

PRESIDENTIAL ADDRESS: J. ROPER-LINDSAY

Judith Roper-Lindsay has been president of the New Zealand Ecological Society since August 1989, having previously served on the Council for four years. She came to New Zealand in 1981 after working with the Scottish Nature Conservancy Council, Scottish Wildlife Trust and Fife Regional Council. Between 1981 and 1988 she worked with planners and landscape architects in the Ministry of Works and Development, focusing on environmental assessment and design of roading operations.

Judith is now a self-employed ecological consultant with current work projects involving river, stream and riparian management in Canterbury and Otago. Ecological interests include: urban ecology (especially the role of natives and introduced species in these 20th century New Zealand ecosystems); getting ecological principles into a wide range of project developments through the environmental impact assessment process; and classification of the professional ecologist - is it a distinct species?

THE FUTURE ROLES OF ECOLOGY AND ECOLOGISTS IN NEW ZEALAND

When I looked through the records of the Society I found that this Presidential Address has been given by some very notable names from ecology in New Zealand. And I am honoured to be able to follow such important scientists in this position. I found that there are many differences between me and my predecessors.

Of course, all were male - I'll say nothing more about that, except to note that the Society always seems to have had a strong membership of women, but with few taking on the "officer" roles. It is not just a sign of the growth in women's self-confidence that we now have over 50% women councillors for the Society. It is a sign that members of the Society are themselves more comfortable with a more "female" approach to management.

To me that means more sharing of tasks, with equal sharing of problems and of successes within Council and the Society as a whole. I think that as ecologists we are less driven by goals of power and financial profit than some groups. While that has not been an acceptable approach in the past, I believe that changes in wider society are now making that better understood.

A few of my predecessors were "introduced" from overseas, like myself, and to varying degrees naturalised by the subjects of their studies and publications.

But of most relevance to the things I am going to talk about this morning, was the fact that all were research ecologists. In that respect they were truly representative of the majority of the members of the Society. In general our membership has been drawn from people employed by DSIR, Forest Research Institute and other government departments, with a healthy representation from the tertiary education sector. Only school teachers, the retired, and some

private consultants would probably not carry out research on a regular basis.

I do not carry out what most of you would consider research! Apart from that done during studies for my PhD degree I never have undertaken "pure" research. But in my work as an ecologist I depend heavily on the research findings of others, some of which are commissioned directly.

And I believe that in the 1990's this Society will find that more and more of its members will or should come from that sort of background; people with scientific training or interests who want to know more about ecology and its application to their own work - the officers of the Department of Conservation who have to translate science into conservation management; Regional Council planners who have to prepare Regional Plans for their estuaries and rivers (subject to the continued existence of Regional Councils of course!); and private consultants whose clients want to build hotels on the sides of mountains.

I think it would be wonderful if the Society had that sort of diverse membership - I think that the changes which are taking place mean that we will have to attract those people to "ecology" or the Society will struggle to survive.

The Society could become a focus for the exchange of information and ideas between a variety of disciplines. We, and a number of other Societies and conservation organisations have concentrated in the past on getting our ideas across to the "public". I have no doubts that these have been worthwhile projects and should continue. Our own Education group is strong and is publishing posters and pamphlets for schools and the public. A whole range of TV programmes, magazines

and articles, and projects have for the last 20 years communicated the facts and values of the natural environment to the layperson.

But now, I think that we must turn to specific sectors of "the public", namely those who are empowered to make decisions about natural resource use and management. We need to communicate in a common language if resource management in the future is to be based on understanding of the science, not just interpretation of legislation.

Resource Management Act

I want to talk, then, about communication; in particular about the Resource Management Act and how it will affect the way other professions carry out planning and management. Allied to that is the way those professions perceive ecology.

If you feel you've heard enough recently about the resource management process and legislation and planning, please don't leave just yet - I hope that this is a slightly different view.

1991 should be an important year for ecologists. The new Act is the piece of legislation we've been waiting for. It's based on the subject we know (or should know) more about than any other group of people in the country. Its main purpose is "to promote sustainable management of natural and physical resources". And throughout the process it has been acknowledged that that means "ecologically sustainable". And who, other than ecologists, should be able to say what is "ecologically sustainable"?

Any piece of legislation is a driving force - a source of energy for those who have to understand it, live by it and comply. This should be the piece of legislation which makes us as indispensable as accountants to deal with tax laws, or lawyers to deal with civil actions. But the rush to enrol for ecology courses hasn't started yet.

The Resource Management Act generally isn't being seen as a piece of ecological legislation. Why not? First, let us look at the input of this Society to the process of legislative change. A small group of members (and I emphasise small) worked on input at every opportunity - general discussion papers, draft legislation and Select Committees. For the first time (as far as I can trace in the Society's history) we were represented in person at a Select Committee hearing. And in response to that effort, we were invited to appear before the National Government's Review Group early this year. In addition, our submission was incorporated in the Royal Society's submission on the Draft Bill.

In all then, we put in a great number of person-hours to try to make sure that the final legislation was based on sound ecological principles. At the same time, of course, tremendous amounts of energy were also

being expended by other scientific societies, conservation groups (notably the alliance formed by Forest and Bird and ECO) and a broad spectrum of environmental groups, to promote the same ideas. They brought the weight of numbers, of conservation values, and, probably, of votes.

The evidence from members of scientific and environmental groups promoted a complete change in the way we manage our environment. However, laws are not written by ecologists or environmentalists; and the groups which are in the forefront of dealing with the new Act are not in those categories either.

Depending who you talk to, the introduction of the Act may seem to be "business as usual, but with some new rules", or a radical departure from the old way of doing things.

The Act has spawned a vast number of seminars and workshops. But how many of them are looking at how to change our life-styles to fit this revolutionary piece of legislation? How many are looking at what ecological sustainability means to Raupo District Council which has a rural rating base, high unemployment and marketable beech forest on its foothills? To me, that is where ecological sustainability has to be understood and achieved; not in the Beehive or the offices of lawyers; nor even in management of protected areas. Some-one has to translate ecological sustainability into words of less than five syllables, and preferably into the language of decision-makers (that is local authority councillors for the greater part) and developers.

Surely, only ecologists can do that!

The New Zealand Planning Institute has been particularly quick to move out of the main centres to take its interpretation of the situation to its members. With its "First Lessons in the Resource Management Act" it will be helping planners to become familiar with the new legislation. The focus seems to be on interpreting the words of the Act, rather than looking at the very reason for its introduction. This is the "business as usual" attitude. The rules have changed, but the new ones will serve the same purpose. The Institute's approach is probably typical of many Regional and local authorities, resource lawyers, and many larger organisations in its response. These groups, and they seem to be in a vocal majority at the moment, are saying: "The game is the same, but we need to learn a new language or rules"

But we must remember that the Bill was introduced in response to a recognition that our whole attitude to the environment and resources is fatal - the infinite pot of resources, the bottomless dustbin for wastes, the market-forces controls on energy and other resource uses, the inability (through simple human nature) of

individuals to make long-term decisions.

The proponents and supporters were looking for a change in the game. And one of the basic changes is that there are no rules to the new game! From now on, local authorities will have greater discretion over the significance they attach to environmental resources and how they intend to conserve them. Innovative management will be sought to produce the desired outcomes.

And I think that it is this challenge to produce new solutions that people are finding hardest to grasp about the new law. It is based on a dynamic natural and physical environment; one about which even the "experts" have insufficient knowledge to make confident predictions; and one which varies both in space and in time. There are no recipe-book solutions to problems - every site is different, every impact is dependent on thousands of variables and may have thousands of downstream effects. In addition, there are social values to add in, and those derive from Maori, European and many other cultures.

Communication

So as ecologists we should be in a strong position to lead the way with the new Act. Words like "change", "dynamics", "flexibility", "integration", "holistic" and "uncertainty" are all part of our daily jargon. We understand many of the patterns and processes of ecosystems and the resources they involve. But, where are our weaknesses? I think that they lie in our inability to link the ecological science with the daily world in which most people live and decision-makers are acting.

In the past we have had little need for rigorous environmental impact assessment procedures and so have not had to learn to efficiently communicate with non-scientist clients (perhaps I can class them under that slightly dirty word "developers"). We have focused research in areas where few humans venture and where Government departments have management responsibilities - the natural and wild areas of New Zealand. Only very recently has there been any ecological research in urban areas. With the admittedly large exceptions of recreation and agricultural values, we have not had to deal with social constructs in our research.

We have developed then, I think, a weakness in our ability to communicate our ideas to members of other disciplines. This is reflected by the lack of ecological input to the formal training of, for example, engineers. At the University of Canterbury, undergraduate engineers do not have any "environmental" segments in their course. During the Masters course, however, there is a much more substantial lecture, field trip and project segment, taught by a member of the Zoology Department

While staff in the civil engineering department are slowly making changes, colleagues in other branches are slow to recognise the links between their subject and the environment in which their students will work. A newly appointed "environmental engineer" may change this.

The interest of engineers in our subject is reflected by the high numbers of enrolments for continuing education courses, also run by the University of Canterbury, in environmental management and ecology. In their general introductory year, engineering undergraduates are choosing ecology options, showing an awareness and interest in the environment. Perhaps we, as a Society, should be seeking more ecological input to a range of student programmes.

Another weakness may lie in our lack of what is commonly known as "political clout" - we are not alone in this. We are a small society, with little money and a membership of diverse interests but concentrated in a small number of employing organisations. This common employer means that many members get the mutual support and exchange of ideas through that medium, rather than needing the Society. For many members, the *Journal* is the main attraction. Like many other similar groups, most work in administration is done by a small group of people.

So extending our communication effort, especially into a range of public and organisational places may be impossible.

Professional status

A further reason that is sometimes suggested for our communication failure, is that we are not a professional organisation. By that I mean that we have open membership without an accreditation system. This has a number of effects:

- we cannot speak for "ecologists" - only for members of the Society;
- we do not have responsibility for the standards of a profession;
- we have no exclusivity, so cannot charge large membership fees;
- following from that, we cannot afford to do a lot of the things that professional bodies (such as the Planning Institute or the Institute of Professional Engineers) do;
- this includes employing paid staff to promote the profession of ecology and ecological science.

Those of you who are also members of the British Ecological Society will be aware that they have pondered long on this matter. In addition to the concerns I just mentioned, there were other pressures on the BES. In Britain, many other professional disciplines do include some ecology as part of their training, for example landscape architects, and engineers. In Britain

it was discovered that people from these professions were carrying out ecological work. It was also found that because they belonged to professions with a high profile, they were actually being employed for ecological jobs. In essence, no one knew what ecologists did, what their qualifications should be, or what pay rate they should be on, so it was easier to employ a landscape architect, who was an Associate of an Institute, and happened to know something about ecology!

In New Zealand at the moment the number of ecological jobs outside research is minimal and that situation is unlikely to have arisen. However, if the change in attitude to environmental management does take place whether or not the Resource Management Act is responsible, then more local authorities, planning firms or "developers" should be looking for ecological skills. Will they look in the right place?

A more imminent scenario in New Zealand relates to Regional and local authority interpretation of the legislation. A tremendous amount of extra resource responsibility is being put on these authorities by central government, with no extra finance to cover the costs. Already in some areas, advisory groups are being considered. They would comprise local "experts" including representatives of environmental groups. They would be "voluntary" and could be the sole providers of ecological or conservation advice to an authority. It is conceivable that there would be no-one on the staff of a small authority who could understand the ecological problems, nor the advice offered.

Would a local authority Council ever dream of using voluntary advice for its road engineering, its sewage system, or its financial department? The scenario has serious potential consequences: firstly, free advice is easily ignored - people certainly value more highly the things that they have had to pay for; secondly, only those who can afford to spend time will be able to serve on these groups, and that prejudices the quality of the advice; thirdly, they may not distinguish between scientific fact and conservation values - this is a complex issue, which is not always clear in the minds of those most closely involved in an environmental debate; and finally, (and this is near to my heart as a self-employed consultant) they are not taking a professional approach to ecological management, and may be getting well-meaning but inaccurate or even dishonest advice.

The British Ecological Society has taken the plunge in 1991, and with the British Association of Nature Conservationists, the Institute of Biology and the Royal Geographical Society has formed the Institute of Ecology and Environmental Management. This wider approach to ecology as a profession has also been taken across the Tasman, where the Environment Institute of Australia was formed about two years ago. (This has a rapidly growing membership, from a range of

environmental management disciplines.)

One of the British Institute's roles is "to promote the profession", so that the profession of "ecologist" seems to have merged with that of "environmental manager". And it is in this problem of definition of "what" is an ecologist that the idea of a professional body always seems to stumble.

Some of the dangers of forming a professional body were set out by Mark Westoby in 1985. Westoby's main concerns, which I share, were: firstly, that forming a professional body leads to elitism. That once there is an accreditation procedure and a set of standards, it implies that everyone who fails to reach those standards is not a professional. I'm sure we all know ecologists who would never conform, but make good ecological sense. Related to that is, secondly, the fear that creating a representative body immediately sets boundaries on the science. For example, because the medical profession happened to be set up by those medics who followed the anatomical and physical train of thought in the 17th century, Western society has condemned those approaching from an holistic or herbal point of view to the realm of "alternative" medicine. In a subject as diverse as ecology could any of us really say that "this" is ecology but "that" isn't? As far as the Royal Society questionnaire, which you all should have received recently goes, I would have failed. The Dewey system doesn't include landscape ecology or ecological interpretation in the classification - nor is ecological consultancy an "outcome"! Westoby's final concern related to money. Westoby suggests that when an organisation's members earn their living from an exclusive profession, then it is difficult for the profession to distinguish between what is good for its individuals and what is good for the discipline. The two are inextricably linked.

So, should the New Zealand Ecological Society follow these overseas examples into forming a professional organisation? Is it an inevitable progression for the protection of the science and the scientist? Is there some other way of achieving the positive aspects of professional bodies?

Of Westoby's concerns, I think that the fixing of boundaries and its resultant loss of new ideas is one of the most compelling against a professional body. At a time when all our skills as ecologists are being challenged by environmental problems, we should not be closing the doors to any opportunity for new approaches, theories or techniques.

We are also moving towards more connections between disciplines; to a better understanding of the ideas and value systems of other groups and professions - as I said earlier, I think we should be open to those interests. A strict definition of ecologist could mean that many Department of Conservation officers, for example, would not be eligible to join - and that would be great loss to both the Society and conservation in

New Zealand.

At the same time though I must admit that our lack of "professional standing" may belittle us in the eyes of other disciplines. Without a clear image, we are easily placed alongside Forest and Bird and other "environment groups". How do we show that we differ from them in terms of membership and expertise?

We should also recognise the differences between New Zealand and these other countries. We have different legislation, so that the role of an ecologist is different. While there is a network of over fifty ecologists employed by local authorities in Britain for their general ecological skills, there is no sign of that sort of employment here. We have a far lower population, so that there is less money to support the activities they carry out. I don't hold to the idea that the lower population brings us less ecological problems - ours are simply different from those of Europe. Unsustainable agriculture, overuse of recreational areas and lack of urban green-space have potentially just as great an impact on New Zealanders as, for example, highly publicised acid rain on Europeans.

Perhaps there is a New Zealand way of promoting ourselves as scientists, rather than as conservation lobbyists; of joining with a wide range of other disciplines to advise and lobby for science; and use of an umbrella body to efficiently use staff resources? I wonder if that could be the ultimate role for the Federation of Scientific and Technical Societies (commonly known as FoSTS), now developing within the Royal Society.

Many of you will remember that a few years ago relationships between ourselves and Royal Society were not good; in that respect we were typical of a number of other member bodies. Since then, FoSTS has been set up to represent more clearly, and more vocally, the views of scientists. The Ecological Society has been supportive of its formation and has had regular input to its activities. At present it functions under an appointed Council. In November, however, elections to the Council will take place and the Federation will become truly representative. Recently we had a major input to a FoSTS submission on the MAF Discussion Paper on sustainable agriculture and it will be interesting to see if our "clout" has been improved in this way.

FoSTS is a large and diverse organisation, and is still developing ways of effectively representing everyone from parasitologists to operations research professionals. A single body may not be able to do that, and sub-groups may eventually be needed within its structure. I hope that ecologists will always be well-represented on its elected Council and that we will be able to regularly contribute to submissions and reports. Members of our Society will have to recognise that this sort of representation is costly - both to the individual Societies and to FoSTS. Although FoSTS is under the umbrella of the Royal Society, its funding is unlikely to

be totally from that body. Some sort of membership levy will be inevitable.

Conclusion

I would now like to draw together the ideas I have outlined this morning. I believe that under the new Resource Management Act there will be an increasing need for ecologists to work alongside a variety of other professionals. These might include planners working in private practice or for local and Regional authorities. For them there will be Regional and District plans to prepare, as well as special plans for locally important resources.

These will not be re-workings of the existing District Scheme contents. Instead they should be looking at basics - what natural resources does an area possess? What is happening to those resources now (that includes the ecological changes taking place)? What do we want the situation to be in ten, twenty or fifty years time? And how do we manage things to ensure the outcome we want?

RMA is looking for innovative management, rather than traditional controls and zoning - negotiated outcomes to avoid the adversarial consents process, community-based rather than legislative solutions, sharing of responsibilities and decisions.

Ecological understanding is better advanced for the natural or semi-natural ecosystems, so that in urban or rural areas we will have to be innovative too. It is in the towns and cities that the Resource Management Act will cause most difficulties for ecologists. But I am sure that there are the skills to respond.

As a profession, we will need to become more acquainted with the value-systems and training programmes of others such as engineers, social scientists and landscape architects, so that we can work alongside them. While the basic ecological research must continue, to provide the essential pool of knowledge, more opportunities must become available for the "generalist" ecologist, able to translate research findings into practical outcomes.

The continuation of research (and its funding) will be an important lobbying role for FoSTS. I haven't mentioned the critical state of science funding today, but this will, I know, be an important item for the Society in coming years. If FoSTS cannot establish itself as representing science and science professionals, then some other body may have to develop. The Government image of science seems heavily weighted towards technological growth, with little recognition of the need for underlying descriptive work, nor of sciences which suggest that growth should be slower!

At the local level, then we need to look for ways to integrate ecological science into the decision-making and planning processes. We have to be able to explain

"sustainability" simply and relate it to more than wetland or forest protection. It has to make sense in a range of decisions such as traffic planning, rural land-uses or tourism development. There is a danger that financially-pressed local authorities will look to unpaid advisory groups to give essentially scientific knowledge, and that this may be confused with the conservation values put on the knowledge by high-profile groups.

I hope that the Society will be able to continue to diversify into these widening areas of ecology. I believe that it is only through this diversity that ecologists will be able to provide the right combination of research results, interpretation and advice needed to ensure that ecologically sustainable resource management becomes a reality.