Eastern bristlebird eucalypt forest habitat

The eastern bristlebird and fire

Eastern bristlebirds are known as shy birds that are only capable of making short-range flights and stay in relatively small territorial areas of about one to four hectares. They feed on invertebrates, mainly insects, and seeds. They commonly seek food on the ground, where they toss aside leaf litter with their bill, peck food items from the surface and probe into soil. They live for at least six years and build small dome shaped nests with a side entrance. In the northern population, nests are usually built in large native grass clumps, in areas where grass cover is particularly tall and thick. The eggs are incubated by one parent and both parents feed the young chicks.

Changes to fire regimes that favour shrubby rather than a grassy understorey has been implicated as a major factor in the decline of the eastern bristlebird in the Border Ranges. Intense or widespread fires can temporarily destroy all suitable habitat and cause the direct death of birds due to their limited flight capacity as they may be unable to escape the flames and find new foraging areas after fire. Birds are most likely to survive fire well when there are patches of unburnt habitat and refuges in close proximity.

When fire frequency declines, shrubs, trees and weeds like lantana are able to establish and grow, shading out grasses and reducing habitat values. In this case the use of low intensity patchy fire and weed management can help to restore the quality of habitat that is vital for their survival.

What next?

A number of activities are planned to further support the recovery of this declining population of eastern bristlebirds. Post fire weed control will occur to assist the recovery of the site. The effectiveness of the burning and weed management activities in the Gradys Creek area will be monitored on an ongoing basis. Post-burn surveys conducted by a PhD student from the University of Queensland will determine the response of the vegetation, the eastern bristlebird populations and their key food resources. A captive breeding program is also being re-established at Currumbin Wildlife Sanctuary with a goal to release birds into the wild. The small mammal trapping survey will be repeated in 2014 to sample the response of the ground dwelling mammal fauna to the planned burn and weed control actions.

Ultimately, this work aims to contribute to improved fire management of these vegetation communities and the recovery of the eastern bristlebird population.

Further reading: Learn more about eastern bristlebirds at Australian Department of Environment or NSW Office of Environment and Heritage.

What can you do?

- When undertaking a planned burn don't burn the whole area at once as patchiness provides refuges for animals and seed sources that allow plants to recolonise burnt areas. Aim to create a mosaic of vegetation at different stages of post fire development to allow for greater diversity of plants and animals. Take photos and notes to record what happens to the plants and animals in the years after fire.
- To support the eastern bristlebird, maintaining grassy patches and managing weeds is important. When treating lantana it may be helpful to combine weed treatments such as use of a splatter gun with a follow-up burn. If you're planning a burn and you think you may have eastern bristlebirds on your property seek advice from Office of Environment and Heritage Threatened Species Officers on 1300 361 967 and your local Fire Control Centre.
- When preparing for a planned burn, it is important to consider other biodiversity values such as: retaining tree hollows, encouraging native grasses, and protecting riparian areas. In the Border Ranges steep land is also a major consideration and it is important to ensure groundcovers are retained to avoid soil loss and erosion.
- Consider planning for fire management in collaboration with your neighbours to try to minimise the likelihood or impact of a devastating wildfire (but recognising that sometimes even the best planning may not be enough to avert such a fire). When making your plans seek advice from your local NSW Rural Fire Service and other fire and vegetation experts.

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CARING FOR OUR COUNTRY

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The Hotspots Fire Project is jointly managed by the NSW Rural Fire Service and the Nature Conservation Council of NSW.

Contact us for further information

Nature Conservation Council of NSW
info@hotspotsfireproject.org.au, (02) 9516 0359

NSW Rural Fire Service
hotspots@rfs.nsw.gov.au, (02) 8741 5555

Credits

Research and Text: Mark Graham, Kevin Taylor, Penny Watson, Waminda Parker, Michelle Rose, Kate McShea, James Tremain, SEQ Fire and Biodiversity Consortium.
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HOTSPOTS FIRE PROJECT

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CASE STUDY

NSW Border Ranges, Restoring habitat for the endangered eastern bristlebird

Image: Eastern bristlebird northern population (*Dasyornis brachypterus*)

In an effort to restore habitat that supports an endangered population of the eastern bristlebird about 100 hectares of grassy forest has undergone a planned burn at Gradys Creek in the Border Ranges region of NSW.

The endangered eastern bristlebird

Eastern bristlebirds *(Dasyornis brachypterus)* are medium-sized, long-tailed birds with brown and rusty coloured feathers. They are a shy bird which inhabits a wide range of vegetation types including rainforest, eucalypt forest, woodland, shrubland, swamp, heathland and sedgeland.

The eastern bristlebird is listed as an endangered species under both NSW and Australian Government legislation. There are three known populations in NSW including the Border Ranges, Illawarra Region, and near the NSW/Victorian border. Ecologists estimate there might only be as few as 30 individuals in the Border Ranges northern population. There has been some discussion among scientists, as to whether this population could even be a subspecies (*Dasyornis brachypterus* subsp. *monoides*). The bird's current northern range covers an area of about 50 square kilometres, within which there may be less than 1,000 hectares of suitable habitat left for nesting and foraging.

About Gradys Creek

Gradys Creek is located just south of the NSW and Queensland border, midway between the eastern and western sections of the Border Ranges National Park, which is part of the Gondwana Rainforests of Australia World Heritage Area. The area is within the lands of the Githabul people of the Bundjalung Nation. Landholders in the area use properties for a range of activities including grazing, farm stays, cropping, forestry, conservation, and lifestyle blocks.

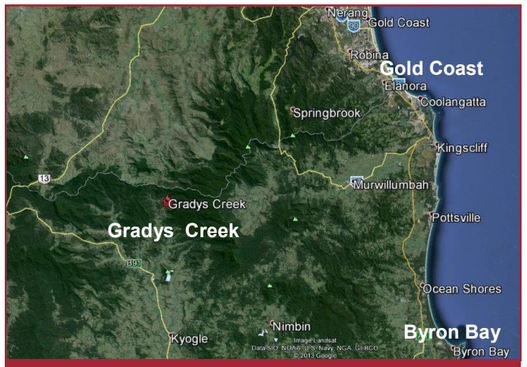
"Researchers believe the lack of fire in the area since the 1980's has resulted in the loss of grassy habitats critical for the survival of the eastern bristlebird".

- Hotspots Project Ecologist Kevin Taylor

In the Gradys Creek area the eastern bristlebird relies on grassy patches of vegetation within eucalypt forests. The health of this habitat may be restored or maintained by appropriate fire management and targeted weed control.

Nature Conservation Council of NSW

NSW RURAL FIRE SERVICE



Gradys Creek located in the Border Ranges

The project: community and agencies working together

The burn at Gradys Creek is one component of a collaborative project to restore habitat for threatened species in the Border Ranges region.

The project aimed to:

- identify habitat of the eastern bristlebird
- implement targeted fire and weed management
- monitor plant and animal responses to the management activities.

This initiative has brought together a range of state and local government agencies to work collaboratively with community representatives and local landholders. The alliance includes the Hotspots Fire Project, Northern Rivers Fire and Biodiversity Consortium, the South East Queensland Fire and Biodiversity Consortium, NSW Rural Fire Service district and volunteers, Northern Rivers Catchment Management Authority, South East Queensland Catchments, and Lantana Master. Project planning was guided by input from members of the Eastern Bristlebird Recovery Team, Northern Working Group.

The work is supported by funding from the Commonwealth Government's Caring for Our Country program and the NSW Rural Fire Service. At a local level one of the properties involved, Sine Cera Rainforest Retreat, made its facilities available to act as a coordination centre during the burn.

More than 45 landholders and land managers from an area with known bristlebird habitat were engaged in the project, covering an area of 1,824 hectares in NSW and 560 hectares in Queensland. Landholders from four properties were involved in the planned burn that was conducted and other local residents participated in the Hotspots workshop series. In addition to the fire management work substantial efforts were also directed to weed control with a particular focus on lantana.

Why does the fire regime matter?

The fire regime relates to the extent, intensity, frequency and season that fires occur. Importantly for wildlife, the fire regime may strongly influence the suitability of habitat. Small-scale or low-to-medium intensity fires leave small patches of unburnt habitat that provide a critical refuge for birds during fire and act as a base for the recolonisation of burnt areas after fire. Intense or extensive wildfires on the other hand, can eliminate large areas of suitable habitat, including potential refuges, and lead to local extinction.

Historic records suggest the Gradys Creek area was burnt approximately every three to four years up until the late 1980's to promote new growth for grazing. The lack of fire in the area over recent decades has resulted in a decline of the important grassy habitats.

The Eastern Bristlebird Recovery Team has undertaken local research and reviewed other published literature to investigate the significance of fire for this northern population of the birds. The team notes research by Dr David Rohweder and colleagues published in 2006* indicating a highly significant relationship between frequent fire and the continued presence of bristlebirds. This result, together with the finding that bristlebirds prefer sites with thick grasses and low mid-storey cover, fits well with what is known from the wider research literature.

"In areas where grassy vegetation adjoins rainforest, frequent fire is a – if not the – key factor allowing grassy patches to persist."

- Penny Watson, Office of Environment & Heritage

A patchy 97 hectare burn to restore degraded habitat

About the burn

On September 5, 2013 a planned burn was conducted by the NSW Rural Fire Service and the NSW National Parks and Wildlife Service to promote suitable habitat conditions to support the local eastern bristlebird population.

Specialist remote area firefighters, rangers and local brigades conducted the operation in steep, remote country on private land adjacent to the Border Ranges National Park.

Hotspots workshops

As an integral component of this initiative the Hotspots Fire Project facilitated a community education fire management workshop series. The workshops provided an opportunity for local landholders to improve their knowledge and skills, including how to plan and implement safe and appropriate fire management strategies.

*Rohweder *et al,* 2006. Eastern Bristlebird habitat monitoring program. Data analysis report. Sandpiper Ecological Surveys

Hotspots Workshop, Sine Cera Retreat, Gradys Creek

The program included two workshop days and follow-up from relevant agencies to support local landholders to develop:

- knowledge of fire behaviour
- knowledge of who is involved with fire management in the local area and their roles
- understanding of how to plan and conduct a safe burn
- understanding of how to undertake fire management that is ecologically sustainable
- confidence in implementing a safe planned burn on their property.

"Brilliant and thanks for reaching to community to assist us. Thank You!"

- Hotspots workshop participant

Participants discussed the range of native vegetation types at Gradys Creek and how fire frequency and intensity influences biodiversity and other ecological values in their local area.

A survey of small native mammals was undertaken as part of this project, finding a small population of the Hastings River mouse at the burn site and five other species of small mammals. The community were delighted to have the opportunity to closely observe some of these species and learn more about local threatened species including the eastern bristlebird, Hastings River mouse and the eastern chestnut mouse. As a result of this interaction participants discussed ways that landholders could become involved in undertaking fire management, including working together for the eastern bristlebird. This included strategies on improving property preparedness for fire and how to undertake collaborative burns (including how to apply for hazard reduction certificates).

"I have a better understanding of fire, how to manage and plan for burns and how fire relates to biodiversity."

- Hotspots workshop participant

Participants also had the opportunity to be part of a demonstration of environmental weed management. This involved the strategic application of herbicide using splatter gun techniques to control large thickets of lantana, which is a prolific weed in the Border Ranges area. The relationships between weeds, disturbance, fire regimes, and Bell Miner Associated Dieback (BMAD) were also discussed.

Importantly, many landholders who participated in the workshops completed Fire Management Plans for their properties. These plans were developed in collaboration with neighbours and with advice and support from the Hotspots team and local experts.

Small Mammal Survey

As an important element of this project a small native mammal survey was conducted in the area by experienced staff and volunteers. The survey targeted two threatened native rodents, the nationally endangered Hastings River mouse *(Pseudomys oralis)* and the eastern chestnut mouse *(Pseudomys gracilicaudatus)* which is listed as vulnerable in NSW. In the Border Ranges these species also prefer the grassy areas favoured by the eastern bristlebirds and are found in higher numbers in the years immediately after fire. In the absence of fire they are replaced by the more common swamp rats *(Rattus lutreolus)*, fawn footed melomys *(Melomys cervinipes)* and bush rats *(Rattus fuscipes)*.

Trained staff undertaking a small mammal survey and introducing workshop participants to some of the species found including the Hastings River mouse