

Red-legged Pademelon

Thylogale stigmatica
Family Macropodidae

Other names:

Pademelon
Northern Red-legged Pademelon

Conservation Status:

The Red-legged Pademelon is listed as Vulnerable under the NSW Threatened Species Conservation Act 1995.



Red-legged Pademelon *Thylogale stigmatica*

photo: wettropics.gov.au

Distribution, Abundance & Population Trends

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National and State

The Red-legged Pademelon populates the coastal and sub-coastal strip of eastern Australia, from Cape York in north Queensland, south to the Hunter Valley on the central coast of NSW (NSW NPWS 1994; Johnson and Vernes 1995) being largely restricted to rainforests and adjacent wet sclerophyll forests.

In north-east NSW the Red-legged Pademelon is widely but patchily distributed through the eastern fall of the Great Dividing Range from the upper Hunter Valley north to the Qld Border, extending west to the edge of the Northern Tablelands mainly in the north of NE NSW.

It is mostly absent from the coastal plain but extends to low elevation, near-coastal habitats at Mooball NP on the Tweed coast. A number of north-east NSW populations appear to be functionally isolated (e.g. populations at Barrington Tops, Mooball NP and Victoria Park NR on the Alstonville Plateau).

Ecology

Habitat

The Red-legged Pademelon inhabits rainforest and wet sclerophyll forest with dense understorey and ground cover, and dry vine scrubs (Jarman et al. 1987; NSW NPWS 1994; Johnson and Vernes 1995). Dense cover provides refuge from predators and adjacent, more open

Local

There are relatively few confirmed records of the Red-legged Pademelon from within Byron Shire. Potential habitats are restricted to wet forests in the foothills of the Nightcap and Koonyum ranges.

The species is known to inhabit the upper Coopers Creek and upper Main Arm areas and is very likely to occur in the upper Wilsons River area. Nightcap National Park and Whian Whian State Conservation Area comprise a regional stronghold for this pademelon and it is also likely to inhabit Mount Jerusalem and Goonengerry National Parks.

Freehold lands adjoining these reserves provide potentially significant supplementary and buffer habitats and may be important corridor links (see Byron Biodiversity Conservation Strategy 2004).

habitat is used for foraging. In north Qld the Red-legged Pademelon forages extensively at forest edges and also ventures into adjacent open grassy areas whereas in north-east NSW it appears more restricted to the forest itself (Johnson and Vernes 1995).

Within Byron Shire the Red-legged Pademelon appears to be restricted to the larger tracts of sub-tropical rainforest associated with the hinterland foothills and ranges. The lowland rainforests of the Big Scrub would once have been prime habitat for this species. The fragmented Big Scrub remnants of the Byron Shire do not appear to support this species, however southern Big Scrub reserves at Victoria Park and Davis Scrub Nature Reserve on the Alstonville Plateau are known to contain remnant populations.

There is a recent road kill record from Wilsons Creek (200m west of Pioneer Bridge). Vegetation is mixed regrowth rainforest dominated by Camphor Laurel, Sally Wattle and Lantana, together with a wide diversity of scattered rainforest trees. The animal was found dead with a Black Apple fruit (*Poutena australis*) still in its mouth, and a large number of fallen and eaten fruit nearby. The parent tree was only a few metres off the road edge.

Home Range, Shelter and Movements

In north Qld, individuals have home ranges of one to four hectares, often divided into nocturnal foraging areas and diurnal shelter areas (Johnson and Vernes 2008). Home ranges may be larger within north-east NSW where food resources may be more dispersed in forest habitats. Home range is also likely to vary with habitat quality.

In north-east NSW the Red-legged Pademelon rarely ventures from the cover and refuge provided by its wet forest habitat. It is largely nocturnal, sleeping by day within the refuge of dense cover, often backed against a rock or tree (Johnson and Vernes 1995).

In northern Qld the Red-legged Pademelon forages up to 70 m from the forest edge (Vernes et al. 1995), indicating an ability to move some distance during day to day activities. In north-east NSW the species appears more reluctant to leave the forest but it is likely that individuals would move in the order of hundreds of metres during foraging activities. Little is known of this species' dispersal abilities or patterns but it is highly likely that forested linking corridors would facilitate natal dispersal. Within Byron Shire forested corridors such as those linking reserves across the upper Coopers Creek and Wilsons River valleys are likely to be important for this purpose.

Diet

The diet of the Red-legged Pademelon includes the leaves and fallen fruits of rainforest plants as well as grasses growing at the forest edge (Vernes 1994). This species also feeds opportunistically upon forest fungi and ferns (Jarman et al. 1987; Vernes 1994). Individuals may begin to forage in the late afternoon and continue until early morning. They leave their dense shelter habitats and follow established routes through the forest

Figure 3: Typical Red-legged Pademelon habitat (subtropical rainforest)

photo: Aila Keto



to current feeding areas (Vernes et al. 1995). They are normally solitary, although may feed with one to three others at a prolific resource such as beneath a fruiting Moreton Bay Fig *Ficus macrophylla*.

Threats

Loss and fragmentation of habitat

The Red-legged Pademelon has experienced a significant contraction in range due to extensive clearing of its preferred habitat (Johnson and Vernes 1995). This contraction is particularly evident in north-east NSW, and specifically within Byron Shire, where favoured lowland rainforest habitats have been extensively cleared and fragmented.

Indiscriminate burning

The Red-legged Pademelon is placed at risk of further habitat loss and population decline where inappropriate burning and grazing is carried out. Frequent fuel reduction burning, or burning to promote the growth of grasses for stock grazing, along the margins of rainforest and wet or moist forests simplifies the understorey, permanently changing the character of the understorey vegetation to favour grasses at the expense of shrubs. This leads to a loss of required shelter and habitat causing increased predation by foxes and cats.

Feral predators

The Red-legged Pademelon is part of a group of small to medium-sized ground mammals referred to as the Critical Weight Range (CWR) species (Burbidge and McKenzie 1989). As a group, CWR species are considered threatened by the impacts of feral predators including foxes and cats. CWR species have experienced dramatic declines in status since European settlement in Australia and are now amongst those most in need of targeted conservation measures.

Stock grazing

Grazing by stock has been implicated as an activity that degrades habitat for this species by opening up the understorey, directly threatening pademelons by trampling and removing protective habitat cover and improving access for predators. Indirect impacts of stock grazing include the replacement of native ground covers with pasture grasses and the long term simplification of ground layer habitats.

Breeding

Red-legged Pademelons are generally solitary except when mating or when females have young at foot. They appear to breed at any time of the year. The single young leaves the pouch after approximately 26 weeks but remains 'at foot' with the mother for approximately 66 days until weaned (Johnson and Vernes 2008) .

Logging

Logging of wet hardwood forests supporting dense rainforest understoreys and potentially inhabited by Red-legged Pademelon populations continues. Logging can lead to the direct loss and fragmentation of habitat as well as providing access for feral predators.

Roads & Utility easements

The construction of roads and powerlines into coastal and forest habitats results in the loss and fragmentation of habitats for this species as well as providing access for feral predators.

Management Actions for Byron Shire

- Identify and prioritise key Red-legged Pademelon habitats within Byron Shire to provide a focus for site specific management actions.
- Protect all known Red-legged Pademelon habitat and the best predicted habitat from clearing, disturbance and isolation.
- Ensure that Byron Shire Council adopts best practice procedures for Council activities such as infrastructure development, weed control, control burning and bush regeneration within and adjoining Red-legged Pademelon habitat.
- Encourage owners of lands supporting known and potential Red-legged Pademelon habitat to maximise the protection and enhancement of those habitats.
 - I. Highlight the impacts of habitat loss and fragmentation, stock grazing and frequent fires.
 - II. Ensure that affected land owners are aware of funding sources and mechanisms available to support habitat protection and enhancement.
 - III. Remove stock grazing from areas of known Red-legged Pademelon habitat and wherever possible, from the best predicted habitat and connecting corridor habitat within the upper Coopers Creek, upper Wilsons River and upper Brunswick River valleys.
- Target the control of foxes and cats to known key sites for threatened terrestrial fauna including the Red-legged Pademelon.
- Protect known and potential habitat during hazard reduction burning activities. Restrictions on burning in broad areas where this species exists, or where it may recolonize, will be a significant determinant of future persistence and recovery. Ensure that the Rural Fire Service (RFS) is aware of the presence of known and potential Red-legged Pademelon habitat within the shire and encourage the RFS to adopt a conservative approach to hazard burning activities in the vicinity of known and potential habitats.
- Encourage and support Landcare and Dunecare groups, bush regeneration teams habitat restoration programs, particularly within rainforest habitats. Restoration programs within areas of known and potential Red-legged Pademelon habitat should be undertaken in light of this species' habitat requirements.
- Wherever possible avoid the construction of new public utilities (roads, powerlines) within known or potential Red-legged Pademelon habitat. Public roads that are no longer required should be revegetated, either naturally or by replanting.
- Encourage local research institutions or government to monitor Red-legged Pademelon populations at key sites and promote surveys within potential habitats.
- Ensure that adequate survey is undertaken for this species wherever development is proposed within or adjacent to known or potential Red-legged Pademelon habitat. DEC's survey and assessment guidelines outline adequate survey levels for this species (DEC November 2004).
- Encourage research into the ecology of the Red-legged Pademelon. Key areas of research include: population dynamics, home range and movements, population viability.
- Report all confirmed Red-legged Pademelon sightings to the Ecologist at Byron Shire Council. Records should include date and location (grid reference).

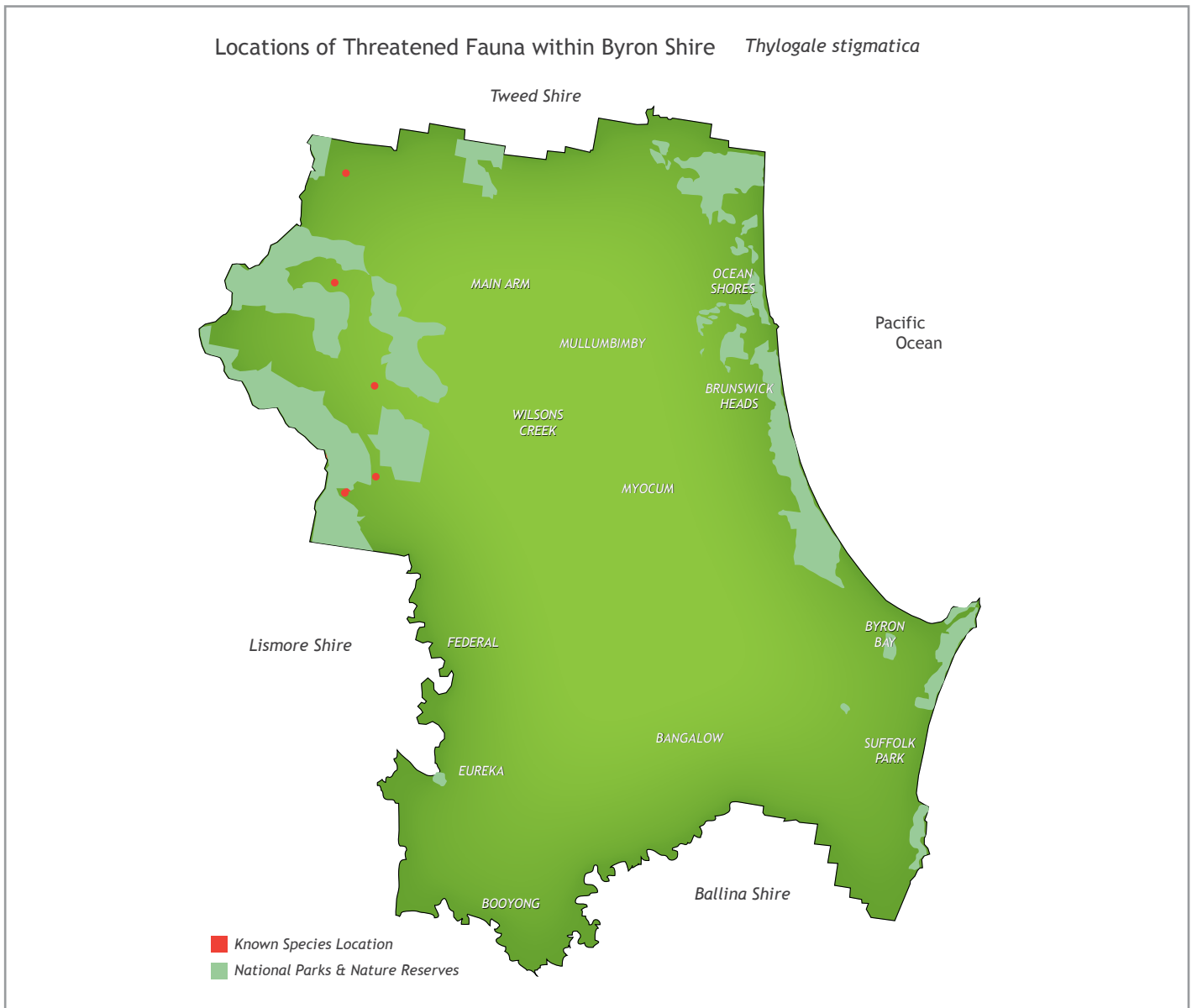


Figure 3: Distribution of Red-legged Pademelon *Thylogale stigmatica* in Byron Shire

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