

The Rediscovery of the Bridled Nail-Tailed Wallaby, *Onychogalea fraenata* (Gould) (Marsupialia : Macropodidae) in Queensland

G. Gordon^A and B. C. Lawrie^B

^ANational Parks and Wildlife Service of Queensland, P.O. Box 190, Brisbane North Quay, Qld 4000.

^BNational Parks and Wildlife Service of Queensland, Pallarenda, Townsville, Qld 4810.

Abstract

O. fraenata has been located near Dingo in central Queensland, the first record of this species since the 1930s. It is common over an area of about 11,000 ha and has an extremely restricted distribution in the district. It occurs in land systems with mixed scrub and eucalypt woodland vegetation and the more fertile soils. Previously unpublished locality records extend the recorded range of the species to near Charters Towers in north Queensland and to Southernwood in central Queensland. It is suggested that the species has been particularly sensitive to the effects of European settlement because of a habitat preference for country that is utilized most intensively by the grazing industry.

Introduction

The bridled nail-tailed wallaby was at least locally common in eastern and south-eastern Australia at the time of European settlement, inhabiting inland regions of the semiarid zones. Krefft (1866) reported it to be 'the most common of all the small species of the Kangaroo tribe' in the area near the junction of the Murray and Darling Rivers. Gould (1973) stated that it was abundant at a site near Gundermein on the lower Namoi River and that Gilbert found it to be common on the Darling Downs. Collett (1887), describing Lumholtz's collections of 1880-84 in central Queensland, states that it 'is numerous in the scrub'.

Early in the next century it was apparently in a state of decline. Le Souëf (1923) considered it in danger of extinction although Longman (1930) said that it was 'not uncommon in some parts of Southern Queensland and its pelts were frequently seen in the sales two or three years ago'. Finlayson (1931) observed it twice during a fauna survey of the Dawson Valley, central Queensland. Over most of the region he considered it absent or rare. There is circumstantial evidence (Jarman and Johnson 1977) that the species may have undergone a population eruption around the turn of the century, then declined. In recent years, the continued existence of the species has been in doubt. However, in 1973 Mr D. Challacombe, a fencing contractor of Duinga, discovered a population in central Queensland near the town of Dingo. He identified the species from its similarity to one of Gould's colour plates reproduced in *Woman's Day* magazine in a series on rare fauna.

This paper describes a survey of the distribution and habitat of this population and reports other hitherto unpublished localities where the species occurred in Queensland.

Description of Region

At the time of settlement the Dingo region had a diverse vegetation with approximately equal mixtures of scrub and eucalypt communities (Speck *et al.* 1968) in a mosaic pattern. Scrubs were mainly associations of *Acacia harpophylla* F. Muell. (brigalow), but included other acacia and non-acacia communities in open-forest and woodland formations. Initial settlement had most impact on the eucalypt communities, as these were grazed and cleared with more success than the scrubs.

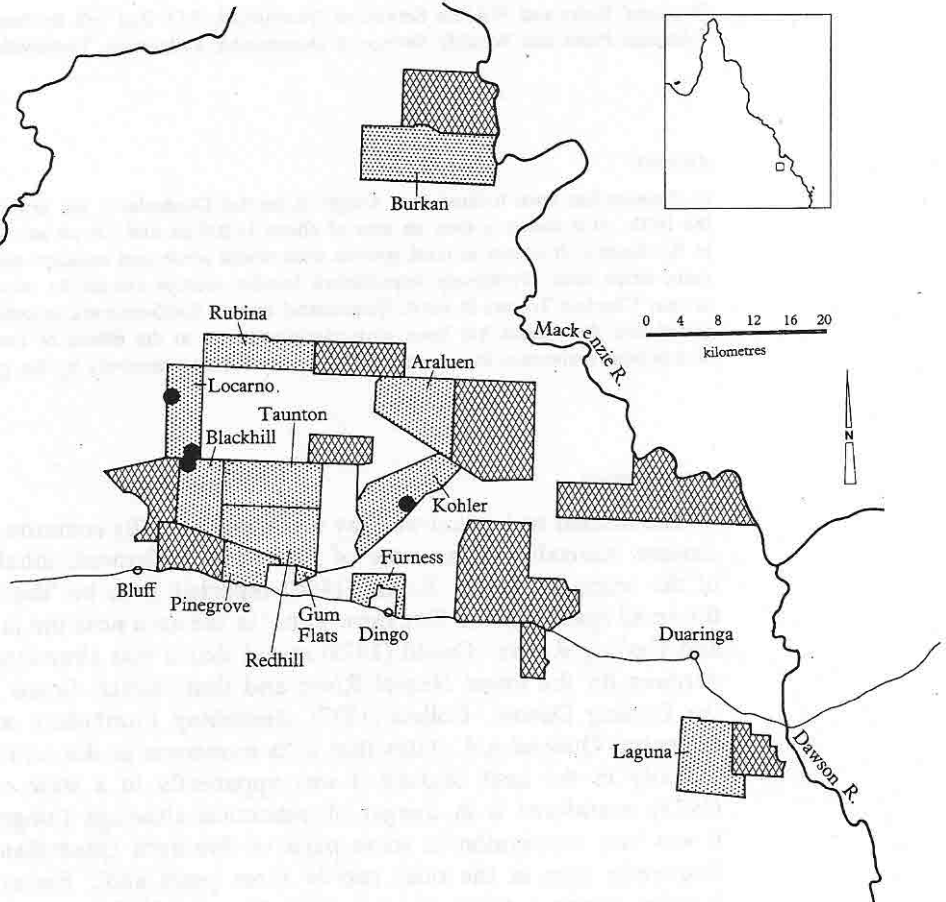


Fig. 1. Dingo region showing survey sites, and locations of sightings of bridled nail-tailed wallabies on areas other than Taunton and Redhill. Stipple, property spotlighted and resident interviewed. Cross-hatching; resident interviewed only. ● Wallaby sightings.

Such clearing mainly affected alluvial flats and some other eucalypt woodlands. The prickly pear infestation extended into the district in the early part of this century. However, the most drastic change to the plant cover occurred during the past few decades with the successful development of brigalow clearing and the introduction of a government-sponsored 'Brigalow Scheme'. This is proceeding rapidly and the major part of the brigalow and some associated scrubs are in the process of conversion to grassland. Today, most remaining timbered country, including the poorer, less fertile regions, shows signs of a pervasive disturbance

from processes such as thinning, attempted clearing (with regrowth of shrubs or crowded canopy species), timber-getting, or fire. Many of the remaining brigalow areas now form a shrub woodland (with two strata of different-aged brigalow plants) or an open or closed scrub of sucker regrowth, a consequence of a severe fire in 1951 which either destroyed or thinned the scrub canopies.

Initially the district was stocked with both sheep and cattle, commencing during the 1860s. The country proved unsuitable for sheep, and cattle raising became the major form of land use early in this century. The recent success of the 'Brigalow Scheme' has led to a decrease in the size of properties and increased stocking rates, so that properties are now used much more intensively than previously and have also undergone an enormous reduction in the size of uncleared areas that may act as reservoirs for fauna.

Extinctions of populations of native mammals are sometimes attributed to the effects of introduced predators or herbivores. Foxes, rabbits, hares and feral cats occur in the district in addition to domestic stock. Cats and rabbits may be rated as common there, and hares and foxes as scarce.

Methods

As a means of rapid assessment of the species' distribution, the primary step in surveying was based on seeking local knowledge of the wallabies rather than on systematic searches of the region. 'Pademelon' is the vernacular name used by residents [as at earlier times (Collett 1887) and in other districts (Longman 1930; Jarman and Johnson 1977)] and proved useful in leading to areas where the species occurred. Residents of the district were interviewed to gain reports of wallabies and to discover people knowledgeable about wildlife (Fig. 1). People interviewed were first asked for ecological and behavioural information on common mammals of the district, to judge their reliability as observers. If they were considered reliable, their comments on the distribution of nail-tailed wallabies were accepted for further investigation, which consisted of nocturnal spotlighting runs through selected properties (Fig. 1) by four-wheel-drive vehicle in sessions of 2-5 h. This survey lasted from April to August 1974, ranging up to 50 km from the site of the original discovery, Taunton.

Nine other sites in central Queensland, ranging up to 180 km distant from Taunton, were checked briefly on trips of 1-2 days, because of reported sightings or other information.

Since the survey period further spotlighting was carried out to gain habitat data: Taunton, five trips; Redhill and parts of Ellesmere and Gum Flats, four trips; Pinegrove, one trip (Fig. 1).

Results

All sightings were within 10 km of Taunton (Fig. 1). Three additional distribution records for central and north Queensland were located in the diary of John Gilbert, in the Mitchell Library, Sydney, as follows:

Date of entry	Basis of record	Interpreted locality	Approximate coordinates
15.i.1845	Specimen	c. 30 km NE. of Comet on Mackenzie R.	148°40'E., 23°23'S.
28.iii.1845	Sighting	Near junction of Cape R. and Suttor R.	146°54'E., 20°48'S.
13.iv.1845	Sighting	Near junction of Lolworth Creek and Burdekin R.	146°06'E., 19°50'S.

One for central Queensland is based on a skin collected on Southernwood station (c. 147°40'E., 23°40'S.) 30-40 years ago (Fig. 2). This skin is in the possession of Mr R. Hawkins of Mowbray station, via Bogantungan, central Queensland.

Spotlighting results indicated that there was a greater abundance of wallabies on Taunton and immediately south on Redhill, than on other surrounding proper-

ties (Table 1). This pattern held both early in the survey and later when the wallabies became more readily seen in the drier season.

All sightings and reliable reports from near Dingo occurred on the land systems called Thomby, Highworth, Barwon, Dingo, and Melbadale in Speck *et al.* (1968) (Fig. 3). None occurred on the remaining land systems in the survey area (Perch,

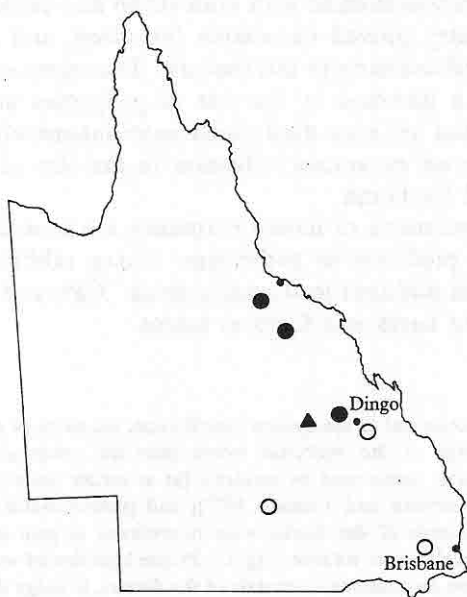


Fig. 2. Known distribution of the bridled nail-tailed wallaby in Queensland. ○ Records from Queensland Museum, Gould (1973) and Collett (1887). ▲ Southernwood specimen. ● John Gilbert's localities.

Duaringa and Wooroonah). Records from the Melbadale land system came from Redhill and were within 1.5 km of a 'scrub' land system, either Thomby or Barwon (Fig. 3). These results indicate that the persisting colonies of this species are associated with the first four land systems listed above.

Table 1. Areas spotlighted and numbers of nail-tailed wallaby sightings, Dingo Region, April-August 1974

Month	Area	No. of sightings	No. of trips	Month	Area	No. of sightings	No. of trips
April	Taunton	4	1	June	Blackhill	1	1
May	Alsace Rd	0	1		Kohler	2	1
	Burkan	0	1	July	Taunton	7	1
	Rubina	0	1		Furness	0	1
	Locarno	2	1		Kohler	1	1
June	Araluen	0	2		Redhill	9	1
				August	Laguna	0	1

Animals sighted at night occurred in a wide range of brigalow communities (shrubby and grassy open-forest, low open-forest or whipstick brigalow, shrubby and grassy woodland, sucker brigalow, brigalow/eucalypt open-forest and woodland, brigalow/*Terminalia oblongata* F. Muell. open-forest, brigalow/*Casuarina cristata* open-forest), other scrubs (*Acacia rhodoxylon* Maid., low open-forest, *A.*

burrowi open-scrub, *Terminalia oblongata* low open-forest), eucalypt communities (grassy woodlands of *E. melanophloia* F. Muell., *E. populnea* F. Muell., *E. crebra* F. Muell., *E. polycarpa* F. Muell.), and cleared areas (grassland and pulled scrub). These habitats comprise most major vegetation types on Taunton and Redhill and include regenerated open-forest and shrubland and areas with partly disturbed canopies resulting from thinning, partial clearing or fire disturbance. In the more open eucalypt and grass communities, animals were sighted frequently as far as one-quarter of a kilometre from scrub communities and occasionally as far as half a kilometre. Three animals found resting in the daytime were in brigalow shrubby open-forest (two) and *Casuarina cristata* shrubby open-forest (one) respectively.

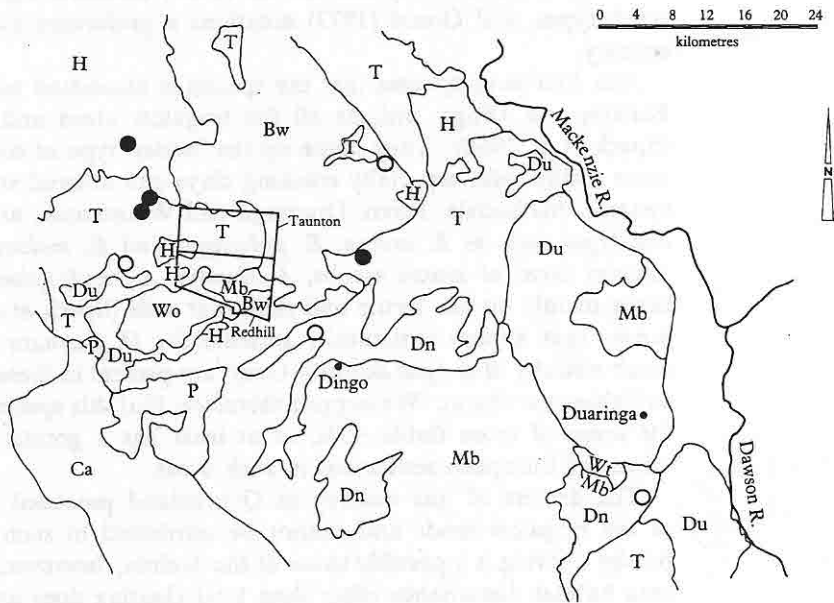


Fig. 3. Distribution of bridled nail-tailed wallabies in the Dingo region in relation to land systems. Distribution denoted by: the properties Taunton and Redhill; ● other sightings; ○ reports. Land systems: Bw, Barwon; Ca, Carborough; Dn, Dingo; Du, Duaringa; H, Highworth; Mb, Melbadale; P, Perch; T, Thomby; Wt, Westwood; Wo, Wooroonah.

No sightings were made in the poorer country of the Wooroonah and Melbadale land systems to the south of Redhill (on Pinegrove, Gumflat and Ellesmere) with scrubs of *Acacia shirleyi* Maid. and *A. rhodoxylon*, and eucalypt open-forests and woodlands of *E. crebra*, *E. polycarpa*, *E. tessellaris* and *E. populnea*. Approximately one-quarter of Taunton, the eastern end, consists of 'improved pasture' — grassland with small timber clumps — and the only sightings here were on the western margin close to timbered country.

Discussion

The records of John Gilbert extend the recorded range of the species north by about 500 km, and the Southernwood record extends the recorded central Queensland range about 200 km farther inland. The distribution now is extremely

