

## RESERVES

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Shortly after I took up the office of President of the Ecological Society, the Council had to decide what to do about the following resolutions passed at the 1960 Annual General Meeting:

1. That the incoming Council be recommended to keep in mind the possibility of informing the National Parks Authority of areas of interest that might be set aside as reserves.
2. That the Council pursue a vigorous policy in keeping in touch with the Lands and Survey Department and the National Parks Authority so that the Society will know of any proposed alterations to boundaries of National Parks.
3. That members be urged to send to Council lists of interesting areas that are threatened by destruction.

These resolutions are but examples of a number which preceded them in the minutes of the meetings of the Society. Nor does the Ecological Society have a patent on such resolutions. I belong to another body, the New Zealand Institute of Foresters, which once expressed similar sentiments and passed similar resolutions. The Foresters have not lost their interest in the subject as I will describe later. Another body, the Royal Society of New Zealand, once set up a Nature Conservation Committee with a wide brief. This committee still operates.

If the organisations instanced above are addicted to passing resolutions about preserving things and making reserves, then it might be safely conjectured that the minute books of a worthy organisation like the Forest & Bird Protection Society have many more like resolutions.

That Society, in fact, set up a "Nature Conservation Council" in 1949 which some of you may remember. It was a voluntary organisation, without any statutory basis, composed of representatives drawn from societies interested in the protection of nature. It has gone into abeyance, but at one time looked into matters such as land use in the Urewera, legislation proposed for the setting up of the National Trust and National Parks Authority, and so forth.

Even the Government's alleged lethargy in these matters has been roused during the last year or so, partly because it has been vociferously accused of not creating the reserves it is asked to, but mainly because it has allowed some glaring instances of breaching of the reserves it has made. Such breaches, if they have not been contrary to its own laws, have been alien to the spirit of those laws.

As we all know the last Government set up a committee whose main brief was to "report fully to Government on the present status of nature conservation in New Zealand". In preparing material for this Committee to work upon,\* it was discovered that at least twenty different Acts were "concerned primarily with conservation of water, land, plant and animal resources". These Acts were administered by eight Government Departments. The committee itself was abandoned by the present Government but it has been replaced by a statutory "Nature Conservation Council", about which I will say more later.

We can look to an even wider field of interest, the international one, and find an "International Union for the Conservation of Nature and Natural Resources", a body growing in stature.

What result is expected to come from the resolutions passed by the Ecological Society whose interest is, I take it, the preservation of natural things for scientific, or more especially, ecological study? I must say that a subcommittee of your council is making a valiant effort to produce order out of chaos, so to speak. They have sent a circular around to selected investigators asking for a list of types of community worth preserving and setting out the aims of reservation. A somewhat similar circular, but asking for a good deal more detail, was sent out to all members in 1955-56. Eight replies were

\* P. Dickinson. Report on "Survey of New Zealand Legislation Affecting Nature Conservation."

received but no action was taken on any of them. The present circular has encouraged a greater number of replies, but now the real task of getting order out of chaos begins. One reply refers to communities which were seen, in passing, ten years or so ago! There is even an occasional qualification that "I think the community was there". One of the most skilled plant ecologists, and certainly the one who has done by far the most work, and therefore should be in a good position to judge, considered that virtually all major types of vegetation were already reserved one way or another.

It must be realised at the outset that if we want reservations of natural things or of natural areas we are usually concerned with land, and that somebody owns that land and has plans for its use. Any private owner or the "eight Government Departments" might be concerned with it and might frustrate the would-be nature conservationist; the odds are weighted heavily against him.

On the other hand, I am sure the conservationist needs to analyse his case critically and, if it is sound, then to be sufficiently familiar with land and its administration to know how to achieve his objectives; otherwise there will be much beating of the air to no purpose.

We might begin to look at the case for making nature reserves, or whatever you like to call them, by examining what reserves we already have in the country. Before we do that, however, we should make it quite clear whether we want scenic and historical reserves or true nature reserves. I have said above that I assume the Society is concerned with the latter. If we mix our pleas for both nature and scenery, even though they frequently coincide on the same area, then our case is confounded from the beginning. We have in New Zealand some 980 scenic and historic reserves, to say nothing of the huge National Parks, or of the several Acts under which they are administered. Under these Acts 285 people, nearly all from the lay and professional public and not indifferent civil servants, are responsible for administering the reserves. If these people are not capable of safeguarding the scenery under their charge — and one regrets that often they are not — I would suggest you begin by educating them. It seems much more impor-

tant to the average New Zealander, and, for that matter, to the overseas tourist as well, that the scenery around urban and occupied rural areas should be tidied up. We have a long, long way to go before we reach the scenic perfection of Britain or of most of Europe. This scenery has little to do with nature. It has, in fact, been written: "Perhaps one of the greatest contributions ever made to aesthetics was the creation in the 18th century of the English country house and its park, never have nature and art been so perfectly united". This is a satisfying result, but it is a far cry from nature.

In New Zealand scenic reserves and National Parks constitute reservations which, in the main, cannot be violated for any form of exploitation. Moreover, many were reserved early enough in the history of the country for most of them to contain vegetation and animal life possessing a close resemblance to that obtaining under virgin conditions. Our parks are not like the National Parks of England which have had to be superimposed on land already occupied.

New Zealand reserves are in themselves, therefore, very largely nature reserves so that nature reservation cannot be considered apart from them. The Reserves and Domains Act 1953 in fact states that scenic reserves are to be so administered and maintained that they are preserved as far as possible in their natural state; native flora and fauna are to be preserved and introduced flora and fauna as far as possible are to be exterminated, and the public have as much freedom of entry and access as is consistent with the preservation of the flora and fauna. Likewise, the National Parks Act 1952 contains, amongst its functions and powers, the following: "administration, management and control of the Park — in such a manner as to secure to the public the fullest proper use and enjoyment of the Park consistent with the preservation of its natural features and the protection and wellbeing of its native fauna and flora".

Other Acts provide for reserves, usually of special kinds. For example, under the Forests Act 1949 forest sanctuaries can be set aside. This legislation was used to create the Wai-poua Kauri Sanctuary of some 22,000 acres. Under forest working plans, provided for

under the Forests Act, it is possible to make provision for protecting unusual or rare things. Thus one working plan for a small forest is partly written around a native frog species!

To some, the legislation dealing with all these reserves of different sorts might seem complex, sometimes aimless and often overlapping. The public looks with abhorrence at the twenty different Acts administered by eight Government Departments. Let me assure you that the situation is not a fraction as complex as the taxonomy of the genus *Hebe* or of *Hemideina*. Many ecologists must perforce apply the necessary study to gain an insight into these two genera, let alone many others falling into their purview. Why not apply the small amount of study required to find out how you can reserve your pet species of these two genera or the communities containing them? The taxonomy of them has taken a span of mere hundreds of years to evolve; the laws dealing with land and with reservations have been evolving ever since the dawn of *Homo sapiens*. It is a wonder therefore that they are not infinitely more complex. It would seem that it is not so much the legislators who are astray, as the biologists who beat their breasts at the threat of extermination of a species or community, but who seem incapable of putting down on paper a reasoned case for their reservation.

Too often a stray biologist passes a spot of "interest", a place where he thinks at some future time another biologist might be able to carry out some investigations. He expects this place to be reserved against such an eventuality — often a most unlikely one.

I would place in this category the reserve asked for by this Society in West Taupo vegetation. An enthusiastic member happened to visit that area. It has wonderfully interesting vegetation with recent migration patterns and seemingly natural ecotones. There is a wide variation of plant and presumably of animal communities. Some kind of overall studies of these are, however, necessary before one could begin to choose or make out a case for the reservation of a selection of communities of marked scientific interest. But you can't reserve the lot. In fact, the land has such a high value for tree growing and for farming that a strong

case would have to be made to reserve even small areas. As part of the case, somebody would have to explain why communities, already reserved in the Tongariro National Park or in the extensive scenic reserves along the Tokaanu-Taumarunui Road, or in the even more extensive ones on the mountains of Pihanga and Kakaramea could not serve the purpose. There are a quarter of a million acres of reserves in that region, many on very good land; so that the ecologist could rightly be asked to present a soundly reasoned case for adding to them. He might even be accused of having an insatiable appetite; for a quarter of a million acres, some of it potentially productive forest and other land, is economically important to New Zealand.

In Mr. Dickinson's report referred to previously there is a schedule of special reserves giving their names and total areas and the degree of protection arranged under three categories. He has kindly allowed me to use this list and it is given as Table 1. That category of reserves shown as possessing the least degree of protection contains Scenic Reserves, National Parks, Historic Reserves and Domains.

TABLE 1. *Table of special reserves taken from a report, "Survey of New Zealand Legislation affecting Nature Conservation," by P. Dickinson.*

Degree of protection	Name of reserves	Number	Area in acres
Maximum	1. Special Areas	1	128,000
	2. Public Reserves for the Preservation of the Flora & Fauna	4	13,102
	3. Wildlife Sanctuaries	3	50
	4. Forest Sanctuaries	3	22,530
	Subtotal	11	163,682
Intermediate	5. Wilderness Areas	2	49,900
	6. Wildlife Refuges	227	113,500
	7. Faunistic Reserves	1	25
	Subtotal	230	163,425
Minimum	8. Scenic Reserves	950	667,158
	9. National Parks	9	4,425,008
	10. Historic Reserves	30	150
	11. Domains	918	60,226
	Subtotal	1,907	5,152,542
	Total all reserves	2,148	5,479,649

NOTE: (1) Above does not include: Soil Conservation Reserves, Experimental Waters, State forest land apart from Forest Sanctuaries.

(2) The total area of Wildlife Refuges has been estimated from a sample of 25 Refuges.

If Scenic Reserves and National Parks are to be considered as having the least degree of protection — presumably as far as the preservation of nature is concerned — then the would-be nature conservationist has little to fear and possesses a huge study ground of infinite variety.

Now to remind you of some of the reserves we already have in the five and a half million acres, the total area of reserves, or the equivalent of about eight per cent of the whole country.

The dominant feature of the nine National Parks might be considered the mountain scenery. An analysis of them, however, quickly shows the huge range of natural characteristics, from the mountain communities to shore-line communities in the Abel Tasman and the Westland parks. A vast array of communities are presented to the ecologist for study. Only with difficulty, however, have biologists been persuaded even to commence general surveys of National Parks. They have admittedly made a better showing in the study of the takahe, rediscovered recently. To protect this rare bird the Government showed that it was not unsympathetic to acting quickly and generously. A reserve of well over 100,000 acres was established immediately to prevent disturbance of the original colony and any others which might be found later. Some control of deer has been done at public expense.

The attempts to preserve this apparently last remnant of the takahe emphasise a strong argument put forward by Professor Dansereau when he was in New Zealand recently. He made the point that it is no use attempting to preserve a particular species without preserving the whole community or set of communities in which it lives. I am unfamiliar with the studies that have been made on the takahe, but they seem to have amounted to no small volume of investigation and they are continuing. It is, of course, important to find out everything possible

about the bird. It seems, from the point of view of preserving the species, even more important to find out as much about the bird's habitat, particularly the introduced animal element. Red deer are an obvious danger to survival, but there must be others equally dangerous though less obvious.

Four special reserves have been created for the reservation of fauna and flora under the forerunners of the Reserves and Domains Act: Little Barrier Island, Cape Kidnappers, Kapiti and Resolution Islands. The history of these reserves is of some interest.

Under the Little Barrier Purchase Act of 1894 power was given to acquire the island for the purpose of making it a reserve for defence and for the reservation of the native fauna and flora; not a very compatible mixture of objectives. The military ones never seem to have been pursued and have probably long since been forgotten, fortunately perhaps for the fauna and flora.

This reserve and others were set up largely as a result of interest and activity taken about that time in the field of native fauna and flora preservation. The Australasian Association for the Advancement of Science met in Christchurch in 1891. Professor A. P. W. Thomas delivered an address on "The Preservation of the Native Fauna and Flora in New Zealand" in which he proposed the following resolutions:

1. That in the interests of Science it is most desirable that some steps should be taken to establish one or more Reserves where the native flora and fauna of New Zealand may be preserved from destruction.
2. That the Little Barrier Island and Resolution Island, Dusky Sound, appear to be most suitable localities for such Reserves.
3. That a copy of the above resolutions be forwarded to the Hon. the Minister of Lands.

As we have seen above the Little Barrier became a reserve. Resolution was reserved in 1891 for its fauna and flora and was, of course, later incorporated into the National Park. Before that, in 1875, it had been reserved "as a station to be used for the restraint and safe keeping of male offenders under sentence of penal servitude".

Also in 1897 "Kapiti Island Public Reserves Act" was passed. In a parliamentary discussion on the bill Mr. Seddon spoke on

the Government's desire to preserve flora and fauna. Maori land was involved in this reserve, and it is interesting to record that the acquisition of all the Maori land has still not been completed!

Nothing will be said here of the Scenic Reserves amounting to close on one million acres or the seven to eight million acres of protection State forests. All these areas are virtually nature reserves.

What do ecologists expect to get from nature reserves? I would like to quote from a report of a committee of the N.Z. Institute of Foresters that looked closely into this matter. After being exhorted by the Institute to recommend to the Forest Service to make Forest Sanctuaries (under the Forests Act) to reserve examples of all major forest communities the committee reported:

"Before a Forest Sanctuary is created, a guarantee that it can be held inviolate and in true primitive condition must be forthcoming. Reservation under any other conditions automatically defeats the purpose to be served by the creation of Forest Sanctuaries in the sense of this term as understood by the committee, i.e. sanctuaries created and safeguarded for strict scientific purposes. Reservations may of course be made for other purposes but unless the area of forest concerned is now and can be held in true primitive condition, the term Forest Sanctuary should not be used."

An Editorial concerning this report reads as follows: ". . . The Committee will have served a useful purpose if it does no more than impress upon the forest authority the existence of the problem and the clear need for a minimum course of action. A careful perusal of the Committee's report however suggests that it has done much more. Probably for the first time in the history of the nature preservation movement in New Zealand, it has analysed clearly and quite objectively the ecological difficulties in maintaining sanctuaries and the administrative and financial problems which would have to be faced. Foresters are not the only people who have sometimes been guilty of adopting an over-enthusiastic and unrealistic approach to this question. The Committee's report should be a help to clearer thinking on the whole problem of nature reserves;

and it should have a salutary effect on those whose approach to the subject is commonly tinged more with emotion than with the cold clear light of scientific reason."

It might be expected that in the newly constituted Nature Conservation Council we have the panacea to any sorting out of nature reserves. Such a hope is fostered when we read in the Explanatory Note to the Bill setting up the body: "The purpose of this Bill is to establish an independent Nature Conservation Council to co-ordinate scientific and technical information on nature conservation matters and to act as an expert advisory body to the Government on matters affecting nature preservation."

Clause 12 of the Act sets out the functions of the Council as:—

- "(a) To act as a central body for obtaining the views of all organisations, bodies, and persons interested in nature conservation or to which any such organisations, bodies, and persons may communicate their views or advice on any aspects of nature conservation:
- (b) To provide coordinated advice to the Minister on the scientific and technical aspects of nature conservation.
- (c) In consultation with Government Departments and other organisations, bodies, or persons interested in nature conservation, to draw up and recommend to the Minister a national policy for the conservation of nature, and from time to time, as the need arises, to recommend changes thereof".

Clause 13 sets out the powers of the Council. I will only quote one, and that is: "(a) Inquire into the effect of any proposed public works on places of scenic or scientific interest." Here we have the fatal compounding of scenery and nature conservation in the one Act. Remembering that the Council is only an advisory body, this clause might well prove to be the Achilles' heel. One hopes not; for this body has been vested with statutory powers for the first time in the history of this country's government, to advise on nature conservation. It should therefore become the sorting house for all requests, such as those which arise from the resolutions quoted at the beginning of the

address. If it is to be successful then cases for reservation must be thoroughly prepared and well presented. The interest theme is not sufficient. We have rare opportunities in New Zealand for studying near-natural com-

munities. We already have a surfeit of material for most purposes, but there are still many lowland communities of special interest in danger of extinction. These we would like to see reserved.

### BOOK REVIEW

*An Introduction to Freshwater Life in New Zealand.* B. J. MARPLES. Pp. 160; 25 text-figures. Whitcombe & Tombs Ltd. Price 20/-.

General accounts of the freshwater community in New Zealand have been limited to various publications of the Education Department and to P. Dickinson's "Field Notes for the Freshwater Naturalist", all restricted to particular aspects. Professor Marples has, therefore, produced the first comprehensive account, dealing specifically with New Zealand and including at least some reference to all the principal groups.

The book is aimed towards "school and university students, teachers and amateur naturalists", and the standard of knowledge assumed in the reader is generally appropriate, particularly for the sixth-form school or first-year university level. Inevitably perhaps there are a few inconsistencies such as the extremely elementary account of the binomial system of nomenclature followed by the unexplained use of the terms haploid and diploid. Some knowledge of, and access to, a microscope are also assumed.

Introductory chapters deal briefly with the main features of freshwater as an environment, and with the classification of living organisms. They include a simple key to enable any animal to be placed in its group. The bulk of the book is then devoted to a series of chapters on the phyla occurring in New Zealand freshwaters. Each describes the essential structural features of the animals in the phylum, the principal groups into which they are divided, and something of their habits and way of life. No attempt is made to provide a systematic account from which the species or even

the genus of a particular animal could be determined, but in the better known groups some of the commonest forms are briefly referred to and sometimes illustrated. The line diagrams, though sometimes rather crude, are clear and give a good general impression of the animal concerned. Each chapter or major section has a list of references which, though far from comprehensive, includes three or four of the principal publications. The book concludes with a short chapter on practical methods.

Although the title of the book refers to freshwater life, by far the greater part of it deals with animals. Plants are limited to a single short chapter and to a few passing references in the chapters on ecology and identification.

The format is suitable for the purpose. The type is clear, the size convenient for the pocket, the binding stout and workmanlike. There is a good index. Proof reading has generally been good but a few errors in technical terms have crept in, e.g. *Nototroctes* for *Prototroctes* on page 138, and *incus* for *uncus* on page 58; the latter is particularly awkward since *incus* is actually used correctly elsewhere in the same paragraph.

In conclusion, this book undoubtedly helps to fill a long-existing gap, and should be particularly welcome to school and university teachers and those with a general interest in the life of our freshwaters. With it, the reader should be able to place almost any animal he finds in freshwater in its correct group and learn something of its structure and mode of life.

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