Our Environment

Christchurch City Council's Environmental Newsletter

ISSUE 23 WINTER 2000

MODERN CITY BUS EXCHANGE EN ROUTE

The new inner city bus exchange, designed to revolutionise public transport in Christchurch, is scheduled to open on 4 November.

Passengers will wait for their bus in comfortable surroundings similar to an airport terminal. Sound reducing glass will separate the two lounges from interior bus lanes and passengers can refer to real-time information on screens to find out exactly when their buses will arrive.

The exchange is part of The Crossing complex at the corner of the City Mall and Colombo Street. Also included are recently-opened ground level shops and a first floor food court with airbridge connections to Ballantynes and the Triangle Centre. A 200-space car park will complete the $40 million redevelopment.

"The bus exchange is a major modernisation of public transport as we know it in the City," says Dave Hinman, Principal Policy Analyst at the City Council. While high quality facilities similar to this are provided overseas there is nothing comparable for bus passengers in New Zealand.

Work on all aspects of the development is on target, according to Mr Hinman. The exchange, which links retailing and car parking with a modern passenger waiting area, is an important aspect of inner city revitalisation, he says. Not only will it bring people to the commercial core of the City but it has already rejuvenated a key part of the city while retaining its character through the retention of heritage facades in Lichfield Street and the City Mall.

The Carter Group, owner of The Crossing, is building the $19.6 million bus exchange and car park for the City Council. Once completed, the Council will manage the bus exchange in partnership with Environment Canterbury.

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CHRISTCHURCH
CITY COUNCIL · YOUR PEOPLE · YOUR CITY

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The exchange is expected to cater for more than 15,000 passengers a day. Buses using the nine internal stops will enter from Lichfield Street then depart along a contra flow bus lane in the one way street. Passengers waiting for buses at the other six stops on either side of Colombo Street can still wait in the exchange, which has entrances off all three streets bounding it.

Buses for all city routes can be boarded at the exchange where they will only remain long enough to drop off and pick up passengers. Four termini will be located near Hoyts 8 , behind the Convention Centre, the corner of Rolleston Avenue and Cashel Street, and by Christchurch Polytechnic.

The staged relocation of buses from the Square will occur on 4 November this year and 1 April 2001. Although some buses will still travel through Cathedral Square after April next year they will not stop there.

Construction of the bus exchange is occurring in tandem with the progressive upgrading of buses and bus route changes. New ticketing systems will reduce queuing and speed up boarding times. A single coin fare has already been introduced and Environment Canterbury is investigating the use of smart cards.

Meanwhile, moves are underway to reduce traffic congestion in the City Centre to improve traffic flow generally and allow buses to keep to their schedules. Special bus, taxi and cycle lanes will be introduced in Colombo Street and parking times and spaces altered. More five and ten minute parking areas and loading zones will be available.

Construction of the bus exchange is expected to be completed well before the official opening date, providing opportunities for trial runs, public open days and displays.

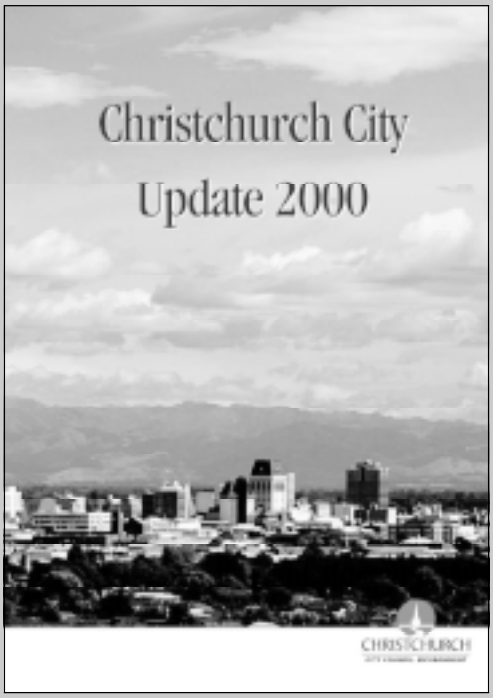
Jennie Hamilton

ANATOMY OF CHRISTCHURCH

Christchurch's latest vital statistics reflect the major changes occurring in the City because of population growth, new social patterns and environmental factors.

The City's diverse features are described in the City Council's fifth monitoring report Christchurch City Update 2000. It presents a detailed picture of Christchurch's people, environment and economy at the end of the twentieth century.

We learn that although about 30,000 extra people will live in Christchurch by 2021, the City's recent growth spurt will slow progressively over the next two decades. A major trend is the ageing population, which will have a major impact on our health and social services when the first "baby boomers" approach retirement near the end of this decade.



Some other interesting facts:

- *The size of City households has decreased, shrinking from 3.1 people in 1976 to 2.6 in 1996.*
- *The once typical family comprising two parents with at least one dependent child fell from 49.4 per cent in 1986 to 42.2 per cent in 1996 while one-parent families increased from 15.3 per cent to 18 per cent.*
- *In the workforce, growth of part-time employment is a major trend, accounting for 22.7 per cent of the labour force by 1996.*
- *At the same time 73 per cent of all Christchurch residents aged 15 and over indicated they had earned $30,000 or less.*
- *The City's urban area increased by 771 hectares or 5 per cent between 1995 and 1999.*
- *Changing lifestyles have made unit and apartment living more attractive. The trend of building large homes on small sections has changed streetscapes.*
- *Sixteen months of drier than average weather up to June 1999 had an extensive impact on the regional economy. It also pushed up the rate of groundwater abstraction.*
- *The equivalent of almost one month a year is hazardous to people's health because of suspended particulate matter (smog).*
- *The proportion of households which had two or more cars increased from 37 to 44 per cent between 1986 and 1999.*
- *Total waste to the Burwood Landfill has been declining at a rate of 3,200 tonnes per year since 1994.*
- *Year-on-year economic growth in Canterbury for September 1999 was 4.2 per cent – the highest annual growth recorded since the mid-1990s.*

The report, written by Corinne Macintyre and David Price of the Council's Environmental Policy and Planning Unit, tells us that most Christchurch residents think our City is a great place to live. Despite this, significant pressures including those caused by increasing population, fluctuating economic conditions, pollution and weather patterns, may adversely affect the environment and quality of life in the City.

Update 2000 is available both in hard copy from the Christchurch City Council and on the Council's web site at www.ccc.govt.nz/Update. It can also be viewed at a Council library or service centre.

The Council has also produced Christchurch City Fact Pack 2000 providing a snapshot of the City. It aims to answer commonly asked questions about Christchurch and includes information on the City's history, population, natural and physical environment and aspects of its economy. It can also be accessed on the Council's web site.

SPONSORS BACK NEW COAST TO HIGH COUNTRY EDUCATION PROGRAMME

More Canterbury students are tuning into environmental issues thanks to a new project sponsored by Shell NZ and local organisations.

The Coast to High Country programme is based at the Environmental Education Centre at Craigieburn.

"It was very interesting comparing the sounds that were at Castle Hill to the sounds at Craigieburn," said Louise, a pupil at St Patrick's School. Her comment echoed the positive feedback of many of her classmates who spent three days on a field trip based there. "I would love to go again," said Amy. "We played good games that taught me a lot. It was great."

Principal Mark Gregory said the activities linked in well to relevant issues at each site. The learning journal supplied provided a focus for all student activities and was a wonderful record of the trip.

Coast to High Country, presented by full-time teacher Toby Johnson, is a three-day field trip/camp for students from Year 7 to Year 13:

- *Day 1 explores sites and issues from Pegasus Bay to Craigieburn;*
- *Day 2 develops environmental awareness through activities and lessons based at the education centre;*
- *Day 3 explores further sites and issues on the return to Christchurch.*

The field trip approach allows activities to be tailored to the class' area of study.

Activities developed at the centre focus on issues such as the impact of introduced species on native flora and fauna, the effect of recreation activities on the environment, interrelationships between living things and their environment, the intrinsic value of natural corridors and development of specific skills such as decision making.

The programme is a joint initiative by Shell NZ, which pays the teaching salary, the World Wide Fund for Nature, Christchurch College of Education, Environment Canterbury, the Department of Conservation and the Canterbury Environmental Trust.

CLOSE ENCOUNTERS OF THE LEARNING KIND

Mountains of Mess, Close Encounters of the Plant Kind and Sea Shore Safari are among the topics to be offered in a new education programme for Christchurch schools. Students will also be able to learn about Sensational Seasons, Mountains of Fire, Voices of the Past and many other intriguing subjects.

The City Council has received funding from the Ministry of Education to deliver wide-ranging activities outside the classroom in its parks, reserves and recycling centres. Supported by on-line resources, the programme will focus on biological sciences, earth science, waste management technologies, recycling and disposal. It will be hands on, interactive and discovery based.

Programme organisers say classes will visit sites to make and record observations on surveys and be involved in different experiences as part of classroom curriculum activities. Class teachers will be supported by web site information and visits from programme staff and Council specialists. It will complement other initiatives run by Science Alive!, Canterbury Museum and Ferrymead Historic Park.

Running from term three 2000 to the end of term two next year, the programme is offered to Year 1-10 students in the Christchurch area. Schools will not be charged for activities but will have to meet transport costs. Extension of the programme will be subject to further funding.

For more information on the programme contact Environmental Promotion Officer, Kerry Everingham, tel: 371 1779.

MOVE TO HALT THE DECLINE OF NEW ZEALAND'S INDIGENOUS BIODIVERSITY

The Government will spend an extra $187 million over the next five years to support the implementation of the New Zealand Biodiversity Strategy.

Launched in April this year, the strategy establishes national goals to halt the decline of our biological diversity. They include maintaining and restoring a full range of our remaining natural habitats and ecosystems and viable populations of all native species.

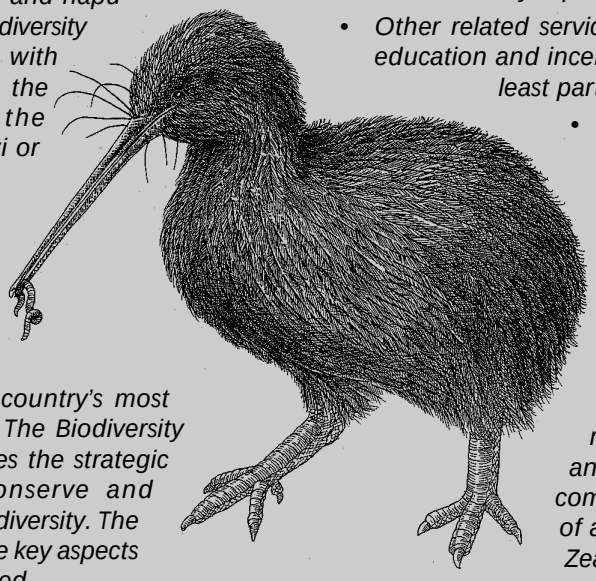
More than one thousand of our known animal, plant and fungi species are at risk of extinction. If future trends continue, many populations of the kiwi, a symbol of our national identity, will also be effectively extinct within 20 years.

The new package sets aside an extra $10 million to create five kiwi sanctuaries covering more than 40,000 hectares at Okarito, Haast, the western North Island, Coromandel and in Northland. This boost to the Kiwi Recovery Programme will help ensure populations are retained on the mainland. It will also enable more New Zealanders to see their national bird in its natural habitat.

Over the next five years the Government will also spend

- *$57 million on controlling animal pests and weeds on public conservation lands;*
- *$37 million on increasing funds available to protect and maintain biodiversity on private land through the Nature Heritage Fund, Nga Whenua Rahui, the QEII National Trust and a new fund for ongoing management;*
- *$11.5 million on increasing the number of marine reserves around New Zealand and providing for their management;*
- *$9.8 million on improving the protection of the marine environment form invasive marine species;*
- *$14.1 million on researching New Zealand's marine biodiversity, leading to better management;*
- *$2.6 million for the development of a comprehensive biosecurity strategy for New Zealand and the assessment of biosecurity risks to indigenous flora and fauna;*
- *$2.35 million to increase iwi and hapu participation in managing biodiversity in ways that are consistent with customary knowledge, and the knowledge remaining the property of the particular iwi or hapu.*

Biodiversity refers to the diversity of plants and animals and the place they live. The 1997 Report on the State of New Zealand's Environment identified the decline of our indigenous biodiversity as the country's most pervasive environmental issue. The Biodiversity Strategy, in response, establishes the strategic framework for action to conserve and sustainable use and manage biodiversity. The new funding package will enable key aspects of the strategy to be implemented.



courtesy Kiwi Conservation Club

For example, further applications to the Nature Heritage Fund, Nga Whenua Rahui and QEII National Trust can be processed. Twenty five cases covering 56,000 hectares valued at $7.3 million are considered priority purchases.

The funding will also speed up the creation of marine reserves, leading to the protection of a wider range of marine ecosystems and biodiversity. At present only 4 per cent of our territorial sea, including the far north Kermadec Islands, is protected in marine reserves. The Biodiversity Strategy set a target of protecting 10 per cent of New Zealand's marine environment by 2010.

The strategy was prepared by the Department of Conservation and the Ministry for the Environment, assisted by a number of other government departments. (For a copy see www.biodiv.govt.nz or email science.publications@doc.govt.nz)

The Prime Minister said earlier this year that the strategy's implementation would be co-ordinated and monitored by a core ministerial team led by the the Minister of Conservation and Local Government, and including the Ministers of Environment, Biosecurity, Fisheries and Agriculture.

As well as a co-ordinated effort at both central and local government levels, implementation also required "buy-in" from the farming, forestry, horticulture, fishing and tourism sectors, from private owners and from iwi.

Bio-What?

Many of the concerns explored in the New Zealand Biodiversity Strategy are addressed in Bio-What?, a preliminary report of the Ministerial Advisory Committee. It is specifically concerned with the effects of private land management on indigenous biodiversity.

The committee calls on the Government to implement a package of policy initiatives including:

- *A national biodiversity accord (with a separate accord for iwi);*
- *A national policy statement under the RMA;*
- *Non-statutory guidance to assist with implementation of biodiversity aspects of the RMA;*
- *Other related services including information systems, education and incentive schemes, which should be at least partially Government funded;*
- *Assistance to local communities with the development of local accords.*

Achieving these goals would not result from forced compliance or from increased public funding alone. Impact on private land management must depend largely on understanding, acceptance and informed decision making by individuals, companies and public agencies. It will take the combined resources and co-operation of all these to halt the decline in New Zealand's biodiversity, the report said.

NETWORK BUILDS INTEREST IN NATIVE RESTORATION PROJECTS

From the street, thriving tussocks are the only clue to the burgeoning ecological network nurtured inside Mike Peters' Addington home.

Out the back though, the 1,500 square metre Eel Creek Reserve Mike began planting 10 years ago reflects his passion for indigenous plants. The reserve led to the creation of the Addington Bush Society which, because of the huge interest it generated, spawned the New Zealand Ecological Restoration Network known simply as NZERN.

The Bush Society is now a member of NZERN which links 111 groups and more than 3,000 members nationwide on its web site (www.bush.org.nz). Committed to hands-on restoration the groups publicise plantings, share resources, and provide details of their own projects. Development of a TV series called Bush Telly, which will feature the various groups, is now underway and will air on CHTV on Sunday mornings.

NZERN's recently written constitution outlines its main purposes as:

- *To aid conservation, restoration and protection of NZ native plant and animal communities;*
- *To engage all interested individuals, community groups and other organisations to participate in this work;*
- *To build a shared self-help, non-partisan network made up of many individuals and independent organisations each wih their own sites, nurseries, ideas and experiences;*
- *To create and distribute useful rsources where there is a common need, including nursery materials, tools and equipment, electronic, broadcast and print media, educational resources.*

Mike is acting President of NZERN, which is about to become a legal entity, and President of the Addington Bush Society. Although both organisations share key officeholders they are administered separately.

A sculptor, Mike considers his "day job" is perfectly compatible with his commitment to biodiversity. "I like creating things, I like doing things. I've always gone tramping because I just love the natural environment. It's about aesthetics.

"In one hundred years we want to have tuataras running all round the country again, he says. "This is the home for all these animals and plants."

Mike began planting his back yard in the early 1990s. Inspired by his vision seven neighbours gradually knocked down their fences and began planting the expanding reserve in native trees and shrubs. The Addington Bush Society was set up to legally protect the ownership of neighbours' combined back yards. Two families have moved but others who took their place were happy to buy into the concept.

These days, fingers of land jut between fences, planted with many indigenous varieties from Canterbury-sourced seed or cuttings. Carefully constructed wooden bridges cross the swales while a rather grand wooden hut stands in the centre. Flocks of fantails visit the reserve, adding kowhai and other seeds to the indigenous mix. "We've got more plants that are self sown than we've planted," says Mike.

Other families and schools in the neighbourhood have also joined the society, which produces seedlings for ongoing planting projects in its own nursery. Huge interest in the Addington Bush Society took its members by surprise and threatened to become unmanageable. When operators of the Native Habitat database wanted to pass it on, Mike leapt at the opportunity. Since then the network has evolved "on the basis of need, trial and error". The result was a shop window for ecological restoration projects in New Zealand and an effective management tool.

Interest shows no sign of waning. "I receive 60 e-mails a day," says Mike. "It's just phenomenal." Whether he's linking groups through NZERN or restoring native plants to riverbanks and other habitats Mike's happy to put in the hours. For him the issue is simple. "We stuffed it up. Why can't we fix it up again?"

Jennie Hamilton

RECYCLED GLASS USED TO RECYCLE WATER

Recycled crushed glass is being used in a new product for swimming pool filtration. FilterCrystal, developed by the Recovered Materials Foundation, is suitable for use in any high-rate sand filtration filters in place of traditionally-used quartz sand.

It is a superior filtration medium due to the angularity of the granules and a tighter range of particle size, resulting in better filtration. The product exceeds New Zealand standard specifications for swimming pool filter media.

Following trials, the Christchurch City Council now plans to switch to using FilterCrystal in all its pools as filtration systems are upgraded. The RMF also has on-going orders with pool equipment suppliers throughout Christchurch.

An organisation similar to the RMF, The Clean Washington Centre based in Seattle, USA, has undertaken extensive research into the performance of screened crushed glass in filter applications over an 18-month period. Results from its studies concluded that recycled glass media compared favourably to conventional sand media through:

- *Improved water clarity shown by a 25 per cent reduction in National Turbity Unit (NTU) readings;*
- *Increased backwash efficiency shown by a 23 per cent reduction in water used for backwashing;*
- *Approximately 20 per cent less glass (by weight) is required for filtration.*

Glass filter media appeared to catch more turbid particles, thereby cleaning water more effectively and efficiently. This may allow pool filters to be operated for fewer hours to achieve desired water clarity, thereby saving energy and equipment life. More efficient backwashing uses less pool water that has already been chemically treated, heated and filtered and requires less operational and staff time.

(Source: Clean Washington Centre, Seattle, 1998)

The net result is not only good news for recycling in finding viable uses for so-called "waste" materials, but also in terms of wider environmental benefits for water and energy conservation.

The Recovered Materials Foundation is a not-for-profit trust set up by the Christchurch City Council to develop local markets for recyclable materials. FilterCrystal is just one of the many products developed from crushed glass collected through kerbside recycling. The RMF glass crushing plant is capable of producing clean crushed glass product in a range of sizes from one tenth of a millimetre, right up to five millimetres in length. Other uses for this product include: sandblasting, asphalt and concrete aggregates, landscaping, hydroponics, architectural coatings and glass flooring.

For further information contact the Recovered Materials Foundation, tel: 348 0595.

Sarah Gordon
Research and Education Officer, RMF

STYX RIVERS BUILD BRIDGES

Christchurch has forged close links with sister cities since 1972. Now local community group Guardians of the Styx is establishing a sister river relationship with the Styx River in Alabama.

The City Council supports the Guardians of the Styx in their development of the sister river link, a first for New Zealand.

Councillors were told that this was an excellent chance to develop a relationship with another part of the world and to exchange information, increase publicity and enhance environmental education and management practice transfers.

Mr Warwick McFadden of the Guardians had earlier contacted the community river watch group and Baldwin County in the United States. It was suggested that the two waterways become sister rivers to promote international rapport between the communities and local governments associated with each Styx River.

Mr McFadden has since visited officials of Baldwin County who organised a ceremony to exchange proclamations with Guardians of the Styx.

The 23.8km Styx River in Christchurch and its tributaries and associated wetlands have high ecological, recreational, landscape, heritage and cultural significance. They also form an important part of the natural drainage system of the northern part of the City.

The Styx River in Alabama is 56km in length and stretches south from the city of Bay Minette to its confluence with the Perdido River, which is classified as an Outstanding National Resource.

With a catchment of 53,000 hectares, the Styx flows through a mainly rural environment that also contains some rural residential development. Local wildlife includes numerous species of fish, snakes, birds and insects as well as deer, squirrels, oppossum, raccoon, bats and the endangered red cockaded woodpecker.

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BISHOPS LEAVE FRUITFUL LEGACY

The name of the Christchurch suburb of Bishopdale is not the Bishop brothers' only legacy. Acorns and seedlings which they planted in the 1860s are now landmark oaks in Greers Road. Their apple and pear trees still produce good crops of fruit.

The trees' spacious setting provokes nostalgic thoughts of earlier days - before the price of urban land shrank the size of sections and triggered infill development.

"We shoot developers when they walk down the drive," the present owners Gillian and John McDonald say wryly. They are the guardians of this precious remnant of history.

Mrs McDonald's grandfather Selwyn Davies bought the land in 1921 and Gillian has lived there almost all of her life. To preserve the property's special character the McDonalds have put it in a trust. "Hopefully it will stay as it is," they say.

William and James Bishop moved on to the land with their families in the early 1860s. Their brother Robert also owned land but it was cultivated by William and James.

James, who had worked as a gardener in England, set to work planting his section with fruit trees. His daughter Miss R S Bishop later noted: "These trees were grown from seeds sent out from England in a barrel by Grandfather Bishop." The consignment consisted of apple and pear pips, plum and peach stones, as well as the seeds of gooseberries, currants, raspberries, strawberries, herbs, flowers and vegetables. Seeds from oaks and elms, elder, and other trees were also sent.

"In later years when the nursery stock was grown, trees and plants which owed their origin to these seeds, were sent over a large part of Canterbury…,"Miss Bishop wrote.

The McDonalds still harvest the fruit which includes a pear of the Cattilac variety, originating from 16th century stock. A cooking apple from 17th century Russian lineage and the Astrakan apple are two other very early varieties. A medlar tree produces knobbly-looking brown fruit, which when left to ripen and soften, tastes like date.

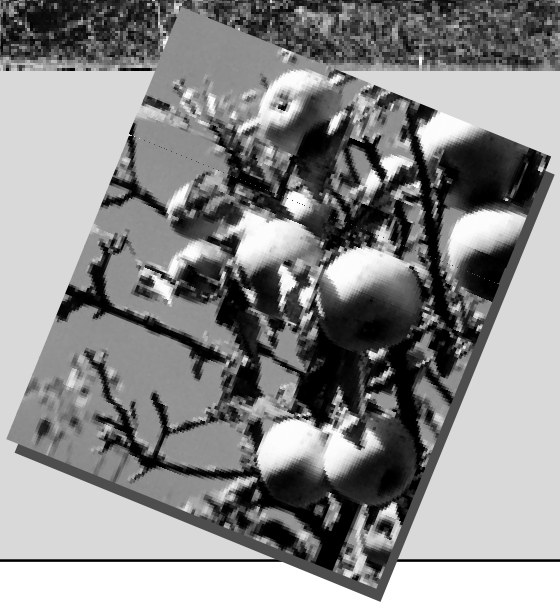
Twelve of the fruit trees were planted in the 19th century and several experts and nurserymen have taken budwood from them to preserve the old strains. The trees are not sprayed. Traps set for Codlin moths are the only concession to modern chemical controls.

The apples are stored and used mainly for cooking. "We grow all our own fruit and vegetables," says Mrs McDonald. "We don't buy any."

One of the elms and five oaks towering over the property are protected notable trees. The oaks were grown from acorns gathered in Gloucestershire's Forest of Dean where ship builders used to select spars for the British Navy. Mrs McDonald says two of the oaks on their property have been described as among the best specimens in Canterbury. The cluster of trees was probably planted to provide shelter behind the site of the former house pictured below.

Bishopdale School, next door, planted an oak seedling from one of the Bishop oaks. The school itself was built on a large section of James Bishop's orchard. Alongside, the street originally named Bishop Road was made an extension of Greers Road after the Council decided it was often confused with Bishop Street in St Albans. Descendants of James and Rebecca Bishop said they were grateful the family name had been retained in the name of the district and school.

Jennie Hamilton



SOLUTION TO STORMWATER PROBLEMS

A major revamp of the western end of Kyle Park has solved drainage problems and created a new BMX track.

Stormwater from the Hornby-Hei Hei area now runs into a landscaped pond on the old BMX track site. The pond is sealed with a plastic liner under its gravel base. Incoming stormwater is then pumped to three shallow basins in Denton Park where it slowly trickles through sub-surface gravels.

The new pond was built on the former BMX track to reduce excavation costs and to preserve large trees that are an attractive feature of the park. Rushes and wetland grasses have been planted around the gently sloping sides of the pond while a beach on the eastern side allows access.

The track was relocated to a more barren area toward the centre of Kyle Park where it is being landscaped to create an attractive club venue and recreation facility.

Before the redevelopment, stormwater was discharged straight on to the western end of the park where it soaked through rubbish under the park. Originally a shingle pit, this section of the park was used as a tip until 1972.

CALL FOR ACTION ON LETHAL FROG FUNGUS

A Christchurch biologist would like to see the sale of tadpoles and frogs banned after the spread of a killer frog fungus in Canterbury.

Dr Bruce Waldman discovered the lethal chytrid fungus among southern bell frogs in a Godley Head pool last November. It has now spread to other parts of Christchurch, West Melton and Springston.

The pet trade frequently collects tadpoles and frogs from the Godley Head pool. In one case teenagers had sold tadpoles from Godley Head to the owners of a pool in West Melton. While tadpoles are not affected by the disease until they metamorphose, they are carriers and the tadpoles may have infected adult frogs living in the pool.

Dr Waldman said he would like to hear from people who observed frogs which appeared lethargic and had trouble righting themselves. Less obvious was the colouration on their bellies and skin scarring. Frogs with the disease lived longer when they were out of the water.

"I don't want to scare people," said Dr Waldman. "Frogs are wonderful creatures." However, until scientists had a clear idea of the extent of the problem he would like to see a ban on the sale of tadpoles and frogs from pet shops and also restrictions on the transport of frogs between the North and South Islands.

The fungus, which does not affect humans, has killed more than 90 per cent of infected frogs in Australia and is thought to have contributed to the extinction of six frog species there. It damages the frogs' skin and kills them by either releasing toxins or by suffocating the frogs as they breathe through their skin.

No cure has yet been found for the disease which had not been identified in New Zealand until last November. Those who observe sick frogs should contact Dr Waldman at bw@zool.canterbury.ac.nz or tel: (03) 364 2066.

A GREEN LIST

GENETICALLY MODIFIED FOOD

The April edition of Consumer notes that while genetic engineering offers exciting possibilities, there may be serious risks for the environment. Consumer emphasises the right of individuals to know what they are eating, and therefore strongly supports the mandatory labelling of GM food.

To broaden your knowledge on this controversial subject, try the following books and web sites from Canterbury Public Library.

***Genetic engineering, food and our environment: a brief guide** by Luke Anderson. (660.65 AND)*

***How to avoid GM food: hundreds of brands, products and ingredients to avoid** by Joanna Blythman. (363.192 BLY)*

***Genetically modified foods: commonly asked questions with answers** by the Ministry of Health, Wellington, N.Z. (363.192 GEN)*

***GM foods: answers to your questions** by the Grocery Industry Council (631.52 GM)*

***Perfectly safe to eat?: the facts on food** by Victoria Hird (363.192 HIR)*

***Eat your genes: how genetically modified food is entering our diet** by Stephen Nottingham (363.192 NOT)*

***Genetically engineered foods: are they safe? you decide** by Laura Ticciati (363.192 TIC)*

***GM free: a shopper's guide to genetically modified foods** by Sue Dibb (363.192 DIB)*

***The ecological risks of engineered crops** by Jane Rissler (631.52 RIS)*

WEB SITES

Consumer Online

*"**GM foods: do you know what you're eating?**"*
http://www.consumer.org.nz/consumer/00april-gmfoods1.html

*The Library's backgrounder on the "**Genetically modified food debate**"*
http://www.ccc.govt.nz/library/Resources/Backgrounder/GeneticallyModifiedFood.asp

Canterbury Public Library
Te Whare Pukapuka Aa Iwi OWaitaha
User Education and Training Team