

Donation to help the endangered brush-tailed rock-wallaby

In 2004 the Wildlife Preservation Society of Australia donated \$1,000 towards the purchase of Green Gully in the Macleay Gorges area for the endangered brush-tailed rock-wallaby.

The Macleay Gorges area, half of which is National Park, harbours 85% of the brush-tailed rock-wallaby population in New South Wales. It is the largest remaining stronghold of this threatened species in the state.

The medium-sized, often colourful and extremely agile rock-wallabies live where rocky, rugged and steep terrain can provide daytime refuge. Suitable habitat is limited and patchy and has led to varying degrees of isolation of colonies and a genetic differentiation with 23 forms of rock-wallabies.

The brush-tailed rock-wallaby (*Petrogale penicillata*) is the only rock-wallaby present in eastern NSW. Their total numbers and range have been drastically reduced since European colonisation and the species is expected to be upgraded from vulnerable to endangered status.

Threats to the brush-tailed rock-wallaby

The ongoing extinction of colonies in recent times is of particular concern. In 1988, at Jenolan Caves for example, a caged population of 80 rock-wallabies was released to boost what was thought to be an abundant local wild population. By 1992 the total population was down to about seven. The survivors were caught and enclosed in a fox and cat-proof enclosure, and the numbers have since begun to increase.

Today scientists consider foxes the major reason for the recent extinctions, since their numbers have risen dramatically since the collapse of the fur trade in the early 1980s.

Other factors that reinforce the process of decline and extinction of local wallaby populations are competing herbivores, especially goats, sheep and rabbits, diseases such as toxoplasmosis and hydatidosis, alteration, fragmentation and destruction of habitat and a lower genetic health due to the increasing isolation of colonies.

Goats compete with the brush-tailed rock-wallaby not only for food but also for shelter. Where goats evict wallabies from their caves they are easily driven into the “territories” of neighbouring wallabies and get attacked. The brush-tailed rock-wallaby is also expected to be susceptible to the introduced diseases toxoplasmosis, carried by cats, and hydatidosis, carried by sheep. Changes in the local vegetation through weed invasion and land degradation have presumably further affected the remaining wallaby populations.

Many of the factors listed above have unknown consequences on the survival of the brush-tailed rock-wallaby in NSW but it is notable that the most important stronghold remains in Green Gully, an area of almost “untouched” prime habitat.

Behaviour

Rock-wallabies are nocturnal and live a fortress existence spending their days in steep, rocky, complex terrain in some kind of shelter (cave, overhang or vegetation) and ranging out into surrounding terrain at night for feed. The greatest activity occurs three hours before and after sunrise and sunset.

Their reliance on refuges leads to the rock-wallabies living in small groups or colonies, with individuals having overlapping home ranges of about 15 hectares each. Within their colonies they seem to be highly territorial with a male's territory overlapping one or a number of female territories. Even at night the wallabies do not move further than two kilometres from their home refuges.

Generally, there are three categories of habitat that the different species of rock-wallaby seem to prefer:

- Loose piles of large boulders containing a maze of subterranean holes and passageways
- Cliffs with many mid-level ledges and caves
- Isolated rock stacks, usually sheer sided and often girdled with fallen boulders

In the Macleay Gorges, however, a large number of colonies have no cliffs or rock outcrop features whatsoever. The approximately 610 hectares of dry rainforest in Green Gully are in itself a rare ecosystem with World Heritage status.

Scientists assume that there is a link between the presence of feral pest species and the wallabies' use of habitat: The greater the threat from foxes and cats, the higher the threshold for suitable habitat ie; the less accessible the refuges.

At Green Gully in the Macleay Gorges area, fox culling programs have kept predator numbers low, and it is in this area where rock-wallabies have even chosen scrubs and hollow logs for shelter. It is the wallabies' use of the terrain that proofs Green Gully's prime habitat qualities.

Green Gully is 13,000 hectares of diverse rugged wilderness, home to great variety of threatened wildlife communities. It includes important wildlife corridors between isolated sections of neighbouring Oxley Wild Rivers National Park. Green Gully contains some of the world's rarest natural communities and harbours an amazing variety of threatened flora and fauna.

Three large wild river systems, the Apsley, Yarowitch and Green Gully, and the varied aspects of valleys and hills create large climatic variations resulting in mega-diverse vegetation. Over 600 hectares of the area are World Heritage listed dry rainforest and there are several old growth forest eco-systems on the property.

Deep rugged gorges, rock outcrops and the variety of eco-systems provide refuges for many threatened animal species. Other threatened fauna of Green Gully includes the glossy black cockatoo, the regent honeyeater, the spotted-tailed quoll, the masked owl, the speckled warbler and the bent-wing bat.

Amongst the threatened flora of the area are *Hibbertia (hermanniifolia)*, *Grevillea (beadleana)*, *Hakea (fraseri)* and *Eucalyptus (michaeliana)*.

Green Gully is also of significant cultural value with sites of European and Aboriginal historical heritage and three boundaries of Aboriginal land councils within the property.

Green Gully is currently the property of the O'Keefe family. Almost all of the 13,000 hectares are identified wilderness, which has been maintained through ongoing pest eradication by the owner. Appropriate fire management has also helped to keep the natural state of the land. Recognising the wilderness qualities and value of his land for conservation, Mr O'Keefe offered his property to the NSW National Parks and Wildlife Service for purchase.

However, the Service has very little hope of purchasing due to the high cost of \$1.3m. As the fundraising body behind the Dunphy Wilderness Fund, the Foundation for National Parks & Wildlife initiated a campaign to raise the funds needed and to purchase the identified wilderness for the Dunphy Wilderness Fund. Property acquired through donations to the Fund such as the \$1,000 from our Society will become wilderness in the national parks estate.

Wilderness

Wilderness protects land-scapes, rare and threatened plants and animals and allows the natural processes of evolution to continue with minimal interference. This means that the biodiversity, or the total variety of life, of these different environments is conserved as a single functioning natural system.

Biodiversity is important to the health of natural systems because the plants, animals and other life forms in any given ecosystem have adapted to living together over thousands of years. Each species plays a role in its ecosystem, and the loss of a seemingly unimportant creature could affect the entire system in ways that people cannot predict.

Biodiversity is also important because it works like nature's insurance policy. Ecosystems that contain a variety of life forms tend to recover from stresses like natural disasters, human disturbance, or invasive species more easily than less diverse ecosystems.

People benefit from protecting biodiversity because healthy, diverse ecosystems provide essential services. They hold plants that produce the oxygen we breathe, insects that pollinate our food crops, and species that could hold clues for medicine. In fact, almost half of our prescription drugs are based on natural products.

People also value healthy natural places for their beauty and their ability to inspire us. Nature can offer respite from the stress of urban life. Wilderness is part of our national identity, even towards the end of the twentieth century the "bush" and the "outback" - landscapes so typified by wilderness - retains a central place in Australian culture. They can also provide a reminder of the Aboriginal landscape of Australia that retains immense cultural significance to the present day. Importantly, and unlike many other land uses, wilderness areas do not close off any land use options for future generations.

Wilderness declaration and management

Wilderness is a large area of land which, together with its native plant and animal communities and the ecosystems of which they are a part, is in an essentially natural state. Wilderness areas are those lands that have been least modified by modern technological society, they represent the most intact and undisturbed expanses of our remaining natural landscapes.

Wilderness areas include vast red deserts and dry sandy riverbeds, extensive inland plains, river valleys and flood-out country, rugged mountains cloaked in tall gum forests, misty rainforest gullies, jagged coastlines, and snow-covered alpine areas.

Only 4 or 5 per cent of land in NSW could still be called wilderness, but less than a half of this has been legally declared as wilderness. Nearly all declared wilderness is within national parks and nature reserves.

Declared wilderness is managed so that native plant and animal communities are disturbed as little as possible. Pest animal control, weed control, and bushfire management are important parts of this management.

Wilderness cannot be declared over freehold or Crown leasehold land, even if it is identified as having wilderness qualities, without the formal written consent of the occupiers. Nor can the NSW National Parks and Wildlife Service compulsorily acquire land for wilderness or any other purpose.

Enjoying wilderness

Wilderness areas are places where people can take in the perfect solitude of the wild at its untouched best. Bushwalking, hiking, canoeing, rock climbing and camping are only some of the endless opportunities to experience wilderness.

Even without experience or equipment people can enjoy wilderness with stunning views or short walks from the edges of many wilderness areas. These can be reached by car and are readily accessible to people of all ages and fitness levels.



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