ISSN 0111-2279

WILDLIFE in the NELSON REGION

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Department of Internal Affairs , Wellington

March , 1987

Fauna Survey Unit Report No. 42

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Front Cover: *Powelliphanta hochstetteri hochstetteri*, a large, carnivorous land snail unique to the beech forests near Canaan, high on the Takaka Hill.

Like tuatara and kiwi, *Powelliphanta* are ancient members of the New Zealand fauna, with no close relatives elsewhere in the world. Nelson is particularly important for this beautiful animal as over half of all *Powelliphanta* species occur only in this region.

Back Cover: The Aorere Valley in Golden Bay, from Beathams Clearing on the Boulder Lake track.
On the skyline is the Wakamarama Range and Farewell Spit. The dense manuka scrub in the foreground is home for the handsome green gecko, *Heteropholis tuberculatus*; and for the almost flightless fernbird which scrambles around in the low-growing scrub in search of insects.

1. INTRODUCTION

Between 1977 and 1985 the Fauna Survey Unit (F.S.U.) of the Wildlife Service surveyed New Zealand to identify all "sites of special wildlife interest", viz. all natural or semi-natural areas which are important for one or more species of protected wildlife. The aim was to compile an inventory of important wildlife habitats in New Zealand, so that factual information on wildlife values was available to local, regional and central government for their consideration when making land use decisions.

The identification and evaluation of important wildlife habitats was carried out on a regional basis and the results published in a series of reports, of which the present account is one. Each regional survey attempted to identify and visit all wildlife habitats of significance but at the same time were necessarily cursory because of the need to build up a national inventory in as short a time as possible (Moynihan 1986). A major shortcut was the exclusion of some montane forests from the survey as their wildlife values were generally not threatened by development.

The Nelson region was surveyed between April and September 1979 and during late February, March and April 1980, but this report also includes information collected by local naturalists and wildlife officers up until late 1985.

1.1 THE SURVEYED AREA

The survey area (Fig. 1) consists of all of Golden Bay County, most of Waimea County and those areas of Buller County not covered in the North Westland Fauna Survey report (Morse 1981). Unfortunately, the need to follow the north-east boundary of the North Westland wildlife survey area means that the south-west border of the Nelson survey area does not match either obvious ecological divisions or established administrative boundaries (i.e. County boundary, Lands and Survey Land District, or New Zealand Forest Service (NZFS) conservancy boundary).

There is, in fact, no single, generally accepted definition of the Nelson region. It is important to note that the "region" for this report includes the Mokihinui River catchment but excludes the Oparara Valley and the Murchison area (Lake Matiri, Tutaki and Matakitaki valley). Fig. 1 shows those 10,000 yard grid squares which were surveyed. For convenience, the region surveyed will be referred to throughout this report as "Nelson", and the use of the term "region" should be taken to mean that area covered by this report, unless stated otherwise.

Only the lowlands of Golden Bay and Waimea Counties were surveyed intensively. To the east, south and west of Nelson are high forested ranges lying within North-west Nelson Forest Park, Richmond Range F.P., Nelson Lakes National Park, and Abel Tasman N.P., and these were not surveyed by the

Wild pig

Pigs were introduced to Nelson some time between D'Urville's visit in 1827 and the establishment of the Nelson settlement in 1842. By 1861 wild pigs were abundant and causing great damage in southern Nelson (see comment by Haast on page 11). Today pigs are widespread on the Bryant Range, in pine forest, scrub and native forest on the Moutere Gravels, in southern Nelson in the St. Arnaud, Speargrass, Howard, Rotoroa and Glenhope areas and along the Mt Owen, Arthur and Pikikiruna Ranges. They are now also present on parts of the Wakamarama Range, from Kahurangi Point to Pakawau. In places, particularly on scrub/forest margins, they are locally common, but elsewhere appear to be in moderate to low numbers.

Where feral pigs are present, they have had a devastating effect on the large land snail Powelliphanta through direct predation, and also through destruction of the moist, protective, litter layer where the snails live. Lizards and large invertebrates such as wetas and beetles are probably similarly affected. Pig rooting probably decreases the amount of food available to birds such as kiwi and robin. Pigs are also known to be predators of ground nesting birds such as kiwi.

With five subspecies of Powelliphanta (P. hochstetteri hochstetteri, P. h. consobrina, P. gilliesi gilliesi, P. g. aurea and P. g. kahurangica) being severely affected by feral pigs, and the long-term viability of some populations now in doubt, there is an urgent need to try and reduce the numbers and control the spread of wild pigs in Nelson.

Goat

Goats are very common in a number of localised areas in Nelson: in scrub and forest on the ranges east of Nelson from Whangamoa to Red Hills; on the Arthur Range; and in Golden Bay on virtually all the hills immediately adjacent to the main valleys and lowlands. While at present they are largely on the margins of the N.W. Nelson forest block, they are gradually spreading inwards.

Being social animals, where goats occur they are generally in locally high numbers and cause severe damage through intensive browsing of the forest understorey and compaction and "drying out" of the litter. They can graze country too steep to be reached by deer or pigs. By seriously damaging forests regarded of "outstanding" wildlife value, goats are jeopardising some populations of the large native snail Powelliphanta, and also affecting other large invertebrates, lizards, and birds such as robin and kiwi who feed on insects on the forest floor. Their mobility and the difficulty of control once they become established make goats a pest of major concern, and the Wildlife Service is particularly anxious to prevent their further spread.

6. SUMMARY

Nelson's greatest importance for wildlife stems partly from the large tracts of forest on mountains in the north-west, south and east of the region, and partly from extensive estuaries along the shallow protected coastline.

This report demonstrates that, while Nelson's natural areas have been extensively modified by man, and some extinctions of species have resulted, the Nelson region retains a number of valuable habitats (sites of special wildlife interest - SSWI) with a wide variety of wildlife. These include some species endemic to the region and others which are nationally threatened or declining. The region's estuaries are host to large numbers of migratory birds (both national and international).

6.1 THE WILDLIFE

THE PRESENT INDIGENOUS WILDLIFE

Nelson:

(a) is the only part of New Zealand with natural breeding populations of:

- 6 (of the 10 known) species of large land snail Powelliphanta
- Nelson green gecko (Heteropholis stellatus)
- Nelson cave spider (Gradungula sp.)
- A number of species of small land snails and other invertebrates.

(b) contains some of the largest populations of nationally rare or declining fauna such as:

- South Island kaka
- Yellow-crowned parakeet
- New Zealand falcon (Fox's "Bush falcon" form)
- Great spotted kiwi
- Blue duck
- South Island fernbird
- Banded rail
- Powelliphanta land snails

(c) contains small or remnant populations of the nationally rare or declining:

- Australasian bittern
- Marsh crake
- Reef heron
- Rock wren
- Kakapo (?)
- Yellowhead (?)
- Lesser short-tailed bat

(d) has relatively large numbers of certain species not immediately threatened, such as:

Robin
Bellbird
Tui
Western weka
New Zealand pigeon
Kea
Yellow-breasted tit
Black-fronted tern
Grey duck
Variable oystercatcher
South Island pied oystercatcher
Banded dotterel

(e) is host to most species of Northern hemisphere migratory birds which visit New Zealand regularly or intermittently, including very large numbers of some species: e.g. Eastern bar-tailed godwit, knot, turnstone.

(f) is a regular host to small numbers of birds from the small New Zealand populations of such rare or declining species as:

New Zealand dotterel
Wrybill
White heron
Royal spoonbill

(g) is an occasional to regular host to small numbers of vagrant birds from elsewhere in the world, e.g.:

Oriental pratincole
Little egret
Australian little grebe
Lesser yellowlegs

EXTINCTIONS

There has been a high rate of extinction in the bird fauna of Nelson since the arrival of European man. The species lost include saddleback, New Zealand thrush, New Zealand quail, laughing owl, and perhaps bush wren, South Island kokako, yellowhead and kakapo. Nesting has probably ceased for some species of seabirds also, including a species of "black petrel".

Several reptiles probably also became extinct in Nelson after the arrival of kiore in historical times viz the tuatara and perhaps the Stephens Island gecko (Hoplodactylus stephensi). The native frog and probably also the giant weta (Deinacrida spp.) and other large nocturnal flightless invertebrates have probably been lost within the last two centuries.

Future Extinctions: It is probable that loss of habitat, predation, competition and other factors will result in further extinctions: the most susceptible species include kakapo and yellowhead (if indeed they are still present), bittern, reef heron, fernbird, banded rail, and some subspecies of the large land snail Powelliphanta.

Land reservation and specific management for rarer species should retain at least some of these animals in natural habitat in Nelson.

6.2 WILDLIFE HABITAT

(a) Historically Nelson was a forested region, with a long, largely shallow, estuarine coastline fringed with saltmarsh, with large flax/raupo swamps at the head of the main bays.

This survey found that significant "natural areas" (sites of special wildlife interest) now occupy only 5.2% of the settled lowlands (of which 2% is actually mudflats), but 68.2% of the total survey area (the contiguous forested hinterland within two National Parks, two Forest Parks and one State Forest, account for 63% of the total survey area). These sites comprise 305 discrete units, mostly of small size: about 51% are 20 ha or less and only 4% are 1000 ha or more.

(b) The survey showed that, in general, the large forest tracts have a greater variety of native forest birds than do the small remnants, and that certain bird species (e.g. kaka, falcon, great spotted kiwi, parakeet) are confined to the large tracts.

Similarly, the larger and less modified freshwater wetlands and coastal estuaries support a greater number and variety of wildlife than do the smaller, more modified ones.

(c) Particularly scarce habitats in Nelson are freshwater swamps and ponds, braided riverbed, coastal forest remnants (particularly those with a natural zonation from tidal areas) and low altitude forest.

Particularly threatened habitats are pakihi (suitable for fernbird), manuka-kanuka scrub, freshwater swamps and ponds, and low altitude forest.

(d) All sites of special wildlife interest in Nelson have been modified by man or his agents. Most show obvious modification.

Large areas which are relatively unmodified are particularly valuable for wildlife (e.g. kaka, parakeet, falcon, kakapo (?) and blue duck are confined to the comparatively unmodified large forest tracts), though certain important endemic species (e.g. fernbird, green geckos) were found to use some much altered vegetation.

(e) The most significant wildlife habitats have been mapped and listed in this report. Some "natural areas" remain unclassified because of their small size or much modified state. These latter areas all have some value for wildlife, mostly for widespread species, but sometimes for rarer fauna as mentioned in (d) above. Some significant sites may have been overlooked, and follow-up work may result in additional areas beng identified and in changes in the rankings assigned in this report.

6.3 EXOTIC FAUNA AND FLORA

Wild animals and, to some extent, adventive plants have had major impacts on wildlife and wildlife habitats of Nelson. The presence of one or more species of exotic animals prevents any habitat from sustaining its full complement of the wildlife characteristic of that habitat type. The most obvious examples are:

(a) Browsing animals. Many habitats are damaged by feral animals (deer, goats, pigs, possum) and farmed livestock. Hares, and in places rabbits, graze grassland sites in the region.

(b) Predators. Stoats, ferrets, weasels, rats, mice, hedgehogs, cats, dogs, wild pigs, thrushes and blackbirds are all predators of native wildlife in Nelson, and all have had some part in the loss or reduction of native wildlife.

(c) Competitors. Browsing and predatory mammals use foods otherwise available to native wildlife. Some also compete with native wildlife for nest sites, shelter etc., e.g. possums sometimes use kiwi burrows.

(d) Exotic plants. Apart from deliberate conversion of native vegetation to farmland and exotic forest, man has allowed exotic plants ("weeds") to invade some wildlife habitats. Spartina grass on tidal flats, and the vine, old man's beard, in forest and shrubland are of particular concern.

7. RECOMMENDATIONS

7.1 NATIVE FOREST AND SCRUB

The Wildlife Service recommends that:

(1) The preservation of all forest SSWI identified in the area be promoted, with priority given to those more highly rated.

All the following recommendations are made in light of this aim.

(2) All Crown-owned sites be reserved or otherwise protected. Domestic stock should be excluded from all Crown-owned sites.

(3) Tax exemptions and other Government subsidies which encourage felling of privately-owned native forest be immediately removed.

(4) Conditional-use procedures be extended to include logging of native forest on private land.

(5) Private owners of forested SSWI be encouraged to protect them by:

(i) the waiving (by local authorities) or payment by central Government of rates payable on privately-owned forests identified in this report as particularly important to wildlife.

(ii) the promotion of Queen Elizabeth II Covenants, which assist the private owner in protecting and fencing important natural sites.

(6) All forest SSWI be recognised within the district and regional planning schemes through:

(i) the inclusion of wildlife policies in scheme statements;
(ii) listing of all SSWI in schedule and map form
(iii) the establishment of ordinances relating to development in or near SSWI.

(7) Every effort be made to preserve existing "corridors" of scrub and forest, and to replant important recently lost corridors with native forest. Of particular importance is:

(i) forest on the Pikikiruna Range linking North-west Nelson (SSWI 148) with Abel Tasman National Park (SSWI 134);

(ii) forest near Tophouse which formerly linked Big Bush (SSWI 300) with Richmond Range (SSWI 269) to the east, and with Nelson Lakes National Park (SSWI 304) to the south;

(iii) manuka scrub and forest in the upper Tadmor River area which until recently linked North-west Nelson (148) to Donald Creek (SSWI 283);

(iv) manuka scrub and forest on the Hope Saddle, linking the northern and southern ends of Big Bush;

(v) forest and scrub in the Pakawau gorge which formerly linked the northern and southern ends of the Wakamarama Range in North-west Nelson (SSWI 148);

(vi) forest near Whangamoa Saddle connecting the Western Richmond Range (SSWI 269) with Maunganui forest (SSWI 170).

(8) Strong measures be taken urgently to stop the further spread of feral goats in North-west Nelson (SSWI 148), to protect its outstanding wildlife values.

(9) Feral pig and goat numbers be reduced and kept as low as possible in the following Powelliphanta land snail habitats:

(i) Mangarakau Scenic Reserve (SSWI 37);

(ii) specific parts of North-west Nelson Forest (SSWI 148) viz.
- the Wakamarama Range, particularly around Kahurangi Point, and Mt Burnett;
- above 300 m (985') on the northern Arthur Range, from Flora Stream to the Pikikiruna Range and Evans Ridge.

(iii) forest above 762 m (2500') on the Bryant Range, particularly between The Rocks and Mt. Duppa.

(10) Prospecting or mining that will detrimentally affect forest habitat identified in this report as particularly important for wildlife (i.e. rated "high" or "outstanding") should not be permitted.

(11) The wildlife values of forest and scrub areas that have not been registered as SSWI be taken into consideration before the land use of such areas is changed. Wildlife Service staff are available to assist landowners in identifying the wildlife values of such areas.

(12) A programme aimed at halting the further spread, and where possible reducing the present occurrence, of the vine Clematis vitalba should be strenuously and continuously pursued by the local and noxious weed authorities.

(13) In view of the outstanding wildlife values of the North-west Nelson forest:

(i) the whole forest should receive a higher reserve status than it currently has (forest park);

(ii) no further logging should occur;

(iii) the buffer of secondary forest and scrub around the North-west Nelson Forest margins should not be destroyed and, where it is in other ownership, should be considered for inclusion in the Forest Park.

7.2 FRESHWATER WETLANDS

The Wildlife Service recommends that:

(1) In view of the great reduction in area of freshwater wetlands in Nelson, all those remaining should be protected, with higher rated sites given priority.

(2) As a matter of urgency, the network of 5 pakihi sites identified as important for the long-term protection of fernbird in Golden Bay be reserved and managed specifically for the species.

(3) Buffer zones of native vegetation be retained, or if necessary be replanted around particularly important ponds and swamps.

(4) No shingle extraction, cattle grazing, flood protection works or other disturbance be permitted on the braided riverbed sectons of the upper Buller, Howard, and Motueka rivers identified as particularly important for wildlife.

7.3 ESTUARIES

The Wildlife Service recommends that:

(1) The protection of all estuarine SSWI in Nelson be promoted.

(2) Conservation of the estuarine SSWI override recreational, residential and commercial pressures to use such areas.

(3) All reclamation permits that have not been taken up by local authorities be rescinded by Parliament, e.g. the Nelson Harbour Board Empowering Act 1970 which provides for extensive reclamation of Waimea Inlet and Nelson Haven.

(4) For all estuarine SSWI, a management plan be compiled jointly by those government departments, local authorities and interest groups responsible for, and interested in, Nelson's estuaries. The main objective of each plan should be to regulate activity in such a way as to ensure the long term survival of the estuary and its wildlife. Priority should be given to formulating plans for those estuaries adjacent to urban centres, viz. Nelson Haven, Waimea Inlet and Moutere Inlet.

(5) Vulnerable and important parts of the estuarine habitat, such as high tide roosts and saltmarsh fringes, be specifically reserved, and efforts made to protect them by:

(i) prohibiting motor vehicles from sandspits, dunes, shellbanks, wading bird feeding areas on intertidal flats, and saltmarshes;

(ii) fencing to exclude cattle;

(iii) preventing disturbance to nesting areas and roosting sites, by dogs and people.

(iv) protecting and, where necessary, replanting (using local stock) saltmarsh and scrub buffer zones on the margins of all estuaries identified in this report as particularly important for wildlife.

(6) That the present Wildlife Service/Ministry of Transport/Local Authority programme to eradicate Spartina should continue to be vigorously pursued.

7.4 EXOTIC PINE PLANTATIONS

The Wildlife Service recommends that:

(1) No exotic forest be planted at the expense of existing native forest, scrub, or pakihi, or in other areas important for wildlife;

(2) Scattered "islands" of native vegetation (scrub or forest) and swamps and ponds be retained permanently within larger exotic forest;

(3) Riparian strips of native vegetation be retained beside streams, freshwater wetlands and estuaries to buffer them from pine plantings. The strips should be between 20 and 100 metres wide, depending on topography.

(4) Amenity species be planted within and around exotic plantations to provide a succession of nectar, flowers and fruit for native birds throughout the year.

(5) Within exotic plantations, some old dead trees (with holes in them) be retained, or nest boxes be provided, to improve exotic forest habitat for hole nesting species such as rifleman, tomtit, morepork and kingfisher.