

**THE IMPORTANCE
OF SMALL RESERVES**



Throughout the 1980s there was considerable debate by conservation biologists about whether it's better for birds to have single large or several small, conservation reserves. It's now recognised that although large reserves are more desirable, small reserves are also very important. However, to keep small reserves viable and maintain species diversity, it's important to protect and/or restore connections in the landscape.

Bird populations need additional individuals each year (either through birth, maturation or immigration) to survive, especially in small reserves. Most immature birds disperse from their natal (i.e. birth) territory so they need habitat corridors to move through the landscape. Ideally, patches of vegetation are linked by corridors of at least 50 metres wide, with gaps of no more than 100 metres. If reserves become too isolated, dispersal from birth sites to new habitats is risky.

Tasmania's reserves vary greatly in size. The 40 hectare wet forest reserve at French's Rd near Wynyard, the 2.6 hectare eucalypt remnant at Reid St Reserve in Ulverstone and the 70 hectare grassy eucalypt forest at Brushy Rivulet near Westbury are all crucial to the survival of many different species.

These reserves with young and old eucalypts of various species, trees such as blackwoods, wattles, native cherries, prickly box and dogwood, patches of dense understorey and lots of logs and stumps support breeding populations of a wide range of different bird species. This is because different species require different things to fulfil all their needs. They need safe nesting places; nest-building material like grass, rootlets, moss, twiglets and spiders' web; and they need dense vegetation where they can shelter from inclement weather and hide from predators.

Most birds are particular about where



Yellow-throated Honeyeaters nest close to the ground but often search for insects and spiders high on the branches and trunks of eucalypts.



Dusky Robins watch the ground for insects and spiders while perched on stumps, limbs or trunks.

they build their nests and where they feed. Yellow-throated Honeyeaters nest close to the ground, but search for invertebrates (insects and spiders) on the trunks and branches of eucalypts. Golden Whistlers and Grey Fantails nest in mid-storey vegetation but have different methods of capturing their prey: Golden Whistlers snatch invertebrates from foliage whereas Grey Fantails take tiny insects from the air. Robins build their cup-shaped nests in tree forks, rock ledges, fallen trees and stream banks, and characteristically watch the ground for prey while perched on limbs, trunks or stumps.



Case moths are among the numerous insects that feed on the flowers and foliage of prickly box (*Bursaria spinosa*).



Bright copper butterflies (*Paralucia aurifera*) lay their eggs on prickly box and regularly feed on the flowers



Green and gold frogs (*Lymnodynastes raniformis*) are now listed as 'vulnerable'.



Fungi such as this *Hypholoma brunneum* help to break down logs, stumps and leaf litter.

Reserves also provide important habitat for plants, mammals, reptiles, frogs, invertebrates, fungi, lichens and slime moulds, all of which play crucial roles in the ecosystem.

Approximately 95% of the world's fauna are invertebrates—insects, spiders, earthworms, snails, millipedes, centipedes and springtails (collembola). Their incredible abundance means they dominate the functions and processes of almost every terrestrial habitat on Earth.

Species that live in the ground such as millipedes and earthworms help to maintain

soil structure; bees, flies and butterflies are important for pollination; chewing insects like beetles help to break down organic material; spiders and predatory and parasitic insects help to control populations of other animals.

Invertebrates, in turn, are important food for many other species including birds, mammals and each other.

Fungi proliferate in reserves and are particularly conspicuous in autumn and winter when their colourful fruiting bodies appear. Fungi have ecologically important roles: approximately 90% of plant species



Spiders control insect populations and their sticky silk is used by birds to bind nesting material and cement nests in place.



Short-beaked echidnas—along with bettongs and bandicoots—dig the ground while searching for prey. This helps to aerate and enrich the soil.

have a symbiotic partnership with fungi. There is an exchange of nutrients in the root zone that contributes to the health of native plants. This is especially important in Australia's nutrient deficient soils.

Fungi are also important for breaking down dead organic material. This helps to recycle nutrients and make them available to plants and other organisms.

Marsupials such as bettongs, bandicoots, and echidnas dig the ground when searching for invertebrates and fungi. Their actions help to enrich the soil by incorporating the surface layer of decaying leaves and other organic material into the subsoil.

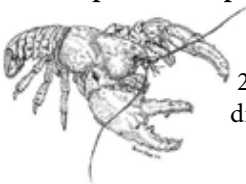
Some of the larger reserves, especially those with old growth trees with hollows such as Brushy Rivulet Reserve, also support rare and endangered species at the top of the food chain including Tasmanian Devils, Spotted-tailed Quolls, Tasmanian Wedge-tailed Eagles, Grey Goshawks or Tasmanian Masked Owls.



The Tasmanian Masked Owl has a large permanent home range of around 2000 hectares.

These predatory animals are extremely important because they control populations of introduced rats, mice, rabbits and starlings whose numbers can reach plague proportions. Predators remove old, injured, sick, or very young animals so they help to keep populations healthy.

All reserves—private and public—are crucial to the maintenance of biodiversity.



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