Biodiversity now!

Joint societies conference, Wellington, 29 June–3 July 1997. Selected papers

Edited by P.M. Blaschke and K. Green

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Cover: *Carmichaelia hollowayii* is one of the smaller native brooms and is considered critically endangered in the wild. The primary threats to its existence in the wild are: land-use practices, browse, weed encroachment, and lackof recruitment. It was first collected by John Stevenson Holloway's grandfather, the Rev. J.E. Holloway, in Waitaki Valley, Otago, and was named for him by G. Simpson in 1945. *Photo by Sarah Vaughan*

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John Stevenson Holloway and his son John on the Southern Crossing of the Tararua Ranges, New Years Eve, 1990.

Foreword and dedication

'Biodiversity Now' was the title of the 1997 joint annual conference of the New Zealand Ecological Society, the Entomological Society of New Zealand, and the Systematics Association of New Zealand. It was organized by a joint committee of the three societies convened by Fran Kell. The conference was held on 29 June–3 July at Victoria University, Wellington, with an attendance of about 340.

The theme of biodiversity was selected as a unifying theme for the three societies and one which was of increasing importance to science research and science-based environmental management. The symposium topic was presented in three parts following an initial overview, dealing in turn with strategy and policy, assessment, and management. Twenty-three papers were presented in these sessions, including papers from two overseas keynote speakers, Dr Peter Bridgewater of Environment Australia and Prof. Jane Lubchenco of Oregon State University and Immediate Past President of the American Society for the Advancement of Science. A further 52 oral and 33 poster papers were presented at the conference, many of them on biodiversity topics.

After the conference, members of the organizing committee felt that some of the invited papers should reach a wider audience. John Holloway, a committee member and Director of Science and Research at Department of Conservation, suggested that a selection of key papers be published by the Department and offered to oversee the project. The conference committee selected papers to represent the main themes and issues of the symposium, and solicited written versions from their presenters.

For a variety of reasons only a small number have proceeded through into this volume. Some papers have already been published elsewhere (Lucas Associates 1997; Nelson & Gordon 1997)[1]. However, the papers in this volume represent a good cross section of the symposium, and we feel that they give a useful snapshot of issues in New Zealand indigenous biodiversity management at the end of the twentieth century. The papers also provide a useful update of an earlier Department of Conservation symposium series on biodiversity issues (McFadgen & Simpson 1997).

With John Holloway's serious illness in early 1998 and subsequent resignation, it was important to us to complete those tasks that John had wanted to see accomplished. John died on 1 January 1999 as this collection of papers was nearing publication. With the support of Mrs Linda Holloway, we have included two further items marking John's formidable contributions to New Zealand conservation and resource management, and the qualities of mind and personality that marked his career and life. The first is the text of the oration given by David Galloway at the memorial service for John held in Wellington on

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[1] In addition to the papers cited, Professor Lubchenco's keynote address drew heavily on her subsequently published 1997 Presidential Address to the American Society for the Advancement of Science (Lubchenco 1998).

13 January 1999. The second is a tribute to John's life and work, by Clive Anstey. We are honored to dedicate this volume to his memory.

Paul Blaschke and Kaye Green
Editors

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A tribute to John Stevenson Holloway

Delivered at a Service of Thanksgiving for the life of John Stevenson Holloway (1944–1999), at St John's in the City, Willis Street, Wellington, Wednesday 13 January 1999.

We meet here today to remember, to honour, to give thanks for the life of John Stevenson Holloway. John died at his home, 65 Wallace Street, Dunedin on 1 January of this year in the presence of his family—his wife Linda, his three sons John William, David Euan, and Adam Lothian. His death was not unexpected and indeed John himself, Linda, David, and Adam over the days, weeks and months previously had all prepared us courageously and graciously for this final parting. Nevertheless, John's passing at the relatively young age of 54 was a great shock to very many. In the all-too-brief span of his life John touched many people, in very many different circumstances and at different times and places. He touched us in such a way as to engender from us all sentiments of gratitude that he had called us friend, and that he had time and interest to spare for the concerns of so many people and organisations in this country. Many of those people are gathered here today to pay to him, and to his family, the due of thanks, respect, and love.

What's in a name? For the past 35 years of my professional life as a taxonomist I have constantly asked this question. A name to me, whether it be of a lichen or of a person, signifies many things. It conjures up an immediate physical appearance or impression, it says something about character, about origins and relationships, it encapsulates a history. John Stevenson Holloway not surprisingly brings together in my mind, and in the minds of very many others, all of these things, some of which I would like to explore and to share with you today.

John, the eldest son of Jack Holloway and Una Stevenson, was born in Dunedin on the 13 August 1944, into a home, a family, and a milieu in which enthusiasm, love, and respect for the world of nature, of the mountains, of books, poetry, music, and of the visual arts were well established interests on both sides. He attended primary schools in Christchurch and Rangiora and his secondary education was at Rangiora High School. Teachers at the latter school made a lasting impression on John, and a mere six weeks ago he was quoting, *in extenso*, verse readily learned by heart from his English teacher at Rangiora.

At Otago University John chose Botany and Chemistry, following in his father's footsteps and also carrying on the family botanical tradition begun there by his grandfather John Ernest Holloway, LTh, DSc, FRS, Lecturer-in-Charge, Department of Botany, Otago University, and by his maternal aunt, the renowned mycologist Dr Greta Stevenson-Cone. Indeed, it is fair to say (and Adam maintains this tradition), that the Holloway family over 4 generations, constitutes New Zealand's leading Botanical dynasty. From his mother Una, and father Jack, and from his family, both immediate and extended, John developed the personality and the values that very many of us were later to admire in him; values such as:

courage, loyalty, honesty, decency, fair-play, tradition, integrity, duty, friendship, fitness, rightness, truth, order, and service. The list is more extensive than this, but these are what sprang to mind when I started jotting down thoughts for today. Of course he was not by any means a complete paragon of virtue, and I would be less than honest if I did not also allude to at least some of his frailties, if I can call them that.

I first met John Holloway at Knox College in 1964. He was a first-year student, already committed to the New Zealand Forest Service as a Technical Trainee. I was an Honours Biochemistry student who had made one unsuccessful trip into the Olivines. We both shared an interest in plants and mountains, in membership of the OUTC and the OUSSA, and in trips onto local hills in the company of fellow Knox Collegians such as Lindsay Strang and Rod Ryburn. From time to time these two would manifest aberrant behaviour in deciding at 10 or 11 p.m. that a bed under the stars on the far side of Double Hill at 'The Clump' on the borders of Silver Peaks, would be better than a night in a college bed. John was a willing, if not eager partner in these midnight tramps, even if the sane light of day and frost on the sleeping bag meant a mad dash out to the motorway to get back to Dunedin in time for morning lectures.

From local hills and climbing John progressed naturally to thoughts and then to plans for long trips to the Olivines to relive and re-explore the routes that his father Jack had undertaken in the 1930's. He joined the Otago Section of the NZAC in 1964, and in 1966 John and I shared a flat in Geoff Baylis's wonderful house 'Threave' at 367 High Street. Geoff succeeded John's grandfather as Head of the Botany Department at Dunedin, and was Otago University's first Professor of Botany. He knew his distinguished predecessor (John's grandfather), and also John's father Jack and John's aunt Greta. He was, therefore, a very helpful and understanding landlord to us—even with John practising the chanter of his bagpipes in the bedroom at unsociable hours. John was keen on mid-winter ascents of Dunedin hills, and I remember vividly when he played the pipes in rousing fashion on the summit of Mt Cargill at midnight on the longest night of the year, insisting that we climb up through knee-deep snow in shorts, fortified only with a bottle of whisky.

I learned a lot from John in the year that we flatted together. As a conversationalist John was spare, taciturn, silent; I was wordy, fearful of gaps, and tried to keep things going. I learned to distinguish several distinctive kinds of meaningful silence from John! He felt things deeply even though he might rarely speak of them, and he had a crisp, dry sense of humour. Getting to know his father and mother as we did in their Rangiora home, 'Cranmore' in Lehmans Road, I soon realised where so much of John's talent and temperament came from. John's writing was also spare, to the point, clear and direct, but carried in handwriting that was infuriatingly crowded, tiny, and scattered with shorthand that made reading at times difficult, if not impossible. When he went to Aberdeen, his postcards carried more on them than I ever thought humanly possible to cram into such a confined space. I was reduced to reading them with a hand-lens!

John was a basic cook (and I am being charitable here) but we soon reached a *modus vivendi* of saveloys, cooked in as many different ways as the cooking days that he was responsible for each week. In the basement flat below us, a long-term resident of the house, Lorna Harrison, treated us very kindly by having

us to meals, and baking cakes for us. Her pride and joy was a huge grey and white cat, Tinker by name, who was fed ling at lunchtime and sole fillet every evening and would countenance no other food. John took up this challenge by inviting Tinker up the outside back stairs of our flat where he put down a plate of our evening meal: saveloys done in the oven with cheese and tomato sauce. Tinker, who had not yet had his evening ration of sole fillet, devoured the saveloys at a very satisfactory rate and was then sent packing. A distressed phone call was received from Miss Harrison two hours later with the news that Tinker had refused his evening meal, and worse, had been sick all over her bed and seemed to have succumbed to some ghastly disease that had let to major haemorrhaging! This elicited conciliatory words from John when we went down to investigate the damage. 'What's happened I think, is that he must have got into somebody's rubbish tin and scrounged old saveloys' he said. 'Oh no! He would never do that' was the rejoinder.

Another High Street episode which is imprinted indelibly on my memory is of the Edwardian brass taps on the small corner hand-basin in our lavatory—a very refined touch this. For some months the brass taps remained blue with verdigris, but since I did much of the flat cleaning and the cooking, I thought that John should clean the bath, basins, and taps. One day, to my pleasant surprise, one of the taps appeared gleaming, golden, and polished, and alongside was a tin of Brasso and a rag. The other tap had its usual scabrous patina. I waited several days more for the job to be finished, but it never was. When I asked John why he had only cleaned one tap, he very robustly told me that the clean tap was HIS contribution to a situation that he hoped I might oblige with, and that if it took an enzymologist three days to wake up to the fact that one tap was dirty and one clean, then God help my glassware and my experiments!

From Otago John graduated BSc in Botany at the end of 1966, and in 1967 went to Aberdeen to take a degree in Forestry, during which time he was President of the Aberdeen University Forestry Society, and he met and became engaged to Linda. He returned to New Zealand in 1969 to a career in the New Zealand Forest Service. Linda joined him in New Zealand and they were married in 1970 at Rangiora.

John had a distinguished career in the New Zealand Forest Service, encompassing the following:

- Forester, Gisborne 1969–1971
- District Forester, Tapanui 1971–1974
- Regional Forester Otago based in Dunedin 1975–1978
- Principal Forester (Planning), Head Office Wellington 1980–1984
- From 1983–1986 John was Assistant Director, Environmental Forestry Division
- In 1986 he was seconded to Environmental Administration Review of the Secretariat of the States Services Commission.
- From 1987–1989 he was Director, Land and Fauna Directorate, Department of Conservation, and

- From 1989–1995 Director, Estate Protection Policy Division in the same Department.
- From July to November 1995 John was Acting Director, Science and Research Division at DOC, and from November 1995, Director.

John was a dedicated member of the New Zealand Institute of Forestry, contributing many papers to the *New Zealand Journal of Forestry* and making a distinguished contribution to that journal as Editor 1979–1983. He served the Council of the Institute in several capacities, and was elected to Fellowship of the Institute in 1987.

John was a valued member of many committees and quangos, bringing with him to those many difficult discussions and meetings a well-prepared brief, moderated and informed by his knowledge and love of New Zealand's forests and mountain lands. He selflessly assumed responsibilities in the following organisations where his capabilities and advice were widely sought and appreciated:

- New Zealand Committee of IUCN (International Union for the Conservation of Nature)
- Protected Natural Areas Management Committee
- Biological Resources Centre Advisory Committee
- Mountain Safety Committee(Deputy Chairman)
- Tourism Liaison Group
- Wilderness Advisory Group
- Works Committee of National Water and Soil Conservation Organisation
- New Zealand Walkways Commission
- Noxious Plants Authority
- Tussock Grasslands and Mountain Lands Institute
- Molesworth Steering Committee
- National Science Strategy Committee (possums and bovine Tb)
- Science Advisory Board, Forest and Wildlands Ecology Division
- Forest Research Institute.

Besides all this, John was a very happily married man, a devoted husband and father, who kept up regularly with family and a wide circle of friends. John was an elder in this Church, and a former Roseneath Residents Association President among many other professional, educational and local commitments. His award of Membership of the New Zealand Order of Merit was richly deserved.

Then, very suddenly, early in March 1998, John was diagnosed as having a large, deep malignant brain tumour. Three weeks later, and entirely in keeping, John sent out an open, honest, wonderful valedictory letter to (and I quote):

> 'All staff at SRD, all friends and colleagues in DOC, and all others who may receive this, whosoever they may be in kindred organisations like Landcare, and FRI. I will certainly not object should anyone want to forward this to anyone whom they think may wish to be updated.

> I'd like to acknowledge the fact that I have been immensely lucky in being able to be associated with the management of natural land resources in New Zealand in all their many facets since almost as long as I can remember, and having had the good fortune for now going on 36 years of being paid to do what I have loved doing. May many of you have the same good fortune! I note that the many and extensive networks of support on which I have previously remarked have their foundations largely in the old agencies from which DOC was formed now so long ago—Lands, Forests, Wildlife, and others. I don't believe we now sufficiently recognise just how important the coherence and esprit de corps of those agencies was and how important (indeed fundamentally so) the shared values derived from common experience of those who were fortunate enough to have been part of them were to the successful establishment and survival of DOC during those rather dark days of 1987–88 when it seemed for a while that it might all fall over—nor how important they have been for the development within the Department of an ability and a pride which has enabled it to hold its head internationally in the field of conservation management. If I have one message it is this: above all, it's worth working hard (not to maintain those loyalties and networks, for that time is now past), but to build within the Department their replacement which will be as effective in 20 years as they have remained 20 years after the disestablishment of the organisations which gave them birth. This is an enormous, but not impossible challenge and I wish all in the Department well in playing their part in meeting it …'

Not knowing when the end would be, but entirely in keeping with a long-held, and hoped-for outcome of a return to John's roots and spiritual home, John and Linda moved to Dunedin in October 1998, to a lovely house set in the Town Belt at the end of Wallace Street, beautifully appointed, modern and convenient; close to family and student haunts, to old friends and, for Linda, the burgeoning new world of responsibility that attaches to her post as Assistant Vice Chancellor, Division of Health Sciences at the University of Otago. Here John was back in familiar and well-loved territory, kept up to date by phone, fax, and email and visited by a constant stream of visitors, whose voices he recognised and placed precisely, even if latterly he could not see them all that well. His mind was unfazed and his ability to pierce to the centre of an argument was as quick and as clean, and as 'Hollowayan' as ever (in this regard he was dauntingly the son of his father Jack).

Old Olivine climbing friends, Pete Smith, Peter Johnson, and I, suggested a short trip back into the hills, as it was John's express wish to hear a mountain stream lull him to sleep within sight and smell of a mountain beech campfire, in an environment that he (and we) knew and loved. With Linda's blessing and Brian William's medical care and support, in early November last we made camp under a copse of mountain beech, beside a talkative stream at the upper end of Chinaman's Flat in the Dart Valley, upstream from Paradise. In our energetic climbing days we had passed this spot both going to, and returning from the Olivine Alps, so it was appropriate as a place of alpine beginnings and homecomings, exactly as it had been for John's father Jack in the 1930's. Touchingly, Pete Smith made his own small wayside shrine there on the morning of our departure—reminiscent of our many trips together when we arrived in blazing sun and departed in long wet fingers of rain.

Two weeks later, we flew high above the Dart in a helicopter hired by John's long-time colleagues and friends Andy Pearce and Oliver Sutherland from Landcare Research. A truly memorable flight out to the Olivine Ice Plateau: a breathtaking journey through the watersheds, peaks, and passes of the Olivine, many so evocatively named by John's father Jack. John's eldest son John William has climbed in the Olivines and was a member of the party on an earlier trip when John (Senior) climbed Mt. Holloway; John (Junior) had climbed it the previous day. Adam came with us on the helicopter flight, so the Olivine tradition continues to the third generation of Holloways.

During our time, at the camp in the Dart Valley, close to beloved outer Olivine summits above the Beansburn, and guarded from the west by the West Peak of Earnslaw and the many-towered ridge of Turret Head, we spoke of the past and of the future. John's thoughts and feelings at this time were very succinctly summed up in a short poem by Paul Powell, a writer, mountaineer, and friend whom we both appreciate:

> Give praise
> for life and light and love,
> for wife and bread and mountain
> and lambent stars above;
> praise God for pain withstood,
> for tribulation's fire, for loyalty
> and strength of friends,
> for joy down all the laughing years:
> all these the true benisons
>
> Paul Powell—Benisons (July 1993). *Are you listening River?* (1995)

On the way home we looked for the site of Fenn's Cottage, a special place to the Holloway family. It was here, beginning in the summer of 1929–1930, that John's grandfather, J.E. Holloway, brought his family for long summer holidays camping in the old, near tumbled down cottage that had once belonged to Joseph Cyprian Fenn, and from whence in due time, John's father, Jack, set out on his Olivine odysseys of the mid 1930's. In Jack's own words:

> '… The truth is that Paradise and the mountains were home, and town life was an unfortunate interregnum. The summers at Paradise were infinitely longer in experience than all the rest of the year put together …'

John, too, absorbed this sense of family and of place that linked three generations of Holloways with Paradise. It was at Paradise that John introduced Linda to Otago's bush and mountains on their honeymoon in 1970, and it was here that, last week, John's sons John (Junior) and David laid his ashes to rest amid the whispering red beech trees under Earnslaw and the ruined chimney sentinel of Fenn Cottage. This place to John was both an anchor and an inspiration and, had he lived, this was where he would have returned many times, perhaps even to retire. In anticipation of this, he commissioned from John Rundle a painting, from the summit of Mt Alfred showing a vista of Paradise and the Olivine country beyond, full of what we might call Holloway icons. The painting—and it is a very lovely one—arrived at Wallace Street on the last afternoon that I was to see John, and he and I, Linda, David, and Adam went over all the features represented in it. As we noted and mentioned all the old familiar

haunts of river-flat, peak, pass, and valley, it was a recognition of time passing, and of the measure and value of places and things worthwhile. In its way, I suppose it was a kind of gentle benediction.

Charles Brasch came close to expressing these feelings when he wrote:

> Dead house and living trees and we that live
> To make our peace on earth and become native
> In place and time, in life and death: how should
> We entertain any other goal or good
> Than this, than here?

Charles Brasch—Letter from Thurlby Domain. *The Estate* (1957)

Last week John's close family and friends assembled in the Ross Chapel of Knox College for a funeral service simply and graciously taken by John's cousin Don Borrie. An apt personal eulogy was sincerely and movingly delivered by Peter Johnson, with the lessons read by John's son John and his sister Margaret. Today we have moved on from the sadness of that occasion to a wider recognition of John's distinguished professional life of service and dedication, and helpfulness in a world that often pays scant attention to those values which so steadfastly informed John's life, work, and relationships. And of course our thoughts and love and support are with Linda, John, David, and Adam, with Una, and with all John's family, to help them through this troubled time.

In many ways John would have enjoyed an occasion such as this, as it provides an opportunity for a great diversity of friends, family, and colleagues to renew or to make acquaintance and to talk about the past and the future. I rather think that we can all hear him saying very clearly regarding the future and its problems and challenges 'There's a lot still to be done out there, let's get on with it, for after all, *someone's* got to do it'.

So let us remember with gratitude John Stevenson Holloway, his devotion to a life of service that, unseen to many, helped make this country better in so many ways. And in remembering, let us not forget that we too should charge ourselves with something of the responsibility that he so willingly shouldered, to make the natural features of this land of ours, accessible, valued, and cared for, both today and in the future. That we should do so is a tribute to all that he held dear, and from us all—and rightly, I think—he would expect nothing less.

David Galloway

John Holloway, the biodiversity manager

John came from a tradition of natural science through his father and his father's father, the first Professor of Botany at Otago University. As the eldest son, John inevitably started on the path of his father, applying science to very practical and often intractable problems. But John was not a scientist in the strict sense. He had a huge respect for science (and the odd scientist) and what it could contribute to sound land management. He had the curiosity, the intelligence and the tenacity to have been an excellent scientist but chose to use these attributes to understand and apply science rather than do it.

In his work as a young forester John had adopted the purpose of the Resource Management Act twenty years before it was enacted. His environmental impact reports of the early 1970s were enlightened and set new standards for the Forest Service. He recognised then what many still fail to grasp: for new land uses such as plantation forestry to be well integrated and sustainable requires a sensitivity to, and thorough understanding of, the place being imposed upon. From the beginning of his professional career John realised the need to form alliances, to enlist the aid of others in gaining the comprehensive understanding required. John was always the generalist, the manager, who saw it as his responsibility to gather all the pieces together and direct cohesive action. As a manager he always appreciated the importance of getting the detail right, of having the right people in the right place at the right time. For John, the preparation was never adequate, the understanding never sufficiently comprehensive - we could always do a lot better.

In the mid 1970s John began a campaign: we were no longer to talk about 'exotic forests' they were to be called 'plantation forests'. Introduced conifers were here to stay so let's stop calling them exotics! For John, biodiversity management was all about learning to live with strangers. Sustainability was a way, not an end, a matter of sustained effort and attention.

John was fulfilling a vital national role in biodiversity management by the end of the 1980s. While others were still making the case for biodiversity protection John was totally absorbed in the business of biodiversity management. When so much changed for others in 1987 little changed for John, the task remained essentially the same. To some he seemed stuck in the past while to others his way was still visionary. This is what made John such a wonderful character and such an influential figure. In his total dedication to biodiversity management, boundaries ceased to exist. This is not to say he was unaware of boundaries and their political significance, but from an ecological perspective you simply had to think and act beyond separatism. John always acted in an inclusive way and was totally unthreatened by the new alliances and relationships that the 1987 changes turned up. Fragmentation, like alienation, bothered him and he struggled to reconcile a political ideology which gave emphasis to boundaries and separatism on the one hand and claimed a concern for sustainability and integration on the other. He had difficulty with any suggestion that the business

of conservation was, in practical terms, any different from sustainable land management. An outcome of biodiversity protection required that the appropriate relationships be sustained and more often than not introduced species posed direct threats from within these webs of relationships.

John always stretched himself to bridge gaps and make connections. He was such an unusual mix of the conservative and the radical, standing as he always did between the very best of tradition and aspirations for more sustainable futures. Here, he sometimes suffered, and was misunderstood. He was neither all for the past nor all for the future and treated change with suspicion, holding no illusions about the hard graft which any real improvement entailed. Above all, John knew that the future of biodiversity depended upon the future of our ecosystems and that we, all of us, were aliens having profound influences.

John's nature, upbringing, training, and experience inclined him towards concerns with the big picture—the big issues—complexity. He had an all-consuming concern with 'greater good'. This concern he manifested in both his personal and his professional life. John's commitment to the issue in front of him was absolute. He could be hard on himself and difficult for those closest to him . He was a daunting challenge for anyone who pursued their interest without regard to the effects on others, but he was hugely supportive of honest intent and would go out of his way to listen to and encourage anyone who wanted to contribute to the cause of biodiversity management and protection.

The nets he cast were wide and the webs of relationships he formed ran deep. John didn't like a fuss and he avoided the spotlight, he just got on with the job. John was always reserved when praise was directed his way and would shift conversation onto what he had not done rather than what he had achieved. He totally underestimated the influence he had on the people who passed his way and was quite overwhelmed by the outpourings of feeling and concern his illness evoked. However, it is through those of us in whose lives he played such an important part, that he will continue to have his say and ask his questions.

Clive Anstey

Landowners, Resource Management Act district plans, and biodiversity protection: What is happening?

Victoria Froude

Pacific Ecologic Resource Management Associates,
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A B S T R A C T

In 1997, approximately half (36) of all territorial authorities in New Zealand were surveyed to ascertain how they were implementing the biodiversity protection provisions in the Resource Management Act 1991. The biodiversity protection provisions in their district plans were highly variable, ranging from minimalist to comprehensive. About two thirds of the authorities reviewed had included (or proposed to include) in their district plans, schedules of ecologically significant sites, usually with rules restricting new land-use activities in these sites. Many landowners objected to having part of their property identified as an ecologically significant site, and their use of the identified site restricted.

A number of problems with schedules of ecologically significant sites are identified, including the use of poor quality information, and inadequate landowner consultation and negotiation.

Alternative and complimentary tools that can be used for promoting biodiversity protection are outlined. Effective and early landowner consultation is important for successful biodiversity protection. Components of effective landowner consultation are suggested.

Observations about improving better biodiversity outcomes cover areas such as: improving council and community understanding of biodiversity values and threats, using appropriate biodiversity protection techniques that address each district's circumstances, and undertaking effective landowner-consultation and negotiation.

1. SCOPE AND OUTLINE

This paper reports on some of the administrative tools which territorial local authorities (district and city councils) use to implement the biodiversity protection requirements of the Resource Management Act 1991. Questions that will be addressed include:

- What is happening with schedules of ecologically significant sites and related mechanisms for promoting biodiversity protection through district plans?
- What problems are associated with schedules of ecologically significant sites (including those resulting from inadequate landowner consultation and negotiation processes)?
- Are there alternative approaches and techniques for promoting terrestrial biodiversity protection?
- What lessons have been learned concerning consultation about biodiversity protection?

2. TERRITORIAL AUTHORITY DISTRICT PLAN STATUS

Thirty-six territorial authorities were reviewed—approximately half of all territorial authorities in New Zealand. The status of these 36 district plans (as at 25 February 1997) was as follows:

- Two plans were operative
- Ten plans were at the stage where the council had made decisions on submissions on the proposed plan
- Seventeen plans were at the proposed stage
- Seven plans had yet to be formally notified under the Resource Management Act

The biodiversity protection provisions in the plans were highly variable, ranging from minimalist to comprehensive (for example, Waitakere City). Figure 1 (from Froude 1997) shows the range of approaches used by territorial authorities to promote biodiversity protection for terrestrial ecosystems.

3. BIODIVERSITY PROTECTION PROVISIONS IN THE RESOURCE MANAGEMENT ACT

The purpose of the Resource Management Act is to promote the sustainable management of natural and physical resources. **Sustainable management** is defined in section 5(2) of the Act to be as much about managing the protection of natural and physical resources as it is about managing their use and development. The protection priorities of national importance are expressed in section 6 of the Act:

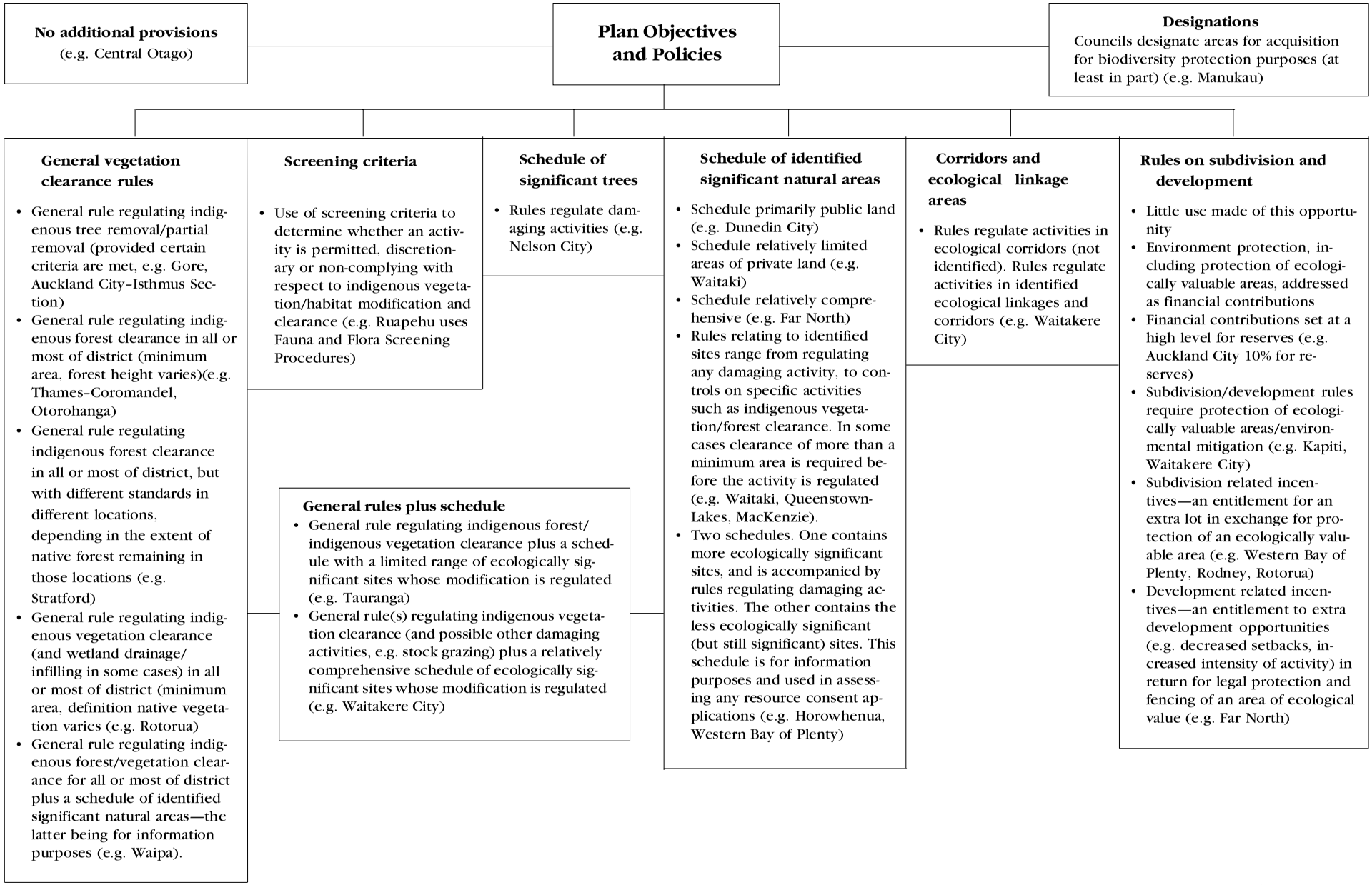

Figure 1. Terrestrial biodiversity protection (excluding riparian/coastal margins and landscape provisions): general regulatory approaches adopted or proposed by territorial authorities, as at 25 February 1997. (Reproduced from Froude 1997)

Section 6 Matters of national importance

> 'In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:
> (a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development:
> (b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use and development:
> (c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna . . .'

Natural character in section 6(a) includes the 'protection of ecosystems and ecological processes and the extent to which these are modified by any development' (Gill v. Rotorua District Council 1993 2NZRMA 604(PT))

The Act does not define **significant** in terms of section 6(c). As there is no relevant case law or national policy, the decision on what is 'significant' is made at the individual council level. To date councils (especially territorial authorities) have used a wide range of criteria and approaches when determining significance. It should be noted that the Act does not qualify the term 'significant' to only refer to ecological significance. This means that areas of indigenous vegetation and wildlife habitat can be significant for a range of reasons including their ecological values, water and soil conservation values and cultural values.

Section 7 of the Act requires all persons exercising functions and powers under the Act to have particular regard to a number of matters including '(d) Intrinsic values of ecosystems'.

Intrinsic values are defined in section 2 of the Act as meaning:

> 'those aspects of ecosystems and their constituent parts which have value in their own right, including:
> (a) their biological and genetic diversity;
> (b) the essential characteristics that determine an ecosystem's integrity, form, functioning and resilience.'

4. SOME DISTRICT PLAN TOOLS FOR PROMOTING PROTECTION

A schedule of ecologically significant sites is a list of sites which a council decides are ecologically significant for the purpose of its plan. The sites are usually identified on the council's planning maps. There are usually rules restricting activities in the identified sites. The comprehensiveness of schedules is highly variable across the country.

Another common tool is the use of general vegetation clearance controls. These are rules that specify a maximum area that can be cleared before council

consent is required. Such rules can apply throughout the district or in a particular zone or vegetation type. There is considerable variation across the country. The definition of native forest or vegetation affected by any rule is also highly variable. Appendix 1 contains an example of vegetation clearance controls from Rotorua District Council.

5. SCHEDULES OF ECOLOGICALLY SIGNIFICANT SITES

Nearly two thirds of councils reviewed used or proposed to use a schedule. Schedules ranged from those that only contained already protected sites, to those that included a large number of sites on private land.

The schedules of ecologically significant sites were based on ecological databases of varying comprehensiveness. At the most basic end, the databases used a single old report (for example a former Wildlife Service report identifying Sites of Special Wildlife Interest) without any updating. Many schedules were based on databases compiled by collating a variety of existing reports and surveys. The information so collected was of variable age, quality, and comprehensiveness. Only a few councils had collected new information for their schedule of ecologically significant sites.

Relatively few councils listed in their plan the criteria used to compile their schedule of ecologically significant sites. Although not often specified, it is clear that the criteria used were highly variable.

Relatively few councils with schedules of ecologically significant sites had consulted, or intended to consult comprehensively with landowners before the notification of their proposed district plan. Some councils consulted landowners after the plan had been formally notified. Council expertise and commitment to landowner-consultation and negotiation varied considerably. Some councils reported that landowners who objected to inclusion in a schedule were automatically deleted regardless of the ecological values of the site. Often no alternative mechanisms were developed to address biodiversity protection for the deleted sites. Some councils retained at least some sites objected to by landowners, excluding those of poor quality. In some cases site boundaries were adjusted.

There were some situations where consultation was not able to address the deep suspicion of the landowners, especially where there were other complicating processes, for example, the high country pastoral lease tenure review.

6. PROBLEMS WITH SCHEDULES OF ECOLOGICALLY SIGNIFICANT SITES

Some of the main problems associated with using a schedule of ecologically significant sites are:

- The use of poor quality, old, and incomplete information about a district's biodiversity values results in incomplete schedules, with important areas omitted and inappropriate areas included. The latter leads to landowner-antagonism.
- A number of council representatives reported that they did not have the training or experience to adequately address the biodiversity protection provisions in the Resource Management Act. They felt that they did not understand ecological databases and their limitations.
- The criteria used by some councils for compiling schedules of ecologically significant sites were so restrictive that only a few outstanding sites were included. Often these sites were already protected under other legislation.
- Poorer rural councils often have less funds available to collect biodiversity information, and to develop appropriate plan provisions, especially incentives. (Schedules tend to be a relatively expensive tool, when done properly.)
- Some councils reported a reluctance by councillors to spend money on biodiversity protection, especially where protection involved financial assistance to landowners. This often included the provision of rate relief.
- Many councils do not consult landowners about sites identified in schedules because of costs, time, not recognising the values of landowner consultation, other priorities, and uncertainty about how to consult, especially for Maori land.
- Inadequate consultation with landowners can result in much landowner opposition.
- Identified sites can be viewed by landowners as *de facto* reserves.
- Schedules can bring forward debates on future land uses/development options for the identified sites.
- The problems of poor consultation are increased where the site information is outdated, inaccurate, or the property was visited without permission.

7. OTHER BIODIVERSITY PROTECTION METHODS USED

Observations about some other methods used by territorial authorities to address the biodiversity protection provisions in the Resource Management Act include:

- General vegetation clearance controls (see Appendix 1) were used, or proposed for use by about half the councils reviewed.
- Some councils used both a schedule of ecologically significant sites, and general vegetation clearance controls. Often this was because one or both techniques were used in a limited way.

- Approximately 50% of the councils reviewed used, or intended to use, some form of coastal or aquatic riparian zone or overlay, where certain activities were more strictly regulated.
- Of the 36 territorial authorities reviewed, 6 had used a landscape zone or overlay. These zones or overlays included landscapes dominated by indigenous ecosystems.
- Few councils implemented, or proposed to implement, ecological rehabilitation projects.
- Some plans provided for councils to require the protection of areas of ecological value when subdivision occurs.
- Most councils had not developed a package of incentives. Approximately one third of councils intended to offer rate relief for legally protected areas.
- Some councils used extra development privileges (for example, bush or protection lot subdivision) as incentives to promote the protection of ecologically valuable areas.

8. LESSONS LEARNED ABOUT LANDOWNER CONSULTATION

Early and effective consultation and negotiation about proposed provisions to promote biodiversity protection can significantly reduce landowner concerns particularly by the time the plan has been notified. **Landowner consultation takes time. It needs to be planned in advance.**

Effective consultation can include:

- Working in small groups and then on a 'one to one' basis to address specific concerns. The latter normally would occur on the landowner's property.
- Informing landowners about the natural values in the general area and specifically for their property.
- Helping landowners see how their activities impact on natural ecosystems on and outside of their property.
- Working through the proposed plan provisions, including any incentive mechanisms, with individual landowners. This includes clarifying that the site boundaries are appropriate.

This process was successfully followed in the pre-formal stages of the proposed Estuarine Protection Zone for the predominantly natural margins of that part of Ohiwa Harbour that lies within Whakatane District.

9. CONCLUSION

Territorial authorities are highly variable in how they address biodiversity protection. Better biodiversity outcomes will occur when the problems identified in this survey are addressed. This will involve:

- Improved council and community understanding of biodiversity values, threats and ecosystem processes
- The use of appropriate biodiversity protection techniques that are suited to each district's circumstances
- The use of effective landowner consultation and negotiation techniques

A schedule of ecologically significant sites is not the most appropriate tool for all situations. Where a schedule is the chosen approach, the essential features should be that:

- Quality information is used
- Criteria are clear and appropriate
- There is effective consultation and negotiation with landowners
- Incentives promoting biodiversity protection are available
- The limits of the technique for promoting biodiversity protection are recognised

10. ACKNOWLEDGEMENTS

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11. REFERENCES

Froude, V.A. 1997. Implementing the biodiversity protection provisions in the Resource Management Act—a review of council progress to date. Pacific Ecologic Resource Management Associates, Wellington. 116 p.

APPENDIX 1

An example of a general rule controlling indigenous vegetation/forest clearance from Rotorua District Council Proposed District Plan as amended by council decisions

Definition of indigenous vegetation

> 'a plant community (including geothermal) in which indigenous species naturally occurring in that part of New Zealand is important in terms of site coverage, structure and/or species diversity. This includes regenerating secondary vegetation which has the reasonable potential to become vegetation of the kind that originally gave that part of New Zealand its distinctive character.'

Definition of an indigenous tree

> 'an indigenous woody plant which ultimately forms part of the canopy or tallest stratum of a naturally occurring forest in that part of New Zealand.'

Discussion of the rule controlling indigenous vegetation clearance

There are a variety of ways that general rules relating to indigenous vegetation clearance/logging can be written. Rotorua District specifies a maximum area that can be cleared as a permitted activity. In the rural zones it is a permitted activity to clear or modify an area of indigenous vegetation that is less than 500 m^2 over any 2 year period where 500 m^2 is either the total for an individual site or for an individual remnant where that remnant covers more than one site. The felling of any indigenous tree (including the taking of firewood) to produce up to 100 m^3/yr on any one site is also a permitted activity. Discretionary activities are those which involve the clearance or modification of indigenous vegetation or the felling or destruction of any remnant indigenous tree, other than that provided for as a permitted activity. In the residential and tourist zones the maximum area that can be cleared as a permitted activity is 100 m^2. Similarly only the felling or destruction of any (remnant) indigenous tree with a height of less than 6 m and a trunk circumference of less than 90 cm at a height of 1.4 m above ground level is a permitted activity.

Often plans containing general rules relating to indigenous vegetation/forest clearance include specific assessment criteria to be used when council considers applications for indigenous forest/vegetation clearance and logging. These criteria are additional to those which council uses to assess other activities requiring consent.

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