

Common Planigale

Planigale maculata
Family Dasyuridae

Other names:

Coastal Planigale
Pygmy Marsupial Mouse

Conservation Status:

The Common Planigale is listed as Vulnerable on the NSW *Threatened Species Conservation Act 1995 (TSC Act)*.



Figure 1: Common Planigale (*Planigale maculata*)

photo: David Milledge

Distribution, Abundance & Population Trends

Last updated January 2010

National and State

The Common Planigale is distributed around Arnhem Land and along Australia's eastern seaboard from Cape York to the central coast of NSW and further south to Gosford, north of Sydney (Burnett, 2008). This species is sporadically recorded further west in a range of habitats of the hinterland foothills and ranges (e.g. Tooloom, Koreelah, Richmond, Snowy, Bushmans, Chichester ranges, Bulga Plateau). Andrew and Settle (1982) suggested this species' distribution could be broadly confined to the 1000mm rainfall isohyet. This observation remains plausible today with the majority of confirmed records coming from coastal areas located to the east of the 1000mm isohyet¹.

It is most frequently recorded on the warm, low elevation coastal plains and large river valleys, locations that are favoured for human habitation, development and agriculture. In these areas, habitat has been severely reduced and fragmented and it is likely that many sub-populations are now functionally isolated and highly susceptible to on-going threatening processes. The NSW Scientific Committee's reasons for listing this species were as follows:

- Its population and distribution are suspected to be reduced
- It faces moderate threatening processes
- It depends upon specific habitats (ecological specialist)

Local

The catchments of the Richmond and Tweed rivers are a regional stronghold for the Common Planigale and Byron Shire is a focal part of that broader area. Within the Shire, existing records indicate Tyagarah Nature Reserve and adjacent areas support a very important local population of this species. Known and likely habitat is also reserved within Billinudgel, Marshalls Creek, Brunswick Heads, Tyagarah and Broken Head Nature Reserves as well as Arakwal National Park. Inner Pocket Nature Reserve, Whian Whian State Conservation Area and Mount Jerusalem, Nightcap and Goonengerry National Parks support supplementary hinterland habitats.

Freehold lands of the shire also support important Common Planigale habitats. In particular, the lower Brunswick Valley, Tyagarah, Belongil - Skinners Shoot - Cumbebin Swamp, Suffolk Park - Coopers Shoot and Newrybar areas include important habitats in their own right but also form parts of habitat corridor links for this species (Figure 3). Other corridors, mapped as part of the Byron Biodiversity Conservation Strategy (2004), are also considered important for this species including coastal corridors and others that link coastal and hinterland habitats.

¹ A line drawn through geographical points which connects points of equal rainfall intensity.

Ecology

Habitat

The Common Planigale occupies a range of habitats including rainforests, sclerophyll forests, savanna woodlands, heathlands, sedgeland, grasslands and rocky areas (Denny 1982). Broadly speaking, habitat selection appears primarily dependent upon the availability of ground cover, presumably for protection from predators (Andrew and Settle 1982)(Figure 2).

Within Byron Shire, native vegetation on sandy soils of the coastal plain constitute core habitat particularly swamp forests, Banksia woodlands, Wallum heaths and dry and moist open forests (Milledge 1991; Miller, 1998). The species is also known to extend to the hinterland habitats of the Shire's lowlands and foothills where it inhabits sub-tropical and dry rainforests as well as dry and moist open forests.

Home Range, Shelter and Movements

Little is known of the home range of the Common Planigale in NSW. Common Planigales are largely nocturnal and shelter by day within hollow logs, rocky crevices, under rocks or fallen bark (Burnett, 2008; Andrew and Settle 1982) or under human debris such as sheet iron or railway sleepers (Burnett, 2008). A local study in Byron Shire found that higher than average leaf litter cover and logs were important habitat variables for Common Planigales (Miller, 1998).

Little is known of this species' movement capabilities (Burnett, 2008) but other planigale species are known to move considerable distances in response to flood events or in search of mates (Read 1982). It is hypothesized that the more predictable habitat of the Common Planigale in north-east NSW may mean that the species is more sedentary (Andrew and Settle 1982) but that remains to be clarified. It is highly likely that vegetated linking corridors, preferably supporting adequate ground covers of grasses or shrubs will facilitate this species' movement and dispersal. Corridors linking along the coast and between coastal and hinterland habitats have been mapped across Byron Shire as part of the Byron Biodiversity Conservation Strategy (2004).

Diet

The Common Planigale is largely nocturnal and actively hunts for insects and other surface-dwelling invertebrates (Andrew and Settle 1982) and is known to consume moths, phasmids, grasshoppers and spiders in captivity (Burnett, 2008). Local observations record it eating one grub, one skink and two beetles in half-an-hour (Miller, 1998). Individuals held in captivity or caught within pit-fall buckets have been known to kill and eat small vertebrates including skinks and frogs (Denny 1982, D. Scotts personal observations).

Figure 2: An example of Common Planigale habitat

photo: Wendy Neilan



Breeding

In contrast to many other small dasyurids, it appears that the planigales have two or more oestral cycles each breeding season (Denny 1982), and are able to have two or more litters a year (Menkhorst & Knight, 2004) during spring and summer in eastern Australia

(Burnett, 2008). The female constructs a nest of grass or Eucalyptus leaves beneath bark or in hollow logs and four to twelve young are born approximately 20 days after mating.

Threats

Loss and fragmentation of habitat

Land clearing has been and remains a significant threat to this species throughout its range (NSW DECC 2008). Coastal and near-coastal land is under continuing development pressure within Byron Shire and often leads to direct habitat loss and the fragmentation of remnant habitats. This reduces the viability of sub-populations, particularly if they become functionally isolated.

(*Banksia integrifolia*) (Dodkin and Gilmore 1985). The Common Planigale is however known to inhabit dunal areas with relatively heavy bitou bush infestations (D. Scotts personal observations), a fact that should be considered when planning broad scale weed removal and restoration activities.

Feral & Domestic predators

Cats and cane toads are known to prey upon planigales (Archer 1976, Covacevich and Archer 1975, Seabrook 1993, Denny 1982). The red fox is also a potential predator. Feral predators are advantaged by activities such as vegetation clearing, fragmentation and general habitat disturbance. Many Common Planigales are killed by domestic cats and dogs (Burnett, 2008)

Road & 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.

Logging

Logging of open forests supporting dense understorey results in the loss and fragmentation of Common Planigale habitat.

Stock grazing

Grazing by stock has been implicated as an activity that degrades habitat for this species by opening up the understorey, directly threatening planigales 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.

Indiscriminate burning and wildfire

Regular burning or severe bushfires within the limited coastal habitats occupied by this species has the potential to degrade its habitat and remove its food supply from impacted areas. Coastal reserves supporting important foraging and roosting habitats are prone to fire, often resulting from arsonist or hazard reduction burns.

Habitat degradation by weed infestation

Weed infestation (e.g. bitou bush) is a threat as it suppresses the regrowth of native dunal vegetation such as coast wattle (*Acacia sophorae*) and coast banksia

Management Recommendations for Byron Shire

- Long term conservation of the Common Planigale within Byron Shire will be enhanced through the consideration and protection of known and predicted habitat within the framework of the Byron Biodiversity Conservation Strategy (2004).
 - I. Investigate the extent to which known and potential Common Planigale habitats are protected by the Strategy, paying particular attention to the maintenance and enhancement of landscape connectivity across the Shire.
 - II. Protect and enhance local habitat corridors linking known and potential Common Planigale habitats to similar patches of native vegetation.
- Encourage owners of lands supporting known and potential Common Planigale 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. Exclude stock from remnant native vegetation on sand dunes, sand plains and flood plains.
 - IV. Encourage the maintenance and restoration of adequate ground cover in areas of potential habitat, especially near water.
- Protect known Common Planigale habitat and all native vegetation comprising potential habitat on coastal sand dunes and flood plains from clearing or development.
- 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 Common Planigale habitat.
- Manage weed infestations within known and potential Common Planigale habitats.
- Ensure appropriate fire hazard burning is in place at areas of known Common Planigale habitat.
- Encourage and support Landcare and Dunecare groups, bush regeneration teams and coastal habitat restoration programs, particularly within coastal woodland, heath, sedgeland and swamp forest habitats.
- Target the control of foxes, cats and cane toads to known key sites for threatened terrestrial fauna including the Common Planigale.
- Wherever possible avoid the construction of new public utilities (roads, powerlines) within known or potential planigale habitat, especially on sand dunes, sand plains and flood plains. Public roads that are no longer required should be revegetated, either naturally or by replanting.
- Map potential habitat across the Byron Shire. This could be accomplished as part of a systematic program of regional predictive modeling (e.g. by DECCW) or undertaken by Byron Shire through a targeted project. Confirmed records of the Common Planigale should be compiled and used to predict the species' habitat elsewhere.
- Ensure that adequate surveying is undertaken for this species wherever development is proposed within or adjacent to known or potential Common Planigale habitat (see NSW DEC, 2004).
- Encourage research into the ecology of the Common Planigale. Key areas of research include: population dynamics, home range and movements, population viability.
- Report all confirmed Common Planigale sightings to the Ecologist at Byron Shire Council. Records should include date, habitat and location (grid reference) and photograph if possible.

Locations of Threatened Fauna within Byron Shire *Planigale Maculata*

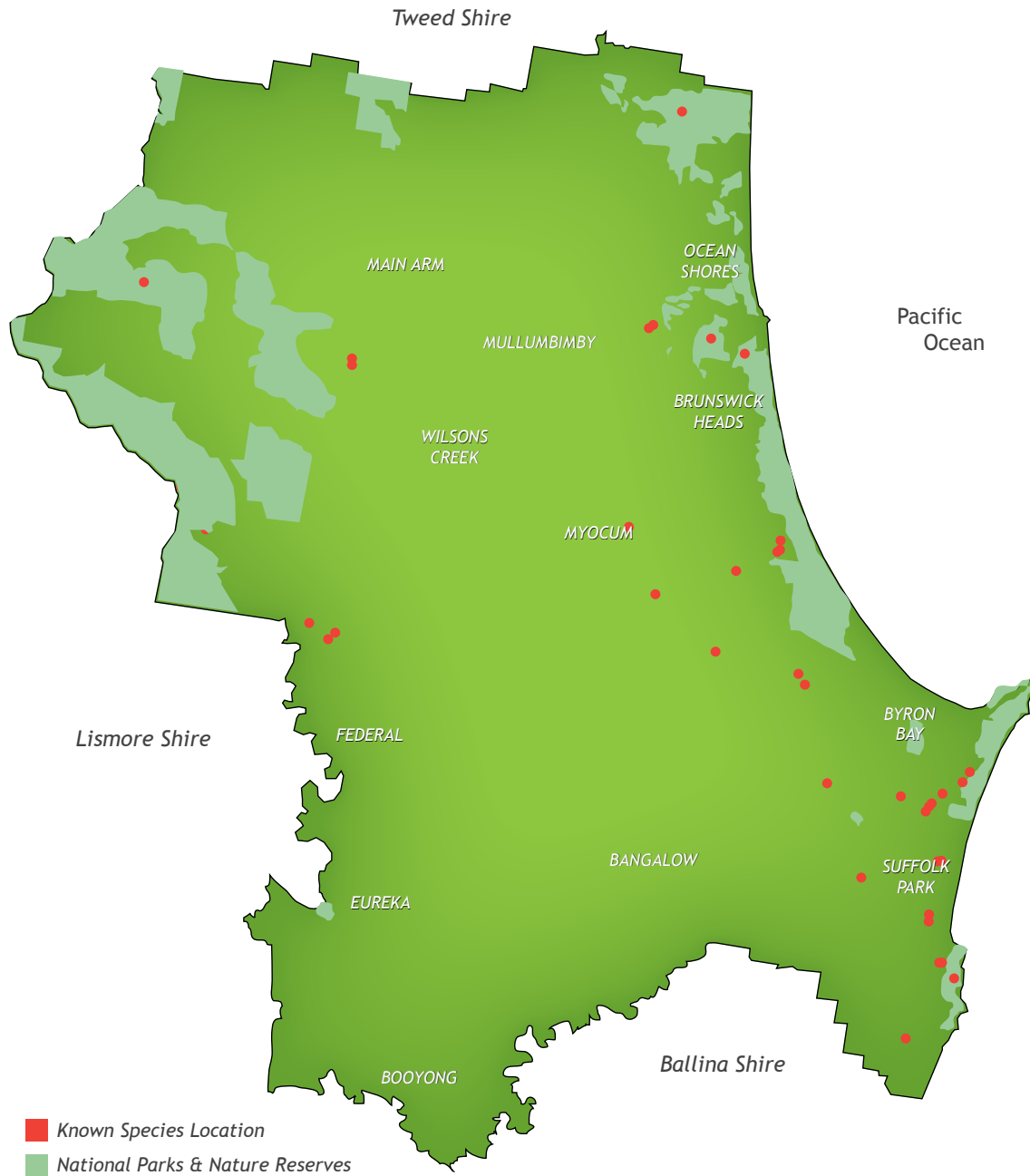


Figure 3: Distribution of Common Planigale *Planigale maculata* in Byron Shire

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