supporting Activity 1.**  
**Progress:** Late Stages  
**Nature of Activity:** Policy  
**Project Name:** Wilson Inlet Management Options  
**Explanation:** In final review stages before implementation  
**Responsible Agency:** DEWCP

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**Action 64.3** Continue the Infill Sewerage Program.



**Supporting Activity 1.**  
**Progress:** Developing  
**Nature of Activity:** Ongoing Program

**Project Name:** Infill Sewerage Program.

**Explanation:** In progress. The Infill Sewerage Program, launched in 1994, has been extended from 10 to 15 years with a reduced level of funding.

**Responsible Agency:** WC

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**Action 64.4** Develop a project to facilitate the development of Wetland Management Plans for WA.

<b>Overall Progress</b>	<b>Not Initiated</b>	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Project

**Project Name:**

**Explanation:**

**Responsible Agency:** DEWCP

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**Suggested Response 65.** Develop best land management practices for rural areas.

**Action 65.1** Develop best land management practices for rural areas.

<b>Overall Progress</b>	<b>Not Initiated</b>	<b>Initiated</b>	<b>Developing</b>	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Agriculture Resources Management Program

**Explanation:** NHT funded project Evaluating Catchment Management Policies – completed 31/12/2002

**Responsible Agency:** DoA

**Supporting Activity 2.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Framework for environmentally responsible agriculture; Ecosystem Management Unit (EMU) and Environmental Management System (EMS) initiative for the Gascoyne-Murchison

**Explanation:** Framework will describe the processes and outputs for the achievement and demonstration of environmentally responsible agriculture; EMU is a mapping and monitoring process that helps pastoralists manage the landscape, while EMS enables them to verify 'clean, green' credentials to gain market recognition for their produce.

**Responsible Agency:** DoA

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**Action 65.2** Develop and implement best land management practices for urban areas.

<b>Overall Progress</b>	<b>Not Initiated</b>	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:**

## Sedimentation

**Suggested Response 66.** There is an urgent need to establish realistic long-term targets to achieve the objective for sedimentation of waterways (see Appendix).

**Action 66.1** Establish long-term targets to reduce sedimentation in waterways (also see Actions for the issue of Soil Erosion on page 44).

Overall Progress   **Not Initiated**   Initiated   Developing   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:** DEWCP, DoA

**Suggested Response 67.** Establish vegetated waterway protection corridors (see Loss of Fringing Vegetation).

**Action 67.1** Establish vegetated waterway protection corridors.

Overall Progress   **Not Initiated**   **Initiated**   Developing   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Negotiating for inclusion of waterways management areas into all levels of State planning.

**Responsible Agency:** Multi-agency

**Suggested Response 68.** Restore river pools in the most affected rivers (where pools have been completed filled) by 2010. It may not be possible to restore all river pools and restoration programs should be developed to reflect the new dynamic equilibrium of river systems.

**Action 68.1** Restore river pools in the most affected areas by 2010.

Overall Progress   **Not Initiated**   **Initiated**   Developing   Late Stages   Complete

**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Actively undertaking work in the Avon where most significant sedimentation has occurred.

**Responsible Agency:** DEWCP; LGA

**Suggested Response 69.** Minimise the discharge of sediments from rural and urban drains to be at ecologically sustainable levels by 2020.

**Action 69.1** Minimise discharge of sediment from rural and urban drains to ecologically sustainable levels by 2020.

<b>Overall Progress</b>	<b>Not Initiated</b>	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:** DEWCP, WC

**Suggested Response 70.** In consultation with the community, ensure best land management practices to reduce erosion and sedimentation are adopted, particularly in priority catchments by 50% of land-users by 2020 and 100% by 2020.

**Action 70.1** Ensure best land management practices are adopted by 50% of land-users by 2010 and 100% by 2020 (also see in the section on Soil Erosion on page 44).

<b>Overall Progress</b>	<b>Not Initiated</b>	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:** DoA

**Suggested Response 71.** As part of the long-term program for mapping and assessing the northern rivers of WA, major sediment sources should be identified and rehabilitation plans implemented. Responses apply to rural and urban areas and should be developed a component of the State's integrated catchment management policy.

**Action 71.1** Mapping of major sediment sources and implementation of rehabilitation plans (also see Action 61.1)

<b>Overall Progress</b>	<b>Not Initiated</b>	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:** DEWCP

## Contamination of Inland Waters

**Suggested Response 72.** The effectiveness of responses to ban or restrict some pesticides has not been assessed and could be linked to the Monitoring River Health initiative.

**Action 72.1** Assess effectiveness to ban or restrict some pesticides.

<b>Overall Progress</b>	<b>Not Initiated</b>	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**  
**Progress:** Not Initiated  
**Nature of Activity:** Project  
**Project Name:**  
**Explanation:**  
**Responsible Agency:** DEWCP

**Suggested Response 73.** Environmental guidelines are not available for acceptable levels of contaminants in stream and wetland sediment. The EPA should review the guidelines for soil contamination and develop a suitable set of guidelines for assessing contamination in sediments.

**Action 73.1** Develop suitable guidelines for assessing contamination in sediments.

<b>Overall Progress</b>	<b>Not Initiated</b>	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**  
**Progress:** Not Initiated  
**Nature of Activity:** Ongoing Program  
**Project Name:**  
**Explanation:**  
**Responsible Agency:** DEWCP

**Suggested Response 74.** All significant point sources of contaminants should be identified by 1998 and be fully regulated by the year 2000 as part of a statewide contamination strategy. As part of this strategy, site specific management plans should be implemented for contaminated groundwater plumes.

**Action 74.1** Maintain accurate, up-to-date information on contaminated sites in WA.

<b>Overall Progress</b>	Not Initiated	<b>Initiated</b>	<b>Developing</b>	Late Stages	Complete
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**Supporting Activity 1.**  
**Progress:** Developing  
**Nature of Activity:** Ongoing Program  
**Project Name:** Contaminated Sites Register.  
**Explanation:** DEP has commenced work on the development of the register of contaminated sites. Awaiting ratification of the Contaminated Sites Bill and associated funding before this action can be completed. The register is a requirement of the Bill and will therefore be available once the Bill is enacted. DEP will be key agency for this action.  
**Responsible Agency:** DEWCP

**Suggested Response 75.** A strategic system on monitoring contaminant loads into major waterbodies subject to significant human pressure to be in place by the year 2000. Again, this will need increased funding and resources in the future.

**Action 75.1** Develop a strategic system of monitoring contaminant loads into major waterbodies subject to human pressure by 2000.

Overall Progress

Not Initiated

Initiated

Developing

Late Stages

Complete

**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

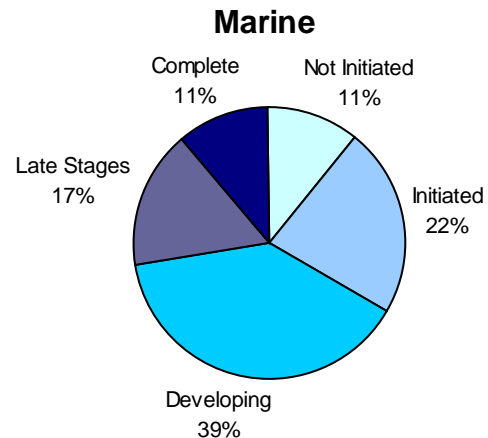
**Responsible Agency:** DEWCP

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## MARINE

For the purpose of this report, 'marine environment' refers to the intertidal zone, near-shore and open ocean environments but excludes estuaries.

The pie chart to the right shows the proportion of actions classified according to progress, recommended to address marine issues identified in the 1998 State of the Environment Report.



## Degradation of Marine Habitats

**Suggested Response 76.** Establish a representative system of marine conservation reserves in line with the Government's New Horizons policy.

**Action 76.1** Implement the State Government's marine conservation and management policy as outlined in New Horizons – the way ahead in marine conservation and management (also see Action 11.3).

Overall Progress    **Not Initiated**    **Initiated**    **Developing**    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** New Horizons

**Explanation:** Progressive implementation of policy. Establishment of new marine conservation reserves underway – Jurien Marine Park to be established in 2003, followed by Montebello/Barrow Island marine conservation reserve, Dampier Archipelago/Cape Preston marine conservation reserve and extensions to the Rowley Shoals Marine Park. Additionally consultation has commenced for the Geopraphe Bay Capes/Hardy Inlet marine conservation reserve and areas adjacent to Ningaloo Marine Park.

**Responsible Agency:** DCLM (Lead), DoF

**Action 76.2** Establish system of Fish and Fish Habitat Protection Areas.

Overall Progress    **Not Initiated**    **Initiated**    **Developing**    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

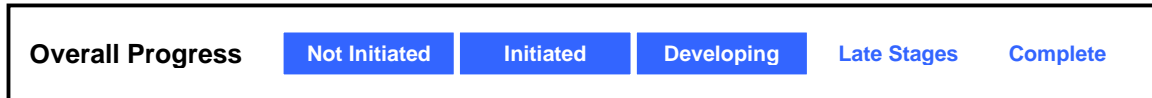
**Project Name:** Fish and Fish Habitat Protection Program.

**Explanation** Fish and Fish Habitat Protection Areas have been established at the following locations: Abrolhos Islands; Lancelin Lagoon; Cottesloe; and, Miaboolya Beach

**Responsible Agency:** DoF

**Suggested Response 77.** Identify areas of increasing pressure, damage or threat and implement regional strategic action plans for their protection and rehabilitation (such as Pilbara and Perth Metropolitan marine regions).

**Action 77.3** Complete regional DoF management strategies.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Fish and Fish Habitat Protection Program.

**Explanation:** Gascoyne Regional Fisheries Environmental Management Strategy completed.

Draft Gascoyne Regional Fisheries Environmental Management Plan completed

**Responsible Agency:** DoF

**Action 77.4** Develop a State Marine Planning Strategy for WA.



**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Policy

**Project Name:**

**Explanation:**

**Responsible Agency:** DPI Lead

**Suggested Response 78.** Improve our knowledge of important marine habitats and resources through a co-ordinated research and monitoring program. Identify, map and establish baseline conditions of habitats.

**Action 78.1** Expand the role of WA Land Information System Marine Working Group to co-ordinate marine habitat mapping and environmental research and monitoring.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** WALIS Marine Group (WMG)

**Explanation:** Several State and Federal Govt. agencies are required to collect marine habitat and environmental data as part of their environmental research and monitoring activities. The WALIS Marine Working Group advises WALIS Council about the best means to coordinate a State-wide approach to marine data collection and dissemination. Proposals are vetted and agreed to by the WALIS Executive Policy group.

**Responsible Agency:** DCLM, DEWCP, DoT, MFP, DOLA, Murdoch Uni, etc

**Suggested Response 79.** Develop a public information program to ensure users of the marine environment act responsibly and do not damage important habitat.

**Action 79.1** Develop mechanisms to co-ordinate existing agency education programs and identify gaps.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** DCLM has developed a marine education framework in conjunction with other State Govt. departments.

**Responsible Agency:** DCLM and others.

**Suggested Response 80.** Based on the precautionary principle and the objectives in this report, the EPA should complete the development of a consistent set of guidelines for environmental impact assessment for the protection of the State's marine benthic primary producer habitats.

**Action 80.1** Complete the guidelines for environmental impact assessment – Marine Benthic Primary Produce Habitat Protection.



**Supporting Activity 1.**

**Progress:** Late Stages

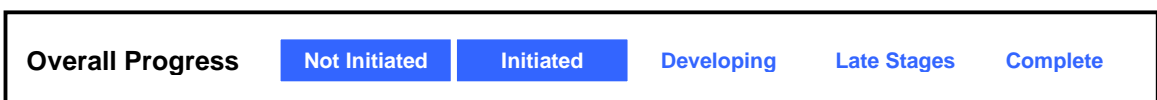
**Nature of Activity:** Policy

**Project Name:** Benthic Primary Producer Habitat Protection Guidance Statement - 29

**Explanation:** EPA has just endorsed 'new' draft for stakeholder comment.

**Responsible Agency:** EPA/DEWCP

**Action 80.2** Produce guidance documents for specific benthic primary producer habitats.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Policy

**Project Name:** Seagrass Benthic Primary Producer Habitat Protection

**Explanation:** Guidance statements still need to be developed for other specific benthic habitats – mangrove, coral, etc

**Responsible Agency:** EPA/DEWCP

## Contamination of the Marine Environment

**Suggested Response 81.** Implement the recommendations of the Southern Metropolitan Coastal Waters Study.

**Action 81.1** Implement the recommendations of the Southern Metropolitan Coastal Waters Study.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

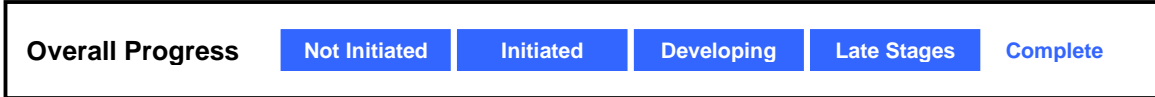
**Project Name:** Southern Metropolitan Coastal Waters Study Recommendations

**Explanation:** There are a large number of recommendations made in this study. The majority have been implemented, or are very close to being implemented.

**Responsible Agency:** DEP lead agency, Cockburn Sound Management Council

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**Action 81.2** Develop a Perth Coastal Waters Management and Consultative Process.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

**Project Name:** Cockburn Sound EPP

**Explanation:** The Cockburn Sound EPP provides legislative protection for water quality in the sound. It is likely that other marine management plans will be modelled on this EPP.

**Responsible Agency:** DEP Lead, DCLM, WC

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**Action 81.3** Upgrade of Woodman Point Waste Water Treatment Plant.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Project

**Project Name:** Woodman Point WWTP

**Explanation:** This \$153M upgrade from primary to advanced secondary treatment of wastewater was to increase hydraulic and treatment capacity to cater for the rapid growth of Perth's southern suburbs, to provide high quality wastewater for reuse or ocean disposal and improve odour control.

**Responsible Agency:** Water Corporation, EPA

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**Action 81.4** Apply the water quality management framework developed in the Perth Coastal Waters Study to other priority areas.



**Supporting Activity 1.**

**Progress:** Initiated

**Nature of Activity:** Policy

**Project Name:** State Marine Waters EPP

**Explanation:** Draft released in 1998. Awaiting amendments to the EPAct to facilitate Statewide EPPs.

**Responsible Agency:** EPA/DEWCP

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**Suggested Response 82.** A statewide inventory of contaminant sources should be developed and maintained by the DEP as part of the NPI.

**Action 82.1** On a statewide basis, develop and maintain inventories of contaminant sources and loads for priority areas.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Developing  
**Nature of Activity:** Ongoing Program  
**Project Name:** National Pollution Inventory  
**Explanation:** For a limited number of specific sites only.  
**Responsible Agency:** DEWCP lead agency

**Suggested Response 83.** The State Government should establish a formal framework to co-ordinate environmental management within Perth’s metropolitan marine region and between these waters and their land catchments. This should be used as a pilot program for expansion to other areas under pressure from domestic and rural discharges.

**Action 83.1** Complete North West Shelf Marine Environmental Management Study.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Developing  
**Nature of Activity:** Ongoing Program  
**Project Name:** North West Shelf Marine Environmental Management Study  
**Explanation:**  
**Responsible Agency:** DEWCP, DoF, DCLM, CSIRO, MPR

**Introduction of Exotic Marine Species**

**Suggested Response 84.** Once final, implement the Australian Ballast Water Management Strategy, and assist in reviewing and updating that strategy.

**Action 84.1** Contribute to the implementation of the Australian Ballast Water Management Strategy.

**Overall Progress**

Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Developing  
**Nature of Activity:** Ongoing Program  
**Project Name:** National introduced marine pest co-ordination group (NIMPCG)  
**Explanation:** NIMPGC developing a national system for management of introduced marine pests.  
**Responsible Agency:** AQIS; DoF, WAQIS, Department of Transport, State Port Authorities, WA Museum

**Suggested Response 85.** Conduct research into the control and eradication of exotic marine species.

**Action 85.1** Complete baseline studies especially in areas of greatest pressure to determine the distribution and abundance of existing exotic species in order to put in place, if necessary, management strategies to eliminate them or control their spread.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Fish and Fish Habitat Protection program.

**Explanation:** This activity supports this action in part only. Could be incorporated into marine habitat and environment surveys.

**Responsible Agency:** DoF, Transport, State Port Authorities, WA Museum, AQIS

**Action 85.2** Conduct further surveys and install early warning systems in marinas, boat harbours and ports in order to minimise the introduction and spread of marine pests.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** DoF-Fish and Fish Habitat Protection program.

**Explanation:** This activity supports this action in part only.

**Responsible Agency:** DoF, Transport, State Port Authorities, WA Museum, AQIS

**Action 85.3** Utilise the risk assessment-based Decision Support System in WA to minimise the risk of the introduction of exotic species into WA waters.

<b>Overall Progress</b>	Not Initiated	Initiated	Developing	Late Stages	Complete
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**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

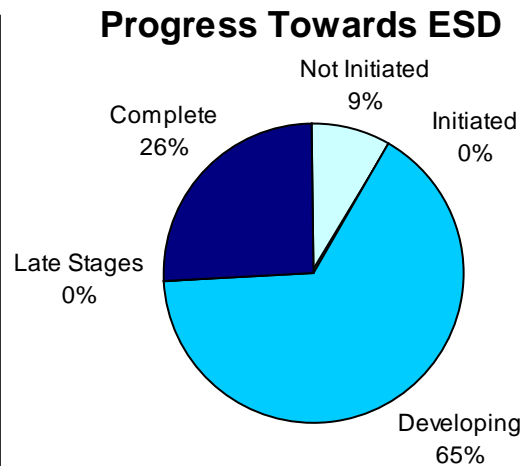
**Explanation:**

**Responsible Agency:**

## PROGRESS TOWARDS ESD

Ecologically Sustainable Development (ESD) involves using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.

The pie chart to the right shows the proportion of actions classified according to progress, recommended to address ESD issues identified in the 1998 State of the Environment Report.



## Agriculture

**Suggested Response:** In the past, agricultural research has looked to increase farm profit through increased crop yields, animal weight gains and short-term profit margins. The research did not put as much emphasis on the long term effects on the land or the waterways. New ways of farming are required which consider these onsite and offsite effects and allow farmers to make a living.

**Action 1.** DoA's Sustainable Rural Development Program has eight strategic activities underway which are intended to progress achievement of the suggested responses above.



### Supporting Activity 1.

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** The Department of Agriculture's Sustainable Rural Development Program has evolved to become the Agricultural Resource management Program.

**Explanation:** The Program aims to protect the natural resource base of agriculture and addresses processes which may degrade that resource base. Threatening processes include wind and water erosion, soil chemical and physical decline, waterlogging, water table rise and salinity, poor water use efficiency and water storage, nutrient export from catchments and declining rangeland condition.

**Responsible Agency:** DoA

## Energy

**Suggested Response:** Develop as part of the State Greenhouse Response Strategy, a policy that addresses the more efficient use of energy and the increased use of renewable energy. This will include the government's response to the Commonwealth's intention to increase by 2% the amount of electricity sourced from renewables and to introduce efficiency standards for electricity generating equipment.

**Action 1.** Develop a Green Power Policy for WA.



**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Policy

**Project Name:**

**Explanation:** A Green Power Policy is not being developed. This was an initiative of the previous Government. The present Government has a Sustainable Energy for the Future document which provides the basis for initiatives in the sustainable energy area.

**Responsible Agency:**

## Fisheries

**Suggested Response:** Fisheries WA will continue to assess the status of targets fish stocks as indicators of sustainable fishing. This is achievable by using a combination of directed research and appropriate management to ensure that all fisheries sectors (commercial, recreational and aquaculture) operate at sustainable levels with minimal impact on the aquatic environment.

**Action 1.** Continue existing research programs into the sustainability of all commercial fisheries.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Policy for the Implementation of Ecologically Sustainable Development for Fisheries and Aquaculture within Western Australia

**Explanation:** Submitting applications against the guidelines set out by the EPBC Act to assess whether the fisheries are being managed in a sustainable manner.

**Responsible Agency:** DoF

**Action 2.** Continue existing research programs monitoring major recreational fishing target species.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Projects

**Project Name:** Various projects continued or commenced since 1999, researching a range of WA's key target recreational fisheries.

**Explanation:** Predominantly survey-based data, integrated with long-run datasets and commercial information of key target species.

**Responsible Agency:** DoF

**Suggested Response:** Fisheries WA is further developing its capacity for managing the State's fish resources at sustainable levels by incorporating ecologically sustainable development principles.

**Action 1.** Identify environmental issues associated with fish, fish habitats and fishing activities and prepare regional management strategies to address these issues. A series of Regional Fisheries Environmental Management Programs will be prepared over a three year duration for five regional areas, namely the Gascoyne, Mid-west, Southern, Pilbara and Kimberley regions.



**Supporting Activity 1.**

**Progress:** Late Stages

**Nature of Activity:** Ongoing Program

**Project Name:** Fish and Fish Habitat Protection program.

**Explanation:** This activity supports this action in part only. Gascoyne Fisheries Environmental Management Review completed

**Responsible Agency:** DoF

**Supporting Activity 2.**

**Progress:** Late Stages

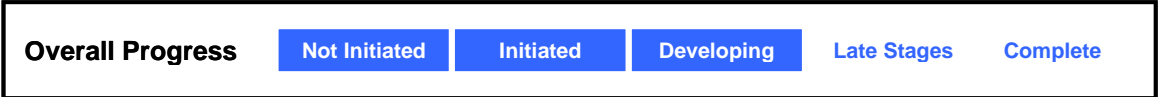
**Nature of Activity:** Ongoing Program

**Project Name:** Fish and Fish Habitat Protection and Research and Bycatch Reduction

**Explanation:** This activity supports this action in part only. All prawn/scallop trawl fisheries north of and including the Abrolhos mid west trawl have by-catch reduction devices fitted grids for 2003 season working towards inclusion of fish escape devices by 2004.

**Responsible Agency:** DoF

**Action 2.** Implement the relevant recommendations of the National Bycatch Action Policy including the development of bycatch action plans for individual fisheries.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Fish and Fish Habitat Protection Bycatch Action Plans

**Explanation:** The Shark Bay Prawn Managed Fishery Draft Bycatch Action Plan has been published and an additional two are at the industry review stage; Exmouth Gulf Prawn Managed Fishery and Shark Bay Scallop Managed Fishery.

**Responsible Agency:** DoF

**Action 3.** Conduct creel surveys to improve knowledge of recreational fishing effort.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Project

**Project Name:** Gascoyne Recreational Fishing Survey; Inner Shark Bay Recreational Fishery

**Explanation:** Estimates of recreational catch and effort inside Shark Bay have been derived from results of creel surveys, undertaken initially in 1998/99 as part of a broader survey of the whole Gascoyne region, and more recently at key boat ramps inside Shark bay in 2002/01

**Responsible Agency:** DoF

**Action 4.** Continue to remove surplus commercial fishing effort through buy-backs of commercial fishing licences under the General Fisheries Adjustment Scheme and the Resource Sharing Initiative.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**  
**Responsible Agency:** DoF

**Suggested Response:** The challenge of assessing the ecological effects of fishing and working toward enlarging the body of information available for the environmental assessment of fishing is being addressed. Fisheries WA is also involved in the process of developing environmental indicators for fishing on a national level.

**Action 1.** Fisheries WA, with assistance from the DoT, is producing Geographical Information System (GIS) data on commercial and recreational fisheries, aquaculture, fish and fish habitat protection areas. This information will be used in the management of the State's fisheries and fish habitats and will be incorporated into the Australian Coastal Atlas.

**Overall Progress** Not Initiated Initiated Developing Late Stages Complete

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Fish and Fish Habitat Protection Bycatch Action Plans

**Explanation:** Dept. of Fisheries GIS is updating and correcting spatial data previously prepared by Dept. of Planning and Infrastructure (ex-DOT) for Dept. of Fisheries. The data relates to management boundaries & zones (including Joint Authority arrangements), closures, fishing activity (commercial & rec'), Species distributions, FHPAs and ROAs. See Appendix.

**Responsible Agency:** DoF, DPI

**Suggested Response:** Sustaining fish habitat is considered an integral part of sustaining fisheries. One of the management tools made available by the *Fish Resources Management Act 1994 (WA)* is the establishment of Fish Habitat Protection Areas which provide special protection and management for fish and their habitats.

**Action 1.** Continue to establish a statewide system of Fish and Fish Habitat Protection Areas.

**Overall Progress** Not Initiated Initiated Developing Late Stages Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Fish and Fish Habitat Protection Program

**Explanation:**

**Responsible Agency:** DoF

## Forestry

**Suggested Response:** Fundamental elements of sustainable development are a secure and managed reserve system and management regimes off-reserve which maintain the ecological processes sustaining the forest. The foundations of these elements exist in WA.

**Action 1.** Implement the Regional Forest Agreements (signed in May 1999) and modify harvesting practices in old growth karri and tingle forest.

**Overall Progress** Not Initiated Initiated Developing Late Stages Complete

**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Forest Management Plan

**Explanation:** The Regional Forest Agreement (RFA) was signed and was being implemented. A new Forest Management Plan (FMP) is under preparation based on the Government's *Protecting our old-growth forests policy*.

**Responsible Agency:** DCLM Lead

**Suggested Response:** Both the public and private sector are contributing to additional plantations on agricultural land which will supply increased timber volumes in the future as well as assisting in redressing water balances in cleared agricultural landscapes. Nationally, the Plantations 2020 vision sets a goal of trebling the nation's plantations by 2020.

**Action 1.** Development of additional plantations on agricultural land (also see Actions in the section on Land).

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Action Plan for tree farming in W.A.

**Explanation:** Approximately 15000 ha of plantations have been established. New eucalypt sawlog program commenced in 2002.

**Responsible Agency:** Forest Products Commission

**Suggested Response:** Research needs to continue into the interactions between different pressures on the forest and their impacts, leading to refinements in management over time.

**Action 1.** Continue research and refine management over time.

Overall Progress    Not Initiated    Initiated    Developing    Late Stages    Complete

**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Ongoing

**Responsible Agency:** DCLM/FPC

## Mining and Petroleum Production

**Suggested Response:** Increased scientific knowledge and changing environmental, social and economic conditions lead to the development of new practices and procedures which define and redefine management practices. Because of the wide range of activities associated with exploration and production and the diverse environments encountered in the State, environmental management responses must be specifically tailored to the activity proposed. Further effort towards ecologically sustainable practices is required in many key areas of mining and petroleum production including management and rehabilitation of mined out voids, tailings management, management of potentially acid forming materials, toxicological studies and defining ecological risk.

**Action 1.** Current activities include the review of new mining and petroleum proposals and annual auditing of environmental performance of mining and petroleum operations in WA. The latter involves reporting on areas disturbed and rehabilitated during the financial year and rating the environmental performance of mining and petroleum activities in terms of meeting environmental commitments and conditions applied to those operations. New regulations and guidelines under the Petroleum (Submerged Lands) Act 1967 (WA) are expected to be introduced early next year. It is anticipated that auditing requirements will increase as a result of their introduction. An agreed program for the Mineral Environment Liaison Committee was developing during 1998/99. Financial and other resources would be provided by all MELC members. Timeframes will be determined when programs are determined.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** These activities as part of MPR's standard operations are to be reviewed.

**Responsible Agency:** MPR

## Tourism

**Suggested Response:** Government agencies involved in the management and promotion of the natural environments used by the tourism industry must further develop methods of measuring the impact tourism is having on the environment. Existing strategies must be refined and new approaches developed to ensure the areas being utilised by tourists are adequately protected from damage.

**Action 1.** Implementation of the Nature Based tourism Strategy and the WA Tourism Development Strategy.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** WATC - The partnerships between the WATC and the Cooperative Research Centre for Sustainable Tourism will be important in refining existing strategies and developing new approaches to ensure that areas being utilised by tourists are adequately protected from damage. The implementation of the Nature Based Tourism strategy will also work towards sustainable tourism.

**Responsible Agency:** WATC,DCLM

## Water Supply

**Suggested Response:** Continue to manage ongoing pressures for water source development to keep allocations within ecologically sustainable limits.

**Action 1.** Water Law Reform Act.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Regulation

**Project Name:** COAG agreements incorporated into the NAP bilateral. Amended legislation RIWA Act (1914) amended 2001.  
**Explanation:** Amended RIWA act contains requirements for specific provisions for the environment  
**Responsible Agency:** DEWCP

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## Action 2. Environmental Water Requirements.



### Supporting Activity 1.

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Statewide Policy No. 5 Environmental Water Provision Policy for Western Australia 2000

**Explanation:** Working through Environmental Water Provisions for groundwater and surface water systems on a priority basis.

**Responsible Agency:** WC, DEWCP

### Supporting Activity 2.

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Environmental Water Requirements

**Explanation:** The Water Corporation with the WRC has completed, or is funding EWR studies on:

- Harding River
- Millstream aquifer
- Canning-Wungong
- Harvey Basin (inc. the Harvey River Restoration Trust)

**Responsible Agency:** WC, DEWCP

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## Action 3. Regional and Local Allocation Plans.



### Supporting Activity 1.

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** Interim strategies are in place and the WRC is working towards these becoming statutory.

**Responsible Agency:** DEWCP (WRC)

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## Action 4. Water Use Efficiency and Reuse.



### Supporting Activity 1

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Several

**Explanation:**

- Drought Emergency Response inc. two days per week sprinkler restrictions.
- Commitment to recycle 20% of WA's wastewater within 10 years (by 2012).
- Kwinana Water Recycling Project.
- Waterwise Schools program.
- Waterwise Gardens Program.
- Domestic Water Use Study.
- Domestic Appliance Water Efficiency Ratings.

Tiered Water Pricing.

**Responsible Agency:** WC, DEWCP (WRC)

**Supporting Activity 2**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:** Draft State Water Conservation Strategy for Western Australia out for public comment. Findings of the Reclaimed Water (Water Recycling) Forum whitepaper.

**Explanation:** Initiatives of whitepaper and strategy are being incorporated into the State Water Strategy Public comment from Strategy reported on at the water symposium.

**Responsible Agency:** DEWCP (WRC)

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**Action 5.** Water Quality Protection Plan.



**Supporting Activity 1.**

**Progress:** Developing

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:** 44 out of 147 water source protection plans available.

**Responsible Agency:** DEWCP (WRC)

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**Action 6.** Contaminated Sites and Groundwater Contamination.



**Supporting Activity 1.**

**Progress:** Not Initiated

**Nature of Activity:** Ongoing Program

**Project Name:**

**Explanation:**

**Responsible Agency:**

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**Action 7.** Appraisal of Water Resources.



**Supporting Activity 1.**

**Progress:** Complete

**Nature of Activity:** Ongoing Program

**Project Name:** Annual review of State of Water Resources for Western Australia.

**Explanation:** The Review has an allocation focus dealing with allocation limits and pressures to and responses of the systems.

**Responsible Agency:** DEWCP (WRC)

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## ACRONYMS

AQIS	Australian Quarantine Inspection Service
BOM	Bureau of Meteorology
CSIRO	Commonwealth Scientific & Industrial Research Organisation
DCLM	Department of Conservation & Land Management
DEWCP*	Department of Environment, Water & Catchment Protection
DEP	Department of Environmental Protection
DLGRD	Department of Local Government & Regional Development
DOLA	Department of Land Administration
DoA	Department of Agriculture
DoF	Department of Fisheries
DoT	Department of Transport
DPC	Department of Premier & Cabinet
DPI	Department of Planning & Infrastructure
EPA	Environmental Protection Authority
EPAct	Environmental Protection Act (1986)
EPP	Environmental Protection Policy
FHPA	Fish Habitat Protection Area
BGPA	Botanic Gardens and Parks Authority
LGA	Local Government Authority
MFP	Ministry For Planning
MPR	Mineral & Petroleum Resources, Department of
PLB	Pastoral Lands Board
SEDO	Sustainable Energy Development Office
WAQIS	Western Australian Quarantine Inspection Service
WASIG	Western Australian Sustainable Industries Group
WATC	Western Australian Tourist Commission
WC	Water Corporation
WRC	Water & Rivers Commission

\* The Department for Environment Water and Catchment Protection (DEWCP) is the current operating name for the Department of Environmental Protection and the Water and Rivers Commission, which are in the progress of amalgamating.

## PARTICIPATING GOVERNMENT AGENCIES

Department of Conservation & Land Management  
Department of Environment, Water & Catchment Protection  
Department of Land Administration  
Department of Agriculture  
Department of Fisheries  
Department of Planning & Infrastructure  
Botanic Gardens and Parks Authority  
Mineral & Petroleum Resources, Department of  
Sustainable Energy Development Office  
Western Australian Tourist Commission  
Water Corporation