

# RIVERVIEW



No. 18

SWAN RIVER TRUST

August 1999

## New Swan River Action Plan

An Action Plan to improve the health of the Swan and Canning Rivers was launched by the Minister for Water Resources on 10 June 1999.

The Action Plan is the culmination of over five years of research, trials, catchment work, computer modelling and community debate.

Its release marks an important milestone for the Swan River.

In 1994 the Swan River Trust embarked on an ambitious program to protect and restore the failing health of the Swan-Canning estuary. Algal blooms, fish deaths in the Swan River, and toxic blue-green blooms in the Canning River had drawn attention to the deteriorating health and chronically high nutrient levels in the estuary. Algal blooms are a natural feature of estuaries, but repeated, excessive blooms disrupt recreation and animal food chains, and toxic blooms pose a public health threat. The level of blooms in the Swan-Canning system had become unacceptable.

Recognising that urgent action was needed, the State Government established the Swan-Canning Cleanup Program and Task Force, allocating \$6.3 million to the Swan River Trust over five years to determine the causes of the problem and guide action for restoration and future management of the estuary.

Speaking at the official launch of the Action Plan, Water Resources Minister Kim Hames said that the most challenging task ahead is to reduce the level of nutrients entering the river so a lot of work will focus on catchment management and land use controls.

"Although catchment management is the only viable long-term cure for our river, it may take many years before its influence is fully realised and involves cooperation, partnerships and action by every member of the community," Dr Hames said.

"Community awareness and education is the vital mechanism that will enable progress and a lot of resources will be dedicated to influencing people's behaviour, empowering them to 'do the right thing'.

"Individual home gardeners, volunteers and community groups undertaking projects will be given information and assistance".



*Minister for Water Resources Dr Kim Hames with Penrhos College students Alex Simeon (left) and Georgia Baker (right) at the Action Plan launch. The girls, representing Millenium Kids, presented their generation's views on the importance of keeping the Swan River healthy for them and for their children.*

The 'Ribbons of Blue' program in the Swan Catchment will be expanded to encourage schools to band together with their local communities to take positive action.

Partnerships between regulators, industry and land managers will be strengthened over the next five years to make sure that best management practices are agreed and implemented. Information about existing and future best practices will be made easily accessible and training will be provided.

Formal agreements with community catchment groups, local government and State agencies will ensure accountability for progress, and nutrient targets will mean that everyone will be working towards shared objectives.

**INSIDE**

This special edition of Riverview presents some of the findings of the Cleanup Program and directions for management of the river and its catchment.

The Swan-Canning Cleanup Program funded a large number of projects related to river and catchment monitoring and mapping, algae and nutrient research, computer modelling of estuarine dynamics, stormwater design, water quality management and development of Catchment Management Plans for key areas. Investigations funded by SCCP, including funding given to the Western Australian Estuarine Research Foundation, have allowed important conclusions to be drawn:

- The main ways nutrients enter the system are from runoff in winter and spring, and from groundwater and sediments in summer.
- It is nitrogen rather than phosphorus that normally limits algal growth; there is usually enough phosphorus present in the water.
- Controlling both nitrogen and phosphorus is essential for effective management.

We also have a better understanding of the role of tidal changes, weather, nutrient availability, oxygen levels, and layering of fresh rainwater over saline marine water (stratification) in the production and intensity of algal blooms.

This understanding puts us in a much better position to make good management decisions.

The high quality of the science and technical innovation developed in SCCP provides the basis for the Action Plan and has resulted in Coast and Clean Seas Program funding being provided by the Commonwealth Government for constructed and natural wetlands for further oxygenation work in the Swan and Canning rivers and for extension of the Trust's light industry pollution prevention work.

The Coasts and Clean Seas Program has contributed \$1.4 million for projects in the Swan-Canning catchment for the next two years.

## Coasts and Clean Seas projects

- Mill Street Main Drain Water Sensitive Urban Design and artificial wetlands (\$110,000)
- Ellen Brook Artificial Wetlands (\$699,000)
- Oxygenation trial on the Canning and Swan rivers (\$250,000)
- Further development of Light Industrial Survey and Education Program (\$90,000)

## The community had a say!

The draft Action Plan was released for public comment in July 1998. Fifty three submissions were received, incorporating 350 comments. The submissions were overwhelmingly supportive of the plan, and specific comments resulted in 35 changes and improvements being made in the final plan.

## Progress in the Catchments

The key to improving water quality in the long term is to reduce the flow of nutrients from the catchment. SCCP has given us a better understanding of where nutrients are coming from across the catchment and the importance of reducing nutrient loads and other contaminants entering the system. This knowledge has made supporting catchment work through the Swan Catchment Centre, Swan-Avon ICM Program and the development of ICM groups a priority. When SCCP started only four ICM groups were in existence. Now over 14 ICM groups are active, with some having established management plans, restoration and demonstration projects. The groups are supported by local government and state agency participation.

The Action Plan will increase support for ICM. Three priority catchments — Ellen Brook, Bayswater and the Upper Canning-Southern Wungong — will be targeted for the most intensive action. Eight other catchments have also been listed for special attention, showing the wide extent of the problems to be tackled. With help from other funding bodies, all these areas will receive support for catchment coordination, planning and specific restoration works. Community and catchment groups will get additional support through the Swan Catchment Centre.



Water quality monitoring has enabled development of water quality targets for the estuary's tributaries and drains and a compliance assessment system.

Local government has a pivotal role in the success of the action plan, and special support will be given to assist them develop and implement improved statutory, policy and decision making frameworks. Support will also be provided to enable local government to appoint additional environmental officers.

SCCP identified the key decision making and statutory planning processes that influence how well we manage the catchment, and identified that appropriate policies and best management practices need to be implemented.

*The rapid and successful expansion of ICM in the Swan-Canning catchment has attracted further Natural Heritage Trust funding and corporate support from Tiwest, Homeswest and Alcoa. Alcoa has provided \$1.25 million over five years to support community waterway restoration and protection activities under the Swan Canning Urban Landcare Program.*

*For further information on progress in the catchments, contact the Swan Catchment Centre on 9221 3840.*

## Community Awareness

As we implement the Action Plan we need to raise general awareness about responsibility — personally and as a community. We need to develop effective partnerships between all sectors of the community, including all levels of government and industry. We need to explore a range of funding options, such as joint ventures and sponsorship, as well as government funding. We must also find new and better ways of working together, recognising the links between catchment activities, urban development, and waterway management. These issues will be a major focus of the Action Plan implementation. The Swan River Trust will coordinate a public awareness campaign. The Ribbons of Blue community and school water monitoring program in the Swan catchment will also be strengthened so that every member of the community has an opportunity to do the right thing for the river.

## Tackling

## Algal Blooms

*in the river*

Sediment chemistry and in-river research into ways to prevent algal blooms have provided the basis for actions in the river. Development of modified clays that bind phosphorus is a technological innovation of considerable significance for improving the health of the Swan-Canning estuary and other waterways in Australia. It also has potential applications in drainage and wastewater treatment.

Innovative work on injecting oxygen into bottom water that is low in oxygen and high in nutrients has created a valuable tool (oxygenation) to improve water quality on the Canning River. In the near future, further oxygenation using a mobile barge on the Swan will provide a means for reducing algal blooms in the upper reaches.

Armed with a better scientific understanding these intervention techniques can be used at selected sites in the river to reduce the severity of blooms. In-river techniques will reduce algal blooms in the short term and take the pressure off the river system while the long-term catchment initiatives take effect.

## On-the-ground work to be done

Physical 'on the ground' works to improve nutrient retention are a very important part of the Action Plan.

These will include:

- 75 kilometres of streamline to be fenced;
- 638 kilometres of foreshore to be revegetated;
- 944 kilometres to be weeded;
- 395 kilometres of works to landscape and control erosion; and
- 102 kilometres closed off to stock and alternative water supplies provided.

# \$14 million in new Action Plan funding

The Action Plan was endorsed by the Western Australian Government in April 1999 when it approved an additional \$14 million funding for a five-year implementation program that will commence in July 1999.

The plan puts forward specific, costed recommendations to:

- Reduce the level of nutrients entering the river from its catchment;
- Prevent nutrients in the river sediments from becoming available to fuel algal blooms; and
- Increase public awareness of the underlying causes and the ways they can help improve water quality.

## SUMMARY OF THE FOUR-POINT ACTION PLAN

### 1. Support Integrated Catchment Management to reduce nutrient inputs

*Core program cost over five years*  
**\$10,000,000**

- Strengthen Integrated Catchment Management in the Swan-Canning catchment and support ICM groups.
- Develop and implement catchment management and farm plans and manage drain inputs to reduce nutrients.
- Raise awareness and provide support to enable the participation of land-holders, catchment and river groups, local government and the broad community in catchment and river management.
- Improve government coordination and support.

### 2. Improve planning and land-use management to reduce nutrient inputs

*Core program cost over five years*  
**\$500,000**

- Use statutory mechanisms including regulations, by-laws, town planning schemes and statements of planning policy to modify land-use practices and prevent or relocate polluting activities.
- Develop and adopt Best Management Practices to reduce nutrient inputs in current land management practices and in all future developments, re-developments and stormwater drainage schemes.
- Use economic and regulatory mechanisms to encourage catchment, wetland and river foreshore management for nutrient reduction.

### 3. Modify river conditions to reduce algal blooms

*Core program cost over five years*  
**\$2,000,000**

- Develop and implement river manipulation and remediation techniques to reduce algal blooms in the Swan-Canning system.

### 4. Monitor river health, fill critical gaps in knowledge and report progress to the community

*Core program cost over five years*  
**\$1,500,000**

- Adopt recommended water quality targets for the freshwater tributaries and complete development of targets for the estuarine portions of the Swan-Canning system until the year 2005 and use this to assess performance of the Action Plan.
- Undertake investigations to fill critical gaps, monitor the river conditions and produce a "State of the Swan-Canning system" report every five years.
- Report progress regularly to the community and ensure opportunities for feedback and for involvement in the adoption and implementation of the Action Plan.



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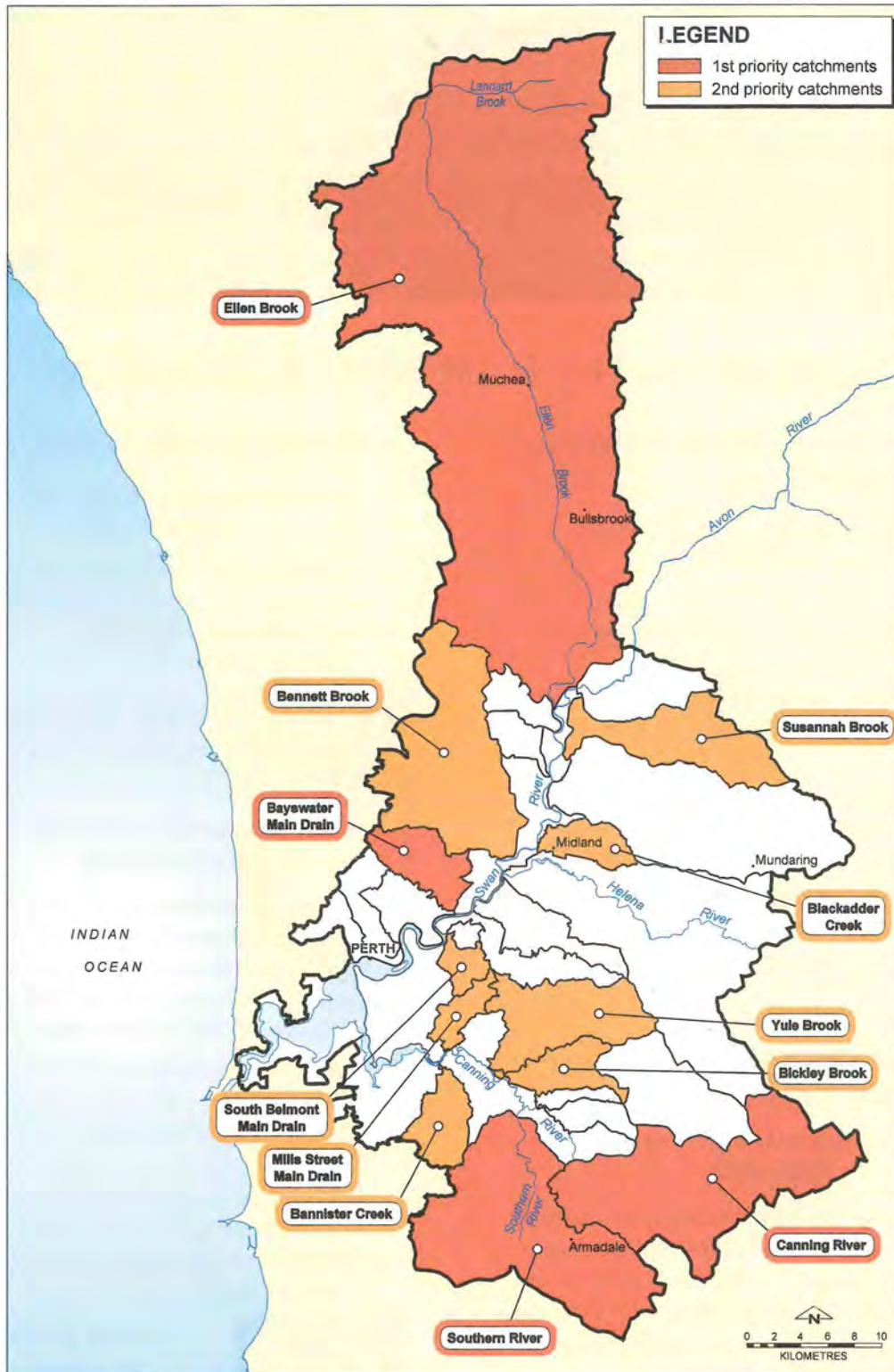
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**SWAN RIVER TRUST**

*Protecting the Swan-Canning River system for the future*

# Focus catchments of the Swan-Canning system



Catchments that contribute the highest levels of nutrients to the river system (classified as first and second priority catchments for management purposes). Both require development or implementation of Catchment Management Plans (CMPs). The Action Plan recommends the appointment of Catchment Coordinators to expedite development and implementation of CMPs in conjunction with community groups and local governments.

## Swan River Education Kit

The Water and Rivers Commission recently hosted an event to thank those involved in the development of the Swan River Education Kit. Water and Rivers chief executive Roger Payne, said the development of the kit was a collaborative process involving education staff, technical staff, catchment management workers that was supported by the federal government. The Swan River Trust and Ribbons of Blue were also involved in its development.

Noel Nannup, from the CALM Aboriginal Tourism Education and Training Unit, and Rosemary Glass from the Bayswater Integrated Catchment Management Group spoke at the function. Both were positive about the kits impact in involving schools in their wider communities and working together for a better future for the community and the catchment.

The kit was developed for use by upper primary and lower secondary teachers of science and society and environment. It encourages teachers to organise excursions to river and creek sites and to study topics such as river communities, water quality investigations and catchment management.



*Kath Broderick, Water and Rivers Commission Education officer, with Noel Nannup at the Olive Farm event.*

The kit includes three booklets, a map, data disc, video and posters. The resources will help teachers in planning a lesson or a unit of work around the river. Teachers are encouraged to plan for student outcomes. The kit is available through education district workshops or by ordering from the Water and Rivers Commission (phone Carolyn Atkinson on 9278 0300).



*The Swan River Trust recently conducted a study to determine the impact of yacht clubs and their activities on the Swan and Canning rivers. The results will assist the Trust by providing the essential information required to consider future expansion plans of yacht clubs, whilst ensuring public use and enjoyment of the river is maintained.*

## Hot off the press

Swan-Canning Cleanup Program Action Plan

Swan-Canning Cleanup Program,  
*Your questions answered*

Swan-Canning Cleanup Program,  
*Analysis of public submissions*

Swan River Education Kit



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