# RIVERVIEW

No.12 SWAN RIVER TRUST March-April 1997


# Landcare month targets waterways

**MARCH is an important month for community action to help clean up our waterways and bushland areas.**

On Sunday 2 March thousands of Perth residents got together to clean up sections of their local river, wetland or bush. The target of Clean Up Australia Day 1997 was plastic bags.

Australians use an estimated four billion plastic bags each year - that's about 400 million for Western Australia. And across the nation we dump over 230,000 or nearly 50 tonnes of plastic bags into landfill each hour.

The most common rubbish item collected across Australia on Clean Up Day 1996 was cigarette butts – so quit for life and the environment. Cigarette butts take 1-5 years to decompose while plastic bags take up to 20 years.

March is again National Landcare Month and to celebrate the theme of vegetation management, the Water and Rivers Commission, with support from the Department of Conservation and Land Management and the Swan River Trust, has produced two excellent booklets on foreshore vegetation (*see back page for details*).

March also sees the start of the Industrial Audit Survey to gather information on pollution prevention procedures and other industrial operations near the river. During the pilot survey, over 600 light industrial premises will be visited by a representative of the Trust, Water and Rivers Commission or local government authority. The project aims to identify and reduce the amount of pollution entering our stormwater system – and then the river (*see page two for details*).

Remember – if it don't get in, it don't do the damage – so protect our river by keeping stormwater clean. ❐

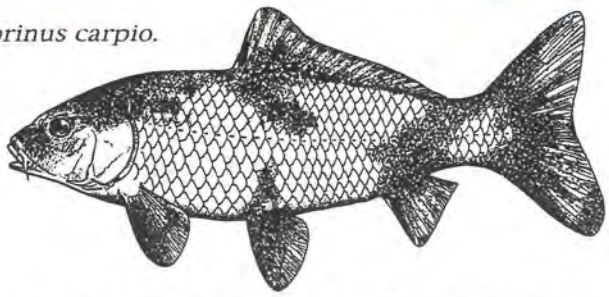


ABOVE *Swan River Trust staff and their families tackled litter along the South Perth foreshore from the Narrows Bridge to Milyu Nature Reserve on Clean Up Australia Day 1997.*

BELOW *Keeping the river clean is a daily task for the Swan River Trust. Here Trust officers use heavy duty equipment to clean a site at Barrack Street Jetty.*


# Koi blimey!

*Cyprinus carpio.*



**SIGHTINGS of carp in Perth waterways are on the increase. The introduced fish has caused serious damage to lakes and rivers in the eastern states, particularly the Murray-Darling River system.**

The fish, a prolific breeder, feeds by filtering bottom sediment causing damage that threatens the waterway's ecosystem. The fish has already established itself in some metropolitan lakes, including North Lake.

*continued page two* ➠

**INSIDE: Clean stormwater – the key to a healthier river.**

# Clean stormwater – the key to a healthier river

**STORMWATER drains reduce the risk of flooding, but they can also carry pollution. When it rains, anything washed into gutters and drains could end up in the river, your local wetland or the ocean.**


*The new sticker – being distributed to raise awareness of the importance of stormwater drainage to the river's health.*

There are two types of stormwater pollution:

* non-point source – where the origin of the pollution is diffuse or difficult to identify to a specific source, such as contaminated road runoff, and,

* point-source – where the origin of the pollution can be detected from a particular location and activity, such as a chemical spill or sewerage overflow.

While much point source pollution has been controlled by licensing and adherence to code of practice, non-point source pollution occurs largely unchecked. In the United States, an estimated 80 per cent of waterway degradation comes from non-point source pollution. The main causes of waterway pollution are:

**suburban**: from fertilisers and lawn clippings washed from parks and gardens; detergent from car washing runoff in driveways; oil and chemical spills; pesticide and herbicide residues seeping into groundwater; defective septic tanks leaching organic material and nutrients to groundwater.

**urban**: runoff from roads and parking lots washing oil, heavy metals, and tyre wear into the stormwater drains; leaching chemicals, bacteria and nutrients from waste disposal sites.

**air pollution**: air pollutants carried by rain or wind onto catchments and into waterways.

**industry**: chemical spills; discharge by mobile operators such as carpet cleaners; wash down areas not linked to sewerage.

**agriculture**: from rain or over-irrigation washing fertilisers, soil, salt, animal waste, pesticides, herbicides etc. into waterways or leaching to groundwater.

In many cases the pollution happens without us even knowing the damage has occurred. For example, from over fertilising lawns and gardens.

"Many people think that if a little fertiliser works well, a lot will work even better," Water and Rivers Commission environmental officer Stephen Wong said. "But our sandy soils do not retain nutrients very well and the excess fertiliser washes away or seeps through to groundwater."

One solution to stormwater pollution is to create water retention basins that filter poisons and nutrients before they reach the waterway. But retention basins need to be cleaned and the accumulated sediments removed to an appropriate landfill site.

**Here are some things you may be able to do to help reduce stormwater pollution:**

*** wash the car on the lawn; recycle oil via your local garage.**

*** use fertilisers sparingly; do use slow release fertilisers; water the garden, not the roadway.**

*** plant native shrubs and ground covers – they need less water and nutrients and many flower during summer.**

*** never tip paint or chemicals down the street drain or into gutters. Contact your local council to find the nearest approved disposal site.**

*** dog droppings are rich in nutrients – protect rivers and wetlands by collecting your pet's mess.**

*** join or support local community conservation groups. Contact the Swan River Trust or the Swan Catchment Centre on 221 3840 to find out about rivercare and bushland groups active in your area.**

# Eight councils join light industry survey

THE COUNCILS of Bayswater, Bassendean, Belmont, Canning, Gosnells, Melville, Stirling and Swan have joined a project aimed at identifying and reducing stormwater pollution to the river.

The project will begin with a survey of over 600 light industrial premises to assess current wastewater and pollution management practices.

The project is being led by the Swan River Trust and the Water and Rivers Commission.

The project aims to establish the extent of industrial pollution to the river and the possible need for further controls through licensing. Many industries are currently regulated by licences administered by the Department of Environmental Protection.

"The support and enthusiasm of local government has been very positive," Trust urban landcare officer Louisa Barnacle said.

Nurseries, car detailers, carpet cleaners, pest control operators, printers, pool supply companies, food processors, mechanical repairers and kennels are among industries to be targeted by the survey.

The project also includes an education component to raise community awareness of the impact on our waterways of pollutants carried in stormwater.

Ms Barnacle said the project group hopes to extend the survey to include other urban councils. For more information contact Ms Barnacle or Mr Wong on 278 0300.

# Carp increase in Perth waters

*from page one*

Swan River Trust chairman Geoff Totterdell said Perth's waterways need to be protected against introduced species, not just fish but other exotic animal and plant species as well.

"Residents along the river and its tributaries have a responsibility to protect their backyards from weed invasion," he said. "It's difficult to protect individual sections of the river if reinfestation is likely from other areas."

The Fisheries Department has recently established a Fish and Habitat Protection Program. Program manager Colin Chalmers said the department is developing a management strategy for aquarium fish which covers issues such as the importation of fish from the eastern states and breeding fish in Western Australia.

"The best solution to the problem is to stop the fish getting into waterways, which means educating the public about the potential danger of introduced species," Mr Chalmers said.

People wanting to dispose of pet fish, such as koi carp and goldfish, should take them to the local pet shop or destroy them.

"Dumping them in the local creek or lake is not the solution. Once they're in the waterway it's very difficult to get them out."

In the Murray-Darling River system, carp have grown to eight kilos. The female fish can produce up to half a million eggs.

# Computer model of river system targets algal blooms

**A RESEARCH project underway in the Swan River will help scientists create a complex computer model of the river system to predict the risk of algal blooms.**

The WA Estuarine Research Foundation project, part of the Swan-Canning Cleanup Program managed by the Swan River Trust, is investigating algae movement in the water. Some species of algae, or phytoplankton, can move up and down the water column to make better use of light and nutrients.

The Foundation's Dr David Hamilton said the project would help scientists understand the factors that trigger algae migration, including light, temperature, salinity and the availability of nutrients.

"Vertical migration is widely understood as being important in the formation and maintenance of algal blooms," Dr Hamilton said. "But attempts to understand its ecological significance have had little success."

Information gathered by scientists from a barge anchored near Ron Courtney Island in Bassendean will be used in a computer model of the river system being developed by the Foundation as part of the Cleanup Program.

The model – which links data from a range of research projects – will help predict the likely outcome from changes to the river system, such as a reduction in nutrients entering from the catchment. Excess nutrients (phosphorus and nitrogen) built-up in the river sediment are considered the main cause of an increase in the size and frequency of algal blooms in recent years.

"Computer models of this type are one of the best ways to represent the complex interactions which occur in nature between physics, chemistry and biology," Dr Hamilton said.

Swan River Trust chairman Geoff Totterdell said the model would also be used to evaluate the usefulness of a range of options being considered as part of the Cleanup Program, for example:

- dredging to remove nutrient-rich sediments in the upper estuary
- artificially mixing the layering of marine over fresh water to improve oxygen levels near the river bed
- adding modified clay to sediment at algal bloom 'hot spots' to reduce the amount of nutrients available to algae.

Mr Totterdell said current river research by the WA Estuarine Research Foundation, the CSIRO and the Water and Rivers Commission would increase the stock of tools available to reduce the risk of algal blooms. He said the Swan River Trust is developing an Action Plan that combines river remediation with catchment management activities to improve water quality in the Swan and Canning Rivers.

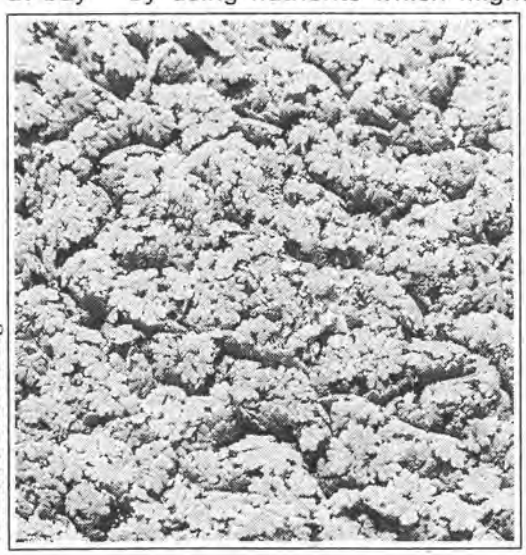
"Improving fertiliser management, pollution control and reducing soil loss from the catchment are the long-term solutions to cleaning up the river," Mr Totterdell said.

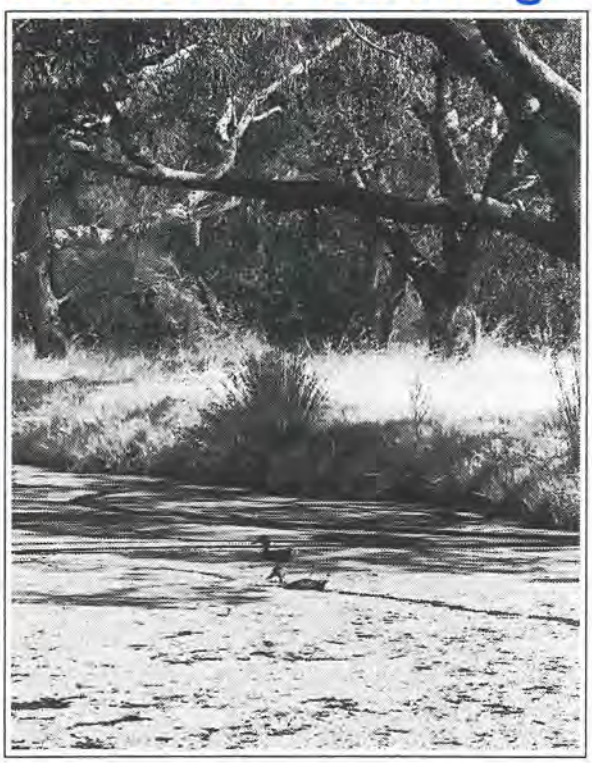
*Alisa Krasnostein, an environmental engineering student at the University of WA's Centre for Water Research taking water samples from the Trust barge near Ron Courtney island. Data collected by Alisa during her 12 weeks' work experience will help Dr David Hamilton's team develop an ecological model of the river system.*

# Native freshwater plants return to cover the Canning

WHILE excess nutrient in the Swan and Canning Rivers is causing problems, some plants benefiting from eutrophication may actually be helping us battle the threat of blue-green algal blooms.

Swan River Trust scientists believe the native plants *Azolla* and *Lemna*, which have grown to cover the Canning River upstream of the Kent Street Weir again this summer, are keeping blue-green algal blooms at bay – by using nutrients which might otherwise be available to the potentially toxic algae species.





RIGHT *Ducks make their way through the native plants upstream of the Kent Street Weir. The plants provide an excellent feeding habitat for wading birds. They also restrict the growth of potentially harmful blue-green algae.*

LEFT *Close up of Azolla – a common fish pond plant.*

Photos: David Fardig

# Dual booklets identify waterway plants

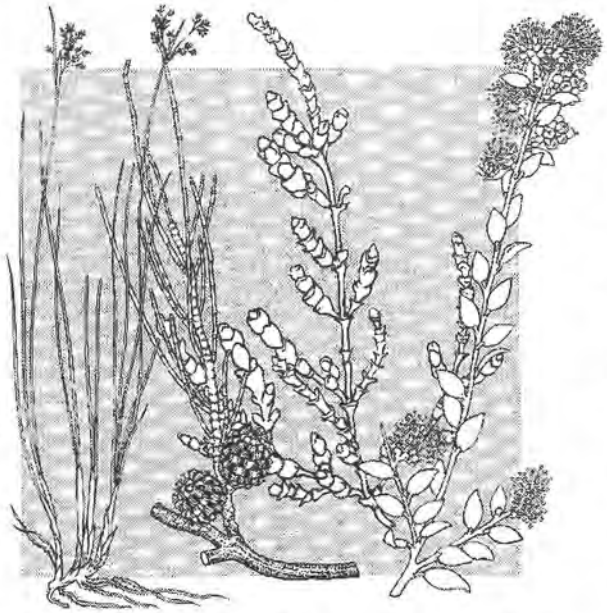
**TO CELEBRATE National Landcare month, the Water and Rivers Commission has released two foreshore vegetation identification booklets.**

The idea for the booklets came from community groups working around the Swan and Canning Rivers who need this information to assist their valuable rehabilitation work.

The booklets will help the community learn more about native plants fringing their local streams and wetlands.

It is important the fringing vegetation is retained in a good condition to maintain a healthy waterway. Fringing vegetation has a wide range of functions including:

* flood control
* shoreline stabilisation to reduce the risk of erosion
* sediment, nutrient and pollution filtering, and
* the provision of food, shelter and breeding habitats for many animals and insects.



*Artwork from the cover of the estuaries and saline waterways vegetation booklet.*

"Native Vegetation of Estuaries and Saline Waterways in South Western Australia" and "Native Vegetation of Freshwater Rivers and Creeks in South Western Australia" have been produced by the Water and Rivers Commission and the Swan River Trust in collaboration with the Department of Conservation and Land Management.

The booklets provide easy to read descriptions of plants found along our waterways and wetlands. The descriptions include the plant form, flowering times, plant distribution and plant propagation techniques.

Local botanical artist, Margaret Wilson, has drawn attractive and detailed illustrations for each plant to assist identification.

The booklets are available from the Water and Rivers Commission (phone 278 0300) or the Swan Catchment Centre (phone 221 3840). You can visit the Swan Catchment Centre at 108 Adelaide Terrace, East Perth, opposite the Hyatt Hotel.

# Community feedback sought on Canning foreshore policy

**A DRAFT foreshore reserves management policy has been endorsed by Canning Council and released for public comment.**

The policy document was developed by the City of Canning in consultation with the Swan River Trust to improve management of the area's foreshore environment. It complements the existing range of Trust policies for protection and management of the Swan and Canning Rivers.

The document is the result of nine months' preparation including a community consultation process involving two issues workshops attended by 150 people and the analysis of 1500 public submissions. The policy addresses community concerns about declining water quality, the protection of native wildlife and vegetation, and the control of commercial development.

Foreshore Community Advisory Committee chairman, councillor Stuart Clarke, a member of the Swan River Trust board, said the draft policy also covers issues relating to drainage, recreation and public access.

"The development of the foreshore policy has been a very important milestone in the life of the City of Canning," Cr Clarke said. "It provides a framework for the environmentally responsible management of the City's major natural resource."

Cr Clarke said the high level of community response during the consultation period reflected the degree of concern residents have for their river and its foreshore. Copies of the draft policy are available for viewing at the City of Canning offices, Riverton, Bentley, Queens Park and Willetton libraries, and the Swan River Trust.

For more information contact City of Canning Parks and Reserves manager, Steve Atwell, on 231 0645. ❐

# $1000 Living Streams Award

SCHOOLS, businesses, landowners and community groups could be eligible to win the $1000 Living Streams award at the State round of this year's National Landcare Australia Awards.

The award, sponsored by the Water and Rivers Commission and Agriculture WA, is open to individuals or groups who have achieved significant results, or initiated a significant project, to rehabilitate a drain, creek, river or estuary foreshore.

For entry forms, phone or fax Monica Durcan on 291 8249.

To celebrate National Landcare Month the Water and Rivers Commission has also produced a colourful A3 poster promoting the concept of living streams.

Copies are available free by contacting the Commission on 278 0300.

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