Continued from page 13

Peninsula. We can seat up to 20 people in the display room and look forward to showing visitors what can be done.

Rodent Fence

We are fundraising to build a rodent proof fence along the drive just behind the shoreline to capture the rats that have been coming across the mud flats and along the inter-tidal zone around the end of the fence in Port FitzRoy. Despite two rows of bait stations and traps at 10-20m intervals on the shoreline and behind, the rats were still crossing into the Sanctuary. The rodent fence is only 1300mm high and extends 500m from the end of the existing fence to just before the FitzRoy House wharf. The total required is just over $100,000 but we have already raised 25% of the cost. We are very grateful for the help provided by our volunteers and the assistance we have received from Lotteries, the Biodiversity Funds, World Wildlife Fund, ARC and the Auckland City Heritage Fund. We are always on the lookout for more volunteers as so much is being asked of so few.

Comment- Community Board Elections

The voting papers call for nominations for 5 candidates out of 10 registered. Those casting their votes should seriously consider who they are voting for and only vote for those who they believe to be the best representatives for the island. If this is only 2 or 3 of the 5 then only vote for the 2 or 3. Don't make up to the 5 as every vote for others lessens the chances for those you wish to be successful.

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GBI Environmental News

published by

Great Barrier Island Charitable Trust

Trustees: John Ogden (Chair), Tony Bouzaid, Jude Gilbert, Liz Westbrooke, and Fenella Christian (Secretary). David Speir is Magazine Editor

Kanuka and manuka

Election Special Candidates Respond

Mission Statement: Our vision is to protect native species through the eradication of rats and feral cats, to re-introduce species lost to the Island, and to work towards building an ecology-based economic framework for Great Barrier Island.

Editorial

It's that time again, time to vote for the island's Community Board in the local body elections.... and this time it's for a Board serving the Barrier in the structure of a much larger Auckland Council, in the 'Super City'.

So we will need strong advocates, we will especially need strong voices for the environment if we wish to keep the island in its beautiful state with its varied eco-systems and its wonderful bio-diversity. We will need protection for the endangered species that still manage to maintain life and reproduction here when they cannot on the mainland. It is essential we have a Community Board that understands that, apart from the pest-managed Sanctuary areas at Glenfern and Windy Hill-Rosalie Bay, biodiversity on the island is in decline and will continue to decline until the pests are managed to low densities or eradicated.

We will need real leadership, leaders able to manage a wide level of debate with this community on the scenario of a rat and feral cat-free future. It is disappointing that so little leadership on this issue has been shown by our Community Board to date, and that they have allowed themselves to be stalled by the toxins debate and not consider the long term benefits – the social, economic, and environmental benefits – that the Trust envisions.

The current Board voted not to support the Trust's well-regarded State of the Environment Report, and in our view has a poor record of funding and supporting environmental issues on the island. Their lack of concern (and action) about the degree of freshwater stream pollution shown through Auckland City stream monitoring is a prime example of the Board's sidelining of an important issue.

We are pleased to have ex-Trustee Sue Daly standing and also to support Izzy Fordham who has been an effective liaison between the Community Board and the Trust.

Environment News sent out questions to each of the candidates. Only 6 of them chose to respond, that should tell you something in itself! So if you want to join us in making a vote for the biodiversity as well as the humans, please think hard about what is being said here, and about the commitment of those who have not replied at all.

We are indeed sad to lose our two outgoing Trustees, Sue Daly and Jo Ritchie. Sue has resigned in order to stand for the upcoming Community Board elections. We have appreciated her input and enjoyed her company and knowledge of the Barrier gained over many years. Good Luck Sue!

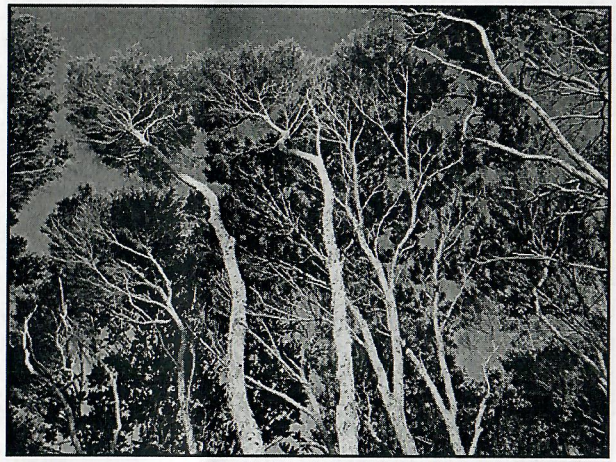
Jo has provided us with valuable expertise in conservation practice. Pressure of work has been a large factor in her decision to resign. Thanks Jo, we are grateful for your input, magazine articles and encouragement.

COVER: *A picture of diversification and ultimately succession as older kanuka give way to emergent kauri, rimu, kahikatea and rewarewa in Okiwi, Great Barrier Island.*

Photo: IslandStay

Kanuka and manuka

Chris Ward examines the ecological characteristics and many values of these common but under-appreciated New Zealand plants.



Looking into kanuka canopy © Dean Baigent-Mercer

Kanuka and manuka are the stuff of controversy. Are they farmland weeds, or valuable resources? Is that hillside covered with scrub, or forest? Is it a precious example of native biodiversity and natural character, or simply a wasteland? For that matter, some layfolk will argue there's no such thing as kanuka, only manuka.

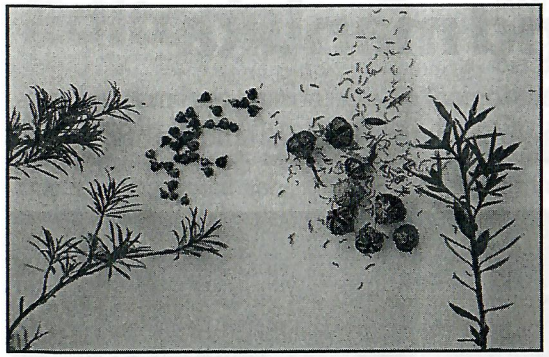
Though frequently look-alikes, and often confused with each other, there are major differences between kanuka and manuka. (Details in box on page 4). Both trees can adapt their forms according to the growing conditions. Kanuka and manuka may look much the same, but often the differences are obvious, even from a distance.

Until about 30 years ago, kanuka and manuka were both identified as closely related species in the genus *Leptospermum*. Then, fundamental differences, especially in the flowers and seed capsules, led Australian botanists to reclassify them in different genera. *Kunzea ericoides* is the 'new' scientific name for kanuka while *Leptospermum scoparium* remains the name for manuka. (Recent PhD research by Peter de Lange has recognised several new species of *Kunzea* previously included with kanuka – watch this space!)

We might feel aggrieved at the Aussies fiddling with the names of New Zealand species in this way, but kanuka and manuka are part of a large complex of similar species shared with Australia.

Could this be the origin of the widespread misunderstanding that kanuka and manuka aren't New Zealand natives? How often have I heard something like 'Oh, we're only cutting scrub, we wouldn't touch the native!' – implying the 'scrub' (kanuka-manuka) isn't native. Far from it; both were present well back in New Zealand's geological past.

That word 'scrub' – it can be used with the emphasis of a four-



Kanuka leaves and seed capsules (left) are smaller than manuka's distinctive larger seed capsules and prickly leaves (right). Copper-coloured manuka seed is pictured here spilling out of split seed capsules.
© Dean Baigent-Mercer

letter word to suggest the 'weed' status of a vegetation, its illegitimacy and lack of value, indeed its negative value. For that reason, many conservation-focused people avoid using the word. But 'scrub' is also a straightforward technical term for closed-canopy woody vegetation dominated by stems less than 10 centimetres diameter, a purely descriptive term without any judgmental implications.

'Shrubland' is an alternative word sometimes used instead of 'scrub' by people concerned with its negative connotations. But technically, shrubland is another form of vegetation – essentially scrub with an open canopy, where shrub cover is less than 80%. On this basis, there is plenty of both scrub and shrubland dominated by kanuka and manuka in many parts of New Zealand and notably Great Barrier.

Much of the vegetation that is commonly referred to as scrub is, however, technically forest. Scrub becomes forest when the dominant stems forming the canopy are more than 10cms diameter at breast height. For kanuka this normally occurs when the stand is about 30 years old, at which time it is typically 8-12 metres tall. These are small trees, agreed, but kanuka will keep on growing to a large size if not felled or burnt.

Many of us will know a corner with some large 'old man' kanuka. My favourite is on the high marine terrace surface of Whetumatarau, a dramatic plateau immediately behind Te Araroa on the East Cape. Large kanuka trees are a component of a mixed forest there. I measured a single stemmed specimen to be 94 centimetres diameter, and estimated its height at 25 metres – a great forest tree laden with perching lilies, orchids and other epiphytes. By comparison with nearby kanuka, known to post-date 1857, I estimate these larger kanuka trees to be 300-400 years old.

So while some people see all kanuka vegetation as scrub, I cannot accept this. Kanuka and manuka are 'seral' or successional species, which dominate key parts in the series or succession of vegetation types which follow the colonizing of a new site. Here size really does matter. Kanuka grows en masse to form dense scrub; then, as the dominant stems grow and the others are suppressed and die, it matures to form a kanuka forest. This will generally diversify to a

Telling differences between kanuka and manuka

Kanuka and manuka are distinctly different species, though they can look very similar. Kanuka grows faster and bigger than manuka, but you can't simply call it manuka for the small stuff and kanuka when it's bigger! The following features help define the differences:

- Kanuka has narrow parallel-sided leaves several times longer than wide and notably soft to the touch
- Manuka leaves are more ovoid but sharp-pointed ('lanceolate') with the prickly apex giving the foliage a harsh feel.
- Kanuka foliage is generally a rather bright olive-green. Specific colour features of kanuka and manuka vary with the seasons, and regionally.
- Manuka is duller, generally darker (not so obvious when very young).

In overview manuka often has a grey-brown look, from a combination of the leaf colour and the branches/stems which typically have a covering of sooty mould (which thrives on the sugary excretion of an introduced scale insect). This mould is much more prevalent on manuka than kanuka.

- Kanuka bark is a light tawny brown. Narrow vertical strips of bark are characteristic of kanuka.
- Manuka bark is darker with a reddish tinge. It comes off in very thin flakes, wider and less regular than kanuka bark.
- Kanuka flowers are notably smaller, 4-5mm across, creamy white.
- Manuka flowers are 10-12 millimetres across and generally pure white.
- Kanuka flowers are carried in dense elongated clusters (or 'cymes') towards the end of the branchlets
- Manuka flowers are more evenly scattered over the plants as single flowers.
- Kanuka generally flowers once a year only, in midsummer.
- Manuka flowers strongly a little earlier than kanuka, and additionally in irregular bursts at other times.
- The kanuka seed capsule is less woody, only 2-3 millimetres across and generally disappears after a month or two. Generally kanuka does not carry seed capsules, except briefly in late summer.
- Manuka has a hard woody seed capsule 5-6 millimetres across which persists on the plant for a year or more after flowering. At any time of the year you will see seed capsules of various ages.
- Kanuka generally has faster growth rates and reaches a larger size so it is commonly seen as trees, 10-15 m tall and more, and 15-40 cm diameter.
- Manuka generally stops at about 6-8 m height and 7-10 cm diameter, or less on the poorest soils (e.g. 1–2 m on the Te Ahumata plateau).

The growth forms of kanuka and manuka are slightly different – the somewhat droopy branchlets of kanuka often contrast with more erect manuka – but there is much variation caused by the character of the site, the density of the stand, and tree age.

mixed forest and ultimately be replaced in a natural succession – if we wait long enough.

Hill country farmers are very familiar with the most basic ecological feature of kanuka and manuka – their ability to colonize the smallest of bare patches in sparse pasture. Those tiny air-borne seeds get around, and the essentially unpalatable seedlings do well in full-light conditions. They may also colonize extensive bare sites after fires or on slips.

Kanuka grows well on soils of middling-to-good natural fertility and drainage. Manuka by contrast favours wetter soils and low-fertility leached soils. It is not so much an active preference for poor conditions; rather, that with competition between the two, kanuka fails in such circumstances. In contrast, manuka often establishes with kanuka on the average or better sites but is suppressed by the faster-growing

Manuka seed capsule.
Photo: Miranda Woodward

kanuka and dies out within 10-20 years, after being overtopped.

The net result is that kanuka dominates in some areas, such as most of the Gisborne District. Manuka persistently dominates on wetland margins, and on some particularly hard, 'bony' or burnt sites. It also flourishes in areas with consistently high annual rainfall, and at higher altitudes.

The different lifespans of manuka and kanuka is the basis of another important distinction between them. Manuka is comparatively short-lived – generally to about 60 years. As a stand approaches this age, there is a progressive breakdown of the canopy as individual manuka die or fall. This allows seedlings or saplings of other species to come through. Now there is an early succession to forests dominated by broadleaved species such as rewarewa or kamahi. In some cases, where browsing by stock or wild animals is excessive, this natural succession may fail – then the manuka may be replaced by mingimingi and bracken, in patches, or a second generation of manuka establishes itself.

Kanuka by contrast is long-lived. Stands dating from the abandonment of land during the economic depression of the 1930s, or before, are widespread. Whether the plants beneath them are heavily browsed by animals or not is to some extent immaterial as far as survival of kanuka forest is concerned. The kanuka will still be there at the end of another century. Removing browsing animals from the understorey would, however, allow a diverse forest to establish and eventually

succeed the kanuka.

Manuka and kanuka have other values, too. While some iwi leaders have declared that manuka (including kanuka) have no worth, others consider that its former use for prized tools and weapons represents a cultural value of high importance.

On the utilitarian front, perhaps the best known value, for kanuka especially, is as a source of firewood. Alas, in the absence of sustainable management systems, this use tends to be an opportunistic 'mining' of the resource.

The quality of kanuka timber also suits it to machining for tool handles, with far higher value-added potential. While there have been encouraging thoughts of harvesting kanuka for such purposes, using sustainable management practices on quite modest areas, no one has yet got that off the ground on a commercial basis.

There has been a tendency in the past to regard kanuka and manuka as significant only as a 'nursery crop' allowing a 'real' forest to develop, but there is far more that makes kanuka-manuka vegetation valuable. High density kanuka-manuka scrub/forest is very effective at holding the land in severe rainstorms – in maintaining slope stability on the steep hillslopes so prone to soil-slips when in pasture. Landcare Research has shown that the combination of canopy interception of the rain, and the strong interlocking roots, means kanuka stands 16-20 years old or more are as effective at erosion control as close-planted pines of eight or more years old. With kanuka there is the added

Close-up of manuka flowers
Photo by Miranda Woodward

opportunity for that stability to be maintained for centuries. Kanuka-manuka scrub/forest won't stop an existing gully eroding out, but it will stop a gully initiating on a slope that in pasture would be vulnerable.

Both kanuka and manuka yield honey in large volumes. This is generally sold as manuka honey with a significant price premium over clover honey. Spectacularly effective antibiotic activity has been tested in some manuka honey (but not from kanuka).

The oil extracted by steam distillation from manuka leaves from the East Coast also has striking anti-bacterial and fungicidal properties. Manuka oil is being used in a variety of medicinal and cosmetic products, commercially produced and marketed from a number of sites including Barrier Gold's operation at Port Fitzroy.

A remarkable recent discovery is that manuka oil varies dramatically in chemical composition and properties from district to district. This illustrates firstly that manuka goes a long way back into the geological past and has evolved locally, and secondly how much we have still to learn about New

Wind-sculpted kanuka near Whahariki Beach, Puponga Farm Park shows kanuka's contortionist abilities in extreme conditions; its groundholding ability is a major stabilizing influence on steep slopes.
© Dean Baigent-Mercer.

Zealand's plants and biodiversity generally.

Kanuka and manuka-dominant vegetation also provide habitat for a remarkable variety of other plants and animals – they are major repositories of New Zealand's indigenous biodiversity. Many native orchid species, for example, particularly favour older kanuka or manuka-dominant vegetation.

Measured by species numbers and ecological complexity the most important elements of biodiversity are the invertebrates – moths, beetles, millipedes, spiders, snails and the rest. Research work in the Gisborne district shows that the significance and diversity of the invertebrate fauna in 60-year-old kanuka forest is as great as that in primary forest. Extensive kanuka-manuka areas support large numbers of the forest birds including threatened species such as whitehead/popokatea and fernbird.

To some, kanuka-manuka areas are but signs of recent farming gone wrong; an essentially unnatural phenomenon of the past century. But there is a long history of forest modification, extending back to the first Maori occupation and long before, due to fires and other disturbances. So kanuka and manuka scrub forests are an important part of the natural character of most districts.

The character of kanuka and manuka vegetation ranges as a continuum, from nuisance weeds invading pasture at one end, to a treasure trove of indigenous biodiversity and natural character at the other. The challenge is deciding at what point in the continuum do the positive values become dominant.

There is no simple answer, and to a great extent it must depend on the specific context of an area. Landowners will commonly argue that their own views on the subject must be paramount. I would like to think it possible to stimulate increasing respect among landowners for kanuka and for manuka.

Adapted (with permission) from an article published in "Forest and Bird" by Christopher Ward.

Great Barrier Island Community Board candidates profile and questionaire

The triennial elections for local government representatives are upon us; GBI has retained its Community Board under the Supercity and ten candidates have nominated for the five positions. Here are the answers of those candidates who chose to reply to our questions.

THE INCUMBENTS

***Paul Downie**, age 59 years lists his interests as Scuba diving, fishing, musician, arts, crafts and island history.*

A regular visitor to Barrier for the past 40 years he moved here to live eight years ago with his wife Geraldine. Local Board member for the past 6 years and Chairman for the past term.

"I have broad local and international business experience. I am a qualified Resource Consent Hearing Commissioner. I am a strong advocate for an improved regulatory environment that best meets the needs of our community without undue costs."

Q 1: How do you see progress in biodiversity protection on the island?

There are a number of opportunities available to progress biodiversity protection on GBI.

1. A predator fence across the northern DOC controlled portion of the island would provide a significant predator free zone for our island's native flora and fauna. This initiative should complement the work already undertaken by Tony Bouzaid on his property.
2. DOC controlled Rakitu Island also could be considered for a predator-free programme.
3. Predator traps should be made available at subsidized pricing (or free) to property owners interested in pursuing pest-control on their own properties.

Q 2: As a person whose vote is mainly determined by performance on environmental issues tell me why I should vote for you?

1. Our stunning biodiversity and natural marine environment is the natural capital of our island and should quite rightly be preserved and protected. We are an island free of stoats, weasels, ferrets, possums, deer, goats hedgehogs and Norwegian rats. Great Barrier's environment is quite unique in this respect and one of the primary reasons for many of us wanting to make the island our home.
2. However, having been an elected community advocate and representative for the past 6 years I am also aware that "the environment" does not exist in isolation. People and their social, economic and cultural activities are also an important part of the fabric of our environment.
3. Any major environmental protection initiatives that may be contemplated in the future need the collaborative support of our community and local iwi, and should not result in any degradation of cultural, social, economic,

and enjoyment rights and use of private property.

Izzy Fordham

I am 55 years of age and live at Harataonga with my partner Lance. I'm a permanent resident of 21 years and a landowner for over 30 years. I work part-time as an administrator for the Claris Club and am also part of the island's Volunteer Rural Fire Force. I have served 2 terms on the Community Board.

Q1.

We do have some biodiversity protection on the island but it is limited and somewhat ad-hoc in fashion. A number of community and private groups are involved in some impressive work, but if the island is going to be serious about conservation then a strong debate is necessary.

Our community needs to be consulted with regards to biodiversity protection, especially in relation to priorities, border control, aerial bait drops and the use of poisons. Once this has been done then the island community and stakeholders can formulate a strategy for the future.

Q2.

I have great respect for my environment and am concerned about the welfare of our planet. Living on Great Barrier Island lends you to a lifestyle where you become more aware of your immediate surroundings, weather patterns and environment.

I feel we need to be cautious in our approach to development and tourism and plan for the island's sustainable future. If we don't, we stand the chance of losing what we value so much – once it's lost it's lost forever.

Mickey O'Shea

Eldest son of the O'Shea family of the Awana Valley, Mickey is a life-long resident of Great Barrier and at 48 years old remains a single man. He has served one term on the Board and has a keen and practical interest in the future economic viability of Great Barrier especially for larger landowners.

Q 1.

Progress to date has been effective given the balance of resources (available) to the area. We may now have to increase private sector funded conservation initiatives to alleviate any likely shortfall in the reviewed DoC sector.

Q 2.

Our community is experiencing change being delivered from the outside. If we are to look after our socio-economic wellbeing we need to be ready, pragmatic and flexible. If there is equitable potential for growth in the environmental management industry, we need to keep as much of the wealth accrual capability within our community as at all possible.

Richard Sommerville-Ryan

Richard is a retired management consultant with local and wide international experience in education, training and development, publishing, and corporate change and restructuring. He first visited the Barrier in 1968, and has lived on the Barrier for five years. He is/was a board member in the last Barrier community board. He and his wife Gendie live in Tryphena. They also own a 40 acre pristine bush block for which he has no plans to develop in any economic way whatsoever.

Q 1.

There's no doubt that we're going backwards on most species indicators—so complacency is not an option. I think there's actually general agreement on the island that we have to make progress on getting rid of the introduced pests like rats, feral cats, and rabbits, the African 'pine', gorse and other aggressive introduced plant species. None of these can be seen in isolation, and each requires practical funding decisions and management. There are some big 'risks' we have to deal with. I am seriously concerned at the significant downsizing in DOC's field staff on the island. I'll be focussing on getting detailed key performance measures including biodiversity from DOC, and then monitoring them closely. I think we need to find a more pragmatic approach to the pest-control/poisons debate. A debate based on visions and emotions isn't helping much. Any option or solution will require complete buy-in from the local community if it is to have a chance of success.

Q 2.

First, I'm pragmatic and I focus on practical incremental steps and achievable goals. One of the first actions of the last board was to increase the initial seed funding for Kaitoke beach restoration—and then we used that to leverage wider commitment and funding to the overall project. That will have long-term benefits. I want to follow that with gorse control at the airport and throughout the island, and I'm concerned at the possible nitrate enrichment in Tryphena harbour. These are practical problems which need a practical response. Second, I think we need to find common ground between the wider community and the trust's vision. That will require serious political work. However, no local board member can or should be a single-issue candidate, and I don't think any 'single issue' board member will achieve much.

THE PROSPECTIVES

Sue Daly

I am 55yrs old and married to Tom. We have 5 kids and 4 Granddaughters. I started up Pigeon Post when it was the Post Office, Postbank and Claris Telephone Exchange, and over the years these and other businesses we have developed have morphed and grown and been onsold including Tom Daly Contractor and Hooked on Barrier. My current interest is studying Organic Horticulture through NorthTec at Medlands and loving it – I'm particularly passionate about permaculture.

Q 1: How do you see progress in biodiversity protection on the island?

Progress is painstakingly slow because of the impact of introduced pests, and because of our reluctance to accept our own human impact. We all love our island, but we become divided over methods and limits of protection that we are prepared to accept. Robust local debate and strong open leadership could help us work it out for the benefit of all.

Q 2: What are your environmental aspirations for Great Barrier?

Local ownership of the issues we face i.e. clean streams, clean beaches, minimizing and recycling waste, healthy flourishing habitats

for all species, including ourselves. No-one is ever going to come to Gt Barrier for it's industries and cities, it is that pristine, rugged wilderness thing that we come for. As Greenpeace says of NZ ,"the environment is the economy". A stunning environment is not only an utterly worthy goal in itself, I believe it will bring us economic health too.

Q 3: What do you see as having priority in terms of conservation on GB?

I think we have to see conservation as a whole process. If the land, the sea, the wetlands and the coastlines in between are allowed to flourish then many more species of flora and fauna may survive and flourish too. Saving just a few birds or skinks at a time seems like peeing in the wind to me. Save it all. It always comes back to those introduced pests though, and ownership of our own impact.

Wayne McVicar

I am a 63yr old Tryphena resident. My group associations are: Chair of the Tryphena Hall Commitee, member of Arts and Heritage Trust, and committee of GBI Oral History Research Group & GBI Yoga School.

My partner Linda Power and I share a 22 hectare original forest property in Rosalie Bay. I work as a landscape/artist on the island.

Q 1.

Not much progress at the present time. I think that progress in the future requires the following: More *research*, *education*, and *consultation* with the island's residents and offshore landowners.

This will allow for more informed debate on our island

Q 2.

To attract more researchers and educational people to the island.

To empower our children with environmental choices

To enjoy swimming in unpolluted water.

Q 3.

The elimination of wilding pines and the planting of indigenous trees on marginal land.

More consultation and debate with landowners by the Local Board and Authorities.

Editor's Note: Of the candidates not represented: Christine Spence and Merle White did not reply to my e-mail, Scott Mabey declined to appear and Wayne Anderson was uncontactable.

EcoBriefs

Regional Monitoring Programme: The ARC is to expand its annual regional monitoring of rats, vegetation, and birds on Great Barrier. A local team will be trained this October to carry out monitoring in 60 sites on the Island over the next five years. Twenty of these are at Glenfern Sanctuary, twenty at Windy Hill and Rosalie Bay, and twenty in areas where no management for pests is carried out. Four sites in each of the areas will be monitored each year. The data from these local sites will be added to data from the Waitakeres, Hunuas, Tawharanui, and other regional parks.

Having a regionally standardized programme means that comparisons can be made between managed and unmanaged areas, the island with the mainland, and between different sanctuary areas. These results will contribute to the knowledge of the status of species and be used as part of the region wide State of the Environment report that is done by the ARC.

Glenfern Sanctuary Update

One year on, almost back to square one

BY TONY BOUZAID

Our first monitoring after the second aerial bait drop took place in September 2009 with only one rat print found under a house in Arthur's Bay. After a year of major rat incursions, aggressive perseverance with trapping and baiting, adapting our techniques and timing to the invaders we are not too far from where we started.

While we have still caught some rats between the last two monitoring rounds none have been caught since and very few fresh prints to which we are responding.

We are finding very few rats in the buffer zones outside the fence which would indicate that we are not currently being reinvaded. Some of these dead rats have been removed by cats and we have discovered one cat print inside the fence.

August 24th to the 26th was the occasion of the Sanctuaries of New Zealand Conference at Orama and enabled us to meet other dedicated operators and to catch up with how other Sanctuaries are dealing with pest incursions. About 60 delegates visited Glenfern and were guided in five teams through the Sanctuary to the kauri tree and back.

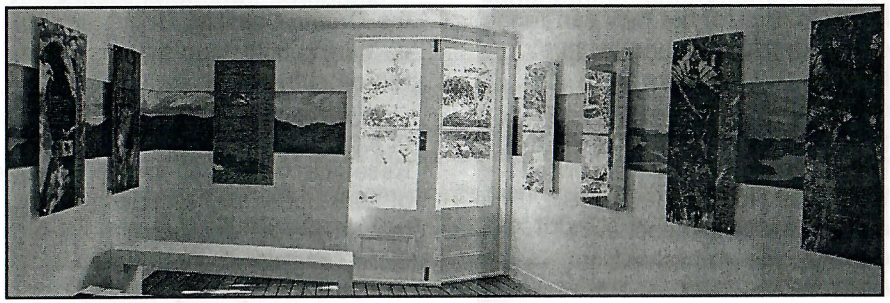
The Conference also enabled our contractors and volunteers to have a detailed discussion with John Innes of Landcare Research about our particular problems. From this we learned that the rats we were catching over the last two months and assumed to be juvenile ship rats were in fact adult kiore! You might think a rat is a rat but in fact the kiore are not as destructive as ship rats. Now we know how to tell the difference.

Interpretive Display Centre

Over the last year we have been building a new office and education centre for visitors to the Sanctuary. A large monitor enables us to give a PowerPoint presentation of the history and operation of the Sanctuary, what we have achieved to date and where we are headed in the future for the whole of the Kotuku

Continued on back cover

Glenfern Sanctuary's new interpretive display centre.



Great Barrier Island hosts 'Sanctuaries of New Zealand' conference

Last weekend GBI was host to the annual 'Sanctuaries of New Zealand' conference, which attracted over 70 people from all over the country. What are 'sanctuaries'? They are places with intensive pest control to protect native biodiversity. *Maungatautari* in the Waikato is NZ's largest and perhaps best known fenced sanctuary at 3500 ha, followed closely by *Zealandia* (formerly *Karori*) in Wellington. Some sanctuaries are fenced to keep pest animals at bay – up to 12 species including rats (3 species), possums, stoats, ferrets, pigs, cats, rabbits and hedgehogs; others are simply areas of intensive pest control where passionate conservationists make every effort to maintain pest control. Some sanctuaries are just a few tens of hectares in size, but they can range up to several thousand hectares. Here on GBI there are two sanctuaries – the fenced Glenfern sanctuary at Port FitzRoy (contact Tony Bouzaid), and the unfenced Windy Hill Rosalie Bay pest-managed area (contact Judy Gilbert). We also have Motu Kaikoura, an island off the west coast of GBI, where Rod Miller and others have been working to achieve low pest densities.

Attendees at the Sanctuaries of NZ Conference.

The conference was hosted by Landcare Research, and was attended by representatives from sanctuaries all around NZ from Northland to Southland, as well as by DOC and Landcare Research scientists, students, Forest and Bird representatives, regional council and DOC staff, and university researchers. Attendees stayed in the Orama Christian Camp, as well as visiting both Glenfern and Windy Hill on subsequent days.

Participants heard about a range of topics. John Innes (Landcare Research) discussed the huge range of sanctuaries that exist and noted that they cover only about 0.2% of the NZ mainland. Rod Miller (Motu Kaikoura Trust), Judy Gilbert, and Tony Bouzaid spoke about their local experiences running sanctuaries – everything from providing local employment to running pest control operations. Colin Campbell-Hunt (Otago University) outlined a recent survey of sanctuaries staff, and spoke of their passion for conservation. Liz Parlato and Helen Nathan, students from Massey and Auckland Universities respectively, described the challenges of reintroducing North Island robins to pest-free areas (Liz) and the problem of detecting small numbers of mice on islands (Helen). Andrea Byrom (Landcare Research) reviewed recent research results for the pest that was on everyone's mind (ship rats), and Roger Pech (also Landcare Research) spoke about the need to put the sanctuaries network in a 'bigger picture' of linked conservation sites across NZ landscapes. The presentation by Craig Gillies (DOC scientist) highlighted the urgent need to maintain the DOC Mainland Island network, which demonstrates just how pest control can really make a difference to native biodiversity. The day was completed by a fascinating talk by Gary Barker (Landcare Research) who described a little-known element of NZ's fauna – land snails of which NZ hosts a huge variety.

The sanctuaries conference was a chance for all participants to catch up on everything from the latest pest control and fencing technologies through to the latest research on pest species and native animals. Everyone went away rejuvenated and enthused.

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