



## Help on the way for algal bloom 'hot spots'

**Trials being conducted in the Swan River will establish whether adding modified clay to the river's sediment can reduce the risk of algal blooms.**

Stage one of the trials was conducted near Ron Courtney Island in the upper Swan during December. The project is being undertaken by the CSIRO for the Swan River Trust as part of the the Swan-Canning Cleanup Program. The Cleanup Program was established in 1994 to investigate the causes and cures of algal blooms.

During the two week experiment a combination of rare earths and clay were added to sediment isolated in large tubes pushed a metre into the river bottom.

"The modified clay operates like a magnet attracting phosphorus, which is an important nutrient required for algal blooms to develop," Swan River Trust chairman Geoff Totterdell said. "Once attached to the clay the phosphorus will not be available to algae."

"Laboratory trials conducted by CSIRO suggest we're on the right track. Now we have to see if the technique works in the river."

Swan Canning Cleanup Program manager Dr Tom Rose said the trial results, which would be available shortly, were showing early signs of success.

"We need to complete the final analysis but the preliminary results are very encouraging and show the material to be very effective at removing phosphorus from the water column and sediments," Dr Rose said.

If stage one of the trials is successful, large scale trials would be undertaken in 1997.

Dr Rose said modified clay could be added to sediment in the river's algal bloom "hot spots" – sections of the Swan River between Maylands and Guildford where nutrient-rich soil particles washed in from the catchment have accumulated. Nutrient build-up in the river sediment has occurred over 20 to 30 years.

"If we're successful then wider application of the technique might help other river and lake systems in the world deal with their nutrient enrichment problems," Dr Rose said.

In-river research and remediation trials are combining with urban and rural activities – such as better drainage design, revegetation, and improved farming practices to reduce soil and fertiliser loss – to improve the health of the Swan and Canning River system. □



Swan River Trust field crew helped CSIRO staff place the 3m x 1m pipes into the river near Ron Courtney Island. Modified clay was added to the sediment at the base of each column to test the material's ability to remove phosphorus from the water column. During the two week sediment trial researchers conducted daily monitoring of nutrients, metals, oxygen, salinity and temperature.

## New industrial strategy to cut river pollution

**A NEW group has been set up to identify and improve waste management practices impacting on Perth's rivers, wetlands and groundwater.**

The group, led by Swan River Trust under the Swan Canning Cleanup Program, includes representatives from local councils and the Water and Rivers Commission.

Trust urban landcare officer Louisa Barnacle said the group's main objectives were to:

- \* establish a standard industrial auditing process which will identify pollutants
- \* check compliance with environmental standards and legislation
- \* develop procedures for ongoing monitoring of waste management practices, and
- \* to recommend improvements to industrial operations to protect water resources.

Ms Barnacle said that while inappropriately disposed of wastes may not be in large quantities, the long-term cumulative effect from numerous diffuse sources can pollute groundwater as well as flow into stormwater drains and pollute the river.

"We're trying to develop an integrated approach to industrial pollution prevention," Ms Barnacle said.

Industries to come under the spotlight are those not currently licensed by the Department of Environmental Protection. These industries include mechanical workshops, nurseries, golf courses, vehicle depots, marine and pool services, and mobile operators such as carpet cleaners, pest control and mechanics.



## Foreshore weed: To remove or not to remove?

**NUISANCE blooms of bright green algae in the lower reaches of the Swan and Canning Rivers have caused community concern over recent weeks.**

The bloom of non-toxic *Rhizoclonium* forms banks of green slime in the shallow parts of the river. The algae can shift across the river surface with changes in tide and wind. The bloom is currently found at various locations between Riverton Bridge and Mt Henry in the Canning River and upstream from the Maylands Yacht Club in the Swan.

"As long as the weed stays wet we don't have a problem," Swan River Trust manager Robert Atkins said. "However, at low tide, or when the algae is washed onto river beaches and begins to dry out, the smell of rotting weed can be quite strong."

The weed might become entangled around boat moorings and propellers. Although the algae is not considered a health risk, obvious discolouration in the water should be avoided. Weed near the foreshore may also conceal other hazards, such as cobbler fish with spines.

### Priority areas

While the Trust's field crew will remove rotting weed accumulations from river beaches, priority will be given to areas of high public use.

Algae often collect on muddy banks or foreshore areas where rushes line the shore.

"These are important parts of the river ecosystem which are easily damaged," Mr Atkins said. "Algae will not be removed from these areas."

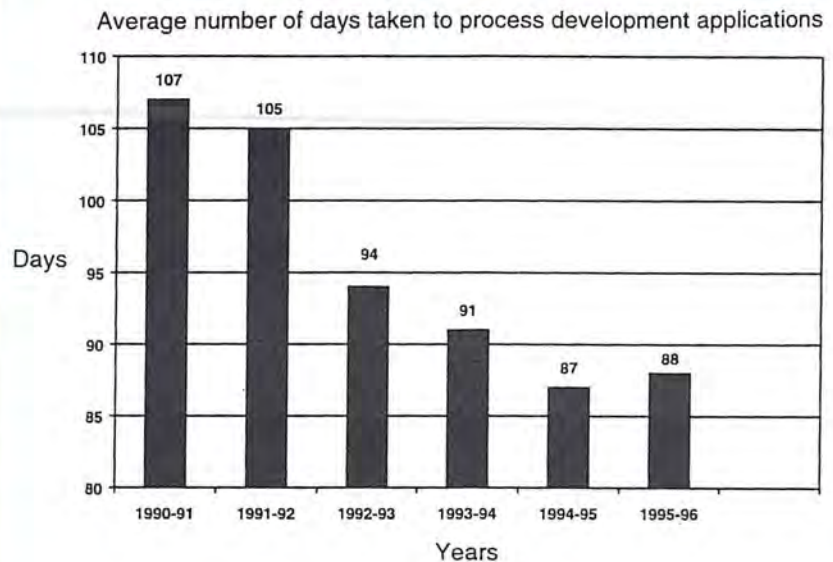
"There will always be algae in the shallow parts of the river causing some odour. This is a natural part of a living river system and part of residing next to a river."

In October the Trust predicted heavy winter rains might lead to greater bloom activity in the Swan and Canning Rivers this summer, including the presence of *Rhizoclonium* in the lower Canning River. The weed is also evident at Maylands.

"Algal blooms are a natural part of the river system, but the frequency and size of blooms have increased in recent years," Mr Atkins said.

The Trust is preparing an Action Plan as part of the Swan-Canning Cleanup Program to reduce the level of algal blooms. In-river trials have also commenced to find more ways to control blooms through limiting nutrient release from sediment (see story page one). □

## Riverside developments put planning team to the test



THE 1995-96 financial year proved a tough time for the Trust's development applications assessment section. Changing locations from London House in the city to the Hyatt Centre in East Perth, changes in support from the Waterways Commission to the Water and Rivers Commission, and staff changes throughout the year put the team under enormous pressure.

But despite the problems, the team managed to achieve one of its fastest years for processing almost 200 development applications for work in or adjoining the Trust's Management Area. It took the team an average of 88 days to process each of the 192 development applications received in 1995-96 (see table). Copies of the Trust's Annual Report are now available.

Some of the major riverside developments requiring Trust assessment last year included Ascot Water in Belmont, Northbank and Pier 21 in North Fremantle, extensions to the South of Perth Yacht Club and the redevelopments of the Ascot Inn, and Raffles and Sandringham hotels.

Officers from the planning team meet regularly with developers and local councils to promote Swan River Trust policies. Increased community awareness of Trust policies will streamline the development application process by reducing the number of applications that do not conform to Trust policies.



Trust planning team members Nicola Vinicombe and Simon Bain discuss development proposals for the river foreshore.



# Recreational and commercial river use stretching environment and safety

No-go conservation zones, more bilge pump-out facilities and stricter speed limits are among recommendations to better manage the impact of boats and other craft on the Swan and Canning Rivers.

The final report of the inquiry into the effects of vessels on the Swan and Canning Rivers drew on almost 200 public submissions expressing concern about the speed of some vessels, safety, noise, disturbance to wildlife, pollution and bank erosion.

"There has been a great deal of debate in recent weeks about the noisy and disruptive activities of some jet ski users and many of the report's recommendations are aimed at addressing this issue," Swan River Trust chairman Mr Totterdell said.

The Trust is working with the Department of Transport to advance implementation of the report's recommendations, several of which require amendments to the Navigable Waters Regulations.

Mr Totterdell said another key area of concern was the impact of vessels on the rivers' conservation values through erosion of banks by wash and disturbance to wildlife.

"We have recognised that some present uses should continue - such as commercial operations to the upper reaches of the Swan - but we believe 'no wash zones' should be considered," Mr Totterdell said.

He said other areas of conservation significance should be off limits to all motorised craft.

The report also recommends more pump out facilities at

## Inquiry releases final report

The loss of foreshore vegetation and the use of vessels in restricted areas leads to erosion, as here at Bakers Bridge at Lilac Hill, upper Swan River.



suitable locations to reduce the risk of sullage and bilge water being discharged illegally to the river.

"We have to ensure that competing demands do not cause conflict between river users or threaten the ecological integrity of the river," Mr Totterdell said.

Copies of the report are available from the Swan River Trust by contacting Mara on (09) 278 0400.

## Hydrocotyle on the ropes in the Canning

The Canning River has been cleared of the large aquatic weed *Hydrocotyle* following continued inspection and removal by the Swan River Trust.

The introduced plant, declared by Agriculture WA as a noxious weed requiring control and eradication, deprives aquatic animals and plants of light and oxygen. It also prevents recreational use of the waterway.

Swan River Trust chairman Geoff Totterdell said that while the weed had been removed from the main waterway, *Hydrocotyle* could still be found in some waterbodies next to the river.

"The potential exists for lingering infestations in some stormwater drains and private properties to find their way back into the river," Mr Totterdell said. "While the river is now free of *Hydrocotyle*, the risk of further outbreaks during summer will remain until all growth of the weed is removed."

The use of the Kent Street Weir to limit the upstream movement of marine water during the dry summer months has led to conditions easily exploited by freshwater aquatic weeds. These include reduced salinity and increased nutrient enrichment.

Any sightings of the weed should be reported to the Swan River Trust or the local council.



ABOVE *Hydrocotyle rununculoides*, a floating plant which can form large mats up to several hundred metres long and up to one metre in depth, grew to smother the Canning River during the early months of 1994.

LEFT A close up of the plant's leaves. *Hydrocotyle* has been declared a noxious weed by Agriculture WA.



# Hunting local fauna info

**DO YOU know about your local fauna? What animals live in your area? On your block?**

We want to know which mammals, lizards and birds live near your home. If you know about insects and other invertebrates, we would love to hear about them too.

The community-based project team for the Upper Canning and Southern-Wungong Rivers catchments is compiling information as part of the process for preparing catchment plans for the area.

"Ensuring sufficient habitat for animals and trying to link the current distribution of native animals is a key component to improving the local environment," chair of the project team, Brett Tizard said.

Mr Tizard said a series of workshops would be held early in the new year to further scope issues and develop solutions to local environmental problems.

The project team is supported by the Swan River Trust. Trust catchment officer Nicole Siemon is helping the project team prepare the catchment plan, which will include a resource inventory, recommendations for land use management and an implementation plan. Contact Nicole on 278 0407. □

# In the drink in the line of duty



Swan River Trust staff will do almost anything to get their picture in the paper. It's all for a good cause of course – to promote the beauty of the river system and community awareness of river issues.

One recurring story involves nutrient-rich sediment and its impact on the growth of algal blooms (see *story page one*).

For a recent article in the *Sunday Times*, photographer Tom Rovis-Hermann needed something special to illustrate dramatically what the thick black ooze sitting on the bottom of the upper reaches of the Swan River looks like.

And that meant Water and Rivers Commission environmental officer Chris Benson getting into the swim of things near South Guildford to scoop some sediment into a cup and then onto a tray.

Crew member Mischa Cousins and Community Relations Officer Tim Larcombe declined the opportunity to join Chris and watched the action from the safety of the Trust boat – positioned advantageously in the background by skipper Ivan Stork.

The Swan River Trust would like to thank the media for all their help promoting community awareness of river issues during 1996.

## Community catchment centre open for business

**GROUPS** needing help with foreshore or catchment revegetation – whether for advice on weed removal or what species to plant – can contact the Swan Catchment Centre on 221 3840.

The centre has been boosted by the appointment of manager Peter Nash and acting network coordinator Caroline Seal. If you want to promote your activities contact the new media officer Tony Whitbread.

The catchment centre, at 108 Adelaide Terrace in East Perth (opposite the Hyatt Centre), provides a variety of services and information to community conservation groups, including internet access, videos, meeting room facilities and training.

Visit the Swan-Avon ICM web site at <http://www.wrc.wa.gov.au/swanavon> or e-mail the centre on [swancc@wrc.wa.gov.au](mailto:swancc@wrc.wa.gov.au).

## Recent Publications

Available from the Swan River Trust unless otherwise stated.

### Booklets

- \* Rivercare Directory, 1996. Rivercare, catchment and support groups of the Swan-Canning region.
- \* Understanding Water Quality on the Swan Coastal Plain: What do the numbers mean?

### Reports

- \* Inquiry into the Effects of Vessels on the Swan and Canning Rivers: A Report to the Minister for the Environment. Report No. 27, December 1996.
- \* Annual Report, 1995-96.

### Pamphlets

- \* Information and Advice to Riverside Residents, November 1996. Catchment Management Series, No.4.

### Videos

- \* Living with Streams. Swan River Trust and Water & Rivers Commission, available to purchase from Water Corporation on 420 2605. For loan from the Swan River Trust.



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Protecting the Swan-Canning River system for the future