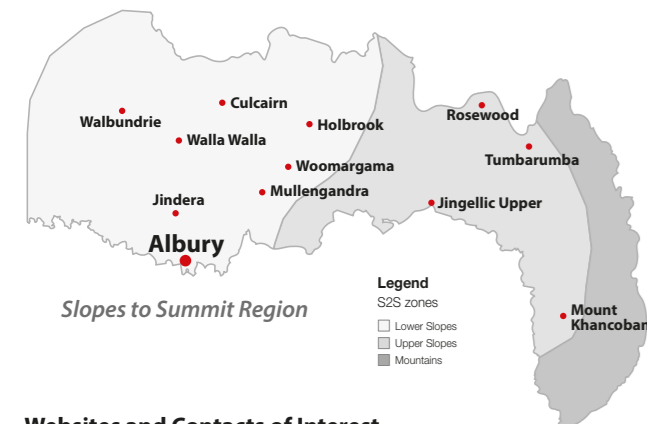


Terrestrial Mammals of the Southwest Slopes & Upper Murray Region of NSW

Slopes to Summit

Slopes to Summit (S2S) is governed by a Working Group of organisations, including Nature Conservation Trust of NSW, Charles Sturt University, Holbrook Landcare Network, Murray Local Land Services, CSIRO, Australian National University, Parklands Albury Wodonga, Albury Conservation Company, and the NSW Office of Environment and Heritage. The group has a vested interest in the management and protection of biodiversity in the Eastern Murray region of NSW, and potential effects of climate change. The S2S region extends from the mountains of Kosciuszko National Park in the east to the fragmented agricultural landscapes of the South West Slopes including the Murray River and Billabong Creek catchments. The area includes box-gum woodlands, riverine forests and floodplains, and wet and dry sclerophyll forests.

S2S is one of the regional partnerships under the Great Eastern Ranges (GER) initiative that are working together to improve habitat and connectivity. Over 64% of NSW's listed threatened species exist within the GER area. Our local biodiversity, which includes an abundance of fungi, plants and animals, is under enormous stress resulting from widespread clearance, fragmentation of habitat and climate change. Connectivity conservation is about ensuring we enable a range of a species to move between habitats and therefore maintain healthy and resilient populations.



Websites and Contacts of Interest

GER/S2S www.greasterranges.org.au
 Murray Local Land Services www.murray.lls.nsw.gov.au 1300 795 299
 Holbrook Landcare Network www.holbrooklandcare.org.au 02 60363181
 Atlas of Living Australia www.ala.gov.au
 NSW Office of Environment & Heritage www.environment.nsw.gov.au

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Terrestrial Mammals

of the southwest slopes & Upper Murray Region of NSW

An identification and habitat management guide



Terrestrial Mammals of the Southwest Slopes & Upper Murray Region of NSW

Dasyurids

Dasyurids are a family of carnivorous marsupials spread across Australia and New Guinea. Dasyurids are characterised by their biting and cutting teeth, and their relatively short life span.



Brush-tailed Phascogale *Phascogale tapoatafa* KS

The Phascogale has a characteristic, black, bushy bottlebrush shaped tail. Its fur is grey above and pale cream below. It has large black eyes and naked ears. Adults have a head and body length of about 20 cm and a tail the same length. Most males die after their first breeding season from stress-induced illness.

Known from the upper slopes and mountains. Unconfirmed reports in the Upper Murray area.



Spotted-tailed Quoll or Tiger Quoll

Dasyurus maculatus KS

Legend: Lower Slopes (light grey), Upper Slopes (medium grey), Mountains (dark grey)

A quoll is about the size of a domestic cat, but has shorter legs and a pointed face. Its dark-brown fur and irregular white spots are quite unique and make it easy to identify. Their young are called joeys. They will eat birds and medium-sized mammals, such as possums and bandicoots, where opportunity exists.

Known from the upper slopes and mountains. Unconfirmed sightings recorded from Woomargama National Park.



Quoll Scat. SN

Dasyurids



Agile Antechinus *Antechinus agilis* GL

The Agile antechinus has plain grey/brown fur above and pale fur below. It has a hairy thin tail. They mate during a two week period in August, after which the males die of exhaustion. Six to eight young are born after a one month gestation. The female has a small pouch, and as the young get bigger they are dragged along the ground attached to her nipples.

Known from the upper slopes.



Yellow-footed Antechinus *Antechinus flavipes* VD

The Yellow-footed Antechinus differs from the Agile Antechinus in that it has a distinct grey head and shoulders contrasting with yellowish-brown to reddish-orange body, with broad feet of buff to yellow brown colour.

Known from the upper slopes and lower slopes below 500 m elevation.



Typical slopes landscape. KD

Possums and Gliders

Gliders have a gliding membrane, while possums do not. Their young are called joeys.



Sugar Glider

Petaurus breviceps PG

The Sugar Glider is pale grey with a white belly with black markings. It has a gliding membrane stretching from its fifth finger to the back ankle. Body length is around 30 cm including tail. It commonly gives birth to twins, which remain in the pouch for just over two months.

Known from the upper slopes and mountains. Dependent on tree hollows for nests.



Squirrel Glider

Petaurus norfolcensis PM

Squirrel Gliders have a head and body length of about 20 cm. They have blue-grey to brown-grey fur above, white on the belly. A dark stripe runs from between the eyes to the mid-back and the tail is bushy with a black tip.

Squirrel Gliders are up to twice the size of Sugar Gliders, and their facial markings are more distinct. They can glide about 50 m between trees.

Known from the lower slopes.



Yellow-bellied Glider

Petaurus australis JW

The Yellow-bellied Glider is large, active, sociable and vocal. It has a large gliding membrane that extends from wrist to ankle. It is grey on its back and creamy to orange underneath, larger than the Sugar Glider and has a longer fluffy tail. It extracts sap by biting into the trunks and branches of trees, often leaving a distinctive V-shaped scar.

Known from the upper slopes and mountains. An endangered population is present on the Bago Plateau.



Typical scars left by Yellow Bellied Glider extracting sap. JP



Ringtail Possum in a tree nest. PG

Possums and Gliders



Feathertail Glider

Acrobates pygmaeus PG

The Feathertail is the smallest gliding marsupial in the world. This glider is the size of a mouse with grey/brown back and white belly. Head and body length is 8 cm. The tail is about the same. It has a distinctive and unique flattened tail that looks like a feather. It can glide up to 25 m using its tail as a rudder.

Known from the lower and upper slopes where there is a diversity of tree and shrub species for year round nectar supply.



Greater Glider

Petauroides volans PG

The largest glider in the region; it is dark grey or mottled cream and grey above, with a whitish underside. Its tail is long and furry and its snout is short and ears large. It can glide for up to 100 m. At the end of its glide it moves to a vertical position to slow down before it lands with all four feet hitting the tree. It rarely comes down to ground level.

Known from the upper slopes and mountains especially moist tall Eucalypt forests. Feeds almost exclusively on Eucalypt leaves.



Common Ringtail Possum

Pseudocheirus peregrinus PG

The Ringtail is about the size of a cat, with a long white-tipped prehensile tail, which can be used for gripping. Its fur is grey-brown with a white underbelly. It has two thumbs on each front foot to help with climbing and is one of only a few marsupials able to feed on eucalypt leaves. This is the only possum species where the male helps care for the young and carries them on his back.

Known across the Slopes to Summit region, it relies on corridors to move around as it rarely comes to the ground.



Common Brushtail Possum

Trichosurus vulpecula PG

The Brushtail is a large possum with a bushy tail with a prehensile tip and a hairless patch on the underside, which helps it grasp tree branches. It has pointed ears and is grey with a black band across the snout, and white to brownish-yellow belly. Its forefeet have sharp claws and the hindfeet each have an opposable, clawless toe that have good grips.

Known across the Slopes to Summit region. It has a diverse diet, including insects, flowers and even eggs.



Monotremes and other Marsupials

Monotremes and other Marsupials

Eutherians (Placental Mammals)

Macropods

Connectivity and Habitat

Link existing vegetation sites, especially if the patches are less than one km apart

- Wider vegetation corridors are better, but different species have different requirements
- For most (mobile) species aim for stepping stones across the property that are less than 100 m apart. The stepping stones may be existing tree patches, paddock trees, rocky outcrops as well as remnant vegetation
- Work with neighbours to connect patches of vegetation in the landscape, find out about incentive programs



Fox with dead glider. PG

Manage the matrix – some farm practices can be sympathetic to our wildlife

- Retain and protect paddock trees, and have a succession plan for them!
- Maintain good ground cover in pasture areas
- Retain areas of native pastures – a diverse pasture base makes for resilience in uncertain climate and can provide habitat and food resources for native species
- Establish stock shelterbelts in strategic places for wildlife movement as well as stock
- Control foxes, pigs and dogs that predate directly on wildlife, and manage domestic animals such as cats, especially at night
- Control rabbits, deer and pigs as they compete for resources and degrade habitat
- Control weeds as they can degrade habitat and replace food and shelter plants used by wildlife

Guide to Symbols

Food Source

Invertebrates: insects, spiders, beetles, snails

Small and/or medium vertebrates: frogs, reptiles, small mammals, eggs

Plant based: fruits, berries, exudates (gum, nectar, sap, pollen, resin), leaves, grasses, herbs, fungi, roots

Habitat

Understorey/mid storey: scrub, hollow logs, rocks, crevices, burrows

Overstorey: nests in hollows or tree forks, moves through tall canopy

Urban gardens and parklands

V – Vulnerable
E – Endangered

One of the great things about living in the South West Slopes and Upper Murray area is being surrounded by nature and sharing the landscape with many unique and interesting plants and animals. Our region hosts mammals that are often not found anywhere else in the state.

There are significant vegetation corridors in the upper slopes, but in lowland areas the native vegetation is often degraded and isolated from other patches with many understorey and mid storey species missing. Habitat fragmentation occurs when areas of continuous habitat are reduced to a set of smaller remnants surrounded by a relatively uniform matrix of crop fields and/or cleared pasture. This process often results in the creation of numerous small and isolated populations that are highly vulnerable to diseases, catastrophic events, inbreeding and activities such as clearing of fallen timber and scrub, increased grazing pressure, land use change and pests and weeds.

Habitat corridors are the primary tool we use to achieve functional connectivity in fragmented landscapes. Functional connectivity describes the degree to which the landscape facilitates or impedes the movement of individuals between patches.

Fortunately, there has been significant investment by both public and private land managers in our region to conserve, enhance and establish vegetation. This helps to improve functional connectivity and habitat diversity, which also benefits land managers through the additional ecosystem services provided by vegetation such as shade, shelter, impact on water retention and quality, erosion control and pollination. Farmers in our region care about their stewardship of the land and want to leave their farms in better condition than they found it. We are lucky to have active landcare, community and producer groups that collaborate to support healthy, diverse and functioning landscapes.



A revegetation site connecting isolated remnant fragments. SD

To help conserve terrestrial mammals in our region you can:

Be aware of what is living in your backyard

- Be aware of what wildlife is in your area – check out online tools such as ala.org.au, bionet.gov.au and australianmuseum.net.au
- Record sightings to the ALA to improve our knowledge
- Participate in local surveys and monitoring events
- Join a local community Landcare or environment group
- Be a responsible pet owner

Look after and enhance existing vegetation

- Manage stock grazing pressure – consider a fence! Consider excluding grazing for block periods if the site is in good condition. If grazing, avoid Nov to Jan when natives set seed, and crash graze for short periods very early Spring to control annuals and late Autumn to avoid seed set
- Make patches bigger with planted vegetation or fenced buffers for regeneration
- Replace missing vegetation layers – plant understorey shrubs, grasses and forbs
- Leave dead, standing and fallen timber or move it into vegetation areas rather than burning it
- Consider adding habitat resources such as ground timber or nestboxes if hollows are lacking – even sheets of corrugated iron can provide a home for lizards and skinks!
- Diversity of habitats is the key!

Eastern Grey Kangaroo

Macropus giganteus PG ■ ■ ■

The Eastern Grey Kangaroo is easy to recognise with its soft grey coat and pale belly. An adult male can be heavily muscled and around 2 m tall, weighing 50 to 66 kg, with females around 17 to 40 kg. Their hind feet are large and powerful and their long muscular tail is used for balance when hopping.

The Eastern Grey Kangaroo is the second largest and heaviest living marsupial in Australia. Once born, the joey will stay in its mum's pouch for up to eight months.

Eastern Greys are found across the Slopes to Summit region.



Red-necked Wallaby

Macropus rufogriseus DC ■ ■

A smaller macropod, their fur is grey with reddish hairs seen on their shoulders and upper back with a white or pale grey abdomen. The Red-necked Wallaby can also be distinguished from other wallabies by its white cheek markings and a weak face stripe. Their muzzle, paws and toes are black in colour. They are solitary, not forming groups. The pouch life for a Red-necked Wallaby joey is about nine months, with the joey continuing to suckle for up to 12-15 months of age.

Found in the upper slopes such as Woomargama National Park, preferring areas of dense vegetation.



Swamp (or Black) Wallaby *Wallabia bicolor* SB ■ ■

The Swamp Wallaby is a small solid marsupial that is very dark in colour with a reddish orange/yellow belly. It has a dark, almost black face. The fur is coarse. Its tail is long and held straight out behind the body when hopping and the wallaby keeps its head low to the ground. They are active feeders during the day, but are shy and solitary.

Like many macropods, females can suckle two joeys of different ages. The pouch life of each joey is eight to nine months, although they may continue to suckle until 15 months of age.

Found right across the Slopes to Summit region preferring areas of dense vegetation.

Eutherians all bear live young, which are nourished before birth in the mother's uterus through a specialized embryonic organ attached to the uterus wall, the placenta.

Bush Rat

Rattus fuscipes

GW ■ ■ ■

Bush rats are shy creatures, generally just moving about at night. Their body fur is grey-brown to red-brown with pale grey underneath. Their feet are pink-white, tails are pink-brown and slightly shorter than length of head and body. Young are called pups.

Known from the upper slopes where there is dense groundcover.



Grey-headed Flying Fox

Pteropus poliocephalus

SR ■ ■ ■ ■ ■ V

The Grey-headed Flying Fox is one of the largest bats in the world. Its body fur is typically medium to dark grey, with many light-tipped hairs. The fur on the head is also grey, but varies from near black to silver. An orange or russet-coloured collar encircles the neck. Leg fur extends to the ankle. Young are called pups.

Known from the lower and upper slopes.



Micro Bats

Small nocturnal bats found across the Slopes to Summit region. They use echolocation to find their prey and are mostly insectivorous. They roost in tree hollows, caves, crevices in bark, rocks and often in houses. Important insect predators in our agricultural landscape.

Some common species include the Little Forest Bat which is one of the smallest and most abundant bat in the region. Its fur is pale grey/brown and adults usually weigh between 2.5 and 5 g with a body length of up to 5 cm. Females are slightly larger than males, and their wing span can be up to 15 cm. Up to 50 bats can roost together in a colony.

They are agile fliers, usually eating their prey as they fly. They have only one young per year and carry it with them until they are too big. Young are called pups.

Another example is the White-striped Freetail Bat. It is one of a few microbats whose calls are audible to humans.

Known across the Slopes to Summit region.



Little Forest Bat

Vespadelus vulturnus

PG ■ ■ ■

Koala

Phascolarctus cinereus JT ■ ■

The iconic Koala's fur is thick, soft and grey, with white underneath. Their ears have long white hairs on the tips. Koalas have large claws for climbing. They sleep for about 75% of the time, becoming active after sunset and they seldom drink water – they get their liquids from the Eucalyptus leaves they eat instead. Koala young are called joeys.

Koalas are found in mature forests, and there are historic records of Koalas from the Upper Murray. There is anecdotal evidence that their range is extending and they may be moving back into the area.



Long-nosed Bandicoot *Perameles nasuta* BT ■ ■ ■ ■

The Long-nosed Bandicoot is about the size of a domestic cat, with pointed ears and a long pointed snout. The fur is greyish brown on the back and creamy underneath. It sits with a hunched posture. The Long-nosed Bandicoot is nocturnal and digs for food making conical holes. It makes a high pitched trumpet sound when disturbed. Young are called joeys

Known from the upper slopes, there is also evidence of their presence in Woomargama National Park.



Nest box at Thurgoona. MLLS



Echidna *Tachyglossus aculeatus* PG ■ ■

A solitary monotreme (egg laying mammal), the Echidna's short quills give it protection as it rolls into a ball when threatened. Males also have a spur on their ankle that is not venomous. It has strong claws for digging and tearing termite and ant mounds apart, and a long tongue with a sticky coating for catching ants. Echidnas have no teeth. The female lays a single soft-shelled egg and keeps it in her pouch until it hatches. The young is called a puggle.

Known across the Slopes to Summit region.



Common Wombat

Vombatus ursinus ST ■ ■

Wombats are stout, sturdy marsupials with sharp claws and stubby, powerful legs that make them great diggers. They are often called the 'bulldozers of the bush'. They grow to about 1.3 m in length, and can weigh up to 40 kg. They have a large, blunt head with small eyes and ears, and a short, muscular neck. The mother's pouch faces backwards, which stops dirt and twigs getting caught in it when the mother digs. A young wombat is called a joey.

Known across the Slopes to Summit region.



Gliders in a nest Box. SM