

KIDS FACTSHEET

Brush-tailed Rock-wallaby (BTRW) *Scientific name: Petrogale penicillator*

The BTRW belongs to the *Macropod* family, which includes kangaroos, wallabies, tree kangaroos, pademelons, potoroos and bettongs. Australian has 15 different species of rock-wallaby = 1/3 of all our macropod species.

Appearance:

The BTRW has a light-coloured cheek stripe and a black stripe over the centre of their forehead. Their upper body is brown, with grey shoulders and a red-tinged rump. Their chest and belly are paler, sometimes with a white blaze. Their paws are dark, as is the outside of their ears. Their fur is long and thick, especially in winter, and particularly about the rump. Their tail ends in a *brush* of coarse dark hair. Males weigh up to 10kg with a maximum body length of 60cm, while females are a little smaller.

Habitat:

The BTRW lives in rocky areas with lots of hiding places to keep them safe from predators. They prefer the north-facing side of escarpment, gorges and boulder-piles, because they can find a sunny ledge in winter and cool caves in summer.

Diet:

The BTRW feeds on a variety of plants including grasses, orchids, bark, fruits, flowers and ferns. They forage along, below and above the cliff, occupying a home range of 5-25ha, depending on the habitat richness, predation pressures and competition for food.

Adaptations and Behaviour:

The BTRW are able to leap up and down near-vertical rocks and trees because they have special gripping *finger prints* on their back feet as well as a long tail for balance and steering. They are most active at dusk and dawn, hiding from predators behind plants and in crevices, straying further from safe refuge areas in the dark to feed.

A population can be made up of one or more *colonies*, living in separate but neighbouring patches of suitable habitat. Colonies of BTRW are then made up of families, with one territorial dominant male and 1-5 mature females, plus sub-adults and joeys. Mothers and daughters tend to remain close and even share territory. Where physically possible, young males move to neighbouring colonies and spread genetic diversity.

Breeding:

Female BTRW can start breeding at 1 ½ years of age and males at 2 years. A single *jellybean-sized* embryo is born after one month and climbs through the mothers' fur to the pouch. Joeys live in the pouch for 6 months, suckling milk. Joeys gradually spend more time playing and feeding out of the pouch, but continue to suckle up to 9 months of age. As with many other macropods, females may *pause* the development of a second embryo until sucking from the previous joey decreases.

Mothers are forced to leave their joeys in small rock crevices, simply because it becomes too tricky to navigate the steep habitat with an *unbalancing* weight in their pouch while they satisfy their extra appetite.

Predators:

When joeys are not tucked safe in their mothers' pouch they are easy prey for feral Foxes and Cats as well as their native predators - Pythons, Wedge Tailed Eagles and Eastern Quolls.

Lifespan:

The BTRW can live for up to ten years.

Why did BTRW become threatened with extinction?

Over a hundred years ago, hundreds of thousands of BTRW lived throughout the Great Dividing Mountain Range, from southern Queensland to Victoria.

During the late 19th & early 20th Centuries most BTRW were shot for sport, fur sales and government bounties.

Then, as the introduced Fox population exploded, the BTRW was pushed towards extinction from the south. Small populations became fragmented, with *islands* of suitable habitat becoming isolated amongst growing areas of cleared farmland. Feral Goats, weeds, drought and fire continue to push BTRW from safe habitat.

Now, this shy and mysterious macropod is *Endangered* with extinction in NSW and Victoria. Many Endangered marsupial Aussie species share the grave threat of *inbreeding*, which results from the small size of remaining

populations and their geographical isolation from each other. When young male BTRW have to move out of their colony, they often die as there are no neighbouring colonies left to join and share their genetics with. Then when the dominant male BTRW dies of old age there are no young males to take their place and breeding stops.

If a small colony of 1 dominant male and 3 breeding females may only produce 3 joeys a year. Unfortunately Foxes and Cats are very good climbers and if a Fox or Cat finds their hiding place and eats the joeys then the colony will soon become extinct as there will be no sub-adults to replace the adults when they die of old age.

Conservation:

Only a few BTRW survive Victoria. Surveys in 1993 located 47 mostly isolated BTRW colonies in NSW. Many of these have since become extinct. The species is extinct across the western slopes and plains of NSW except for the struggling population in Warrumbungle National Park.

A number of the threats to the BTRW are being addressed by the NSW, Victorian and National Recovery Teams. Scientists are studying their breeding biology and genetics to understand the consequences of their small population size, and how best to help. The National Parks and Wildlife Service (NPWS) runs fox control programs to protect BTRW in a number of NSW National Parks and on private property. Since many surviving BTRW and other threatened species are *not* located within National Parks, the involvement of local communities in feral control and habitat protection is vital to biodiversity conservation.

The Friends of the Brush-tailed Rock-wallaby is a not-for-profit community group based in the Shoalhaven that is dedicated to raising funds and public awareness for the conservation of the BTRW.

Science, Research and Monitoring:

BTRW populations are extremely difficult to monitor, not only because they are shy and secretive, but also because their habitats is rugged and steep with lots of hiding places. BTRW *scats* have a unique appearance and surveys for fresh scats have provided information on changes in distribution and habitat use. Old scats have been known, however, to persist in protected rock shelters many years after the extinction of a colony. Recently DNA analysis can indicate the size and relatedness of a colony. This conservation science saved a Shoalhaven colony from extinction in 2007, when it was discovered that only one individual female remained. A mate from a stable wild population was relocated to the site and their breeding has since helped to rebuild this most southerly NSW colony, right here in the Kangaroo Valley area.

A tiny population of BTRW can recover to a level able to sustain low Fox and Cat predation. Captive breeding programs and intensive management are vital to the survival of small isolated populations of many threatened Australian marsupials. Waterfall Springs Wildlife Sanctuary breeds BTRW in natural enclosures to build up resilient populations in priority locations. The Shoalhaven and Warrumbungle populations are a priority for management because they represent the limits of the known range in NSW, are extremely isolated from other populations and protected by long-running and intensive NPWS fox control programs.

Captive breed BTRW are radio-collared, micro-chipped and sampled for DNA and blood analysis prior to release into their new wild colony. They are closely monitored by dedicated NPWS staff and volunteers using radio-tracking equipment and cameras. Each of the 20 adult BTRW of the 3 Shoalhaven colonies is individually recognised by NPWS staff on the monitoring cameras. They all have names and undergo a monthly *roll call*.

While many relocated rock-wallabies settle-in to their new wild home and commence breeding, some individuals meet with stress, health problems and death. Autopsy results guide adjustments to the relocation process, ultimately improving the success rate. The first release of a male BTRW in 2007 saved a Shoalhaven colony from extinction and preserved the genetics of the last surviving female. Release of captive breed BTRW and intensive Fox and Cat Control are the only way we will be able to save the Kangaroo Valley Rock wallabies.

How can I help?

- Go to www.rockwallaby.org.au and symbolically adopt a rock wallaby or become a member of the *Friends of the Brush-tailed Rock-wallaby*
- Keep pet cats inside or in an enclosed cat playground 24/7
- Keep pet dogs on your property 24/7
- Educate yourself and others on *the importance of biodiversity and how to minimise your ecological footprint* and relieve the pressures that are driving so many native species towards extinction
- Become a conservationist or ecologist
- Join a local Landcare or Bushcare Group or a Nature Conservation Group