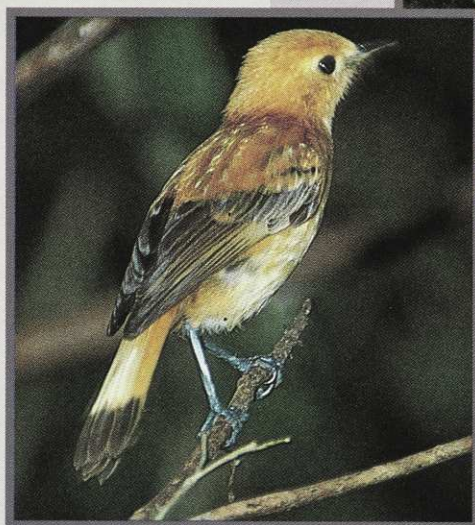
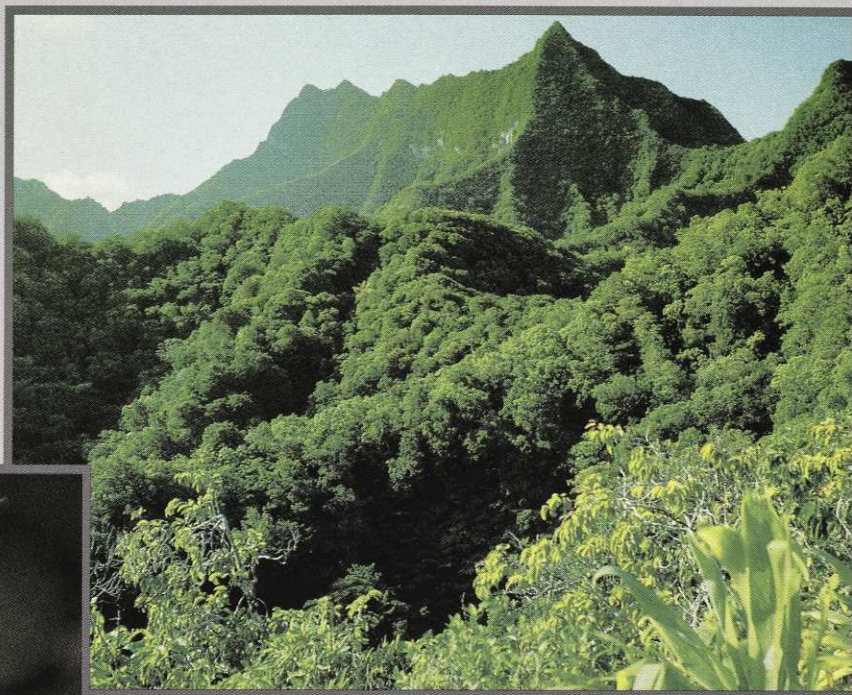


Volume 22 Number 2
May 1991

Forest & Bird



Join up a new member



....and qualify for the draw for a trip to the beautiful rainforests and tropical lagoons of the Cook Islands.

Forest and Bird is offering a chance for a free trip for two adults to Rarotonga (to be taken before 31 October 1991), including 7 days accommodation and air travel – if you sign up a new member by June 30, 1991.

You will stay in a pole bungalow set in gardens in the foothills of Rarotonga's spectacular mountain peaks.

Here is what Professor John Morton has written about Rarotonga: "The glory of Rarotonga is in its central crown of forest, with the panorama to be scanned in the half day's cross-island walk. In the Cook Islands, it is not too late to discover the old heritage, of which big pieces are still intact."

Walk in lush tropical rainforests • See the Rarotongan starling • The endangered kakarori

Just fill in the gift coupon in the back of the magazine and you could be in the draw for a holiday in Rarotonga.

Cover: An historic breakthrough in kakapo breeding occurred on Little Barrier Island in February when three chicks hatched – the first to survive since 1981. The chick in the photo – as yet unsexed and unnamed – was hatched weighing 27 grams. 26 days later, when the photo was taken, it weighed 723 grams, and by early May was an impressive 1.6 kg. It appears one of the keys to raising healthy chicks is the same diet that induced the adults to breed – nuts, apples, kumara – which mother John Girl assiduously fed her vulnerable nestling.

Photo: Rod Morris courtesy of DOC.

Re-opening the Forest Debates

ANYONE WHO KNOWS NATURE knows that nothing stays the same. Cyclone Bola left us a demonstration of that, as did the Tarawera Eruption and any number of natural disasters which have had a catastrophic effect. The regenerative forces of nature have in the past gradually repaired the damage. But nature cannot respond quickly enough to repair the massive damage people have inflicted on New Zealand's natural landscapes.

Rapid change has been a continuing challenge in our recent work. The latest has been adjusting to another Government's ways of doing things. In the conservation area legislation held over from the previous Government has continued on the agenda of the new. The Resource Management Law Reform Bill, which is rewriting the way we manage much of our countryside, has been a major pre-occupation for conservationists under both Governments. The management of privately-owned native forests has been another.

In 1988 Forest and Bird embarked on a campaign to end the destruction of New Zealand rainforests by the woodchip trade with Japan. We also sought greater protection for native forests on private land.

Last year a Labour Government introduced controls on the export of native woodchips. These forced the wood-chippers of Southland and Nelson out of the native forests and into the extensive exotic plantations. Labour also announced it would introduce land-use controls that would ensure no further clearance of native forest on private land and permit only low-impact logging.

Just before last Christmas a new National Government reviewed that indigenous forest policy and let the wood-chippers back into the forests of Southland. Conservationists in Southland and elsewhere were very disappointed at this. So Forest and Bird has recently presented to the Government an alternative proposal for Southland forestry, where exotic softwood plantations would be logged instead of native beech. We will continue to press for an early end to industrial uses of our native forests.

The National Government also committed itself to the introduction of land-use controls, as had Labour, to protect forests on private land. Six months later the promised legislation has not surfaced and major issues in its planning remain unresolved. For example, will such laws bind the Crown? Will Maori land be subject to the same controls as other private land? Will the unfortunate proposals for the export of rimu, kahikatea and matai logs and timber continue?

Sadly, the uncertainty and delays by both Governments has led to a frenzy of bush-felling, as landowners exercise their property rights before controls come into force. The promise of better protection to come is actually accelerating disaster in native forests on private land.

As a broad-based interest group, apart from party politics, Forest and Bird is well-placed to bring concerned people and groups together to resolve conflicts. In the argument over land-use controls Forest and Bird is now suggesting other ways to protect the forest. This will involve us talking with land-owners, Maori, interested communities, the departmental advisers and politicians. Our cause is a transparent one – better protection for natural values. By acting as honest brokers we can, hopefully, help gain the protection even political parties have espoused, before it is too late.

Such activity is part of our pro-active approach to change. To maintain our objectives for the protection of nature and scenery, Forest and Bird is working to offer formulae which help the whole community to accept responsibilities to future generations.

Gordon Ell
National President



Contributors to *Forest & Bird* may express their opinions on contentious issues. Those opinions are not necessarily the prevailing opinion of the Royal Forest & Bird Protection Society.

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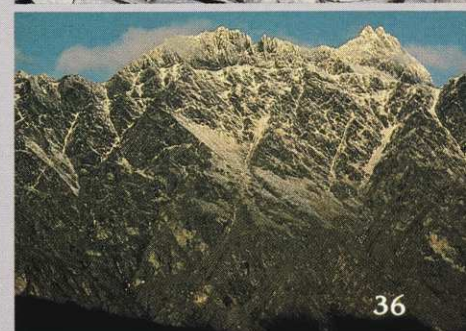
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The bellbird's return

THE BELLBIRD OR KORIMAKO is one of three New Zealand honeyeaters – the others being the tui and the rare stitchbird. It is one of our sweetest songbirds.

The bellbird is also at the centre of one of our intriguing ecological mysteries: reported as common by early Pakeha observers, it suddenly and inexplicably disappeared from much of the country in the 1860s.

In many areas it quickly recovered, but it has never re-colonised the North Island mainland north of the Waikato (with the exception of the Coromandel) or large offshore islands like Great Barrier.

Various theories have been advanced to explain the loss of the bellbird from the north. Some suggest an introduced avian disease, others the impact of the tree-climbing ship rat or a combination of factors.

Whatever the theories, moves are now afoot to reintroduce the bellbird to areas where it once flourished. Until now conservation managers have concentrated on saving or restoring endangered species in largely pristine ecosystems – usually remote islands. Project Bellbird, on the other hand, was set up to help restore the bellbird to the most densely populated region of the country – greater Auckland.

As a first step to regional restoration, Project Bellbird and the Department of



Project Bellbird prime mover Mike Lee.

is now a 175 ha nature reserve under the jurisdiction of the Department of Conservation's Waikato conservancy.

Cuvier has been described as a "giant outdoor aviary". Birds such as the North Island saddleback, red-crowned kakariki and bellbird thrive there in large numbers, secure from predators.

In February, Project Bellbird volunteers Dave Lee, Guy Warnam and myself along with Sandra Anderson of Auckland University Zoology department and Liz Humphries, Rick Thorpe and Malcolm Goad from the Department of Conservation travelled together to Cuvier on the RNZNVR vessel *Hinau*.

DoC's objectives were to recover any tuatara left on the island for a controlled breeding recovery programme at Auckland Zoo. Auckland University required blood samples from saddlebacks for genetic research on isolated native bird populations. Everybody gave everyone else a hand.

In their spare time Project Bellbird members expressed their appreciation to DoC (and Cuvier) by gathering copious quantities of *Coprosma* berries and sending them to the Tiritiri Matangi nursery for future revegetation of Cuvier's open areas.

Two tuatara were recovered, blood samples from 20 saddlebacks successfully obtained and 60 bellbirds mistnetted in four days. The bellbirds were whisked by an RNZAF Iroquois helicopter to holding aviaries at three locations on Waiheke (Te Matutu Bay, Onetangi and Omiha), where they were held for several days and gradually released into the surrounding bush.

To obtain maximum public involvement, an open day was held at Onetangi where Forest and Bird and Kiwi Conservation Club members could quietly observe the birds in the aviary and at their release. In a quiet cere-

mony the birds were welcomed to the island and blessed by senior Maori elder Mr Kato Kauwhata.

Ninety bellbirds have been released on Waiheke in the past six months. So far Project Bellbird is going to plan, but are the unknown factors which caused the mass extinction of the bellbird still present?

Persistent bellbird sightings from all over Waiheke suggest they are not – but only time will tell. Meanwhile, we are confident that a university-based survey later this year will confirm our belief that the birds are breeding. If we are right, a significant step will have been taken to restore one of New Zealand's most loved native birds to the north. The forest hills and coastal valleys of Waiheke may once again ring to the song of the bellbird. 🐦

Mike Lee

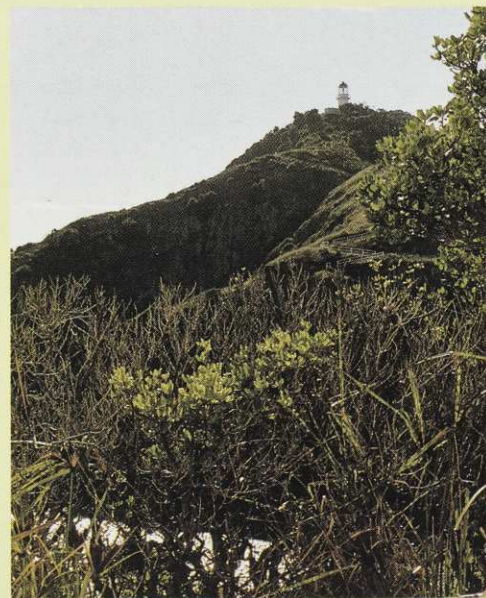


The Air Force Iroquois helicopter used to ferry bellbirds from Cuvier Island to Waiheke.

Conservation with the support of Forest and Bird branches have translocated over 110 bellbirds to Waiheke Island since 1988. Waiheke (9,459 ha), 19 km from downtown Auckland, is one of the country's largest possum-free areas and has significant areas of coastal native forest cover. However, it is also a highly modified environment with an urbanised population of over 6000 and mainland predators like cats and ship rats.

Twenty-one bellbirds have come from Kai-ngaroa in the central North Island with the balance from Cuvier Island.

Cuvier or Repanga is a rugged and remote extinct volcano that lies north-east of the Coromandel near the edge of the Pacific continental shelf about 120 km from Waiheke. This former manned lighthouse station guarding the approaches to the Hauraki Gulf



Looking up to the lighthouse on Cuvier Island.

New deal for Campbell Island Teal

THE CAMPBELL ISLAND TEAL – probably the rarest species of duck in the world – will have its chances of survival greatly increased by a rescue programme completed recently by the Department of Conservation.

Seven teal, including two breeding pairs, were caught on Dent Island, part of the subantarctic Campbell Island group, in November. The birds were transported to Lyttelton on the New Zealand navy ship *HMNZS Waikato* and then flown to Mt Bruce Wildlife Centre, near Wellington. One of the established pair has gone to a North Island private breeder with experience working with the species. Attempts at breeding over the 1990/91 summer have not succeeded.

Campbell Island teal were thought to have



DoC conservation officer Pete McLelland with one of the flightless Campbell Island teal taken to Mt Bruce Wildlife Centre.



Dent Island just offshore from Campbell Island – so named for its shape which resembles a tooth – is home to most of the world's Campbell Island teal. Photos: Murray Willans

become extinct in the 1940s, but were rediscovered on tiny Dent Island in 1975. The population is estimated at less than 100 birds. Two male and one female Campbell Island teal were brought to Mt Bruce in 1985, but the female has refused to mate.

Southland conservation officer Pete McClelland says the decision to remove some birds for captive rearing was carefully considered and should not affect the viability of the Dent Island population. Six field workers used tape recordings of teal calls and nets to capture the birds for transfer.

The Campbell Island teal is a small flightless duck about a third of the size of a mallard. It is dark brown and lives among the subantarctic megaherbs and waist-high tussock, probably feeding on insects and seeds.

Despite searches of other islets and the

main Campbell Island, the teal has been recorded only on the sheer-sided Dent Island.

Mr McClelland said field staff were concerned that slips induced by unusually heavy rain in 1975 had left bare areas which greatly increased the risk of teal predation by southern skuas.

While on Campbell Island, Department of Conservation staff also killed more than 1,200 sheep which have run wild since farming was abandoned in 1931. Dividing fences were erected on the island in 1970 and 1984 to restrict sheep to one end of the island and let the unique and fragile subantarctic flora recover from grazing. Mr McClelland said fewer than ten sheep remained on the island, and would be removed in a subsequent mop-up operation. 🐦

Tim Higham

The Chathams – bird update

WITH A DISPROPORTIONATE NUMBER of rare and endangered bird species on the Chatham Islands, it is heartening to report on some recent conservation success stories in the region.

Black robins, once reduced to five birds, now number 138. A lack of funding means that they may not be fully monitored this coming breeding season.

Extensive surveying of kuku, the Chatham Island pigeon, has shown that the population of the bird is closer to 100, up from the previous estimate of 40. Some detailed work is now being carried out on the bird's diet to understand the relationship between breeding and food supply. The kuku has never been intensively studied before.

A further Chatham Island taiko burrow was found in January, bringing the total known active breeding burrows this season to four.

Subfossil deposits indicate that millions of this nocturnal seabird once bred on the Chathams. An intensive predator trapping and poisoning programme is being carried out around the burrows to halt any further decline.

More nests of another rare seabird, the Chatham Island petrel – previously known only from 10 burrows – have also been found. Thirteen new burrows were discovered in January, six of these using "war whoops" (see *Forest & Bird* February 1991).

An attempt to captive-rear shore plover at Mt Bruce has failed with most eggs not hatching. Only about 100 of this confiding and striking plover survive, being confined to rodent-free Rangatira (South-East) Island.

Source: *Rare Bits* (Department of Conservation Threatened Species Unit newsletter). 🐦



The first photograph ever taken of a Chatham Island taiko chick, one of the world's rarest seabirds. Photo: Graeme Taylor

Forest and Bird's new corporate membership

THE ROYAL FOREST AND BIRD PROTECTION SOCIETY has launched a new membership campaign aimed at increasing the number of companies who choose to support the Society as corporate members.

Membership campaigner Melanie Hutton said Forest and Bird had previously not concentrated on building up corporate membership. However with business showing strong interest in environmental issues, many would be interested in supporting New Zealand's largest national conservation group.

"The unique aspect of our corporate membership is that Forest and Bird will be offering companies a special corporate newsletter as an ongoing service. The newsletter will contain articles on environmental issues from New Zealand and overseas. It will be written to be specially relevant to businesses. In this way we hope to provide companies with ideas and specific proposals for greening their operation," Melanie says.



This will include the latest information on waste reduction, recycling developments, corporate environmental sponsorships, environmental auditing and so on.

Melanie says in this age of ecological awareness it is in companies' best interests to know more about environmental issues.

"New Zealand is lagging behind many overseas developments in improving the environmental record of businesses," she points out.

As well as offering the newsletters, Forest and Bird will give each corporate client a complimentary art print, multiple copies of *Forest & Bird* magazine, opportunities for staff to participate in Forest and Bird activities, and assistance in developing environmental charters.

Membership will be open to any business and does not imply endorsement by Forest and Bird of the company or its activities. If you have a business or work for a company which you think should be a Forest and Bird corporate member, send for an application form to the Membership Secretary, PO Box 631, Wellington. 🦜

"We must be close to civilisation..."



TVNZ reporter Bill Simpson snapped this photo of Little Hellfire Beach, Stewart Island, showing plastic waste from fishing boats strewn the length of the beach. The remote beach is on the west side of the island. There is good news on the marine debris front, however. Packaging company Kiwi Packaging Ltd has recently developed a bait box which does away with the traditional blue strapping, responsible for ensnaring animals such as seals.

KNOW YOUR WEEDS

Water net

IN 1986 WATER NET, (*Hydrodictyon reticulatum*), was first found in Tauranga by Ministry of Agriculture and Fisheries officials, who believe that it was accidentally imported with plants or fish by an aquarium trade importer. At that stage it was well established in ponds, aquariums and in the entire stream of the catchment where it was discovered. From there it has now spread to the Rotorua lakes, Taupo, and even the Maketu Estuary. It is predicted to spread into the Waikato River and be a major weed within the next two years.

Water net's algal filaments form a green mesh like a sausage-shaped hairnet, up to 20 cm long. It was first recorded in Chinese writing as a pest of rice paddy fields, over a thousand years ago.

This summer, water net has grown prolific

ally in the shallow water of Lake Rotorua, its slimy strands spoiling the pleasure of bathers, anglers and boaties. When it grows densely, small fish can become entrapped and die.

Water net has an incredible capacity to multiply vegetatively from every cell. It grows prodigiously over the warm summer months, and remains in significant quantities during winter.

This pest seems set to invade lakes and dams throughout New Zealand. There is no known method of control.

The algal invasion highlights the ease with which pests can enter New Zealand, and reinforces Forest and Bird's opinion that much tougher import controls are needed. 🦜

Basil Graeme



Water net: like a sausage-shaped hairnet.
Photo: Brian Colley

A saline oasis

A NEW SCENIC RESERVE at the southern end of the Strath Taieri Valley in Central Otago preserves a unique natural ecosystem – an inland salt lake.

Sutton Salt Lake and its complement of salt-tolerant plants and invertebrate animals have long been of scientific interest. Now there is a public walkway to the lake and a series of information panels interpreting the extraordinary turns nature has taken at this place.

Seasonally dry, the lake occupies a 4 ha basin in the schist-rock landscape and it fills to a depth of about half a metre. It owes its saltiness – it is half as salty as the sea – to the gradual weathering of the surrounding schist and the fact the basin has no outlet.

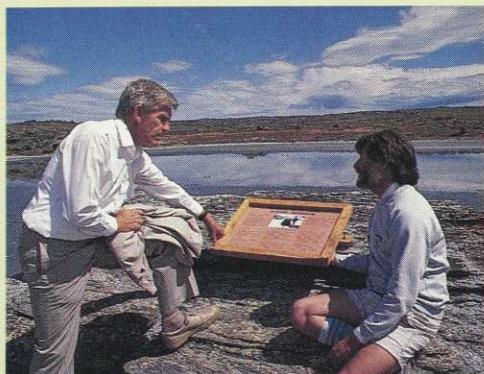
The outcrops (tors) of schist in this area are among the most impressive in Central Otago. They form a fascinating pattern of parallel ridges, representing the rocks most resistant to weathering.

Salts released from the rock are borne by surface run-off and water percolating up through the soil. The silty lake sediments show extreme alkalinity (pH 9.4).

The shores of the lake are home to a range of plants more usually found by the ocean, including two native creeping herbs, *Lilaeopsis novae-zelandiae* and *Selliera radicans*.

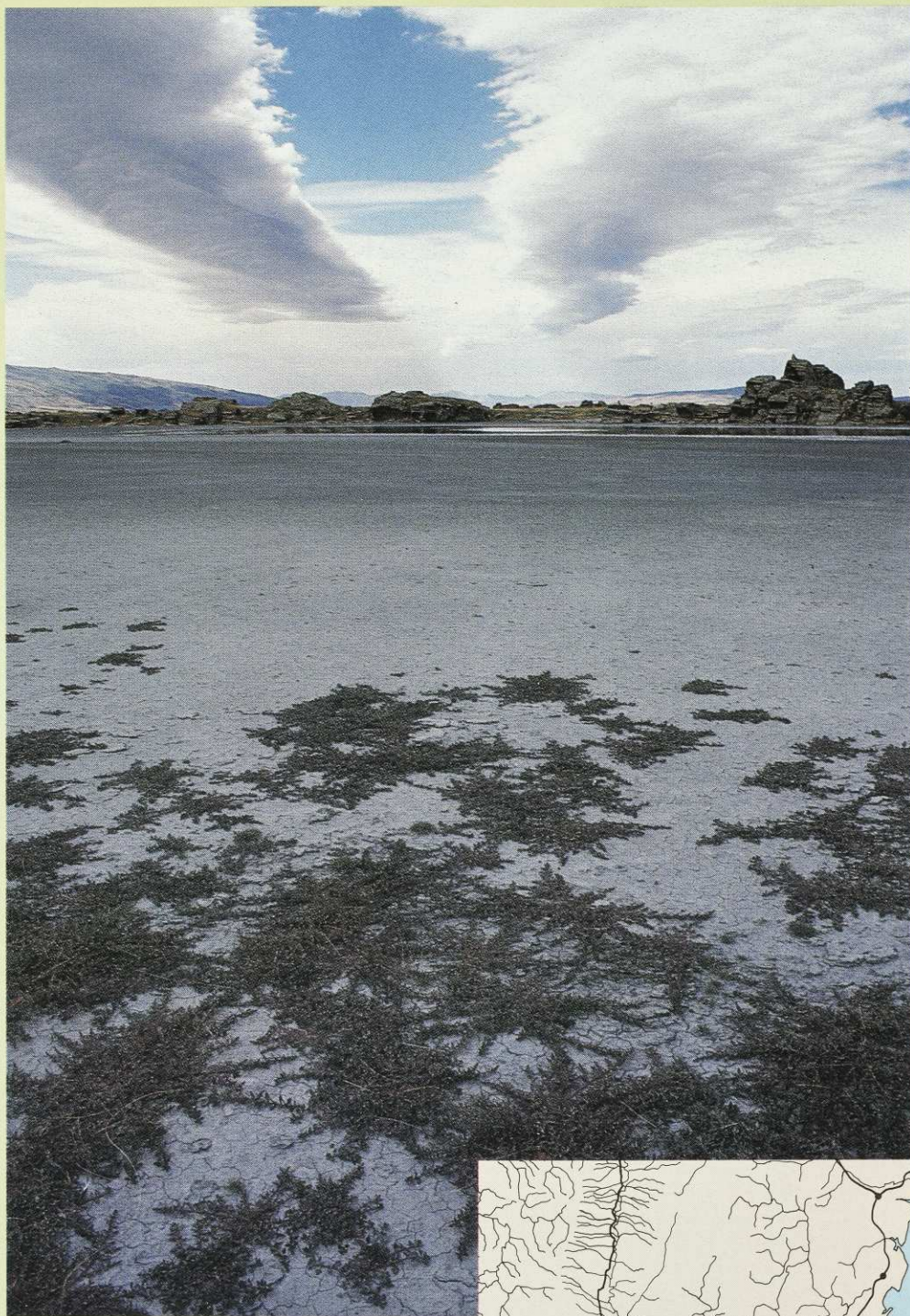
The big question is: how did they get there? One theory holds that they are derived from plants which migrated here millions of years ago when the sea encroached far into what is now Central Otago.

Copepods are among the tiny salt-adapted aquatic animals found in the lake. No fish live in it. Birds likely to be seen on or near the water include paradise shelducks, shoveler and mallard ducks, black swans and white-faced herons. Harriers and pied oystercatchers are also seen in the vicinity as well as an occasional falcon. This is good country for skinks and geckos. The large Otago skinks are sometimes found basking on the rocks on sunny days.



The reserve covers 125 ha. Formerly part of Gladbrook Station, it was acquired by the Department of Conservation last year and officially opened by Otago MP Warren Cooper in February.

Conservative farm management of the block has preserved much of the natural



The salt-tolerant plant *Lilaeopsis ruthiana* on the shores of the salt lake. All photos: Neville Peat

Otago MP Warren Cooper, who opened Sutton Salt Lake Reserve, inspects an information panel with the Regional Conservator for the Department of Conservation in Otago, Jeff Connell.

vegetation, including the tall blue wheat grass *Elymus rectisetus*, which disappears under intensive grazing. Entomologist Brian Patrick says that the presence of the southern tiger moth in the area reflects the minimal disturbance.

Visitors can do a circuit of the reserve following a walkway that is marked by arrows etched on to slabs of schist. The round trip, with stops to read the information panels, takes about an hour.



Central Otago's distinctive rock and tussock landscape is noticeably under-represented in the country's parks and reserves system. The advent of Sutton Salt Lake Reserve gives visitors free access to this type of country and the bonus of a unique saline oasis. 🦋

Neville Peat

Godwits in the firing line

THIS AUTUMN, Department of Conservation staff discovered that large numbers of godwits (kuaka) are being shot in far north harbours. The Department thinks a black market in godwits could be operating, with some birds being sold for food as far south as Auckland.

Harbours such as Rangaunu and Parengarenga are favoured godwit feeding areas and internationally important wintering sites for this long-legged arctic breeder. Each year godwits make an epic 20,000 km return journey to New Zealand from Siberia and Alaska to escape the northern hemisphere winter.

The birds are being shot and netted for food and many are left maimed. Department of Conservation staff estimated 3-4 percent of godwits in Rangaunu and Parengarenga were badly injured and many more seriously hurt birds were likely to have already been taken by predators. Department Scientist, Dr Ray Pierce, described the crippled survivors as a "horrendous" sight and he predicted many more would die. "These birds are likely to ditch into the ocean on their way back to Siberia and Alaska or not go at all."

More than godwits are being shot. Other

species they flock with, including the large far eastern curlew, are at risk.

Muriwhenua leader, Matiu Rata, wants Waitangi Tribunal support for the killing, which Forest and Bird strongly opposes. Harvesting godwits for food, as Mr Rata proposes, was necessary in the past, but in today's world it is an indulgence not a necessity.

Forest and Bird does not believe that the clock can be wound back. The eating of kakapo, godwits and kereru are an important part of Maori history, but it is not appropriate today. Our native bird populations have been severely depleted by habitat loss and predation. They deserve total protection.

Concern over depleted numbers of godwits because of indiscriminate shooting was the reason they were first protected in 1922 when harvesting was restricted to an open season between May and July. However, in 1941 godwits were specifically taken off the game list because of concerns about their continuing declining numbers. It would be a retrograde step to reintroduce hunting – the godwits have earned their right to grace our harbours in peace. 🐦

Going green with Glaxo

CORPORATE INVOLVEMENT in environmental and conservation projects is becoming increasingly common, and now staff at one Palmerston North company have started their own conservation group.

The Glaxo Conservation Group (GCG) was formed after a meeting of 10 Glaxo workers, although the group does not directly represent the company. Rather, it is a collection of individuals working to a common aim, aided by Glaxo which provides sponsorship for various projects.

These projects have included bringing a National Museum display on "The Forgotten Fauna" to the National Wildlife Centre at Mount Bruce, and encouraging local children to plant trees by helping schools to develop their own area of native reserve. The GCG hopes to continue school projects on a long-term basis. 🐦



Neill Velvin (GCG), Linda Stopforth (GCG) and Mike Thorsen, education officer with the National Wildlife Centre examining one of the "Forgotten Fauna" stars, a tuatara. Photo: Garry Norman

THE FORGOTTEN FAUNA

New Zealand Amphibians and Reptiles EXHIBITION

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New Zealand's major centre for breeding rare and endangered New Zealand wildlife.

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A pied shag duet



Photographer Brian Chudleigh recently captured this delightful pair of pied shags closely examining a power pole.

Forest and Bird HQ moves house

IN THE 68 YEARS of its existence, Forest and Bird's Wellington headquarters has occupied a variety of habitats.

One of our first homes was in the *Evening Post* building. After the Second World War Forest and Bird occupied several different offices in the inner city. In the late 1970s the Society bought the 7th floor of Central House, 26 Brandon St. At that time Forest and Bird's membership stood at 25,000, and there were three conservation and three administration staff.

Today Forest and Bird has 60,000 members, with eight administration staff in Wellington to service them. There are now eight conservation staff.

With the Central House office bursting at the seams, it became obvious the Society would have to re-locate elsewhere. After a lengthy search for new premises, the Society has now bought and refurbished for its new headquarters the Anglican City Mission at 172 Taranaki St (two blocks from Courtenay Place). Built in 1940, the City Mission building has three floors in an art deco design.

The new premises, dubbed the Forest and Bird Environment Centre, houses a street

level shop, a public resource area, a library and a public meeting room able to seat at least 100 people. The centre is available for use by the Wellington area Forest and Bird branches, other environmental groups, students and the general public.

Members will always be welcome to visit and use the environmental resource material, help work on Society campaigns and projects or socialise with staff and other members. 🦅



Wrap up your Hot Water Cylinder

HOW YOU CAN SAVE HOT WATER AND YOUR WALLET TOO!

- Hot Water Cylinder Wrap has been designed to enable the home handyman to increase the insulation of an existing hot water cylinder.
- The kit includes step-by-step instructions, tape and a complementary knife.
- An Energy Management (Ministry of Commerce) study indicated savings ranging from \$17 to \$87 per year (with an approximate average saving of \$50) for a 135 litre cylinder.
- It also keeps hot water hotter for longer in case of winter cuts to heating.
- Hot Water Cylinder Wrap is available from major building supply companies and insulation specialists.



Most people believe in energy efficiency. But belief is not enough – we have to put it into practice. Lack of factual information and uncertainty as to the existence of real benefits can be critical barriers to our implementing energy efficiency measures in our own homes. The following is the first of four articles that will present you with the facts and outline the real benefits of specific energy efficiency measures that you can take.

We have chosen electric hot water cylinder insulation wraps for our first example. Hot water was chosen as it is usually the single largest domestic energy cost. We will show how you can reduce this cost both for your own and for the country's benefit.

Your hot water system will use about 45% of your electricity. Nationally our hot water usage requires about 20% of the electricity generated in New Zealand. Of this, roughly 20% is lost from the walls of electric hot water cylinders.

That means that about 4% of the electricity we generate per year is lost from the walls of hot water cylinders. This is slightly more than 1,000 gigawatt hours or roughly equivalent to the annual output of the Wairakei geothermal power station. This heat loss costs consumers in the order of \$120,000,000 per year.

Tests conducted by Energy Management, Ministry of Commerce, indicate that fitting an insulation wrap to older cylinders or new cylinders that don't meet the 1988 insulation standard, will reduce heat loss by up to a half.

If half of these pre-1988 standard cylinders were fitted with an insulation wrap, the saving would amount to approximately 135 gigawatt hours. This is about as much power as would be required to heat water for 100 million showers.

So you can see that a little saving by enough individuals can easily add up to a lot nationally. Insulating our nation's hot water cylinders is clearly good for our country.

Best of all it saves you money. Tests conducted by Energy Management found a range of annual savings from \$17 to \$87 for 135 litre hot water cylinders. The saving varies depending on individual circumstances. Situations where cylinders are poorly insulated, set at a high temperature and located in a cold draughty place give the greatest saving.

Ready-to-go insulation wrap kits are available for a recommended retail price of \$75. Based on the above test results, the wrap will, on average, pay for itself in 18 months. At the best, it may pay for itself in less than a year and at the very worst it will pay for itself in five years. So you see, you can't lose. Further savings can be obtained by insulating the first few metres of pipe from the cylinder. Foam tubing is ideal but offcuts from the wrap also work well.

SO THERE IT IS! GO TO IT!

For further information
please contact:

Christopher Turbott
Energy Management
Ministry of Commerce
PO Box 4218, Auckland
or Telephone (09) 775 328



Energy
Management



Handy hemp

AS PART OF the campaign to wean North Americans off old growth forests, environmentalists are starting to promote "tree-free" paper. The ideal fibre, they argue, is hemp (*Cannabis sativa*) which is claimed to have been the world's largest agricultural crop until the 19th century.

Among its different properties, hemp:

- Uses the sun more efficiently than virtually any other plant on earth;
- grows in virtually any climate or soil, even in marginal areas;
- does not require chemicals to combat insect pests.

One hectare of hemp can produce four times as much pulp as a hectare of forest. Hemp also requires much less energy to convert into fibre than trees do, and the only chemical needed to bleach it is hydrogen peroxide, less of a concern than chlorine, the main chemical used to bleach fibre.

Other alternatives to wood pulp are cotton, jute, flax, rice and wheat stubble.

Source: *Earth Island Journal*

Longline losses

SOME SPECIES OF ALBATROSS and the endangered Hawaiian monk seal are facing a serious threat from longline fishers targetting broadbill swordfish around the north-west Hawaiian archipelago.

Each day, a boat will set and retrieve one line up to 55 km long with 450-700 hooks. Birds and seals swallow the baited hooks and are injured or drowned. Some fishers have taken extreme measures to keep birds away from baits, including shooting as many birds as they can, injuring one bird and leaving it

flapping in the water to attract other birds to it while the boat moves on, and throwing baits containing large pieces of plastic or corrosive caustic chemicals to birds to kill or scare them.

It is alleged that more than 1000 albatrosses have been slaughtered in one day by the longliners. Mutilated albatrosses have landed on colonies - one with its beak missing.

In nine days during January this year, eight monk seals were found with injuries associated with longline fishery and those are only the ones that survived to make it onshore. There are only 1200 Hawaiian monk seals left.

The Western Pacific Regional Fishery Management Council meeting wants to see the fishery closed within 30 km of the islands because of the wildlife toll.

Source: *Honolulu Advertiser*

Car growth defeats emission controls

DESPITE THE improvements made to engine efficiency, the increasing numbers of cars and trucks on the world's roads is overwhelming any gains, according to a new study.

The World Resources Institute, a respected Washington environmental think-tank, says that there are now 540 million vehicles in the world, a figure predicted to soar to nearly one billion early next century.

Between 1971 and 1987, CO₂ emissions from vehicles rose by 63 percent. In another 20 years the emissions may grow by 50 percent, increasing the menace of climate change and stratospheric ozone depletion.

The report says that car manufacturers must start to produce non-polluting cars or cars that do not use fossil fuels. One factor could assist in this - there are only 14 car manufacturing firms concentrated in North America, Japan and Western Europe.

Source: *Climate Alert*

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Birds engulfed by oil

IN MARCH the International Council for Bird Preservation (ICBP) sent a team to the Middle East Gulf to assess the damage caused by the oil spill and assist in efforts to minimise damage to birds.

One piece of good news was that the spill was less extensive than originally feared. Instead of the estimated 11 million barrels of oil escaped into the Gulf, the overall estimate was one and a half million barrels.

The main species oiled were curlew sandpiper, terek sandpiper (both of which occur in New Zealand), curlew, redshank, greater sandplover, lesser sandplover, Kentish plover and slender-billed gull. Altogether 26 oiled species of birds were spotted.

Parrot rediscovered

THE NIGHT PARROT *Geopsittacus occidentalis* has been rediscovered near Mt Isa, Queensland. A solitary specimen in a

desiccated state was found in October 1990 by ornithologists from the Australian and Queensland Museums. The recovery of the skin authenticates rumours that have been circulating for several decades. The specimen found is the first seen for 120 years.

Conserving Pitta's last forest

IN 1986 one of the world's most beautiful and threatened birds, Gurney's pitta (*Pitta gurneyi*), was rediscovered in one of Thailand's last remaining pristine areas of lowland forest, Khao Noi Chuchi.

ICBP sent a team there to survey the forest. Their conclusion: it is the most important area for the species in Thailand, but also a stronghold for plants and other animals. The forest is a natural oasis in lowland Thailand which has been described as one of the most modified landscapes in the world.

A major project has been launched in the

area. Its main aims are to establish a forest reserve, promote non-detrimental farming practices, and set up a conservation education programme.

Saving the Sisserou

THE CAMPAIGN to save two of the world's most endangered parrots - the sisserou or imperial Amazon and the red-necked Amazon - appears to be succeeding. Both live around the Picard River in Dominica.

Since Project Sisserou was launched two years ago there has been a rise in the populations of the two parrots, now estimated at about 80 sisserou and 300 red-necked Amazons.

The ICBP/Dominican government/RARE project has bought 80 ha of the forest which is now a special reserve. Education programmes are teaching local people about the importance of the birds.

BRANCHING OUT.....

Motuora Island – a future open sanctuary



Forest and Bird members land on Motuora Island to begin the replanting project.

MID-NORTH BRANCH has formed an action group to press for an open sanctuary on Motuora Island, offshore from Orewa in the Hauraki Gulf.

Although modified by Maori occupation and dairy farming, the island is free of predators. It is home to many seabirds and a potential home for threatened species. Already the hard work has begun of revegetating the island. Forest

and Bird members and others are planting trees, collecting seeds, releasing trees and re-pairing fences.

The Motuora Action Group aims to have a young forest established around the island perimeter by the year 2000. For offers of assistance or further information, please contact Mike Harris of the Mid-North branch (0846) 25532.

Hinewai reserve blossoms

THE PRIVATELY-OWNED Hinewai Reserve on Banks Peninsula is now graced with a lodge thanks to the financial support of the Canterbury branch. An old woolshed has been converted into a new lodge which will provide over-night accommodation for work parties, as well as day-

time facilities for study groups.

Members have also pitched in with replanting native trees and shrubs in pasture on what is now a disused farm. The existing beech forest is regenerating well thanks to concerted goat and possum control.



The prime mover behind the Hinewai Reserve, Hugh Wilson (left) and volunteer Martin Oelderink in front of the converted woolshed.

Photo: Marion Macbeth

Possum hunt

OVER THE SCHOOL holidays, Southern Hawkes Bay branch encouraged children to trap and kill possums in a novel competition designed to capture the children's enthusiasm. A total of 953 possums were caught by the

children. The winner managed to trap 168 over the 12-day competition!

As a result the local furriers had to employ additional staff to cope with the influx of possums. The furs will end up as clothing in Russia and China.

Canterbury focuses on birds

CONGRATULATIONS to the Canterbury branch members who put so much time and effort into the highly successful 20th International Ornithological Congress held in Christchurch in December. Canterbury members could be found greeting the hundreds of scientists and bird lovers at the airport, helping with accommodation, organising field trips and providing a lost property office and overnight security patrol.

The branch ran the official Congress shop. F&B member Peter Langlands, who took on the exhausting job of shop manager, found it a worthwhile and enjoyable task and even got into some of the conference sessions free!



Canterbury branch members Peter Langlands, Rosemary Thompson and Helen Geven behind the counter of the Congress shop.

New section and Kiwi Conservation Clubs

WELCOME to our newest section on Great Barrier Island which has been established with assistance from Mike Lee of the Hauraki Islands branch. The Kiwi Conservation Club

continues to expand with clubs set up by the South Taranaki branch and Golden Bay section. We wish them well in their conservation activities.



Members of Forest and Bird's new Great Barrier Island section.

Urban chainsaw silenced

QUICK ACTION by Central Auckland branch members in January saw a human chain formed around a 150-year-old pohutukawa to protect it from being felled. The magnificent Mt Albert specimen stands 20 m tall and measures 7 m in girth.

The property on which it stands was recently sold and the new owner wanted it felled. Unfortunately, two big branches were sawn off before the Auckland members' speedy action which resulted in good media coverage and an emergency council meeting. A notice was rushed to the owner warning her the tree would be listed in the district scheme. The felling contractor had by this time backed off in the face of the resistance from the tree rescuers.

Once the tree has been given a protected listing in the council's district scheme, as one of Auckland's notable trees it should be safe from further attack.



Photo: NZ Herald

Moonlighting with weka

WEKA-HUNTING central North Island conservation officers Ann and Basil Graeme joined Department of Conservation staff and members from Rotorua, Te Puke, Eastern BoP and Gisborne branches out under the stars on Mokoia Island and Matawai forest, north of Gisborne. Armed with compass, notebooks and taped weka calls, they listened and recorded weka numbers as part of the Department of Conservation's Project Weka (see February 1991 *Forest & Bird*).

The survey will determine the size of the weka's populations. The option of removing weka for captive breeding programmes can then be evaluated. With more than 70 weka recorded, the signs look promising that the weka is still in relatively good numbers in some areas.



Flying for conservation

CONCERN ABOUT the extent of native vegetation remaining in South Canterbury has prompted the South Canterbury branch to carry out an aerial survey to locate and map the remnant areas. Four branch members flew backwards and forwards across Timaru, Geraldine, Temuka and Waimate building up vegetation maps of the area.

Their maps show significant native vegetation remaining in the gullies, some in the downlands but very little on the plains. Without protection or further planting South Canterbury may lose the native vegetation remnants on its farms. The resource data collected will be invaluable in helping develop a conservation strategy for South Canterbury.

Mount Ruapehu natural history week



FOREST AND BIRD'S natural history education week at the Society's Mt Ruapehu lodge was a resounding success for the 30 participants. Led by conservation staff Kevin Smith and Mike Harding, the week involved a range of field trips in the Ruapehu area with plenty of opportunities to practise plant identification.

Highlights included a visit to Tongariro forest, a close en-

counter with a family of blue duck, and visits to the Kaimanawa beech forests, Lake Taupo wetlands and the Tokaanu thermal fields.

The low point of the week was discovering huge bulldozers working in the Whakapapa River and sending waves of silt downstream. The bulldozing was part of a massive repair job on Electricorp's Whakapapa tunnel intake.

King Country branch chairman Keith Chapple hosted the group for dinner and led an evening trip to the Kakahi glow worm grotto. The week ended with dinner at the Chateau. We are planning more of these natural history weeks so if you missed out this time be in early when the next one is advertised.

Participants on the Mt Ruapehu natural history week studying alpine plants. Photo: Mike Harding



Bulldozer at work in the Whakapapa River just upstream of a family of blue duck. Photo: Mike Harding

Albatross in trouble

by Forest and Bird conservation officer Alan Tennyson

In the November 1990 issue of Forest & Bird conservation officer Alan Tennyson revealed that thousands of albatrosses were being killed in the southern ocean each year by fishing practices. The fishing industry accused the Society of alarmist and unfounded reports.

Now an independent report has documented the extent of the seabird mortality. Its findings? Unfortunately, just as serious as predicted.

SEABIRD EXPERT Sandy Bartle paints a grim picture for the future of albatrosses affected by fishing. In a report (in preparation at the time of writing) he predicts a dramatic decline in the population of the white-capped albatross – one of New Zealand's most striking endemic birds – due to trawling around the Auckland Islands.

Using data from MAF observers collected during the 1989-1990 Auckland Islands squid fishing season, the National Museum scientist's report shows an alarming number of birds killed.

Based on the average number of birds caught per boat per day, a minimum estimate of 1,700 white-capped albatrosses were killed last season. However, the report states this estimate should be "doubled to allow for corpses lost from the net and for birds which subsequently die as a result of injuries but are not entangled in trawl gear and recovered." It seems at least 3,400 birds died last season.

Highest mortality

The worst incident on record was when 231 white-capped albatrosses were killed by one trawler during one month of fishing. Up to 17 albatrosses have been killed during a single

net retrieval. Typically, about 10,000 trawl tows are made in this fishery each season. However, only half this number were carried out last season because of poor squid catches. Twice as many birds probably die in normal fishing years.

The white-capped albatross (or molly-mawk, a term used for several of the smaller albatrosses) found at the Auckland Islands, has an estimated population of 64,000 pairs. It is a separate race from the only other white-capped albatross population, known from islands off Tasmania where there are about 3,500 pairs.

Albatrosses have high adult survival rates, at greater than 90 percent per year, and low reproductive rates, raising a maximum of one chick each year. Their populations are very sensitive to changes in mortality rates and an increase in adult mortality can have serious consequences. For wandering albatrosses, an increase in mean adult mortality of only 2-4 percent has been enough to cause worldwide population declines of up to 50 percent during the last 20 years.

The report states that the accelerated mortality caused by the fishery will result in a serious population decline.

The white-capped albatross is the main victim of the fishery, because of its abundance on the Auckland Islands' shelf. Flocks of 2-3,000 are commonly seen following the fishing fleet.

About 50 squid trawlers ply the waters around the subantarctic Auckland Islands between January and May. Half the fleet are Soviet boats but nearly all foreign licensed boats are chartered by New Zealand companies. The fleet is well known for its annual kill of Hooker's sea lions but the bird deaths are just as serious.

Soviet trawlers cause nearly all of the albatross deaths. These boats have a monitor cable running from the ship to the net which the more modern vessels in the fleet do not have.

A gruesome death

The report graphically illustrates how birds meet a gruesome death.

"...Most birds died as a result of collision with the headline netsonde monitor wire, which extends from the top of the aft gantry (near the boat's stern) to up to 20 m behind the boat. The wire is 7 mm in diameter and very stiff, so that it whips up and down as the boat pitches in the swell. It is grey, and very hard to see on overcast days and in twilight.

Albatrosses feeding behind trawlers have their eyes set on offal ... they fail to see the monitor wire and crash into it."

"...Albatrosses which are killed by the monitor wire are generally wrapped around it with a broken or even torn off wing. They also get snagged on stiff broken strands which are common on worn parts of the monitor cable."

"Albatross carcasses which do not get snagged slide down the stiff monitor wire like oceanographic messenger weights, accumulating in clumps at a joint just above the headline monitor itself. Others drop back into the bellylines when the net is hauled ... further corpses drop off the wire earlier ... and yet more are seen falling from the monitor wire as it passes over the gantry during hauling."

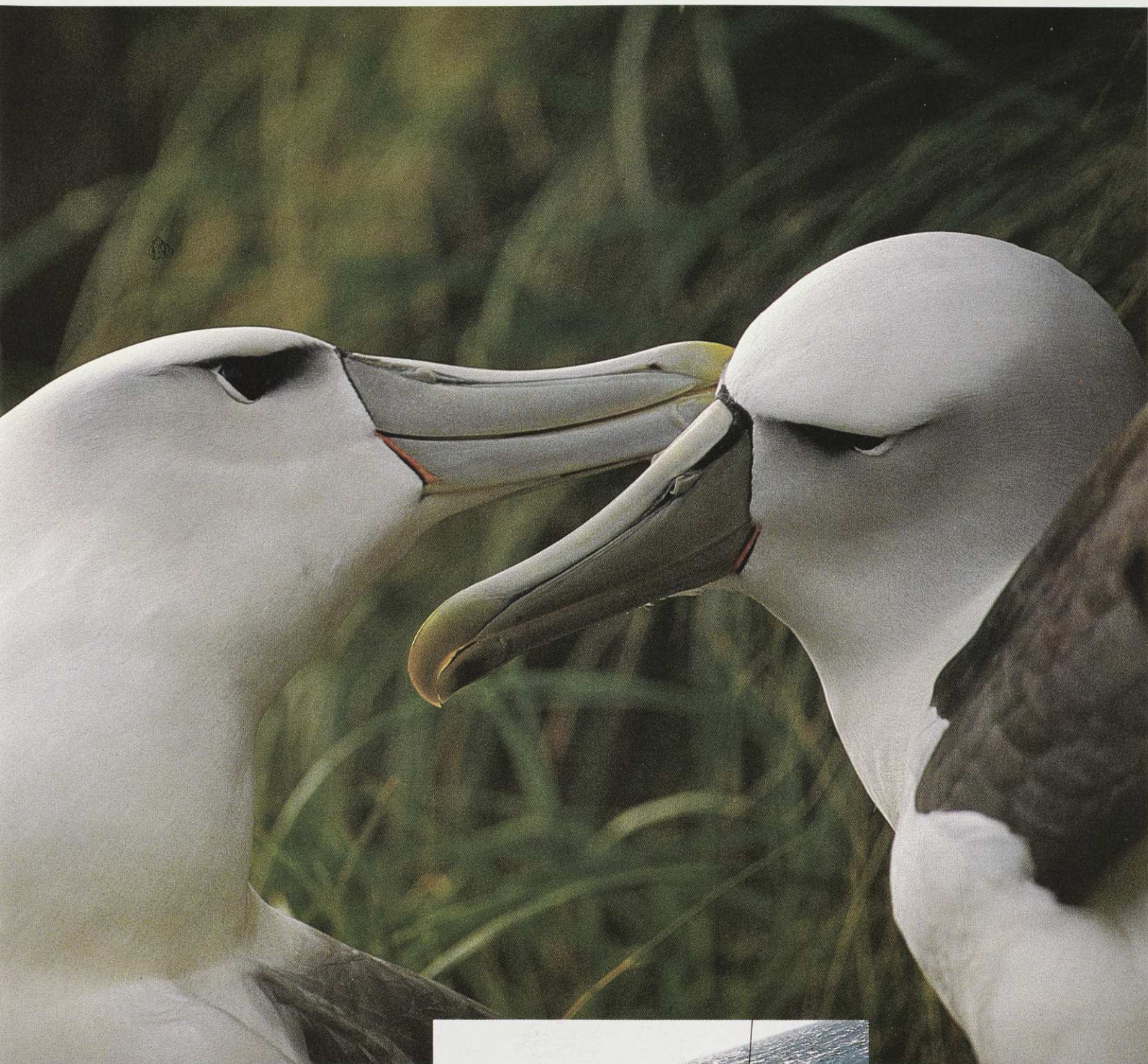
Autopsies revealed that the "cause of death appeared to have been drowning, mostly associated with fresh serious injuries (broken wings, legs, bills, etc) in conformity with having collided with and becoming entangled in trawl gear."



Sandy Bartle, curator of birds at the National Museum, with a white-capped albatross killed in the Auckland Islands squid fishery.

Photo: Gerard Hutching





But the threat to the white-capped albatross does not end there. This species is one of the most commonly drowned on Asian bluefin tuna longlines each year in Australasian waters. The thousands that are thought to be killed in this fishery each year compound the seriousness of the trawler kills. Moreover, pigs liberated years ago on the Auckland Islands have largely destroyed the colony on the main island.

Vessel ban called for

The report concludes that trawlers fitted with netsonde monitor cables (those responsible for the high bird mortality) cannot be permitted to continue to fish around the Auckland Islands. Forest and Bird believes the albatross deaths are a national disgrace. They are avoidable and should have been stopped years ago. Failure to take action on this problem reflects poorly on the industry and on the Minister of Fisheries.

The proposed trawler exclusion zone of 60 nautical miles radius around the islands for



A pair of white-capped albatrosses, the most common victim of the squid trawlers. Photo: Kim Westerskov.

A gruesome death for two albatrosses wrapped around the netsonde monitor cable.

the protection of Hooker's sea lion would greatly reduce the bird kill problem. However, the deadly monitor cables are in use in many oceans around the world. Off the Kerguelen Islands in the South Indian Ocean, black-browed mollymawks are being killed by similar trawlers and the population there has declined. Soviet trawlers fishing around the Snares Islands have killed white-capped and Buller's albatrosses. The same trawlers fishing for southern blue whiting off New Zealand's subantarctic Campbell and Bounty Islands are likely to cause similar problems for other albatross populations.

The albatross deaths have attracted attention at international forums. Last year the International Council for Bird Preservation (ICBP), called on national fishing authorities to ban trawlers using the outdated net monitor cables from their economic zones.

The mounting pressure from the Department of Conservation (DoC), Ministry of Fisheries (MAF) and Forest and Bird has achieved some changes. New Zealand companies such as Sealord Products Ltd, Independent Fisheries Ltd and Amalgamated Marketing Ltd, which charter the Soviet ships fishing around the Auckland Islands, have modified their net monitor cable systems. They have lowered the cable so it is closer to the water and less likely to hit the birds. Unfortunately, the new system has failed to eliminate the bird deaths and by February 1991 – just a week or two into the fishing season – bags of dead albatrosses were arriving at the National Museum.

Despite the efforts of fishing companies, there is clearly only one solution – vessels using the cables must be prohibited from fishing within our economic zone.

The jigger solution

AROUND SOUTHERN New Zealand, the bright glow on the horizon from squid fishing fleets is a characteristic feature of summer and autumn nights. The vessels in these fleets are called jiggers, which use an unusual fishing method to catch their quarry.

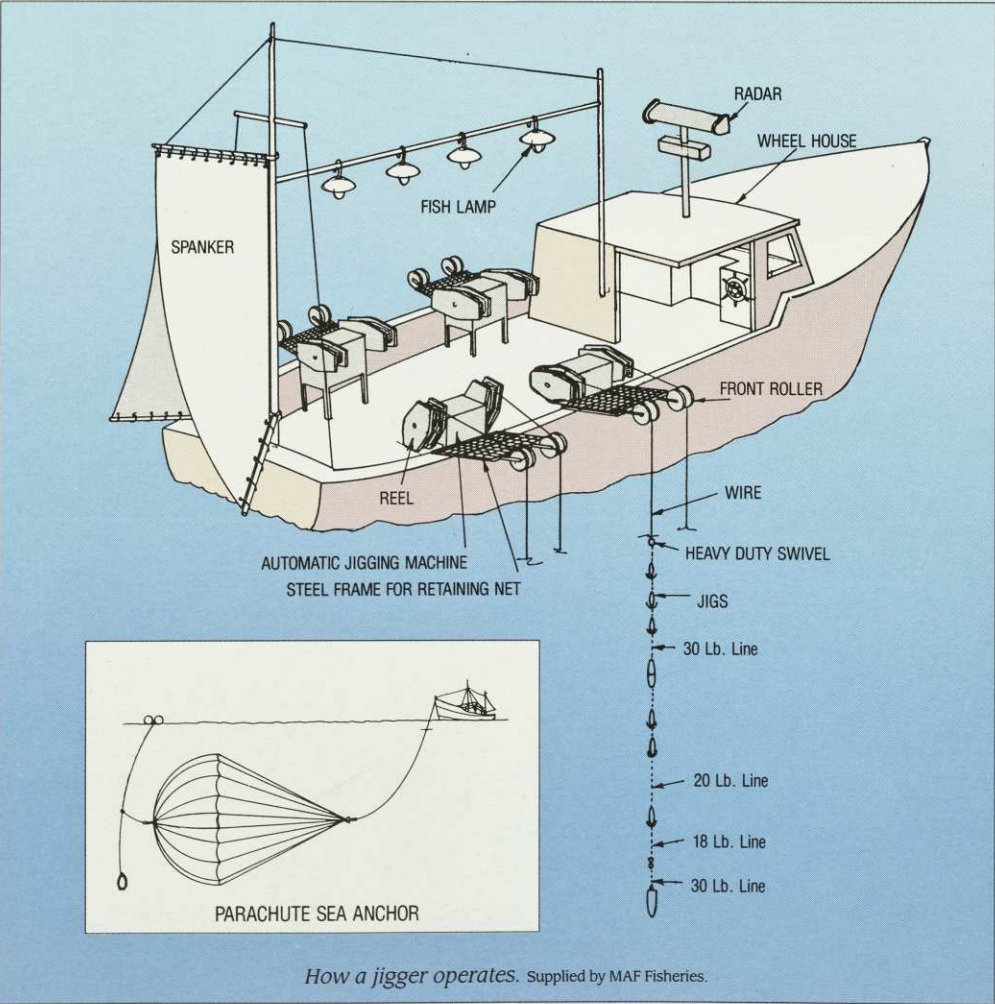
That same bright glow could be a ray of hope for albatrosses and Hooker's sea lions, under siege from squid trawlers around New Zealand's subantarctic islands. Forest and Bird is advocating replacing the trawlers with jiggers.

Because jiggers don't use nets or baited hooks, they catch few non-target species. The squid attack lures and are snagged on unbarbed hooks.

Large vessels use 2,000 of these lures at a time. Once hooked, the squid are carried out of the water on automatically operated lines, dropped off into netting then slid down into a gutter where they are collected for packing.

Squid seek shelter in the shadow underneath the vessels to escape the glare of the lights. Many squid, including the target *Nototodarus* species, live at greater depths during the day, normally only coming closer to the surface to feed at night.

Of all foreign fleets in New Zealand waters, the squid fishing fleet is the largest. During the 1989/90 season, Japan had six trawlers and 42 jiggers, Korea had 11 trawlers and 42 jiggers and the Soviet Union had 27 trawlers and four

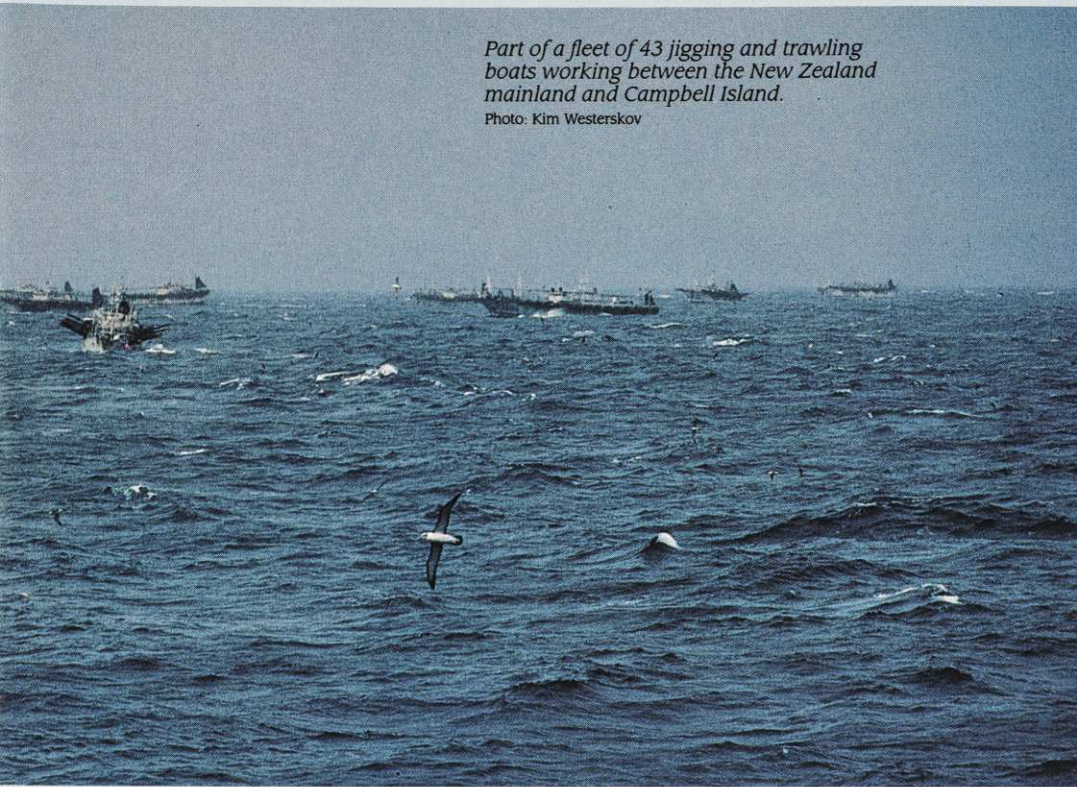


jiggers targeting squid. Forest and Bird believes only jiggering vessels should be permitted to fish around the Auckland Islands because the trawlers slaughter sea lions, fur seals, albatrosses and petrels. Trawling is threatening the survival of two species, Hooker's sea lion and the white-capped albatross. Forest and Bird has prepared a comprehensive report proposing a 60 nautical mile (100km) radius Auckland Island marine mammal sanctuary from which trawlers would be excluded. Squid fishing could continue within the sanctuary provided the jiggering method was used. The fishing industry has claimed that jiggering vessels cannot work around the Auckland Islands because of the rough waters. However, the facts do not support their claims.

- During the 1989/90 season, New Zealand waters were fished by 45 jiggers that were larger than some of the squid trawlers fishing around the Auckland Islands last year. The largest

Part of a fleet of 43 jigging and trawling boats working between the New Zealand mainland and Campbell Island.

Photo: Kim Westerskov



of these jiggers was three times larger than nine of the 44 trawlers working around the Auckland Islands. It cannot be argued, therefore, that the waters around the Aucklands are too dangerous for jiggers because of their allegedly smaller size. Many jiggers working around the Falkland Islands in the subantarctic South Atlantic are even larger and could be chartered to work in New Zealand waters. These very large jiggers often pass through New Zealand waters on their way to the Falklands.

- Jiggers are used in areas of rough water in foreign fisheries and within the New Zealand 200 mile EEZ. In the 1989/90 season at least 78 percent of all jiggers working in New Zealand waters worked in the subantarctic, including 522 fishing days around the remote Bounty Platform and Pukaki Rise. In the 1986/87 season, the Snares shelf was the most important squid jigging area.
- Jiggers have worked around the Auckland Islands in the past and some jigging was even carried out in the 1989/90 season.

So why does the fishing industry dispute the fact that jiggers can work around the Auckland Islands? The answer is economics. Trawlers can catch more squid than jiggers (although squid caught through jigging is usually better quality and therefore fetches a higher price). The ecological costs of trawling, including the deaths of hundreds of sea lions and thousands of albatrosses, are ignored.



Above: Industry claims that jiggers are too small to work around the Auckland Islands do not stack up. These two Japanese jiggers, the Chidori Maru No 58 and Soho Maru No 85, are three times the size of some trawlers working around the Aucklands, such as the No 709 Dong Yung (inset).

Photos: Alan Tennyson

Centre left: About 100 Hooker's sea lions are drowned each year by squid trawlers around the Auckland Islands.

Photo: Canon Fraser

Left: Squid pounce on these lures and are snagged by the rows of unbarbed hooks.

Photo: Alan Tennyson



What you can do

Write to the Ministers of Conservation and Fisheries, Parliament Buildings, Wellington, asking them to ban trawlers using the deadly monitor cables in New Zealand waters.

Learning to grow up green



Pupils from Salford School in Invercargill race back to class after finishing some hands-on conservation work when they planted trees and shrubs at the Waihopai flood detention dam. The dam is being restored as a wetland.

Photo: Southland Times

by Cindy Baxter

As interest in the environment grows among the young, many of them are learning that what they do makes a difference.



A GROUP OF Whakatane High School students protests against tropical rainforest timber being used in decking for a new school building. Their pressure results in the rainforest timber being replaced with New Zealand pine.

Wairarapa College student Fiona Beardslee, 14, calls a public meeting to discuss regular cleanups of local beaches and lakes.

The beach cleanups are now a part of community life. Once a month, teams co-ordinated by the schoolgirl clear litter from the Wairarapa coastline and lake shores.

Three university students, Kate and Megan Graeme and David Holland, spend their holidays surveying the presence of wild ginger in the Coromandel, presenting the local council with a comprehensive report and map to help eradicate the noxious plant.

These students are just some of many young people today who are acting to clean up the environment, encouraging their peers and parents to follow suit. But just how widespread is this concern among children? Are young people today taking more notice of environmental issues than their parents?

Tropical Rainforest activist Ange Palmer spent last year taking the New Zealand Forest Education Roadshow to 130 schools around the country, alerting students to the rainforest issue.

The focus of the group was on the older students, in the sixth and seventh form.

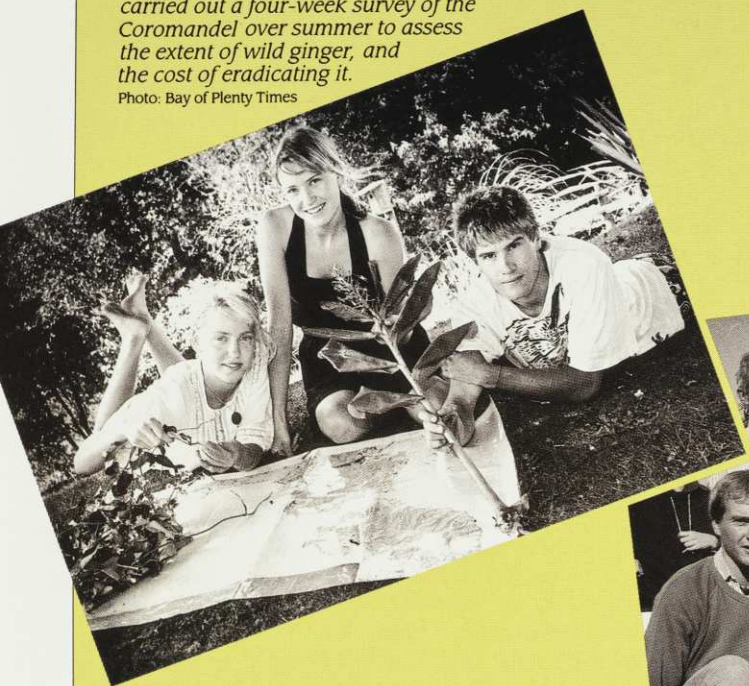
"Children, especially of the age group dealt with by the Roadshow, are well aware that theirs is the future. They are worried about what is to be handed down to them by us, and therefore they have a strong instinct to understand what is going on," she says in her final report.

"Putting energy into young people is surely our best investment for Earth."

The presentation started on global environmental problems, and came right back to the local situation. The Roadshow, although working with some of the teachers, focused on the children themselves.

"I think that when the kids looked at us, in our jeans and basketball boots, speaking to them in their own language, a lot of them realised that it's 'cool' to be interested in the environment," she says. Fiona Beardslee agrees. "I think that kids are much more prepared to do something about their environment today."

Kate Graeme, her sister Meg and David Holland carried out a four-week survey of the Coromandel over summer to assess the extent of wild ginger, and the cost of eradicating it.
Photo: Bay of Plenty Times



Cashmere High School pupils recently declared their school a "tropical timber-free zone." Christchurch Mayor Vicki Buck was on hand to congratulate the children for their stand. Rainforests Coalition co-ordinator Grant Rosoman is on the left. Photo: Eugenie Sage



Janet Turney and Angela Palmer delivering their rainforest talk to 6th and 7th form pupils at Linwood High School, Christchurch.

Parents, she says, are much more likely to back away from environmental problems, a difficulty she found frustrating in her efforts to clean up the beaches. Many of her fellow students were keen to help, but couldn't get parental support in the form of transport provided by their parents.

Young peoples' interest in the environmental movement has certainly gained momentum in recent years, says Department of Conservation education officer Bev Abbott.

"One of the lessons we have learnt is that the global environmental problems worry kids a lot. It is very easy for them to start feeling that they cannot do anything about it. 'What we need to do is get the 'you can make a difference' message out.'"

It seems that message is getting through. Throughout New Zealand, school and university students are actively doing something to make a difference. On March 22, thousands of schoolchildren took to the Christchurch beaches to pick up litter.

Organiser Leon Bertstein was amazed at the response he got when he began planning the cleanup. "I found that where I had asked a school if they had one or two classes who could take part, the entire school ended up coming along. The kids are so interested, they are really into it and they are concerned about it."

The Royal Forest and Bird Protection Society's Kiwi Conservation Club, formed three years ago, now has 5000 members and the membership list is growing fast.

Education Officer Chris Wratt says the club's aim is to empower young people to take care of their local environment, teaching

through action at the local level.

"There is an incredible interest in conservation and environment issues from kids. Through the KCC, we are teaching them that there are things you can do at the local level that will make a difference," he says.

Forest and Bird is hoping to link up with the Rainforests Action Group and Project X to start a newsletter aimed at secondary school and university environmental groups. It will give them the opportunity to share ideas, plus information on local issues, how to set up a group, plan action and how to increase membership.

Greenpeace education co-ordinator Pauline MacDonald says that she gets about 50 letters a day from schoolchildren interested in a huge range of environmental issues.

But she says the organisation is also moving to a point where young people are encouraged to do their own research.

"We don't want to just hand out information for their projects, we would like to empower kids to take their own action. For example, if their local stream is being polluted, they should find out where it is coming from and approach the companies themselves."

Victoria University students Patricia Ng and Carol Stephenson last year took a course in playwriting, where they wrote and performed a play about an area of local concern – the proposed Kapiti Island Marine Reserve.

Their performances at local schools included a question and answer session at the end for the audience to take part.

"The questions they asked us and the interest that we generated was such that we

wanted to take it further," says Patricia. "We felt we had a powerful piece of information about conservation to take to schools."

After the university year, they formed their own theatre group and gave a further 16 performances to schools around the Wellington region.

The quest by young people for information on the environment is catching up with an education system which does not adequately cater for the subject. Natural Heritage Foundation executive director Delyse Springett is concerned that teachers do not have sufficient resource material for their classes.

"The kids are aware and they are interested. But teachers often feel out on a limb because their own environmental education was so slight," she says.

The Foundation had initiated environmental courses for teachers this year and hopes to be able to extend that education. Later in the year it will hold a conference focusing on environmental education in New Zealand. Getting the subject into school curriculums is one main aim.

Ange Palmer's roadshow around New Zealand also included a quiz for students to ascertain their level of environmental and conservation knowledge.

"Environmental education is seriously lacking in this country. Young people want to take action but don't know how," she says.

Chris Wratt agrees that environmental education is happening despite the subject not being taught as part of the mainstream school curriculum.

"Teachers are crying out for information. The NGOs (Non-Government Organisations)

themselves are the ones who are trying to fill the gap. The Government is not providing anything," he says.

But the lack of environmental education in school curriculums has not stopped the energies of the students and many teachers. Many schools around the country now have recycling as a part of the school system.

While this has often been initiated by the children themselves, teachers are also using recycling as an environmental activity that the whole school can take part in (while raising much needed funds).

On Auckland's North Shore, Sunnybrae Normal School principal Kevin O'Carroll says he has cut down the use of the school's incinerator through the recycling programme. "We are trying to eliminate its use to a large extent, and encouraging the children to recycle," he says. "Caring for the environment is one of our charter goals."

Not so with other schools. Hutt Valley High School pupils were horrified last year when they saw the trees on the stopbank at the back of the school being cut down. Pupils formed an environment committee to try and fight the action, but were too late. By the time they went to the council (which was, according to the school, responsible) and were in turn told by the council that it was the school's responsibility, the trees had gone.

Ironically, the committee has since raised \$3000, half of which has been used to plant more trees around the school grounds. The environment committee is active, and further recycling, educational and local environmental issues are being addressed.

Comalco's "Cash for Cans" scheme of aluminium can recycling has taken off in schools and is a hit for young people. Last year's programme collected 70 percent more cans than the 1989 programme.

The school activities spread into the home and to parents. Parents are being harassed by their younger children into getting their five bins for recycling aluminium cans, plastic, paper, food scraps and glass.

Leiarne Mackenzie, a Christchurch environmentalist, is often taken down to the river by her son, James, aged 10, to clean up the litter there. "Not only are we now recycling our own rubbish, but all the stuff from the river as well," she says.

Mrs Mackenzie herself is involved in the environmental movement and says James is furious if he's discovered she has gone to a meeting without her. "It's great - he's encouraging the other kids at school to join groups and take part, and, through them, the message is getting to other adults," she says.

"It's always been a case of kids learning from adults. Now it's time for them to educate the grownups. I feel sorry for kids sometimes because they know what is going on and they feel that they have no say and adults won't listen to them. The tables have now been turned."

Hannah Efford, 12, of Te Aro School, points to the reason. "We have to live in this world for longer than the adults do, and so do future generations. What I like about New Zealand is how green and beautiful it is. Since New Zealand is so wonderful we should try to keep it clean."

With this sort of attitude amongst today's younger generation, the future looks bright. ♣

But what can we do?

SO WHAT EXACTLY do young New Zealanders know about their environment? Will the next generation come to the rescue of Gaia, or are they as wedded to consumption, "progress" and technology as many of their parents?

During its tour, the New Zealand Forest Education Roadshow 1990 - under the auspices of the Pacific Institute for Resource Management - conducted a survey to try to find out.

The survey was divided into two sections. The first tested general knowledge about the environment, while the second offered an opportunity to express an opinion in key areas.

It was the second section which revealed the most exciting results. 80 percent of young kiwis agreed that: "Environmental problems are the ultimate responsibility of every individual on earth." Only 4 percent answered "large companies", 3 percent said "God" and 5 percent said "governments".

This indicates that a huge majority of young people are aware environmental damage is occurring on their behalf. We found this result very heartening, even if this sense of responsibility was not being translated into action.

It also seems that young kiwis are well aware that New Zealand's clean, green image overseas is only skin deep. When asked to describe the nature of New Zealand's environmental problems, 63 percent answered "many and serious", and 25 percent answered "many but under control". Only 1 percent suggested there were "none" and 11 percent "few".

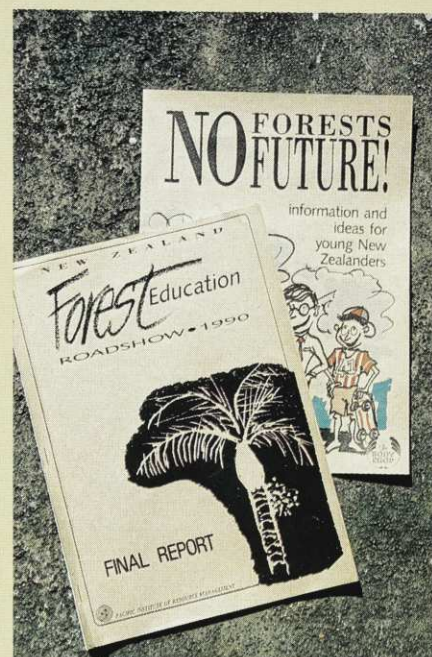
Why then are more young people not acting on their beliefs? What is it that stops ideas being turned into action?

The last part of the survey shed some light on this problem. Students were asked to list the environment-related subjects which they wanted to know more about.

Global issues such as ozone depletion, greenhouse effect and rainforest destruction along with high profile subjects such as driftnetting, endangered species and Antarctica dominated the areas of interest of young people. The more mundane local issues such as old man's beard, erosion and sewage were of less interest.

Young people are aware that all is not right with the earth. At the same time they were always asking "But what can we do?" The links between the high profile but more accessible areas were not understood. If young people can be shown how recycling can help to minimise the greenhouse effect and how wasp control and sewage disposal can halt the extinction of animal species, then we will see the great depth of feeling turned into positive action.

Experience in the classroom backed up the survey. Clearly environmental education in New Zealand is seriously



inadequate and it is essential that provision be made for it within the school curriculum.

At the end of our tour the Roadshow felt that increased environmental education was important for two reasons.

- There are alternatives available to the current path of increased consumption and increased environmental damage and it is important that these are made available to young people. Most are not aware how their consumption or how their waste effects the environment. This is true at a local level but even more so internationally. Young people want to know how they are affecting the environment and how they can respond to the situation.
- Current predictions for the planet for the year 2030 are not rosy. Population is due to double, reaching 10 billion and at the same time current rates of rainforest destruction could see the entire biome destroyed. There will be marked changes to society and to living conditions. Even with stringent environmental controls and safeguards people must still be prepared to face these changing conditions. The goals and perceptions of young people can only reflect these conditions through education.

Young kiwis don't need doom and gloom. Many of them already find the whole issue depressing. What they need is a positive plan to which they can respond. ♣

Adam Leavesley

The Kiwi Conservation Club

A Growing Movement



What gift can you give to a child that's fun, educational, doesn't need batteries or doesn't break after the first week?

There aren't many today, but a gift membership to the Kiwi Conservation Club is one. The KCC is a Forest and Bird initiative for children from 5 years and older that encourages them to take part in practical, positive conservation activities.

• *Positive* •

With problems such as driftnet fishing, global warming and the hole in the ozone layer, it's easy for children to become worried about the future of their planet.

Through the KCC they learn that by taking personal action they can make a difference.

• *Active* •

All over New Zealand KCC members meet regularly to take part in walks to the coast and bush, replanting projects, raising money for endangered species and taking part in conservation activity days.

• *Informative* •

Every KCC member receives a stimulating newsletter full of news, information and their own poems, pictures and letters about conservation.

Many classes, libraries and groups are also members and receive multiple copies of the KCC newsletter – a valuable research resource.

Give a gift membership to the Kiwi Conservation Club and encourage today's young Kiwis to become tomorrow's conservationists.

*Complete the membership form in this journal and return it to
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Today's Young Kiwis – Tomorrow's Conservationists.

TUATAPERÉ'S WILD CHALLENGE

by Tim Higham

Competitors on Lake Hauroko race towards the outlet to the Wairaurahiri River. Photo: Tim Higham.



ON JANUARY 12 1991, 22 athletes lined up for the inaugural Wild Challenge race: Tuatapere's equivalent of the Coast to Coast endurance event.

The 6am gathering on the shores of Lake Hauroko was much more significant than the number of entrants in the race indicated.

Auckland Radio 1ZB, having seen a news item in the *New Zealand Herald*, decided to run updates on the race through the day. TV3's Melanie Reid built the race into an action packed and entertaining six-minute *Nightline* piece.

Positive exposure

Within a week race organisers fielded an enquiry from a North Island nature tourism operator about possible accommodation facilities in redundant forestry staff quarters. Tuatapere – it seemed – was finally gaining the positive exposure it deserved.

The town had been in the doldrums: in June, then-deputy Prime Minister Helen Clark announced to Forest and Bird's Council meeting a comprehensive ban on native timber exports. Outraged Tuatapere farmers, counting on the income from clearing and chipping beech forest on marginal land, defiantly felled as many trees as possible before the cut-off

date, parading chainsaws and sawdust in front of print and broadcast journalists.

However, it was the lobbying of Wallace MP Bill English and Awarua MP Jeff Grant which proved more successful than the publicity in exempting Southland from the constraints of Labour's Indigenous Forestry Policy.

National was prepared to allow chipmilling of sizeable areas of beech forest to give Tuatapere a reprieve. It would permit the filling of existing woodchip contracts and a five-year transition period in which native logging could continue until exotic hardwoods came on stream. However, native forest woodchipping would continue until 2002 at a reduced cut.

Even in the depths of economic despair organisers of The Wild Challenge were thinking positive. Often huddled around a bar heater in the Tuatapere promotions group information centre, they planned for the big day.

Despite thousands of cumulative hours of pounding the streets no major sponsor was forthcoming. The race feasibility study was funded by a business development grant, and a few Southland businesses helped out with prizes and promotional material.

Race day dawned fine, but a brisk nor-

wester forced the start of the race to be transferred to Teal Bay, Lake Hauroko's outlet to the Wairaurahiri River, cutting out a 14-kilometre lake paddle.

The kayak down the Wairaurahiri, compared by competitor Russell Prince to an hour-long hydroslide ride, passed through Waitutu Forest.

Waitutu – part stewardship land, part Maori land – is one of the largest areas of lowland temperate rainforest left in New Zealand.

Stands of dense podocarp – predominantly rimu, miro and Hall's totara – and silver beech cloak a series of ancient marine terraces which rise from the coast to the mountains of Fiordland. Each of the terraces has slightly different fertility and drainage characteristics and harbours a unique assemblage of plant life. The upper terraces support stunted podocarps, such as yellow silver pine.

Bush-clad terraces

In the mid-1980s Waitutu was the focus of a campaign by Forest and Bird and the Native Forests Action Council. Beautiful photographs of bush-clad terraces graced the pages of calendars and magazines. Forest and Bird has continued to press for Waitutu to be added to Fiordland National Park.



Left: Tuatapere promotions group chairman Alec Miller (left) discusses planning for the Wild Challenge race with Department of Conservation staff Trevor Tidey (centre) and Barry Bennett on the wharf at Lake Hauroko.

Photo: Christine Williams, Southland Times.

Right: A mature rimu in the Holly Burn, south-western Longwoods. The Holly Burn is a habitat for the declining yellowhead.

Right inset: Waitutu Forest where the Tuatapere Wild Challenge was run: one of the largest areas of lowland forest remaining in New Zealand.

Photo: Alan Mark

Tuatapere community board chairman Ngarita Dixon says townspeople realise the attractions of the region.

"People are fully aware of the potential (for nature tourism), but will almost begrudgingly reveal the secrets that are here.

"We are very reluctant to give up our isolation because we enjoy it. But we can no longer afford the seclusion."

The Tuatapere and District Promotions Group have made the not-unrealistic assumption that if environmentalists are keen to protect the region's forests, they will also want to spend money exploring them. Tuatapere people are aware that one-and-a-quarter hours up the road Te Anau is enjoying the economic benefits of servicing the very popular Milford, Kepler and Routeburn tracks.

Most New Zealanders are drawn to Fiordland by images of launches on Milford and Doubtful Sounds, and trampers standing high above glacially-carved valleys.

Promotions group secretary Anne McCracken hopes that the comparatively under-utilised southern end of Fiordland National Park, and Waitutu, Dean and Rowallan forests, will become sought after by a different breed of tourist:

"The anti-tourist", says McCracken, "campervanners and cyclists – predominantly young people who want to get away from the main tourist routes to experience the natural environment, the relaxed pace of country life, and the hospitality of real New Zealanders. What better place than Tuatapere."

Seals and dolphins

The McCracken farm homestead overlooks Te Waewae Bay. Family members take for granted the regular visits by fur seals and the antics of a population of about 400 Hector's

dolphins. Even last year's month-long visit to the bay of 10 southern right whales caused only minor excitement.

"There are a lot of things that we take for granted, which urban New Zealanders are looking to experience," says McCracken.

At the changeover for the mountain bike section of the Wild Challenge, at Bluecliffs Beach, Hector's dolphins cruised and cartwheeled among the breakers, entertaining supporters.

The most gruelling section of the race was the run between the Wairaurahiri River and Te Waewae Bay, along old logging tramways.

Competitors passed over three spectacular wooden viaducts, the longest, over the Percy Burn, being 124 metres in length and 36 metres above the ravine below.

The viaducts and tramways were built in the 1920s to feed timber into the Port Craig mill, at the time one of the most modern in the southern hemisphere.

The remains of the mill, dwellings, and a wharf can still be seen, and the old schoolhouse is maintained as a tramper's hut by the

Department of Conservation.

The 1930s Depression forced the closure of the Port Craig mill, and served to spare Waitutu forest, to the west of the Wairaurahiri River, from the axe.

The Department of Conservation – with assistance, recently, from engineers of the Australian Army – maintains the viaducts as part of a three-day tramping track from Te Waewae Bay to Big River, beyond Waitutu.

Wilderness and adventure

Southland Conservancy advocacy manager Phil Doole says DOC is planning facilities which will not detract from the Waitutu area's sense of wilderness and adventure. The department is also looking at improving access over the Hump Ridge, a link between Te Waewae Bay and Fiordland's Lake Hauroko. The track will deviate from the present route, passing spectacular granite outcrops and alpine tarns, and providing panoramas of Lakes Hauroko and Pōteriteri, the southern coast and islands of Foveaux Strait. Tuatapere farmer Val McKay has been the first in the town to diversify into a tourist servicing business. He provides a ferry service on Lake Hauroko for trampers and hunters wanting access into the Wairaurahiri River and the southern end of the Dusky Track.



Women almost stole the honours in the inaugural Wild Challenge race. Second and third placegetters Penny Webster (left) and Jacinda Amey with race administrator Anne McCracken.

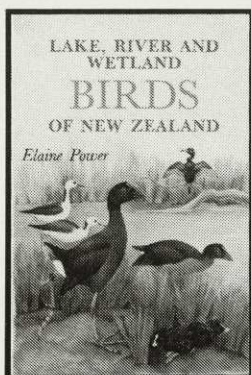
Photo: Tim Higham.





One of the spectacular wooden viaducts which takes trampers along the south coast tramping track between Te Waewae Bay and Waitutu Forest. Photo: Geoff Spearpoint

SPECIAL OFFER TO READERS



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Excellent trout fishing and deer hunting, a rich gold mining and timber milling history, and wild lakes and coastline have others confident there is potential for more jobs. Anne McCracken says the forests, lakes and rivers of the area can still be exploited, "not for timber and hydro-electric power, but for adventure tourism and nature tourism."

The Wild Challenge after-race function saw competitors enthusiastic about the future of the event. Winners Russell Prince and Penny Webster vowed to return for the second Wild Challenge and to bring friends and rivals. Prince, who finished in just under six-and-a-half hours, said the event was tougher than the first day of the two-day Coast to Coast race.

Unanimously competitors agreed the scenery was superb, and the hospitality unrivalled. Almost everyone in Tuatapere seemed to have something to do with race day administration or catering. Elderly citizens waited patiently on the street for the triathletes to pass. All competitors received a bagpiper's welcome as they finally crossed the tape, the last coming home in nine-and-a-half hours.

The barbecue included marinated venison, huge steaks, and, of course, Tuatapere's famous sausages. Crayfish cocktails were perfectly garnished, pikelets lovingly topped with jam, and the pavlova liberally creamed.

Each contestant was called up to the front of the hall for a round of applause and congratulations by race organisers. Most returned again for placings and spot prizes. The Wild Challenge proved to all present that Tuatapere is a town with a big future – even without rimu logs and beech chips. 🦅

Tim Higham is an information officer with the Department of Conservation in Southland.

Tony Gray – The bellbird's barrister

by Gerard Hutching



SOUTHLAND CONSERVATIONIST Tony Gray recounts the time he addressed a meeting of the Southland Progress League where he described himself as the "bellbird's barrister." The subject was woodchipping of native forest.

"Native birds can't argue for themselves. All they have is their own sweetness," he told the meeting of Southland worthies.

It was not the first time that Tony Gray had stood up to defend the rights of species which could not speak for themselves. The veteran campaigner has long been a constant thorn in the side of developers, although he prefers a more colourful analogy.

"A thorn in developers' sides? I prefer to see myself as a drop of disinfectant in a bucket of muck," he says emphatically.

Since he arrived in Southland in 1971 from the United Kingdom, Tony has been one of a dedicated few in the region who has carried the torch for conservation. Early on it was a fairly lonely business, he admits, but today Forest and Bird's Southland branch is one of the most active in the country, with committed people such as chairperson Christine Henderson, secretary Audrey Gamble and long time conservationist Don Lamont in its ranks.

A firm believer in the power of education to mould a person's outlook on life, he traces his awareness of environmental issues back to Rachel Carson's *Silent Spring*. It was a book which he maintains changed his life, and was naturally a publication he used to recommend to students at Kingswell High School where he taught English until recent retirement.

In the 1960s his beloved countryside was being overrun by development, with a motorway slicing its way through the River Swift near his village. Tony was described by the *Guardian* newspaper as an "ardent conservationist" in the battle over the motorway.

New Zealand beckoned. "I felt I had come to a better place which still had a chance. In Europe there were too many people, and too much pollution."

His arrival in Southland coincided with the launch of the Forest Service's infamous beech scheme proposal. The

proposal was to clearfell or intensively log 339,500 ha of indigenous forest in Nelson, Southland and Westland – including most of the accessible beech forest in the South Island – and convert much of it to pines or eucalypts. Tony's introduction to New Zealand's native bush was through Ross Reidie, one of the foremost opponents of the Forest Service plan and someone he holds in high regard.

Fortunately, public anger was such that the Forest Service's proposals were dropped. However in 1981 the Southland chipmill began to clearfell native forest in the region. Tony was an implacable opponent from the chipmill's early days. At the time he was putting a lot of his energy into Ecology Action, a group which today goes by the more pedestrian title of the Southland Resources Monitor Group. A decade later his sense of outrage at the way the mill has disfigured the Southland landscape has not diminished.

"It was a big con. People were told that it was going to use 'waste wood.' The mill received a suspensory loan but has never shown a profit."

That other great Southland resource user, Comalco, has also been the object of his ire. So when Forest and Bird worked with Comalco on the kakapo sponsorship, it was not a decision he greeted with joy.

"I think a lot of people weren't happy with it. How could you be happy to get into bed with a monster like Comalco?" he charged in *Terra Nova* magazine recently.

In the relatively small, close knit Southland community, Tony has suffered for his outspokenness. Christine Henderson, active in conservation since the early 1970s, understands why locals react to him as they do.

"He's a passionate man and that can alienate people. They don't understand that passion."

"Tony's slogged his heart out but he's had little kudos from the public. The fact that he's right has nothing to do with it," she observes.

She is full of admiration for the professionalism with which he tackles issues. He is often called upon to write Forest and Bird submissions.

A gifted raconteur, Tony Gray was born with a delightful sense of humour, one that has "seen us through some rough times," says Christine Henderson. In retirement he continues to keep busy with Forest and Bird work, maintaining his farmlet and occasional teacher relieving. In between chores he tries to fit in a spot of trout fishing – his favourite leisure activity, although he claims to talk about it more than practice it.

In July the chipmill is due to start operating in the Longwood Forests, on Invercargill's back doorstep. It appears certain that trout fishing will take a back seat as the "bellbird's barrister" prepares his case against the mill. His client will be hoping he is well briefed. 🐦

Farmer fears

SOUTHLAND FARMERS Brian and Robyn Barnes are two locals prepared to voice their opposition to the chipmill.

From their homestead near the picturesque seaside town of Riverton they gaze across to the south-eastern corner of the Longwood Range. In the near distance the silver beech forest begins, forest that was recently allocated to Timberlands. Described as cutover, the podocarps were hauled out years ago. Yet, the beech which remains is tall, contiguous and abounding with birds such as bellbirds, tui and fantail. Less common forest birds such as kaka, parakeet and robin are also present.

Rumour has it that this corner of the Longwoods will be the first to go when the chipmill renews its attack on the state's native forest resource. At present Timberlands are refusing to divulge where they intend to let the chipmill loose. But just prior to the election Labour rejected a Timberland's application to clearfell 260 hectares of this forest as part of a so-called sustainable beech scheme.

For the Barnes' the implications of any clearfelling above their property are all too clear.

"God knows what will happen when the chipmill gets up there. At the moment we dredge out about two feet of silt a year from our stream."

The stream on the Barnes' property is tidal inland as far as their farm. That makes it very prone to flooding. The couple fear the problem could only worsen with clearfelling and subsequent silting.

Brian Barnes believes that opposition to the chipmill is widespread among locals. A number of factors contribute: once the mill has laid waste to the forest its values for outdoor recreation plummet; local employment will not be assisted by sending woodchips to Japan compared to the opportunities from local solid wood processing for high quality furniture; clearfelling will exacerbate downstream siltation and flooding; and the view from the surrounding countryside will be blighted by logging scars.

For now it is a time of waiting. By July both the Barnes and Timberlands should know who has won the day. 🐦



Brian and Robyn Barnes

The marvel of migration

Photography



AROUND MARCH and April, birds migrate from New Zealand to far away destinations such as the Arctic, or closer ports of call such as Australia. Migration also occurs within New Zealand as birds such as the black stilt and wrybill leave their South Island breeding areas for northern wintering-

over grounds.

Despite our increasing knowledge about destinations, routes and reasons for migration, the mystery still remains: how does a bird find its way to its destination, perhaps halfway around the world? Although researchers know birds use the sun, stars and

the Earth's magnetic field to set a compass course, their capacity for true navigation has yet to be explained.

Some bird migrations are fantastic feats of endurance. Perhaps the greatest of all migrants is the arctic tern which will fly from the Arctic to Antarctica (more than 15,000 km)



Left: The far eastern curlew's beak is ideal for probing in the mud or sand, winking out most worms and crabs. During its summer in the Siberian tundra the curlew takes advantage of the swarms of insects, beetle grubs and sand fleas. A few small flocks of this species can be seen on Parengarenga Harbour, Kaipara Harbour, the Firth of Thames, Farewell Spit, and Southland lagoons.

Below: At the most no more than 200 sharp-tailed sandpipers come to New Zealand a year from their north-eastern Siberian breeding grounds.

Bottom: The Pacific golden plover breeds in northern and north-eastern Siberia and Alaska and migrates to numerous countries between the tropical Pacific and southern New Zealand. In New Zealand golden plovers occur in a variety of localities from Parengarenga Harbour in the north to Lake Ellesmere. The population of golden plovers in New Zealand is never more than 800.



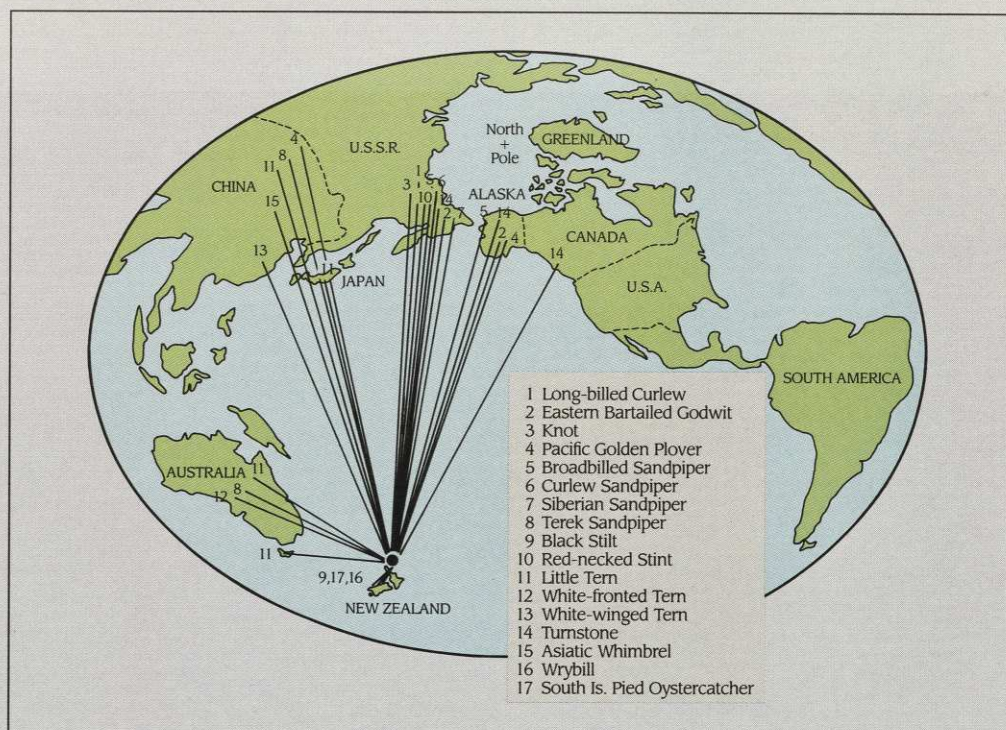
and back again each year.
Photographer Brian Chudleigh's specialty is wading and migratory birds. His ability to capture the birds in the acts of preening and feeding is unmatched among New Zealand photographers as the following images attest.

An uncommon migratory bird in New Zealand, the marsh sandpiper is most often seen in the company of pied stilts.





Dawn over Miranda, the Firth of Thames. One of New Zealand's most important areas for migratory birds, the 8,500 ha of intertidal feeding grounds supports around 30,000 birds, mostly migratory. Forest and Bird and the Department of Conservation together nominated Miranda as a wetland of international importance, and in 1990 the nomination was accepted.



Left: One of the species affected by the Golfo oil spill is the terek sandpiper. Ever on the move when feeding, this sandpiper breeds in the Arctic Circle from Finland to Siberia. The number which arrive in New Zealand each year is only a handful.

Far left: Arriving in New Zealand in September from Siberia and Alaska, the red-necked stint is a diminutive bird which is usually seen with wrybills and banded dotterels. Its wintering-over grounds stretch all the way from China to New Zealand.

The Caspian tern – easily identified by its bright red beak – is one of the world's most widespread coastal birds, occurring in the temperate zones of Africa, Europe, Asia, Australia, and North America. However in New Zealand its population is no higher than 3,500. South Island Caspian terns move to northern coastal waters for the winter.







Striking identical poses, a white-fronted tern and chick are pictured at Sulphur Point near Tauranga, while an adult is captured in the act of preening (left). This species is the most common tern in New Zealand, although its future is by no means secure: predators and human disturbance have taken their toll of the bird. In winter many migrate to Australia or to northern New Zealand.



Far left: The tables are turned on a wrybill as a cockle attaches itself to its toe. The endemic wrybill is best known for its remarkable sideways turning beak which it uses to "sweep up" food. In December the total population of wrybills (estimated at 5000) travels north after having bred in South Island braided rivers. They will remain in the Firth of Thames, Manukau and Kaipara Harbours and other ports of call until August when they return south. Wrybill flocks are noted for their highly co-ordinated aerial movements (bottom).

THE PENAN

SPEAKING FOR THE RAINFOREST

by Grant Rosoman

Time is running out for the rainforest inhabitants of Sarawak – the humans, the wildlife, the plants. In a decade's time one of the world's largest remaining areas of intact primary rainforest could be logged, the tremendous diversity within it extinguished. Grant Rosoman recently visited the Penan tribe to investigate their plight.

VAST RAFTS OF LOGS float by in the mustard yellow river. On the banks the forest giants lie in clumsy piles – the booty of Malaysia's timber tycoons, ready for export to distant markets. This is the Baram River in northern Sarawak on the island of Borneo. Speeding along in an express longboat, I hurtle deeper into the interior. The remains of the once magnificent forest protrude through the patchy regrowth and scars of logging roads can be seen on nearby hill sides. Occasionally the boat pulls up at a village or forestry camp to set down passengers.

Last Eden

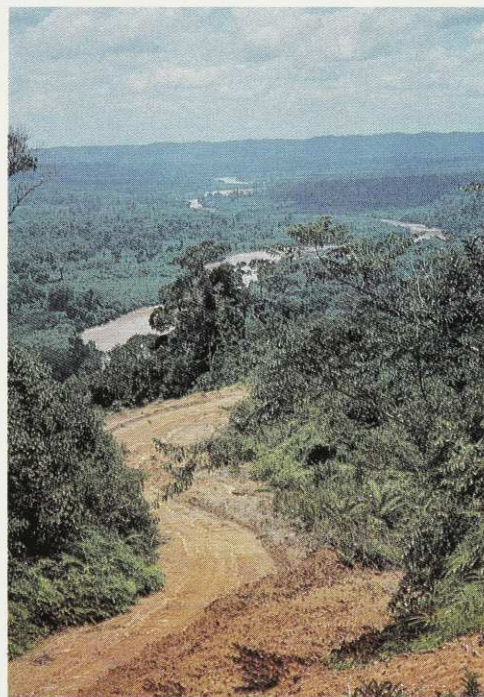
By nightfall, after hitching a ride on a logging company landcruiser, I arrive at the Penan village Long Bangan. By flickering lamp light I am greeted warmly and given food and drink, in front of an audience of curious onlookers. I have come to the home of the chairman of the Sarawak Penan Association, Juwin Lehan, to witness the tribe's plight and deliver money raised in New Zealand by the 1989/90 Rainforest Roadshow and the Christchurch Tropical Rainforest Action Group.

The Penan are one of seven tribal groups (collectively known as Dayaks) living in Sarawak's forest interior who have been fighting for their survival as a result of the logging of their traditional lands. The Penan are particularly affected as they are nomadic hunter-gatherers, living solely off the plants and animals in the forest. Over the 40,000 years that their ancestors have inhabited the area, they have developed a lifestyle in harmony with an ancient forest ecosystem. It is they who can show us what real sustainable forest management is and how to tread lightly on this Earth.

Borneo has been described at the "last Eden", after its amazing array of plants and animals. Its biodiversity, 180 million years in the making, has yet to be fully appreciated. Many unique animals inhabit the forests: 15 cm-long cicadas, 13 species of hornbills, the endangered clouded leopard, sun bear, orang-utan and rhinoceros. Just *one family* of forest trees, the dipterocarps, which happen to make up the majority of the timber species exploited, contains in excess of 300 species. A mere 10 hectares of Sarawak rainforest may support 700 tree species, more than the total number of native tree and shrub species found in New Zealand. However, it is this very richness that has brought the whine of the chainsaw and conflict to these tranquil forests. In 1989 Malaysia made \$NZ4.3 billion

from timber exports, a major part of this being unprocessed logs from Sarawak. The Sarawak Government and the timber industry cash in on the forests, the very same forests that the 650,000 tribal people depend on.

In New Zealand we obtain over half of our tropical timber imports from Malaysia either directly, or indirectly via Hong Kong or Taiwan. Much of this originates in Sarawak. The timbers such as balau, chengal, merbau and ramin are commonly used for decking, joinery, furniture, weatherboarding and some structural purposes. We have locally grown timber alternatives available for every present use of tropical timber. As a consumer of tropi-



"After a single night's rain, look at the chocolate brown rivers in your locality and remember that they are carrying the life blood of the land into the sea . . . our country is in peril." This quote from a pastoral letter by Philippines Catholic bishops in 1988 could apply equally to what is happening in Sarawak. Photo: Grant Rosoman

cal rainforest timber, New Zealand is directly contributing to the destruction of the forests and the lives of the people who depend on them.

Logging blockades

As logging intensified in the mid-1980s and the Government ignored the Dayaks' pleas for their land rights to be recognized, the frustrated tribal people ran out of options. They chose to blockade the loggers. In 1987, when the first blockades were mounted, they lasted for several months and brought the logging to a halt in many areas. The blockades have continued, with hundreds of Dayak people arrested and detained for periods in jail. Recently some have been convicted and fined. As a result, the tribal people made a plea for help to the rest of the world.

The money I delivered was to go towards legal, travel and food expenses incurred as a consequence of the blockades. In early February, the Penan and other tribal people resumed the blockades against a Government that has been given international support for the continued destruction through a recent International Tropical Timber Organisation (ITTO) report (see box).

I was deeply saddened by the state of the people, the forests and rivers as a result of the logging. The Penan are such gentle and warm people whose modest lifestyle has been shattered. Even though a lush blanket of vegetation clothed the hills around Long Bangan and Long Iman, it was only secondary growth, regenerated since the loggers moved on five years ago. With the disappearance of the primary forest went most of their food, medicines, building and craft sources. Their staple food (the sago palm) is now relatively scarce. With the trees went the wild fruits, the main food of the wild pigs. The pigs were their major protein source and where the Penan could formerly catch one in one to two hours, it now takes two to three days. The tajim tree's sap was used as a poison for blowpipe darts; the nearest tree is now four hours away. Craft and medicinal resources have been similarly depleted. Rivers run yellow with the silt from the disturbed soils, even in small streams days after rain. Where in half an hour they could catch enough fish for the whole family, there are no more.

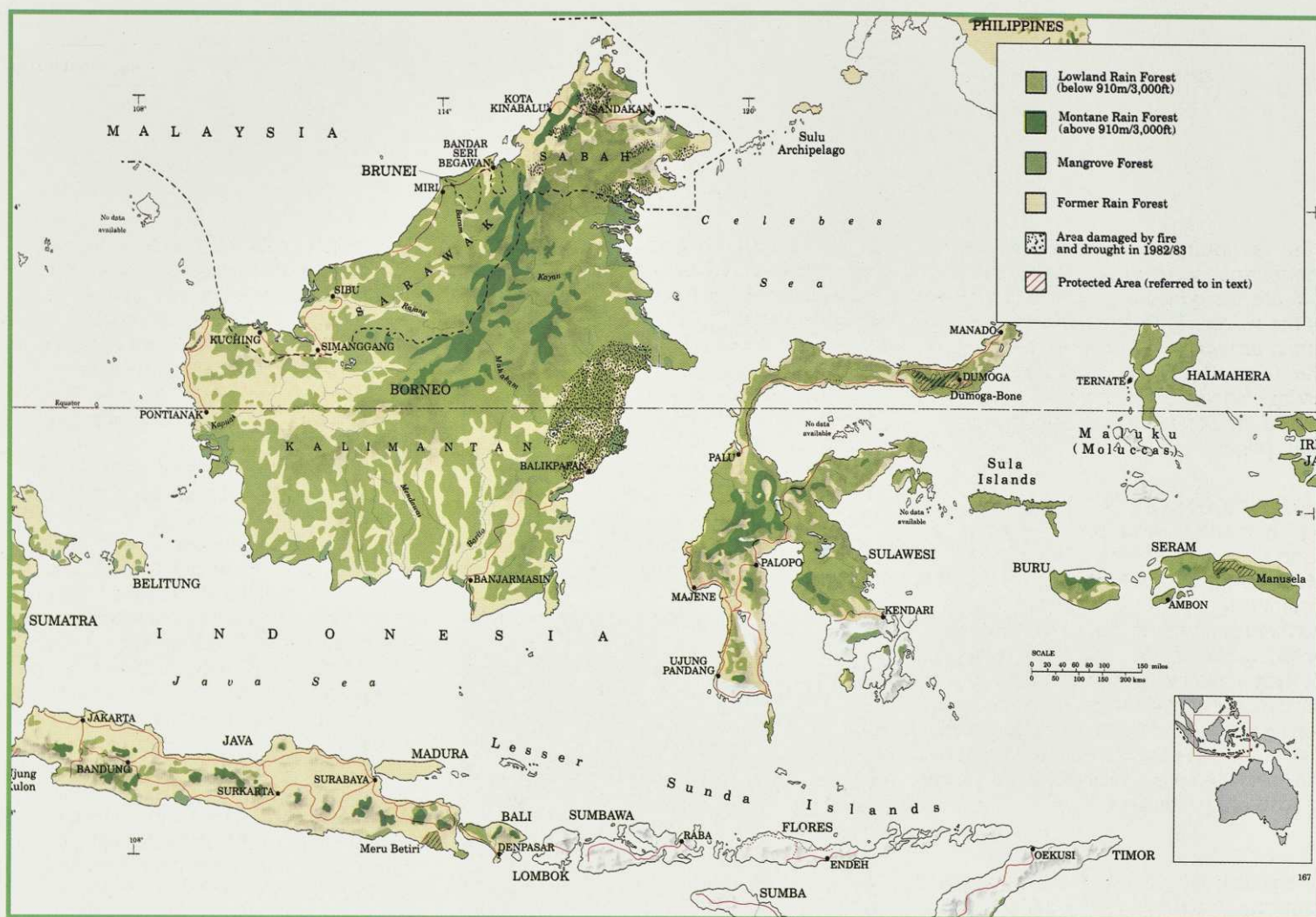
Forest knowledge

Most days I went with the Penan into the regenerating forest to collect food and firewood or to hunt. I was in awe of the depth of knowledge they had of the forest. Juwin, the headman of Long Bangan, could name and describe the use of any plant that I cared to point out. He knew where to find different herbs or trees: mid-slope on a hill, near a stream, on a swampy fringe. He could also name any bird or animal by sound or sight. Here was a vast store of knowledge which was being lost. The young people cannot follow the old ways or perpetuate the ancient forest wisdom. The forest provides them not only with their livelihood; it is also the centre of their many rituals and spiritual beliefs. They are part of the forest and the forest is part of them.

"Save our forests"

For many of the Penan and the other tribal groups their lives have been irreversibly changed. I asked Juwin Lehan, the Sarawak Penan Association Chairman, what the Penan now wanted.

He replied: "We are very sad. The noise of the logging trucks night and day makes us feel very sad. We want the logging of our lands stopped now and our rights to these lands recognized. If this happens soon then we have a chance. We want to stay living in the kampongs but be able to live off the jun-



gle around us. We would like the Government to help us build better houses and provide us with a school and a clinic."

Another Penan man described their situation: "We feel like a fish out of water with our forests gone. For the companies to come and rob us of our forests is the same as us going down to the towns and just taking what we want from the shops."

With their forest resources devastated, the Penan are having to learn to grow rice to survive. They also now spend a lot of their time making handcrafts to sell down the river, so they can supplement their meagre diet with tinned fish and sago out of a packet. But even the craft materials – mostly rattan – are becoming more difficult to find. Many of the children have infected sores, indicating some major deficiencies. Since the logging malaria has become common. For the Penan to live off the forests they need to have large areas of mature forest, to provide them with a sustainable source of forest produce such as sago, fruit, vegetables, herbs, rattan and wild animals.

The intact forest also provides valuable soil protection, leaving the rivers and streams clean. Although logging in Sarawak removes only about ten trees per hectare, between 40 and 50 percent of the forest is destroyed by roading, skid tracks, loading yards and damage during felling and extraction. The torrential tropical rains quickly wash the exposed soil down the steep hill sides into the river systems.

One of the worst aspects of logging the supposed "sustained yield managed permanent forest estate", is the very short cutting cycle. Some areas I visited were being cut over again after only eight years, whereas the

Government claims all logging is on a 25 or 40-year rotation. A recent study found that in no way are the present logging practices sustainable. All the primary forests available for timber production are due to be harvested within 11 years (see box). No thought is given to the sustainability of the non-timber values of the forest or the lifestyles of the tribal forest people.

Any hope of the Government stepping in to aid the people or halt this forest destruction is a pipe dream. The Government does not recognize the land rights of the tribal people, not

even on legal customary land (in June 1990 the High Court ruled that the natives had no right to challenge the validity of a logging licence issued on their customary land). Malaysian government policy is "to bring all jungle dwellers into the mainstream of society." In the words of the Malaysian Prime Minister, who was recently elected for another term, "there's nothing romantic about these helpless, half-starved and disease-ridden people". The bottom line in all this, is the immense wealth that is generated by the 'mining' of the forests.



The banks of the Baram River are lined for kilometres with stacked logs awaiting export. Photo: Grant Rosoman



Farewell to Sarawak's rainforests: yet another raft of logs disappears into a Baram River sunset. Photo: Grant Rosoman



Before logging, rivers such as the Tutoh River in the Upper Baram ran clean, according to the Penan. Photo: Grant Rosoman

ITTO report a whitewash

A RECENTLY RELEASED REPORT on the logging in Sarawak fails to address any of the tribal peoples' concerns and concedes that the logging is unsustainable.

The recommendations of the International Tropical Timber Organisation (ITTO) mission, led by Lord Cranbrook and commissioned by the Malaysian Government, ignored the needs of the Penan people and legitimised the destruction of the Sarawak forests under the guise of sustainable management. The report recommends only a minor reduction in the cut from 13 million cubic metres/year to 9.2 million m³, effectively only delaying the impending total destruction by two years from 11 years to 13 years.

Yet the New Zealand Ministry of Forestry's Chief Economist, Don Wijewardana, issued a press release welcoming the Malaysian Government's acceptance of this much criticised report. He enthusiastically endorsed the Malaysian decision as a recognition of the

"need for a balance between development and preservation".

Environmentalists say the report does nothing to defuse the growing call for restrictions on the tropical timber trade, and could be used as evidence by the timber industry for the continuation of the logging of the hill forests in Sarawak. This confirms that the ITTO is primarily concerned with the promotion of the tropical timber trade rather than the conservation of the tropical forests.

Forest and Bird had called on the Government to join the ITTO to promote tropical rainforest conservation, but stated that MoF's blatant bias toward logging made them an utterly inappropriate body to represent New Zealand on the ITTO. New Zealand's involvement in the ITTO should be through the Ministry for the Environment or Department of Conservation. If MoF continue their pro-logging stance in international forums, they will bring New Zealand into disrepute. 🐦

A corrupt government

The Chief Minister of the Sarawak Government and his deputy control the issuing of logging licences. A complex system of back scratching and bribes has evolved for the granting and working of a concession, with some of the bribes from the prospective contracting companies reaching \$40 million. In the run-up to the 1987 State elections, a smear campaign run by the two main parties revealed that politicians, their relatives and associates control more than half of the total area (2.9 million ha) of forests licensed out to be logged. This farcical state of affairs is epitomized by James Wong, Sarawak's Environment and Tourism Minister, who has over 100,000 ha of logging concessions.

Any account of the exploitation of a developing country's resources would be incomplete without the multinational connection. Malaysia currently supplies 60 percent of the world export market in tropical timber, with 95 percent of Sarawak's 13 million cubic metres per year exported as unprocessed logs. It is Japan, South Korea, Taiwan, Hong Kong, the United States, the EEC, Australia and New Zealand which provide the ready markets for the timbers. Mostly the timber is marketed and processed by the Japanese multinational giants such as the Mitsubishi, Marubeni, Sumitomo, Nichimen, C Itoh & Co, Mitsui & Co and Nissho Iwai corporations. They also have investments in the logging infrastructure such as roading and bridges that is often couched as "development aid". Most of the timber finishes up in a rubbish landfill or an incinerator, as nearly all of the Japanese log imports become either plywood for construction formwork and car cases, or are pulped for paper and cardboard.

The New Zealand Government recently sold pine forests in Coromandel, Manawatu and Otago to Earnslaw One. Earnslaw One's sister company, Rimbunan Hijau is one of the major companies logging in Sarawak. A number of Japanese multinationals involved in rainforest destruction have investments in New Zealand. C. Itoh & Co is a partner in the



Frozen in daylight, this Waglan's pit viper could be mistaken for a branch.
Photo: Grant Rosoman

Southland woodchip mill that the National Government recently gave the green light to resume beech forest woodchipping. In October 1990 Nissho Iwai Corporation jointly bought into forests in the Wairarapa and Northland. Sumitomo has a share in Comalco NZ, is connected with the iron sand mining and along with Mitsubishi and Mitsui & Co buy much of our coal.

Is there any hope?

There is still some hope for the forests and the people. International protests are putting pressure on the destructive tropical timber trade. There is growing consumer resistance to the use of tropical rainforest timbers. Around the world conservation groups are seeking bans on the import of tropical timbers that do not come from sustainable logging operations or do not have the consent of the traditional forest owners and users. This is a key feature of the New Zealand tropical rainforest campaign and was a policy in the 1990 Vote for the Environment charter, of which Forest and Bird was a member.

Cashmere High School in Christchurch recently became the first school in New Zealand to ban the use of rainforest timbers. Austria recently banned the import of unsustainably produced tropical timbers and 200 West German city councils have decided not to use tropical timber in any of their building programmes. With only about 12 percent of its forest cover remaining, Thailand has banned logging altogether. In the words of a Penan woman, Libai Uwe, "if the people in the far away countries would like to see us living, then they should not buy timber from our country."

For the true worth of the forest to be appreciated, uses other than timber need to be emphasized. These include fibres, resins and oils, as well as food, medicinal and craft products. This year Trade Aid hope to market the baskets and bracelets made by the tribal people of Sarawak. By buying these we can support the people in their fight to save the

forest – a very positive form of development aid. The New Zealand Government needs to become a stronger advocate of forest conservation measures to countries like Malaysia, providing a greater level of aid, especially to promote the uses of the forest other than timber, as a source of income for the local people.

If we want tropical rainforest conservation, then we should be prepared to help pay for it, as to some extent the income from the sale of timber is being used to develop the economies of the Third World. New Zealand can also assist with the establishment of a comprehensive and secure parks and reserves system. A proposal to set up two large biosphere reserves for the Penan in northern Sarawak needs to be supported.

There are a few grassroots organizations working in Malaysia for the rights of the tribal people and the environment. One such group is Sahabat Alam Malaysia (Friends of the Earth Malaysia). They have championed the case of the tribal people and deserve any monetary support we can give them. They have plans to help organize and co-ordinate the different tribal groups and assist them into forms of development which are good for them and their environment.

Harrison Ngau of Friends of the Earth Malaysia and recently elected MP for the Banam says "the next five years are critical. We have a chance now, or we have a disaster." 🦋

Grant Rosoman has recently finished a M. Applied Sci. degree in Nature Conservation at Lincoln University. He visited Sarawak in March/April 1990 and is currently based in Christchurch working for the New Zealand Rainforests Coalition, of which Forest and Bird is a member.

What you can do!

- support a ban on tropical rainforest timbers;
- buy rainforest products that are sustainable, such as the rattan baskets and bracelets from Trade Aid, and boycott the products of the multinationals involved in rainforest destruction;
- write to Government ministers in Malaysia, New Zealand and Japan, telling them of your concerns.

Write polite letters to:

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or

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Prime Minister's Department
Jalan Dato' Onn 50480
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or

Prime Minister Toshiki Kaifu
Souri Kantei
2-3-1 Nagata-cho
Chiyoda-ku
Tokyo 100, Japan

PROTECTING AN ICON

by Neville Peat



Forest and Bird has recently proposed the creation of a Remarkables Conservation Park.

The view (from Queenstown) most people have of the national icon that is the Remarkables.

Photo: Barney Brewster

AS FAR AS photogenic mountain ranges go, the Remarkables are tops – an upright, sky-piercing backdrop that features in every Queenstown tourist's photo collection.

Queenstown without the Remarkables is as unthinkable as New Zealand without the kiwi. Well named, the mountain range enjoys icon status. Yet within the country's parks and reserves system it currently holds the lowest status – "stewardship land".

For scenic and landscape quality alone, the Remarkables have long enjoyed rave reviews – and not only from tourists.

Absorbing grandeur

Back in 1908, an Otago University geologist, Professor James Park, wrote of the "absorbing grandeur" of these mountains. In this respect, he said, they were unrivalled.

But their stunning form as viewed from Queenstown – an immense rock wall, evenly puckered, capped in jagged glory and rising 2,000 metres from the shores of Lake Wakatipu – is only part of the absorbing story of the Remarkables.

The range and adjacent country is built of schist and shaped, to a large extent, by ice. A glacier once filled the Wakatipu basin, and its grinding impact plus fault movement in the

bedrock have contributed to the ruggedness of the terrain.

The geological features today include schist tors, hanging valleys, armchair cirques, earth terraces and mysterious stone drains. These drains, lined at the bottom with stones, may exceed 150 metres in length. Their precise origin is unknown, but the alpine climate, past or present, particularly the action of severe frost in between periods of thaw, is said to be implicated.

Lakes and tarns

Behind the great western wall and the big lake at its foot lies a dissected alpine landscape dotted by many little lakes and tarns left behind by the glaciation – some 60 in all. Lake Alta (1,830 metres), nestled under the range's highest peak, Double Cone (2,324 metres) in the headwaters of the Rastus Burn, is dammed by moraine in one of the best examples of an armchair cirque. To the south, Lake Hope, the source of the South Branch of Wye Creek, occupies another cirque.

Adding hugely to the scientific intrigue here is the location of the Remarkables in the transition zone between the glaciated Alps and western rainforests and the relatively dry and subdued Central Otago region, comprising

blockfaulted mountains, high tablelands and intervening basins.

The biota of the Remarkables is influenced from both east and west. Some invertebrates are thought to be unique to the area. Certainly there are combinations of plants that are unique.

Botanist Dr Alan Mark co-authored a major report on the area in the 1970s that pointed out how special it was to find several of the larger and more colourful alpine Main Divide species have their eastern limit here (including *Ranunculus buchananii*, *Parahebe birleyi*, *Anisotome capillifolia*, *Celmisia petiolata* and the snow patch tussock, *Chionochloa oreophila*), living in close proximity to cushion plants typical of the Central Otago uplands.

But perhaps the most striking feature of the plant life of the Remarkables is its diversity, with the various communities separated by altitude and topography.

The mosaic includes snow tussock, snowbanks, wetlands, cushion fields, herbfields, fellfields, boulderfields and at lower altitudes remnant mountain beech forest.

Near-record elevations

Snow tussock is the most extensive vegetation type, ranging up to near-record elevations over 1,900 metres. Above about 1,200 metres the tall narrow-leaved snow tussock *Chionochloa rigida* is replaced by the less-lofty slim snow tussock *Chionochloa macra*, which tends to merge with blue tussock *Poa colensoi* at its upper limits or end abruptly at stony fellfield.

In upper Wye Creek, snowbanks adjoining the several large tarns carry the only known colonies of snow patch tussock on the range, here at its eastern limit.

Indeed Wye Creek holds special interest for botanists. Regenerating mountain beech covers lower reaches of the valley and a sequence of subalpine scrub, snow tussock, herbfield and fellfield vegetation follows on upwards.

DSIR botanists Ralph Allen and Bill Lee, in a report to the Department of Lands and Survey in 1986, said the vegetation sequence of Wye Creek was the most complete in the

Ranunculus buchananii, one of the most spectacular alpine buttercups, which reaches its eastern limits on the Remarkables and Hector Mountains. Photo: Neill Simpson





Double Cone (2,324 metres), highest point on the Remarkables Range, viewed from the south in upper Wye Creek – spectacular but readily accessible alpine landscapes. Photo: Neill Simpson

whole Remarkables ecological district (which takes in surrounding ranges). The Wye, they said, had “exceptional biological values”, and they attributed the high species diversity of the Wye to the absence of grazing since the mid-1970s.

Alpine plant specialist Neill Simpson, of the Department of Conservation Queenstown office, has made a comprehensive study of the Remarkables and points out a number of

special features, including the presence of the rare cress *Ischnocarpus novae-zelandiae*.

Bird life on the range is characteristic of the Central Otago high country. The beech forest – and to some extent the scrubland above it – provides habitat for fantail, grey warbler, silvereye, tit and bellbird. Higher up and breeding on the range are banded dotterel, South Island pied oystercatcher and black-backed gulls.

Kea commotion

Limited numbers of kea, at their eastern limit here, and New Zealand falcons patrol the tops. The kea caused a commotion in the mid-1980s. They were said to be causing too much damage to skifield equipment being erected in the Rastus Burn. The five local birds were removed (reportedly to the North Island) but such was the uproar from Forest and Bird and others over this issue that five replacement kea, from Closeburn Station further up Lake Wakatipu, were released and the skifield operators just had to learn to live with these unique parrots and their prying beaks.

Invertebrate life in the Remarkables provoked the comment from entomologist John Dugdale in the 1970s that “endemism is rife”.

Invertebrates here, as in most alpine areas, tend to be relatively large. There are giant weevils, including *Lyperobius spedeni*, which live on native members of the carrot family including various speargrass species, and large diurnal chafer beetles which are at home on a variety of cushion plants. Alpine cicadas, wetas and grasshoppers are also large and, in the case of one grasshopper, distinctly hairy.



Parahebe birleyi, a remarkable high-alpine plant with perhaps the highest overall elevation of any New Zealand alpine species. Never descending below 2,000 metres, it is confined to the highest peaks and reaches its eastern limits on the Remarkables and Hector Mountains. Photo: Alan Mark

Brian Patrick and Brian Lyford, in a recent study of moths and butterflies, have found at least two endemic species in a recorded list of 320 native moths (paper in press, *NZ Entomologist*). The rarer species live in the high-alpine zone.

A full study of the natural and conservation values of the Remarkables Ecological District, in the context of the Protected Natural Areas Programme, has yet to be made, but there is no doubting, on the strength of studies done to date, that the Remarkables is brimming with interest.

Alan Mark, in a recent proposal for a

146,000 hectare Central Otago Conservation Park based on results of recent PNA surveys of the adjacent Old Man, Nokomai and Umbrella Ecological Districts, has recommended the inclusion of 87,000 hectares from the Remarkables District.

On the recreation side, the Remarkables have long been a destination for trampers and climbers. Before the skifield road provided motor access to the Rastus Burn, Lake Alta, with its adjacent rock bivvy, was a popular stopping place for climbers *en route* to Double Cone.

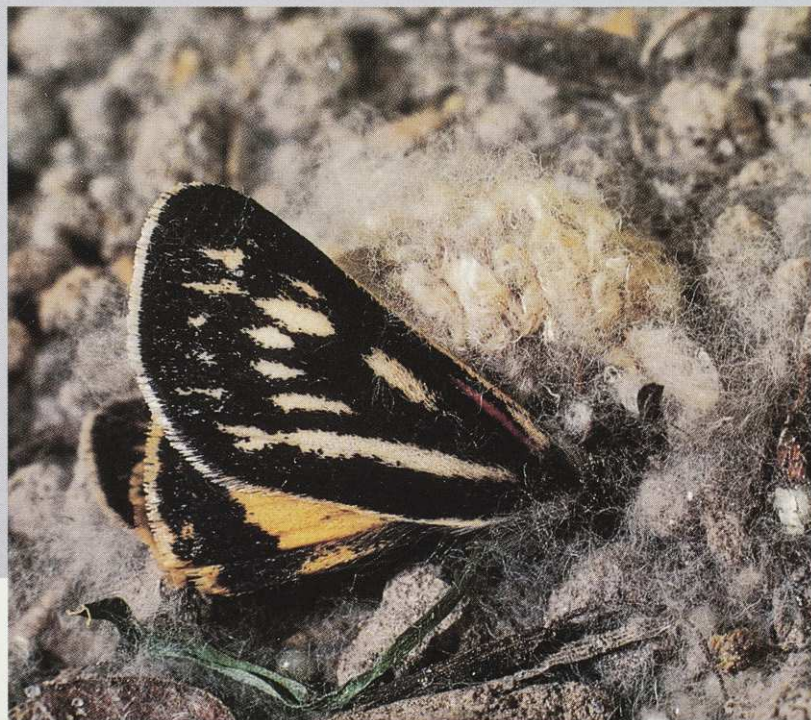
Nowadays, for summer visitors who come

by car, Lake Alta is a gentle stroll from the skifield car park by way of a newly-formed trail.

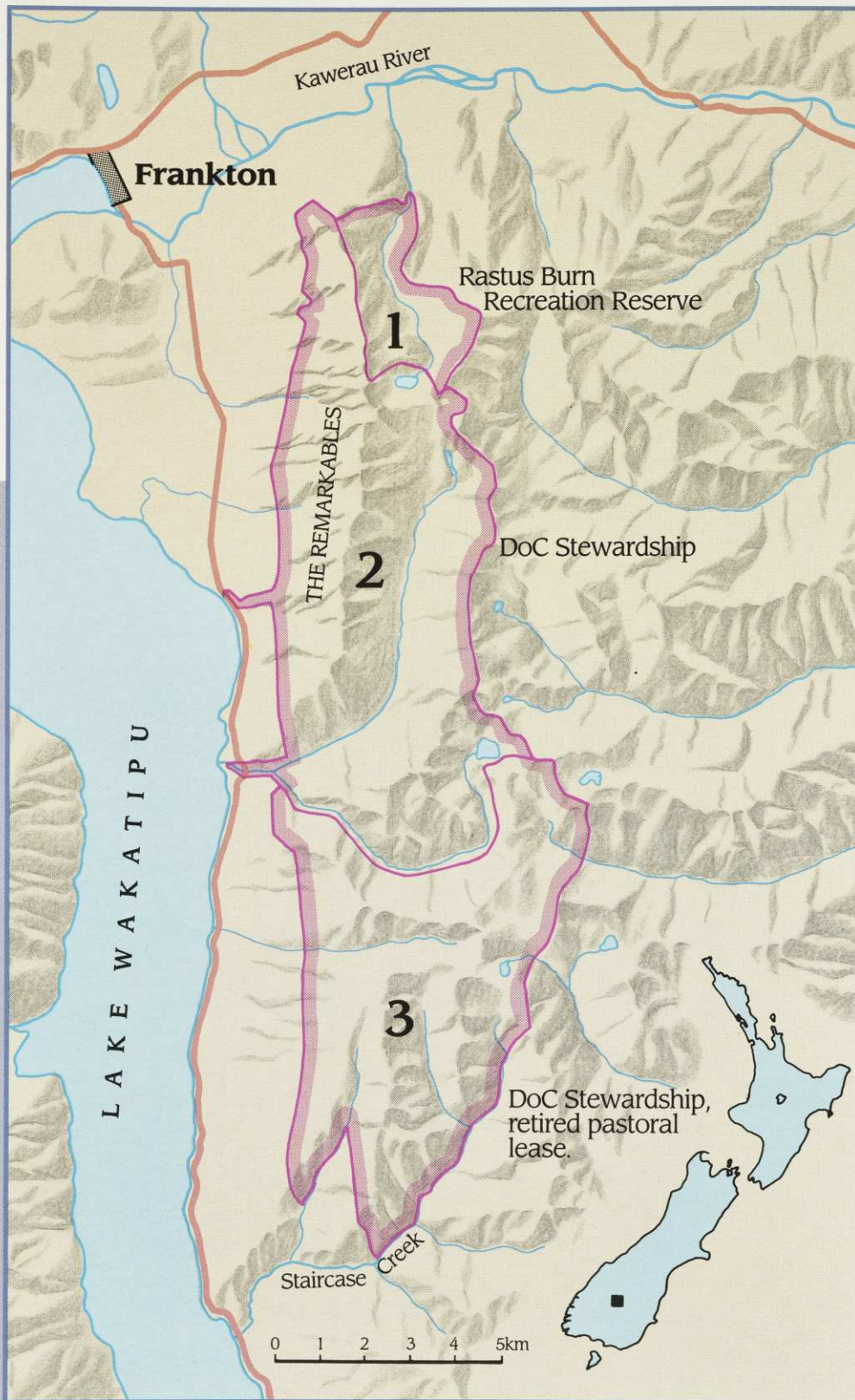
And the keener foot recreationists now aim for remoter parts of the area, including the upper reaches of Wye Valley. To the south lie other destinations, Ben Nevis (2,240 metres), Lake Hope and Staircase Creek.

DoC Summer holiday programmes regularly include trips to Lake Alta and a tramp into the Wye Valley via a new track through the beech forest.

Winter heliskiing ventures into the Remarkables have been available since the 1970s.



Left: *Senecio lyallii* in the Rastus Burn. Photo: Neill Simpson Top: The male Hepialid moth, *Aoraia senex*, frequents high alpine snowbanks where it emerges and flies by day in February. This specimen is on *Raoulia youngii*. The large-bodied female is flightless. Photo: Brian Patrick Bottom: Seen here in the act of mating, the colourful male tiger moth *Metacrias huttoni* has located the nest of the fluffy flightless female. The larvae are the commonly encountered woolly-bear caterpillars. This species flies in November-December, between 800 and 1,500 metres. Photo: Brian Patrick



The Mount Cook Group's Remarkables Skifield in the Rastus Burn catchment, 10 km from Queenstown, opened in 1985. It offers three chairlifts, one of which was used in the early years of the skifield to transport summer visitors most of the way to a dramatic look-out over the Wakatipu Basin from the brink of the western face.

The Remarkables may appear prime country for parapenting and hang-gliding but the fact is these aerial forms of recreation are prohibited within three nautical miles (5.5 km) of Frankton Airport. That rules out launching from the western face.



Now only found on dry, sheltered cliffs or overhangs because it has largely been eaten out by stock, the rare native cress *Ischnocarpus novae zelandiae* occurs in the Remarkables.



Up to 25 mm long, the large weevil *Lyperobius spedeni* is found on various plants of the carrot family in the high-alpine zone. The larvae feed on the roots of the plants, the adults on the flowers and foliage. Photo: Brian Patrick

Anisotome capillifolia (right),
Myosotis elderi (below left) and
Celmisia verbascifolia (below
 right). The Remarkables may be
 noted by tourists for their scenic
 splendour, but botanists value
 the area for its diversity. Photos:
 Neill Simpson



Remarkable recognition

Remarkable by name (pioneer surveyor Alexander Garvie applied it) but not remarkable enough to be given proper recognition in our parks and reserves system – that, until now, has been the fate of the Remarkables Range.

Last year the Royal Forest and Bird Protection Society put up a proposal to the Otago National Parks and Reserves Board for the creation of a Remarkables Conservation Park embracing three areas – the stewardship land on the range proper (5,011 ha), plus a block of recently surrendered pastoral leasehold land to the south (3,950 ha) and, on the northern side, the Rastus Burn Recreation Reserve (700 ha). Total area: 9,661 ha.

The land retired from pastoral lease has limited productive use but contains significant conservation values, water and soil conservation among them.

The case for a conservation park was worked up by consultant ecologist Sue

Michelsen Heath, of Dunedin. It struck a chord with the Board, which backed the concept in principle.

The Board's successor, the Otago Conservation Board, has now to pursue the move on the advice of DoC's Otago Regional Conservancy.

DoC already administers the stewardship land and expects to have transferred to it soon the surrendered pastoral leasehold land, formerly part of Loch Linnhe Station, following processing of the surrender documents by the Office of Crown Lands.

The Rastus Burn Recreation Reserve, prompted by skifield development, is also administered by DoC. Inclusion of the reserve within a new conservation park is not as straightforward as it may seem on account of its being a Reserves Act matter, whereas conservation parks are sanctioned under different legislation, the Conservation Act. The reserve would have to revert to Crown land be-

fore being embraced as a conservation park.

The old forest parks now come under the designation conservation park. The term is expected to survive any rationalization of categories under the Reserves, Conservation and Wildlife Acts.

In the Remarkables case, Forest and Bird has suggested that inclusion of the recreation reserve be investigated after the two bigger areas have been designated conservation park.

The stewardship land on the Remarkables is actually *de facto* scenic reserve. Approval was given for scenic reserve status to apply to the area in 1982 but it was never gazetted.

Conservation parks are dedicated to protecting natural and historic resources. Their second goal is to "facilitate public recreation and enjoyment".

And that would suit the Remarkables just fine. 🦜

Recreation potential

Although the bulk of visitors to Queenstown are content to admire the Remarkables from a distance, and keep contact confined to celluloid, the potential surely exists for increased walking, tramping and climbing in this now easily accessible and superb alpine landscape.

An elevated status for the Remarkables in New Zealand's protected areas system seems

likely in 1991 (see box).

The creation of a conservation park would not only acknowledge the compelling landscape and natural values of the Remarkables; it would also underline the need for adequately protecting representative areas of tussock mountainland throughout the South Island rangeland in the rain shadow of the Main Divide.

Tussock – call it low-lying forest if you like

– harbours its own unique plant and animal communities, and representative areas of it have as much right to protection as, say, kauri forests, glaciers and beaches.

Twenty percent of New Zealand was once under tussock. About half of it is left, and of that, only a tiny fraction of it is formally protected. 🦜

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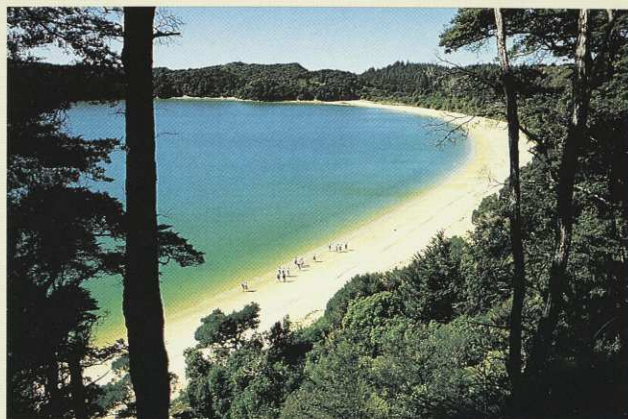
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War on Wallabies

by Basil and Ann Graeme, Forest and Bird Central North Island Field Officers



The largest wallaby in New Zealand is Bennett's. This species is well established in South Canterbury's Hunters Hills and in several other South Canterbury pockets. Photo: Dick Roberts

TO SEE HOW WALLABIES can destroy a forest, go to the wire-netted enclosure plots on the shores of Lake Okataina. These plots are tiny sanctuaries that exclude wallaby browsing, and they are filled with seedlings and saplings. There is no better evidence against the wallaby than the surrounding bare forest floor.

These Rotorua wallabies are poised to invade our major axial forest ranges. Our forests stand at another crossroad. Will we allow wallabies to escape as another uncontrollable pest, or will we grasp the chance to eradicate them while we can?

Eminent and misguided

Wallabies are "big feet", belonging to the Macropodidae family of marsupials. Other than bats, New Zealand had no land mammals, and early European settlers did their best to rectify this perceived deficiency. One of the most eminent and misguided enthusiasts for introducing foreign species was Governor Grey. Besides introducing such unsuitable animals as monkeys and zebras, in 1870 he liberated five species of wallaby on Kawau Island.

In the same year a Captain Thomas brought Bennett's wallaby to Christchurch from Tasmania. In 1874 two females and a male, probably from this stock, were liberated

in the Hunters Hills, near Waimate in South Canterbury. Today there is still a thriving population in the Hunters Hills as well as four small populations in Kakahu Forest, Pioneer Park and Peel Forest, and at Quartz Creek (between Lakes Hawea and Wanaka). From Kawau the dama wallaby was released to the Rotorua region, and rock wallabies to Auckland's Rangitoto and Motutapu Islands.

Our native forests have borne the brunt of these introductions. Wallabies come from mixed grass and forest habitat in Australia. They prefer forest and scrub margins in New Zealand too, but where pasture is not available, they thrive on forest plants alone. At Rotorua in the Okataina Scenic Reserve they eat out hangehange, tree fuchsia, karamu, pate, five-finger, putaputa weta, mahoe, kamahi, broadleaf and raurekau. These are the fruit and insect-rich understorey plants so important as food for our native birds.

If the wallaby pressure is not totally overwhelming, then an impoverished understorey of mangeao, rewarewa, rangiora and silver fern survives. In places on Kawau Island one can see only unpalatable silver fern and poisonous arum lily. On Rangitoto, rock wallabies eat colonising pohutukawa, Kirk's tree daisy and *Astelia banksii*.

Wallabies clearly devastate native forest. Their low profile as a serious forest pest is

due to their limited distribution, but this is not likely to last. Wallabies are on the move. However, wallaby populations may still be regarded as "pioneer populations", still at a stage where containment and eradication are attractive and cost-effective options. These options threaten to slip through our fingers forever. If the wallaby threat is ignored, these pioneer populations will spread to the extensive forests of the Urewera and axial ranges of the North and South Island.

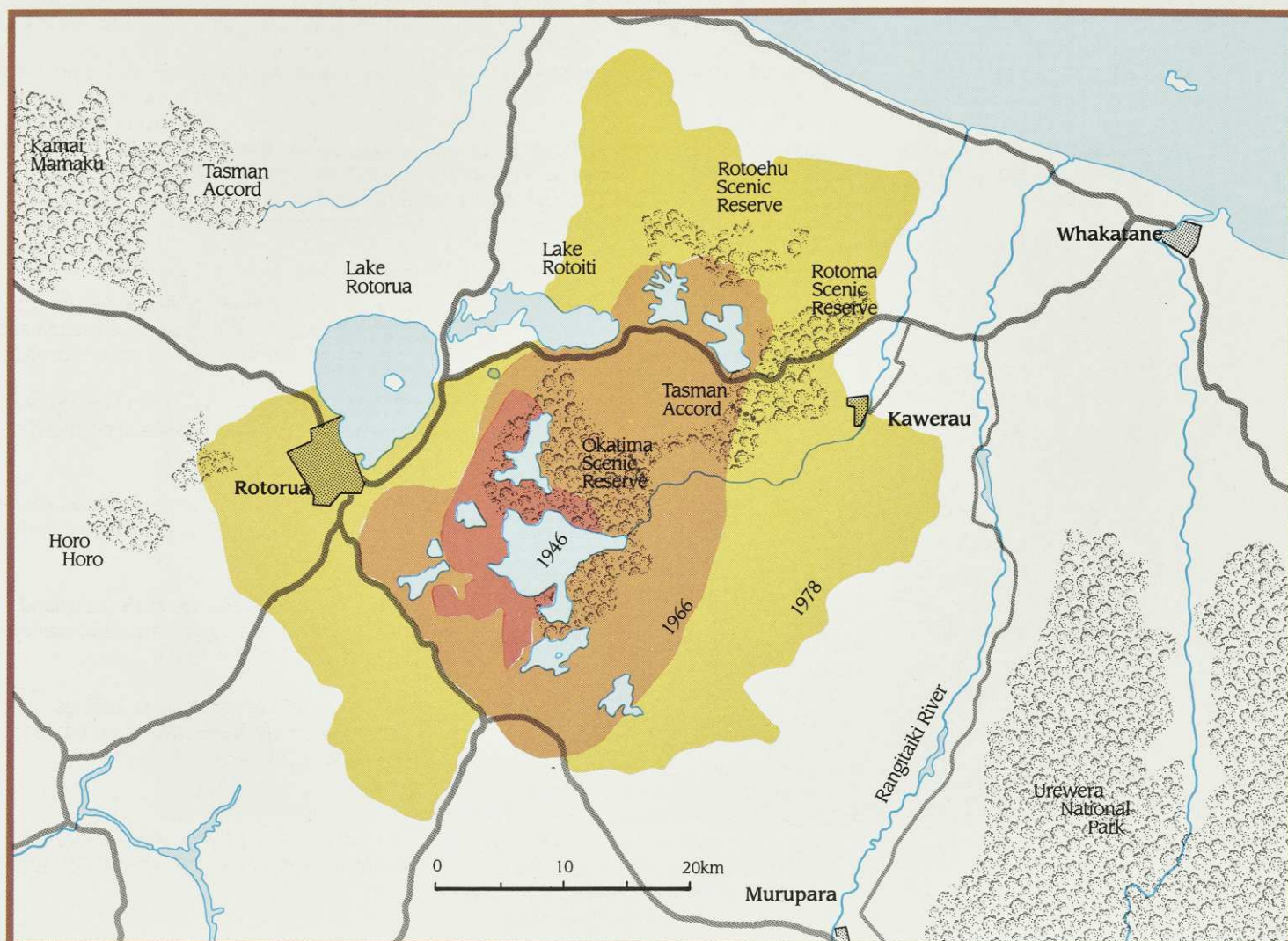
Wallabies are also pastoral pests. Their appetite for grass prompted control operations on Kawau Island and in Canterbury. Wallabies are not known to be tuberculosis carriers but their forest-to-pasture grazing habits suggest they may be.

Wallabies have a fail-safe breeding strategy. The female carries a new 'joey' in her pouch for almost a year. But backing this up, waiting to mature and occupy the pouch, is a quiescent embryo joey. Within 24 hours of giving birth, the female mates again. She is thus continually in the business of producing young – a biological forerunner to Ford's assembly line.

All wallabies, except Bennett's, are very sociable animals. Their social habits, coupled with their breeding potential, mean wallabies stock an area of forest right up to its carrying capacity. The enclosure plots at Oka-

Natural dispersal of Rotorua Wallabies

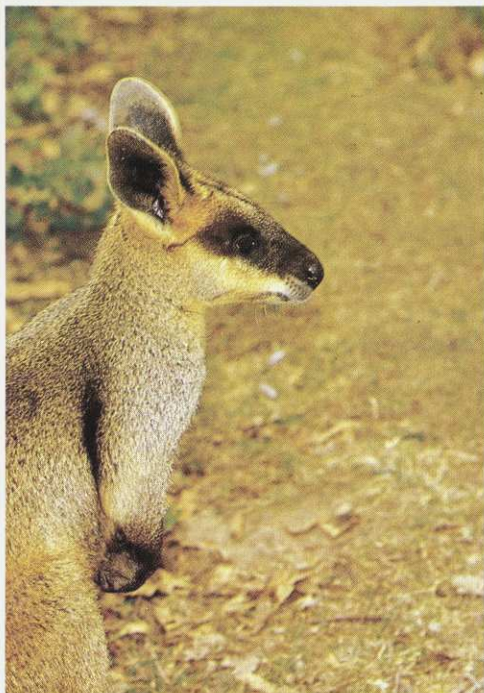
The Rangitaiki River is an imperfect barrier to wallaby penetration of the Urewera with its shallow headwaters in Kaingaroa Forest. Wallabies have already penetrated the Mamaku margin and Rotoehu Forest. These three native forests nurture the largest populations of the endangered kokako on the mainland. Should wallabies escape to the axial ranges then the regenerative capacity of New Zealand's main catchment forests will be seriously compromised.



Left: Erected in 1984 by the Forest Service, this combined enclosure for wallabies, deer and possums in the Okatima Scenic Reserve was photographed in 1987. Photo: D Harding Right: This low structure excludes wallabies (not deer or possums). The photo shows regrowth of mahoe, five-finger, hangehange, rewarewa, protected when they were seedlings from wallaby grazing by the low fence. Outside the fence seedling loss continues. Ngati Tarawhai gifted 1202 ha of the Okatima Scenic Reserve to the Crown. Descendants encouraged the Department of Conservation and helped fund efforts to poison wallabies in this forest in 1987 and 1990. One can see why! Forest and Bird staff Kevin Smith, Ann and Basil Graeme and DoC Officer Dave Hunt ponder the results of wallaby damage.

tainia graphically demonstrate how wallabies have stripped palatable shrubs from the forest floor. This grazing pressure is so relentless that wallabies even feed on leaves falling from the canopy.

The exclosure plots also show how, even two years after 1080 poisoning and a 96 per cent reduction in wallaby numbers, the grazing pressure of the remaining few wallabies plus a few deer continues to repress regeneration. Recovery of the forest is still doubtful. 'Control' that reduces the density of wallabies without a decisive and conclusive push for eradication looks like a loser. Control alone also does little to address the problem of further wallaby dispersal.



Kawau Island is the only New Zealand home of the swamp wallaby, whose preferred habitat is the kanuka forest at the northern end of the island. Photo: Dick Roberts

Steady dispersal

The mainland population at Rotorua is dispersing. This spread is slow but accelerating. Shelter provided by the extensive pine plantations in the region has probably helped increase the rate of dispersal. "Outriders" of the Rotorua wallaby population now threaten to invade the Urewera, and have already reached the kokako forest of Rotoehu, and Horohoro in the Mamaku.

The social nature of wallabies fortunately means that they do not spread as fast as a lot of other pests. Despite this, wallabies have suddenly appeared around Tauranga, New Plymouth, Waitakere range (Auckland), Great Barrier Island, Te Whaiti (Urewera), Paradise valley (Ngongataha), the Paeroa Range and Puaiti Scenic Reserve (between Taupo and Rotorua). This distant wallaby dispersal is not natural, but results from human intervention. Each new population is a further source of wallabies for more liberations.

The New Plymouth, Waitakere, Great Barrier, and Tauranga releases were shot and are presumed to have been eradicated. The Urewera release has been investigated and is thought to have died out or been shot by locals. Rotary (Auckland) has sponsored DoC to eradicate wallabies as a co-target with possums on Rangitoto and Motutapu Islands.

However other pockets of wallabies remain

untouched. Most alarming of the releases is that at Ngongataha which has been allowed to spread to the margins of the Mamaku at Horohoro.

With the exception of the dispersing Rotorua populations, all of our introduced wallaby pockets are constrained into "islands" isolated by pasture or water. There should be no great physical difficulty in eradicating discrete islands of wallabies. However, there are two discouraging precedents of failed attempts at wallaby eradication.

In the 1960s the Rabbit Board's Wallaby Destruction Committee attempted to eradicate wallabies in South Canterbury, and the Forest Service attempted to clear Kawau Island. The Canterbury operation was instigated by farmers concerned at the loss of pasture. The grass margins were retired for a 1080 poisoning programme. This was so effective in the "control" phase that farmers became impatient to reap the rapid regrowth of pasture, and insisted on re-introducing sheep before the final eradication goal was achieved.

Eradication foiled

On Kawau, eradication was foiled both by residents who had grown fond of their wallabies, and by a remarkable and fortuitous rescue of the parma wallaby which was then thought to be extinct in Australia (see box). Public and particularly local commitment to eradication is clearly a crucial factor in any wallaby strategy, and we must take into account the undoubtedly attractive image of wallabies in any campaign against them.

Wallabies are a local problem at the moment. They infest a small proportion of the DoC estate. They are a pest to only five Regional Councils, to a minority of establishing pine plantations, and to farmers of the Hunter Hills region of South Canterbury. Clearly should they spread via the Urewera and Mamaku to the ranges of the North Island, then they will become a major burden to most North Island regions. Should they be spread to the South Island ranges, then most South Island regions will be affected. The Department of Conservation would be in no position to deal with a national wallaby plague.

Now is the time for action when wallabies are at a vulnerable stage. When we are faced with so many unsolvable pest problems, it makes sense to focus on an achievable target; one that does offer the potential of total eradication.

We already have this strategy for notifiable pests and diseases such as foot and mouth, exotic fruit flies and even the relatively unimportant Dutch Elm Disease. We should adopt the same strategy for wallabies as a serious forest pest.

All the discrete populations from Kawau Island to Quartz Creek are ready targets for elimination. Of these the Paradise Valley - Horohoro populations must be the top priority.

The more extensive Rotorua populations require a more complex strategy. The "out-riders" threatening to breach the Urewera should be immediately rolled back. Present operations directed at controlling the centre of the population should be diverted to the borders to progressively shrink the population back to core areas, working towards a final eradication phase.

All wallabies should be classified as pests of local importance, but should also be recognised by the Department of Conservation as potentially pests of national importance. A joint regional and national response is urgently required. The Department of Conservation as the Crown agent representing national interests should shoulder the initiation and co-ordination of the national wallaby strategy.

Let us stop wasting money on perpetuating fragmented control programmes. Let us decide wallabies are one environmental threat we can solve - forever. A success with wallabies may stimulate new initiatives and funding against old foes - deer, goats, thar, chamois and possums. 🦘

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The Parma wallaby

THE SMALLEST of the wallabies, in the 1960s the parma was thought to be extinct in its native Australia. In 1969 all the wallabies on Kawau Island were temporarily protected while parmas were captured and taken to Australia or to zoos worldwide to restore the population.

Later surveys in the 1970s showed the parma was in no danger of extinction in Australia. In 1984 the New Zealand Government removed the protection granted the wallaby. 🦘



The parma wallaby, once feared extinct in its native Australia, was granted temporary protection in New Zealand from 1969-1984.

Photo: Dick Roberts

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ECO-LABELLING

By Robin Major

Soon a new scheme will be launched so consumers can tell the genuine article from the green con.

RECENT RESEARCH has shown that 80 percent of New Zealanders are prepared to pay at least a little more for environmentally friendlier products but how do you know if the things you buy are as green as they seem?

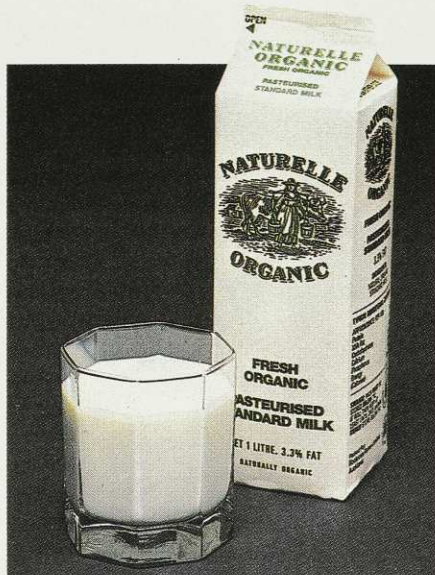
By the end of the year at the very latest, a hitherto little known government quango called Telarc will help consumers identify the genuine article when it starts awarding Environmental Choice New Zealand (ECNZ) labels to products which are proven to cause as little damage to the environment as is practically possible.

The media industry's Advertising Standards Authority is also doing its bit with a new heavyweight code which outlaws misleading claims about the environmental benefit of products. The authority, which has enough teeth to force offending material to be withdrawn, put the code into action on the first of March although material written before that date is not affected until the beginning of June.

Details about ECNZ are still being finalised but it is certain that the scheme will take a cradle-to-grave look at products. Factors such as the manufacturing process, pollution and disposal after use are therefore certain to be among the issues considered when the environmental friendliness of items is assessed.

The ECNZ advisory committee, which consists of representatives from manufacturing, retailing, packaging, consumer and environmental groups including Forest and Bird, is now setting various criteria against which manufacturers can voluntarily have their products assessed in different categories. The committee is using the Canadian's "green" eco-labelling criteria as a basis from which to work.

Telarc director Dr Jack Garside explains: "The schemes operate in a similar fashion and carry their respective government endorsements. There has been a lot of work



Naturelle milk - no bull, but unfortunately pesticide residues turned up in this brand of milk which the Auckland Milk Corporation last year marketed as "organic."

done already and we see no point in re-inventing the wheel."

Since setting up their scheme in 1988, the Canadians have prepared 14 product category criteria and are working on another ten. The ECNZ committee is assessing the suitability of the battery, engine oil, recycled plastic and paper products and household detergent criteria at the moment.

If it runs well, ECNZ will undoubtedly give New Zealand manufacturers a chance to gain a valuable marketing edge amongst green-

conscious consumers and Telarc marketing manager, Fiona McKenzie, has been working hard to present it to industry in this light. It is not a pass/fail situation, she says, but rather encourages manufacturers to meet a minimum standard through gradual improvement if need be.

Although searching, the criteria will be attainable she says.

"It would be pointless for the committee setting criteria to go totally over the top and make them unachievable given today's technological and economic environment. There is simply no point in making something unachievable."

The strength of consumer feeling about environmental issues means that manufacturers will not be able to ignore the swing toward green labelling, says McKenzie. She also believes the media's sympathy toward conservation means if a company gets a bad name, it could cost it more to patch up its image than if it cleaned up its operations in the first place.

"Those who ignore the trend risk an even bigger bashing than those who try, and then have to try again."

From a consumer's point of view, both the ECNZ label and the new advertising code will go a long way towards reducing the "con" factor in green consumerism. Household detergents are particularly misleading in their claims of being biodegradable because there is no official New Zealand standard of biodegradability. If at all possible many other items in supermarkets today claim to be green in some way or other.

Consumer's Institute chief executive David Russell says supermarkets have "an absolute responsibility to substantiate any claims being made by manufacturers" but environmental consultant, Peter Davis, who has researched the greening of supermarkets, says the big stores do little investigation and as far as he knows, no products have been rejected because of false statements.

Under the present laws, even if shoppers do read labels to check whether claims are true, they are unlikely to be any wiser. For instance, cleaners do not have to have the contents listed unless they contain toxic substances. There is no way consumers can confirm whether products really are phosphate-free or contain very slow biodegrading optical whiteners which make clothes "whiter than white" but not any cleaner.

Davis reports overseas cleaning product giants such as Procter & Gamble and Unilever have tried to keep their recipes secret, although in Europe a voluntary agreement among manufacturers has averted an EEC ruling requiring the labelling of ingredients. Meanwhile in New Zealand, there are no plans to force manufacturers to reveal what is in their products and they are reluctant to do so voluntarily, particularly as some feel terms

The overseas experience

THE FIRST ever environmental labelling scheme was devised by West Germany in the mid-1970s. Nowadays, Blue Angel is rather unsophisticated compared to other schemes because it does not take an holistic approach to the environmental costs of products, but nevertheless it introduced the world to the idea of eco-labelling and today 3000 products carry the logo.

The difference between Blue Angel and the Canadian's newer "green" scheme is that the latter covers a wider range of impacts. Therefore, if a company manufactured a silent lawnmower, for instance, it might receive the Blue Angel label because it reduces noise pollution, but if it was also energy inefficient it would not receive the "green" seal of

approval in Canada.

Meanwhile the Japanese have a different system altogether. They divide products into separate categories for different labelling purposes. One label, for example, tells consumers a product causes minimal environmental damage when used while another might say the same thing about its disposal. The logo also comes with a brief explanation of why the product has been approved. Japan has now issued 850 labels covering 31 product groups.

Sweden, Norway, Finland and Austria have plans to introduce labelling in the near future. Britain, Portugal, the Netherlands, Australia and the European Community Commission are all studying the idea. 🐦

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Advertisements such as this imply that the product has no effect on the environment, which is patently untrue. In the small print the advert does allow that "the effect (of gas) on the environment is minimal".

Some of the products to be assessed in New Zealand first for the Environmental Choice label: recycled paper, water-based paints, oil, detergents, cleaners.



such as "anionic surfactants" will mean nothing to consumers anyhow.

It is also hard for consumers to know if the food items they buy are as natural as they are claimed to be because, even though the ingredients must be listed, additives are referred to only by class such as flavour enhancer. There is, however, legislation in the pipeline requiring manufacturers to refer to additives by code numbers which can be translated into names via a codebreaking book.

In the end though, one question must be asked: are the new green products just short term gimmicks or real efforts to address the major environmental issues of the day? The new green cleaners, for instance, may be phosphate-free and meet Australian and European standards of biodegradability, but they still harm the environment more than they need to because they are made out of slow biodegrading petroleum bases rather than faster biodegrading vegetable oil.

Martin Brennan, marketing director for Reckitt & Colman, which makes the "Down to Earth" range of cleaners, cannot explain why his company, a self-declared "greenie", still uses petroleum bases except to say "it was more difficult to get hold of vegetable bases but then supply is drawn by demand so there is no reason why we can't do it". Likewise the company's Mortein Natural flyspray includes Pyrethrum Daisy Extract, but it is still in an aerosol can rather than a pump action container. The latter is often re-usable and does not use greenhouse gases.

Brennan, who hastens to add that Reckitt & Colman plans to use vegetable bases in the future, says he would be quite happy if aerosols disappeared tomorrow - which is most likely to happen if consumers stop buying them. He goes on to explain the company's product range has changed enormously over the last 10 years because of green consumerism, proving that shoppers have the power to change manufacturers' practices.

"The consumer has the ultimate power - the purchasing power," says Brennan. "I

never underestimate consumers and spend a lot on research to find out what their needs are."

But surely the problem for business is that, taken to its ultimate conclusion, green consumerism must threaten consumerism itself. As *The Ecologist* said in its summer 1989 issue, in an article entitled "The Limits of Green Consumerism", the whole concept of consumerism must be questioned because the world cannot sustain Western-style consumptive habits for ever.

However, for the moment, Brennan

believes business has a viable future if it gives consumers what they want. This is why Reckitt & Colman not only has a more natural flyspray and greener cleaners but also makes multipurpose products which cut down on the number of bottles in the cupboard and offers trigger packs as an alternative to aerosols.

"Green consumerism is only a threat if you don't want to do what the consumers want. If you see the consumer change and you dig your toes in and don't want to change then you become a dinosaur." 🦖

Advertising code

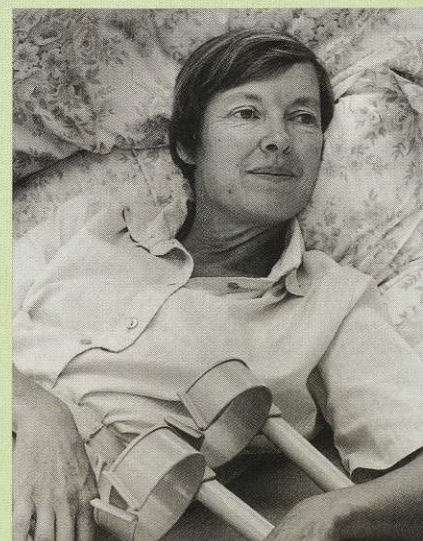
THE NEW environmental claims advertising code is designed to prevent companies overinflating the virtues of their products.

Like ECNZ, the code demands that claims for environmental benefit be assessed on the complete lifecycle of the product and its packaging. This means absolute claims, whether stated or implied, are out which should make phrases such as "environmentally friendly", "safe" and "kind" a thing of the past.

Qualified claims, such as "environmentally friendlier", "safer" or "kinder", may be acceptable where the product, service or company can demonstrate a significant environmental advantage over its competitors or improvement on its previous formulation, components, packaging and method of manufacture or operation. All claims must also meet local or international standards of biodegradability if such a benefit is claimed.

Overseas, where there are few such codes, consumer faith in green products has been undermined by blatant extravagant claims. For instance, in the United Kingdom, BP has claimed its new "su-

pergreen" brand of lead-free petrol causes "no pollution to the environment". The copywriters forgot about acid rain, urban smog and the greenhouse effect the day they wrote that line.



Ann Graeme, Forest & Bird's representative on The Environmental Choice New Zealand advisory committee recuperating at home after being hurt in a recent vehicle accident.



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Annual General Meeting

The 68th Annual General Meeting of the Society will be held on June 22 1991, at the Airport Hotel, 16 Kemp St Kilbirnie, Wellington at 8.30 am. The agenda will be as follows:

1. Declaration of Councillors
2. Confirmation of minutes
3. Annual Report and Statement of Finances
4. Remits
5. Appointment of Auditors

This will be followed by the National Council Meeting.

The Annual Report is enclosed with this magazine.

J.S. Watson Conservation Trust Grants

The Trust invites applications from individuals or conservation groups for financial assistance for conservation projects over the 1991-2 year.

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Lucky to be alive

Forest and Bird came close to losing three of its conservation campaigners in March when field director Mark Bellingham, Auckland field officer Fiona Edwards and Central North Island field officer Ann Graeme were involved in a head-on collision.

Mark, who has been a staff member for eight years, suffered the most serious injuries with a broken hip, and facial and spleen injuries. He will be off work for at least two-three months.

Ann was hospitalised with a cracked pelvis and broken ribs. She will be on crutches for some time.

Fiona had the ligaments on one of her feet badly torn and had her foot in plaster for some time.

The three were on a trip to Waipoua Forest to organise the Easter Gathering there when the accident occurred near Whangarei. We wish them a speedy recovery.



Conservation staff at a recent training session at Bushy Park. Top row, from left: Ann Graeme, Alan Tennyson, Kevin Smith, Mike Harding, Fiona Edwards, Gerard Hutching. Bottom row, from left: Basil Graeme, Chris Wratt, Mark Bellingham, Melanie Hutton.

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Ruapehu Lodge, Whakapapa Village, Tongariro National Park

Set in a privileged position within the National Park this lodge is available for MEMBERS ONLY, and is an ideal location for tramping, skiing, botanising and exploring.

The comfortable lodge holds 32 people in four bunk rooms, and provides all facilities. You need bring only food and bedding. Private parties are restricted to 10 members.

Bookings and enquiries should be made from P O Box 631, Wellington (04) 728-154. The lodge is very popular, and bookings may be made six months in advance, if secured with a 20% deposit. The rates are reasonable, and fluctuate seasonally.

Full payment is required four weeks prior to occupation, after which time there is no refund for cancellation.

Turner Cottage, Stewart Island

Turner Cottage, is on Stewart Island and is a three-roomed dwelling with sleeping arrangements for six people. For details write, enclosing a stamped, addressed envelope, to: "Turner Cottage", C/- Mrs M. Tait, P.O. Box 48, Stewart Island, Telephone (021) 391-396.

William Hartree Memorial Lodge, Hawke's Bay

The lodge is situated 48km from Napier on the Puketitiri Road and 8 km past Patoka, amid the 14ha William Hartree Memorial Scenic Reserve.

The Lodge accommodates 10 people. Extra mattresses and pillows are available to sleep up to 20. The lodge has a fully equipped kitchen, including refrigerator.

Visitors supply their own linen and cutlery. The nearest store is 8km away. No animals are permitted.

For rates send a stamped addressed envelope to the Booking Officer, Mrs Colleen MacKay, 3 Plunket Street, Tamatea, Napier, Telephone (070) 444-219.

Tautuku Lodge

Tautuku State Highway 92, South East Otago. Situated on the Royal Forest and Bird Protection Society's 550 ha Lenz Reserve 32 km south of Owaka. In a bush setting, and many lovely beaches nearby providing a wonderful base for exploring the Catlins. 3 well appointed buildings, the Lodge, the Coutts cabin and an A-frame sleep 10, 5 and 2 respectively.

Information and rates on application to the caretaker: Miss M. Roy, Papatowai, Owaka, R.D.2. Phone (03) 415-8024. Stamped addressed envelope with inquiries please.

Tai Haruru Lodge, Piha, West Auckland

A seaside home situated in Garden Road, Piha, 38km from central Auckland. Eight minutes' walk from the Piha store, with right-of-way access to the surfbeach and close to bush reserves and walking tracks in the Waitakere Ranges.

The lodge is fully equipped and sleeps six to eight persons. It has a large lounge with open fire, dining area, and modern kitchen.

You will need food supplies, bed linen, towels, and tea-towels.

Different rates apply for winter and summer, for rates send a stamped, addressed envelope to the Booking Officer, Mrs B. Marshall, 160 Valley Road, Henderson, Auckland. Telephone 838-5859.

Waiheke Island Cottage, Onetangi, Waiheke Island

The cottage has comfortable bunk accommodation for eight people and has a stove, refrigerator, and hot water. Adjacent to a 49ha wildlife reserve, belonging to the Society it is in easy walking distance from shops and beach. It is reached by ferry from Auckland City (two or three returns daily) and by bus or taxi from the island ferry wharf. Everything is supplied except linen and food. No animals are permitted.

Different rates apply for winter and summer. For rates send an addressed envelope to the Booking Officer, Mr D. McLean, 55a Queens Drive, Oneroa, Waiheke Island. Telephone Waiheke 6494.

Bushy Park Lodge

Kai Iwi, 24km northwest of Wanganui on sealed road off S.H.3.

Historic homestead, fine grounds and view. 89 ha of virgin bush with tracks and trees identified.

Accommodation: for 16 in six bedrooms, single and double beds, electric blankets, heaters and vanity units. Six extra folding beds. Bedding, linen and towels supplied. Showers, drying cupboard, kitchen with electric stoves, microwave, refrigerator, deep freeze, cutlery and crockery. Bring own rations. Milk may be ordered.

Reduced adult rates Sunday to Thursday nights except long weekends and school holidays (GST included). Open 7 days a week.

A bunkhouse for 12 is available for group bookings. It has kitchen facilities, mattresses and pillows. Toilets and showers are in the adjacent stables building.

Bookings and Information leaflets: Manager, Bushy Park Lodge, Kai Iwi, RD8 Wanganui. Telephone Kai Iwi 879. STD (06) 3429-879.

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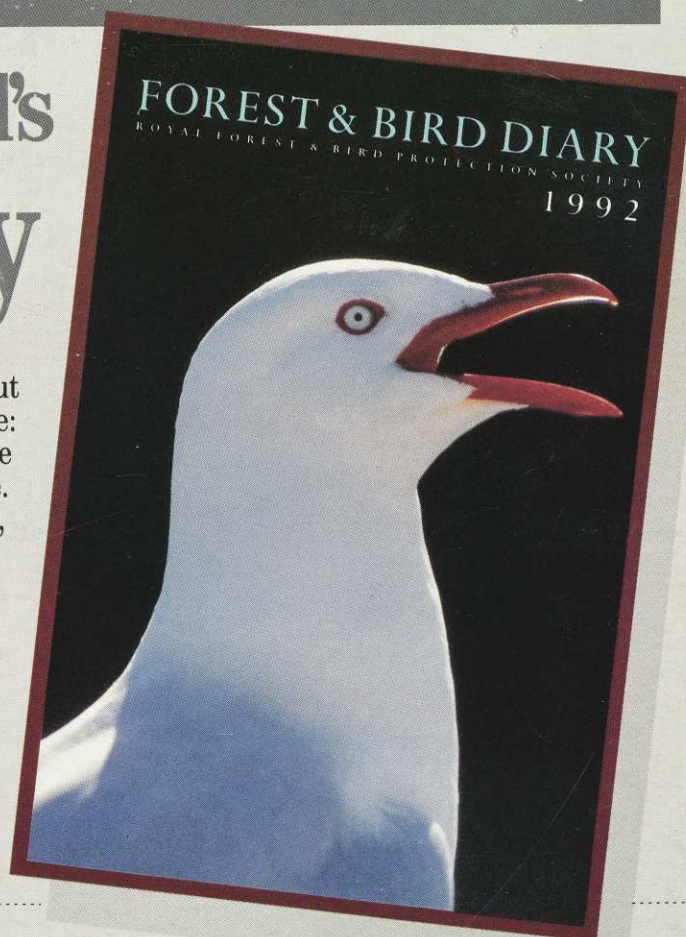
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