70TH ANNIVERSARY YEAR

Forest & Bird

February 1993

Northland kereru harvest • good news on right whales
battle for the Whakapapa • New Zealand's strangest plant • Wairau lagoons
Forest and Bird turns 70

Test your Forest and Bird IQ. Try this easy quiz!

1 **Where is the only Freshwater Faunistic Reserve in the North Island?**

a Lake Rotopounamu
b Lake Wairarapa
c Lake Waikaremoana
d Lake Taupo

2 **Which subantarctic island has the biggest colony of Hooker's sea lions?**

a Enderby Is
b Soames Is
c Dundas Is

3 **The North Shore recycling scheme is one of the most successful domestic recyling schemes in the world. What proportion of raw garbage does it recycle?**

a 10%
b 20%
c 30%
d 40%

4 **What does membership of Forest and Bird give you?**

a participation in New Zealand's largest and most active grass-roots conservation organisation.
b subscription to the country's most important magazine on environmental and conservation issues – four full-colour issues a year of *Forest & Bird*. Plus six issues of the topical *Conservation News*.
c a great gift for a friend or member of the family.
d a chance to join one of 56 branches and support local conservation initiatives.
e the right to stay at any of Forest and Bird's lodges throughout the country.
f all of the above.

Answers
1a,2c,3d,4f

see Membership Form in back of magazine

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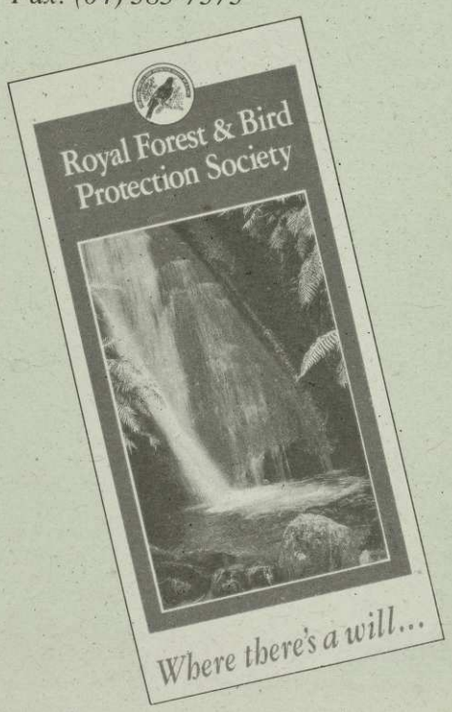

70TH ANNIVERSARY YEAR

Forest & Bird

Issue Number 267
February 1993

Seventy years a' growing

AFTER 70 YEARS, the need for our society to protect New Zealand's "forests and birds" has not abated, only changed. Indeed some battles, like the campaign to protect the kauri in a national park, go back for most of our existence.

But no conservation battle, it seems, is ever wholly won. The world changes and so do people's values. When Forest and Bird joined with local Maori to effect the statutory protection of godwit in 1941 how many could imagine that more than 50 years later another generation would want to harvest them? Or consider the native pigeon, now more endangered than when it was first absolutely protected in 1921; who might have foreseen it today, becoming a symbol in the political aspirations of some Maori to manage and harvest the forests again?

Forest and Bird was born in response to the excesses of pioneer development. Our philosophy of nature protection emerged from a growing concern that natural New Zealand was rapidly disappearing. Since then the society has played a key role in the establishment of national parks and reserves to protect species and their habitats. That campaigning spirit continues as the public estate languishes in an era of mean spirits and casual compromise.

In places the very fabric of the parks is threatened. Officers of the Department of Conservation speak of losing the bush from some reserves within 25 years, through pests like possums, yet there is only enough money dedicated to eradicate possums from one percent of the land in their care. There are local communities, some Maori and some European, who argue for the return of parks to them for the purposes of development. Business and local governments continue to eye the possibility of getting "something for nothing" from the conservation estate.

Presently, several factors of social change are affecting our work for nature protection, in ways unimaginable a few years ago. Hard times have meant not only limited funding for the protection of national parks and reserves but also the need for employment has meant new pressures to develop resources previously protected. Further, continuing Maori grievances have placed the very ownership of previously secure land, plants and wildlife in debate.

Forest and Bird members, like most reasonable New Zealanders, must wish the questions raised by Maori over the ownership of land and living creatures on it, to be promptly and fairly resolved. In righting the wrongs of the past, however, the collective achievements of the broader community in protecting our plants and wildlife should not be lost sight of.

In the late twentieth century, caring for nature has become part of a worldwide concern for the very survival of life in an overpopulated world. Our environmental concerns are but a microcosm of a universal need to act for the protection of the environment: from pollution, atmospheric change, even sheer exhaustion of the natural world on which people ultimately depend for their physical survival. We cannot afford to lose ourselves now in some historical romance, looking back to a lost world where there may once have been enough birds and forests for all to harvest, without endangering the health of the planet.

Gordon Ell
National President

COVER The kereru or native pigeon is one of New Zealand's best known birds. But throughout the country it is in trouble, particularly in Northland where illegal hunting is adding to the threats posed by cats, stoats and rats (see story page 18).

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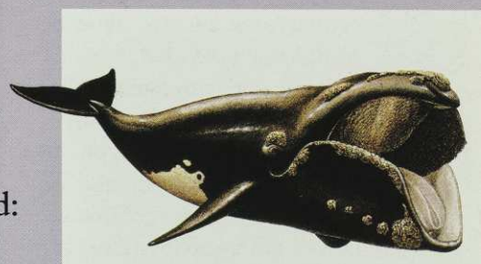

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Conservation update

Still clearfelling in '93 . . .

AT YOKOHAMA, Japan, last November, New Zealand was welcomed as the 50th member of the International Tropical Timber Organisation. New Zealand's inaugural address to the ITTO made the proud claim that "We have found our own solution to the problem of deforestation. The seven million hectares of remaining natural forest are now almost completely protected."

Sadly, with this statement New Zealand has joined the ranks of international hypocrites in pulling a green curtain over the clearfelling and deforestation of our ancient rainforests.

URLICH WALTHERT

This is 1993, not 1973: recently felled tracts of dense rimu in Ianthe forest, South Westland. Inset: Rimu logs from South Westland forests at the Ruatapu Mill near Hokitika owned by Carter Holt Harvey.

Since coming to office with a manifesto that said "the clearfelling (of native forests) will end", the National government has let loose the chainsaws in the beech forests of Southland where export woodchipping has resumed, in the kanuka forests and shrublands of the East Coast by making government subsidies available for clearance, and in the rain-drenched rimu forests of South Westland.

Under the West Coast Accord the clearfelling of rimu in South Westland was to have ended last December. However, the government has extended the clearfelling undertaken by the state-owned West Coast Timberlands for two more years which will see the logging of up to 50,000 rimu trees, each several centuries old.

Pleas to the government by Forest and Bird and local residents to end the felling have been ignored. As the Malaysians, the Brazilians and North Americans know, clearfelling rainforests with no thought for the future is an easy way to make a quick buck.

In the 1990s New Zealand has gone from being one of the leading countries in the world on forest conservation to one of those that has to resort to international deception to conceal the awful reality of the destruction of its rainforests.

Kevin Smith

More marine reserves

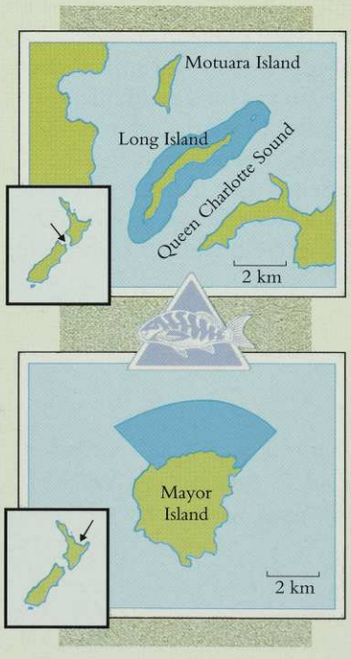
IN A FLURRY OF activity, timed for the Wellington Central byelection, three new marine reserves were approved by the government late last year – at Cathedral Cove near Hahei on the Coromandel Peninsula, Mayor Island in the Bay of Plenty, and Long Island in the Marlborough Sounds. All reserves were actively supported by Forest and Bird.

The Hahei reserve has been in the pipeline for some time (see *Conservation Update* August 1992) and has been gazetted without any of the major reductions in size that were feared. Hahei is significant in that it is the first "mainland" marine reserve after Leigh.

The Mayor Island reserve, on the northern side of the island, began with a Maori initiative and had the active support of MAF Fisheries. It adjoins a restricted fishing area and includes underwater hot springs and areas of black volcanic glass.

The Long Island reserve, extending out half a kilometre right round the island, was proposed originally by Marlborough dive clubs and enjoyed strong local support.

While three new reserves in one hit is encouraging (and it is even *more* encouraging that the government sees the announcement as "good" political news), the proportion of the coastline protected in no-take reserves remains under a pitifully small one percent. In many respects they remain an orphan in coastal and marine policy and are barely mentioned in the recent fisheries task force report and the draft national Coastal Policy.



It is essential that the reality of marine reserves as an insurance against greed and ignorance are built into both fisheries legislation and coastal policy.

Ballast water woes

NEW ZEALAND'S problems with introduced plants and animals does not end at the shoreline. Like other countries with a highly endemic flora and fauna, New Zealand's waters are particularly at risk from the introduction of exotic marine organisms.

The ballast tanks of international cargo ships are mobile aquaria, transporting organisms across the seas to be discharged in visiting ports. Unlike the problems of more visible marine environmental calamities such as oil spills, the problems of pests introduced through ballast water discharge are chronic, cumulative and irreversible. The introduced organisms have the potential to wipe out marine life, destroy shellfish industries and threaten human health.

As a net exporter of bulk cargoes, this country is also a leading importer of ballast water from around the world.

Since 1975 over ten new species of exotic organisms have been found in our coastal waters. These include seaweeds, crustaceans and molluscs and it is likely that most of them were introduced via ballast water. Some, including the large seaweed *Undaria pinnatifida* introduced from Japan, are succeeding well in disturbed environments and may displace the natural marine flora. There are likely to be many more we don't know about.

C.H. HAY

The spores of the Japanese seaweed Undaria pinnatifida *are dispersed by sea currents. In 1987 it was discovered in Wellington Harbour and it is now known from ports as far south as Timaru.*

Last year MAF instituted a system of voluntary controls on overseas ballast discharge. Vessels which need to discharge ballast in New Zealand waters are now asked to exchange their initial water at sea. This is thought to remove about 90 percent of stowaway organisms.

A survey over six months of 792 ships suggested that over 90 percent were complying with the new controls. However some ships' masters were unable to give a sample of ballast water upon request and others indicated that they would not comply with the controls until they became compulsory.

Australia and New Zealand have pressed the International Maritime Organisation to set up international rules on the discharge of ballast water, but to date the IMO has only established a working group to research the issue.

Global warming is only likely to make matters worse. Transport by ballast will be an easy way for organisms to "test" their ability to colonise changed environments.

Little spot moves to Mana

A LITTLE SPOTTED kiwi, long thought to be extinct on the mainland, was moved to a patch of forest on Mana Island last October. The bird, discovered at Franz Josef, was originally thought to be a great spotted kiwi but genetic testing showed otherwise.

The last confirmed sighting of the smaller species in the South Island was in 1938 and the bird is now only found on off-shore sanctuaries such as Kapiti, Red Mercury, Hen and Long Islands.

DoC moved the bird, despite local opposition, because of what it saw as considerable risks posed by dogs, cats and stoats in the Franz Josef area.

The department plans at present to keep the lone bird, a female, separated from other, genetically different, little spotted kiwi on nearby Kapiti Island. Officers from the kiwi recovery programme hope to find a mate from any remaining southern population during searches around Franz Josef this summer.

The controversy surrounding the shifting of this one bird highlights the need for DoC to consult with local conservationists and conservation boards before taking precipitate action on the future of endangered species.

IAN CLOSE

Footnote: In news just to hand, a new kiwi species has been described from Okarito forest in Westland National Park. It has long been known that the 60-100 "brown" kiwi at Okarito were a distinct population. Genetic analysis has now confirmed that the birds are sufficiently different to be classed as a separate species. The Okarito birds, now an instant endangered species, are greyer than brown kiwi with white feathers on the head and neck.

One bird and a lot of attention. After blessings from Ngai Tahu and Ngati Toa kaumatua, the little spotted kiwi was released into its new Mana Island home.

Scenic improvement?

THE OVER-ZEALOUS clearance of native vegetation alongside scenic highways has long been a contentious issue in New Zealand, but a recent Forest and Bird field trip to South Westland came across an example that would take some beating for its sheer stupidity.

Contractors working for Transit New Zealand (formerly the National Roads Board) were discovered clearing lakeside vegetation, including flax bushes, from the margin of Lake Ianthe beside the State Highway – apparently "to improve the view". For most people travelling this Heritage Highway the flax and other native plants added to the scenic attractions of the lake while providing cover for the lake's wildlife, including the rare crested grebe.

Fortunately, the contractors agreed to Forest and Bird's request to stop work while a DoC officer could be called to intervene and put an official end to this scenic vandalism alongside the Lake Ianthe Scenic Reserve.

MIKE HARDING

Scenery enhancement at Lake Ianthe, courtesy of Transit NZ.

Transit NZ is very red-faced and says that the contractor was at fault in not obeying the guidelines of the contract documents. Transit's operations engineer, Peter Connors, says he is "conscious of the importance of the scenic features of our roads and picnic areas and takes that responsibility seriously". He adds that Forest and Bird's concerns "have been thoroughly investigated so that we continue to improve our performance".

Transit NZ's commitment to conservation was put to the test last month when Forest and Bird and residents of remote Bruce Bay further down the Coast called for an immediate halt to plans to fell 20 soaring kahikatea trees from the famous Semple Avenue alongside the Haast highway.

The trees form a canopy over the well-travelled world heritage road. "It's one of the most photographed parts of the road," says local resident Thomas Condon. "I hope the proposal is stopped before we have to go and tie ourselves to the trees."

Because of the controversy, Transit have stopped the work and would "re-look" at the situation later in the year. Consultation with Forest and Bird and the locals has been promised before any decisions are made. Such consultation should be standard practice whenever potentially controversial roadside clearance is contemplated by Transit NZ.

Rough times for Kidd

THE PARLIAMENTARY Commissioner for the Enviroment Helen Hughes has found that the Chatham Rise orange roughy fishery is in imminent danger of collapse. This fully supports the position taken by Forest and Bird on the overfishing of this deep-water and slow growing fish (see *Forest & Bird* August last year).

The commissioner's report was highly critical of the approach of the Fisheries Minister Doug Kidd to sustainable management of the species and his decisions on catch limits.

The commissioner claimed in her report that "the decisions on [total allowable catch] for the Chatham Rise Orange Roughy Fishery in 1991-92 and 1992-93 were unlawful" because the minister took into account issues outside the scope of the legislation and the decision would not result in a sustainable fishery.

The catch level set by the Minister for the current fishing year will cause a further decline in the orange roughy stock.

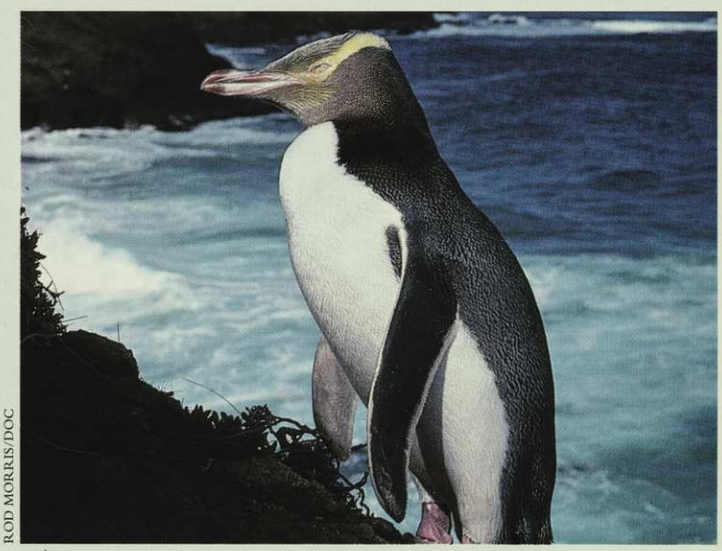
MAF Fisheries recommended that the catch be reduced to a maximum of 6,100 tonnes on the Chatham Rise but the Minister allowed 14,000 tonnes to be caught. To rebuild the fishery to a long term sustainable level, the catch would have to be reduced to 3,300 tonnes.

Mr Kidd claimed at the time that the information was ambiguous but surprisingly even the fishing industry's own researchers agreed with MAF. In a report to the Fishing Industry Board, consultant Doug Butterworth had said that MAF "were drawing conclusions on a commonly accepted scientific basis on the most parsimonious interpretation of the data. Indeed it would be irresponsible of them not to put those conclusions forward."

Sadly the Minister and the fishing industry seem to view this vulnerable fishery as a short-term cash crop.

Barry Weeber

Hoiho numbers on the increase



ROD MORRIS/DOC

For hoiho, the threats from ferrets, stoats and cats continue. Over the last 11 years only nine percent of fledged chicks have survived to breed.

THE 1992 CENSUS of the world's rarest penguin has reported a rise in numbers for the second year in a row.

The yellow-eyed penguin or hoiho, found only in small colonies from Banks Peninsula south to the subantarctic, now numbers about 380 pairs on the mainland.

But Otago Museum zoologist John Darby cautions against reading too much into the results. The mainland figure is still well below what it was five years ago and he estimates that intensive conservation efforts such as fencing and revegetating breeding areas, establishing reserves and controlling predators, will need to continue for another five to ten years before numbers show a significant increase.

Shore plover hatchings

THE CAPTIVE shore plover at the National Wildlife Centre at Mt Bruce (see last issue of *Forest & Bird*) have produced six chicks this season (five surviving) with another two eggs still under incubation.

The chicks are the only shore plover so far bred in captivity. The parent birds were transferred to the centre as eggs in 1991 from the bird's only remaining stronghold of Rangatira (South East) Island in the Chathams. Once widespread around New Zealand, only about 100 birds now survive in the wild and they are at constant risk from any predators which may reach the island.

DoC staff at Mt Bruce are particularly pleased for two reasons. Having assured food supplies, the plover have bred in their first rather than in their second or third year as they do in the wild, and secondly they are laying larger clutches of four eggs rather than the normal two or three.

GARRY NORMAN

One of the new shore plover chicks at Mt Bruce. It is hoped that captive breeding will eventually provide sufficient birds to establish a second population on a suitable predator-free island.

New home for BoP marine life

THE PORT of Tauranga Ltd has turned a channel enlargement exercise into a novel opportunity to maintain an important habitat for marine wildlife.

At Forest and Bird's suggestion a reef, which was to be dynamited to increase the size of the harbour entrance for container vessels, was shifted to a nearby location inside the harbour. Rocky habitat is uncommon in the Bay of Plenty, with boulder habitat particularly scarce.

Shifting of the Tanea reef began early last year and has almost been completed. Over 100,000 cubic metres of boulders will be moved and the new reef will occupy over a hectare of the harbour floor. Other parties involved in the project are the district and regional councils and the Department of Conservation.

The University of Waikato is surveying the effects of the overall port dredging programme while Forest and Bird field officers Ann and Basil Graeme have a contract with the port authority to monitor the recolonisation of the reef. Already schools of small fish and plant life have moved in and signs have been installed nearby asking people not to interfere with the new marine ecosystem.

"This is the first time in New Zealand in the development of an industrial port that a reef has been shifted," says Ann Graeme. "We see it becoming an oasis of life in the harbour and the nucleus of a future marine reserve."

BASIL GRAEME

Moving a reef isn't easy. The boulders of Tanea reef were lifted by crane onto a barge before being placed at the new site.

Kaikoura purse seine ban

FOREST AND BIRD has been successful in helping to obtain restrictions at Kaikoura on the use of purse seine nets for the 1992-93 fishing year. These large nets are used by commercial operators to target schools of surface fish such as kahawai.

Conservationists and recreational fishers have long been concerned about the effects of the nets on the availability of fish for the marine mammals and birdlife for which Kaikoura is so well known, and the danger to the abundant marine mammal life inshore. The issue came to a head last February when five Hector's dolphins were accidently caught by a Sealord vessel in full view of the beach.

Although Forest and Bird's proposal for inshore restrictions on purse-seining in the area were initially dismissed by Sealord chief executive Brian Rhoades "as the most ridiculous thing I've ever heard in my life", the company has now joined with other commercial operators in an agreement to keep their nets at least one nautical mile from the Kaikoura coast. Hopefully, the agreement will become permanent.

World watch

Saving the great bustard

THE GREAT bustard is probably Europe's most spectacular bird. It is also globally threatened. Its last stronghold is the Spanish steppes, where over 65 percent of the world population of 20,000 occur. But the Spanish government is planning to use European Community funds to irrigate four million hectares of the steppes by 2010, and the survival of the great bustard is seriously threatened.

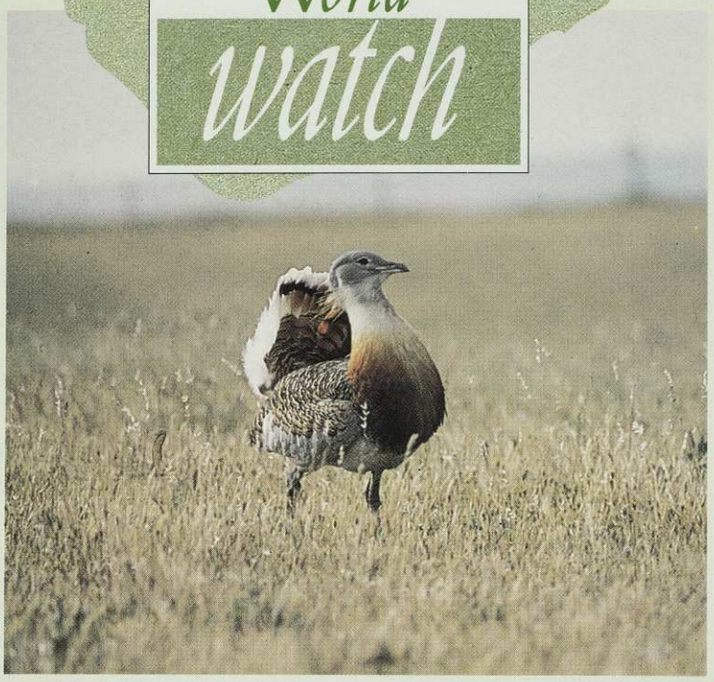
Rolling, open and dry areas of low scrub and grassland, the Spanish steppes are a beautiful and rapidly diminishing habitat with a unique and threatened bird life including two other globally threatened birds, the little bustard and lesser kestrel, and other rare or declining species.

Irrigation effectively destroys the habitat for steppe birds. The all-important mosaic of semi-natural vegetation, extensive crops and fallow land is replaced with monocultures of artificially fertilised, dense and fast-growing crops. Increased pesticide use reduces the invertebrate food supply for birds like the lesser kestrel and bustards. Disturbance from agricultural operations such as aerial spraying prevents shy species such as the great bustard from nesting. Great bustards, being large and cumbersome in flight, also die through collisions with the power lines essential for the schemes.

The planned irrigation schemes make little sense and are overwhelmingly opposed by local farmers. The steppes are essentially dry places, and the water tables are not suitable for extensive exploitation. The schemes are almost certainly unsustainable in the long term.

The ICBP backed by ornithological societies throughout Europe, is calling on the European Community to stop financing the irrigation projects. Supporters of the great bustard have won an initial victory with the declaration of two Environmentally Sensitive Areas in the steppes. Farmers in these areas, which contain about 1,500 bustards, will receive subsidies from the Community to maintain the steppes as a traditional patchwork of grazing land and low-intensity cereal farming. However, the threat of irrigation over large areas of the steppes remains.

Source: International Council for Bird Preservation



S. RUANO

The great bustard stands up to a metre high and is one of the heaviest of flying land birds. Its population has been halved in the last 20 years, and its main remaining habitat is now threatened with irrigation development.

Pilchard plunder

THE FISHING industry in northern Chile is on the brink of collapse. After 15 years of unfettered expansion, pilchard stocks, which once fed the biggest fishmeal industry in the world, are dangerously depleted.

In Iquique, a port perched on the edge of the towering mountains of the Atacama desert, the stench of fishmeal plants has disappeared. The plants are silent, facing an idle fishing fleet moored in the bay. Even the vultures and pelicans circling overhead look hungry.

The pilchard catch has declined dramatically since a peak of 2.6 million tonnes was landed in 1985. Seiners – fishing vessels which carry long vertical nets – brought back only a quarter of that last year. The outlook for this year is even more bleak.

At Sernap, the national fishing inspectorate, Eduardo Gil says fishing companies are not prepared to acknowledge their share of the blame. "They tell us that the fish have gone south, gone north, gone further out, but the truth is that all the pilchards have been turned into fishmeal.

"They are not fooling us, only themselves," Gil says. "This is a typical case of overexploitation. It happened to the herring stocks in the North Sea, in Japan and off California. We cannot be the exception."

The average age of the fish caught has been dropping steadily since the mid-1980s. In 1991, fishermen were bringing in pilchards which were just six years old, the age of the sexually mature fish, indicating that stocks were on the border of extinction.

Sernap fears that the fishing industry in northern Chile, which generates 40 percent of the region's gross domestic product and employs 18,000 people, is about to collapse as it did 25 years ago, when anchovies were wiped out.

Gil says it may take 20 to 30 years for pilchard stocks to recover. And because there is nothing to take their place, many fishmeal plants face closure. The industry, which earned over $NZ700 million in exports in 1991, risks losing its place at the top of the world league.

A number of the pilchard fishing companies are partly owned by New Zealand's Carter Holt Harvey. These are currently losing over $NZ70 million a year.

The scarcity of pilchards is also pitting fishmeal plants against canneries. Rival fishing fleets now employ a whole battery of detective equipment, including satellite photos, ultrasonar equipment and support aircraft, to lead them to the isolated schools of pilchards. Once detected, the race is on to fish as quickly as possible and keep the competition out of the area.

Source: Financial Times

Oyster problems in UK

A NEW threat to Britain's native oysters has shown how hard sometimes it is to win in dealing with the separate environmental problems of pollution and the introduction of pest species.

The alien Pacific oyster was introduced some years ago to British oyster farms. It was given the okay by Britain's fisheries administrators on the grounds that the exotic organism was no threat to other marine life because it "couldn't breed in UK waters".

Unfortunately it now seems that the only reason it couldn't breed was because TBT – widely used to keep barnacles off the bottoms of boats and a major marine pollutant – suppressed its reproductive processes.

TBT was banned in Britain in the late 1980s and the country's coastal waters are considerably better for it. However, in the last two years Pacific oysters have escaped from farms and are now breeding in unprecedented numbers in the TBT-free waters of the southwest coast.

The Pacific oysters are a boon to oyster farmers who can restock their beds for free, but conservation agencies are concerned at the impact they will have on native species.

Source: New Scientist

Mixed prospects for kagu

THE FIRST extensive listening survey of the endangered New Caledonian kagu has thrown up some good – and bad – news.

The good news is that there are more of the flightless ground-nesting bird than were thought – an estimated 500. The worrying results, however, are that kagu habitat is very fragmented and only five percent of birds are in areas protected from mining and forestry. Kagu are most vulnerable when forests are opened up for these activities. Roads provide access to introduced predators such as cats, and also to hunters and their dogs.

The kagu is allied to the cranes and rails but with no known close relatives. About the size of a domestic hen, it feeds on invertebrates on the forest floor. It has a unique nasal structure and blood composition (nine times the haemoglobin but a third of the red blood cells of other birds) making it an ornithological oddity.

The survey was the first phase of a four-year Kagu Recovery Project which is supported by DoC and Massey University in New Zealand, and the RSPB in Britain. The next stage of the project involves a research and education campaign. Finally it is hoped to establish reserves in key kagu areas and to manage them to control introduced animals.

In addition, a successful captive breeding programme in the Rivière Bleue Park, south-east of Noumea, has provided birds for reintroduction to other areas.

ROD MORRIS

The flightless kagu has no natural predators and little means of defence against introduced ones apart from a spectacular distraction display. Its grey-white appearance and reclusive behaviour have led to Melanesians referring to the bird as "the ghost of the forest".

Stopping the oil spillage

DESPITE THE continuing run of oil tanker disasters – the breakup of the *Braer* on the Shetland Islands in early January was one of the worst in history, spilling more than twice the amount of oil as the Exxon Valdez in 1989 – there seems little international will to regulate tanker traffic or enforce improvements in procedures or technology.

The volume of oil travelling the oceans has doubled since 1985 to 1.5 billion tonnes a year and, inevitably, big spills are becoming more frequent. Yet it is only the major ones which reach the headlines. Numerous smaller incidents go unreported.

Because a glut of tankers came on the market in the 1970s, more than half the world's fleet is more than 15 years old – the age when a ship is generally nearing the end of its working life. Many are registered in countries such as Liberia and Bermuda where the controls and checks on vessel safety are weak to non-existent.

A decision in 1991 by the International Maritime Organisation (a UN agency) that all larger tankers must have double hulls or equivalent safety devices to decrease the chances of spillage in the event of an accident, is meant to take effect this year. However there is a two to three year backlog of orders in the world's shipyards to be met, as owners try to beat the deadline. Thus these old-style ships will still be being launched onto the world's oceans in two years time and will still be transporting oil in 20 years.

Improved crew training, avoidance of narrow shipping routes plus the earlier enforcement of safer designs are all essential. Otherwise the effects on the world's wildlife will continue unabated.

Holes in new ozone decision

IN THE aftermath of the largest Antarctic ozone hole on record, the meeting of the world's environment ministers in Copenhagen last November tightened the deadlines for the phasing out of ozone depleting substances. They refused, however, to take decisive action against new threats to the ozone layer.

The Montreal Protocol signatories brought forward the phase-out date of CFCs and carbon tetrachloride by four years to 1996, and halons by six years to 1994.

HCFCs, touted as CFC substitutes until their own considerable ozone depletion potential was realised, have now been brought into the Montreal protocol but, disappointingly, will not be phased out till 2030.

While these changes passed with little debate, there was wrangling over the "new" threat of methyl bromide. Production of this fumigant increased 50 percent from 1984 to 1990 due to the growing international trade in fruit and vegetables, and it is now thought to be responsible for up to ten percent of the ozone destroyed to date.

Scientific meetings preparatory to Copenhagen concluded that most uses of methyl bromide could be replaced with other chemical fumigants within this decade. However, major fruit exporters such as Israel, Brazil, Spain, Greece and Italy, which depend on methyl bromide as a cheap pest control, refused to accept any cutbacks in use and the only agreement was to freeze production and consumption (apart from quarantine uses) at 1991 levels from 1995.

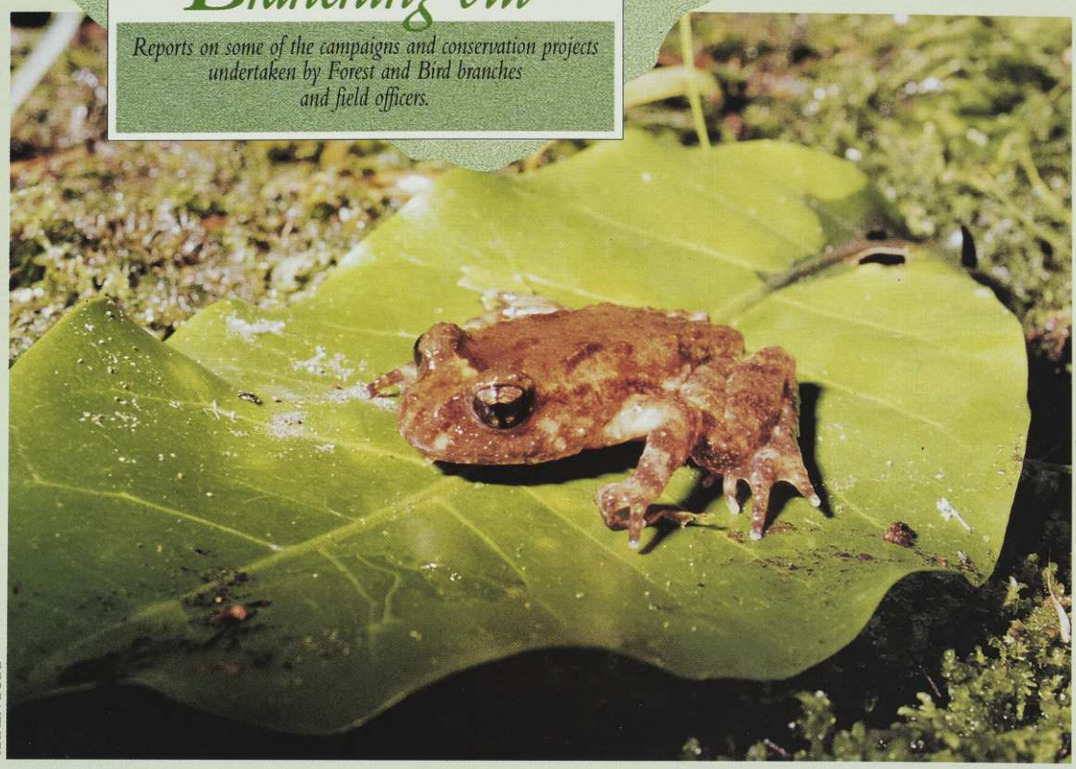
Branching out

Reports on some of the campaigns and conservation projects undertaken by Forest and Bird branches and field officers.

Te Puke takes on the miners

IT WAS a daunting case for the Te Puke branch. In the face of ministerial approval they went to the Planning Tribunal to oppose a mining licence for a huge road metal quarry in DoC-owned forest.

For decades a small quarry had been worked intermittently on gorse-covered Crown land in the hills behind Te Puke. Then the operator applied for a further licence, to penetrate the beautiful Oropi forest on DoC stewardship land and extract up to 50,000 tonnes of road metal yearly. In 1990, against the advice of the regional DoC office and the department's policy guidelines, the then Conservation Minister, Philip Woollaston, gave his consent.



KAREN BUDD

A Hochstetter's frog in the Oropi forest found by branch members while researching their case in the Planning Tribunal. This was the first record of this rare frog in the Te Puke area.

Our members built up a meticulous case to defend the forest and streams. They surveyed and described the forest and researched wildlife and geological reports. They explored the economies of roading in the Bay of Plenty and, in the deregulated market, found road metal both cheap and plentiful. They set out the difficulties of quarrying in steep, high-rainfall country, and the catastrophic effects likely on the network of streams and the native fish. Searchers even turned up a rare Hochstetter's frog, previously unrecorded from the southern part of the Kaimai Range, and brown kiwi were found in night time surveys.

The case was presented by the branch chair Malcolm Gray, committee members and the society's regional field officer Basil Graeme. Their efforts met with only limited success. In November the licence was granted, although with both reduced term and area, and with stringent and restrictive conditions.

This is not an isolated case but a typical scenario for conservationists opposing mining applications. To the government, DoC stewardship land is obviously the Cinderella of the conservation estate. Under the new Crown Minerals Act, however, DoC now has greater power to refuse access for mining on conservation land. All it needs is the fortitude to follow its own policy guidelines, and a Minister who is prepared to stand up to the mining industry.

Marlborough branch 25 years

THE Marlborough branch celebrated its first 25 years with a dinner last year attended by over 50 people. Marlborough was the society's 25th branch and began life with 60 members. It now has more than 600.

The dinner was addressed by the branch's first chairperson, Stewart Kennington, and South Island field officer Mike Harding. Long-time stalwart Margaret Peace recalled a number of the branch's conservation projects and campaigns including the native tree plantings on Maud Island and the still unfinished battle for protection of the Wairau lagoons.

A marine reserve for Whangarei?

FOREST AND BIRD members at Kamo High School have been busy over the last three years with a proposal they have developed for a marine reserve in the waters around Motukaroro Island in Whangarei Harbour.

The area proposed for the reserve is a fine diving area with abundant marine wildlife and is very accessible.

The students, with the assistance of their geography teacher Warren Farrelly, have put together a pamphlet outlining the proposal and circulated a questionnaire to assess attitudes to the idea within the Whangarei community. They have consulted with a number of local organisations including the port company, diving club and Maori groups.

The students hope that the reserve proposal can be formally distributed early this year.

WARREN FARRELLY

A sea horse, hinamoki, one of the fish found in the proposed reserve. The sea horse coils its tail around seaweeds and feeds on small crustaceans.

Kiwicare

THE FAR North branch has responded to the Kiwi Recovery Programme and the surveys showing alarming kiwi decline (see *Conservation Update*, last issue) by assisting DoC with funds and labour to erect signs in the Kerikeri Inlet area. Numerous northern brown kiwi live in the area, in regenerating shrublands close to settlements.

The signs will alert people to the presence of the kiwi population, and the need to control dogs which are their major threat.

There has been a good public response to the signs, although birds are still being killed.

The branch is also circulating an information display about kiwi to schools and communities throughout the district.

DAVID TAYLOR/THE CHRONICLE

Far North branch members Alan Baldwin and John Dawn with DoC's Terry Toft.

Rat control in the capital

TAPU TE RANGI, a small island just off Island Bay, on Wellington's south coast is the site of a rat control programme by the Wellington branch. Native birds including the reef heron, variable oyster catcher and little blue penguin nest there and it is home to three rare plant species. The island is listed as a "site of ecological significance" in the branch's *Natural Wellington* strategy.

Administered by the Wellington City Council, the island is also of major cultural and historical importance.

The branch is using two permanent and (nearly) vandal-proof bait stations designed by Rowley Taylor and Bruce Thomas of Breaksea Island fame. DoC's Rawyn Epsom is providing invaluable technical assistance and oversight.

The programme has proved to be a cheap and effective way of controlling a major pest on small inshore islands.

Other branches interested in running similar projects should in the first instance contact the threatened species officer of their DoC conservancy. Permission will also be needed from the organisation responsible for administering the island.

COLIN RYDER

Members Lyn and Gerald Griggs replenish the bait stations on Tapu te rangi every two or three weeks. Once the rats have been eradicated, permanent baits will be left to catch those which swim to the island.

Negotiation – the art of winning

COMMITTEE MEMBERS from the Auckland branches have been honing their negotiation and mediation skills.

Nine members attended a one-day workshop in October run by Auckland-based mediators Tracy Brown and Lee Chisholm. Forest and Bird branches regularly find themselves in conflict situations with district and regional councils and local companies, and the course was useful in helping members develop the skills to thrash out suitable solutions around the table rather than resort to costly litigation.

Similar courses are available in other centres. Branches interested in setting up a course in their area should contact Claire Stevens of the North Shore branch.

LEE CHISHOLM

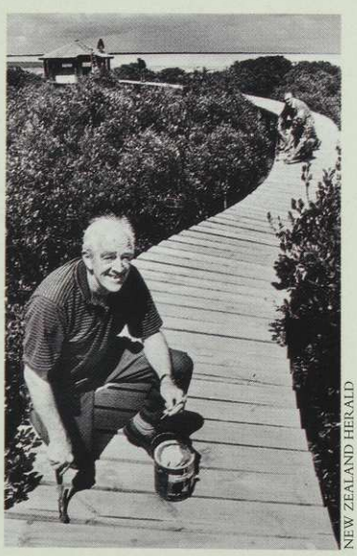
Members from the Auckland branches improving their mediation skills. Top from left: Jan Butcher, Jay Clarke, Ann Fenn, Tracy Brown, Joe Crandle. Bottom: Claire Stevens, Dee Pigneguy, Val Hollard.

Bird hide opened at last

THE Thames/Hauraki (formerly Coromandel) branch's bird hide in the Thames estuary, opposed by miners and the district council (see *Branching Out* May 1992), has finally been finished. Forest and Bird field officer Ann Graeme formally opened the hide and the connecting 70-metre boardwalk across the mangrove swamp in November.

The hide, almost alongside the Thames Pak'n Save, will provide access to view and study the 30 or so bird species which frequent the estuary.

However, a recent threat to the wetland has arisen. Against the advice of his department, the Minister of Conservation has given the go-ahead to a prospecting licence over 800 hectares of the estuary including the area of the hide. Local conservationists, the Maori trust board and the Thames District Council have filed for a judicial review of the Minister's decision.



NEW ZEALAND HERALD

The end of one battle but a new one beginning? Committee member Keith Purnell and fellow workers finish off work on the boardwalk.

THE RETURN OF THE RIGHT WHALE

In June last year an Airforce surveillance flight over the New Zealand subantarctic recorded one of the largest congregations of southern right whales seen anywhere in the world this century. TIM HIGHAM reports on the fall and rise of one of the world's rarest whales.

FROM THE ANDOVER plane above the Auckland Islands observers spotted 50 whales in the harbour of Port Ross. Others were seen in the island's eastern bays and fiords – a total of 70 including seven calves.

Unusually clear and calm conditions made the historic flight possible, the only mid-winter census since coast watchers occupied Auckland Island during World War II and the Hardwicke whaling and farming settlement of 1849-52. Only several whales were recorded during these periods of earlier occupation.

Two months later, in August, I flew over the Auckland Islands in conditions more typical of the subantarctic winter. Gale-force westerlies caused the Airforce Orion to shudder violently as it banked to low altitude around Enderby Island. Despite uncertain footing in the crowded cockpit and squalls whipping the sea surface we managed to make out the distinctive broad backs of numerous right whales still in Port Ross. Thanks to the

TIM HIGHAM

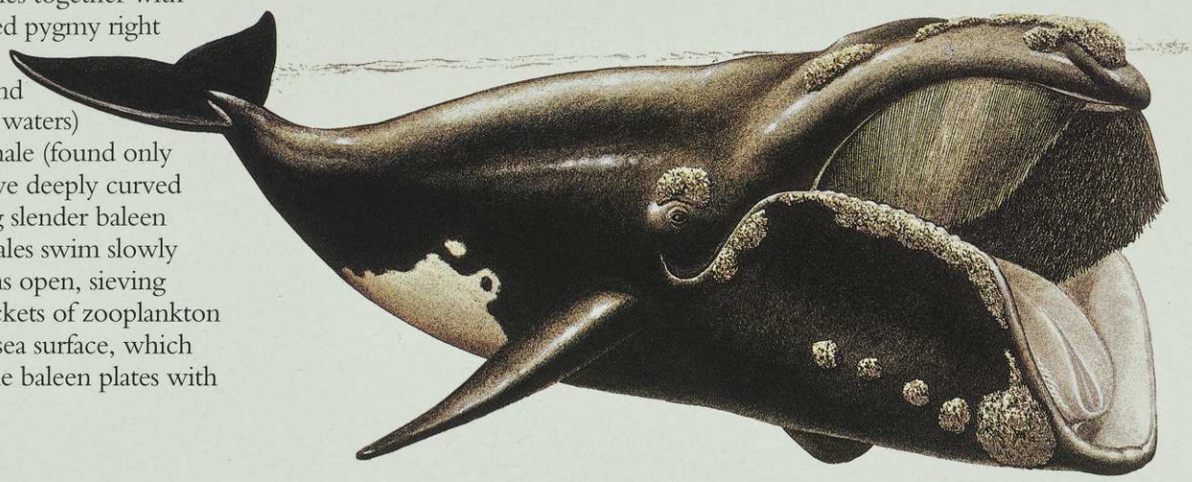
Head of a right whale in Te Waewae Bay, Southland. Scientists have developed techniques which enable individual whales to be identified by the pattern of callosities on their heads. These naturally occurring markings are raised patches of whitish, rough skin infested with whale lice, parasitic worms and barnacles. The size, positioning and shape of the markings can be identified in photographs taken from a small plane or helicopter and have enabled scientists to build up an identity record similar to that of thumb-prints in humans.

PETER BEST

A right whale cow and calf in Walker Bay, South Africa. South African waters are one of the strongholds of the species.

Southern right whale

Right whales together with the related pygmy right whale (also found in New Zealand waters) and bowhead whale (found only in the Arctic) have deeply curved jawlines and long slender baleen plates. Right whales swim slowly with their mouths open, sieving concentrated pockets of zooplankton on or under the sea surface, which they scrape off the baleen plates with their tongues.



SEA MAMMALS: TELSTAR BOOKS

Average adult length	15 metres
Average weight	50-56 tonnes
Colour	black; some individuals with large white patches
Distribution	all southern oceans from about 20°S to 55°S
Numbers	estimated 3,000

Royal New Zealand Airforce we were now able to confirm that breeding activity in this population lasted at least two months.

THE RIGHT WHALE belongs to that group of huge filter-feeders known as baleen whales. The baleens number 11 species and include the largest animal of all, the blue whale. There are now two species known as right whales, one for each hemisphere; the northern right whale, *Eubalaena glacialis*, and the southern right whale, *Eubalaena australis*. Right whales also form several distinct populations within each hemisphere. The north-east Atlantic and north-east Pacific stocks are on the verge of extinction, being represented by little more than a hundred individuals in each.

Stocks in the north-west Atlantic, north-west Pacific, south-west Australia and south-east Australia/New Zealand regions are estimated at several hundred animals each. South Africa and Argentine Patagonia are currently thought to support the world's largest stocks, in excess of 500 animals.

Classified as vulnerable, the world population is estimated at only about three percent of its pre-harvest level.

The right whale was so named because it swam slowly and close to shore, and was easily harpooned from row boats based at shore stations. Whales also floated when dead and yielded large amounts of premium quality oil and baleen.

Right whales were the first whales to be hunted commercially, by the Basques of northern Spain, as early as the 12th century. By the 16th century the population was so depleted that whaling fleets set out to exploit new stocks around Newfoundland and Labrador, and, in the 17th century, around Spitsbergen and Greenland.

With the collapse of each stock the whalers looked to new grounds – off South Africa, Japan, Brazil, Peru and Chile, Australia and New Zealand – to keep Europe's whale-oil-powered street lamps burning. In south-east Australian and New Zealand waters at least 26,000 right whales were killed, mainly in the 1830s and 40s.

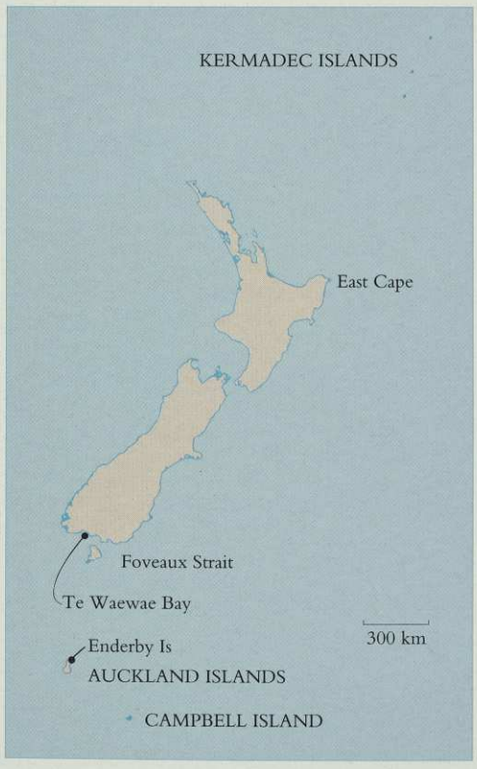
So complete was the destruction of this region's population that the first documented 20th century sighting of a right whale off the Australian coast was not until 1955.

Now, protected from commercial whaling since the 1930s, this great whale is starting to make a comeback, particularly the southern species.

Off Patagonia's Valdez Peninsula 900 individuals have been identified from photographs taken during aerial surveys over 20 years, nearly 500 of which have been identified in more than one season. Such data has been used to estimate that the population is increasing at a rate of 7.6 percent a year and that the average calving interval is 3.6 years.

Aerial surveys have also been made off the South African and Western Australian coasts for over a decade and populations there show similar trends.

A group of southern right whales off the South African coast. The activity here is probably associated with mating. ▶



Found in New Zealand waters from the subantarctic to the Kermadec Islands, right whales appear to migrate northwards through the region during the colder months, the females traditionally moving into sheltered bays for calving and mating. Their sonar systems are suited to navigation in shallow bays and they rarely strand.

PETER BEST

The whales' wake

ALEXANDER TURNBULL LIBRARY

Whalers with a right whale at Kaikoura early this century. By this time right whales were so rare that they were only occasionally caught, and whalers concentrated on the more numerous sperm and humpback whale stocks.

THE FIRST WHALING ship listed as calling into a New Zealand port was the *William and Ann* in 1791. Lured by the reports of whales by early explorers, British and American vessels continued to ply the country's off-shore waters until the 1830s. Their main target was the sperm whale; the quarry was rendered down at sea, and Maori settlements used as a source of provisions and extra hands.

In 1829 the first shore-based stations were established in Cook Strait and in Fiordland's Preservation Inlet to target the winter and spring migration of right whales close to shore.

By 1844 over 80 such stations had been established, dotted along the eastern coastline from East Cape to Foveaux Strait. Some operated only for a short period. In addition, foreign ships, known as bay whalers, anchored in coastal waters and competed with the shore bases for whales.

Even incomplete whaling records show 26,000 right whales were killed in south-east Australian and New Zealand waters, three quarters of them in the decade 1835-44. During this period the region supplied a major proportion – probably about one third – of the world's total right whale catches.

Look-outs were established on high ground near the bases and the tell-tale, V-shaped blow of right whales could be observed up to eight kilometres off-shore. Clinker-built row boats were dispatched carrying about eight men, an oarsman in the stern and a harpooner at the bow. Cows entering bays to calve were quickly exterminated. Those in groups migrating northwards ran the gauntlet of rival stations along each section of coast.

Once secured by harpoon the whales were towed to shore, their blubber cut away and rendered down in try-pots, and the oil separated and stored in wooden barrels.

A stench of rotting offal and blubber scraps, and greasy smoke from the try-pot fires which coated buildings and trees, characterised each whaling base.

But the smell of whale was the smell of money. Like today's petroleum industry, the end products provided lighting, heating and lubrication. A secondary product – the horny, keratin plates of the whales' baleen – was used to make chair seats, corsets and buggy whips.

In 1840 over twice as much right whale oil as sperm whale oil was shipped from Sydney, the destination of the product from New Zealand bases. By 1845 there was practically none. The right whales had gone, and with them the associated industry.

RAMARI STEWART

The distinctive deeply notched tail of a southern right whale about to disappear below the surface off Campbell Island. Right whales are known for their exuberant lobtailing, where they bring the tail crashing down onto the water.

In the New Zealand region there has also been an apparent increase in sightings over the last decade, although the statistics have not been systematically collected.

MY FIRST ENCOUNTER with the species was in Southland's Te Waewae Bay in August 1990. From a small boat the sheer size of the animals was daunting; their loud, resonant expiration of air – awe-inspiring. One 15-metre individual manoeuvred within centimetres of our aluminium runabout and poked its barnacle-clad head out of the waves to have a look at us. It is thought the callosities on the head deflect water away from the twin blowholes and form scrapers used in courtship battles. They have given rise to the nickname for the species – Barnacle Bill – given first to a friendly individual off the Napier coast by local fishermen.

During my three years in Invercargill, reports of right whales around Foveaux Strait, Stewart Island, the Catlins and Fiordland have become quite common during the winter months. In successive winters a pair of right whales have nosed into Bluff harbour, much to the delight of locals. Even Southern Air flights from Stewart Island have deviated from their usual flight paths to treat passengers to a view of one of the world's largest and rarest mammals.

A RARE INSIGHT into the behaviour of these whales was gained by Ramari Stewart, a staff member at the Campbell Island Meteorological Base in 1983.

She observed whales in North West Bay from when they first appeared in May until they left in September.

She kept careful notes and discerned a distinct pattern of behaviour around the bay. One section of coast she named "Whale Road" because of the way whales repeatedly cruised in and out of the shallow coves, sometimes resting their bellies on the bottom. Cows first arrived with young calves and showed little interest in bulls until mid-July when, she assumes, they came into oestrous. Loud blowing noises, breaching, fluke slapping, and rolling in the surf followed. When cows wished to avoid the attention of males they simply swam upside down, their genitalia out of the water.

As well, Ramari observed purely playful behaviour. One sub-adult male repeatedly trailed kelp from its mouth to attract an entourage of a dozen young sea lions.

Ramari estimated a population of about 30 whales at Campbell Island, suggesting a slight increase from the 1940s. Two whaling bases operated there between 1909 and 1916 and probably killed close to 100 animals.

Ramari says it is important that a photographic inventory be developed for the Campbell Island whales, similar to the ones for whales in Patagonia, South Africa and Australia. The inclusion of a Department of Conservation employee among the year-long meteorological station appointments should help with standardisation of the whale observation programme. DoC's principal conservation officer for marine mammals, Mike Donoghue, is proposing a long-term monitoring programme for the subantarctic populations and is seeking international support for a pilot study this coming winter.

RAMARI STEWART

A partially albino female right whale swims upside down to avoid the attention of males, a behaviour adopted by females in the breeding grounds who have not yet come into oestrous.

Recognising your whale

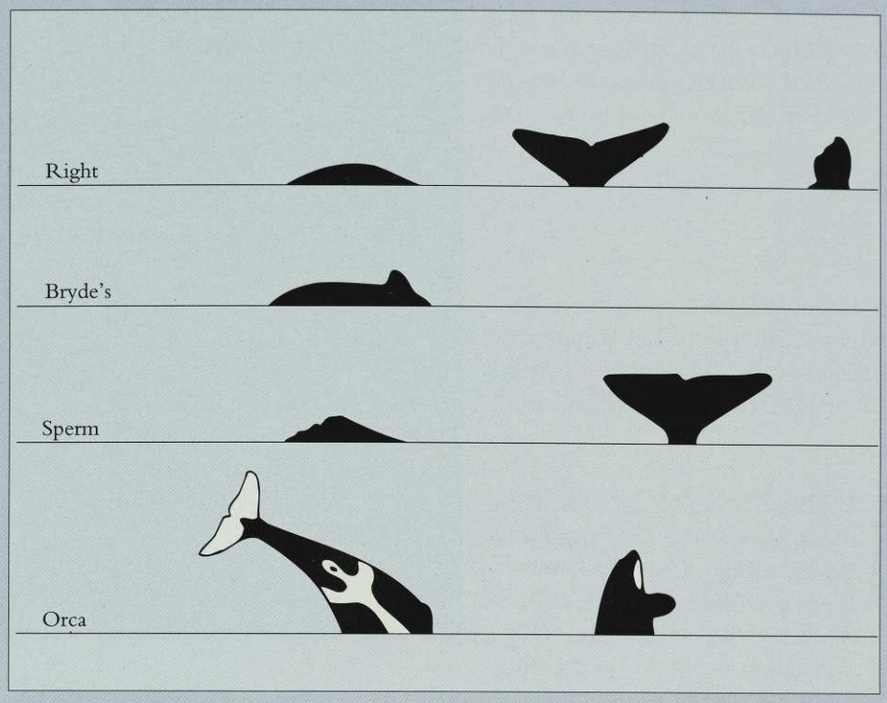
RIGHT WHALES are probably the easiest of the large whales to identify. They are the only ones without any dorsal fin and they have distinctive white callosities on their heads. They can also be distinguished by their blow – a distinctive V-shaped column of spray up to five metres tall, formed from the twin blow-holes

Even from fleeting glimpses of their tails, right whales can be recognised by the curved, smooth blades and deep tail notch. Like sperm whales and humpback whales the tail is raised clear of the water when diving. The stocky body of a stranded right whale should be easily recognisable. And from skeletal remains the spectacularly arched jaw bone should be a give-away.

They are slow swimmers, cruising at less than two knots, and can sprint to about five knots. They usually breathe two or three times a minute for several minutes before making a long dive lasting 10 to 20 minutes.

In breeding grounds they have been observed "sailing" – thought to be a form of play – where the tail or flippers are raised and the animal sails downwind.

They communicate through a series of low-frequency moans, belches and pulsed sounds, mostly at night, but their acoustic behaviour is nowhere near as complex as that of humpback whales.



The surfacing characteristics of four whales found in New Zealand waters.

TIM HIGHAM

An excited Mike Donoghue, DoC's marine mammal specialist, counting the large numbers of right whales over the Auckland Islands last August.

The Auckland and Campbell Islands whales are the only remaining major breeding population which is not being monitored, he says. Donoghue proposes shore and boat-based observation to build up a comprehensive photographic catalogue, and the collection of skin tissue for genetic analysis against other breeding populations.

There will also be interest this winter to see whether the pod of about ten right whales returns to Te Waewae Bay. If New Zealand whales breed about every three years, like the Patagonian population, then this is a possibility.

Genetic analysis and photographic cataloguing could provide clues as to the origin of this pod; whether they are vagrants from south-east Australia or overflow from the Auckland Islands population.

RIGHT WHALES are unique among whales in calving and mating so close to shore. Important conservation management issues will arise if right whales do start recolonising traditionally used areas of the New Zealand coastline. Some, such as Wellington Harbour, may no longer be suitable as calving grounds because of shipping and port developments.

Recent television pictures from South Australia showed the vulnerability of this species to entanglement in ropes and fishing gear. This coastal whale is also susceptible to habitat depletion, and their surface-feeding habits are unsuited to coping with pollution, particularly oil.

Little is known of the effects of small boat traffic on whales in breeding bays, and a buildup of accessible populations would inevitably create commercial and recreational whale watching pressures.

Nearly 60 years after right whales became the first whale species to be given full international protection, they are only just starting to show signs of an increase. There is much to be learnt and many management challenges to be met if the comeback is to be a lasting one. ❖

Tim Higham is a writer specialising in natural history and works for DoC in Invercargill.

Forest and Bird
the beginnings

Next month Forest and Bird will celebrate its 70th birthday. IAN CLOSE looks at the early years of the society and the man who founded it.

FOREST AND Bird began with Kapiti Island. Not the creation of a bird sanctuary – that happened earlier, in 1900. But with a fight to ensure that the island *stayed* a sanctuary.

Captain Val Sanderson, Gallipoli veteran and bird lover, remembered Kapiti Island as the playground of his childhood. But on a visit to the supposed sanctuary in 1922 he found 5,000 cattle, goats and sheep, the forest floor bare, erosion rampant and birds hard to find.

Thus began a fight to force the government to return the island to its designated status. After a brief but heady battle and with the backing of the Wellington newspapers, Sanderson and his supporters forced the government to have the stock removed.

It was then suggested to him that the problems of conservation in New Zealand were merely Kapiti on a grander scale and he resolved to set up a society to fight for the protection of the country's native birds.

His gift for organisation and generating publicity ensured that the public meeting on 28 March 1923 at the Dominion Farmers' Institute building in Wellington was well attended. Sanderson moved successfully "that a Native Bird Protection Society be formed . . . with the object of obtaining unity of control on all matters affecting wildlife and also the advocating of a bird day for our schools".

Forest and Bird had good connections from the beginning. Sir Thomas MacKenzie, former Prime Minister and high commissioner to London was elected the first president. Internationally renowned botanist Leonard Cockayne was the second. Sanderson was secretary. The membership fee was five shillings (50 cents).

Sanderson was the main force in the society for over 20 years. He remained secretary until 1933 when he became president. Even then he continued to carry out most of the secretarial duties until his death in 1945, many of the expenses being met from his own pocket. "Being alive to the fact that the accumulation of wealth should not be a man's sole aim," he later wrote, "I retired from active money-seeking early. At the same time an idle life without aim or object did not appeal to me, and moreover, it seemed that a man should do something for his country to warrant his existence."

Captain Val Sanderson, founder of the Native Bird Protection Society and driving force in the society's first decades.

At first the society was largely run from Sanderson's home at Paekakariki, then from various shared and leased offices in town. A permanent typist, a Miss Dickson, was employed to assist him with the increasing load of work.

The society from the beginning put out a regular bulletin titled *Birds* to its members which, in addition to the objects of the society, proclaimed on the front cover that "the foundation of true conservation is in the setting aside of sanctuaries efficiently and rigidly controlled by men who know how".

In 1933 the bulletin became *Forest and Bird* and the society followed suit with a name change a year later, giving recognition in its title to the importance of habitat in conserving native animals. The "Royal" prefix didn't come until our 40th anniversary in 1963.

One of the first issues faced by the society was the problem of introduced animals and their effects on forests and native wildlife. Early articles in the magazine refer to the "ravages of deer" and the "menace of introduced animals". It might seem that nothing has changed, but deer and possums were then protected and Forest and Bird took on the powerful acclimatisation societies. The protection was lifted from deer in 1930.

Membership of the society remained relatively small in the first decades. At Sanderson's death in 1945 it was only 800. Ten years later it had doubled but the big increases came later with the fight to save Lake Manapouri in the 1960s and early 70s, and the struggles of the 70s and 80s to save native forests.

Today Forest and Bird is a large professional organisation with over 55,000 members and 15 full-time staff. Seventy years traditionally measures the term of a natural life, but the society at 70 shows no signs of slowing down.

Throughout this anniversary year *Forest & Bird* will feature a number of articles relating to the history of the society and its future challenges.

KILLING THE KERERU

BRIAN ENTING

In Northland, kereru or native wood pigeon are in trouble. And this time it's not just the ecological problems of predation by stoats and rats, and competition from possums. As ROSS ATKINSON explains, hunters are taking increasing numbers of this dwindling forest icon – and getting away with it.

WOOD PIGEONS are dying.

The weather is calm and clear. On any beautiful still late-autumn morning somewhere in Northland, pigeons may be dying at the rate of up to twenty a day.

These kereru, or kukupa as they are known in Northland, are not dying naturally. They are being taken by rifle or shotgun. It is happening every year in the majority of Northland's native forests such as Puketi, Waipoua, Warawara, Raetea, and Omahuta.

Fine, clear, and calm conditions are favoured by the kereru's hunters. From dawn to around 10.30 am, the kereru is feeding and at its most active. In the stillness of the morning the wing beats are easily heard as the bird moves about readily in search of miro berries. It then likes to sit in the sun and preen.

In a typical scenario, the hunter has been dropped off by vehicle near his favourite area, just on, or slightly before daylight. He picks his way quietly and carefully along the track, taking particular care not to leave any footprints for at least the first few hundred metres. The hunter is wary of the few wildlife rangers or Department of Conservation officers who are skilful enough to track and catch him.

Within an hour he has arrived at a lonely descending side spur off the main ridge track. The side spur has plenty of miro scattered about. Miro trees that have been painstakingly cleared of undergrowth that would inhibit his shooting. This has been done over successive seasons, with regular trimming every year.

The berries have been ripe for about a month now, and the kereru has had time to build up condition. The miro flavour is succulent throughout its plump body. Ripe for the pot.

By 8 am the hunter has his first bird.

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Crime and punishment: three cases

IAN GREGORY (brother of Northern Maori MP Bruce Gregory) was observed on 13 April 1991 leaving home with a canvas bag, a .22 rifle and a number of dogs. He entered the Herekino conservation area. A number of shots were heard and sometime later that day Gregory was approached in the reserve by two wildlife rangers. He threw the canvas bag into the bush and ran off carrying the rifle. The bag contained four freshly plucked kereru.

DoC has the statutory responsibility for prosecuting wildlife offences, and usually does this through the Crown Solicitor. In order to save money, and because firearms were involved, DoC handed the case over to the police. Gregory was charged with a firearms offence and also charged under section 63 of the Wildlife Act with hunting and unlawfully possessing a protected species. He pleaded guilty to all charges.

The police, understandably, were more interested in pushing the firearms offence. Gregory was convicted on this charge and sentenced to 150 hours community service. He was also convicted on the wildlife charges but discharged without penalty.

IN JULY 1991 Sandy Pihema and Joseph Tahere, both unemployed of Mangamuka, pleaded guilty in Kaitaia District Court to charges that they had killed seven kereru. For one of them it was a second offence.

The defence lawyer, Ken Bailey, argued that the two young men had been asked to do so by older people. "To deny these people the small luxury of hunting these birds at a certain time of year is virtually the same as denying us our Christmas ham," he told Judge McKegg. He argued that it was the loss of habitat rather than hunting pressure which was contributing to the bird's increasing rarity in Northland. Further evidence was received from Maori elders that the real threat to the kereru was from drifting sprays used by pine tree owners.

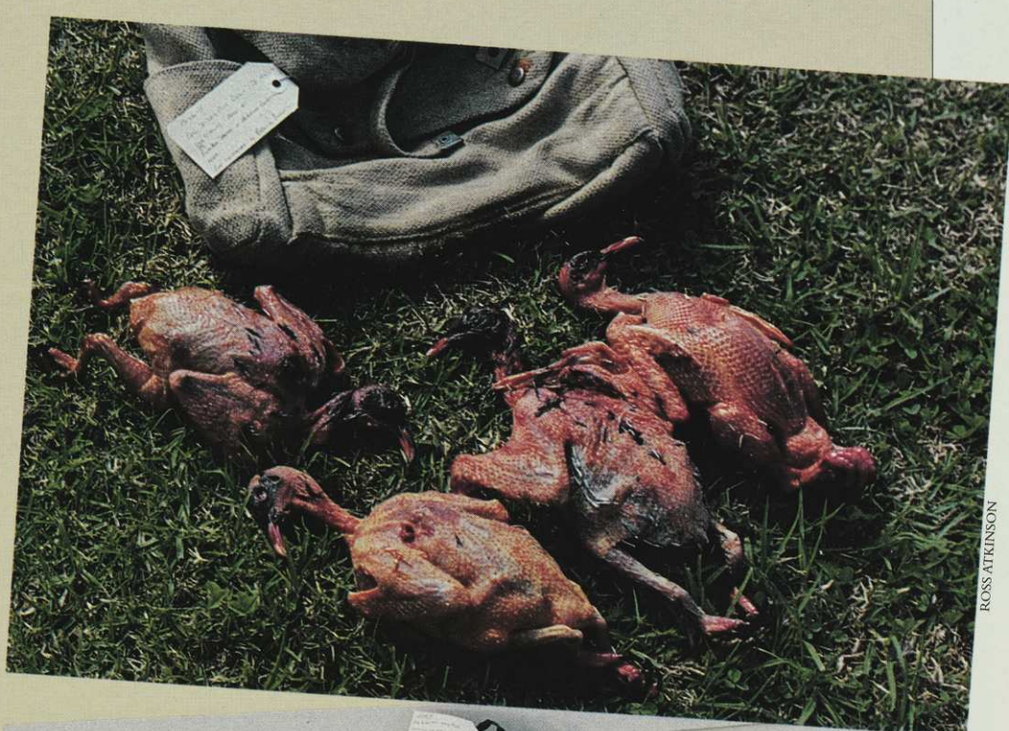
DoC, again for cost reasons, had let the police handle the prosecution and were not represented. None of the above evidence was contradicted.

The judge, noting that the defendants had no money, convicted them and discharged them without penalty.

LAST NOVEMBER 35-year-old Kaitaia panelbeater Raymond Subritzki pleaded guilty to charges of killing and possessing a native pigeon and of using a firearm in a reserve without authority. He argued that he had taken the bird on the wishes of his dying father-in-law, a local kaumatua.

DoC prosecuted this case itself. Kaitaia Field Centre manager Bruce Waddell told the court of the bird's low breeding success and that numbers were declining. He said the department believed the main offenders were outside the network of iwi control.

Judge McKegg, who had earlier asked DoC to meet with Maori representatives to discuss the possibility of a legal take of kereru for cultural purposes, discharged Subritzki without penalty. He said he did not regard the defendant as a criminal. DoC has decided not to appeal the judge's decision, on the grounds that it was unlikely to be successful.



ROSS ATKINSON

Court exhibits from the Gregory case (top) and another kereru killing case (below).

TYREE STUDIO COLLECTION/NELSON PROVINCIAL MUSEUM

Cultural harvest. The shooting of kereru was a tradition – if for a shorter time – amongst pakeha also. The large, visible and slow-moving birds were taken in huge numbers, as shown in this portrait of a hunting party around the turn of the century in Nelson. The species was not fully protected until 1921.

BEFORE THE ARRIVAL of Europeans in New Zealand, the country was predominantly covered with forest, and kereru were abundant. The bird was a traditional and important food source to Maori, who caught it using spears and snares and preserved it in its own fat.

With Europeans came firearms and axes and the beginning of the huge downward trend in kereru populations. Pakeha also saw the bird as an excellent food and there are photographs and stories of hunting parties returning with bags of hundreds of birds.

The felling of the majority of the forest tracts in the country reduced the population to a barely sustainable level. As early as 1864, kereru were the first native birds to be given (partial) protection, and in 1921 the species was fully protected.

In pre-European days it did not matter if a large number of birds were taken from a specific area. The extensive habitat and sizeable populations were such that it was not long before that area was replenished. The iwi of the region attempted to ensure that the species was not over-hunted. They were aware of the need to sustain the food source and the cultural significance of the bird.

Today, however, it is a different story. Those who still take kereru do not use traditional methods. The use of shotguns and, more often, the silenced .22 are common.

Shot through the breast with the silenced .22 rifle. He quietly makes his way some metres off the shooting area and carefully plucks every feather from the kereru, even from the head. The feathers are carefully concealed under a log with debris pushed over them, or with ponga fronds laid on top. As the bird is placed in a plastic bread bag inside the pack, another pigeon is heard arriving noisily back up the ridge. And so it goes on.

Just what is being done to protect this endemic bird from continual predation by hunters? It would appear that while it is an absolutely protected species under the Wildlife Act, the poor kereru is afforded very little "absolute protection" at all.

Kereru are naturally slow breeders. They lay only one egg and not necessarily every year. The period from laying the egg to fledging is an unusually long two and a half months. We now know that the naturally low reproductive rate of kereru has been exacerbated by pressure from introduced predators and competitors such as rats, weasels, stoats, ferrets, possums and cats, and that an average of only one in eight nesting attempts today results in successful fledging.

Northland DoC scientist Dr Ray Pierce is convinced that kereru are not breeding fast enough to replace themselves. While the problem is worst in the north, the only area of the country in which populations don't appear to be in decline is in Marlborough.

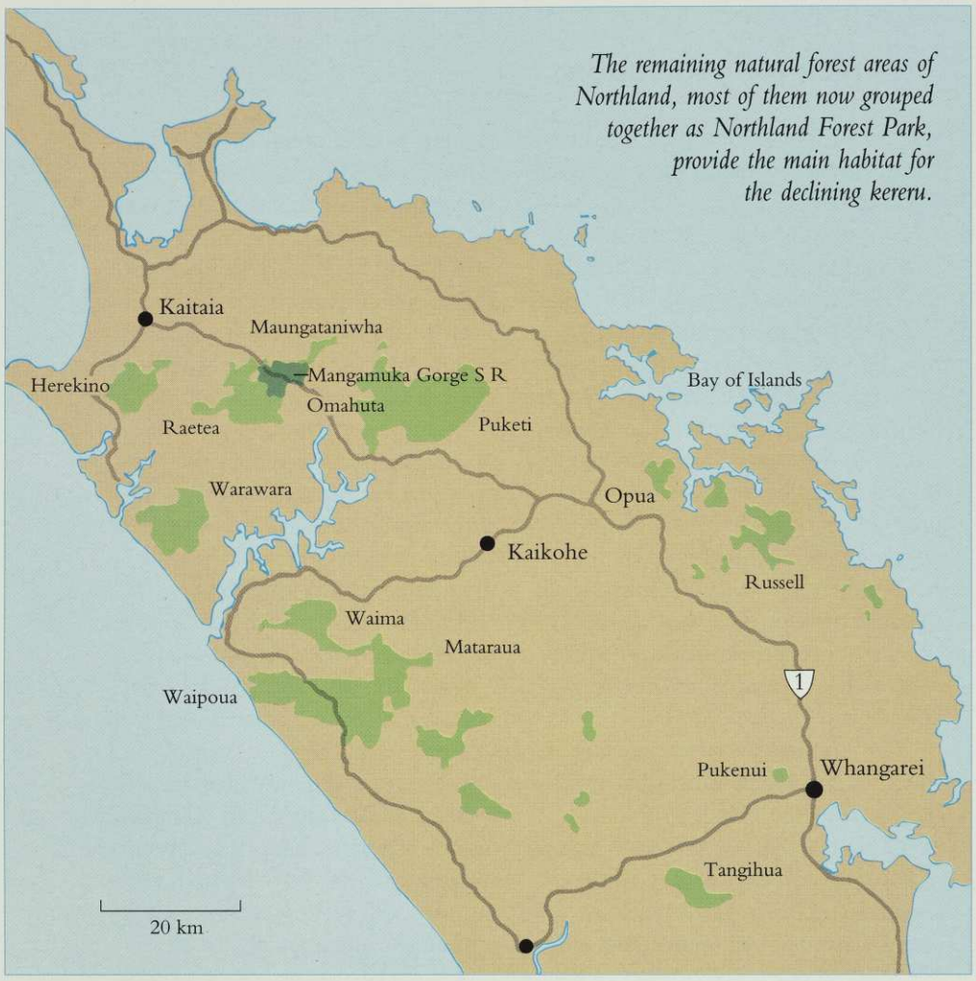
Pierce is at present carefully duplicating a 1979 Wildlife Service survey by recording bird calls at 120 Northland sites. The census is expected to confirm a sharp drop in kereru numbers over the last decade.

Forest and Bird's position

The society's policy on indigenous plants and animals was adopted by the Council in June last year. Among other things it aims to ensure:

- "that all absolutely protected wildlife under the Wildlife Act remains fully protected.
- "that the absolute protection afforded to species under the Wildlife Act is not compromised by the killing of species for cultural, economic or other purposes."

The society's position is in line with that of the International Council for Bird Preservation. ICBP accepts the killing of protected species only where essential for the sustenance of indigenous peoples and where the kill is sustainable.



The remaining natural forest areas of Northland, most of them now grouped together as Northland Forest Park, provide the main habitat for the declining kereru.

In some of the remaining areas of native forest in Northland, hunting of this species seems to take place with little control by the iwi, to the extent that in some forest areas you will see different parties from separate tribal areas all hunting a small population of birds. The results are devastating.

Driving through the beautiful areas of remaining native forest in Northland today, you will be fortunate to observe even one kereru. Even when stopping to enjoy the tranquillity of a picnic area, you will find the forest is noticeably empty of birds.

IF THE HUNTING of kereru is a significant problem in Northland, it is also a very sensitive one.

Let's look at some statistics. In Northland since April 1990, 18 people have been apprehended for taking this absolutely protected species – with a total of 33 birds seized. Twelve of these offenders (involving 22 birds) were caught in just *one* scenic reserve (Mangamuka Gorge).

These figures represent only those hunters who have been detected. The

Law and policy: what DoC is up to

IT IS THE WILDLIFE ACT of 1953 that governs the protection status of all native non-marine wildlife. There is a general presumption in the Act that all native birds, mammals, reptiles and amphibians are absolutely protected throughout New Zealand. But there are some exceptions.

First, with the permission of DoC, wildlife can be killed for conservation purposes (for example animals taken by scientists for genetic studies).

Second, there are seven bird species listed in schedules to the Act which can be taken in certain circumstances. Four (paradise duck, grey duck, shoveler and pukeko) are game birds which can be hunted under particular conditions and during set seasons. Weka can be hunted in the Chatham Islands. And, in an arrangement that pre-dates the Act, two seabird species are open to limited cultural harvest. Sooty shearwater or titi can be harvested on islands off Stewart Island, and the grey-faced petrel can be taken from certain northern islands.

The maximum fine for each offence under the Act is $1,500, but it appears that the courts rarely impose penalties over $800.

DoC argues that it is in a bind on the issue of cultural harvest. While the Wildlife Act obliges it to prosecute any taking of protected species, the Conservation Act, under which the department functions, obliges it to "give effect to the principles of the Treaty of Waitangi". Because of the competing demands of the two Acts, says DoC's director of protected species Janet Owen, the department "needs to balance both cultural perspectives".

So far DoC has no firm articulated policy on cultural harvest of wildlife. A committee, set up over two years ago by the New Zealand Conservation Authority to examine the issue, asked for the department's views but has yet to receive a report.

To date only one request for harvest has been granted by DoC. A proposal by Chatham Island Moriori for a once-off ceremonial harvest of toroa (royal albatross) was approved in 1991 after much internal soul-searching and with strict conditions. Only a maximum of 20 chicks washed up on the beach and who were unlikely to live could be taken.

The Minister of Conservation formally referred the issue of cultural harvest to the Conservation Authority for advice last December. The authority next meets in March.

Meanwhile other requests are currently being considered by DoC. These include a proposal to take flesh-footed shearwater from Karewa Island in the Bay of Plenty, and another for titi or sooty shearwater in the Chathams.

In the case of kereru in Northland where poaching is rife, the department's position has been to resist calls for any harvesting regime. DoC's director-general Bill Mansfield says that the department "remains opposed to any harvest where a species is under threat". But on the other hand, it has been less than vigorous, at least until recently, in enforcing the law and in providing expert witnesses to inform judges on the vulnerable status of the species.

There are welcome signs, however, that as a result of the publicity surrounding recent court cases in Northland DoC is toughening its stand.

Ian Close

A plea for protection

"THE DESIRE to harvest indigenous species conflicts with the widely-held conservation ethic which is reflected in New Zealand's protected species legislation.

Essentially, the ethic is centred on valuing ecosystems in a non-hierarchical way. In this sense, it does not place humans above everything else. It recognises an intrinsic value in each component of ecological communities. It is central to this point of view that each component has a right to exist for its own sake, in this case as an element of New Zealand's remarkable natural heritage. This right is derived from the contribution made by each to the stability and diversity of its community.

From the notion of intrinsic worth have arisen strong cultural and spiritual associations. Together with ecological values, these establish in principle that the right to exist overrides the human right to harvest. In New Zealand, this is especially so for indigenous species, since these are more closely identified with New Zealanders' maturing perceptions of their heritage. These cultural and spiritual values are as valid as those of the tangata whenua although they are not so clearly associated with any particular ethnic group.

The protection view sees individual species in a context which is quite literally a global one. This perspective has grown in both stature and acceptance internationally as modern science has revealed more of the biology and vulnerability of these species, and of the fragility of life systems on the planet. The need to reduce levels of risk to these systems is felt acutely.

Proponents of protection acknowledge the existence of harvest traditions and accept that Waitangi Tribunal rulings on claims of right may be well-founded. Considered in the context of New Zealand's natural heritage today, however, the *appropriateness* of the harvest tradition is questioned. It is clear that too large a proportion of New Zealand's indigenous species is threatened by human-induced change, and almost all of those on which harvest applications are focused are small remnants of a once rich and more diverse fauna.

The importance of recovering as much of this fauna as possible is fundamental to the protection view. Renewed human exploitation is seen as fraught with risk, a view underscored by deep scepticism about stated guarantees of security for the harvested species. Conservation agencies have been unable to cope with existing threats to species, for instance. It is not accepted that harvest could improve this situation.

The reinstatement of harvest practices represents a fundamental retreat from the healing philosophy of absolute protection.

The fear is held that sanction for the . . . harvest (of indigenous species) will increase harvest expectations and prompt communities to apply for a more extensive range of species. This may result in the need to research and monitor a steadily increasing number of harvested species and is seen as inevitably drawing scarce resources away from recovery programmes for threatened and endangered species.

Existing harvests of indigenous species are not automatically accepted as precedents for extending harvest to others. It is argued instead that these existing harvests are now inconsistent with good conservation principle and practice, especially where they exploit species which have not benefited from modification of the New Zealand environment or may be threatened by exploitation.

Expert international opinion, as articulated by the International Council for Bird Preservation, supports New Zealand's present species legislation. Though not opposed in principle to indigenous harvest of species, ICBP found that Chatham Islands Maori and Moriori claims to harvest toroa [royal albatross], for instance, did not meet minimum criteria for acceptance:

- the tangata whenua are not truly dependent on the harvest for their livelihood;
- reliable assessments of sustainable harvest would be extremely difficult to obtain because of the scale of the research required.

The department's desire to stop illegal harvesting by allowing controlled take was considered to be unfounded: in ICBP opinion, controlled harvesting usually facilitates illegal take. "

– from an internal DoC discussion paper on the harvest of native birds, 1992. The paper also contained an alternative "harvest perspective".

number that go about their business unchecked is not known. Nor is it known what the effect is of this hunting pressure on the already unstable breeding and static population of an area such as Mangamuka.

Mangamuka and the adjoining Raetea conservation area are now fortunate enough to be policed by a predominantly voluntary group of enforcement officers and DoC staff with minimal financial resources.

What is happening in a forest such as the Warawara where there is no such active protection? What of the Waima, where pig hunters tell of finding piles of pigeon feathers that come up to their knees? What of the Puketi where cut horse tracks lead to camps with their hitching rails set up, and the miro trees cleared of surrounding undergrowth? What of the rumours from local hotels of kereru being sold or raffled for a hundred dollars apiece?

In the Mangamuka example, if you were to enter the forest prior to 1992 on a fine day during the pigeon "season" (April through to late June), you would have been sure to find evidence of hunting. All the major tracks were well trodden with fresh footprints. Good miro stands with piles of pigeon feathers about. The odd camp site littered with rubbish, spent shotgun and .22 rounds. And, if you knew what to listen for, you would have heard the occasional shot.

Mangamuka in mid-June 1992 is now a different story. The tracks are no longer well trodden, the piles of feathers have all but disappeared, and the camps are no longer used. The occasional hunter is still trying his luck but he is now very wary. At the Easter holiday break, a time when many out-of-town hunters normally come home to try their luck, Mangamuka was quiet. The word around was that going for a bird was too risky.

Mangamuka is now an exception to the norm in hunting pressure, although the kereru population has yet to return to an acceptable level. This result has been achieved by old-fashioned enforcement procedures.

IF ENFORCEMENT and compliance can be effective in this instance, why don't we see more of it?

It may be that the public do not perceive the species to be actually under threat. Kereru being large and noisy birds often seem more numerous than they really are. Without public pressure it is perhaps understandable that a government department with considerable budgetary problems would give the difficult and culturally sensitive responsibility for enforcement a low priority.

Since its formation in 1987, the Department of Conservation has had a continual financial struggle to maintain and implement its statutory obligations. Despite these constraints, some threatened species such as yellow-eyed penguin, kakapo and kiwi now have the benefits of corporate sponsorship to assist DoC in well-publicised campaigns for their survival. How far should a species be allowed to decline before a rescue party comes to its aid?

There is a real need for an education and public relations programme to create an awareness of the problems and potential disaster facing the kereru in the 1990s. Enforcement alone will not solve the problems. Kereru poachers must be shown that not only are they wrong, but why the species is protected.

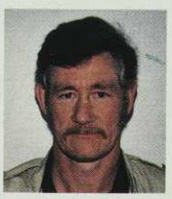
ROSS ATKINSON

Mangamuka Gorge Scenic Reserve. Until recently the scene of large scale kereru killing, it is now effectively controlled by volunteer rangers and local DoC staff.

New Zealanders need to be made aware of just what is happening to the kereru before it too becomes endangered.

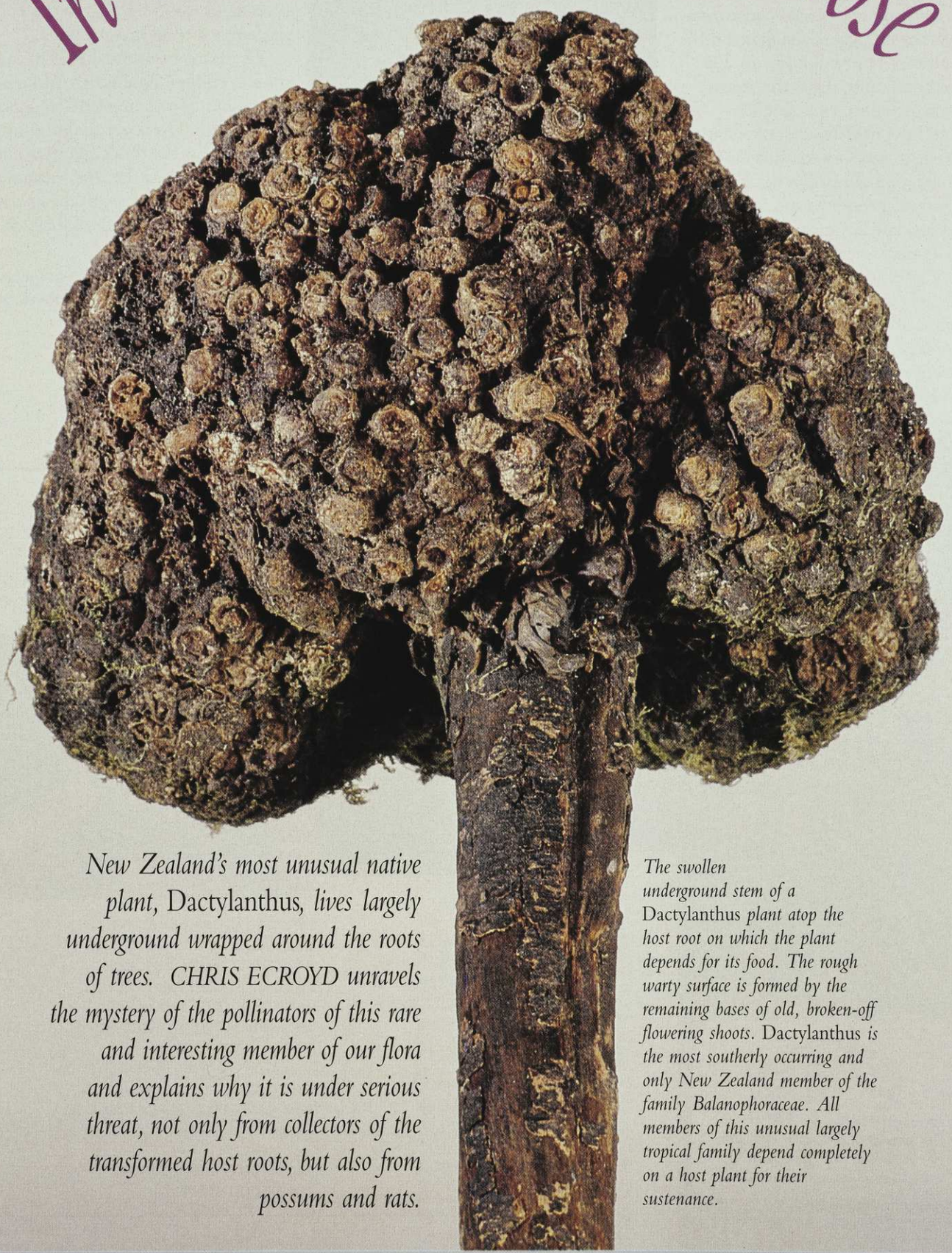
The kereru is now one of the few animals capable of ensuring the propagation of such trees as puriri, taraire, miro, and karaka. The decline of kereru in Northland is also a threat to the continuing survival of all those species.

There has been much said of the continuing cultural significance of kereru and the wishes of certain Maori in continuing to kill them. However the most important question that all conservationists need to address is that whether the cultural needs of some people outweigh the ecological needs of the bird and the forests. ❖



Ross Atkinson is a volunteer senior wildlife ranger in Northland.

In search of the wood rose



New Zealand's most unusual native plant, Dactylanthus, *lives largely underground wrapped around the roots of trees. CHRIS ECROYD unravels the mystery of the pollinators of this rare and interesting member of our flora and explains why it is under serious threat, not only from collectors of the transformed host roots, but also from possums and rats.*

The swollen underground stem of a Dactylanthus *plant atop the host root on which the plant depends for its food. The rough warty surface is formed by the remaining bases of old, broken-off flowering shoots.* Dactylanthus *is the most southerly occurring and only New Zealand member of the family Balanophoraceae. All members of this unusual largely tropical family depend completely on a host plant for their sustenance.*

DAVID BLAKE/FRI

WOOD ROSE, flower of Hades, pua o te reinga. Whatever name you use, *Dactylanthus taylorii* is New Zealand's only completely parasitic flowering plant.

Strangely devoid of roots and obvious leaves, *Dactylanthus* consists mainly of a swollen underground stem up to 50 cm wide and looking like a large ugly warty potato. The tiny flowers are usually in dull purplish to grey-brown clusters, and although they give the plant little claim to beauty, the fluted "wooden roses" it moulds out of the roots of its hosts are a different story. These beautiful objects have long been prized by collectors, and this has added to the pressure on a rare and interesting organism.

Dactylanthus does not obtain its food through photosynthesis like most plants, but lives on nutrients from the roots of about 30 species of native hardwood trees and shrubs. Mahoe, lancewood, kohuhu, wineberry, broadleaf, karamu and putaputaweta are common hosts, though it is often difficult to be sure of the host as the tree trunk may be some distance from the infected root and may not necessarily be the closest tree. Unless there are a lot of them, *Dactylanthus* plants are unlikely to affect the health of the host.

Growing close together and completely underground, *Dactylanthus* plants are extremely difficult to identify and count without digging them up. This makes it impossible to estimate accurately the number of plants in any one area, but we know that their distribution has shrunk this century and today there are likely to be only a few thousand in existence.

Habitat loss from land clearance, human destruction of plants to obtain the wood roses, and browsing of the flowers by introduced animals have combined to place the species under serious threat. It is in the "vulnerable" category in current lists of threatened plants in New Zealand.

In 1985 some live plants were found at the base of a kohuhu tree in native forest on the Mamaku Plateau, not far from Rotorua. Knowing how rare the plant was, and how very few photographs of it existed, I was keen to see and photograph the flowers. Returning to the site the next flowering season, I could find only broken flower stalks. The following season was the same but this time I inspected the broken flower stalks closely and found that the tips were consistently eaten out. An animal was very thoroughly destroying all the flowers.

In February 1989 I covered the plants with wire netting exclosures and two weeks later there was a flourishing patch of *Dactylanthus* flowers under the netting. Wild pigs were regularly feeding in this area and one plant had been moved by a pig rooting too close to it, but there was never any evidence to suggest that they had been attracted to the *Dactylanthus* plants or flowers. Pellets, browsed flowers and scratchings on the ground, however, suggested possums – a theory proved correct when the stomach contents of captured possums were found to include the remains of the sweet asparagus-like flowering shoots of *Dactylanthus* from outside the exclosures.

The flowering season lasts about three months. At Mamaku it began at the end of February, peaking in late March to early April, and was finished by late May. *Dactylanthus* plants are unisexual, which means they carry either male or female flowers in clusters, known as inflorescences, on separate plants. A large mature plant can easily produce 40 inflorescences, each containing about 20 finger-like organs called spadices, surrounded by greatly modified "leaves". On each of these spadices there are at least 50 tiny simple flowers. Thus one mature female plant

CHRIS ECROYD/NZFRI

These three flower clusters, showing hundreds of very small male flowers laden with white pollen, will have a pool of nectar forming inside the protecting petal-like leaves.

can produce 40,000 seeds each season if all the flowers are pollinated.

But with completely separate male and female plants, not necessarily growing close together, *Dactylanthus* pollen must somehow be carried from the male flowers to the female flowers. It was essential to work out who or what was responsible for pollination and to make sure that they were not excluded by the possum exclosures.

At first insects were thought to be the most likely pollinators. Several different traps were used to find out exactly which insects were visiting the flowers. The only ones visiting regularly and in large numbers were the German and common wasps. The "host of small flies" around the flowers, referred to in earlier accounts of this species, was never seen.

Another aspect of the mystery was the pool of sweet tasting nectar noticed inside each inflorescence. The amounts seemed particularly large for a plant supposedly pollinated by small insects. Each inflorescence contained up to 1.5 ml of nectar, a lot for any type of flower. Furthermore, each male inflorescence lasted for 10-14 days, over which time it produced an incredible 5 ml of nectar. Nectar was produced constantly throughout 24 hours, giving no clue as to whether the plant was likely to attract a nocturnal or day-time pollinator.

WHEN A PLANT produces large quantities of nectar it usually means it has large pollinators. But what large native animal could be attracted to such dull coloured flowers, smelling like fermented corn and found only on the ground? Birds are generally attracted by brightly coloured flowers, rather than by smell, and although bright red and yellow *Dactylanthus* inflorescences have been found, these are rare freaks. Large insects such as weta are not known to feed on nectar.

This seemed to leave bats, lizards and tuatara – our only other large native land animals. The bat theory was strongly supported by a record of *Dactylanthus* pollen in guano from short-tailed bats in Northland's Omahuta Forest. This rare bat feeds on nectar and fruit as well as insects and, having evolved in the absence of terrestrial mammalian predators, is well adapted to feeding on the ground (see *Forest & Bird* August 1992).

Little Barrier Island was the only site where short-tailed bats and *Dactylanthus* were known to co-exist but *Dactylanthus* had only been found there twice in the last 40 years.

Then in 1991 came a report that *Dactylanthus* had been found on Little Barrier. On a hastily organised trip I managed to find only two live plants and numerous dead ones in the general area suggested. The dead plants were the first indication that this island was not the safe haven for *Dactylanthus* that it was thought to be.

Another trip to Little Barrier was planned to resolve the pollination question. A special video camera was borrowed, with infra-red lighting for nocturnal monitoring and a time-lapse video recorder which could monitor a site for up to six days without human interference. The equipment was tried out for a night at Pureora where a ship-rat was filmed visiting, but not harming, female *Dactylanthus* flowers.

With some difficulty the heavy equipment was taken to Little Barrier Island in March last year. Only eleven plants were found, and only unopened buds. After a week of monitoring, the video caught a kiore or Polynesian rat chewing and damaging the nearly open buds. All the flowers produced from Little Barrier plants that season suffered this fate and there was no sign of bats near the plants.

THE BREAKTHROUGH occured when the video equipment was subsequently set up in an area of magnificent native forest at Pureora. The tape captured a short-tailed bat fluttering onto a tree trunk,

JOHN BARRAN/NZFRI

A typical dull-coloured male Dactylanthus *flower cluster just opening and showing off a mass of minute male flowers heavy with white pollen and surrounded by greyish "petals". These flower clusters, or inflorescences, are the only part of the plant that emerges above the ground.*

CHRIS ECROYD/NZFRI

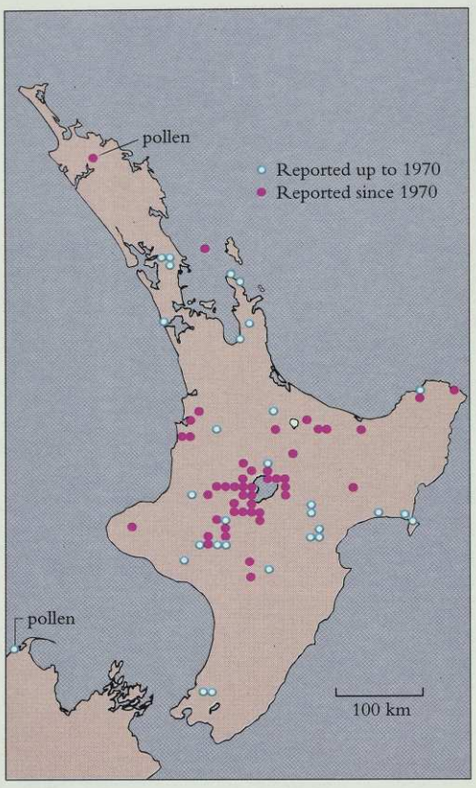
A fully open female Dactylanthus *inflorescence with brownish petal-like leaves surrounding hundreds of minute dark-purplish female flowers. A pool of nectar also collects inside these flower clusters.*

climbing down to the ground, crawling through the netting exclosure to the *Dactylanthus* flowers and pushing its head into the flower. Upon finishing this feast of nectar the bat flew up through the 50-mm mesh netting without hesitation. Amazingly this bat visited the same flowers 40 times that night from 8pm until nearly dawn.

Over the next four weeks we made further visits to this site and set up a 35-mm camera and flashlight alongside the video camera. From a comfortable spot nearby we used the video as a closed circuit television system, and remotely triggered the camera and flash when the bat was in position for a photograph. Although frightened by the flash, the bat kept quickly returning to the site.

These photographs and the video tape provided the proof that *Dactylanthus* is indeed a bat-pollinated species.

AN EXCITING RESULT of this discovery is the opportunity now to use *Dactylanthus* flowers, or an artificial lure imitating the nectar, to help locate short-tailed bats. The bats are completely nocturnal, extremely hard to locate and very difficult animals to study. We still do not know, for example, whether they are killed during operations to control possums using 1080 poison.



Dactylanthus *was once widely distributed throughout the North Island and fossil pollen indicates that it also used to occur in the South Island. Now, however, it is known mainly from small areas of secondary forest in the centre of the North Island between East Cape and Wanganui, and on Little Barrier Island. It has not been seen in Northland, Coromandel or near Wellington for over 60 years.*

Dactylanthus is the only plant in the world producing flowers at ground level that is known to be bat-pollinated. This special relationship is not so surprising because the short-tailed bat feeds on the ground more than any other bat species and it has developed from its ancient Gondwanan ancestors alongside *Dactylanthus* over millions of years. The remains of extinct larger species of short-tailed bat have been found in ancient Maori ovens and these larger bats may also have been pollinators of the *Dactylanthus* flowers.

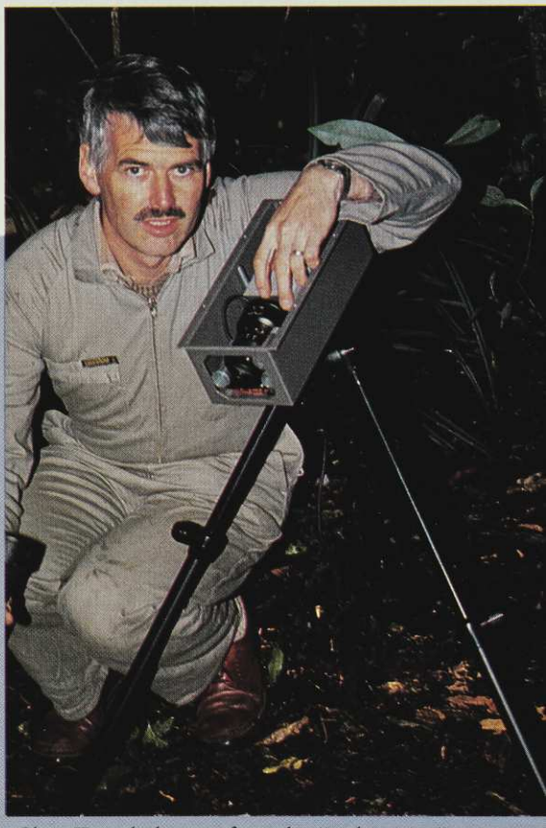
Unfortunately, instead of bats these flowers are now attracting introduced mammals such as possums and Polynesian rats which are destroying the flowers and preventing seed production.

Frequently thought to be "just a fungus" or disease, *Dactylanthus* is now recognised as being a very distinctive member of our native flora. Not only a rare and interesting plant in its own right, it also has great ecological significance by producing nectar which contains ingredients important for the diet of the short-tailed bat.

A limited number of plants can be protected from possums by a very simple wire netting exclosure with the mesh coarse enough to allow bats through. Possum control using traps or poison is expensive and if small areas are involved,

CHRIS ECROYD/NZFRI

Possums are the main, but not the only, threat to the future of Dactylanthus. *A possum, lured by the strong scent, has eaten all the flowers leaving only the leaves. Possums usually break off the inflorescences at the bud stage, often before they fully emerge above ground.*



ERIC ANDERSON

Chris Ecroyd about to focus the "night-vision" video camera which was used to monitor short-tailed bats, rats, and possums visiting Dactylanthus *flowers. The equipment needed heavy 12-volt batteries, and a strong back to carry them.*

CHRIS ECROYD/NZFRI

Scent rather than colour is the main attractant for Dactylanthus *pollinators and brightly coloured flower clusters occur very rarely. These red and yellow male inflorescences are produced each year at Mamaku by the same plants.*

rapid reinvasion of the site will be a problem.

Eradicating kiore from Little Barrier Island would help ensure the survival of that *Dactylanthus* population. The evidence suggests that ship-rats, on the other hand, do not destroy the flowers and may even help in pollination – female flowers, for example, visited by these rats have set abundant seed. Therefore introducing *Dactylanthus* to another island free of kiore and possums but with ship-rats present is a now a possibility due to a recent breakthrough in cultivation.

Dactylanthus seed requires chemical stimulation from a host root to germinate and if the seedling is unable to attach itself after growing only a millimetre or two towards a host root, it will exhaust its food reserves and die. Now for the first time seeds have been germinated by sowing them adjacent to the roots of known host plants and it is thus possible to transfer the *Dactylanthus* to possum-free sites. Unfortunately, moving short-tailed bats to a new location is not currently a practical option.

Dactylanthus is a most unusual plant and is worthy of extra effort to ensure its survival. New Zealand's short-tailed bat has features which make it distinctive among the 1,000 or so bat species in the world and it is placed in a family of its own. It is one of our two surviving native land mammals and in recent years has been seen in very few locations. The survival of these two closely entwined but increasingly rare species presents a challenge to us all and will ultimately depend on maintaining suitable habitats free from the effects of introduced mammals such as possums and rats.

Members of Forest and Bird can assist by reporting any sightings of the bats and of *Dactylanthus* to DoC and reporting anyone digging up these plants from reserves. ❖

ERIC ANDERSON, CHRIS ECROYD/NZFRI

A short-tailed bat visiting Dactylanthus *flowers at Pureora to feed on the nectar. This bat visited these flowers 40 times in one evening staying on average over a minute each time.*

Chris Ecroyd is a scientist with a special interest in rare and endangered plants and is curator of the New Zealand Forest Research Institute herbarium. He is on the Bay of Plenty Conservation Board and a past-president of the Rotorua branch of Forest and Bird.

RETURNING THE WATERS TO THE WHAKAPAPA

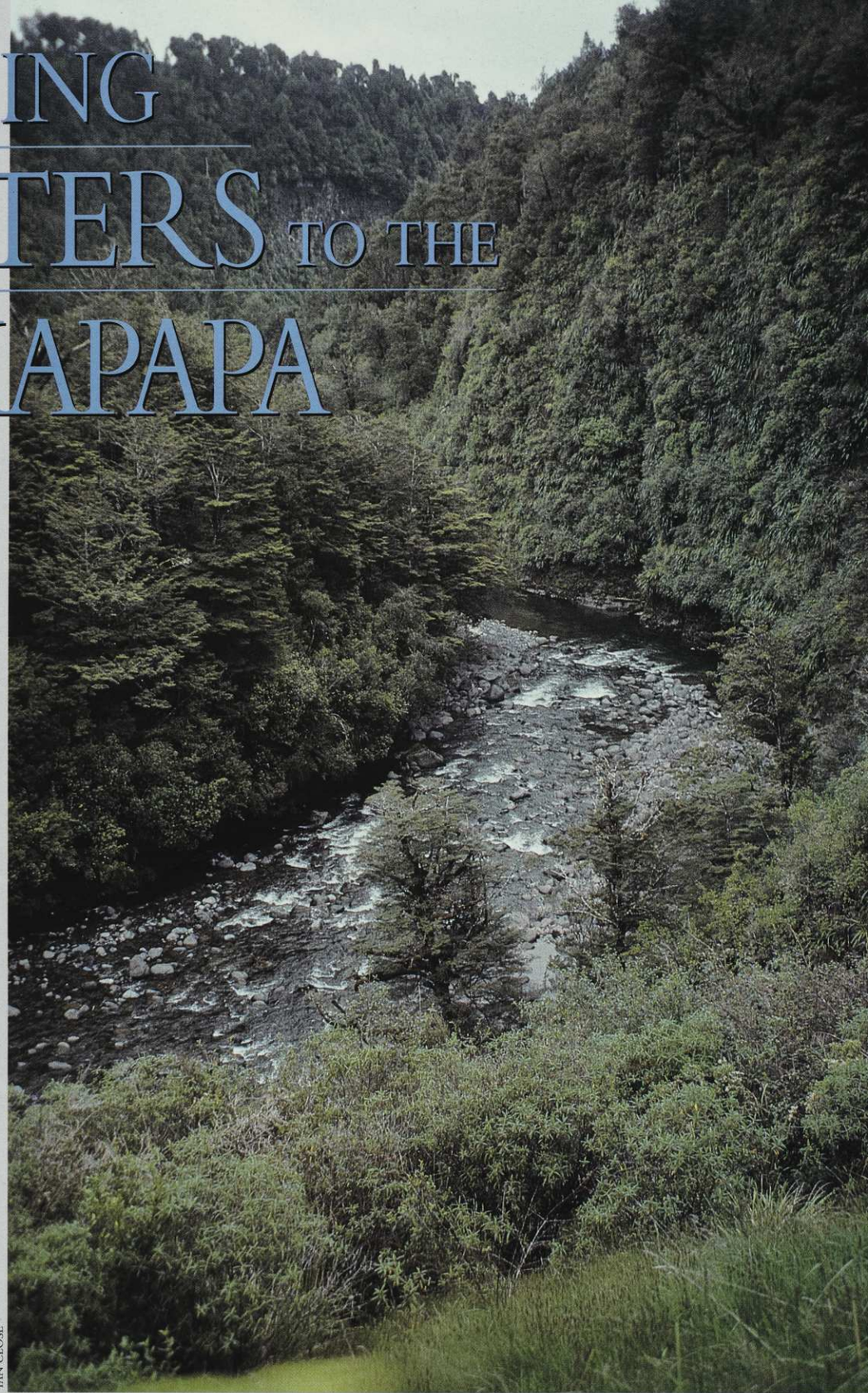
Five years ago a coalition of King Country residents took on the huge New Zealand electricity machine in defence of the mountain rivers of the North Island volcanic plateau. IAN CLOSE visits the Whakapapa River and attends the final celebratory meeting of the coalition.

ON A WET FRIDAY afternoon in early December, a small group of people arrive for a meeting in the Owhango Public Hall beside State Highway 4. In the gentle King Country rain they have come to formally wind-up the Wanganui River Flows Coalition.

The fight has seemingly been won. In June, the High Court dismissed Electricorp's appeal against the Planning Tribunal's decision to return partial flows to the Whakapapa River. In September, the minimum flow for the Whakapapa set by the tribunal's Judge Sheppard had been instituted, and in December, the tribunal's decision on the higher summer flow on the Whanganui would take effect.

A few kilometres from the hall is a small bridge over the Whakapapa, once one of the finest mountain rivers in the country and the focus of much of the coalition's campaign. It was a river celebrated by poets and painters. For Greg Kelly in 1967 it was:

> ". . . an introduction to glory. The highland air of the mountain country, the sweet smell of rich forest with its groves of splendid totara trees, the dark blue bluffs below which rare blue ducks sported fearlessly, the white stillness of high pumice banks under which trout pools curled and gurgled. Where birdlife was orchestral in dawn light. Where in winter, crisp white morning reflected the clear warm sunlight."



IAN CLOSE

The Whakapapa, once a fine mountain river and still a beautiful gorge. Will the increased flows be enough to increase the habitat for blue duck?

But within a few years the Whakapapa's waters had been diverted underground for power generation. For two decades only a derisory trickle, less than five percent of the river's natural flow, ran from the top of Electricorp's intake shaft to the confluence with the Whanganui 55 kilometres downstream at Kakahi. The significant population of blue duck for whom the river had been home was now reduced to a remnant of its pre-1972 numbers.

The other upper tributaries of the Whanganui were similarly de-watered. The result was the longest navigable river in New Zealand – over 200 kilometres to its mouth – with the life choked out of it. Silt has built up, and trout fishing, canoeing and rafting have all suffered. In drier periods it has been described as "quite rotten" with decaying algae.

The fight for the Whakapapa and the other headwaters of the Whanganui River had, of course, been going far longer than five years. In started in 1964 after news of the proposed Tongariro

Power Development had leaked out and Peter McIntyre, artist and fisherman, penned an eloquent plea to *The Evening Post*. "The Philistine with his bulldozer is on the rampage in New Zealand," he wrote.

Even in 1964, in an era when development was largely unquestioned and environmental impact assessment unheard of, the arrogance and greed of the Electricity Department in taking nearly all the water from these rivers aroused opposition and a sense of great unfairness.

FOR KEITH CHAPPLE, chairperson and driving force of the coalition (see *Forest & Bird* November 1990), it has been a long struggle. For much of 1989 and 1990 he had to take leave from his job at Taumarunui District Hospital to attend the mammoth Planning Tribunal hearing in Wellington.

As the rain pours down on the roof of the hall in Owhango, Chapple gives a brief summary of the campaign. He notes that the meeting to set up the coalition five years earlier was held in the same hall, "even the chairs and tables arranged the same way".

In 1987 the level of the minimum flow of the Whanganui, set four years previously, was soon to come up for renewal. The Wanganui River Flows Coalition – 35 groups including such unlikely environmentalists as the King Country Federated Farmers, the local Young Nationals and the Wanganui Chamber of Commerce – came together to argue that the water should be shared. "The coalition at no stage argued that the Tongariro Power Development, or indeed any part of it, should be scrapped," Chapple explains. "But 1987 was the celebration of the centenary of Tongariro National Park, our first national park, and yet just across the road, all the rivers coming out of the park disappeared into frigging holes in the ground!"

KEITH CHAPPLE

The Whanganui River in the Whanganui National Park. The loss of its headwaters has damaged the river and the life that depends on it along its whole length.

The struggle to cut back Electricorp's share of the water took the coalition through two major tribunal hearings and to the High Court.

Tom Wells takes the floor. For the former college headmaster and one of Chapple's chief aides and strategists, it was a great victory for the local community. "The whole campaign was an immense learning experience," he says. "It is one of the very special delights and privileges of life to work with kindred spirits on an issue that really matters. And this one did." He pays tribute to Chapple who was "inspiring to work alongside and to see at work".

IAN CLOSE

Some of the key players in the campaign to restore water to the mountain rivers. Standing on Owhango bridge: Larry Rogers, Tom Wells, Bron Hunt (DoC), Tich Todd, Keith Chapple, Ken Hunt (DoC), Brenda Chapple and John Ombler (DoC).

THE COALITION, of course, didn't do all the work by themselves. In 1988 when it looked as though Electricorp was going to stretch the dispute out for as long as they could and test the resources of the conservation groups, the coalition had thrown down the challenge to the recently formed Department of Conservation. The department was asked to take up the cause of the rivers and its wildlife and join the coalition and the local Maori trust board

What is the Tongariro Power Development?

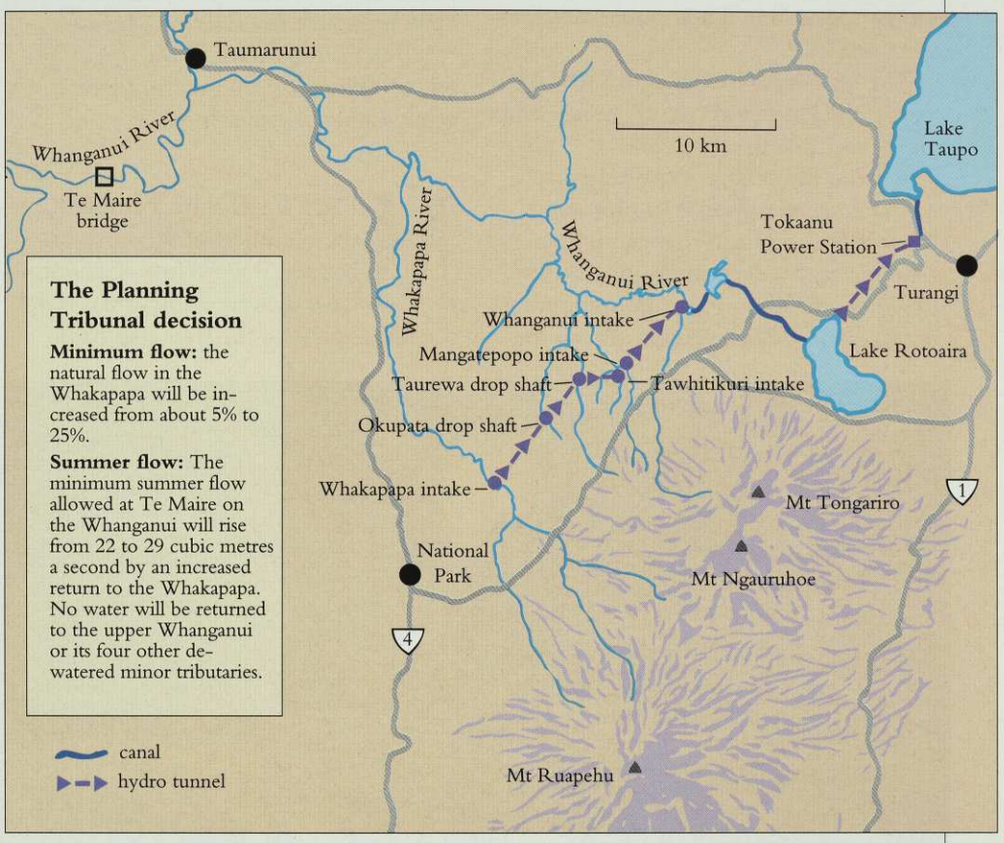
THE IDEA of diverting some of the rivers running off the central North Island mountains for electricity had been kicked around since the 1930s, but was only given serious consideration during the power shortages of the 1950s.

The scheme, which was later to be slated by Treasury as "one of New Zealand's most misguided engineering projects", was authorised by a government decision in 1958. No consideration was given in the planning stage to issues of soil and water conservation, fisheries, recreation, tourism or aesthetics, let alone river ecology. No local authorities were consulted.

Built in two main stages from 1967 – known respectively as the Western and Eastern Diversions – the scheme diverted water from all the four major catchments flowing from the volcanic plateau, affecting over 60 rivers and streams.

In all, the scheme provides 30 percent of the North Island's hydro capacity or six percent of New Zealand's total electricity generating capacity.

The Western Diversion, which covers the Whanganui and its tributaries, accounts for slightly less than half of this. Thus the water lost by Electricorp in the final Whanganui flows decision amounts to only about half a percent of the country's generating capacity.



The Western Diversion of the Tongariro Power Development showing the decapitation of the Whanganui headwaters. Until the implementation of the Planning Tribunal's decision in June last year, ninety-seven percent of these headwaters were diverted by a system of drop shafts and intake gates along a large mainly-underground tunnel to the Tokaanu Power Station and into Lake Taupo.

in opposing Electricorp's application for continued near-monopoly of the Whanganui headwaters.

John Ombler, the local DoC conservator at the time, was put in an interesting position. The new department had been set up, with the high hopes of all conservationists, under legislation that gave it a role as an "advocate for conservation".

Ombler knew that environmental groups had great expectations of the department using its financial, technical and scientific resources to take up this, as yet untried, advocacy role. Here was a ready-made case where there were significant conservation values at stake and under-resourced conservationists attempting to maintain the struggle against a corporate giant.

"The department was entering untested waters," says Ombler. "The challenge had been laid down, and it was the sort of challenge that if not taken up, would have been very damaging for the new department. At first we chose some rather careful words in saying we'd do some research to determine the exact effect of the reduced flows and the changes necessary to remedy the negative effects. At the time I did wonder what exactly I was getting us into.

"DoC of course, ended up with a large team working on the case, some in the department, some consultants, some volunteers. The interesting thing we were finding as a department was just how far we could push, how much the department was following the public groundswell of opposition and how much it could lead."

KEITH CHAPPLE

One way to use a river. The headwaters of the Whanganui system all wrapped up and headed for Tokaanu Power Station.

NOW THAT IT IS OVER, what has come out of the struggle for the rivers?

First, the decision has set a precedent for any future conflicts over water rights in New Zealand. It can be safely said that never again will any river be totally de-watered. Compromises may be made between competing parties but, as Chapple says, it is now stamped into the New Zealand psyche that rivers actually count, and that their natural values are just as important as their potential megawats.

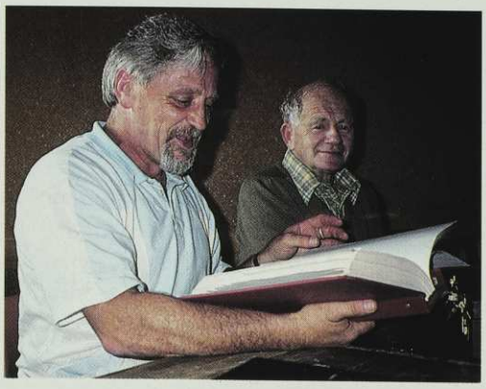
A second lesson is that you need significant resources to contest the actions of a huge state-owned enterprise such as Electricorp. The coalition spent about $100,000 on the case, two-thirds of which came from Forest and Bird. But this was small beer compared to the $1 million that DoC estimates it spent and the minimum of $7 million spent by Electricorp. Electricorp, of course, was the only party not disadvantaged by spending money. The corporation stood to lose $35 million a year from an unfa-

vourable decision and the longer the case went on the longer its preferred 1983 regime continued.

Thirdly it showed how, despite the odds, a group of local activists can take on a mighty corporation. It was the first time that the electricity industry in this country had lost a major battle. In many ways, says Chapple, Electricorp was the perfect villain. "They never did anything right. Every time they opened their mouth they put their foot in it. Their public relations were awful."

The case drew attention to issues of energy efficiency and conservation – mere empty words before the mid 80s. They now mean something and Electricorp's only real future option is to promote them. Its loss on the Whanganui has sent it the message that it cannot rely on its present water allocation. And under the new Resource Management Act all the corporation's hydro as well as thermal operations will be subject to more rigorous environmental scrutiny.

For DoC's John Ombler one of the major lessons of the whole campaign was in showing how DoC's advocacy role is not enough in isolation. DoC needs to work in tandem with environmental groups, so that the department is not seen as getting too far ahead of public opinion. "Without the coalition, DoC may not have been able to go so far," he says. "And that's important in the ongoing relationship between environmental groups and the department".



IAN CLOSE

The final meeting of the Wanganui River Flows Coalition. Keith Chapple (left) and Tom Wells revisit some of Electricorp's evidence.

MEANWHILE back in Owhango, the members of the now-disbanded River Flows Coalition have moved along to the hotel. Reminiscences of the five-year battle flow as freely as the Waikato bitter. Tales of how one witness was cross-examined by Electricorp lawyers for three and a half days, how a mole in Electricorp ("we never found out who") provided Chapple with internal documents showing how the corporation would try and split the coalition, the shock at seeing the size of the lever-arched files of Electricorp evidence, and how the tribunal conveniently went into recess for two weeks so that Chapple could attend the birth of his son.

At the Chapple homestead at Kakahi the stories continue into the early morning. The Whakapapa, in full flow from the rain, roars away below, as it has down the centuries. There are further battles for this river and its wildlife in the years ahead. Is it too much to hope that one day it will flow free again? ❖

Ian Close is the editor of Forest & Bird.

KEITH CHAPPLE

The Mangatepopo River. Another tributary of the Whanganui and completely de-watered.

A brief chronology

1958
Order-in-Council signed by the government giving the NZ Electricity Department authority for the Tongariro Power Diversion. No public discussion or consultation.

1964
Peter McIntyre launches his "Hands off Tongariro River" petition.

1967-72
Construction of the western section of the scheme. The scheme diverts water by a system of intakes, tunnels and canals from six headwater streams of the Whanganui River, effectively removing all their flow.

1983
After pressure from recreational users, the National Water and Soil Conservation Authority sets a minimum flow at Te Maire (17 kilometres downstream from Taumarunui) of 22 cubic metres a second in summer (not enough to get your shorts wet) and 16 cubic metres a second (about knee deep) at other times. In effect Electricorp loses only three percent of the total flow. This decision is to expire in 1988.

October 1987
Formation of the Wanganui River Flows Coalition at the instigation of the King Country Branch of Forest and Bird. The 35 organisations in the coalition argue for a more equitable sharing of the available water. The coalition's first act is to organise petitions to force Electricorp to apply for a water right.

March 1988
Electricorp bows to pressure and agrees to apply for water right. Rangitikei-Wanganui Catchment Board sets up tribunal in Taumarunui to review the 1983 minimum-flow regime.

October 1988
Catchment Board tribunal rules that the upper Whanganui be restored to full natural flow. Increased natural flow (33% in winter; 66% in summer) to Whakapapa. Overall, Electricorp's share of the water reduced from 97% to 69%. Electricorp announces it will appeal. The 1983 regime continues.

September 1989 – March 1990
The Planning Tribunal hears appeals by Electricorp (wanting *more* diversion) and

The future of the rivers

WHILE THE COALITION and other environmental groups accepted the Planning Tribunal's decision as a reasonable compromise at the time, it was considerably less than they had originally wanted.

"We argued for a proportional flow," says Chapple. "We said that 30 percent was the maximum that could be taken without damaging the ecology of the river, that this proportion could be taken at all time, but that 70 percent should be left – floods, droughts and whatever. This way the natural variation would be maintained."

DoC had pushed for a similar arrangement whereby below a certain minimum level all water removal would cease but that above that level the water should be split – half for the river, half for power generation. That would ensure an adequate base flow and some semblance of natural fluctuation.

It was an argument that wasn't accepted by the Planning Tribunal.

Richard Heerdegen, a hydrologist from Massey University and a DoC witness at the tribunal hearing, has serious doubts whether the new flow regime will markedly improve the life of the river. "The river is still a regulated one," he says. "And with a regulated river the natural rhythm of the flows is lost. Regulation disrupts the life cycles of the many animals dependent on the river and allows for much greater growth of algae and other slimy deposits. The fine sediments are able to settle between the rocks and gravels so that they are more likely to cement in place."

Heerdegen believes that the new regime will provide some improvement in the natural rhythm of flows. "But only a complete absence of regulation will allow the variability in flow which is needed for the river to achieve a more pristine quality." Certainly there will be more water in the summer but summer flows will be even more like winter flows than at present. Whether the increased flows will increase blue duck habitat and allow numbers to rebuild is open to doubt.

"We may have won something for the users," he says. "But have we really won anything for the river?"

Electricorp toyed for some time last year with the idea of meeting their obligations for a minimum summer flow downstream at Te Maire by putting summer water back into the four de-watered minor tributaries (the Okupata, Taurewa, Mangatepopo and Tawhitikuri), rather than the Whakapapa.

Chapple was particularly unhappy with these "shenanigans". The coalition's reading of the decision was that the tribunal intended that the Whakapapa should always be the main control point – ecologically a far more satisfactory arrangement. Electricorp was now arguing that there were engineering difficulties in doing this but Chapple points out that the corporation had had two years to prepare itself for the new flow regime.

Only at a meeting in January this year, convened by the regional council at the instigation of Forest and Bird, did Electricorp finally agree that the Whakapapa be the first and main control point for the increased summer flows.

DoC is planning to monitor the effects of the new flow regime on the biology of the river. A number of baseline studies will be set up, which will be funded by Electricorp.

Under the Resource Mangement Act Electricorp must apply for renewal of all its water rights, including those over the Whanganui, over the next decade. The Whanganui, indeed the whole of the Tongariro Power Development, will remain one of the corporation's biggest problems. Groups such as Forest and Bird are keen to see further river habitat restored.

A consultative forum on the TPD, including most interested parties, has been established to try and resolve the issues around these permits and avoid recourse to the courts. There is some doubt as to whether the Planning Tribunal decision on the Whanganui, which was announced before the Resource Management Act came into force, is actually adequate as a water permit under the Act.

In any case the decision will be revisited before long.

the Whanganui Maori Trust Board (arguing for *less* diversion) against the catchment board decision. DoC and the River Flows Coalition oppose Electricorp's appeal. The issues canvassed include the cultural values of the river and traditional fisheries of the tangata whenua, ecological effects of disrupted flows and increased sediment on the river's biology, and recreational pursuits such as fishing, rafting, canoeing and jetboating. The hearing is the longest and most costly of its kind in New Zealand history, with 94 sitting days over eight months, 104 witnesses and over 2,500 pages of transcript.

October 1990
Judge Sheppard hands down the tribunal's decision setting a new flow regime. Dramatic increase in the flow of the Whakapapa to about 25 percent of average natural flow, no minimum set for upper Whanganui. Minimum flow to increase, as measured at Te Maire, from December to May. Overall, Electricorp's share of the water reduced to 78%, somewhat better for them than 1988 decision. Decision to take effect from June 1991. The compromise is accepted by the River Flows Coalition as probably the best that could be achieved given the balancing act required by the old (pre-Resource Management Act) legislation. Electricorp general manager initially accepts the decision.

November 1990
Electricorp announces it will appeal. The SOE's huge financial resources "have become an arsenal to wear down those who challenge its single-minded power play," says *The Dominion*. Keith Chapple describes Electricorp as "the biggest corporate bully this country has ever seen". The 1983 regime continues.

June 1992
After a four-week case based largely on points of law, the High Court upholds all of the Planning Tribunal's decisions.

1 September 1992
Minimum flow is returned to the Whakapapa.

1 December 1992
Summer flow returned to the head-waters as measured at Te Maire.

4 December 1992
Keith Chapple formally proposes that the Wanganui River Flows Coalition be wound up.

WAIRAU LAGOONS

important wetlands under threat

GRAHAM MATTHEWS

CRAIG POTTON

In 150 years New Zealand has lost ninety percent of its wetlands. Of those remaining, one of the most outstanding is the Wairau Lagoons and its associated estuaries in north-east Marlborough. Yet, as MARGARET PEACE reports, the area has never had protected status or a management plan. Only recently has local controversy over the lack of protection motivated the Department of Conservation to look at an appropriate management regime for the lagoons.

AT THE SOUTHERN end of Cloudy Bay, just east of Blenheim and south of where the Wairau and Opawa river mouths flow into the bay, are a series of tidal wetlands known as the Wairau lagoons.

They are famous for the diversity and abundance of their birdlife. These include the largest population of spoonbills in the country and a significant breeding population of Caspian terns. It is also an important staging area for golden plover, wrybill, knot and even the occasional black stilt in their migration from the South to the North Island.

The area also has great cultural significance. The lagoon surrounds were used extensively by early Maori and there are numerous archaeological sites dating back a thousand years. Recent investigations on the Wairau Bar by Dr Roger Duff have changed archeological thinking on the evolution of Maori culture and society.

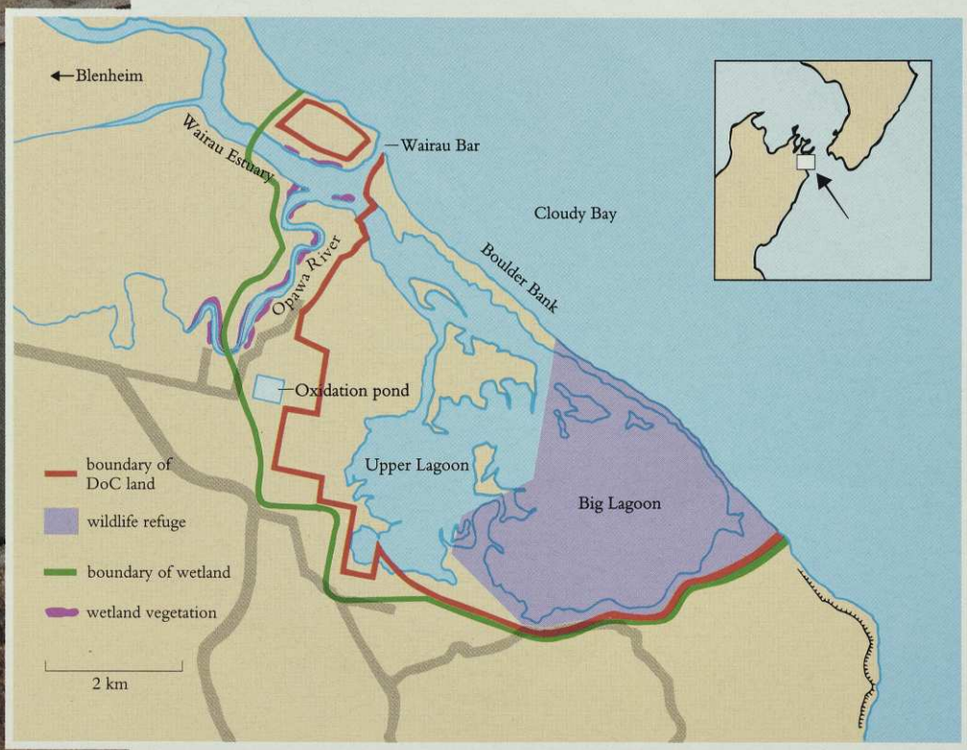
The lagoons themselves cover 12 square kilometres; two times this if you include the fringing land under DoC stewardship. They average less than half a metre deep and are separated from the sea only by a low boulder bank or spit formed of gravel from the Awatere River, swept up from the south by ocean currents. Tidal flow is maintained through a channel opposite the Wairau River mouth.

The Wairau wetlands are now only a fraction of what they were 150 years ago. Since that time they have been continuously reduced by drainage canals on adjacent farmland and since 1963 by the opening of a major diversion canal north of the lagoons designed to take the major part of the Wairau River flow.

Of the 90 species of birds recorded in the area some 60 are wholly or partly dependent on wetland resources. Some, like godwits, turnstones and knots are long-distance regular migrants, others are rare visitors.

Shooting is popular and the western half of the lagoons is open for waterfowl hunting. Black swan, Canada geese, mallard, plus the native grey duck and paradise shelduck are regularly shot during the official hunting season (May and June) by about 60 hunters.

The lagoons and estuary are also



Opposite: *Wairau Bar in the foreground with the gravels of Boulder Bank stretching away to the south. The bank includes sites from the early Moa-hunter period. The lagoons lie in a rain shadow and the surrounding hills are parched and dry.*

Inset: *Spoonbills were first observed on the lagoons in 1975 and now the wetland contains the biggest population in New Zealand with 30 breeding pairs.*

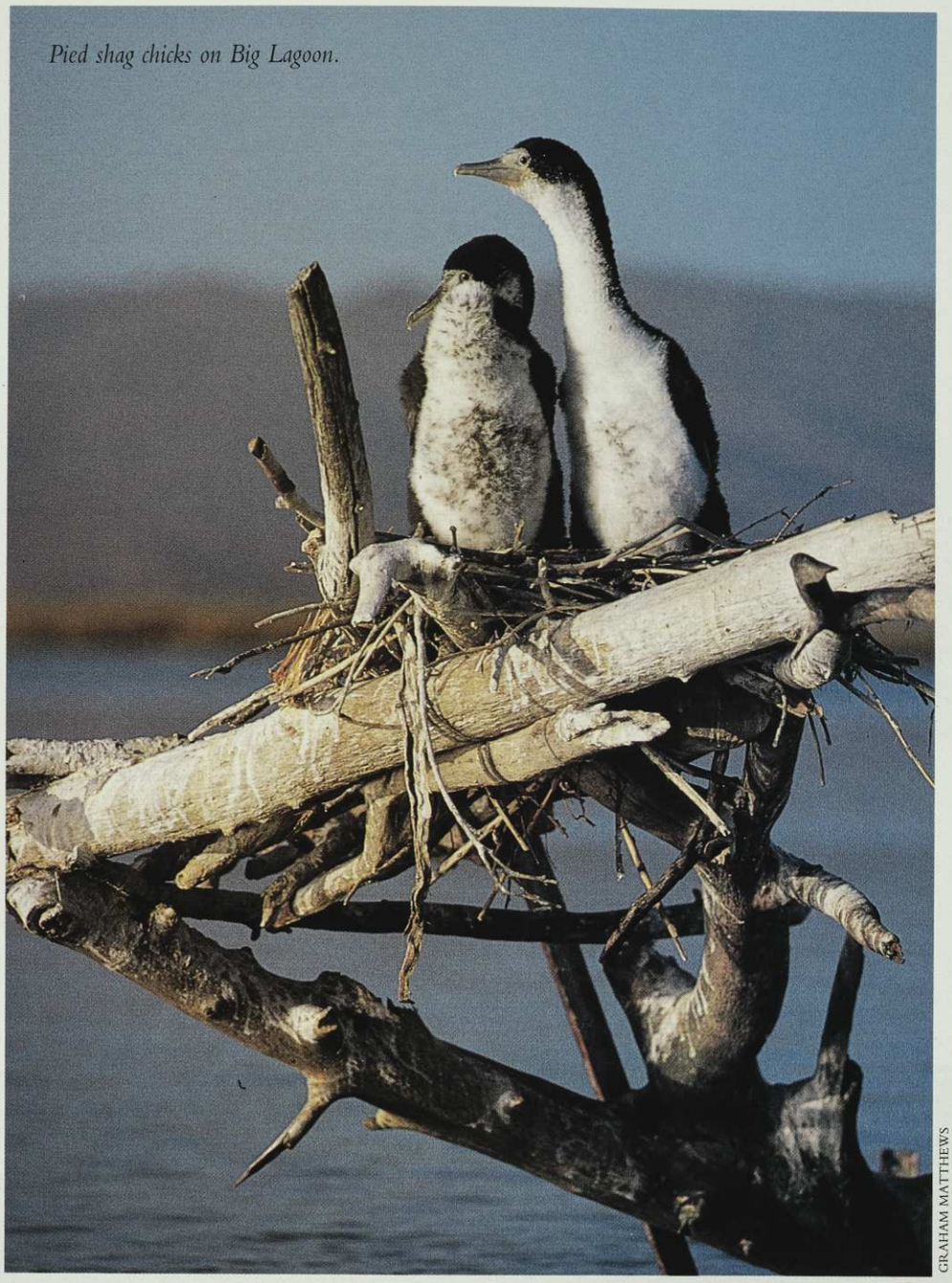
Looking across the shifting currents of Big Lagoon. The local Fish and Game Council is trying to have the wildlife refuge status of the lagoon lifted.

CRAIG POTTON

Saltmarsh areas are dominated by Salicornia, *sea rush and introduced tall fescue.*

CRAIG POTTON

important feeding and especially breeding areas for over 20 species of fish, mainly flounder, mullet, kahawai and inanga, and the extensive mudflats support a variety of tubeworms, molluscs and crabs which are a major source of food for wading birds. Historically the area was an important source of shellfish, with cockles and pipis and, on the outer coasts, sizeable mussel beds. There is little commercial fishing at present although flounder and kahawai were taken in the past and there have been limited attempts at aquaculture. Recreational fishing with nets and lines is popular at the mouth of the river diversion.



Pied shag chicks on Big Lagoon.

GRAHAM MATTHEWS

VEGETATION AROUND the lagoons has been severely modified in the past by Maori fires and, in European times, by stock grazing and burning accompanied by an invasion of introduced weeds, notably boxthorn and gorse. Only vestiges of native woody vegetation remain – scattered matagouri, manuka, shore ribbonwood and *Hymenanthera*. Saltmarsh areas are dominated by *Salicornia*, sea rush and introduced tall fescue, and there are extensive beds of horse's mane between tide levels. Flax and raupo, once abundant, have been reduced considerably by cattle, and their freshwater habitats lost.

Commercial exploitation became a threat in the 1970s with a proposal to extend the salt-harvesting activities of the Grassmere company into the Wairau lagoons. The Marlborough Catchment Board and Ministry of Works carried out preliminary research for some years but there was strong opposition from Forest and Bird and the Acclimatisation Society and the proposal never went ahead.

An ongoing problem is the pollution from nearby operations. Sewage from Blenheim has for many years been partially treated in oxidation ponds on the edge of the lagoon system before being piped to an outfall on the lower Opawa River which takes it to the sea. Periodic failures in the sewerage system have resulted in raw sewage entering the river and ongoing complaints about unacceptable levels of pollution. A second oxidation pond is being built and the district council is looking at options for further treatment and the best location for ultimate disposal.

In the early 1980s a large freezing works was built by Waitaki NZ at Riverlands on the outskirts of Blenheim to the west. Effluent from the works goes through aerobic and anaerobic ponds before being piped to an outfall where the lagoons open to the sea. To satisfy objectors at the time, the Planning Tribunal required baseline ecological investigations which recommended ongoing regular monitoring.

The Marlborough branch of Forest and Bird tried unsuccessfully for many years to get public recognition and protection for the lagoons as a wetland important for indigenous flora and fauna. But until the mid-1980s, the attempts came to nothing.

One of the problems was the divided ownership of the wetlands. Known as Vernon lagoons, they were obtained by the Crown between 1844 and 1848. A number of tribes claim to be tangata whenua of the region and several claims have been filed with the Waitangi Tribunal covering the lagoons.

Title was then divided for many years between the Department of Lands and Survey, the Marlborough Harbour Board and the Marlborough Hospital Board. In 1956 Big Lagoon was proclaimed a wildlife refuge – primarily, it seems, to ensure a continuing supply of gamebirds for shooting. The Wildlife Service became responsible for the wildlife but not for their habitat.

Lands and Survey finally took over full title to the lagoons and surrounding area in 1984. A draft Strategy Plan in 1985 recommending designation of the lagoons as a national reserve was overtaken by the changeover to Department of Conservation stewardship.

DoC has not proceeded with the comprehensive management plan that was hoped for, and the department's main activity in the area has been limited wildlife survey work and instalment of a public walkway to allow access to a restricted area.

PUBLIC CONCERN for the conservation of the lagoons came to the fore in February last year when a proposal was put to DoC and the Marlborough Conservation Board by the

DoC's issues and options report on the lagoons was to have been available for public comment last September but has been delayed. DoC has consulted with Marlborough Forest and Bird and it is expected that the report will be available for public comment in April. However, it is not expected to make specific recommendations about protective status or management regimes. The next step will be a period of public comment and consideration of the report by the Marlborough Conservation Board. Many other claims for use of the area will certainly be promoted by Maori and recreational and tourism interests.
Conservation News will keep members informed about when and where to send submissions.

Marlborough/Nelson Fish and Game Council (successor to the Acclimatisation Society) requesting the lifting of refuge status from Big Lagoon to enable shooting over it the following winter.

Opposition to this came to a head at a well-attended public meeting. The proposal was resisted by Forest and Bird members on the grounds that the disturbance caused by people, dogs and boats through the area would be very disruptive to birdlife. Some non-game birds would be killed or wounded by hunters and an accumulation of lead shot in the bed of the lagoons would pose an unacceptable threat to all wildlife. Local Maori also opposed any opening of Big Lagoon to shooters because of the area's many ancient burial grounds.

The strength of the opposition led to continuation of the current status while DoC agreed to prepare an "issues and options" report for the lagoons. My view is that the whole wetland and its immediate environs should be formally protected to provide optimum habitat for the indigenous plants and wildlife. Any management plan should exclude stock from access to the lagoons, extend the sewage outfall beyond the Boulder Bank, and exclude hunters.

For the time being at least Big Lagoon remains undisturbed. ❖

Margaret Peace has been actively involved in this conservation issue since first coming to live in Marlborough sixteen years ago.

A BETTER DEAL FOR LIFE IN THE SEA?

In June the government plans to introduce a new Fisheries Bill to Parliament. This bill, says MARK BELLINGHAM, will keep the focus on a flow of fish to the fishing industry with virtually no regard for sustaining marine communities. Any greater protection for marine life has been ignored.

THE NEW fisheries legislation will be a backward step for the sustainable management of living resources in New Zealand. While our land and coastal resources are now subject to the sustainability provisions of the new Resource Management Act, the fishing industry has been successful to date in keeping fisheries out of the sphere of sustainable management and New Zealand's obligations under the Biodiversity Convention.

MAF and the task force looking at a revision of the legislation have produced a number of reports and discussion papers. But the theme of these reflects the dinosaur mentality of those involved in exploiting the sea – no respect for marine life, and with the entire debate fixed around exploitation of commercial fish species and giving property rights to the exploiters. The missing factor is any recognition of the intrinsic values of marine life and marine ecosystems.

To continue to treat marine life as a "common property right of the fisheries resource", whether it be as a right of commercial, Maori or recreational fishers or conservationists, leaves the marine world to the rule of capture and the financial and political resources of these competitors.

WE TREAT marine life differently from almost all other indigenous living resources in New Zealand. Apart from the 30 species covered by the Quota Management System, when we get to the sea it is still largely a free-for-all. The only things that slow down our harvesting from the sea are the weather, the time it takes and our fishing gear. You may catch a fish on your line that lives longer than an albatross, or it may be as locally rare as a kakariki. But if it is not a familiar fish, it is likely to be used as bait or fed to the cat. This same attitude prevails among commercial fishers.

New Zealanders lack the caring approach to the sea and marine life that they have for land-based wildlife. This probably comes from ignorance of the hidden worlds of the sea, and lack of awareness that the ecological and environment principles we use on land apply equally below water.

The colonial attitudes of taming nature and the taking of plentiful resources still persist when it comes to the sea. Just as we have developed a more protective ethic for wildlife, native forests and other land-based ecosystems, this needs to be developed for marine life and marine ecosystems.

MALCOLM FRANCIS

The red moki is a long-lived territorial reef fish, curious, slow moving and easy to catch. It is not a commercial species but it is being seriously depleted in many areas by set netting and spear fishing. Apart from individuals in marine reserves, like nearly all other marine life the species is not protected in any way.

There are thousands of species of marine animals in the seas around New Zealand and it is clear that not all species or areas should be fished. The Fisheries Act provides for species to be protected, but to date only two corals, one fish and a few turtles have been protected (to be consistent with the Wildlife Act).

Whole marine communities are currently being depleted and degraded and there are widespread problems of indiscriminate stripping of our shores. Both the Fisheries Act and the Territorial Sea and Exclusive Economic Zone Act provide for the conservation of marine life, but little positive action has ever been taken to protect it under this legislation. Arguably the only action has been to control the exploitation of certain marine life through a quota system which theoretically keeps populations of certain individual species at levels where they can be continually harvested. This is no substitute for actually protecting marine life.

Only a small portion of the marine species around New Zealand are fished, yet the remaining unprotected flora and fauna are vital parts of the ecosystems that support the fished species.

TO PROVIDE an incentive towards protecting and conserving marine life, Forest and Bird has proposed an approach where there is a presumption of protection. The new Fisheries Act, or a separate Marine Species Protection Act, could provide general protection for marine life, but allow for fishing. Using the approach of the Wildlife Act those species that can be fished (as they are far fewer than those that are not taken) would be listed in schedules to the Act:

- the first schedule will set out those species that can be taken commercially, that is the quota management species, plus additional non-quota species;
- the second schedule will list species in addition to the first schedule that can be taken by recreational fishers;
- the third schedule will list in addition to the previous two, species that can be taken by traditional Maori fishers.

Any species not listed in any of the schedules would be protected, could not be legally landed and should be returned to the sea. For species to be moved between schedules or added to schedules a public process would be required with the Minister being the final arbiter. Any applicant proposing a change would be required to produce an environmental impact assessment.

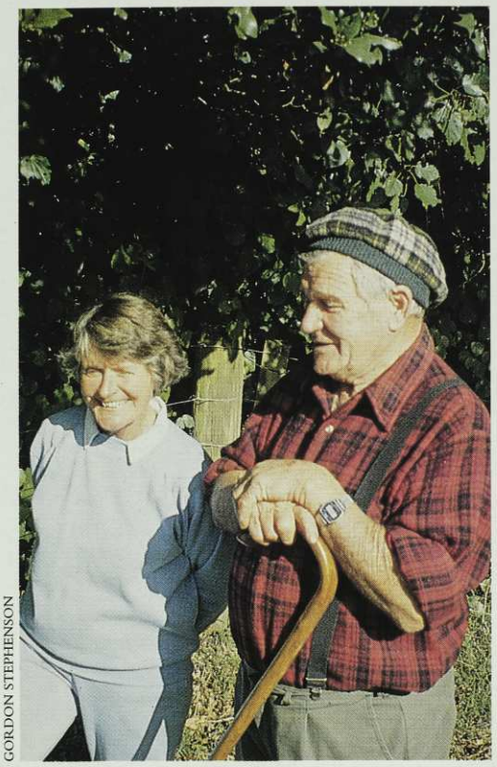
The Act would need to make some allowance for accidental and incidental by-catch and monitoring of this by-catch. This has been proposed for the Marine Mammals Protection Act, where all mammals are totally protected. In situations where there is an incidental catch, management planning would set targets for reducing this incidental catch to zero.

Mark Bellingham is the former field director of Forest and Bird. He now works for the Maruia Society on resource management issues.

ARTHUR COWAN

MAN WITH A MISSION

GORDON STEPHENSON talks to a farmer who is one of the most respected names in conservation.



GORDON STEPHENSON

Arthur and Pat Cowan at home on their Otorohanga farm.

ARTHUR COWAN, MBE, JP, Loder Cup. On this committee and that. Long-time member of Forest and Bird. Well known both for his actions and fearless advocacy for the protection of bush.

But none of this prepares you for the warmth, the gentle humour, and the humility that greet you when you first meet Arthur. Nor for the driving energy that at 76 years, leaves many a person half that age flagging in his wake.

Arthur and his wife Pat farm in the hills about 16 km south-east of Otorohanga in the northern King Country. The upper reaches of the Waipa River, the major tributary of the Waikato, flow down a steep valley a couple of kilometres to the east of their forest home. The Waipa was to have a pivotal role in their lives after they moved to their new undeveloped farm after the war with a returned service loan.

Arthur's father had farmed in the same area and, after years of "breaking in" the land, he had changed to loving the bush, and indeed converted a hectare of pasture near his home into bush by careful planting.

Arthur was infected by this love, although Pat says the first years on their farm were totally devoted to turning the scrub to pasture – but always fencing off the bush. Even then, they knew the crucial importance of preventing grazing of the bush.

It was events in the Waipa Valley that were the turning point in changing the emphasis from farmer to conservationist. From age 14, Arthur had been a keen fisherman. He fished the clear waters of the Waipa up the heavily forested valley floor, through the dense stands of kahikatea. After his return from six years overseas in the artillery, he noticed that the water was becoming discoloured from logging. "It did not please me at all," says Arthur. "Logging was extending right to the top of the river. All the giant trees beside which I'd fished were then being taken out."

The massive 1958 flood brought matters to a head. "All your concerns of the past faced you in a dramatic way. The erosion was incredible. The flood was from one side of the gorge to the other. Immense amounts of logs and roots and debris were coming down.

"From then on, we became more vocal about our concerns." Arthur's conversation is full of the word "we". When pushed, he modestly concedes it really should be "I" or "Pat and I".

He led a campaign against the logging of bush. Although his actions stemmed from a love of the bush, its trees, plants, birds, and insects, "we always argued on the practical issues of soil and water because conservation is also supportive of our economic base." He became a thorn in the flank of the newly-formed Waikato Valley Authority, constantly challenging its decisions.

In the 1970s, large-scale clearings were under way. The development, particularly for forestry, was often encouraged by government. Land was being cleared right down to the river banks. "Totally unacceptable," comments Arthur. "Very foolish. There was not even an economic return. Absolutely stupid."

He was accused of interfering in Waipa Valley issues when he did not even own land in the main valley. So when the opportunity arose, he purchased an additional farm which had 200 hectares of beautiful bush on the steep slopes on the west side of the river. He now had a direct stake.

There were farmers' meetings. "We opposed the logging with great vigour, but both sides agreed to disagree." It says much for Arthur's personality that even his opponents never became enemies.

THEN IN 1979 1,300 hectares of bush on Mt Rangitoto at the headwaters of the Waipa in northern Pureora came up for sale. It had been logged for 23 years. Several farmers were interested in it for grazing.

The bush had been damaged by the timber extraction, but Arthur has always recognised the "extraordinary resilience" of logged or even heavily grazed bush to recover once it is given the opportunity.

The timber company that owned the land had received a firm offer of purchase. Arthur was given 24 hours to match the offer of $125,000 (quite a sum 15 years ago). "We did a lot of fast work," Arthur says. "We tried the Valley Authority, we tried Lands and Survey and others." But he had no success. "We decided to buy it ourselves. We mortgaged the farm, took out family and other loans. We bought the land and held it for two years. Finally, the Wildlife Service purchased it off us."

What he did not realise at the time was that it was one of the major kokako breeding areas. Cowan's Block, adjacent to Pureora Forest Park, is now of enormous wildlife importance.

The next venture was the setting up of the Native Forest Restoration Trust. This followed the famous tree-sitting episode to stop logging in Pureora, a campaign initiated by Shirley Guildford of Auckland, and carried through by Stephen

The Cowans' farm contains over 60 hectares of protected bush.

QEII NATIONAL TRUST

Brochendale farm on the upper Waipa River where Arthur and Pat have arranged a covenant on over 200 hectares of largely unmodified podocarp forest.

King and others.

Subsequently, Shirley recognised the need for re-planting, and Arthur was part of the small group who set up the trust at a meeting in Shirley's house.

Since then, Arthur has been involved through the trust in the planting of what he estimates to be tens of thousands of trees. There are stories of plantings when the weather had turned wet and cold, when everyone else had turned tail for shelter or home, but Arthur was still out there, raincoat on, spade in hand.

As part of the trust's activities Arthur has helped in the purchase of several areas of bush. "This is good," says the practical Arthur. "It saves us planting. The trees are already there." He takes particular pleasure in the Stewart Russell Reserve, 640 hectares of black beech near the coast north of Awakino. "A beautiful remnant, far north of where beech should be."

Typically, much of his pleasure derives from being the means of achieving someone else's ambitions. In this particular case, Stewart Russell was committed to the protection of the bush – he was a "Man of the Trees" – and the purchase went through before his recent death.

It has been with much the same philosophy that Arthur has been involved with, and for the last four years an elected director of, the QE II National Trust. "For many years," he says, "we tried to find a means of protecting bush on private land. Nothing was satisfactory. Then in

GORDON STEPHENSON

QEII NATIONAL TRUST

Part of Cowan's Block on Mount Rangitoto. Arthur had to raise $125,000 in 24 hours to save this large area of kokako habitat from clearance.

the late 70s came the National Trust, and provided the answers." Arthur now has five covenants on his properties totalling over 600 hectares of bush. But it was his work in persuading others to negotiate open space covenants that was one of the prime factors in the award of the Loder Cup, New Zealand's most prestigious conservation award.

Sometimes by direct approach, sometimes through groups such as the local Forest and Bird branch, Arthur has been instrumental in the covenanting of bush from Northland to the King Country.

To top up a busy life, he is also a member of the Waikato Advisory Committee for Regional Environment (ACRE), scrutinising the policies and activities of the Regional Council. His input there leaves no peace for any member of the council or staff when Arthur believes, for example, that a logging consent is unjustified. Currently he formally objects to any applications for consents to log bush, but so far there has been no major test case of a regional interpretation of the new Resource Management Act. Arthur contends the "Purpose and Principles" of the Act should apply to all the council's decisions, thus enabling consents for bush logging to be declined.

And the future? "My dream is to see all remaining forests protected. Our future generations really do deserve to have some of the good things we have today. We must look forward."

Truly, as his life's companion Pat says, "he is a man with a mission. He always has had a mission." ❖

Gordon Stephenson is himself a farmer in the Waikato and the most recent recipient of the Loder Cup. He is also a member of Forest and Bird's national executive.

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Book reviews

The Black Robin: saving the world's most endangered bird

by David Butler and Don Merton (Oxford University Press) 1992, 304pp, $49.95

No species can come closer to extinction than the black robin.

By the late 1970s it was reduced to one effective breeding pair and over the following decade a single rock fall, storm, rat invasion or accident during transfer between islands could have spelt the end of the bird.

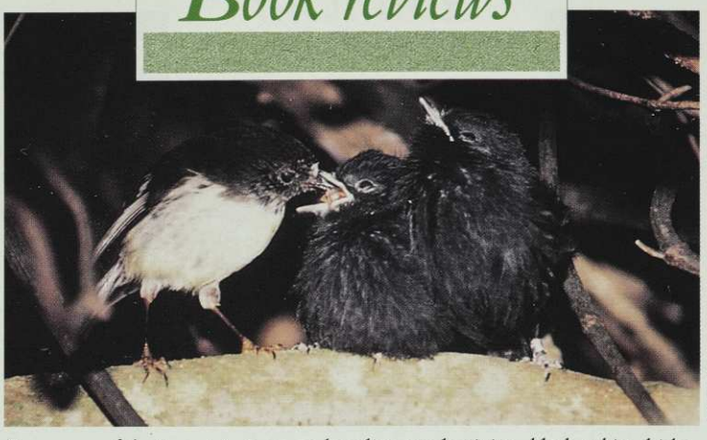
The first chapters of this story are the most gripping, describing the robin's discovery by Europeans, the 1938 visit by Fleming, Turbott and Wotherspoon to the precipitous robin refuge of Little Mangere Island in the Chathams, the first involvement of the Wildlife Service in the 1950s, the realisation from the late 60s that the robin's habitat was fast deteriorating, and the rescue of the species from its island fortress.

Later chapters become a bit bogged down in the complexity and detail of the cross-fostering programme. They will be useful, however, for managers and scientists, and it is worth noting that the robin is the only wild species where the ancestry of every individual is known and can be traced to a common ancestor.

Although several proof-reading errors have crept in, mainly in photo captions or references to photos, I found the book thoroughly enjoyable and a fascinating account of one of the world's most startling and successful conservation programmes.

In many ways the book is an opportunity for Merton to thank his numerous helpers over the years.

Yet with a population of less than 140 individuals, the authors point out that it is brave to suggest the species is "saved". Now other more pressing Chatham Islands projects take priority over robin work. By 1988-89 the critically threatened state of other Chatham Islands birds – six species by then were rarer or more threatened than the robin – resulted in robin management work being reduced. It is still a sad reflection on the government's misplaced priorities that work on a species as vulnerable as the robin receives so little funding.



DON MERTON

In a successful attempt to increase breeding productivity, black robin chicks were fostered out to other species. Here a tomtit feeds two black robin fledglings on South East Island in 1985.

As this book documents, the survival of an endangered species can sometimes depend on the skills and devotion of a few key individuals involved in the project. The continuing survival of the black robin is both testimony and tribute to the devotion of Merton and his team.

Alan Tennyson

Handbook of the Birds of the World, volume 1: ostrich to ducks

edited by Josep del Hoyo, Andrew Elliott and Jordi Sargatal (Lynx Edicions, Barcelona, in association with ICBP) 1992, 696pp, US$165

This ambitious book, the first volume of ten, is published under the imprimatur of the International Council for Bird Preservation. It is the first time that anyone has attempted to detail the biology and distribution of every bird species. It is similar in format, size and price, but because of its wider coverage, inevitably less detailed, than other major projects such as *Birds of the Western Palearctic* and *Handbook of the Birds of Australia, New Zealand and Antarctica* which are currently in production.

Unfortunately the book probably suffers from being too ambitious. Of the consultants listed, none seem to be from the Australasian/Pacific area. Thus for the birds of this region there are a number of worrying mistakes. Little spotted kiwi, for example, are shown in Fiordland. The conservation priority for fulmar prions is apparently to eliminate "introduced mammals . . . from breeding islands", yet all the bird's breeding islands are free of predatory mammals. The population information on black-winged petrels is ten years out of date.

Some of the distribution maps and illustrations are sloppy and inaccurate, and many of the conservation classifications are over-generous, with the critically endangered Chatham Islands taiko, for example, described only as "rare".

But the book does have its good points. There are some beautiful photos, often illustrating interesting behavioural characteristics, and there is a welcome focus put on conservation aspects of species, even if at times this is superficial. Overall a useful general reference book to the world's birds, if you can afford it.

This volume includes more New Zealand species than the later ones will. It also highlights the inadequacy of much of the population information on New Zealand's seabirds.

Available from natural history booksellers or direct from the publishers, Lynx Edicions, Diagonal 477, 08036, Barcelona, Spain. Royalties go to ICBP.

Alan Tennyson

New Zealand Native Plants

by Bruce Treeby (The Open Polytechnic of New Zealand) 1992, 570pp, $150

This is not just a book but a complete correspondence course on New Zealand native plants, their ecology, propagation, planting and place in the natural and cultural landscape.

This course will open up a whole new world of knowledge on the place and role of native plants. The material is extensive – it comes in two ringbinders, with seven learning units, evaluation sheets, field notebook, background information and a tutor at the Open Polytechnic (with a free phone line).

The outline at the front of the course includes a flow chart of the different sections and how they fit together. It includes information about the course tutor – Bruce Treeby, a life member of the NZ Farm Forestry Association and active conservationist, with 30 years of teaching courses on tree crops, farm forestry, plant propagation and organics.

The course units are excellent in their simplicity of presentation and depth of coverage. The protection section, for example, covers land protection, legal protection and physical protection of plants from possums, goats and other browsers. It includes material on how to control possums, rodents and other pests such as stoats, weasels, cats and wasps. The text is clearly illustrated with photographs, line drawings and beautiful woodcuts.

Those of us involved in revegetation schemes or raising plants at home will find the plant propagation chapter invaluable. It's all here – nursery layout and gear, seed collection, growing-in containers, cuttings, raising plants from forest duff and planting out.

Treeby's revegetation flow charts are interesting and helpful for planning revegetation, providing a recipe for transforming gorse, grassland, bracken or manuka into mature forest. You can select the route you wish to take – do nothing, plant only, plant and spray, or plant, cut and spray – and the flow charts give you a step-by-step guide.

If you are interested in any aspect of native plants and want to extend your knowledge, this is the way to do it. You can do the course in your own time and at home, and at the end you will have what is possibly the most complete reference set there is on New Zealand native plants.

Mark Bellingham

Labour weekend in South Westland

FOREST AND BIRD'S conservation gatherings have become a much enjoyed and valued tradition.

The Harihari gathering over the October Labour weekend was no exception and focused attention on the disgraceful decision of the government to extend the clearfelling of South Westland's rimu forests. In sunny spring weather members visited some of New Zealand's most splendid natural surroundings including Okarito forest and lagoon, Saltwater forest, kahikatea forests alongside the Harihari coastal walkway, the threatened rimu stands of Poerua forest and the devastation of Ianthe forest (see *Conservation Update* in this issue).

Other conservation issues raised during the weekend were the alarming spread of willow into the Coast's wetlands and swamp forests, and the impact on ground birds of uncontrolled dogs.

Members returned from the gathering inspired by the beauty of the Coast and keen to write a brace of letters to politicians and others to persuade them of the urgent need for the protection of its forests and wildlife.

MIKE HARDING

Members in Ianthe Forest during Labour weekend.

Executive and Council go to Rotorua

THE LAKES, native forests and thermal areas of Rotorua were the setting for the November meetings of the society's national executive and council.

The executive discussed the government's extension of clearfelling on the West Coast and, given the absurdly low royalties being paid by West Coast Timberlands, authorised the society to offer to purchase the clearfelling rights to Poerua forest so that it could be declared an ecological area.

The executive also rejected DoC's Himalayan thar control plan, and urged a major commercial or departmental offensive against thar throughout their range.

Councillors were addressed on the Saturday evening by Bryce Heard, chief executive of Tasman Forestry on the alliance between conservationists, led by Forest and Bird, and enlightened sections of the forestry industry to preserve native forests and promote plantation forestry on non-conservation land.

John Blincoe, Labour's spokesperson on conservation issues, spoke frankly to councillors on his party's conservation programme for the coming election.

Field trips for council members were organised by Ann and Basil Graeme to the geysers, mudpools and geothermal vegetation of the area, and to the wallaby exclosures on the shores of Lake Okataina, the latter particularly highlighting the destruction caused by introduced animals.

Stephensons take Loder Cup

EXECUTIVE MEMBER Gordon Stephenson and his wife Celia are the latest of a long list of Forest and Bird luminaries to be awarded the Loder Cup,

STEWART GREY

Celia and Gordon Stephenson receive the Loder Cup from Denis Marshall at Waotu.

New Zealand's premier conservation award. The Cup was presented by Conservation Minister Denis Marshall in October at a gathering in Waotu, the farming community in the South Waikato where the Stephensons live.

In outlining the couple's impressive list of conservation achievements, Mr Marshall said that as immigrants from England in 1958, Gordon and Celia had brought a vision of farmers husbanding the land and resources they worked. They saw the values of the natural environment of the country they had arrived in, often in a clearer way than many locals, and they set out to farm with respect for the environment.

Gordon developed the concept of protecting private land through covenants, served as Deputy Chairman of the Queen Elizabeth II National Trust, and was the first to covenant bush under the trust. He has been active on many public bodies, often bridging the gap between farmers and conservationists and is currently chairperson of the Waikato Conservation Board. His interest in the protection of New Zealand's neglected wetlands led to his writing an important guide to these "shy places".

Handbook of Environmental Law sets sail

THE SOCIETY'S long-awaited citizen's guide to the mysteries of the Resource Management Act and other environmental legislation was successfully launched last November. Over 80 people packed Bennetts Bookshop beside the Beehive to hear David Lange give the book its much deserved sendoff into the world.

Mr Lange praised the book for being "a good one-stop shop", its readability, its clear layout, charts and diagrams, and pointed out that, at the equivalent price of five minutes of a QC's time, it was excellent value. He ended by noting that if we had been one of Geoffrey Palmer's students we would have scored an "A", something not many of his colleagues could claim.

The book is available from Forest and Bird Mail Order (at a discount price of $26.95), and all bookshops.

New bequests

THE SOCIETY continues to reap the benefits of the loyalty and generosity of some of our older members, and received two major bequests late last year.

One, from the estate of M.M. and W.J. Cole, was for over $150,000 for conservation work in Auckland, including development of the Matuku reserve in west Auckland.

We were also the sole beneficiary of the estate of the late John Ford, formerly of Tauranga, killed four years ago on a cycling trip around Europe. To the surprise and delight of treasurer David Underwood, a cheque for $500,000 was handed over by Mr Ford's brother, Ken, at a small ceremony at head office in November.

These bequests will contribute significantly to the society's conservation work in the coming years.

Ron D. and E.A. Greenwood Environmental Trust

THIS TRUST provides financial support for projects advancing the conservation and protection of New Zealand's natural resources, particularly flora and fauna, marine life, geology, atmosphere, and waters including the promotion of a wider care and understanding of such resources. More information is available from the trust at PO Box 10-359, Wellington.

Volunteers needed

OUR AUCKLAND office is looking for a stalls organiser, a shop manager, a public speaking coordinator and a displays designer. Preferably people who can give a regular 4 to 8 hours a week. Please contact Tania Dewitt, phone (09) 303-3079.

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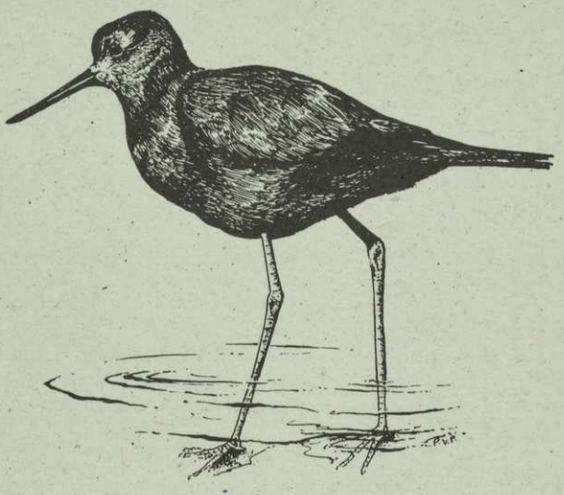

Our key campaigns for the future are:

- marine reserves
- high country tussocklands • fisheries
- native forest protection • pollution • threatened species
- Antarctica • energy conservation • waste reduction

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☐ Schools and libraries	$25.00	☐ Family, Schools and Groups	$20.00
☐ Overseas	$60.00		
☐ Life	$475.00	Donation	$_____

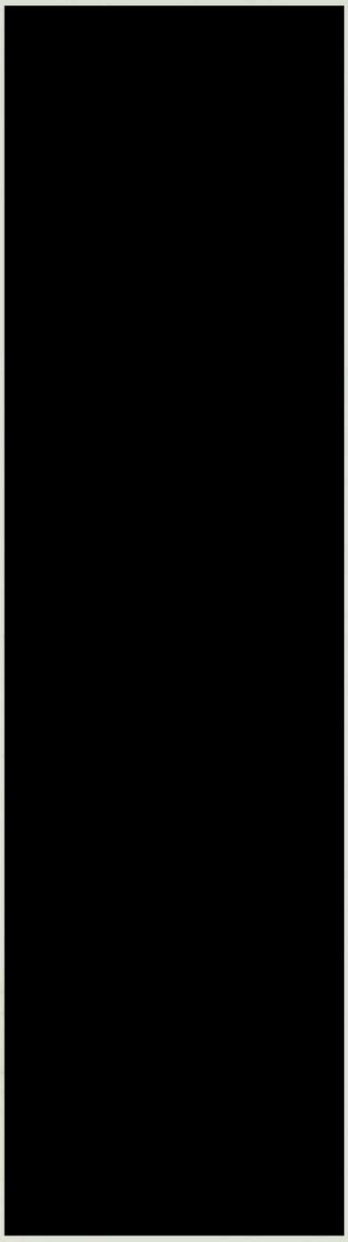
☐ Enclosed cheque to Forest & Bird. Charge to my ☐ Visa ☐ Bankcard ☐ Mastercard

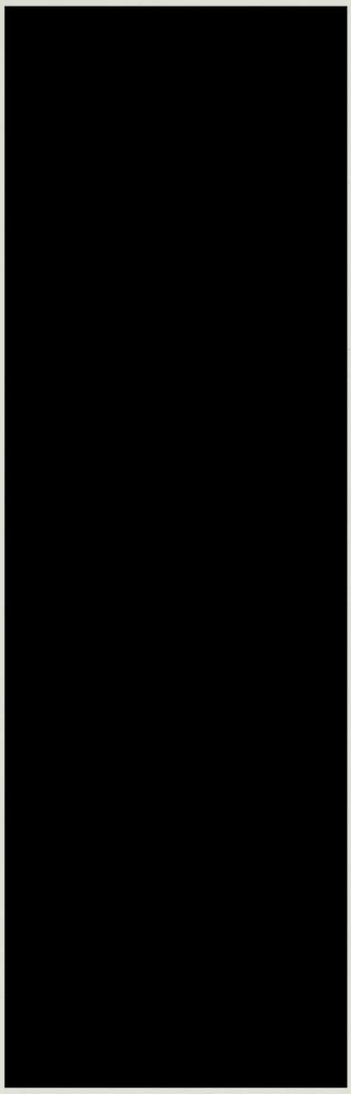
Card No. | | | | | | | | | | | | | | | |

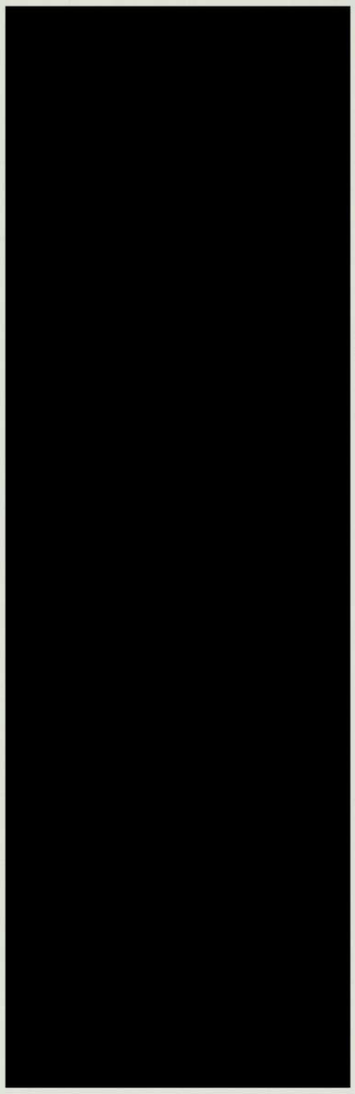
Cardholder's signature _____ Expiry date _____

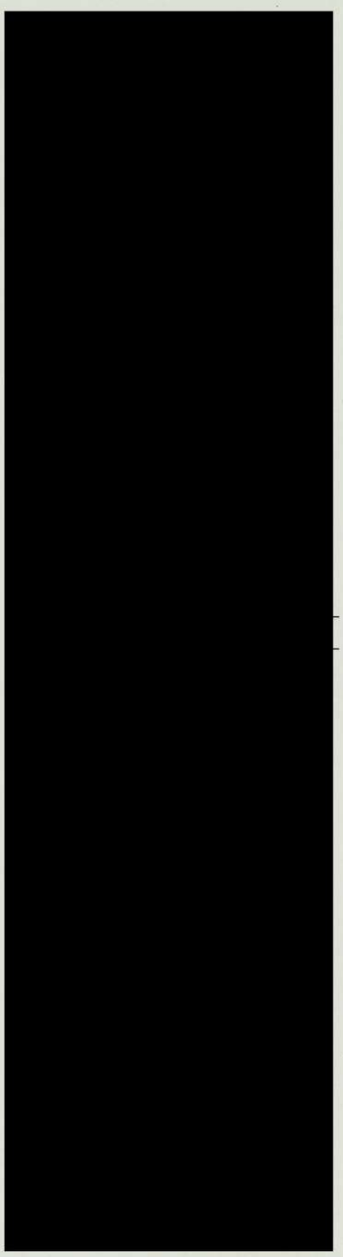
Send to: FREEPOST No. 669, Membership Secretary,
Royal Forest and Bird Protection Society, PO Box 631, Wellington

92/93









Lodges and houses

Ruapehu Lodge, Whakapapa Village, Tongariro National Park

Set within the national park this lodge is available for MEMBERS ONLY, and is an ideal location for tramping, skiing, botanising and exploring.

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

Bookings and inquiries should be made to PO Box 631, Wellington (04) 385-7374. 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.

Arethusa Cottage

An ideal base from which to explore the Far North. Near Pukenui in wetland reserve. Six bunks. Fully equipped kitchen. Separate bathroom outside. Inquiries and bookings to Howard Ockenden, Waipapa Rd, Kerikeri, (09) 407-9457 or John Dawn, Doves Bay Rd, RD 1, Kerikeri, (09) 407-8658.

William Hartree Memorial Lodge, Hawke's Bay

Situated 48 km from Napier, 8 km past Patoka on the Puketitiri Road, the lodge is set amidst the 14-ha William Hartree Memorial Scenic Reserve, and close to many varied walks in the area including the Kaweka Range, as well as hot springs and a museum. Information sheets are available.

The lodge accommodates up to 20 with 10 bunks and 10 mattresses, has fully equipped kitchen including microwave, refrigerator and stove plus hot showers and an open fireplace. Visitors supply own linen. The nearest store is a Patoka (8 km). No animals.

For rates send a stamped addressed envelope to the booking officer, Mrs Colleen Mackay, 89 Rogers Road, Bayview, Napier, (06) 836-6836.

Tautuku Lodge

Tautuku State Highway 92, South East Otago. Situated on Forest and Bird's 550-ha Lenz Reserve 32 km south of Owaka. A bush setting, and many lovely beaches nearby provide a wonderful base for exploring the Catlins. The Lodge, the Coutts cabin and an A-frame sleep 10, 4 and 2 respectively. No animals.

For information and rates please send a stamped addressed envelope to the caretaker: Miss M. Roy, Papatowai, Owaka, RD2. Phone (03) 415-8024.

Tai Haruru Lodge, Piha, West Auckand

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

The lodge is fully equipped and sleeps six to eight people. Large lounge with open fire, dining area, and modern kitchen.

You will need food, 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 Henderson Valley Road, Henderson, Auckland, (09) 838-5859.

Waiheke Island Cottage

The cottage at Onetangi has comfortable bunk accommodation for eight people and has a stove, refrigerator, and hot water. Adjacent to a 49-ha wildlife reserve, 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.

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, (09) 726-494.

Bushy Park Lodge

Kai Iwi, 24 km northwest of Wanganui on sealed road off SH 3. Historic home-stead, fine grounds and 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 food. Milk may be ordered.

Open 7 days; reduced off-peak rates.

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

Bookings and information leaflets: Manager, Bushy Park Lodge, Kai Iwi, RD8 Wanganui, (06) 342-9879.

Turner Cottage, Stewart Is.

This three-roomed dwelling accommodates six people.

For details send a stamped, addressed envelope, to: "Turner Cottage", C/- Mrs M. Tait, PO Box 48, Stewart Island, (03) 219-1396.

The only thing as watertight as Gore-Tex is the guarantee that comes with it.

Ever since W.L. Gore &Associates introduced the world's first waterproof, breathable fabric, we have maintained a relentless regime of testing, research and development. Our efforts have resulted in a procession of innovations and improvements. Together with the leading specialist outerwear manufacturers in Australia and New Zealand, we have set uncompromising standards for performance that ensure we make the best protective outerwear in the world.

We're so confident in the consistent quality of our fabrics and the garments made from them that we back them with the most comprehensive guarantee ever given in the clothing industry. That's because our products are tested in conditions that replicate real life situations. We've even devised our own methods and equipment for testing. The Gore Rain Simulator, for example, can spray moving mannequins dressed in our garments from any angle, with controlled velocity and droplet size.

Before commercial production commences, every Gore-Tex outerwear style is artificially aged by repeated washing then subjected to the Storm Test - the equivalent of a 16cm deluge. Only if the garment remains completely dry inside is the style passed for production. No other brand in New Zealand can withstand this test.

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We are committed to producing World Class products to enhance your outdoor experiences. If this product does not meet your expectations, please call us toll free at Gore Australia on 0800 44 17 09.

GORE-TEX® Outerwear Is Guaranteed To Keep You Dry.®

If you are not completely satisfied with the performance of your Gore-Tex® outerwear, when you call us we will arrange for the product to be sent for assessment and we will either repair it, replace it or refund your purchase price.

That's our watertight guarantee.
For further information and your nearest Gore-Tex stockist phone Gore toll free on 0800 44 17 09.

This symbol appears on Gore-Tex garments which are approved for backpacking.