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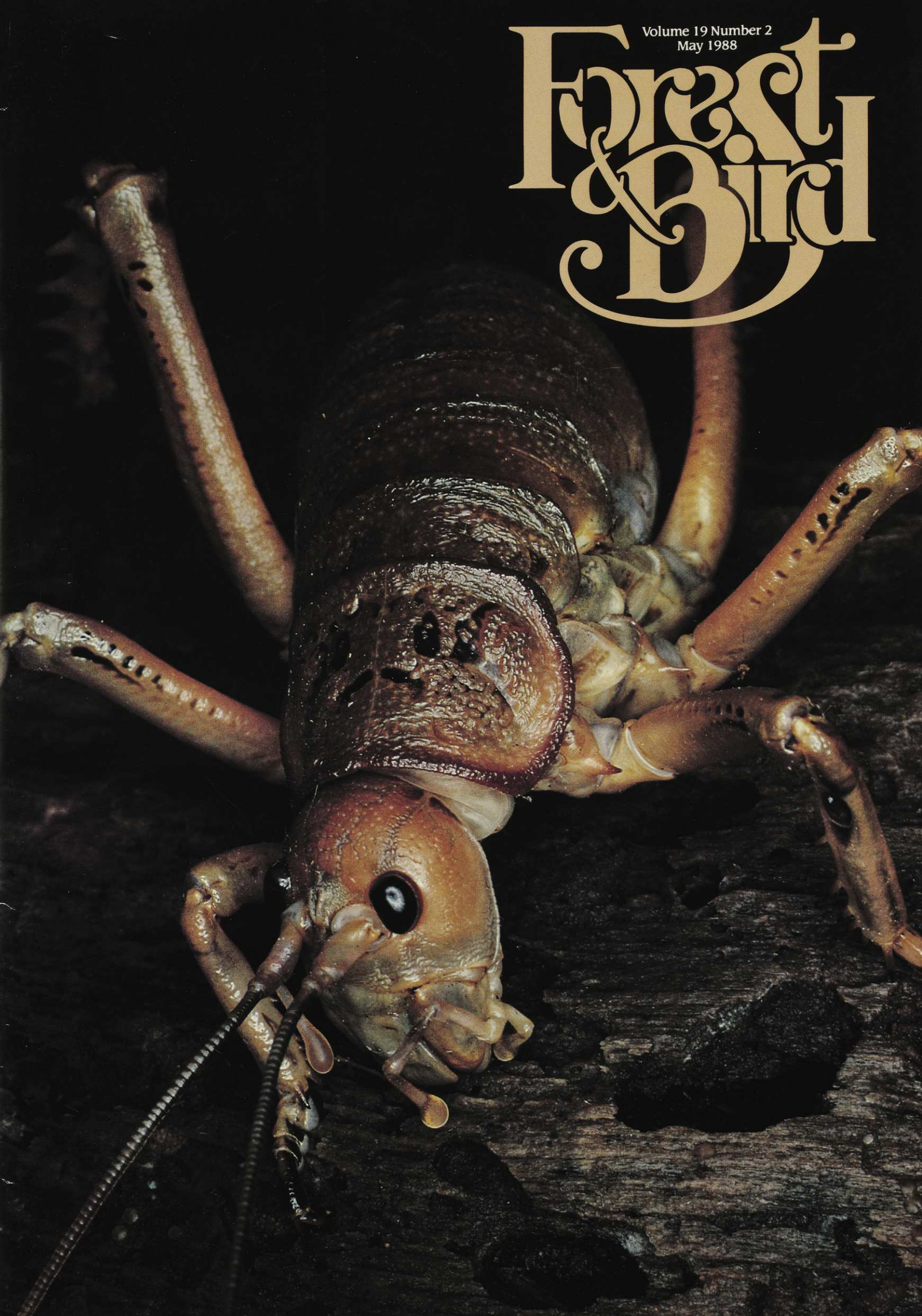
May 1988

Forest & Bird



Botanic Man David Bellamy returned to Whirinaki Forest to help the Rewi family, the Minginui Community Services Trust and Whirinaki Minginui Resources Ltd launch its plans for a whare wananga — a natural and cultural learning centre — on 24 January 1988.

Centred around Whirinaki's now-protected "dinosaur" forests, the scheme aims to both enlighten visitors and provide jobs for the Tuhoe people of Minginui, hit hard by corporatisation of the Forest Service.

For one viewpoint on Maori attitudes to conservation see the interview with Forest and Bird executive member Sandra Lee on page 2 inside. *Photo Joe Crandle.*

Front Cover: *Fearsome looking, giant wetas do not deserve their unpopular reputation. In fact the world's heaviest insects are shy and gentle animals with no protection against predators like rats. This Kaikoura female weighs 15 gms and is 6cm long, twice the size of the male.* Photo: Brian Enting

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HELP US PROTECT OUR ENDANGERED ANIMALS, PLANTS AND HABITATS.

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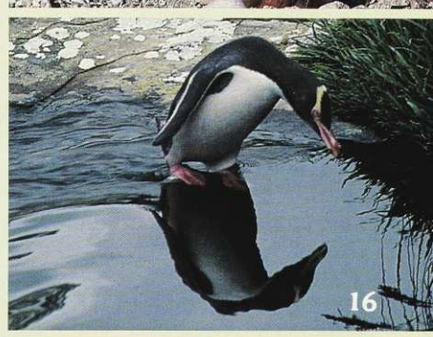
C·O·N·T·E·N·T·S

Articles



Departments

Trans-Tasman links

Tasmania, which I visited last summer with a group of New Zealand ecologists and conservationists, is only a 3-hour flight away. In an ecological sense it is also quite close, sharing similar types of alpine communities and temperate rainforests which distinguishes them as once belonging to the ancient southern supercontinent Gondwana.

However, New Zealand and Tasmania are in some respects quite distant. This country drifted completely away from Australia more than 60 million years ago, whereas Tasmania was still linked to mainland Australia during the last Ice Age, which ended about 12,000 years ago.

I am reminded of this dichotomy — this similarity and yet this distinction — by the theme of the Society's annual appeal, which this year is "Threatened Species".

The Tasmanian approach to conservation has not been influenced by the existence of large numbers of rare and endangered animals — especially birds — that sadly we have in New Zealand. Their fascinating marsupials have learned to live with predators and fire over millenia and most appear to be coping, although forest destruction through logging has placed some species under strain. Fire also poses problems because in Tasmania not only are they frequent but some 97 percent are lit by humans. They use fire as protection against uncontrollable fires, but those fires themselves can get out of control. Such fires — I was told of one which burned through 60,000ha of mixed eucalypt/rainforest in just two days — might be expected to have a catastrophic effect on wildlife. The reality is that they don't although frequent forest fires are having an adverse effect on the ecology of the forests — their structure and diversity are both simplified.

In a sense, then, it is easier to rally around the conservation cause in New Zealand. The fact that some 90 percent of our plants and animals occur nowhere else in the world is powerful evidence that this country is a very special place. Numerous of our threatened species are captivating and therefore gain public sympathy more readily than forests do.

Some of these rare and endangered animals are featured in this issue. Just to prove that the Society is concerned not only with appealing birds, we have begun a "save the giant weta" campaign to rescue from extinction the last known survivors on the mainland.

The story of hoiho, the yellow-eyed penguin, is by now well known to many New Zealanders. Unfortunately it had to wait until virtually the last of its habitat was destroyed by humans before a campaign was mounted to halt its slide into oblivion.

By necessity we are selective when it comes to threatened species, simply because there are so many of them. Thus, for example, there has been little publicity given to the fate of the New Zealand dotterel, which breeds along northern North Island sandy coastlines. An article in this issue points out that we cannot be complacent about any of our special native animals. Even though dotterel numbers have remained constant for the last 20 years, we could see numbers of these long-lived birds plummet suddenly.

My comment about how much simpler it is to enlist public sympathy for captivating animals than for habitats needs to be qualified. The informed and concerned public — that is to say, Forest and Bird members — have responded magnificently to our recent plea to save the forests and wetlands of South Westland. In the years I have spent in the conservation movement, I can recall few times that such consistently high calibre submissions have been made to government. I congratulate you all.

I hope you will give equal support to the conservation of our non-forest ecosystems east of the Main Divide which are so poorly represented in the reserves system. The Protected Natural Areas Programme in the South Island is concentrating its efforts in this rain shadow region, as outlined in this issue, in an attempt to identify the best of which remains before it is too late. I call on your support for this exercise as well.

Dr Alan Mark, President

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LAND ALONE

Sandra Lee: Conservation movement must be fair and consistent over Maori issues. Photo: Gary Baigent

Sandra Lee has been closely involved in conservation and Forest and Bird for nine years. She and her husband Michael live on Waiheke Island with their children on a small rural block surrounded by the bush and native birds they hold so dear.

Sandra is also Deputy Chairperson of the Waiheke County Council, a local authority which she is keen to see make a strong commitment to conservation. She has been on the County Council for five years and sees it as having a vital role to play in preserving the distinctive natural and cultural features of Waiheke that make it loved by residents and visitors alike.

Sandra was elected to the Forest and Bird National Executive in 1987. She has since played a central role in guiding the Society to appreciate the role of local authorities. More importantly she has helped us to better appreciate the Maori dimension in conservation and protection of our natural and cultural heritage.

Forest and Bird: Sandra, your upbringing has strongly influenced your attitude to the land. What is your whakapapa and do you take a great interest in Maoritanga?
Lee: I am descended from the Ngai Tahu, Ngati Kahununu and Ngati Toa tribes. My great, great, great, great grandfather Tuhuru was Paramount Chief of the Poutini Ngai Tahu of the West Coast (South Island). I was fortunate as a child because in the house in which I grew up lived my great grandfather, Tame Whakamaua Pihawai, who was born in Tuahiwi Pa in 1874. This wise old kaumatua had a significant influence on my early childhood. So of course my Maoritanga and ancestral lands have always been of absolute importance to me.

Forest and Bird: Sandra, Forest and Bird has always had a close interest in the West Coast. How do you feel about the West Coast and its lakes, rivers, native forests, mountains and seacoast?
Lee: Te Wahi Pounamu (West Coast) is a very tapu, powerful place. The magnitude of our mountains, strength of our rivers and beauty of our forests, so worthy of preservation, serve to remind us of our true scale in the scheme of things. I will always fight to retain our ancestral lands there because they have been bequeathed to us by the tupuna. The responsibility that the land brings takes me home several times a year and probably when I'm older I will return there.

Forest and Bird: Has European settlement of Westland been sensitive to those values?
Lee: I think not. It is tragic that little of the huge fortunes made from ripping off of the natural resources, such as our forests, gold and coal, has been reinvested back into the Coast in environmentally sensitive, less destructive alternatives. While our sacred pounamu is being plundered on the Arahura, just a few miles north at Mawhera (Greymouth) my people as owners of the city continue to be prevented from charging market rentals for their land by legislation. Perpetual lease provisions ensure to this day that we cannot ever have use of our land for ourselves. I cannot recall the Pakeha Coasters mobilising to support my people over these sorts of injustices.

The saying "Coasters are an endangered species" is popular with some Pakeha down there — they most certainly will be as long as they refuse to accept the need to diversify economically away from continual natural resource exploitation. After all, after 1000 years of occupation my people had to change, which is why so many of us have had to move to other areas for employment and education.

Forest and Bird: Do you feel Maori people and the conservation movement share common interests?
Lee: Yes, Maori people have always been conservationists and many of our National Parks have been given by my people. I think many Maori are heartened by the growing conservation movement in Aotearoa. It signals New Zealanders are now able to accept the unique natural beauty and essence of this land (or what remains of it) without the need to continue to transform it into another England.

Forest and Bird: Can you give any examples where we have helped each other?
Lee: In the years I have been involved in Forest and Bird, and most recently the executive, it has been good to see the gradual development of a partnership between the conservation movement and the Maori people. I think a few examples best illustrate this:-

- On Waiheke Forest and Bird helped the campaign and petition by the tangata whenua to retain communal control and reserve protection for the Maori Affairs block and its important bush remnants. This area adjoined Forest and Bird's Te Matuku reserve.
- Forest and Bird has worked with the Te Hapua people of the far north in their efforts to protect rare flax snails, bush and important urupa (burial sites).
- In the coastal conservation field it has been excellent to see Forest and Bird working alongside Maori communities to restore the Maketu estuary, to oppose harbour reclamation for marinas, to control sewage dumping and protect traditional kai moana areas.
- Probably the issue above all else where we all worked closely together was in opposing the alienation of natural and culturally important public lands to the new State Corporations.

Is it appropriate in the 20th century to allow kereru harvesting, as some Maoris would wish? Sandra Lee argues that the Maori culture does not need to resort to harvesting threatened species in order to survive.

Forest and Bird: Do you see issues looming where we will need to work more closely together — particularly the younger people who want to develop a closer relationship with the land rather than exploiting it?

ENDURES

a Maori perspective on Conservation

Lee: I am extremely confident that an even closer working relationship will evolve between us. Conservationists should be prepared to support Maori issues such as the fight against pounamu pillaging in the south and the disturbance and abuse of urupa (burial grounds) to extract ironsands in the north.

Forest and Bird: The November 1987 issue of *Nga Kaitiaki,* the Conservation Department newsletter, has an article on the Maori conservation ethic and interviews with Tipene O'Regan, Pat Park and Te Aue Davis. It presents a strong case for allowing Maori people controlled harvest of natural resources from DoC lands. It argues that there is likely to be conflict between the department's preservation goals and Maori techniques of sustained management. Do you also believe that a preservation ethic (as opposed to a conservation or harvest ethic) is alien to the traditional and contemporary Maori relationship with nature?
Lee: My people have always recognised the wisdom of democratic social control of precious resources for the common good as well as for nature's own sake. The tragic effect of the ecological holocaust on the children of Tane reveals that 10 percent of the

Sandra Lee and her great aunt, a kaumatua, at Arahura, near Hokitika.

planet's total endangered species of birdlife may be found in Aotearoa, this in spite of the promises contained in the Treaty. So of course I support the preservation ethic for our forests and birds. The issue today is simply one of preservation or destruction — and therefore extinction.

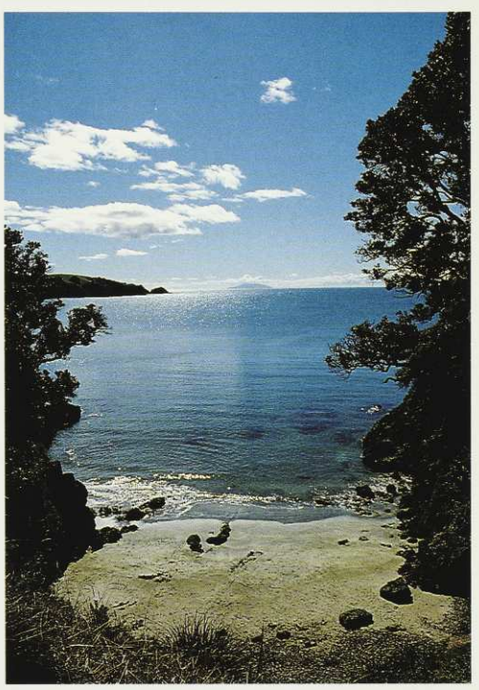
In this era of the Maori renaissance I am positive that our culture will thrive and is not dependent on the consumption of threatened species to achieve this.

Forest and Bird: Influenced by the perspective of Mr O'Regan and others, the Conservation Department is now examining amending our protected area and species legislation to make it easier for traditional harvest from reserves and is also initiating research into sustained harvest techniques. Do you think such amendments could set dangerous precedents? Could they be exploited by unscrupulous entrepreneurs?
Lee: I would be happier if DoC discussed these sorts of issues more in the tribal areas in the traditional tribal way. Why is it that the view of one or a few Maoris is often assumed to be the view of us all? Most Maori people do not make the same assumption with Pakeha.

Greedy people always take advantage of the weakness of legislation to make a fast dollar. To assume that conservation legislation will be any more respected than, say, the Town and Country Planning Act is, I suspect, naive. I would be disappointed to see the legislation made any more vulnerable than it is already is. I came down and argued this case in March 1987 before the Select Committee considering the Conservation Bill.

Forest and Bird: In the same *Nga Kaitiaki* article, Tipene O'Regan discusses kukupa (kereru, native pigeon) harvest. He argues that even though many of the rituals and customs concerning hunting are no longer practised, old mechanisms can be revised. Do you see it necessary or appropriate to revive pre-European activities like kereru harvest in view of their severely reduced habitat and numbers, improved hunting techniques and the birds' inability to breed quickly?
Lee: I have hand-reared several of these chubby charmers. In each case they were orphaned by humans tampering with kukupa's immediate environment. I'm aware of one case where an elder "shot out" almost completely an area once plentiful with these birds. Today, rather than seeing kukupa as a "food resource", we must see them as sustaining us in a more important way, as Kaitiaki of the Kakahu of Papa (guardians of the cloak of the Earth mother) proclaiming Aotearoa — ours — unique.

Forest and Bird: Many Pakeha feel some discomfort about the land claims before the Waitangi Tribunal — often unaware of the injustices by which the land was acquired from its rightful owners. Maori concern about land alienation has been heightened by the large scale sale of land to effectively private state corporations. This has precipitated many of the claims. Are there also concerns that Maori land is still being alienated?



Islands in the Gulf. Looking out to Little Barrier Island from Waiheke Island, where Sandra Lee lives. Photo: Gordon Ell, Bush Press

Lee: Perhaps those who do feel discomfort should consider the possible consequences of not allowing these grievances to be finally aired. Maori concern regarding land alienation to private state corporations is obvious and justified. There are still cases where our existing reservations can and are still being alienated even by our own people.

Forest and Bird: What priorities do you see for Forest and Bird to develop closer liaison and cooperation with the Maori people?
Lee: I have heard some of my elders say Pakeha are all conservationists when it comes to Maori land. I think there has been a feeling that there was an attitude of "what's yours is mine and mine's my own". The conservation movement and Forest and Bird must be fair and consistent with, and considerate of, Maori perspectives when dealing with conservation matters. Our first priority must be the development of better communication and trust between us, and the realisation that many of our aspirations in terms of conservation values are the same.

A big challenge facing me — and I think all of us in Forest and Bird, is to strengthen that partnership.

OUR KAURI HERITA

A NATIONAL PARK FOR THE NORTH

A new national park to protect the Crown kauri forests has been proposed by the Northland National Parks and Reserves Board. A preliminary investigation by officials of the Department of Conservation is underway, involving local communities, and a report on possibilities is due in October this year. Gordon Ell, Deputy National President of Forest and Bird and a member of the Northland National Parks and Reserves Board, outlines the proposal.

Whatever the outcome, this survey of remaining kauri forests will probably determine their future for all time. Estimates vary about the amount of kauri forest surviving but it is generally agreed to be only 2 percent to 4 percent of the forests which once clothed vast areas from the vicinity of Auckland northward. Yet these remnants are often substantial forests — three separate areas in themselves exceed the recommended minimum of 10,000 hectares required for a national park.

In all, the kauri national park proposal includes more than 92,000 hectares of Crown forests in Northland. Until recently only a tiny fraction was formally reserved.

The turnaround in kauri forest protection has been the recent Conservation Act which encompasses the old State forests and forest parks of the New Zealand Forest Service into the Department of Conservation. The bringing together of the national kauri estate, under one "ownership", has made the kauri park proposal possible at last. Only six years ago the National Parks and Reserves Authority rejected a proposal to create a National Reserve out of Trounson Scenic Reserve. This magnificent relict north of Dargaville was at that time the only major kauri forest protected by the Reserves Act. Yet, at a mere 566 hectares, Trounson is now dwarfed by the adjacent Waipoua Forest Sanctuary of 12,884 hectares. While Waipoua was controlled (and protected) by the New Zealand Forest Service it remained "out of bounds" for the Park Board's efforts to protect the symbolic tree of the north by giving it "national status".

Serious Omission

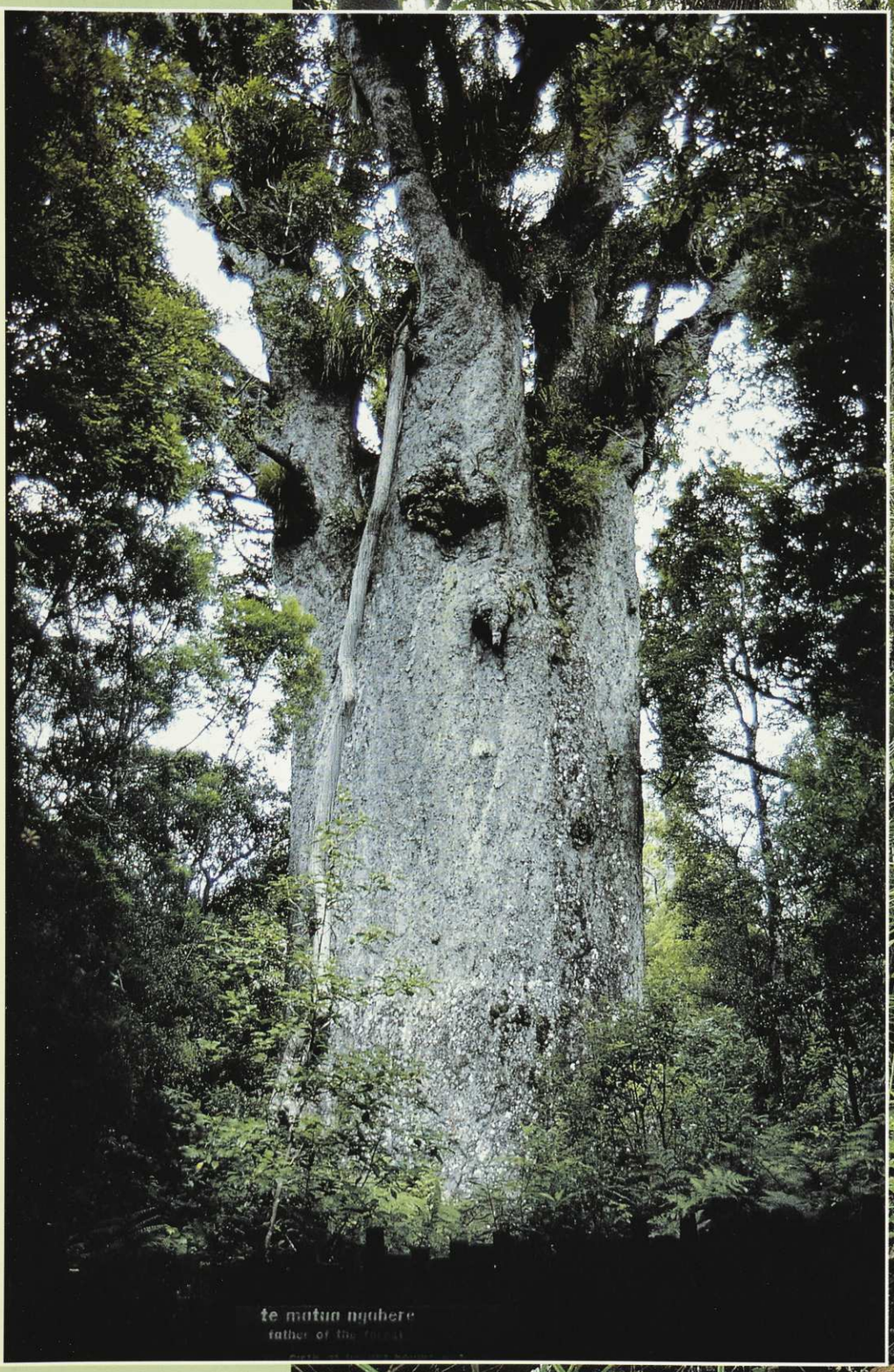
Despite two magnificent offshore maritime parks — Hauraki and Bay of Islands — the Auckland region lacks a mainland park regarded as "of national importance". This is not a matter of parochial disappointment; it is a serious omission in our system of protecting different natural areas. It means that while the beech and podocarp forests of the south are largely representative of the "subantarctic" zone, New Zealand's "subtropical" plants and trees lack the formal protection of national park. It is as if the plants of the north are somehow less worthy of protection, yet its forest types are arguably just as exciting and impressive.

North of a rather eccentric line which crosses the island about Auckland there lives a range of plants and trees unknown, in nature, further south. The kauri may be the most upstanding but the red-blossoming pohutukawa clinging to the coasts and the mudbound mangrove growing below high tide are among the more spectacular of plants which distinguish our subtropics. While there are scenic reserves, and now conservation lands taken from the Forest Service, there is no formal national park system to protect this heritage.

The kauri national park proposal looks at the remaining forests between Auckland and Kaitaia and advocates a broad-based park, aggregating most of the Crown forests there. It extends beyond the immediate vicinity of Waipoua (some 22,511 hectares including Waima and Mataraua forests) to take in a further 10,000 hectares along the western coast of Northland — protected remnants like Trounson and Katui (295 hectares), deep enclaves in the once vast kauri lands of the northern Wairoa.

Also in the brief of the park investigation are such spectacles as giant Maunganui Bluff (rising 460 metres sheer from the sea) and landmarks like the Kai Iwi lakes and

Lake Ohia. Remains of a kauri forest from more than 30,000 years ago are preserved in the peaty lake waters. Forest and Bird saved this unique gumland from farm development in 1985.
Photo: Gordon Ell, Bush Press



The mighty kauri, symbolic tree of the north. 190 years after Europeans first started to exploit this stately tree, reducing it in that time to about 4 percent of its former extent, plans are underway to bestow national park status on the north's kauri forests. Te Matua Ngahere (Father of the Forest) in Waipoua Forest has the greatest girth (16.41 metres) — of any living kauri.
Photo: Gerard Hutching

Kauri forest understorey. Photo: Brian Enting

The rare orchid Yoania australis *was not described until 1963. This elusive orchid is found under taraire trees within mixed forests of kauri, taraire and nikau.* Photos: Brian Enting

Kahakaharoa, the big dune at the northern entrance of the Hokianga Harbour. The investigation includes these places because they are such significant sights in a journey about Northland. Divorcing them from nearby forests is like closing your eyes to the Sutherland Falls or the glaciers on a southern journey. The diversity of reserves is like the concept of the Otago Goldfields Park, or the contrasting islands of the Hauraki Gulf Park. United by the kauri symbol, they preserve the essence of the wild north.

The park proposal also looks further north, to the shores of the Hokianga Harbour, where there is a further focus of Crown forests. On the northern shore is nearly 7000 hectares of Warawara Forest where kauri was milled into the early 1970s. Stretching inland is another 10,524 hectares of contiguous forest, with frequent kauri, in Raetea Forest, Maungataniwha Forest and Mangamuka Scenic Reserve. Eastwards towards the Bay of Islands another 13,760 hectares of forest includes the kauri of Omahuta, Puketi (northern home of the kokako) and Manginangina.

There are also the broad hills of eastern Northland, backing the remote coves of the outer Bay of Islands. Ngaiotonga Scenic Reserve rises from a broad river of mangroves through a succession of northern forest types to kauri on its ridge. Along with Russell Forest it contributes a further 7000 hectares to the proposal. Among other large blocks to be considered are Tangihua Forest (3240 hectares), Herekino (4745 hectares) and the bleak tableland of the Ahipara Gumfields (2925 hectares).

Kauri Theme Approach

The forests are not solid kauri — the tree does not grow like that — but like the big podocarps of the south it forms associations with other trees, often dominating the warm ridges with its broad-spreading head. The kauri exists in different stages of growth too, all worthy of representation in a "kauri theme" approach. Waipoua has the densest concentration of mature trees, some over 1000 years old. By contrast the southernmost reserve, Pukekaroro, is a conical hill of young trees emerging in fresh, green rickers above the sombre kanuka which nursed it. Pukekaroro would serve as the park's sentinel for travellers about to confront the Brynderwyn Hills where Northland proper begins.

The gumfields are part of the proposal because of their significance in the story of kauri. Ahipara is a high tableland where poor white kauri soils bear little but stunted manuka and, seasonally, orchids. The roots of burned and vanished forests poke out of the claypans where gum diggers washed their hard-won nuggets earlier this century. At Lake Ohia, on the eastern side of Kaitaia, holes where gum diggers probed and excavated gum abut a wilderness reserve preserving the typical gumland plants — a kind of stunted shrubland — and the giant stumps of kauri trees flattened by some cataclysm more than 30,000 years ago.

Elsewhere there are sometimes signs of pioneer milling — just as there are in parks like Urewera and Paparoa and Abel Tasman. That damage does not diminish the case for preserving what remains here either.

Part of the kauri story is the human history. Kauri dams are a testimony to the ingenuity of pioneer bushmen, although they were hardly efficient as many trees were damaged as they hurtled down streams, or else they became embedded in the ground, impossible to extricate. Photo: Gordon Ell, Bush Press

The fact is that much of the north was built on kauri. From the 1790s merchants were about the coasts of Coromandel and in the north seeking spars said to be on Nelson's ships at Trafalgar. Coastal ports flourished, as exporters to Australia and the Pacific, besides supplying the timber to build our own settlements. Ship building yards began before New Zealand was officially declared a colony and many famous sailing vessels were built of kauri beside the northern rivers. While some "kauri" towns survive as service centres and holiday resorts, the map of the north includes the ghosts of long-gone towns and ports, vanished with their supporting forests.

Maori legend records that the Mamari canoe was wrecked just south of the Maunganui Bluff on Northland's west coast and is now a reef there. This sheer bluff, rising 460 metres out of the sea, is being investigated for the park proposal. Photo: Gordon Ell, Bush Press

In an official's paper (to a joint meeting of the Northland Parks Board and the NPRA at Paihia last August) District Conservator John Beachman put forward five possible models for a kauri national park. They ran the gamut from preserving Waipoua and its neighbours, through a Hokianga model to a broader Northland one, and a "kauri matrix model" which took in harbours, coastlines, historic houses of kauri and a range of covenanted land, including museums and Maori protected lands. The Northland board chose a Northland model, expressly excluding private property and Maori lands. There will still be scope for private groups to work in with a park proposal by offering covenanted lands — one group already has — but the investigation and the park idea is firmly based on better protection and management of existing public land.

Maori Land Claims

As it is, much of the Crown land in Northland is subject to land claims by Maori people under the Waitangi Tribunal Act. These cases may take a while to resolve but in the meantime the park investigation proceeds. The process will include consultation with Maori people of the region.

The Park Board is charged by its Act to identify areas for protection and can make a recommendation without prejudicing any Maori claim. In the Far North, for example, the Park Board has already gained official endorsement for its Te Paki National Reserve, protecting much of the northern tip of New Zealand. That region too is subject to a Maori land claim. The Board's case is approved but no further action towards declaring a National Reserve will be made until the land claim is settled.

Maori feeling for the forests may be deep and traditions of places and trees are still a part of life. At Waipoua an archaeological project, advised by Maori people, has revealed settlement in the forest going back perhaps 900 years. Everywhere in the north dramatic Maori fortress pa are a tangible symbol of the cultural heritage which per-

vades the lands and forests of Tai Tokerau.

Nevertheless economic pressures are as strong on Maori tribal lands as they are on pakeha forests. Now the Crown forests are no longer available for milling, kauri timber prices have risen to levels unforeseen in the days when forests were poorly harvested and even burned. With bleak financial prospects both Maori and Pakeha farmers are being pressured to let the rights to cut kauri from their lands. The increase in private milling rights makes the preservation of what remains in state hands perhaps the only chance for the kauri.

Local government and business too will be interested closely in a park proposal, with its tourist potential and its impact on employment and services. Conservation groups and other community interests will be canvassed. Already the national bodies of Federated Mountain Clubs, Native Forests Action Council and Forest and Bird have given support for a national park. Their areas to date, however, are not as far ranging as the board's Northland-wide proposal. The Department of Conservation in Kaikohe will be drawing these interests together in compiling their report on the possibilities. At the same time the head office of the department, along with the National Parks Authority, has been asked to support the investigation, speeding up the process towards a Section 8 investigation — and this is the stage when the National Park Authority instructs the Department of Conservation to complete a further official investigation so it can recommend a park to the Government.

Slow Process

Making national parks can be a slow process: 14 years for the Whanganui; 12 years for the Paparoa. There is plenty of time for people to oppose it. Sometimes a park can be nibbled away while its supporters wait. Paparoa, created in 1987, protects only the fringe of the original Paparoa park proposal, while the Red Hills dropped off the edge of Mt Aspiring National Park and proved difficult to add in later.

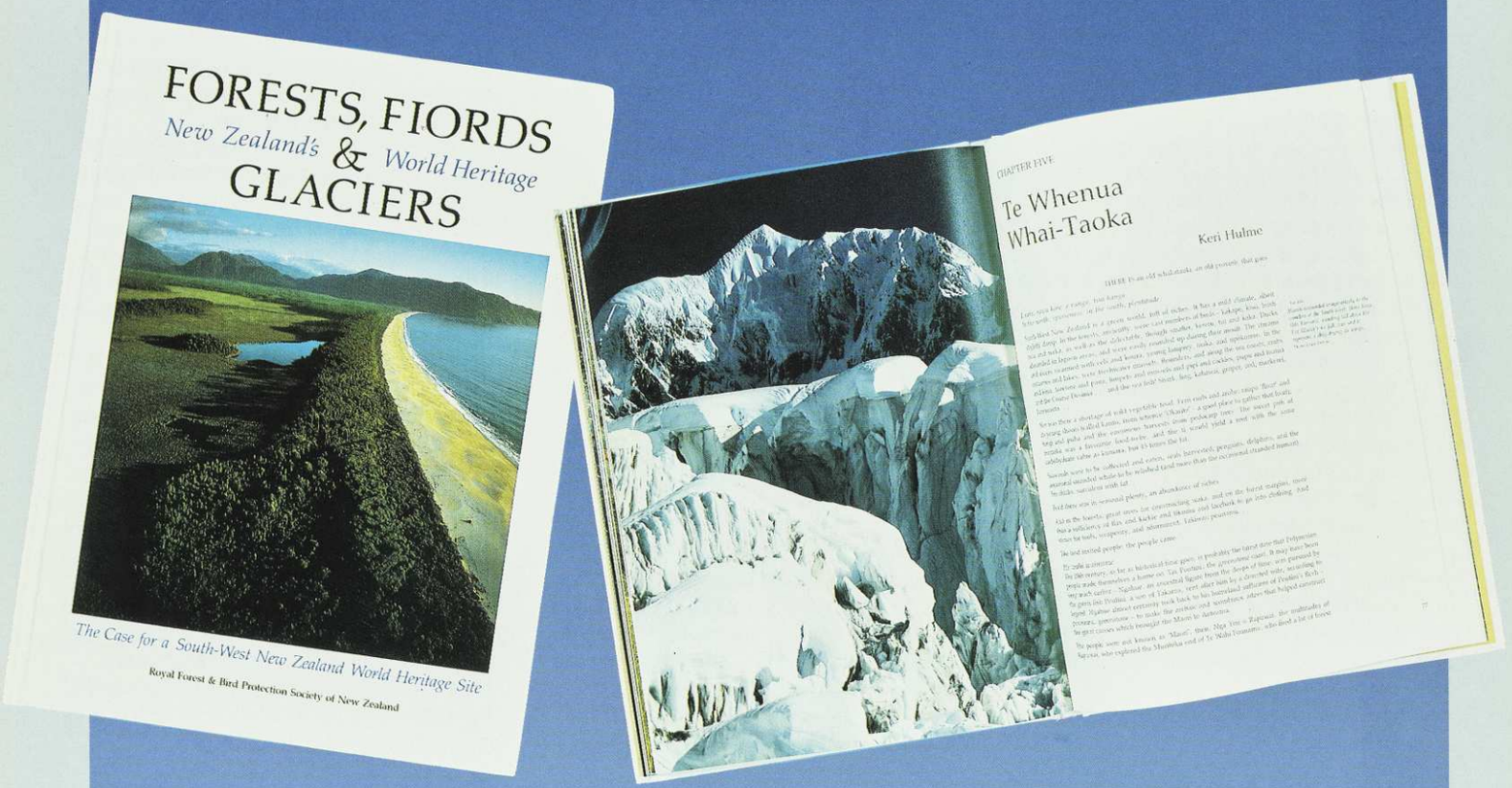
That is why the kauri national park proposal has begun with the broadest possible base. It is easy to erode an area of land; practically impossible to extend it once the investigation gets underway.

It is possible to see this "preliminary investigation" as a technique to spread out the process and negotiations. More positively, however, it represents a new approach in establishing parks and reserves — early consultation to speed the later stages of investigation. Desirably it will identify misgivings, and gather support, while clarifying the proposal.

Such a "theme" park, covering several forests, involves a degree of lateral thinking in national park terms. Yet to argue that a national park must be wholly contiguous is to condemn the kauri for surviving only in "islands", albeit often of national park dimensions. Interpreted and managed as one, the forests of the region should give a higher profile to wild places of the north. The park should become a place of some local pride and a further attraction to tourists exploring the north. By managing the forests as one, park authorities could give absolute protection to the most sensitive corners while encouraging people to enjoy the kauri experience in all suitable places.

Some people have argued that the remnant kauri forests have been so far whittled away that they no longer have the integrity befitting the title "National Park". Visit these forests, however, and you may agree that such "last remnants" deserve the maximum status and protection.

Forests, Fiords & Glaciers
New Zealand's World Heritage



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Send your cheque to RF & BPS Mail Order, PO Box 631, Wellington. You can also order through the mail order catalogue which comes with this magazine.

Fiordland's Kepler Track Opened

The Kepler Track in Fiordland National Park, near Te Anau was opened on 21 February. This 3-4 day, 65 kilometre round track runs through the Kepler Mountains. It is a high standard tramp with good huts suited for people of moderate fitness. In opening the track, Tourism Minister Phil Goff noted that more than $1 million for construction of the track came from his department in recognition of the tourism industry's debt to New Zealand's natural heritage. More than 400,000 overseas visitors went to at least one national park last year and Fiordland National Park was the most frequently visited.

Mr Goff said the Kepler Track was a much needed addition to the park's facilities and would relieve pressure on the Milford and the Routeburn tracks. Both tracks are now used nearly to capacity. 10,000 people walked the Milford track last year and 8,000 the Routeburn track. The Kepler track will be easier and cheaper for New Zealanders to walk than these other two tracks because of its common start-finish point and easy accessibility.

At the 28 January launch of our South West book Mr Goff strongly supported the South West New Zealand World Heritage proposal. Tourist and Publicity also gave the concept its endorsement in its recent submission on the future of southern South Westland forests.

Forest and Bird Distinguished Life Member and long time Fiordland National Park advocate Les Henderson of Te Anau cuts one of the ribbons to open the Kepler track. Photo: G. McSweeney

Congratulations to Telecoms

Only days before their transfer of assets, Telecom staff agreed to place protective covenants on:

- taraire forest around their Warkworth satellite station
- coastal landscape at Musick Point, Howick, Auckland
- walkways, bush and coastal shrubland at Makara, Wellington
- coastal cliff herbs below the Chatham Island radio site

In addition they agreed to reallocate more than 300 ha of wetland to the Department of Conservation on their Awarua radio site near Bluff.

Telecom's cooperative attitude was in marked contrast to that of the other state-owned corporations, in particular Electricorp, which initially refused to even discuss issues over the land they were claiming — they wanted to own river and lake margins.

TBT in Mammals

TBT, the anti-fouling additive in boat paint which has been found to be extremely toxic to shellfish, has been found in the tissues of five dead Californian sea otters. The highest TBT level recorded was 1.2 parts per million, 50,000 times the concentration known to be harmful to oysters.

The significance of the finding is not yet known, but it is hoped that the proof that TBT can accumulate in mammals will lead to further research.

Meanwhile, the New Zealand Navy is pleading to be exempted from moves to have the paint additive banned in New Zealand, because it claims paint with TBT is "more effective". The NZ Navy seems to be taking its lead from the US Navy, which also wants to use the anti-fouling paint, and which has conducted tests supposedly showing the paint to be environmentally safe.

South West Tours Popular

Forest and Bird's special 6-day natural history tours have proved immensely popular with both our members and Haast people. The three tours last year and two so far this year have been booked out with nearly 150 participants.

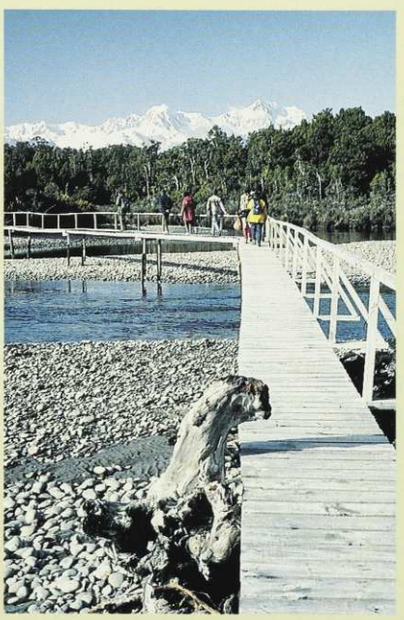
The tours are being organised by Forest and Bird's West Coast conservation officer Kevin Smith to introduce members to the great forests, coastlines, wetlands and wildlife within our proposed South West World Heritage Area. Local tourist operators are also very enthusiastic about the tours whose leisurely exploration is in marked contrast to the mad rush of most visitors to this region.

Further tours will be run during the clear settled weather this July so members should write to Kevin Smith, Box 57, Hari Hari, South Westland for details.

Cole Creek Beach near Haast is one of the few beaches left in New Zealand dominated by the native sandbinding sedge pingao. Forest and Bird's Natural History tours are helping to keep it that way by weeding out any introduced marram grass to prevent it swamping the pingao.
Photo: G. McSweeney

Forest and Bird

SOUTH WESTLAND ADVENTURE TOURS



Have the winter holiday of a lifetime in beautiful South Westland with guide Kevin Smith, an acknowledged expert on the area.

One definite trip is being offered: July 15-20. However, others will be added depending on demand.

These non-profit tours are organised by Forest & Bird to show members the heart of the proposed South-West World Heritage area. Walk through kahikatea forests, discover wetland birds in flax swamps, see seals and penguins along the coast.

All inclusive costs for transport, quality food, motel accommodation, guide, commemorative booklet. Remember: winter is the most settled period on the Coast and is an ideal time for a Coast holiday.

For further details, contact Kevin Smith, PO Box 57, Harihari, South Westland, or phone (0288) 33-090 (Harihari).

THE GREAT SUBMISSION WRITING EXERCISE

Submission writing, it seems, has been elevated almost to a literary art form by conservation minded New Zealanders, to judge by the latest South Westland exercise.

By deadline time more than 3953 people had put pen to paper and written to Environment Secretary Roger Blakeley, an effort that exceeded even the big campaigns of the late 1970s-early 80s.

If conservationists are jubilant at this massive public response, pro-loggers have cause to be unhappy, knowing that the overwhelming weight of public opinion is to protect South Westland's forests in a national park.

1988 is decision time for the forests. The options are quite clear — either protection or logging. Forest and Bird is committed to protection and totally opposed to logging.

These two options are set to exercise the minds of the Blakeley Committee this year, which is due to report to the Government by December 31. Forest and Bird West Coast field officer Kevin Smith is the conservation representative on the committee.

The Government's 1987 Election manifesto made it clear that the forests have international values and areas set aside for protection south of Fox Glacier would be nominated as part of a South West World Heritage site. At the February launch of the book *Forests, Fiords & Glaciers,* Ministers Philip Woollaston, Helen Clark and Phil Goff reiterated that commitment.

The Department of Conservation has also told Blakeley in no uncertain terms where it stands, with its strong protection message contained in its South Westland submission. Well researched, cogently argued and highly informative, the submission is worth having as a valuable resource document in its own right.

Below are reproduced excerpts from just some of the 3000 submissions supporting protection.

In Trusteeship

"One reads and hears of New Zealanders bemoaning the actions of other nations who permit, or watch helpless as, white rhinos or orangutangs, tropical forest or mountain scrub are threatened or lost forever. We too have our insensitivities or lack of determination which allow us to destroy parts of our trusteeship which we hold not just for ourselves, but for the whole world. Our record is not an enviable one.

"The forests of South Westland are a truly remarkable remnant, and I cannot over emphasise their world value. Being largely forest-wetland, they are extremely sensitive to change. The fact that huge areas are inaccesible to all except the most ardent adventurer in no way lessens the arguments for their preservation in as near pristine condition as possible." (Putaruru)

No Need to Destroy

"Our family immigrated to New Zealand in 1980. In New Zealand we enjoy clean air, clean water, healthy soil free of nuclear contaminants and above all beautiful native forests to which visitors from overseas flock.

"Forests all over the world are being decimated by saws, acid rain or disease. There is no need for New Zealand to destroy the South Westland forests. It is essential that they be preserved as a heritage for New Zealand and the rest of the world." (Invercargill)

Miraculously Intact

"I have spent all my working life in the North Island and much latterly in Hawkes Bay. Like the rest of the east coast of the North Island, its landscape has been almost totally changed by Europeans anxious to establish pastures and farmlands. How much bush, scrub or wetlands can you find between Palliser Bay and Te Araroa? How many species of native plants, insects and birds have been lost because of such drastic treatment to such a large area?

"To a North Islander it seems miraculous that such a beautiful and unique area as South Westland is still relatively intact right up to the present day. Surely it is obvious to the authorities that the opportunity must be seized and the place preserved as a national park. North Islanders bring to South Westland the sharpest appreciation of its richness as part of pre-European New Zealand." (Napier)

Employment Prospects

"When I spent a holiday in South Westland in November 1987 I talked to friends there about the plans for future developments. I have listened to many different points of view and understand the reservations some people have about the impact of tourism, its unpredictability and the need for secure employment. In the past the traditional industries of logging, sawmilling and gold mining provided employment and prosperity for the West Coast and there is resistance to any change in this situation. However with careful planning tourism could be developed to cater for people with a wide range of interests. A national park centred on Haast could serve this purpose." (Wellington)

Unique Heritage

"I think the mountains, rivers and forests south of the Cook are a unique heritage which we in New Zealand ought to treasure and protect just as they are. I think they are a splendid tourist attraction and although there are not many tracks yet, these will surely come with further development. The wildlife too, of kaka, parakeet and whitebait must be protected or it will surely disappear. I hope it will be possible to give this area world heritage status. Sustained yield logging would be a disaster." (Greymouth)

Large Areas Needed

"I live in Rotorua. Here we are surrounded by radiata pine plantations. There are precious few areas of native bush left, and the fragments are so small that the larger birds like the kokako and kaka have become relatively rare. I want to make the point that it is not only samples of native vegetation that we need protected, but areas large enough to provide habitats in which the more mobile species can thrive. An area like southern South Westland, remote from large centres of population, would be ideal as a national park because of its extent and because of its remoteness."

Nothing Left to See

"I am only 11 years old and I already see what you are doing to New Zealand. We should protect this plentiful piece of land. Soon there will be nothing left; then where will you be? Tourists will not come to see the white heron or other beautiful animals because there will be nothing left, so be wise and protect what you have left."(Auckland)

Former Logger

"I consider that this area is a valuable and sensitive natural environment, well worthy of "Conservation Park" or maybe National Park. It would be a crime to log any of it, especially with the present timber glut on the West Coast.

I have spent a number of years in both logging operations and environmental forestry. I have worked in native logging gangs on the West Coast. I am not anti-logging or mining, but their values to our country are short term and only benefit a small, already well-off part of the community. They have their place in areas which have no natural values and can be returned to farmland or exotics." (Greymouth)

International Submission

"The Directors of Friends of Nature, an international conservation society with members in New Zealand, have voted unanimously to go on record as urging the establishment of a National Park to preserve the native forests of South Westland, south of the Cook River. The remaining wild areas of your country are very special and contain unique flora and fauna.

I have had the pleasure of visiting the forests of Westland on three occasions in the last twenty-five years and I hope these magnificent woodlands will be preserved by the New Zealand government." (Canada)

Lifeblood of the Forests

"This holiday period we travelled to South Westland to experience the forests and wetlands of that area. As we travelled the path — well worn by many and a growing number of tourists — we were enthralled by the large areas of forest. We experienced driving along roads where kahikatea and rimu touched overhead and where the rain feeds wetlands which keep roadside ditches forever running with water. We were miserable when the days were filled with clouds and rain but realised this was the lifeblood of the forests and wildlife within them. We had a wonderful experience." (Wellington)

A WARNING TO US ALL

The Governor-General, Sir Paul Reeves, opened Paparoa National Park on December 5, 1987. His speech on the danger of excessive commercialisation of national parks, reproduced here with his kind permission, will strike a chord with many members.

The load of junk and garbage left by climbers of Everest should act as warning to us all, especially when we set aside land for a national park.

I listened carefully to the minister when she spoke of integrating conservation and development and the interest which they represent.

I want to suggest that within the particular sphere of conservation there are still issues which must be faced.

Just as the cathedrals of England can be endangered by the sheer numbers of people who visit them, so we can love our national parks to death.

Surveys indicate people want to visit national parks; 1,000,000 per year visit Tongariro. I know that in management of national parks there are different zones of recreational use going from high intensity to restricted access. There is eternal difficulty that while we want people to enjoy the land, how do they do that without changing it forever?

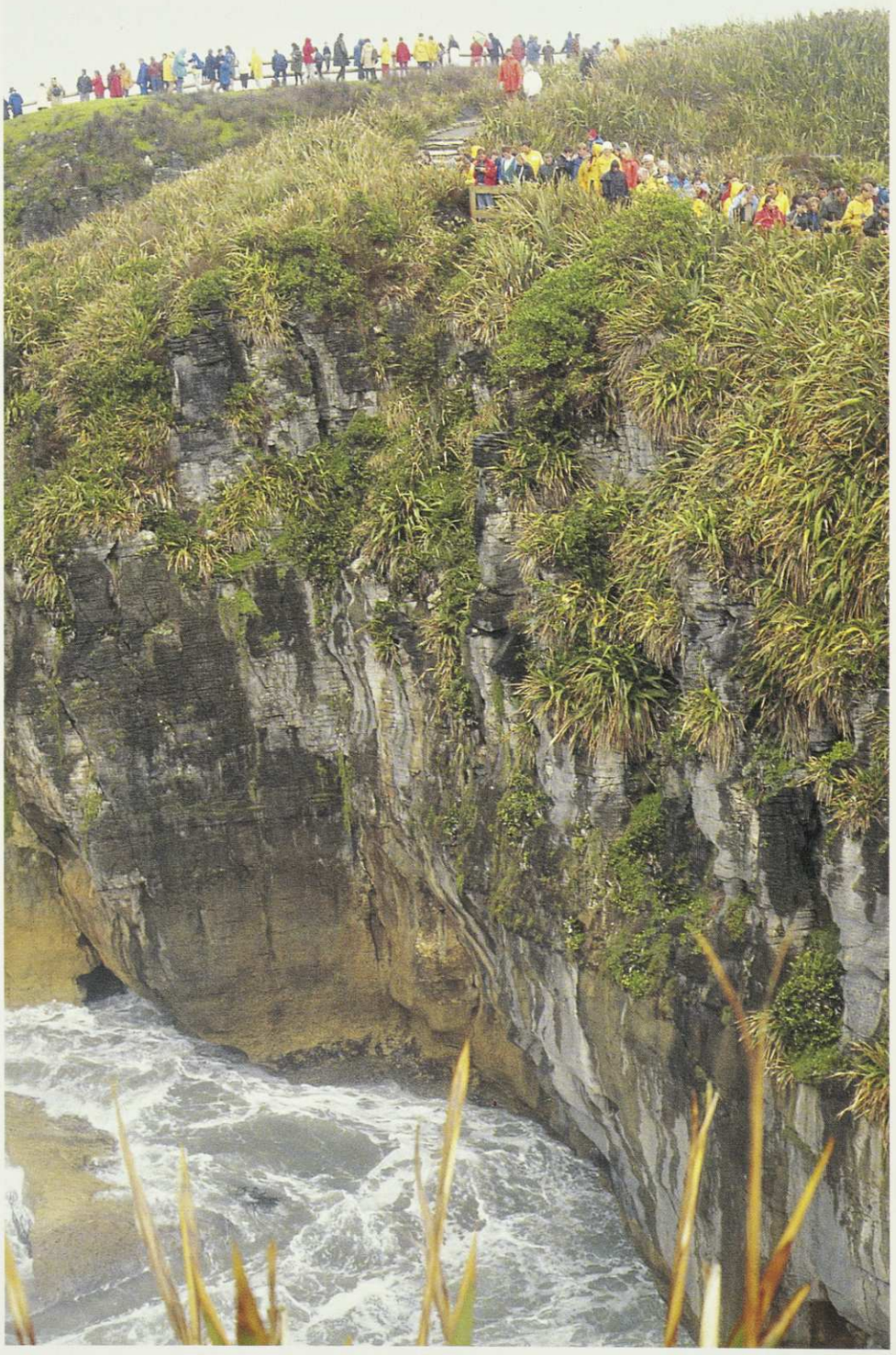
I understand the Grand Canyon reverberates to the sound of 274 helicopter and small plane flights each day. Presently they are working to get cars and concessions out of Yellowstone Park and planes out of the Grand Canyon.

I realise management involves compromise and that is why the staff of national parks must be both sensible and sensitive. I read recently New Zealand needs a clear philosophy of values for national parks. Is the aim, asked the writer, a natural world free of consumer comfort and impact where time and space are measured by natural rhythms and where people see, hear, taste, and smell only what they can never create?

Well, it probably is. I would prefer to say that national parks are not fun parlours. The minister has stated that the Department of Conservation will seek to develop a good working relationship with the tourist industry and not allow this park to be spoiled by extensive commercialism. I hope the tourist industry shares the same aim. When you decide to bring people to where they have not been before, that is a very significant decision. When you make things of beauty accessible, for the first time, you are trusting in people's sense of responsibility. Management may reduce the risk but it still remains.

National parks ultimately raise questions about us. What sort of people are we? Do we have a loving relationship with the natural order or do we charge around like bulls in a china shop?

Time will tell, but I am very glad to declare this Paparoa National Park open.



Guests at the opening of Paparoa National Park high above the surging sea that shapes the Pancake Rocks. Photo: Alan Mark

Giant Wetas

Endangered and Neglected

Conservationists will readily support a project to rescue an endangered bird, but it takes more persuasion when the species is an insect. Here Alison Ballance of Ecology Division, DSIR, explains the work being carried out to save the world's heaviest insects.

Wetas are large flightless insects related to crickets, and "giant weta" is an umbrella term for eight species that belong to the genus *Deinacrida*. Giant wetas have squat, heavy bodies and a matt rough-textured exoskeleton. They cannot jump, and they have a generally placid nature. Giant wetas have been described as "insect dinosaurs", in recognition both of their links with Gondwanaland, and their status as the world's heaviest insects.

Tree (or bush) wetas are the wetas that most people are familiar with, and they differ in several significant ways from giant wetas. They are thinner, more streamlined insects with a glossy appearance; they are strong jumpers; they have large, powerful jaws; and they can kick and bite to defend themselves. Cave wetas are another well-known group of wetas, which are classified in a completely different family from giant wetas and tree wetas. They have small bodies, very long spindly legs and feelers, and are common in dark places such as caves.

Giant wetas are nocturnal vegetarians. During the daytime they retreat into refuges in the foliage of trees or shrubs, or in holes in trunks or branches. At night they feed on leaves, seldom venturing onto the ground. A female giant weta produces several hundred eggs, which are laid in the soil over several months. The eggs are cigar-shaped, about 5mm long, and take between two and nine months to develop and hatch. Hatchlings mature in about 18 months, and they moult about 10 times as they grow. Once they are mature they pair and mate, and then die, shortly after the female has laid eggs. The lifespan of a giant weta is about two years.

All of the species of *Deinacrida*, except for the high-altitude scree (or boulder) weta which is common and widespread, are legally protected under the 1980 Wildlife Amendment Act. Four of the species that are now confined to islands are listed as "threatened" in the International Red Data Book of endangered species. Until recently little was known about the giant weta species surviving on the mainland, but over the last couple of years those at Kaikoura and Mahoenui have been the subject of much attention by Ecology Division DSIR and the Wildlife Service (now part of the Department of Conservation). Both species survive in low numbers in highly modified farmland habitat, and the history and status of their populations highlight some of the general problems of invertebrate conservation.

Wetas are vegetarians whose favoured foods are leaves. However, like this Kaikoura weta, they will also chew on bark. Photo: Brian Enting

Top: *Quite different coloration sets the Mahoenui giant weta apart from its relatives. Like other northern-dwelling wetas, the Mahoenui lives in trees. The further south they occur, the closer they live to the ground.* Photo: Brian Enting

Left: *The only known habitat for the Mahoenui giant weta is this 300 ha expanse of gorse on King Country farmland. While the giant weta now appears to be surviving in this recent habitat, it is still very vulnerable — it would take only one disaster such as a fire to destroy the whole species.* Photo: Alison Ballance

Right: *Kaikoura giant wetas have been found in the last few years in rotten logs, scattered across scrubby farmland, at several sites on the Kaikoura coast. The wetas are at risk from predation by rats, trampling by stock, and the deliberate use of fire to clear pastures.* Photo: Alison Ballance

Mahoenui Giant Weta

Until the 1960s it was thought that all of the mainland populations of giant wetas were probably extinct. Then, in 1962, a teacher from the school at Mahoenui, in the King Country, contacted Entomology Division DSIR about an unusual black weta from a local farm. Three more wetas were found later that year, and the species was initially identified as *Deinacrida heteracantha*, the species that is found on Little Barrier Island. However, subsequent examinations revealed differences in size, behaviour and physical characteristics that show it is clearly a separate, but as yet unnamed, species.

Between 1962 and 1986 only a handful of giant wetas was found at Mahoenui. The wetas were hiding in gorse, rotten tree stumps and a hollow ponga in several small tawa forest remnants, and in an area of pine trees and mature gorse. By 1986, many of these sites had been cleared for farmland, and it began to look as if the population could be on the verge of extinction. The outlook for the giant weta population at

Mahoenui was at its most gloomy when Ecology Division DSIR proposed a last-ditch rescue attempt: to take as many wetas as possible into captivity, breed them, and release the offspring onto a rat-free island. Mike Meads of Ecology Division had already shown that it was possible to establish new populations of wetas on islands, when he successfully transferred some giant wetas from Mana Island to Maud Island in 1977.

In December 1986, a team of seven people from Ecology Division and the Wildlife Service spent four days searching at Mahoenui. They found 13 wetas, most of them in the skirts of dead fronds on some scattered tree ferns in the corner of a farm paddock. Three pairs were taken by Ecology Division to form the nucleus of a captive breeding population.

In 1987, the Department of Conservation (DoC) began some on-site management. This included erecting an electric fence to exclude stock and goats from the area of tree ferns where the last wetas were collected, and creating artificial refuges by hanging sacking around tree fern trunks.

Late in 1987, DoC called a meeting of interested DSIR and DoC staff to discuss the management and future of the population. Local DoC staff made an intensive search of the area several weeks after this meeting, and found giant wetas throughout 300 ha of adjacent gorse. The discovery was greeted with some relief, as it meant the situation was not as critical as had been believed.

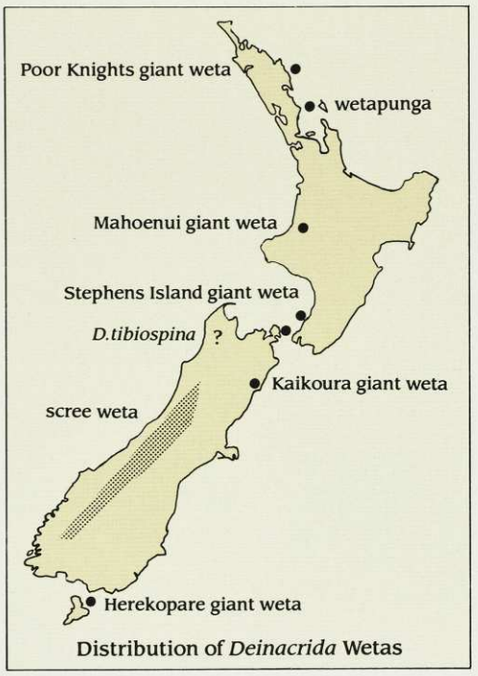
The next move by DoC was to prepare a Species Recovery Plan which outlined management options. The options included leaving the population alone, managing the site, breeding and maintaining the wetas in captivity, and establishing new populations. The course of action is currently being considered. In the meantime, Ecology Division's captive breeding programme is continuing, and DoC is keeping an eye on the situation at Mahoenui.

Kaikoura Giant Weta

The Kaikoura giant weta was described from a single specimen by Buller in 1894, and it remained virtually unknown until 1966 when another animal was found. In 1984, a party of surveyors reported to Ecology Division that they had found a female giant weta under a gatepost on a farm near Kaikoura. This sparked several searches by Ecology Division and the Wildlife Service in the following years, and giant wetas fitting the description of Buller's Kaikoura giant weta were found in very low numbers at a few scattered localities. Because it would be difficult to manage such a sparse and widely distributed species, Mike Meads proposed captive breeding and release on a predator-free island.

Very few wetas were found. Three searches in three years turned up only seven wetas. Although some were taken into captivity for breeding, a major stumbling block was that all the animals were of different ages, and they were unable to mate. It wasn't until 1987 that an adult female and an adult male were available together, and the breeding programme could get under way.

The distribution of the Kaikoura giant weta is still unclear. Reports of giant wetas from various sites along the Kaikoura coast trickle in, but a lack of staff and money limits its efforts to confirm them. It can be a time-consuming business searching for wetas. On the most recent survey, in September 1987, 11 wetas were found during a week of searching, and each weta took, on average, nearly five person-hours to find.



Giant wetas used to be found in forest and scrub throughout New Zealand, but since the arrival of humans much of their habitat has been modified or destroyed, and introduced predators such as rats have taken a heavy toll. Four species of giant wetas, including the three largest species, are now found only on rat-free offshore islands, and the situation for the Kaikoura and Mahoenui giant wetas on the mainland is precarious.

Conservation Battles

Trying to get support for a conservation programme for giant wetas is an uphill battle — people are fascinated by giant wetas, but most don't actually like them. While cute black robins, for example, produce great feelings of tenderness and protectiveness, giant wetas, no matter how endangered or deserving, provoke reactions of either dislike or apathy. "Cold prickly" animals just don't have the instant appeal that "warm fuzzy" ones have.

While dislike or apathy can make it hard to take conservation action for a species, they are not insurmountable problems. There are examples of positive feelings and enlightened conservation programmes that show it is both possible and beneficial to conserve invertebrates. In Japan, for example, a dragonfly sanctuary has played upon reverence of the insect as a symbol of power and harbinger of bumber crops, to the benefit of both the insects and the local people. The dragonflies have been saved from the effects of habitat destruction and pesticides by the creation of a 50 hectare sanctuary, and the local economy is benefitting from the estimated 100,000 tourists that will visit the sanctuary each year.

In New Zealand a large part of the problem is a lack of knowledge about invertebrates. Even though they far outnumber the other animals in our wildlife, both in diversity and in sheer numbers, they are inconspicuous and poorly studied. The number of experts on insects, for example, is small compared to the number of experts on birds, despite the bewildering array of insect species they have to deal with. There is a corresponding lack of information available within schools or to the general public, which means that people seldom get an opportunity to learn about New Zealand's invertebrate fauna. As long as people remain ignorant about invertebrates they will continue to neglect and undervalue them.

What we do know is that one of the biggest threats to invertebrates is the gradual loss of habitat caused by land development. Although it is sometimes necessary to concentrate conservation efforts on a single species, such as the giant weta, the most effective way of conserving as many invertebrates as possible is to conserve a wide range of habitats.

When talking about conservation of invertebrates, one of the most commonly asked questions is: "Why conserve them"? There are many answers to that question, based on economic, moral, spiritual and emotional reasons, and an article like this can't begin to do justice to them. One of the basic arguments in support of conservation is that all species, including giant wetas, are part of a complex ecosystem. Like every other part of the ecosystem they have a role, even though it might not be immediately apparent to us what that role is. To maintain the integrity and health of the ecosystem, and thereby ultimately our own health and well-being, we need to maintain the individual species which make up the ecosystem. And that includes giant wetas.

The histories of the Kaikoura and Mahoenui giant wetas show how easy it is for an insect, even one as relatively conspicuous as a giant weta, to be overlooked until it is nearly too late. Their stories highlight how difficult it is to do anything about saving invertebrates, because there are few precedents for it, there is little mana attached to it, and it is difficult to enlist public and financial support. One of the biggest conservation battles ahead of us will be to persuade people that invertebrates can be as endangered as any bird or mammal, and that conservation efforts on their behalf are not only possible, but are also valid, worthwhile and necessary.

Ecology Division DSIR acknowledges with thanks Forest and Bird, in particular the Lower Hutt Branch, for their financial support of the captive breeding programme for the Mahoenui and Kaikoura giant wetas.

How you can help to save our giant wetas

In January the Society launched a "Breed a Weta Campaign". We asked members to donate $10 towards the cost of a weta breeding box and thereby becoming registered as the sponsor of a weta box. Once hatched, each weta requires a separate box because of their cannabilistic tendencies. Please send your donation in multiples of $10 to Forest and Bird Weta Appeal, PO Box 631, Wellington. To date we have raised more than $1000, enough for 100 breeding boxes.

The New Zealand Dotterel

A New Zealand dotterel and one of the few dotterel chicks which managed to hatch last season. It will still be touch and go as to whether this chick will make it to adulthood. Photo: Brian Chudleigh

Fewer than 1300 New Zealand dotterels are left in the world, and their numbers have been slowly declining for the last 20 years. Probably the main reason why the population has suffered is the fact that its choice of breeding ground — a sandy beach with a nearby stream — is also popular with humans. Tauranga branch member* Brian Chudleigh *has been looking at the problems the dotterel and other shore birds are experiencing on our coasts.

Although we recognise the fact that wetlands and forests are diminishing, along with their inhabitants, only recently has attention begun to focus on what is being done to our sandy shoreline. My years of wandering the Bay of Plenty coastline watching and photographing birds has revealed an alarming lack of breeding success for the New Zealand dotterel, as well as problems for other birds.

In the North Island the dotterel is a bird of sandy, ocean beaches and estuaries, breeding mostly just above the tide where it lays three well camouflaged eggs in a shallow depression in the sand, or occasionally in gravel or short grass. Often it nests very late; around Tauranga Harbour it is rare to see eggs before late October and it is frequently November before the clutch is complete. The eggs take four weeks to hatch and during that period they must survive a multitude of human hazards.

Fishing, swimming, boating and surfing bring people on to the beaches as the weather begins to warm up in late spring. Few people notice the small brown birds running around on the sand and even fewer see the well disguised nests among the flotsam on the sand.

Like most birds which nest on the ground, the New Zealand dotterel leaves the nest when danger threatens. Even if people are as far away as 100 metres, they will keep a bird away from its eggs so that incubation cannot continue. Although the eggs may not be walked on, taken or washed away, they probably will not hatch in areas actively used by people. The eggs cool down or overheat while the adult is off the nest.

Motorcyclists and off-road vehicles are an added hazard to these specialist shorebirds. Some enlightened countries have banned such vehicles from anywhere but private property and certain roads set aside for the purpose. In New Zealand, only Mangonui County in the far north of Northland bans vehicles from many of its beaches where New Zealand dotterel breed. But generally what few restrictions exist seem not to be enforced and these vehicles are tearing up the most isolated beaches, making breeding impossible for birds. Even isolated Matakana Island's long ocean beach is regularly carved up by vehicles.

A further contribution to the dotterel's woes is a massive increase in black-backed gull numbers. About 1000 pairs of gulls now nest on Matakana Island, usually further back from the edge of the tide. Predatory species that they are, they usually pick off most of the few dotterel chicks which do hatch. Banded dotterels have given up trying to nest on the northern end of Matakana Island, although New Zealand dotterels have not given up — however I have not seen a chick in years. Oystercatchers still succeed because they are more than a match for the gulls.

A dotterel nest, Matakana Island. What chance do our sandy coastline birds have against these odds? Photo: Brian Chudleigh

White-fronted terns nesting on Tauranga Harbour during the 1987-88 season were under siege from the black-backs. Half a dozen pairs of breeding gulls had all but wiped out all the chicks of 100 pairs of terns at my last visit. All I could find were two tern chicks.

Buildings close to the shoreline have put pressure on birds, and the fact that sand has been used dredged from the shores of Matakana Island is causing serious erosion. At one time the Sulphur Point reclamation was a fine man-made habitat for nesting birds, among them half a dozen pairs of New Zealand dotterels, but it is years since they have bred, thanks to the motorbikes and four-wheel drives which disturb them.

Finally, human attempts to halt erosion by planting marram grass have affected the dotterels adversely. Dotterels like to nest where they have 360 degrees visibility but the existence of marram has forced them into areas where their eggs are prone to being washed out in storms.

Why, if New Zealand dotterels are not dramatically declining in numbers, is there any reason to fear for their future? Quite simply, the reason why dotterel numbers have only declined slightly in 20 years is because it is a long-lived bird — one colour-banded bird was still alive last year and known to be more than 35 years old. It is thought they average about 20 years of age.

Unless some way can be found of improving their breeding success, we may find one day soon that the New Zealand dotterel's numbers drop alarmingly.

Success

For the past two summers Waikato Forest and Bird and the Department of Conservation have paid a warden to keep people, dogs and vehicles out of the Wharekawa Wildlife Reserve on Coromandel Peninsula. The warden redirects people and their dogs to other parts of the beach and a rope fence keeps vehicles and the more inquisitive people out. This small area has produced 15 dotterel and 19 oystercatcher fledglings in two years. In the years before this no chicks were successfully raised.

Failure

Omaha spit near Warkworth is typical of most dotterel nesting areas — plagued by off-road vehicles, dogs and high numbers of people during the nesting season. This site is also an important dotterel flocking site during the winter with 50-60 birds gathering there. Few eggs hatch and those chicks which are produced rarely survive the continual disturbance.

WHO IS HELPING HOIHO, THE YELLOW-

"Penguins just a mile from here?" The American's laconic attitude suddenly changed; this was something different! . . .

I was speaking to him amidst the bleak desolation of a native forest clearing operation in eastern Southland. He was selling a log hauler to the chipmill company, I was selling conservation. He was having more success. The idea of penguins living in a forest was completely new to him however, and I gathered that he had always thought of them as cute creatures standing on ice floes or adorning Christmas cards.

We both learned some things from our brief talk: he about our unique yellow-eyed penguins and me about the potential interest in the bird by people from the penguin-less northern hemisphere. However, our talk did little to help the penguins and the forest destruction went on, fueled by the chipmill's demands and farmers' need for more land.

Bush-felling binge

That was some years ago, at a time when government incentives for farm development were encouraging a bush-felling binge of historic proportions. Today the chipmill still demands the forest, but in eastern Southland at least, there are fewer owners willing to provide it. Even the local people have become alarmed by the rate of forest loss. As well as this, after years of neglect, something is at last being done about the yellow-eyed penguin. Concerned people in the south are working and gearing up for a massive effort to save this rarest penguin in the world, and certainly one of the most unusual.

What makes it so extraordinary? The yellow-eyed penguin, or "hoiho" (Maori meaning "noise-shouter"), is found only in New Zealand waters and is not closely related to the world's 15 other penguin species. One of its most obvious peculiarities is that instead of congregating in closely packed breeding colonies like other penguins, it prefers to seek out solitary nesting places in coastal forest and scrub, sometimes more than one kilometre from the coast. So compelling is this drive for solitude, a pair of hoiho will usually fail to breed successfully if they are within sight of another pair's nest.

Hoiho is the biggest of New Zealand's five native penguin species. It grows to about 60 centimetres long, is grey with a typical pure white underside and has a handsome band of yellow feathers behind its yellow eyes. Its attractive colouration and size is well described by its scientific name: *Megadyptes antipodes,* meaning "big diver from the Antipodes". Its present population is estimated to be about 5000. It breeds along the south-east coast of the South Island from Moeraki to Bluff, as well as on Stewart Island and the sub-Antarctic Auckland and Campbell islands. Unlike other penguins it is sedentary, living near its breeding grounds all year. Only the fledged juveniles travel north up to 500 kilometres to winter feeding grounds.

Greatest threat

The greatest threat to the survival of hoiho is on the mainland where nesting sites in forest and coastal scrub have been cleared for farms. Besides removing the birds' hiding places, the clearance has encouraged predators. Rats, wild cats, stoats, ferrets and dogs all pose a hazard. The chicks are at most risk, although stoats, dogs, and unfortunately even humans have killed adult birds, most commonly during their vulnerable three-week moulting period in autumn. Even on offshore islands hoiho is not secure from introduced carnivores. On Stewart Island, cats are a menace, while rats, cats and pigs are present on the main Auckland Island and rats and cats roam Campbell Island.

Some individual efforts have been made to help hoiho. These range from the Jones's penguin "hospital" at Moeraki in North Otago, to the Southland Forest and Bird Society's Te Rere penguin reserve project. It has become apparent however that greater co-ordination is needed. In response to this need, the Department of Conservation has produced a draft species recovery plan. Also, a Yellow-eyed Penguin Trust has been set up by concerned individuals, its aim being to co-ordinate efforts to reverse the decline in numbers of the bird.

One person who can take a major portion of the credit for the recent highlighting of hoiho's plight is John Darby. John, an ornithologist who works for the Otago Museum in Dunedin, has led research into the birds' numbers and habits, taking up where pioneer researcher, Lance Richdale, left off more than 40 years ago.

John's enthusiasm has encouraged others and he has co-ordinated a much needed census of the mainland population. We now have a good knowledge of the distribution of the 41 breeding areas on the coast, and we also have clear knowledge of the crisis the bird faces with a low and rapidly declin-

The lighthouse at Moeraki Point has become a beacon of survival for many yellow-eyed penguins. Janice (pictured) and Bob Jones are honorary rangers who have been rescuing sick and starving penguins and nursing them back to health in a swimming pool donated by Forest and Bird. Starvation may be caused partly by the El Nino weather phenomenon, which has affected the oceanic food chain. Because squid is a favoured food for juveniles, questions are also being asked about whether foreign fleets are depriving the bird of this vital fish.

EYED PENGUIN ?

by Fergus Sutherland, Forest and Bird Southland branch chairman

ing population. John has shown that there are fewer than 700 birds left on the mainland and that losses have continued since the first full count in 1984. The 1986-7 summer breeding season was a disaster for hoiho. Suffering from what appeared to be lack of food, some breeding areas failed to fledge any new offspring, while others produced very few young and a large number of adults also died. Breeding adults have declined by 65 percent over the last two years.

Southern South Island: extent of forested land before 1840

Southern South Island: present forest cover and principal hoiho breeding areas on the mainland.

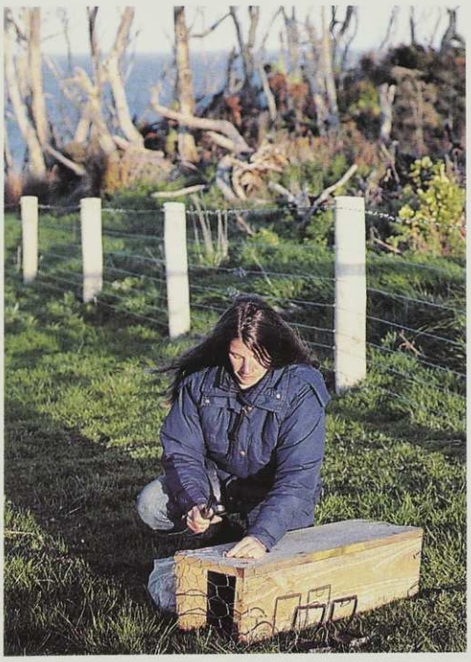
Food supplies

With hoiho's problem of survival highlighted, other researchers are entering the field. Yolanda van Heezik, a PhD zoology student at Otago University, is working on the vital question of food supplies. Her results so far show that although a wide variety of small fish are eaten by hoiho, the main ones are red cod, opal fish, sprat, ahura and squid. She also found that if there is insufficient food to build up the young to over five kilograms by their fledgling state, they are unlikely to survive. Her research indicated that owing to the small size and low fishing priority of fish eaten by hoiho there is no direct competition with commercial fishing, but the complexity of the oceanic food chain means that indirect links may exist. The lack of food in the 1986-7 season seems to be linked to changes in the normal distribution of fish as a result of the El Nino effect on oceanic currents and temperatures.

Other research underway by John Darby, Otago University student Philip Seddon and by the Department of Conservation scientists aims to find out more about how hoiho uses its loud voice, the effects of temperature on breeding success, and possible gene flow between the mainland and offshore island hoiho populations.

With the recent significant decline in the numbers of birds breeding on the mainland there is some urgency to establish whether recruitment occurs to the mainland from sub-antarctic populations. A Department of Conservation expedition (with John Darby on board the HMNZS Wellington) recently

Otago scientist John Darby first drew attention to the serious plight of the yellow-eyed penguin in the early 1980s. Here he and conservation officer Peter Moore study a dead penguin during a recent Department of Conservation seminar.



Stoats, ferrets and wild cats follow well-trodden trails to the penguins' nests to take the helpless chicks. Parents are ineffective against such attacks. Trapping is attempted, but catches only a few predators.

In their weakened and bedraggled condition, moulting penguins are easy targets for sharpshooters (left) and other predators. During this autumnal danger period, they seek out the haven of whatever shelter exists (right).

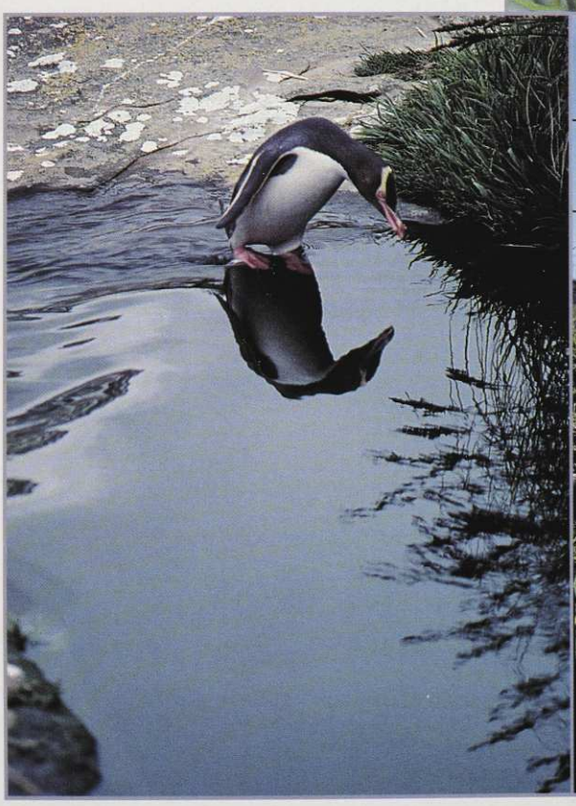
visited Auckland and Campbell Islands as part of a blood sampling programme. Samples will be analysed using electro phoresis by Dr Sue Triggs of DOC and mitochondrial DNA analysis will be carried out by Dr Allan Baker of the Royal Ontario Museum in Canada. The findings will not only establish clearly whether gene flow occurs between island populations, but also its frequency and whether it is bi-directional. Peter Moore, a Department of Conservation Scientist, is spending a full year on Campbell Island studying the breeding biology of the yellow-eyed penguin in the most southern part of its breeding range.

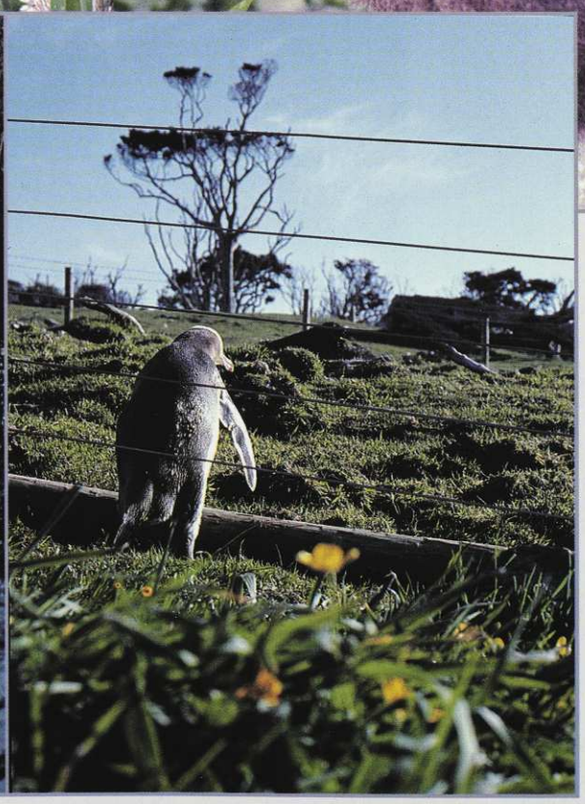
This and other research is necessary if hoiho's needs are to be fully understood. However the continued loss of breeding habitat is obviously plunging the mainland populations towards extinction, and therefore beyond research. Protecting and replanting coastal scrub and forest nesting sites is an obvious priority. Up until a few years ago, farmers who watched the penguins struggle up from the seas through grazing stock to nest in a few rock overhangs, believed the birds could co-exist with the farmed animals. Census work has proved this belief to be mistaken; numbers of birds nesting in "open" ground have dropped most dramatically, and the success rate for the rearing of chicks there has been abysmal. It is clear that open country encourages predators, allows stock to trample nests, and discourages successful nesting by neighbour-shy penguins. Lack of shade in the summer breeding season also causes the well-insulated penguins to overheat and become stressed.

Conservation efforts

What is being done? The new Department of Conservation has at last taken a lead from a few private efforts and fenced important reserve land at Highcliff on the Otago

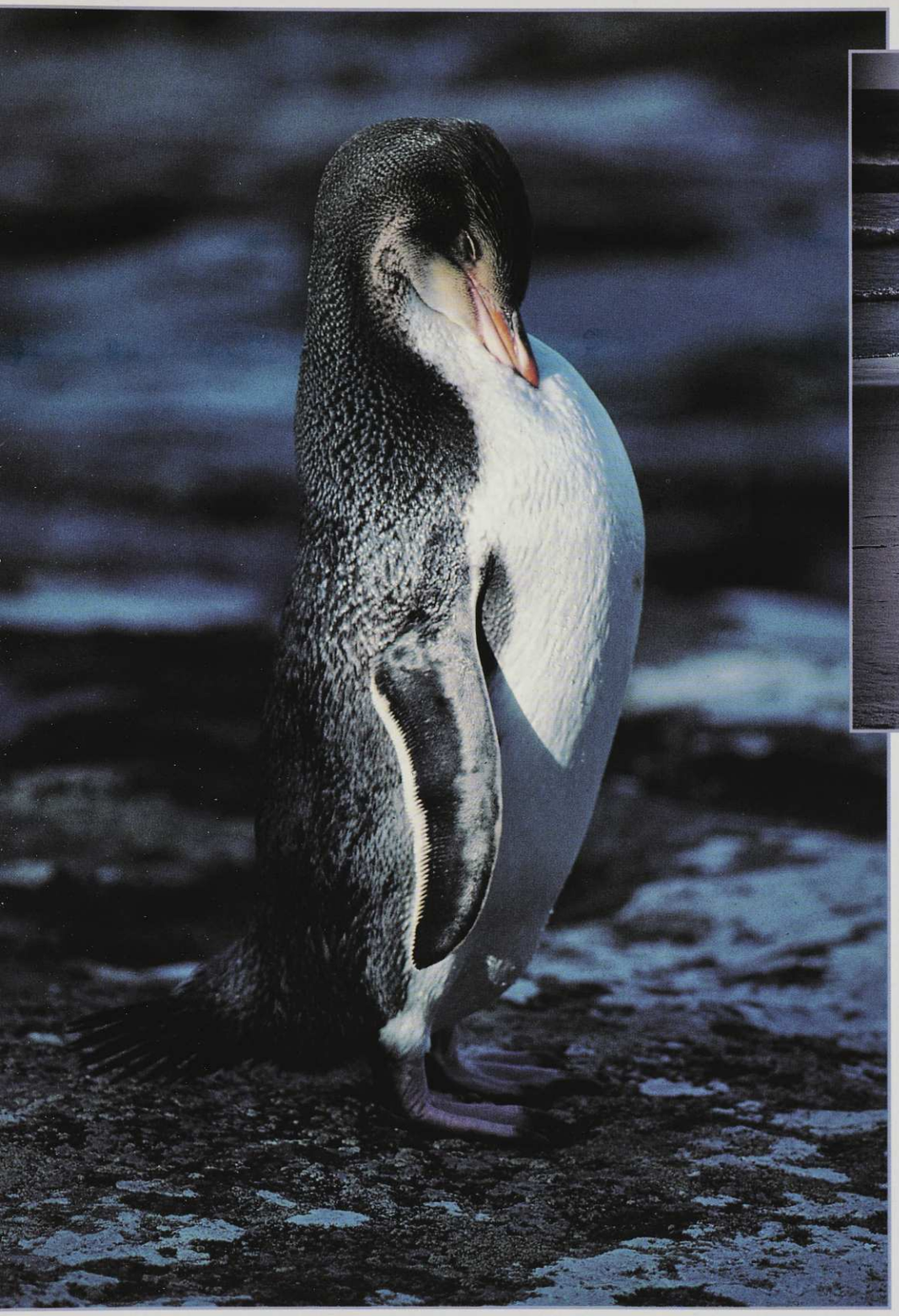
An introspective moment for hoiho before he travels inland to his nesting site. All photos Dean Schneider

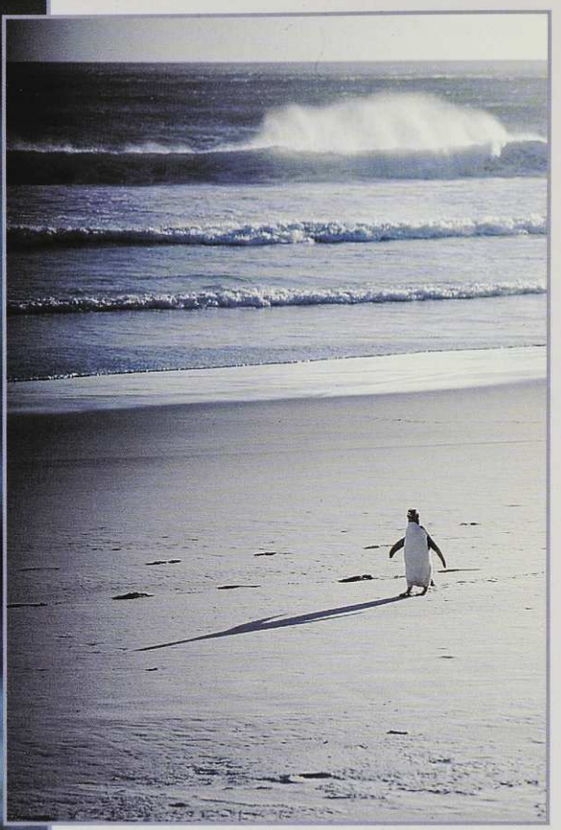




Above: *Curious but cautious, a chick sets out to explore the world around its nest site. This 7-week-old chick will be left alone all day while its parents fish, leaving it particularly susceptible to predators. Many chicks also succumb to heat stress because of a lack of shelter from the sun.*

Left: *Unlike its relatives, the yellow-eyed will slip through fences, trundle through grass and hop over logs to reach its secluded nest in coastal bush up to more than 1 km inland.*





Above: *Casting a shadow along an Otago beach in the evening twilight, a lone yellow-eyed strides inland after a long day's fishing.*

Left: *A handsome juvenile during preening.*

Peninsula; and Nugget Point, Hina Hina Cove and Kings Rocks in the Catlins district of South Otago.

In North Otago, Bob and Janice Jones have developed a reputation as the "penguin people". Living in the house attached to the now unmanned Moeraki lighthouse, they rescue birds hurt at sea, often after being caught in nets, and nurse them back to health before releasing them again. They are honorary rangers in charge of the penguin reserves at Shag Point and Katiki Beach where chick survival has risen dramatically since their work began. On the Otago Peninsula, where the greatest concentration of mainland penguins is found, replanting of part of the Highcliff Reserve has started with the help of school children. Schools have also raised funds for hoiho through mufti days and other fund raising projects. Most important, privately-owned penguin areas desperately need fencing but financial and legal difficulties are preventing progress. The newly formed Yellow-eyed Penguin Trust has set out to remedy this situation.

In the Catlins, where farmer pressure for land has been less and where there are already several reserves on land occupied by hoiho, progress on protection is being made. A programme for fencing of reserves by the Department of Conservation is nearly completed and important colonies on private land at Penguin Bay and at Te Rere have been partly fenced.

It was near Te Rere that I spoke to the American about penguins. It is this area that I have been involved with most closely. Possibly the most important in the Catlins district, it presently supports some 40 pairs of breeding birds and has a great potential for expansion. Some of the best and most well known photos of hoiho have come from Te Rere as seen through the lens of local photographer, Dean Schneider. Here the forest has been cleared only very recently and a substantial area still remains bush-covered close to the coast. The Forest and Bird Society has successfully negotiated to buy some 60 hectares, most of which is still in forest. The coastal fringe however has largely been cleared, and a major replanting programme will be needed. Replanting has already started on five hectares fenced by the Southland Branch of the Society between 1980 and 1985. We in Southland are now running a fundraising campaign to recover the cost of fencing, surveying and replanting the land. This is estimated to cost some $40,000.

The people of the south are working together to save the world's rarest penguin from disappearing from the mainland. Many areas where hoiho nests on reserves are now protected by fencing, but the most important areas remain unprotected on private land. If the effort to save the bird is to be successful over the next few years, assistance from all over the country will be needed.

The greatest need is for funds to fence land and to buy it where necessary, for only with adequate protection from stock, predators, and the sun, will the yellow-eyed penguin survive. It is not a great deal to ask: it is the least we owe this unique bird.

For more information on the Yellow-eyed Penguin Trust, write to the Secretary, PO Box 5409, Dunedin.

From the Wet West

proposed additions to Arthur's Pass National Park

To run down a Canterbury shingle scree is to almost defy gravity. Your giant steps down the moving mountain resemble Neil Armstrong's moonwalk.

However, if you resist the temptation to run, and instead stop and look around, you discover life amongst the shattered greywacke; large black scree butterflies, cryptically coloured grasshoppers and scree plants. Grey, blue and purple leaved plants emerge from the screes, capped in summer with rosettes of fragrant white, yellow, pink and even black flowers. The penwiper, black scree cotula, yellow forget-me-not, fleshy lobelia, red willowherb, and Haast's buttercup are but a few of these. On a distant ridge crest, what seems to be flocks of sheep are on closer viewing found to be massive immobile cushions of white *Raoulia* or vegetable sheep.

Our eastern mountain screes host some of New Zealand's most distinctive plants. They are uniquely adapted with their long tap roots, succulent and hairy leaves and cushion forms to a life of extremes of temperature and moisture on a moving hillside of shattered stone. However, unfortunately they are less well adapted to introduced browsing mammals. For example, the fleshy penwiper plant — a member of the cabbage family — and Haast's buttercup are heavily grazed by sheep, chamois and hares.

These plants are largely confined to the eastern South Island mountains yet remain largely outside national parks or reserves.

It is a situation that mirrors the historical absence of lowland native forests — the merchantable forests — from our park system.

Grazing Leases Prevented Park Addition

Because most of the dry eastern mountains were already under pastoral lease tenure and grazed by sheep they were not included in the parks established along the wetter Southern Alps main divide where the specialised scree plants are largely absent.

Today, emphasis on ecological representation in our national parks means we need to reappraise the present boundaries of our parks and identify opportunities for extension. In response to public pressure and with the support of catchment authorities, government officials and pastoral lessees, cautious steps are now being started to recognise the national park values of the eastern mountainlands and add to the parks areas retired from grazing.

Each of our South Island main divide national parks is a candidate for such eastward extensions. East of Nelson Lakes National Park are the arid mountainlands of the Rainbow and St James pastoral leases and Molesworth Station. Much of the Ben Ohau range alongside Mt Cook National Park is now destocked as are much of the upper Shotover-Richardson mountains east of Mt Aspiring National Park and the Livingstone mountains east of Fiordland.

This article focuses on the 94,497-hectare Arthur's Pass National Park where a series of recent and proposed additions, both in the west (Deception-Taipo rivers) and in the east (Cox-Binser-Candlestick Range) offer the opportunity for a park covering the complete ecological sequence from wet lowland rainforest to semi-desert shrublands and scree.

30 Years Coming

Arthur's Pass National Park was created in 1929, centred around the transalpine pass and peaks at the head of the Waimakariri River. However, as early as 1955, the Arthur's Pass National Park Board started moves to add to the National Park a major area — the Cox River — to the park. The wheels of bureaucracy move slowly. Finally, 30 years later in 1985 the public was formally invited to comment on this proposed 19,230 hectare Cox-Binser Saddle addition. Unfortunately the boundaries chosen for this addition were based primarily on ten-

to the Dry East

by Gerry McSweeney, Conservation Director

ure considerations, not landforms or vegetation. In fact there has still been no specific vegetation survey of the proposed Cox-Binser addition.

In its submission on the 1985 report, Forest and Bird gave support to the Cox-Binser addition. We felt it would protect within the national park a substantial area of forested mountainland and some areas of drier eastern mountain vegetation.

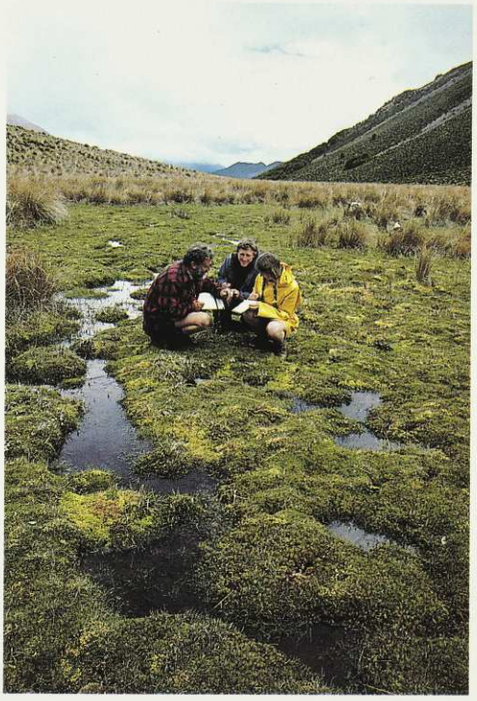
However, we also noted there was an important opportunity to go a lot further in correcting the deficiency of eastern mountainlands within the park. We argued that another 8,000 hectares east of the Cox-Binser addition should also be added to the park. We noted a range of distinctive botanical and landscape features that made this 8,000 hectare park addition desirable and we sought a botanical survey of the area to find out what it contained.

Surrendered From Grazing

The land in question is to be surrendered in 1992 from the huge 49,800-hectare Mt White Station under the terms of a Catchment Board high country retirement scheme.

In 1985 the owners of Mt White signed a run management plan which involves the destocking of 12,361 hectares of severely eroded mountainlands. More than 8000 hectares of that land behind retirement fences is to be surrendered from the lease and revert to full Crown (DoC) contorl and 4242 hectares will be destocked but remain within the title of the lease. (*See over)

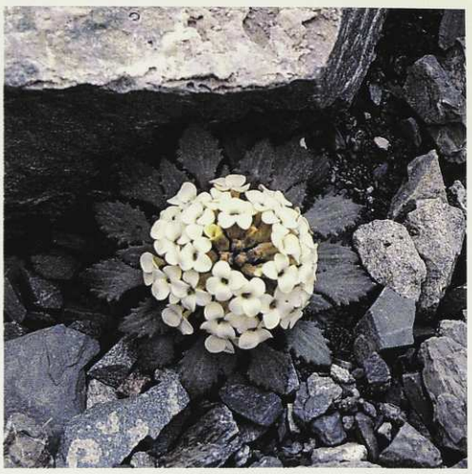
Left: *Among glacial moraines known as the Mounds of Misery beside the Cox River there are small islands which have escaped the worst effects of a century of grazing and burning. They still host threatened plants such as Armstrong's hebe (Inset). In the wild this species is now confined to the Waimakariri River basin, although it is possibly the most widely cultivated whipcord hebe.* Photo: G McSweeney



Above: *Red tussock cushion bog, Big Flora Stream. These wetlands are now most uncommon in the high country, the victims of drainage and heavy trampling by cattle. On Mt White Station they remain largely unmodified.* Photo: G McSweeney

Far left: *The spectacular Mounds of Misery viewed from Gray Hill. Scattered clumps of mountain beech date from pre-human times before large scale burning took place. They are now rapidly regenerating and expanding in area because of Mt White Station's sensitive farming practices.* Photo: Mike Harding

Left: *The predominantly Nelson-Marlborough tree daisy* Traversia baccharoides *propped up by Forest and Bird president Alan Mark with the author looking on. This plant reaches its southern geographic limit here in the Nigger Stream and to the east at Okuku Pass.* Photo: Mike Harding



Left: *The yellow flowering* Leptinella dendyi *(pictured) and its relative the black flowered* L. atrata *are distinctive scree plants of the eastern high country as is the massive vegetable sheep* Raoulia eximia *(centre) and the succulent penwiper plant (right). All these plants are predominantly found east of the present National Park boundary.* Photos Mike Harding and Alan Mark.

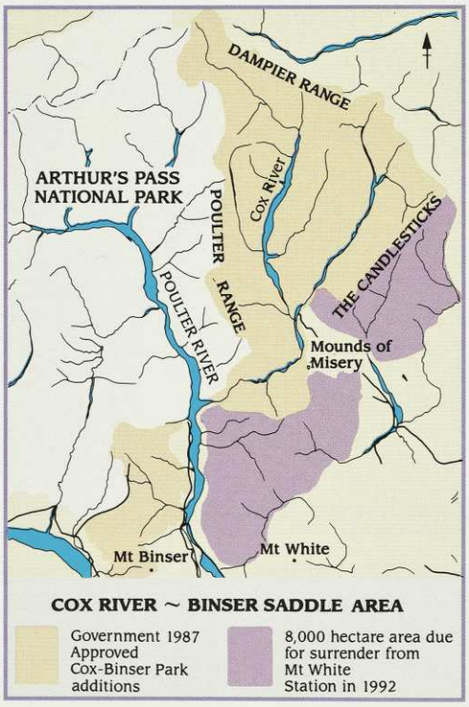
Survey Long Overdue

From the time of writing our submissions in 1985, the chaos of environmental restructuring intervened. It took us nearly two years to return and organise a botanical survey to explore the 8,000 hectares adjoining the Cox-Binser area to find out what special or distinctive plants, animals and land forms were there. In the interim the National Parks Authority recommended the Cox-Binser addition. This was approved by Government in 1986 and only awaits survey to be added to the national park.

Finally, in December 1987, Society president Alan Mark and I went into the Cox-Candlestick region with Arthur's Pass National Park ranger Mike Harding and Canterbury branch committee member and DoC staffer Amanda Baird.

For a week we clambered up to 1800m altitude over most of the ridges and valleys within the area and measured more than 50 vegetation plots. Subsequently we also surveyed Mt Binser and parts of the Cox Valley ranges to see how different this vegetation was from the 8,000 hectares on the Mt White Station.

The survey of the 8,000 hectares showed substantial vegetation differences from the existing national park and its Cox-Binser addition. The surveyed area lies largely within the Cass ecological district which is outside the Park boundaries. The Cass district has a much drier climate than the national park. It includes the arid Cass-Castle Hill intermontane basins. Short tussock, dry shrublands, pockets of mountain beech forest and distinctive scree vegetation are a feature of the district.



These features were all well represented within the 8,000 hectare survey area on Mt White Station and would add significantly to ecological representation in the Park. However, we also found a number of rare plants and plants at their limits of distribution.

Major changes occur in snow tussock distribution. The predominantly Nelson-Marlborough carpet snowgrass *Chionochloa australis* reaches its southern limit here on Gray Hill and east to the Puketeraki range. Within the study area it is competing with other snow tussock grasslands along a classic invasion front.

- There is a major transition in alpine scree and herbfield plants. A succulent scree willowherb (*Epilobium crassum*) and Haast's buttercup are found within the survey block but no further west in the existing or expanded National Park (Burrows 1986).
- The Nelson-Marlborough tree daisy *Traversia baccharoides*, abundant in shrub communities in the block, is also at its southern geographic limit here and east to the Okuku Pass.
- There are extensive populations of the endangered whipcord *Hebe armstrongii*.
- Mistletoe is unusually abundant on the mountain beech forests of the survey area.

Plans For An Enlarged Park

Under the run retirement plan, the 8,000 hectare Candlestick-Gray Hill area will become stewardship land within DoC in 1992.

There is a strong case for this area to be considered as a park addition. It meets park criteria for ecological representativeness, distinctive and special features. It has a scenic grandeur characteristic of the dry intermontane basins. The area also provides semi-wilderness opportunities for trampers without the severe climate further west. Remote from the main road and rail that dominates so much of the park, the Cox-Candlestick needs no new tracks or huts. Wide bush-edged river valleys are both the accessways and the camping sites.

Addition to the national park should also allay the fears of high country lessees like Mt White manager Ray Marshall that surrendered lands will no longer have a caretaker. Control to prevent spread of the small pockets of gorse and broom within the block will be of highest priority should the area come into the national park. Public use of the area will also be supervised and managed by park staff. Visitors would be encouraged to observe the usual high country courtesies in notifying Mr Marshall were they visiting the area.

Arthur's Pass National Park may well be a trendsetter in a programme of ecologically-based park additions which will have a powerful impact in our next century of national parks.

** Footnote: In 1985 Forest and Bird sparked off a major controversy over the Mt White run plan. Initially the Catchment Board had proposed to destock the 12,361 hectares of the lease but not require its surrender from the lease, hence contravening the 1984 Labour party election policy which argued that when taxpayer money was used to retire mountainland from grazing, that land should revert from leasehold tenure to full Crown control and be available for recreation use. After much public debate, Works Minister Fraser Colman finally consented to an amended run plan involving surrender of much (8119 ha) of the retired land. This decision was a trendsetter and soon after the Government announced its 1985 Destocking and Surrender policy for the South Island High Country. This requires the identification and surrender of severely eroded land from pastoral leases. Unfortunately this important policy has not yet been activated by officials charged with lease administration.*

In exchange for losing the grazing over a quarter of their lease, the Mt White Station owners receive a government subsidy of $209,700 towards an 8-year retirement plan costing $305,150. The plan involves retirement fences, windbreaks and cultivation, oversowing and topdressing of the lower parts of the station which will allow it to carry on a smaller area an equivalent or greater number of stock to those previously run over the whole property.

Acknowledgements:
All of us on the Forest and Bird survey sincerely appreciate the kind co-operation of Chief Ranger Peter Simpson, the staff of Arthur's Pass National Park, Mr Ray Marshall Manager of Mt White Station and Dr Colin Burrows, Canterbury University.

References:

Burrows, C J 1986. Botany of Arthur's Pass National Park, South Island NZ. *History of botanical studies and checklist of the vascular flora. NZ Journal of Botany* 24:9-68
Lands and Survey 1985. Cox River-Binser Saddle Area-resource study.
North Canterbury Catchment Board 1985. *Mt White Station Soil and Water Conservation Plan.*

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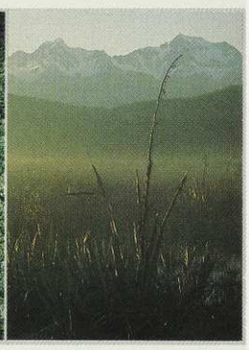

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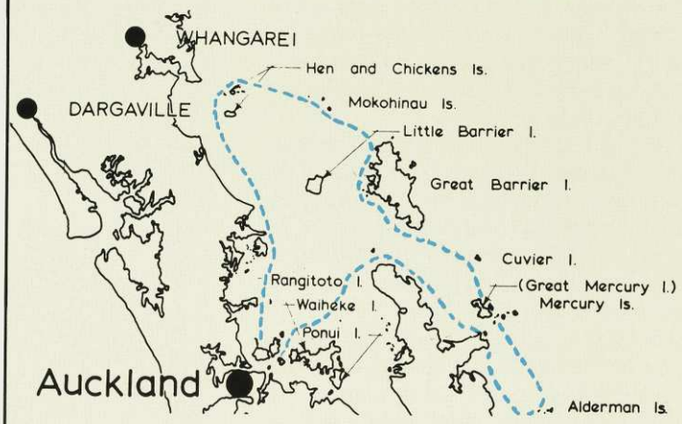

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Love at First Sight

by Peter Winter, North Taranaki chairperson

On a knoll near State Highway 3A about two kilometres south of Lepperton railway station stands a remnant of the forests which once clothed the area. It is beautiful, very conspicuous and the most noticeable natural feature between Waitara and Inglewood.

Along with many other Taranaki people I had been aware of this bush for most of my life and had looked for it on my journeys between Inglewood and Waitara. Once I stopped to photograph it to illustrate an article I was writing about patches of native bush in the countryside.

About a year ago a "for sale" sign appeared on the roadside and I had visions of the bush gone with tree-stumps, grass and cattle taking its place. Surprisingly, because the timber in the bush and the land beneath it were of considerable value, nothing happened and eventually the "for sale" notice was joined by another from a different agency.

Diffidently, not knowing what to expect, I invited members of the North Taranaki Branch executive to meet the land agents on site. The asking price was high, $45,000, but not high in relation to the productive value of the 4.85 hectares of land plus the timber. I was well aware we could purchase much more forest than this in the hinterland for the same price if quantity were a criterion.

I need not have worried. It was love at first sight.

About this time we were notified of a legacy from the estate of Miss Dorothy Baker, a member of our branch. Although the legacy was left to the society, not specifically to North Taranaki branch, we believed with the goodwill of the national executive the purchase was possible.

We canvassed all our members and received 135 positive replies and one negative. At our next monthly meeting I was authorised to offer $35,000 subject to our being able to arrange finance and the planning consent of North Taranaki District Council. The answer was "yes" provided we would accept responsibility for fencing the sub-division.

From that day forward offers to help with the fencing poured in, but eventually the owner himself volunteered to undertake the job.

Public interest was widespread. A policeman phoned from Opunake to say he had often wished he was wealthy enough to buy the bush, and a neighbouring resident said the same.

What is amazing is that the bush survived on what was always a small section, originally about 20 ha, which passed through the hands of many owners and lessees. After a part of the land was taken for the railway in 1873 the tree-covered portion made up 4.85 ha of a total 7.25 ha.

Several owners tried to drain the wet area near the road but there was insufficient fall and they did not succeed. This wet area enhances the section in the eyes of Forest and Bird members. There is a small stand of swamp maire growing there and once the land is protected from browing animals it will probably spread.

View of Te Wairoa from State Highway 3A showing hydrangeas at bush verge. Regenerating forest will eventually overcome the hydrangeas. Photo: Peter Winter

Before European settlement the place name was Te Wairoa which probably referred to a wetland later modified by the siting of rail and road and by farming practices. Rumour has it local Maoris hid their greenstone taonga in the swamp prior to a raid by the Waikato tribes and it was never recovered.

The trees could surely tell more. Some would be hundreds of years old. There are huge, spreading puriri, kohekohe of dimensions seldom seen, large buttressed puketea and tall tawa. Since the trees are old they fruit heavily and provide a bounteous food store for berry-eating birds.

Botanist Maggie Bayfield, who was leader of the Protected Natural Areas survey of the Egmont Ecological Region (Bayfield and Benson 1986), says the remnant was not specified as a priority for protection in the report as only the best examples of each ecological unit were recommended.

"However, less than one percent of semi-coastal vegetation in the original landscape is currently protected. Kelly (1980) suggests 10 percent of the original area of each broad landscape class or habitat is reasonable in order to retain the original character of the countryside. Unfortunately there are very few remnants left and these are scattered and mostly in poor condition. As there is such an under-representation of semi-coastal vegetation protected, and so little remaining, any remnants have a very high priority for protection."

In describing the bush Maggie Bayfield's associate Marlene Benson states: "The canopy consists mainly of tawa with titoki, puketea, rewarewa and karaka. In the south-east corner the most common species are puriri and kohekohe. Kohekohe occurs plentifully in the sub-canopy and the common under-storey species are supplejack, occasional pigeonwood and mahoe.

"Although this area is suffering from having been grazed for many years it contains enough mature trees to provide a seed source for the future. It should therefore regenerate rapidly when fenced. The presence of swamp maire, although in small numbers only, adds to its value since this species is under-protected in Taranaki."

While enthusiasm for the purchase is widespread, small management problems are already surfacing. A plan for the future and some firm decisions will be needed. Both botanists recommend the bush should be allowed to recover in its own time in its own way. That is to say they recommend fencing, control of introduced animals and adventives but no planting, even of species which occur naturally.

"I think you will be surprised," says Maggie Bayfield.

Faith in the regenerative powers of the bush has also been expressed by Sarah DeRenzy, property officer for the Queen Elizabeth II National Trust, who inspected the property with special adviser, Ken Davidson. She echoed Maggie Bayfield's "I think you will be surprised" statement.

The Trust is providing for a conservation covenant and has helped with finance.

Whatever management plans are made, the bush will remain in perpetuity as a beautiful feature on a main road, a significant living memorial and historical record of the past, an educational facility, but above all a gesture that people believe it is worthwhile to spend time and money in preserving what is left of our native forest.

What it has been, what it is and what it could be

by Katharine Dickinson and Alan Mark

Most members of the Society will be well aware of the land use conflicts which have occurred in New Zealand over recent years. Indeed, the public debate over the raising of Lake Manapouri in Fiordland National Park (now twenty five years ago) is often upheld as the turning point for conservation in this country. Then, a large proportion of responsible New Zealanders declared enough was enough. Environmental awareness has continued to increase since that time and over the last decade it has become very clear that many of this country's unique assemblages of plants, animals and landforms have little or no protection in our reserves system. If we think about it, our national parks and reserves are concentrated in the mountainous, generally rugged regions, where land use conflicts are at a minimum.

Small wonder then that the concern over the depletion of New Zealand's very special natural places was recognised in the early 1980s by the National Parks and Reserves Authority. A programme was needed to safeguard representative samples of New Zealand's full range of natural habitats — samples of which would have a chance for survival not just for one generation but forever. Thus, the Protected Natural Areas Programme was conceived. Numerous people involved in the natural sciences divided New Zealand up into ecological regions, of which there are 85, and ecological districts, numbering 268. Districts are simply areas which have a consistent pattern of natural or physical characters — these may be based on such features as rock type, landform, climate, soils, vegetation, plants or animals or, as is often the case, a combination of these. Regions may be a single, very distinctive ecological district, or more commonly, a group of districts whose characters are generally similar.

This framework of districts and regions provided the geographic system on which to base the Programme. The great strength of the exercise was that a variety of groups were in support, from the conservation organisations to Federated Farmers. Indeed the Programme is seen as apolitical.

In 1983, the Programme rolled into action with the sudden provision of funding through a Government Special Employment Scheme. While it was marvellous to have financial support for an exercise that was considered so urgent, the initial stages were dogged by the rapidity which grassroots planning had to be done. Teams with 5-10 members were employed on short-term wages to complete surveys of particular districts. They were relatively inexperienced ecologists, recent graduates and senior students, working under the guidance of scientific advisors from DSIR and other institutions.

The initial four studies were set up as pilot studies to test survey methods in a range of environments and also on a variety of land tenures. Thus it was that two North Island districts were chosen in forest and coastal areas: Rodney District near Auckland with many small private holdings and fragmentary natural areas, and Motu District on the East Cape with large natural or semi-natural tracts of mostly Maori-owned forested land. In the South Island, the areas selected were the largely pastoral leasehold tussock grasslands and mountainlands, one in the steep erosion-prone greywacke mountains and intermontane basins of inland South Canterbury/North Otago (Mackenzie Ecological Region of seven districts); the other, the broad plateaux, tundra-like uplands and tussock grasslands of the subdued Old Man District, Central Otago Region.

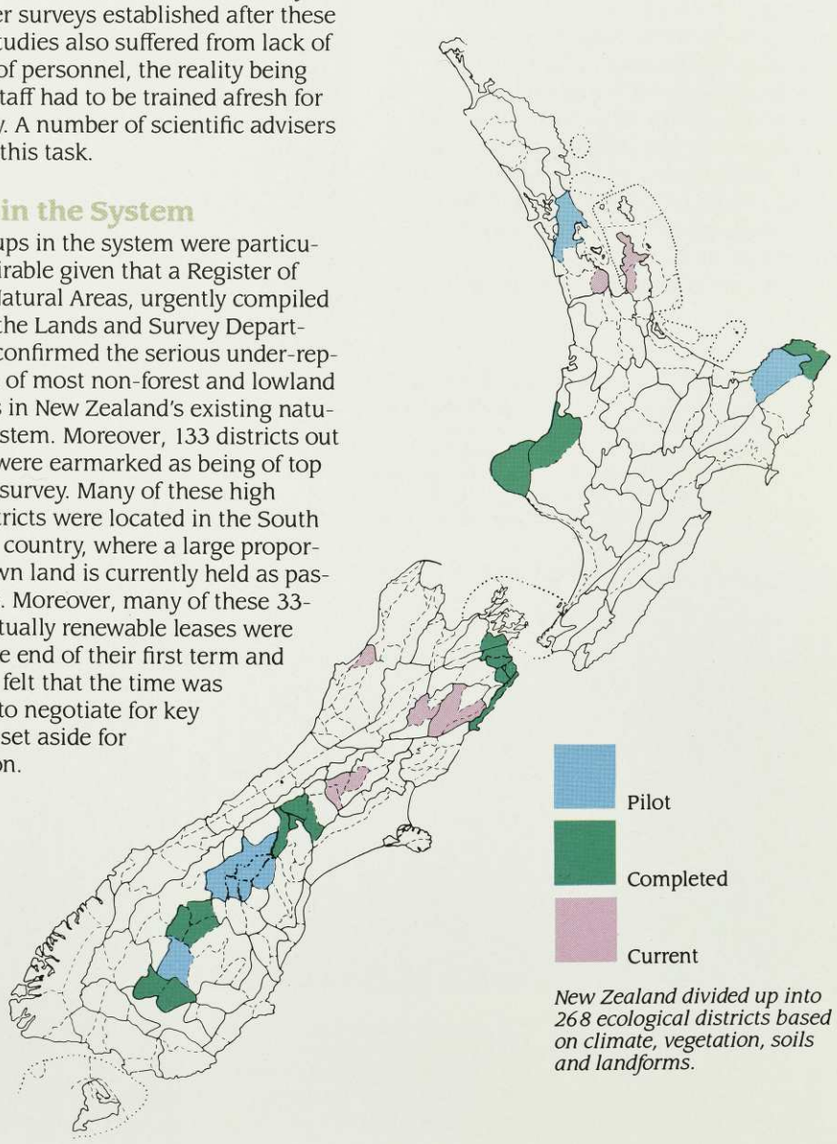
Being the first of their type, these pilot surveys had a demanding and unenviable task ahead of them and indeed approached the exercise in various ways. Sadly, largely because of the lack of permanent funding for the Programme, much of the experience and expertise gained as a result of these early surveys was lost as team members sought alternative employment. The Programme thus at a fairly early stage began to suffer from a lack of feedback into the system. Further surveys established after these four pilot studies also suffered from lack of continuity of personnel, the reality being that most staff had to be trained afresh for each survey. A number of scientific advisers were given this task.

Hiccups in the System

These hiccups in the system were particularly undesirable given that a Register of Protected Natural Areas, urgently compiled in 1984 by the Lands and Survey Department, had confirmed the serious under-representation of most non-forest and lowland ecosystems in New Zealand's existing natural areas system. Moreover, 133 districts out of the 268 were earmarked as being of top priority for survey. Many of these high priority districts were located in the South Island high country, where a large proportion of Crown land is currently held as pastoral leases. Moreover, many of these 33-year, perpetually renewable leases were reaching the end of their first term and it was thus felt that the time was opportune to negotiate for key areas to be set aside for conservation.

The initial four pilot surveys were followed by a further three in the North Island (Egmont Region; Pukeamaru District; North Taranaki District); and six in the South Island (Lindis, Pisa and Dunstan Districts; Arrowsmith, Hakatere and Two Thumbs Districts; Kaikoura Region; Wairau Region; Umbrella District; Nokomai District). With the exception of the last three South Island surveys (which involved one person with a half-time field assistant) all were conducted by teams of 4-9 people. Only the Umbrella survey has been funded outside the bureaucracy, being supported by the University Grants Committee and the Hellaby Indigenous Grasslands Research Trust.

In the 1987-88 summer, surveys were underway in the Hunua Ecological District, (Auckland ER), funded mainly by the Auckland Regional Authority; Colville and Thames Districts (Coromandel Region); Balaclava, Sedgemere and Dillon Districts (Molesworth and Clarence Regions); Coleridge, Craigieburn and Cass Districts (Puketeraki Region); and Ngakawau District (North Westland Region), funded by the Department of Conservation.



New Zealand divided up into 268 ecological districts based on climate, vegetation, soils and landforms.

How Surveys Work

So, faced with an ecological district for PNAP survey, how is the job done? There are broadly four phases. Firstly, before rushing in, there is a lot of preparation to do. What information on natural values is already available for the district? Who might have first-hand knowledge relating to any of the natural values of the district? Is there any written material available? What is the air photo coverage like? Whose land or lease is where? These are all basic questions which have to be followed up at the start of any survey. The land occupiers on whose land access may be required, are all contacted by letter and then in person, in the extremely important initial public relations stage.

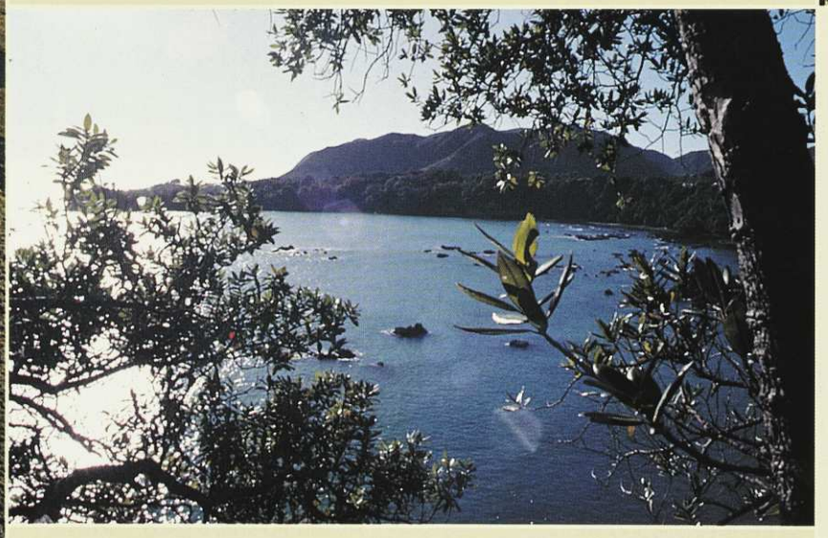
The second phase in PNAP surveys is that of field reconnaissance. Generally, the area of land to be surveyed is substantial (greater than 100,000 ha) and a broad idea of the range of natural values present within a district is needed. Once an overview can be obtained, decisions can be made as to which areas within a district deserve more detailed study. This must be related to the survey's aim of identifying the full range of natural values representative of the district. In many districts, unfortunately, there is no choice for some ecosystems — there may be only one small fragment left, or worse still, the habitat has gone forever.

The third phase is to document the natural values within particular study areas — this might be a wetland, or a catchment ranging from forest through tussock grassland to the alpine zone. Information is gathered to answer such questions as: What plant communities are present? What native species of plant and animal are found there? What condition is the habitat in? Has it been greatly modified? What landform features are present? Are there any special values that should be recorded — a rare plant or animal species, or an unusual landform?

Top: *At 1430 metres above sea level in the upper Nevis Valley of southern Central Otago are found these spectacular string bogs. Rare outside the boreal zone of the arctic region (in countries such as Scandanavia and Canada), these string bogs of several hundred hectares are ranked as of international importance in a recent report on the Nokomai District. The photo was taken from 200 metres.* Photo Alan Mark

Upper Jordan Creek below Mt Whitecomb (1566m) on the Umbrella Mountains was recommended for protection in the Umbrella PNA report because of its good representation and diversity of both landforms and vegetation plus the good condition of its plant cover. Photo: Katharine Dickinson

PNA surveyors in Coromandel Forest. (Left to right) Andy Garrick (team leader), Paula Broekhuizen and Gretchen Rasch. Photo: Chris Ward



Looking across Whanarua Bay, Motu Ecological District, East Cape. Here is one of the few opportunities to protect a continuity of ecosystems — from seacoast to interior hills and mountains. Photo: Chris Ward

Parahebe trifida, *an alpine snowbank plant that was listed as "rare" by Dr David Given, was previously known from only a few sites on the Old Man Range, Garvie, Hector and Eyre Mountains. It was found to be abundant in both the Umbrella and Nokomai Ecological Districts and the PNA reports recommend its status be changed to "local".* Photo: Alan Mark

Using the answers to these questions, and others, the fourth phase of the Survey may be put into action: identification and documentation of Recommended Areas for Protection (RAPs). These are representative areas of the highest natural values remaining in the District(s). Selection of RAPs takes into account several criteria to assess the quality of the natural areas including: representativeness; naturalness; diversity; long-term viability; size and shape.

Public Relations a Necessity

Once these RAPs have been identified then the relevant local people should be informed of the results, at least those relating to their property, as soon as possible. Sadly, this is where the Programme has been allowed to falter. Whether by the hiatus created by Government's reorganisation of environmental administration, or a lack of understanding as to the necessity for public relations, a feeling of distrust has built up among many landowners. The situation is particularly frustrating given that there is in fact a great deal of common ground between land occupiers and scientists and certainly room for negotiation.

A PNA survey report is considered complete when it has received official endorsement from the scientific advisor(s) and is formally published. Up until early 1987 reports have been made available to the Protected Areas Scientific Advisory Committee (PASAC), which comprises nine senior scientists from various fields of expertise. Their role has been to assess a representative range of RAPs identified during a survey, as well as ensuring an adequate and consistent standard. They also have provided a perceived independent and expert overview.

The role of PASAC is currently under review and it may soon cease to exist. As a single national overview body, even with only 29 surveys completed so far, PASAC has been severely overstretched. With the

Programme now into its fifth year, surveys completed are well behind the target of complete coverage of New Zealand within a decade. Lengthy delays in completion and publication of reports have been common which of course does nothing to foster public relations. The vital implementation phase, regrettably, has been limited by lack of both staff and commitment.

To be fair, the Programme has been severely compromised by the upheaval in the Government's environmental administration. The embryo Department of Conservation, in its first year, has expended considerable effort on decision and policy-making. In the meantime several survey reports completed during the reorganisation period have lain idle. However, action has extended to applying restrictions on certain potentially harmful activities on RAPs identified on Crown pastoral leasehold high country.

These restrictions relate to privileges under Crown jurisdiction and concern particularly burning, oversowing, fencing, tree-planting and any form of earth disturbance. They were adopted as policy by the now-defunct Land Settlement Board and were to apply between the identification and implementation stages which, at the time, were envisaged to be of only a few months duration. The Department of Conservation has inherited this policy. Given the delays, in some cases over two years, inevitable frustration and disillusionment has resulted, particularly in the rural community. This has placed a severe strain on the Programme's credibility.

Cause for Optimism

As to the future, the creation of a Government conservation advocacy organisation and their apparently clear intention to pursue the PNA Programme, gives all of us some cause for optimism. Furthermore, the Programme was rated among the top environmental funding priorities in the manifestos of both major political parties in the 1987 General Election. We would like to think that this bodes well for its future. The Programme has also been fully supported by the New Zealand Ecological Society and the Royal Society of New Zealand.

The current survey effort by the Department of Conservation is commendable, being several times greater than in the previous two years. Unfortunately, a claimed lack of funding precludes either active or adequate pursuit of both survey and implementation phases. There is no funding facility for permanent staff, for either survey or implementation, which can consolidate experience gained from earlier work — knowledge continues to be lost as contract labour comes and goes. Obviously there needs to be a major effort in all phases of the exercise to convince the wider community of the efficiency and motives of the Programme and of Government's resolve in it.

The Programme has important long-term benefits for New Zealand and indeed its cost is small compared to the $1.2 billion currently earned annually in overseas exchange from tourism. After all, tourism depends very largely on those natural resources which the Programme is designed to identify, and conserve. Let's hope the National Parks Centennial year is the time that all parties can come together to make this nationally important Programme effective, to dispel the distrust, and to safeguard for all time an adequate representation of what is distinctively characteristic of this country's natural values.

Conservation Groups and the Public Champion Representative Reserves

While the formal PNA Programme has progressed in fits and starts, there have been significant gains in representative reserves outside of the PNA Programme. This has been chiefly through the efforts of the Royal Forest and Bird Protection Society coupled also with others such as NFAC, FMC and Acclimatisation Societies in the Joint Campaign on Native Forests and Public Lands Coalition.

Forest and Bird's objects are "to preserve New Zealand's native plants, native animals and natural landscapes". Since 1983, using the ecological regions and district maps as a framework and through extensive field survey work, Forest and Bird staff have successfully championed cases for representative reserves from Kaimaumau swamp in the far north to Masons Bay on Stewart Island. This work was vital as management plans were prepared for State forests and Crown lands by the Forest Service and Lands and Survey. Working with the Society's local branches, our Head Office staff successfully put forward many representative reserve cases. These have been described in *Forest and Bird* journal articles and were the focus of many public campaigns. Protection of swamps, shrublands and forests at Spirits Bay, Karikari Peninsula, Ninety Mile Beach, Waipoua, Russell (Northland), Tongariro, Mamaku and Rangitaiki (Central N.I), Waitere (Hawkes Bay), Aotuhia (Taranaki), Mana Island, Glazebrook (Marlborough) and pakihi swampland in Nelson and Westland are but a few of these areas which correct major deficiencies in our reserve network.

Through the Joint Campaign we have also achieved major gains in getting the remaining state indigenous forest in the North Island protected with particularly significant gains at Whirinaki, Kaimai-Mamaku, the Northland kauri state forests and the 79,000 hectare Whanganui National Park.

In the South Island, ecological district characters were crucial in scientific cases for representative reserves put forward by Forest and Bird and NFAC staff for North Westland and the Buller. These culminated in a total of some 200,000 hectares of mainly lowland forest being protected in the 1986 Government-endorsed West Coast Accord signed between conservation and development interests. In exchange some 120,000 hectares of forest — of which more than half was heavily cutover — was allocated to sustained-yield rimu and beech management.

The carve-up of Crown land between the Conservation Department and Forestry Corporation and Land Corporation in 1987 also provided a vital opportunity to gain representative reserves. The Public Lands Coalition, spearheaded by Forest and Bird, has managed to retrieve from allocation to the Corporations some 500,000 hectares of public land with important nature conservation values. This land will be allocated initially to the Conservation Department as stewardship land but much of it deserves specially protected status as ecological reserves.

Another major debate over the allocation of Crown land will continue throughout 1988 with major implications for our representative reserve network. This involves the 311,000 hectares of former state forest south of the Cook River in South Westland. The new Conservation Department has backed this stand with a powerful submission arguing the outstanding natural values of the area and the National Parks and Reserves Authority has formally asked the Department to assess the entire area — Fiordland to Westland — for national park status.

Nearly a million hectares — 4 percent of New Zealand — has been added to the reserve system as a consequence of these efforts. More importantly it has not been more ice and rock. Rather it has been poorly represented shrublands, lowland forest, tussock and duneland. These major gains in achieving representative reserves through detailed research backed by major public campaigns stand in stark contrast to the difficulties experienced by the formal PNA Programme where reserve implementation has to date been disappointing. A strong partnership between scientists and the public is clearly essential if we are to help protect the best of what remains of our natural heritage by the year 2000 to serve the country's needs next century.

Dr Alan Mark, President
Dr Gerry McSweeney, Conservation Director

The Department of Conservation is planning to spend $3.5 million on the PNA Programme in 1988-89. $900,000 will be spent on survey, $950,000 on implementation work (consultation, negotiation) and $1.65 million on securing final protection — through purchase, lease or other compensation and to meet legal survey costs. We await with interest confirmation of these figures in the 1988 Budget.

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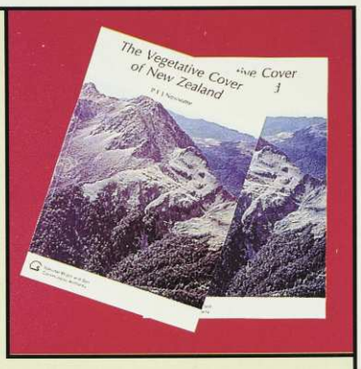

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THE MEANING OF WORLD HERITAGE

By the end of the 20th century humankind has taken the conquest of nature so far that environmental damage threatens the human race with extinction. For nature the reckoning is too heavy: massive deforestation; the erosion and degradation of soils; depletion of the ozone layer and global warming; the disappearance of many plant and animal species; water, air, land and marine pollution of many kinds; expanding human populations, concrete and asphalt; dwindling open spaces, disappearing wilderness . . .

The World Heritage Convention is an attempt to halt the world's slide into environmental chaos, to preserve nature and wilderness and to preserve the legacies of the human cultures that have shaped civilisation.

In an era when nature is under extreme pressure around the globe, the World Heritage Convention has managed to transcend political differences and unite more than 100 nations worldwide to work together to protect more than 200 wonders of the world as the common heritage of all humankind. The Rocky Mountains, Mt Everest, Ecuador's the Galapagos Islands, the Great Barrier Reef and the Serengeti plains of Africa are all now protected as World Heritage sites. In an increasingly pessimistic world it is a shining example of international cooperation.

What is the World Heritage Convention?

The World Heritage Convention is described as the Red Cross for the world's natural areas. It is now the world's most successful conservation agreement, with more than 200 sites protected.

Adopted by UNESCO in 1972, the Convention developed from widespread concern at the disastrous consequences of the flooding by Egypt's Aswan dam on the Nile's archaeological treasures and a desire by many nations to work to protect these and other threatened wonders of the world. The convention is administered by a committee comprising representatives of 21 signatory nations with rotating membership. This committee can comprise delegates from the communist and non-communist world.

Does it affect sovereignty?

New Zealand loses no sovereign rights over any area that becomes a World Heritage Site. The only force that the Convention can apply is moral – if the rules are flouted, the area could lose World Heritage status and thus New Zealand's international reputation may be tarnished. Article 6 of the convention says that "it fully respects the sovereignty of the states where sites are situated."

Is Private Land affected?

No, article 6 of the Convention excludes private land. If however owners of private land wish to protect their land through statute and it meets the criteria it can be added to a World Heritage site. However, such a step is entirely at the landowner's discretion.

Do World Heritage Sites have to be National Parks?

No, but they have to be protected by statute or policy. In New Zealand they could, for example, be Conservation Parks, Wilderness Areas, Wildlife Reserves and so on. Sites have to have "outstanding universal value", however, and the test is a very stringent one. Natural sites try to preserve the finest representative examples of the processes that have shaped the earth's evolution (e.g. glaciation, volcanism, crustal movement), areas with unique features and areas that host rare and threatened plant and animals.

World Heritage in Danger and the World Heritage Fund

The World Heritage Committee regularly prepares a list of threatened World Heritage Sites – for example by war, natural disaster, logging, mining, roading or settlement. Member nations are levied and provide voluntary contributions to a Fund which is used to help protect at-risk areas. In Sagarmatha (Mt Everest) National Park the Fund is supporting solar power development to reduce demands on scarce firewood and so save surrounding forest. In Tanzania it is helping fund the College of Wildlife Management which trains staff from the country's World Heritage Parks, such as Serengeti and Ngorongoro Crater.

New Zealand and World Heritage

New Zealand signed the World Heritage Convention in November 1984. Other member states include the United States, Australia, Poland, Sweden, Turkey, West Germany, France, Canada, Switzerland, Norway, Libya, Cuba, Chile, Argentina and the United Kingdom. It is notable that amongst this list are nations that may have political differences. Despite these they work together in the World Heritage Committee. Although the UK and USA withdrew from UNESCO, they have remained as enthusiastic supporters of the World Heritage Convention. The USA has more World Heritage sites than any other nation. Since 1984, New Zealand has been able to nominate areas for inclusion on the World Heritage list. Two nominations to date – Fiordland and Mt Cook/Westland National Parks – have been accepted as World Heritage Sites.

Wonders of the World

by Georges Fradier

The notion that a communist conspiracy lurks behind the World Heritage Convention may seem faintly ludicrous, but unfortunately a number of New Zealanders appear to fear that this is the case. In order to clarify any misconceptions which have arisen, the following article on the meaning of the World Heritage Convention is reproduced.
It first appeared in the *Unesco Courier.*

In a sense the World Heritage Convention is a reflection of the state of national cultures in the late twentieth century.

But it is much more than that; unlike many a diplomatic treaty, it is ahead of its time. For the property it presents to us is considered to be of universal value. Now what civilization has ever acknowledged that areas of national territory, or objects of every possible origin and form can possess a "universal" value? (True, the ancient Greeks drew up a list of Seven Wonders of the World. But what a small world it was! Five of the seven had been built by the Greeks themselves, six were products of their own times. The Egyptian pyramids were the only exception; they were already 1,500 years old and are, incidentally, the only wonder to have survived). How justified is the proposition that monuments and sites admired in one country should command admiration in all the rest — in other words that the whole of humanity now has a common heritage?

No Frontiers

In the case of natural property the idea is not too hard to accept. The world's biological reserves are of concern to everyone on earth. The great ecosystems know no frontiers, and there is something faintly ludicrous about "national" ownership of geological phenomena. Everyone feels that "the beauties of nature" should be shared or respected by all human beings precisely because they were not made by human hand. As for our own works, it requires little imagination to realize that we are all heirs to the treasures of human knowledge and thought. The trouble is that we are dealing here not with abstractions but with tangible, immovable things: buildings firmly established on a plot of land, inseparable from a landscape, built by the children of that particular piece of soil acting in accordance with their own specific aims and standards.

The list urges us to appreciate the universal value of the temples of Abu Simbel and those of Tikal. Mont Saint-Michel and its bay are included as being capable of stirring the emotions of people all over the world.

Where the majestic Colorado River passes through Arizona, the curtain rises on one of geology's most dramatic spectacles. The Grand Canyon is a great gash, 1500 metres deep, 440 kms long and between 200 metres and 30 kms wide. Significantly, although the United States withdrew from Unesco, it remained a party to the World Heritage Convention and is proud to see the Grand Canyon National Park listed as a World Heritage site. The Statue of Liberty is also a World Heritage Site – hardly a communist-inspired plot! Similarly, the United Kingdom chose to join the Convention at the same time as it withdrew from Unesco. Photo: Dean Schneider

And why not? One hundred and fifty years ago, this monastery on a desolate wave-swept rock was used as a prison, it was a miniature Gothic Alcatraz. Presumably, the French authorities of the day attached no value to it except as a penitentiary. But today the Mont Saint-Michel is presented to us as a "wonder" in the fullest sense. And everyone is bound to agree, provided that he or she sees the place, can experience a sense of wonder at it, is interested in medieval Christianity, twelfth-century European architecture, and the glint of wet sand.

At any rate, this is what the World Heritage Convention implies. History has begun to take on a human face. Exchanges take place in a spirit of equality which shatters national self-centredness and disturbs us as we smugly contemplate "our" monuments, the inimitable repositories of "our" values. Here, "in the same bag", we have Aachen and Isfahan, the age of Charlemagne and that of Abbas I, Quito and Dubrovnik, Cairo and Kathmandu, because it is seemingly accepted that the Swedes (among others) will see Isfahan like the Iranians, and that the Iranians (among others) will see Kathmandu like the Nepalese.

Without Precedent

Far from being backward-looking, the Heritage Convention seems to be prophetic. But there is one point where States party to it make a particularly striking innovation. They pledge to preserve the cultural and natural property on their inventory. Each State "recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the heritage belongs primarily to that State". Such an obligation is quite without precedent!

For we are talking about a heritage, a legacy: old towns and ancient monuments. People think that we have inherited this legacy from our ancestors to whom it was bequeathed by their own forebears and who religiously preserved it with us in mind. But this is simply not true, except for a few items on the list. National parks are fairly recent creations and have obviously been protected ever since they were established. Previously, their contents needed less protection because they were further from the reach of interference by our forefathers. In addition, certain buildings have been deliberately bequeathed to us: royal palaces, which now belong to the "nation" or the "people", churches, mosques and temples which are still in use. But all the other property on the list is there by chance — or through the tireless efforts of archaeologists who reconstruct ruins and are still today rescuing monuments from the jungle, from the earth, from oblivion.

Governments now make it their business to restore cultural monuments, and sometimes the general public rallies to the defence of buildings which have survived from their past. The reasons for this about-turn in public opinion are well known. The adoption of the Heritage Convention coincided with mounting concern about the deterioration of the environment, the exhaustion of natural resources, and the stultifying monotony of much international architecture. In more than one town and city the authorities actually began to stop demolishing. A few voices crying in the wilderness had already insisted on the value of buildings and quarters that had miraculously survived the centuries. Suddenly their cries were being echoed by millions of people. These buildings were seen to be remarkable by any standards, not just objects of nostalgic regard. Each one is unique and therefore irreplaceable.

These treasures are not only beyond price, they are terrifyingly fragile. They need the kind of protection they have never been given; they could not survive a few more years of neglect. Protection is becoming a permanent duty. The States party to the Convention perform this duty all the more effectively because public opinion is not only behind them but often ahead. We have decided to remove from present or future dangers the little we have salvaged from the past. In the way of "immovable" property we have nothing better to transmit to them.

The world heritage mirrors the world. Its natural glories possess a value we cherish because they are untouched by human hand, except by the hand which seeks to preserve them.

Georges Fradier, French novelist and essayist, was for many years a member of Unesco's staff, latterly as Director of the Division of Human Settlements and Socio-Cultural Environment.

Footnote: Forest and Bird has just produced a pamphlet on World Heritage. If you would like a copy, please write with a self addressed envelope enclosing $1 to Forest and Bird, PO Box 631, Wellington.

MANAGING FOR THE LONG TERM

Although considerable progress has been made in developing a network of reserves[1] in New Zealand during the last decade, significant deficiencies still occur. However, it is important that areas already protected are not ignored; reservation is only the beginning, not the end-point for conservation. In this article Dr David Norton of Canterbury University's School of Forestry discusses some of the issues involved in the ecological management of reserves.

Some reserves are large (for example national parks) and, with the exception of some grassland and wetland areas, are unlikely to suffer directly from human impact in the near future. However, deer, goats, possums and other introduced animals threaten even the most remote areas, while climatic changes associated with the global increase in CO2 will also affect them.

Most other reserves are small, especially in the more intensively developed parts of New Zealand (see figure one). These need scientifically-based management if they are to survive with most of their natural values intact. We should now be building on the ecological management already underway to ensure the long-term survival of all our reserves.

Why manage?

There appears to be much confusion over what is meant by managing reserves. Often this is seen as involving some form of exploitation, such as logging, but in fact that is only one type of management and others such as conservation management are essential.

Management can be divided into two broad categories: the "do nothing" or passive management approach, and the active intervention approach. In national parks, larger scenic reserves and ecological areas, the "do nothing" approach is undoubtedly most appropriate, with a few qualifications — introduced animal control, recreation planning, and monitoring come to mind. Smaller reserves or those containing sensitive communities like grasslands and wetlands will require the active management approach if the threatened species and communities they contain are to survive.

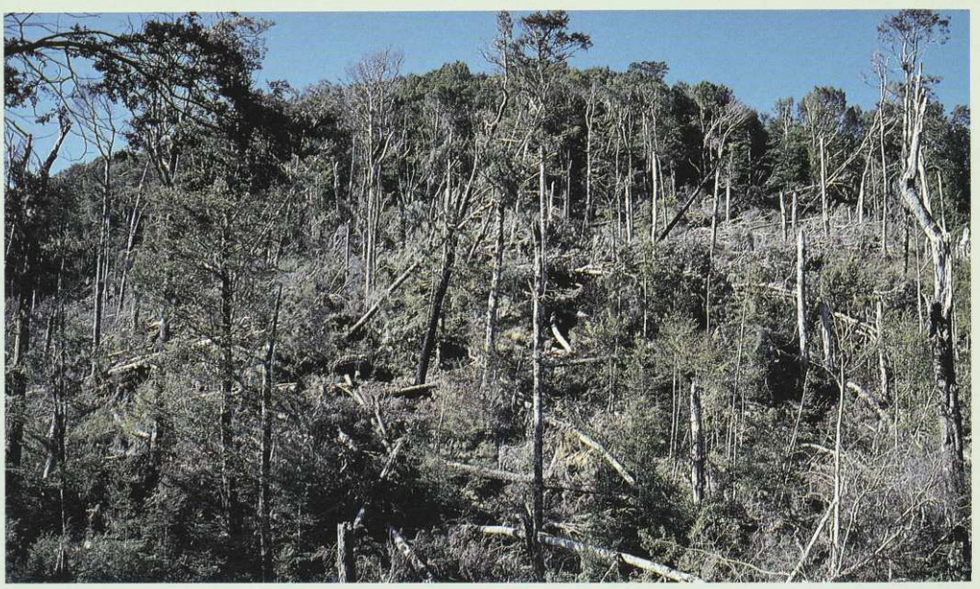
Is there any value in having small reserves? Some may doubt their value, but these small refuges may house the **only examples** of plants and animals formerly widespread in an area and are therefore of considerable scientific interest. For example, two reserves totalling 4.9 hectares are all that remain of the grasslands and shrublands of the Canterbury Plains (once 300,000 ha in extent!)

There are two main reasons for active management. First, because they are often small and isolated (perhaps surrounded by farms), reserves are very vulnerable to windthrow and fire.[2] It is often difficult for a full range of native species to re-establish after disturbance in small reserves, either because there is too much competition from introduced plants or because there is no seed source left. Although many disturbances are caused by humans, some occur naturally. Windthrow has created havoc in some areas, while the death of adult kaikawaka on Banks Peninsula probably resulted from natural causes. Nevertheless, small reserves often do not recover after they have been naturally disturbed because humans have eliminated the plants that would normally invade after disturbance or have introduced plants from outside New Zealand that take their place. One of the features of small reserves is that they mostly contain mature plant communities; disturbed or seral communities are poorly represented.

Secondly, we may need to actively manage when reserves contain vegetation that is changing. Perhaps the best examples are grasslands which are developing into shrublands. In many instances these grasslands have been maintained for tens or even hundreds of years by fire and/or grazing. Because these areas were protected for their grassland values, continued grazing or managed fire may be necessary to maintain them.

Similarly, open pakihi in North Westland with its distinctive plants and the habitat it

Bankside Scientific Reserve, a pocket handkerchief grassland and shrub reserve (2.6 ha) on the Canterbury Plains has seen a marked expansion of introduced grasses since grazing ceased in 1969. Grazing and/or fire may be the best management strategy to ensure the survival of the remaining native plants.



Catastrophic damage from windthrow (above) and snowbreak are an integral part of beech forest ecology; disturbance is quickly followed by regrowth of young beech. However, in small forest remnants such as Torlesse Bush (below), extensive natural damage snowbreak has been followed by invasion by Old Man's Beard.

provides for fernbirds and bitterns is undergoing change to forest. These pakihi have formed after fire and logging and without further fire will lose many of their present values as they revert back to forest. We can draw parallels with other countries: for example, scots pine and birch invasion of East Anglican heathlands.

In North America and particularly Europe, active intervention is commonly used to conserve semi-natural areas. Chalk grassland and acid heathlands are grazed and deciduous woodlands are coppiced. Although many of the pressures affecting New Zealand reserves are different, active intervention is still likely to play an important role in conservation management here.

Of course, ecological management is not new in New Zealand. In the 1890s Richard Henry was transferring kakapo and kiwi to Resolution Island. Other rare birds such as the black robin and takahe have long been managed, as have plants such as the Castle Hill buttercup and *Hebe armstrongii*. On islands such as Tiritiri Matangi and Mana, revegetation programmes are taking place. Urban reserves such as Riccarton Bush in Christchurch have been intensively managed. However, in many reserves, management has been minimal and largely passive. Where it has been active, it has been related to saving single species rather than whole communities of plants or animals. However, if we are to retain the full range of ecological values in reserves, we will have to manage communities too.

How do we manage?

First, we must have a good knowledge of the ecology of the species or communities concerned. That means monitoring, with an initial census of what is present and a longer term study of the losses and gains of both vulnerable species and of potentially aggressive invaders.

Prior to management, it is necessary to clearly identify the important ecological values and the threats that face them. In some cases this may be difficult. For example, shrubs readily invade induced grassland when fire or grazing ceases, but often the grassland is felt to have the greater ecological value. However, it can also be argued that management should aim to re-establish the "natural" vegetation at the site. Clearly issues of this type need to be resolved before any management is undertaken.

Active intervention management can include a large number of options: transplanting to increase plant numbers or lost plants, removal or modification of other plants (eg. introduced plants or vigorously regenerating native plants like mahoe or wineberry), and environmental manipulation through deliberate disturbance (eg. fire and grazing), to list but a few.

In some instances there may be no change from the kind of management that existed before the area was reserved. For example, in the South Island high country, continued grazing may be the most appropriate management strategy.

We also need to consider management of areas adjacent to reserves (buffer zones), for example, to prevent fertiliser or seed drift, introduced plant invasion or altered water tables.

There are always pluses and minuses when intervening in nature. Fire may help maintain grassland vegetation but reduce insect numbers. There are risks when transplanting through mixing genetically different populations. So, for example, it has been recommended that plant material used for revegetating Mana Island comes only from the Sounds-Wellington ecological region, and preferably from Mana Island itself.

Finally, when establishing reserves, we should think about how easily they can be managed as well as biological diversity and representativeness. It may be simpler to have one large reserve rather than two smaller ones, even if this means that certain plant and animal communities are not represented in reserves in each ecological district.

Large natural areas such as this sand dune sequence south of Haast require little in the way of active management.

Conclusions

Many people have fought long and hard for the reserves we now have in New Zealand. If the values that these reserves were established for are not to be lost, it is essential that we do not view reservation as the end of the conservation effort, but rather as the beginning. We must work together, conservationists, land manager and scientists, and continue the work already started to achieve effective ecological management of all our reserved areas in order to ensure their long-term survival.

[1] – Reserve is used in a colloquial sense in this article to refer to national parks, scenic reserves, ecological areas and other protected natural areas.

[2] – Although natural disturbance is a normal feature of native plant communities

Acknowledgements

I would like to thank David Given, Colin Meurk, Brian Molloy, Colin Ogle and Susan Timmins for valuable discussion on the issues raised in this article.

Further Information

Kelly, G C and Park, G N (eds). 1986. *The New Zealand Protected Natural Areas programme. A Scientific Focus.* D.S.I.R Wellington

Mark, A F 1985. The botanical component of conservation in New Zealand. *New Zealand Journal of Botany* 23, 789-810.

Meurk, D C 1987. Conservation objectives in pastoralism. *Proceedings of the New Zealand Grassland Association* 48, 71-74.

Molloy, B P J 1971. Possibilities and problems for nature conservation in a closely settled area. *Proceedings of the New Zealand Ecological Society* 18, 25-37.

O'Connor, K F. 1982. The implications of past exploitation and current developments to the conservation of South Island tussock grasslands. *New Zealand Journal of Ecology* 5, 97-107.

Ogle, C C 1987. The incidence and conservation of animal and plant species in remnants of native vegetation in New Zealand. In D A Saunders, G W. Arnold, A A. Burbidge and A J M Hopkins (eds), *Nature Conservation: The Role of Remnants of Native Vegetation.* Surrey Betty and Sons Ltd, Chipping-Norton, NSW pp 79-87.

Scott, D. 1979. Use and conservation of New Zealand native grasslands in 2079. *New Zealand Journal of Ecology* 2, 71-75.

Timmins, S M, Atkinson, I A E and Ogle, C C. 1987. Conservation opportunities on a highly modified island. Mana Island, Wellington, New Zealand. *New Zealand Journal of Ecology* 10, 57-65.

The New Zealand Ecological Society is running a three-day symposium on "Management of New Zealand's Natural Estate" in Dunedin on August 22-26. Managers and scientists will speak on a number of issues related to this theme. Anyone may attend. Further information: The Secretary, NZ Ecological Society, PO Box 12-019, Wellington.

Small reserves are a common feature of the more intensively developed parts of New Zealand. The following table is based on the "Biological Survey of Reserves Series" and presents the mean area and size distribution of scenic reserves in nine regions of New Zealand. Historical reserves and domains have not been included in the analysis, unless they have high biological values. Some reserves which consist of two or more discrete units have been split for analysis. In several areas (eg. north Westland) the analysis did not include new reserves created since the survey data was published.

Table 1

These data show that the mean size of scenic reserves varies considerably, primarily with respect to development. The two areas with the smallest mean reserve sizes, north Auckland and west Taranaki, are major urban/farming and farming areas respectively, while the two areas with the largest mean reserve sizes, south Westland and Marlborough Sounds, have only limited urban and rural development. The size distribution of reserves also follows this pattern with 60 percent of the west Taranaki reserves less than 10 ha compared with only 6 percent in south Westland. For the 439 reserves analysed, 27 percent (119) are less than 10 ha and 54 percent (240) less than 50 ha. Clearly small reserves are a common feature of the New Zealand protected natural area system.

Some of the data presented above conceal the extent of small reserves in the more intensively developed parts of New Zealand as some of the geographical districts analysed are very diverse (eg. Canterbury and Otago).

Table 2

The relationship between development and reserve size (and number) is very dramatically shown with only three reserves (2.3, 2.6, 11.4 ha) present on the intensively farmed Canterbury Plains (500,000 ha). Banks Peninsula, an area that has experienced considerable human impact since the first European settlers, has 43 percent of reserves less than 10 ha and 90 percent less than 50 ha. The remainder of Canterbury (high country and north Canterbury) has on average much larger reserves; only 7 percent of the reserves are less than 10 ha. When early botanists such as Laing and Cockayne visited Banks Peninsula at the turn of the century the forests were already severely fragmented as a result of fire and logging over the previous 50 years. At this time kaikawaka was a distinctive and common tree in the uppermost forest remnants, usually growing in association with thin-barked totara. However, by the time Kelly surveyed the scenic reserves of Banks Peninsula in the late 1960s, kaikawaka was all but extinct. Widespread mortality appears to have occurred amongst adult trees in the 1940s and 1950s with only one adult and a few small areas of regenerating saplings present. This mortality has occurred irrespective of the size of the forest remnants and irrespective of whether or not they were protected. Research is presently underway to establish the cause of the mortality.

TABLE 1: RESERVE SIZES FOR NINE REGIONS OF NEW ZEALAND

	mean reserve area (all reserves)		mean reserve area (reserves <1000ha)		% reserves in different size classes (ha)				
	N	ha	n	ha	<10	10-50	50-100	100-1000	>1000
S. Westland	32	548	29	264	6	16	13	56	9
Marlborough Sounds	85	509	77	182	21	11	14	45	9
S. Marlborough	23	321	20	47	21	41	8	13	17
N. Westland	27	306	26	174	26	22	15	33	4
Canterbury	72	196	71	50	31	47	7	14	1
Otago	53	167	52	145	17	25	13	43	2
E. Taranaki	73	166	71	116	21	30	15	31	3
N. Auckland	33	33	33	33	50	30	12	6	0
W. Taranaki	40	30	40	30	60	30	5	5	0
TOTAL	439	260	419	116	27	27	12	28	5

TABLE 2: RESERVE SIZES FOR THE CANTERBURY LAND DISTRICT

	mean reserve area (all reserves)		mean reserve area (reserves <1000ha)		% reserves in different size classes (ha)				
	N	ha	n	ha	<10	10-50	50-100	100-1000	>1000
Plains	3	5	3	5	66	33	0	0	0
Banks Peninsula	42	28	42	28	43	48	2	7	0
Rest of Canterbury	27	479	26	90	7	48	15	26	4

A further set-back for kaikawaka occurred in June 1984 when a gorse fire on the Akaroa side of Flag Peak was swept out of control by gusty northwest winds over the top of Flag Peak and down into Armstrong Scenic Reserve. About 400 kaikawaka saplings were killed by the fire representing a 75 percent reduction in the total kaikawaka population on Banks Peninsula. This area had until then been considered as offering the best chance for the long-term survival of this species on Banks Peninsula. Today there are about 145 kaikawaka distributed between seven sites of which 75 percent occur at just two sites; about 30 percent of all kaikawaka are in poor health.

On Banks Peninsula kaikawaka has come close to extinction as a result of both natural and human-induced disturbance over the last 50 years. This has occurred despite many of the best kaikawaka sites being in scenic reserves. The fate of this species clearly illustrates the vulnerability of small reserves. Without some form of management there is a strong likelihood that kaikawaka could become extinct on Banks Peninsula as have other species (eg. hinau and rimu. Two male rimu exist but no female trees are known). It is also worth noting that with the death of the adult kaikawaka, we have also lost the very distinctive filmy fern *Hymenophyllum malingii*, which usually occurs abundantly as an epiphyte on mature kaikawaka. This fern has not been seen on Banks Peninsula since the early part of this century.

Dead adult kaikawaka in thin-barked totara forest, Purau Valley, Banks Peninsula. All photos David Norton.

J S Watson Conservation Trust Grants

The Trust invites applications from individuals or conservation groups for financial assistance for conservation projects over the 1988-89 year.

The criteria for assistance are:-

1. The conservation of the plants and animals and natural features of New Zealand.
2. The advancement of knowledge in these matters by way of research, literary contribution, essay or articles, or other effort.
3. General education of the public to give them an understanding and a love of the earth in which they live.

A total of $4,000 is available and at the sole discretion of the Trustees, this may be awarded in whole or part to one or more applicants, or held over for a subsequent year.

For futher details, and application forms, write to P O Box 631, Wellington.

Applications close 31 July 1988.

Summer Camp

The Marlborough Branch summer camp is to be held at Innes House, Blenheim, 22-27 January 1989. Innes House is a secondary school hostel, and motor camp or motel accommodation will also be available.

An interesting programme of day trips and evening activities is being arranged and we hope that family groups from all over the country will be able to share some of Marlborough's summer activities.

Those interested in attending should send a stamped, self-addressed envelope to:
Mrs J Davies
Secretary, Marlborough Branch
Batty's Road
Blenheim

Wilderness Areas in New Zealand

I am researching the use of wilderness areas (designated, proposed and de facto) in New Zealand — wilderness being defined (as in the official Wilderness Policy), as undeveloped outdoor areas which remain "wild" and remote and which have no maintained facilities such as huts or tracks. If you have visited such an area in the last six months, or plan on visiting one within the next year, please contact me at the address below, leaving your name, address and area visited. Some of you will be contacted and asked to complete a questionnaire on perceptions and use of wilderness areas. The information gathered is to be used as part of a PhD dissertation.

Your help would be greatly appreciated!

John Shultis
Department of Geography
University of Otago
Private Bag
DUNEDIN

Annual General Meeting

The 64th Annual General Meeting of the Society will be held on 25th June 1988 at Host Harvey, 16 Kemp Street, Kilbirnie, Wellington, at 8.30 am.

The agenda will be as follows:

1. Apologies.
2. Declaration of Councillors.
3. Minutes.
4. Annual Report and Statement of Accounts.
5. Remits.
6. Appointment of Auditors

This will be followed by a National Council Meeting.
The Annual Report for 1988 is enclosed with this journal.

Tauranga Summer Camp

Aongatete Lodge — Tauranga — January 16th to January 23rd 1989
The Three Bees Camp
(Birds Bush Beaches)
Kaimai-Mamaku Conservation Park
Comfortable Lodge — Good Food — Nice People
Cost $300 for 7 days
Family rates on request
Cost includes Lodge — Food — Daily bus trips

Details from Tauranga Branch Secretary, 364A Waihi Road, Tauranga (075) 83 245.

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Aug 17 South America!!! Amazon Cruise

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Oct 31 Round India Kashmir and Nepal

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P O Box 3030, Wellington

Northern N.S.W. and Southern Queensland National Parks Tour August/September 1988

A 14 day tour including Lamington, Giraween, Tyalgum Tops and Evans Head National Parks with a three day pass to Expo 88 in Brisbane. Alternatively 21 day tour as above plus Fraser Island and Bunya National Parks. Both are fully escorted tours guided by an NZ. and Australian Tour Safari Operators.

Approximate cost Ex Auckland or Wellington from $NZ1649.00.

Enquiries to: Macanz Tours, P O Box 36, Wanganui
or Manager AA Travel, P O Box 440, Wanganui

Errata

Pg 29, February 1988 issue: Please note that the truck itself has been dumped, and the portable sawmill is cutting swamp kauri.

Books Received

The Vegetative Cover of New Zealand, *P F J Newsome $38.50 (NWASCO)* This long-awaited publication gives us the first overview of New Zealand's vegetation cover. A 150-page booklet describes characteristic features of each of the 47 vegetation types, and has colour photographs of each type.

The accompanying 1:1,000,000 scale maps are useful for assessing the extent of each vegetation type in some detail.

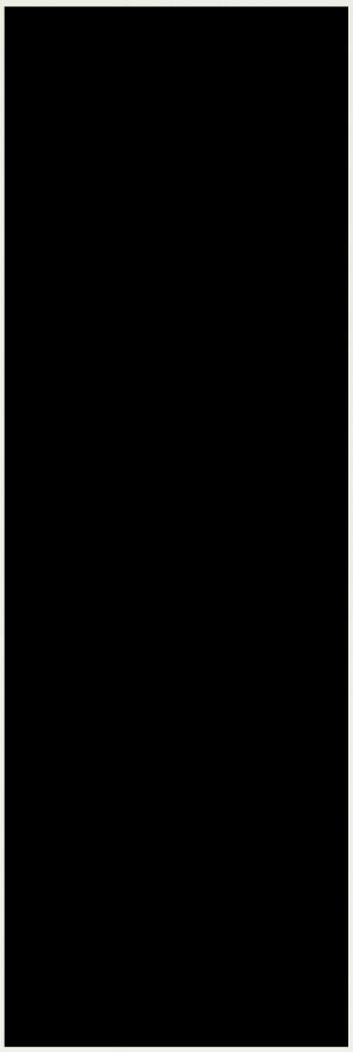
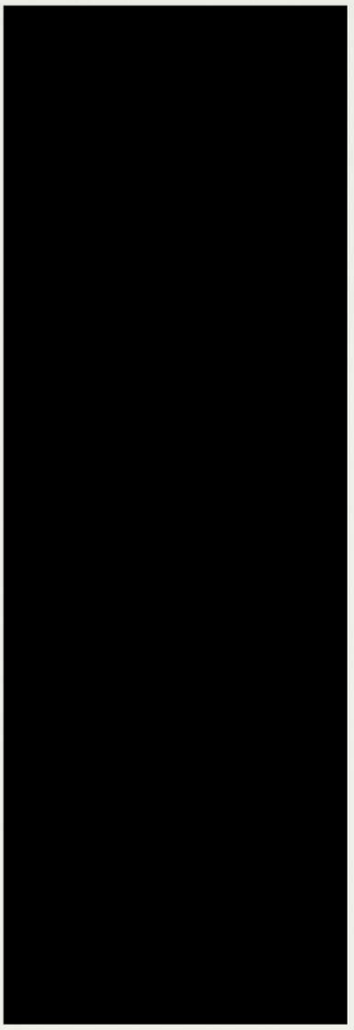
The publication has three minor defects; estuarine vegetation is omitted; kauri forest appears to be lumped into lowland podocarp-broadleaf forest without any explanation; and discussion on the relationship between vegetation, moa and Maori takes little account of the wealth of new research in this field over the past decade.

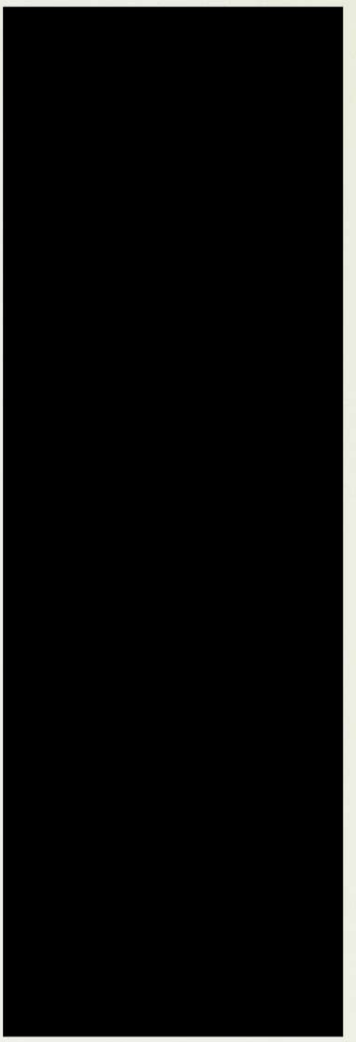
Despite this the book is a good up-to-date reference work on our native and exotic vegetation cover.

Vegetation of Stewart Island, *H D Wilson $35.75 (DSIR)* Hugh Wilson's latest work is the accompanying volume to his *Stewart Island Plants* field guide. It describes the plant communities of Stewart Island, with interpretation of the influence of man, possum and deer on vegetation types and threatened plants (*Stilbocarpa*, Cook's Scurvy grass). The final section discusses the rare and restricted plant species on Stewart Island.

A useful book for any plant enthusiast heading off to cool, damp climes

Outdoor Recreation in Otago — A Conservation Plan, *Bruce Mason $30 or $22.50 to FMC members (Federated Mountain Clubs)* Bruce Mason has produced a document packed full of information on the recreational opportunities of Central Otago's block mountains, along with some description of the special conservation features of the region. Those working on the PNA Programme should study this Plan for pointers on what areas should be reserved for recreation. This will be a valuable resource document for years to come, although some aspects such as land tenure and zoning are bound to date soon — so buy your copy now from FMC, PO Box 1604, Wellington.



SOCIETY'S LODGES AND HOUSES

Bushy Park Lodge

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

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

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

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

Bookings and Information Leaflet: Custodian, Bushy Park Lodge, Kai Iwi, RD8 Wanganui. Telephone Kai Iwi 879. STD (064) 29-879.

Okarito Beach NFAC Cottage

Sleeps 4–6 in basic but comfortable facilities, water, wood stove, 2 rooms. Sited in historic township, coastal and bush walks, Okarito lagoon, Westland National Park and glaciers. $3 per person per night. Bookings: Bill Minehan, Private Bag, Hokitika, Ph 734 Whataroa.

William Hartree Memorial Lodge, Hawke's Bay

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

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

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

For rates send a stamped addressed envelope to the Booking Officer, June Norther, 212 Kennedy Road, Napier, Telephone Napier 438 193.

Ruapehu Lodge, Whakapapa Village, Tongariro National Park

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

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

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

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

Tautuku Lodge

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

Information and rates on application to the caretaker: Miss M. Roy, Papatowai, Owaka, R.D.2. Phone (0299) 58–024. Stamped addressed envelope with inquiries please.

Turner Cottage, Stewart Island

Turner Cottage, is on Stewart Island and is a two-roomed dwelling furnished for three people.

For details write, enclosing a stamped, addressed envelope, to: "Turner Cottage", C/o Mrs N. Fife, P.O. Box 67, Halfmoon Bay, Stewart Island.

Tai Haruru Lodge, Piha, West Auckland

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

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

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

Different rates apply for winter and summer, for rates send a stamped, addressed envelope to the Booking Officer, Mrs B. Marshall, 160 Valley Road, Henderson, Auckland. Telephone 836-5859.

Waiheke Island Cottage, Onetangi, Waiheke Island

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

Different rates apply for winter and summer. For rates send an addressed envelope to the Booking Officer, Mrs R. Foley, 23 Stoddard Street, Mt Roskill, Auckland. Telephone Auckland 696-769 (evenings).

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YES, I want to join the Royal Forest and Bird Protection Society. Start my subscription to *Forest and Bird* magazine immediately.

Please tick the appropriate category:

	1987/88 Incl. GST
☐ Schools or library	$17.00
☐ Junior (under 17 or at school) Age	$17.00
☐ Student (with ID proof)	$17.00
☐ Ordinary	$33.00
☐ Family (Partners with or without children)	$33.00
☐ Senior Citizen (Over 60) - partners or single	$25.00
☐ Life	$450.00
☐ Conservation News	$6.60
☐ Groups	$33.00

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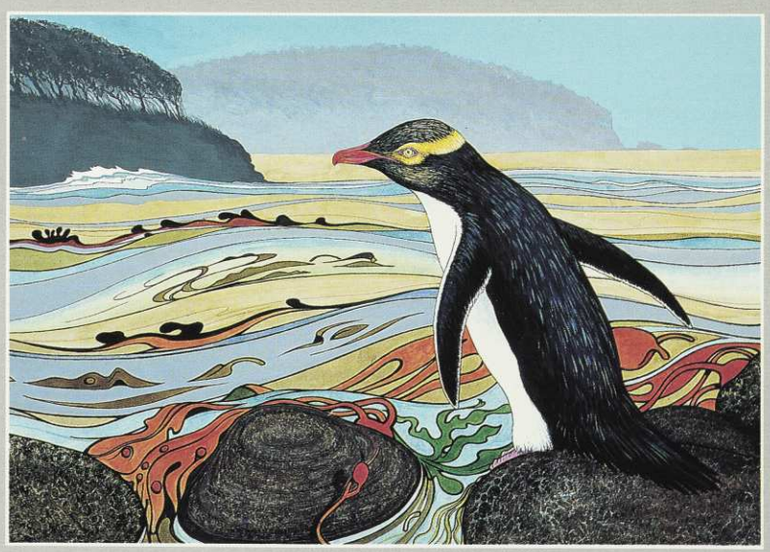
Hoiho – the World's Rarest Penguin

Limited Edition Art Prints

The Royal Forest and Bird Protection Society offers members the opportunity to purchase a limited edition high quality art print of the world's rarest penguin, hoiho or the yellow-eyed penguin. The artist is well known Southland painter and sculptor Merv Sarson. Funds from the sale of the print will go directly towards the fencing of the Society's reserve in the Catlins, Te Rere. This area is considered one of the best mainland breeding locations for the yellow-eyed.



Limited edition of 450, 610 x 420 mm, $50 (inc GST).

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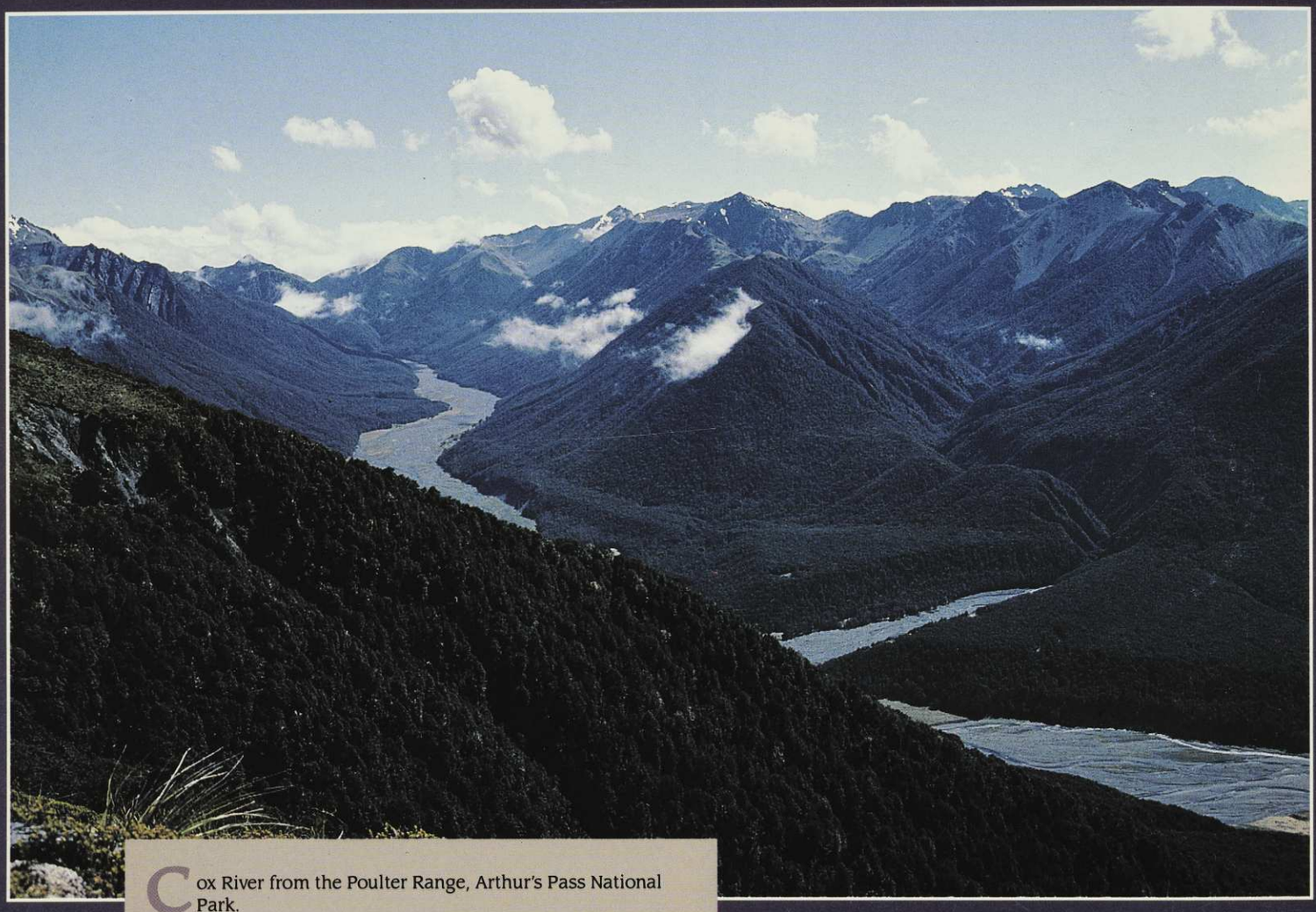
Name ..... Address .....

Send your cheque to RF & BPS Mail Order, PO Box 631, Wellington.



Cox River from the Poulter Range, Arthur's Pass National Park.

The 19,230 hectare Cox-Mt Binser area will soon be added to the Arthur's Pass National Park once survey is completed.

This important addition of red-silver-mountain beech forests and the possible future addition of drier tussock mountain land shortly to be surrendered from the Mt White pastoral lease will complete an important west-east wet to dry climate vegetation sequence within this National Park (see article on page 20 inside). *Photo: Mike Harding*