WETLAND WILDLIFE TRACKS

Wetlands are a dwindling resource because of natural infilling and infilling by man by induced erosion or reclamation. They may also be wholly or partly ruined as wildlife habitat by uncontrolled grazing.

Many well-meaning landowners and managers know too little of the wildlife that inhabits their wetlands, of the significance of this wildlife and of how to protect the wetlands. They may not realise how grazing may damage the habitats. The ones that do may fence a wetland or have this done with assistance from a trust.

Even if a landowner does make a wetland secure, vermin, such as rats, feral and domestic cats, possums, weasels, stoats and even hedgehogs may make the wetland precarious for birds. Yet, the vermin may escape attention because of nocturnal habits. The number of vermin may be so high that the time, effort and money spent on preservation of the birds can be wasted.

A first need for assessing a wetland's wildlife value is to find out what animals are present

Ducks, gulls, shags, stilts, herons, swan, geese and harrier are normally easy to detect by sight or sound. Other animals, being furtive or nocturnal, and inhabiting dense wetland vegetation, are often hard or impossible to detect. Examples are the Banded Rail, Spotless Crake, Bittern, vermin and sometimes the Pukeko.

TRACKS AS A SURVEY TOOL

Animals can be detected with certainty from their tracks. Footprints can be deep and clear in soft, litter-free mud. Where the mud has firmed, where a foot is put down unevenly or where a track is distorted by litter, partial tracks are formed. Nevertheless, after some experience in track reading, one can use partial tracks as reliably as complete ones.

Within limits, tracks can give information on birds' breeding, density and behaviour and on the presence and habits of vermin. Breeding is shown by the miniature tracks of juvenile birds beside those of adults. By reading tracks, one can learn much of wetland wildlife.

The illustrations of the footprints presented (correlated with sightings) help distinguish the tracks of one animal from those of others (see Figures 1-12). The study was confined to the tracks of common birds and other animals in 14 wetlands on either side of the Inlet road, running east from Keri Keri, parallel to the Keri Keri Inlet, in the Bay of Islands, Northland.

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FIGURE 1 — For long film exposure a special stand was used to position the lens 450 mm above the ground surface.

FIGURE 2 — ***Banded Rail*** *(Rallus philippensis):* Observed length of central toe 30-40 mm; ratio between length of central and outer toes 1:3; angle between central and outer toes 25-60°. The last indicates that the bird can vary the placement of the outer toes.

Tracks are typically encountered along the margins of major channels in mangrove forest, where mud crabs under large trees are common.

Tracks have been encountered in all of the 14 sites examined, including mud under open stands of manuka *(Leptospermum scoparium).* The wide dis-persal of the tracks is related to the relatively large distances this bird travels overland and to its occasional movement by night from one wetland to another.

No tracks were encountered in the dense rush stands upstream from the mangrove or in dense thickets that mark fernbird habitats.

FIGURE 3 — ***Spotless Crake*** *(Porzana tabuensis plumbea)*: Observed length of central toe 40 mm; ratio between length of central and outer toes 1:2; angle between the central and outer toes 40-50°.

But for one landowner, none knew that this bird inhabited their wetlands. Yet, even though they were not numerous, their tracks were encountered in 13 out of 14 wetland sites examined, given that the stubby tracks with imprint of the back toe can give clear identification.

Even when, from fresh tracks, we knew this bird to be nearby, only once did we get a response to its call from a tape.

FIGURE 4 — ***White-faced Heron*** *(Ardea novaehollandiae)*: Observed length of central toe 50-60 mm; ratio between length of central and outer toes 1:1; angle between the central and outer toes 40-50°.

Coming down from their roosts or nests in trees, they frequent wetlands to feed. Like the bittern, they stride through swamp and along channel margins spearing and swallowing frogs and gambusia (introduced so-called mosquito fish), indicating considerable storage capacity. This accounts for periods of absence from wetlands. Their tracks, however, betray their periodical visits.

FIGURE 5 — ***Pied Stilt*** *(Himantopus himantopus leucocephalus)*: Observed length of central toe 40 mm; ratio between length of central and outer toes 1:2; angle between the central and outer toes 40-60°.

The Pied Stilt is a social bird. Numerous tracks of it in a helter-skelter pattern at a given site indicate that these are from several birds.

The Banded Rail, on the other hand, tends to be solitary, although when with young it can move in a family group. If one encounters numerous tracks of it at a given site, they are likely made by a single Banded Rail and one can follow the direction in which it has moved.

Moreover, according to our observations, the footprint of the stilt always shows a rather wide angle between the central and outer toes, whereas that of the Banded Rail shows variable angles.

FIGURE 6 — ***Ducks***: Observed length of central toe 50-60 mm; ratio between length of central and outer toes 1:2; angle between the central and outer toes 25-40°. *Specific ducks may give figures deviating from these.*

But for the rounding of the outer toes towards the centre, duck tracks can closely resemble those of Pheasant. In soft mud, the imprint of the web between the toes eliminates Pheasant.

No ducks were observed in the densely vegetated wetland that marks the fernbird habitat. In mangroves they were observed to breed far upstream only, where there is enough fresh water for water weeds to develop. Once the young develop, they move farther downstream. More importantly, the mangrove channels provide roosting places for ducks, but in a periodic and localised manner.

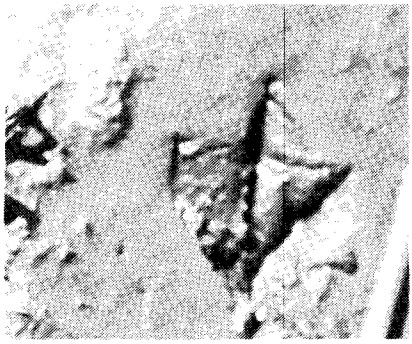

FIGURE 7 — Webbing between toes in duck track

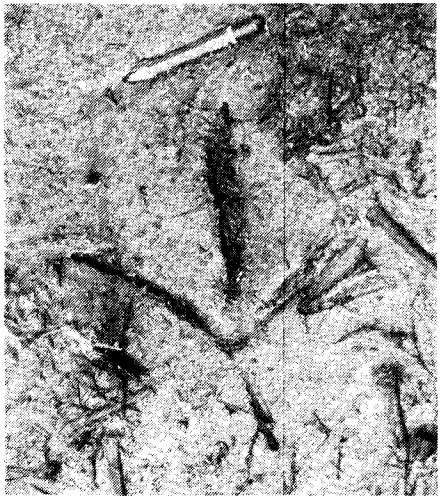

FIGURE 8 — ***Australasian Bittern*** *(Botaurus stellaris poiciloptilus)*: Observed length of central toe 80 - 90 mm; ratio between length of central and outer toes 1:3; angle between the central and outer toes 40-50°.

The length of the central toe is the key to identification, compared with the track of the White-faced Heron. In addition, the length of the central toe in relation to that of the outer toes in the bittern track is greater than in the heron track. Moreover, the imprint by a bittern foot is deeper than that by a heron foot.

Even though it was breeding at 3 or 4 sites only, its tracks revealed that it regularly visited all the 14 wetland sites examined, as we knew also from sightings.

The male, slightly sturdier than the female, seemed more mobile. During the breeding season it boomed from time to time from unlikely breeding sites, presumably trying to attract a female.

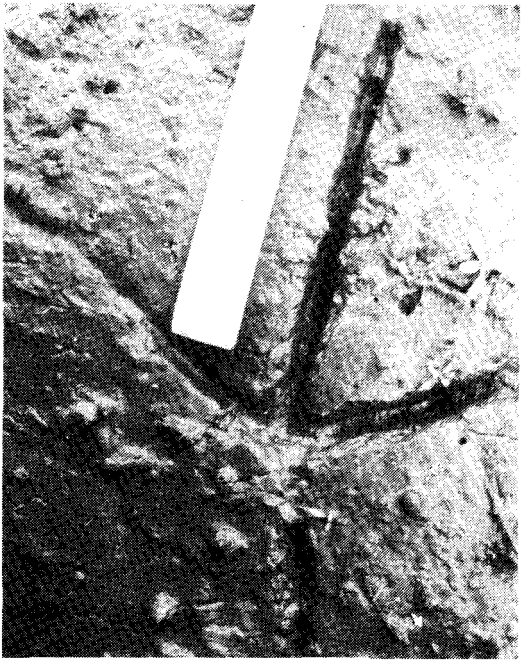

FIGURE 9 — ***Pukeko*** *(Porphyrio porphyrio melanotus):* Observed length of central toe 95-110 mm; ratio between length of central and outer toes 1:0-1:2; angle between the central and outer toes 55°.

Even though the Pukeko is not an inconspicuous bird, it can stay hidden, particularly during mid-summer days.

An incomplete Pukeko presence was obtained where dense vegetation extended well beyond the border of a wetland.

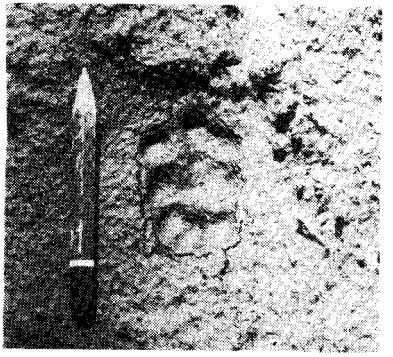

FIGURE 10 — ***Cats*** *(feral and domestic)*: Observed width 30 mm, length 37 mm. Owing to the range in size and in behaviour of this animal, imprints of cat paws in mud are quite variable. However, all show a multiple "cushion" imprint, similar to that shown in Figure 10.

Although less numerous, cats had a similar distribution to possums.

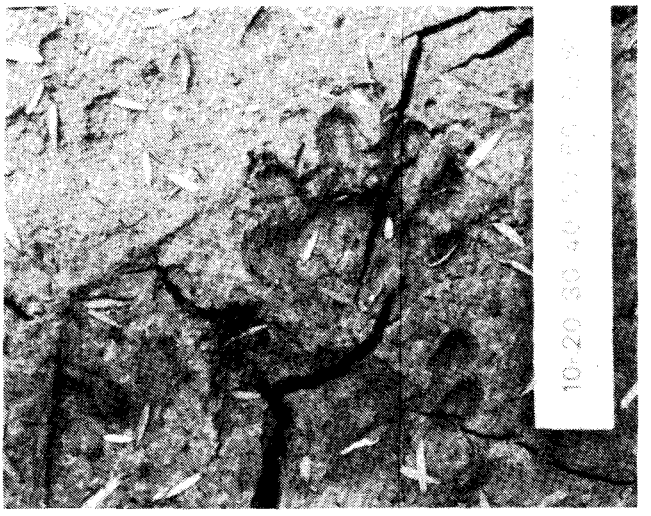

FIGURE 11 — ***Brush-tailed Possum*** *(Trichurus vulpecula)*: Observed width 45 mm, length 39 mm. The possum track in mud is rather variable, depending on how the animal splays its feet when walking on a soft substratum. To check on this, we made footprints in mud with an artificially splayed foot of a possum that had just been killed by traffic. The pattern obtained was like that in Figure 11. Numerous tracks were observed at the margins of or within all examined wetlands, other than mangrove.

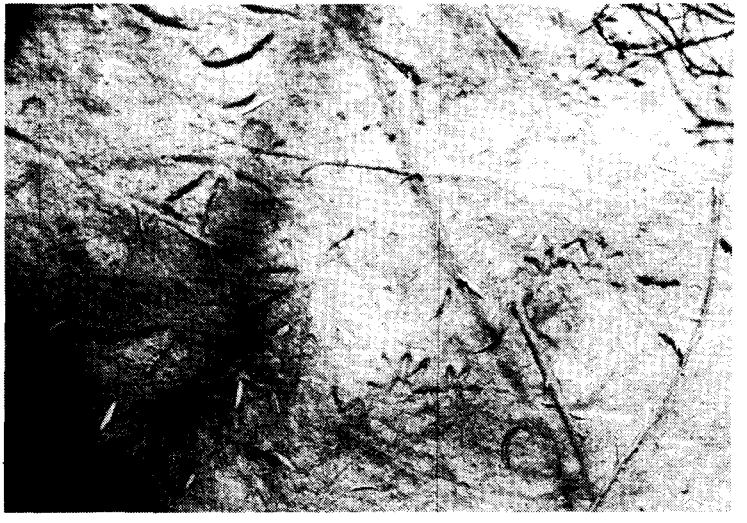

FIGURE 12 — ***Rat*** *(Rattus norvegicus)*: Rat tracks are shown alongside those of juvenile Banded Rail and an old imprint of a possum foot. Rats were common in all examined wetlands, except in the dense rush stands upstream from mangrove. Within mangrove they seem to follow the receding tide, suggesting that they travel long distances.