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Swan-Canning Industry Survey underway

'Don't let your river go down the drain' is the catchcry of a new project to help protect Perth's waterways.

The project — launched by the Water Resources Minister Kim Hames on 14 May — begins with a pilot survey of waste management practices at about 600 light industrial premises in eight councils bordering the Swan and Canning Rivers.

Dr Hames said that while public understanding of the importance of looking after the Swan and Canning Rivers had risen dramatically in recent years, the community needed to be more aware of the importance of stormwater drains.

"Drains are almost invisible," Dr Hames said at the launch. "We see them all around us but we don't really notice them. We certainly don't spend much time thinking about them.

"Yet drains are critical when it comes to protecting our waterways."

Unacceptable industrial practices have been identified as the cause of 70 per cent of pollution complaints to the Swan River Trust.

The survey covers some 42 business types including chemical blending works, automotive industries, nurseries, food processors and printing shops. The survey aims to establish the risk of industrial pollution to the river and to identify ways of improving waste management practices.

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ABOVE Water Resources Minister Kim Hames (left) gets a rundown on the industry survey database from Water and Rivers Commission pollution management officer Stephen Wong. With them are (left to right) City of Canning senior environmental health officer Peter Morrison, Swan River Trust urban landcare officer Louisa Barnacle and Swan River Trust chairman Geoff Totterdell.

BELOW Cloverdale Primary School Year 7 student Nathan Wells shows the Minister how the drains stencilling program works.



Inside ...

- * the development application process: how it works
- * complying with conditions: weekly river runs keep an eye on our waterways and foreshores
- * the back page: what's happening in Integrated Catchment Management (ICM) across the region

Education pack to support pollution reduction project

The aim of the Swan-Canning Industry Survey is to assess, and ultimately reduce, the risk of pollution to the river and groundwater. The education pack will help raise awareness in industry and the general community of the importance of clean stormwater to the health of our waterways.

The education pack includes:

- workplace signs promoting good housekeeping and best management practice
- posters promoting ways to help protect the river, wetlands and the ocean; targeting residential and industrial areas.
- 'Don't let your river go down the drain' sticker.
- drain stencilling project in which local government, schools, industry and community groups use stencils to spray paint the messages 'Drains to River' and 'Clean Water Only' onto gutters next to drains inlets.

Industry Survey launch

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A database being established as part of the project will provide councils with detailed information on waste management practices, chemical storage and industry types in their area. The database will help councils with pollution prevention and development planning.

The Swan-Canning Industry Survey is being led by the Swan River Trust with support from the Water and Rivers Commission, the Department of Environmental Protection and the eight councils. The project is an initiative of the Swan-Canning Cleanup Program.

The councils involved in the pilot survey are Bassendean, Bayswater, Belmont, Canning, Gosnells, Melville, Stirling and Swan. Once complete, there are plans to use the pilot survey as a model for expanding the project to include other councils across Perth.

City of Belmont mayor Peter Passeri said that before the 1980s, drains had generally been little more than blots on Perth's landscape, "ugly open trenches whose sole purpose was to direct stormwater to the river".

"Now, thankfully, all that has changed," Mr Passeri said, pointing out the role revegetated drains can play in stripping nutrient and chemical pollution from water before it reaches the river.

"Through our relationship with the Swan River Trust we have become pretty good strippers — of nutrients, that is.

"Belmont and the Swan River Trust are working closely on other projects to reduce the amount of nutrients entering the Swan River, including the major rerouting of the Mathieson Road drain into nutrient stripping ponds in the Ascot Racecourse."

Mr Passeri said the Mathieson Road drain redirection would improve the quality of water entering the river, reduce the impact on the Ascot Waters residential development and provide Ascot Racecourse with attractive wetlands in the centre of the track.

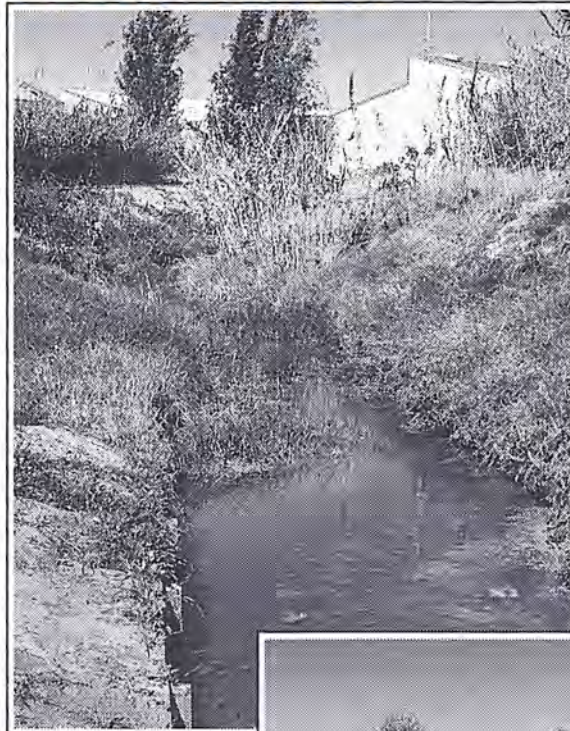
"A coordinated approach such as this really is great news," he said. "Not just for the people of Belmont but throughout the metropolitan area."

The launch was attended by 80 local, State, community and industry representatives. For more information contact Louisa Barnacle or Stephen Wong on (08) 9278 0400.

Water Resources Minister, Dr Kim Hames, with City of Belmont mayor, Peter Passeri, and Swan River Trust chairman, Geoff Totterdell. The project launch was held at the site of drain beautification works being undertaken by the City of Belmont.



From this ...



Revegetating old drainage lines provides habitat for wildlife, can remove nutrient and chemical pollution before it reaches the river, and provides a more attractive environment for people. Here in the City of Belmont, drain beautification works being undertaken by the council along the banks of the South Belmont Main Drain show how drains can reduce the risk of flooding and still be environmentally and aesthetically useful.

... to this



Living streams workshop brings schools, councils and community groups together

Thirty school, community and local government representatives met recently to advance "living stream" projects across the Swan-Canning catchment.

The workshop, held at the Swan Catchment Centre in March, was organised by the Ribbons of Blue schools environmental education program with support from the Swan River Trust and the Water and Rivers Commission.

The aim of the workshop was to provide participants with:

- * background information on the importance of natural vegetation to the ecology of the river system;
- * a framework of practical skills necessary to plan, organise and implement a community streamline project;
- * and the opportunity to form teams to progress future projects.

"The workshop was designed to bring together schools, community groups and local government to find out more about streamline vegetation projects," Ribbons of Blue State coordinator Susan Worley said. Ms Worley said the workshop would help Ribbons of Blue schools involved in water quality monitoring extend their activities into other areas of environmental management.

The renowned beauty of the Swan and Canning River system has not been preserved by chance - it is the result of careful planning and management. Balancing community needs for recreation and commercial development while still maintaining the quality of the river system is a complex and demanding task.

Since 1989, the Swan River Trust has exercised planning controls for all development within the management area. The Trust is almost like a local government authority for the Swan and Canning Rivers.

The planning process ensures that consideration of the rivers' needs are included in decisions made by the Minister for Water Resources and the Minister for Planning that directly affect the river.

Swan River Trust acting manager Robert Atkins said the Trust is working with the Ministry for Planning to review the process with the aim of shortening and improving procedures.

There are three main pathways by which a development application in and around the river can proceed (see chart).

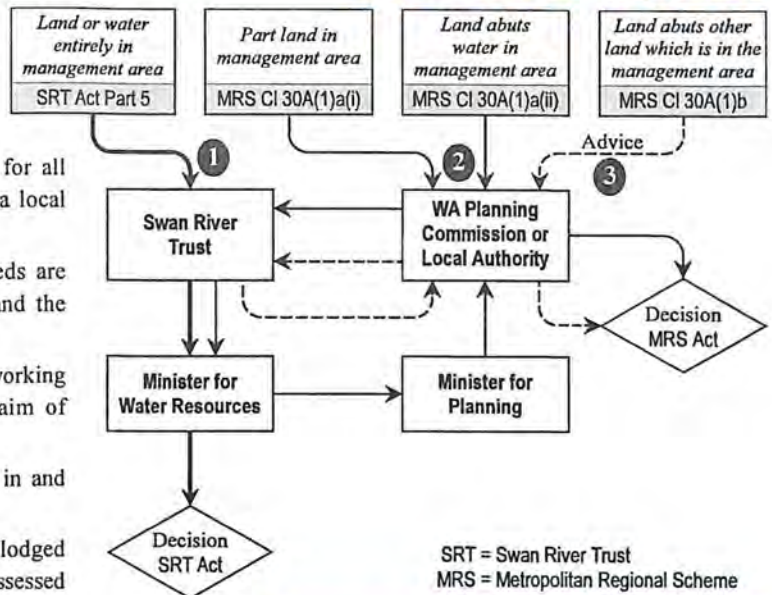
1 Applications for development within the management area are lodged directly with the Trust on an SRT Form 1. These applications are assessed under Part 5 of the Swan River Trust Act 1988 and recommendations made directly to the Minister for Water Resources. The Minister determines the outcome of development applications in this instance.

2 Applications on land abutting the waters of, or partly inside, the management area are lodged on an MRS Form 1 with the local government authority or with the Ministry of Planning. These are passed to the Trust for consideration. The Trust provides the Minister for Water Resources with advice. The Minister gives notice to the Minister for Planning on how to determine the application.

3 Applications on land next to the management area, or situated away from the river and considered as likely to impact upon the health and amenity of the Swan and Canning Rivers, may also be referred to the Swan River Trust for assessment. The Trust will provide advice in this instance.

The Trust also provides general advice on rezonings, subdivisions and other planning and management proposals that might impact upon the management area. The Swan River Trust board meets every month to consider applications.

Development control on the river



The Swan River Trust management area includes the waters of the Swan and Canning River system and adjoining parks and recreation reserves - extending upstream from the Fremantle Traffic Bridge to Moondyne Brook on the Avon River, to the lower diversion dam on the Helena River, along Southern River to the Allen Road crossing and the Canning River to its confluence with Stinton Creek.

What does your job involve?

I am on the lookout for activities relating to the Swan River Trust Act and its regulations. This includes development and pollution control, foreshore maintenance and river recreation such as fishing and boating. I undertake twice-weekly river inspections. I also carry out site inspections connected with development approvals and follow up on public complaints and enquiries.

What's good about working on the river?

No two river inspections are the same. There's always something that comes to notice. The river is a marvellous life form that needs protection, especially now that the city is growing so rapidly. I enjoy seeing birds and animals in their natural habitat, particularly in the upstream areas of the Swan.

What are you looking for during your inspection run?

I am checking to see that the Trust's development control process is being followed. I check that developments which have received approval, proceed according to the conditions set out by the Minister or the Trust. That also means ensuring no illegal developments are occurring in, or next to, the Trust's management area.

I also check that anglers are not digging for worms in areas other than the six approved sites. This damages the foreshore, especially the reeds, which are the first line of defence in erosion control.

I am always on the look out for any activity which might cause degradation of the river bank, and other infringements such as speeding vessels, derelict boats or sunken vessels. I report these to the relevant government agency if it is not directly a Trust matter.

Keeping an eye on our waterways

River inspector Ila Hayward's weekly river runs follow the progress of developments, recreational and commercial river use, and wildlife.

River inspector Ila Hayward on the Trust boat near the Maylands foreshore where overclearing of a residential property (background) has increased the risk of erosion.



What are some mistakes people living along the foreshore make?

The Trust has a brochure *Information and Advice to Riverside Residents* that contains valuable information for people living next to the river. My job would be made easier if people with properties along the foreshores read and took note of the contents.

Some people cut or remove vegetation without seeking Trust approval. Retention of native vegetation is the best means of avoiding erosion along the foreshore. In the long-term this would save the community a lot of money. Landfill is often placed on property next to the foreshore without Trust and planning approvals. Rain can wash this fill into the river if it is not secured.

What's happening in the catchments

Constructed wetlands - the future for Perth's waterways?

Wetlands once covered a large proportion of the Perth region. Much of the river's foreshore was wetland. Now moves are being made to replace lost wetland areas. But the latest in designer billabongs do more than just increase real estate values.

Today they are made to work hard - stripping nutrients and chemical pollution from waterways as well as providing a potentially rich habitat for wildlife.

Recently, Dr Alex Horne, Professor of Applied Ecology at the University of California at Berkeley, visited Perth for a series of talks. Dr Horne's trip, sponsored by the Swan-Canning Cleanup Program, gave Perth's environmental gurus a chance to see what was happening at the cutting edge of water pollution management.

"A constructed wetland is a mixture of shallow ponds and emergent plants that has been built for a specific purpose, such as wildlife habitat, pollution control, flood control or a combination of all of these," Dr Horne said.

"Western Australia has a lot of low level but widespread pollution, especially of nutrients that make algae grow and which can produce toxic blue-green algae."

Constructed wetlands are needed in WA, according to Dr Horne, to:

- * Remove nutrients from agricultural, urban storm and landscape watering runoff.
- * Remove other pollutants such as heavy metals, eroded soils, pesticides, oils and organic pollution.
- * Replace some of the humic acids that are a natural result of draining WA forests. Humic acids (which give natural streams their tea colour) absorb sunlight available for algae growth.

Limnology. The study of bodies of fresh water with reference to their plant and animal life, physical properties, geographical features, etc. (From Greek *limne* lake).

As forests are cleared, stream water will become less tea stained allowing more algae to grow.

- * Provide habitat for water-loving birds, bugs and animals while still cleaning up the pollution.

Dr Horne said WA would be served best by wetlands built on inexpensive land, near sources of pollution and where people would like a recreational or aesthetically pleasing park. Priority sites should be above sections of the river where pollution affects the river.

Dr Horne said constructed wetlands can be enhanced by wooded walkways to encourage tours of wildlife and the cleanup process. Dr Horne's comments were supported by Water and Rivers Commission principal environmental officer, Malcolm Robb, who agreed constructed wetlands could have very positive application in managing and protecting Perth's waterways.

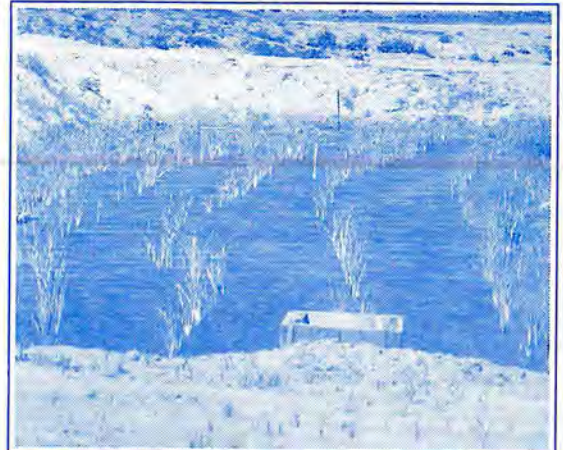
"Ellen Brook, in particular, contributes a large amount of nutrients to the Swan estuary, and a constructed wetland system upstream of the confluence with the river could significantly improve water quality downstream and reduce algae growth," Mr Robb said. ■

**American limnologist
Dr Alex Horne
specialises in 'fixing
broken ecosystems'.
RiverView caught up
with him in California
via e-mail after his
recent visit to Perth.**

Dr Horne gives two examples of how constructed wetlands can help the environment:

1. In Florida, a large experimental wetland (1000ha) has been built to clean a shallow lake - Lake Apopka (3000ha) - which is degraded by algae and suspended particles. It looks brown and murky, so recreation and fishing is not attractive. The water from the lake is pumped into the wetland marsh and a few weeks later up to 90 per cent of the total nitrogen (N) and phosphorus (P) are removed.

2. In Orange County, California, the richest county in the world and home to two million people, part of the main drinking water supply is contaminated by potentially toxic nitrate. A large wetland (200ha) has been built several kilometres upstream from Disneyland to remove nitrate. Between 30 and 90 per cent of nitrate is removed in about a week (10 mg/L as N down to as low as 1 mg/L in summer). About 30 per cent P is also removed. The Prado Wetlands also provides habitat for many waterbirds, including rare and endangered species.



A wetland under construction in California. Constructed wetlands can be used to strip nutrients and pollution from tributaries before they enter the main waterway.

Landcare centre for Muchea

A LANDCARE Education Centre will soon be opened on the old Gingin Road at Muchea.

Mineral sands mining company Tiwest has donated land and an old house to the Chittering Valley Land Conservation District Committee (LCDC) for the centre. The company has also donated \$7000 for the centre's establishment costs and made a pledge to pay annual outgoings such as water and power costs.

The old house will be refurbished and used as a landcare centre for meetings, school talks and practical landcare demonstrations.

A nursery building for seedling propagation will also be built to provide trees and understorey shrubs for rehabilitation of degraded sites in the Ellen Brook and Brockman River catchments. A nutrient and water recycling process is being developed at the nursery to demonstrate nutrient stripping and water recycling.

The centre is near an arboretum established with Tiwest's help several years ago. A previously waterlogged area of land has been transformed into a vigorous stand of about 6000 trees containing 30 species, most of which are native to the Muchea/Chittering area. The arboretum will become a valuable source of seeds for the nursery.

What's on? Contact the Swan Catchment Centre

IF YOU have any news items, group milestones or achievements you would like to see included on the back page of *RiverView* please contact Tony Whitbread at the Swan Catchment Centre on (08) 9221 3840.

The catchment centre is at 108 Adelaide Terrace in East Perth (opposite the Hyatt Hotel where the Swan River Trust and Water and Rivers Commission are located). The catchment centre is a great source of information and advice. Rooms can be booked for group meetings and training sessions.

Funding submissions close

APPLICATIONS for funding under the Natural Heritage Trust (NHT) for 1997-98 have closed and the submissions are currently being assessed.

Twenty-seven applications have been made for funding by groups in the Swan Catchment for projects ranging from industrial pollution control to revegetation and stream rehabilitation. Swan Catchment Centre program manager Peter Nash said the applications would be assessed by a regional panel, then a State panel, after which the recommended applications would be sent to Canberra for approval by the NHT.



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Protecting the Swan-Canning River system for the future

Swan-Canning Industry Survey



WATER AND RIVERS
COMMISSION

Education Pack



The Swan-Canning Industry Survey is a pilot survey of approximately 600 light industry premises to assess current wastewater and pollution management practices. The project involves officers from eight local authorities, Swan River Trust, Water and Rivers Commission and Department of Environmental Protection. The aim of the project is to assess, and ultimately reduce, the risk of pollution to the river and groundwater. The education pack will help raise awareness of the importance of clean stormwater to the health of our waterways.

STICKER

The sticker and posters will help raise awareness in the community of the importance of clean stormwater. They are being distributed to industry, schools, local government and community groups throughout the Swan-Canning catchment. The 'H₂Only' poster is designed specifically for industry and contains advice on chemical storage and spill cleanup procedure.



POSTERS



WORKPLACE SIGNS



These signs promote practices which help reduce the risk of pollution to our waterways. They should be fastened to walls near stormwater drains and where they can be clearly seen by staff.



DRAIN STENCILLING

As part of the Swan-Canning Industry Survey the Swan River Trust has developed a stormwater drain stencilling program to raise awareness of the importance of stormwater to the health of the river. Stormwater drains on individual premises can be spray painted with the message 'Clean Water Only' or 'Drains to River'.

For more information, a free set of workplace signs, posters and stickers contact the Swan River Trust on **9278 0416**. The Swan-Canning Industry Survey is an initiative of the Swan-Canning Cleanup Program.