CHAPTER 21

"Brushing for bristles" Habitat corridors for the Rufous Bristlebird

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The Rufous Bristlebird subspecies *Dasyornis broadbenti broadbenti* occurs in a narrow coastal strip from Anglesea to the Glenelg River in western Victoria. The bird is listed under the Victorian *Flora and Fauna Guarantee Act* 1988. Following preparation of an Action Statement, a conservation programme has begun which includes re-establishing and protecting suitable habitat for the species on private land. Landholders in southwestern Victoria have used direct seeding and brushing techniques to establish vegetation corridors and fencing to protect remnant patches of critical habitat. A concurrent study has identified the habitat requirements of the Rufous Bristlebird within the Port Campbell National Park. Results from this study will be used to assist in establishing further corridors and in linking fragmented sites. This report details progress to date. The revegetation project has involved a number of individuals and agencies including landholders, seed suppliers, ecologists, Greening Australia, community groups and the Department of Conservation and Natural Resources.

INTRODUCTION

THE Rufous Bristlebird subspecies *Dasyornis broadbenti broadbenti* is endemic to southwestern Victoria and occurs from Anglesea to the Glenelg River, near the South Australian and Victorian border (Blakers *et al.* 1984). It is largely confined to the coastal strip, but can also occur in dense gullies and forested areas up to 40 km inland (Emison *et al.* 1987). The type specimen was collected in 1858 "twenty-four miles from Portland Bay" (Campbell 1900), and the first recorded nest was from near Bambra in the Otway Ranges in 1893.

The range of the subspecies has been reduced since European settlement due to fragmentation and loss of habitat as a result of land clearing for urban and agricultural development. Frequent fires may also have had an adverse effect on the suitability of heathlands as a habitat for the Rufous Bristlebird, and extensive or major fires may result in local extinctions (Reilly 1991). Near Port Campbell, Belcher (1993) found that the optimum habitat was climax heathland dominated by *Leptospermum* and *Baumea*, and greater than 25 years since last fire. The Eastern Bristlebird *Dasyornis brachypterus* is believed to have declined as a result of inappropriate burning regimes (Garnett 1992). Predation from introduced carnivores (Red Fox *Vulpes vulpes* and Cat *Felis catus*) is also a probable cause of decline. The Rufous Bristlebird is regarded as rare in Victoria (CNR 1993), and it has been listed under the *Flora and Fauna Guarantee Act* 1988. An Action Statement has been prepared (Smith and Baker-Gabb 1993) outlining measures to enhance its conservation status.

In southwestern Victoria between Anglesea and Warrnambool, the stronghold of the subspecies appears to be in the Port Campbell National Park, with the greatest density being in the Loch Ard Gorge area (38°39'S, 143°03'E) (Belcher 1993). The estimated density at Loch Ard Gorge and in nearby prime habitat is 4–6 birds/ha, while at other sites the estimate is at most 2 birds/ha. (W. O'Shea, pers. observ.). The vegetation community where the highest density of Rufous Bristlebirds has been recorded is an open heath sub-community dominated by Prickly Tea-tree *Leptospermum continentale* and Bare Twig-sedge *Baumea juncea* that has a species richness of about 30 species within a 30 × 30 m quadrat. Heathland sites with a lower floristic richness have a lower density of bristlebirds (Belcher 1993). At inland sites, such as at Framlingham and Naringal, Rufous Bristlebirds occur in open forest with dense understorey vegetation. At these sites, the primary determinant of habitat suitability appears to be vegetation structure rather than floristics. Dense low cover in these forests is dominated by Prickly Tea-tree, Scrub She-oak *Allocasuarina paludosa*, Forest Wire-grass *Tetrarrhena juncea* and Variable Sword Sedge *Lepidosperma laterale*.

Small populations of Rufous Bristlebirds have been recorded on private land in remnant blocks of vegetation that provide suitable habitat. The

Table 1. Species sown by direct seeding, October 1992, at Port Campbell.

Scientific name	Common name	Amount sown (g)	No. seeds/g
Eucalyptus ovata	Swamp Gum	100	563
E. willisii	Peppermint	50	54
E. obliqua	Messmate	400	84
Acacia stricta	Hop Wattle	300	60
A. myrtifolia	Myrtle Wattle	300	76
A. verticillata	Prickly Moses	400	60
A. melanoxylon	Blackwood	150	76
Leptospermum continentale	Prickly Tea-tree	1 150	1 000
L. lanigerum	Woolly Tea-tree	100	1 000
Melaleuca squarrosa	Scented Paperbark	50	1 250
Allocasuarina paludosa	Scrub She-oak	500	400
Cassinia aculeata	Dogwood	300	1 500
Solanum aviculare	Kangaroo Apple	50	150
Gahnia sp.	sedge	100	90

bird is a poor flier and its ability to disperse is not well understood (Smith and Baker-Gabb 1993). Dispersal of young birds is not likely to occur across large tracts of cleared land. Observations in the Port Campbell area have been that flying is "feeble" and never far from cover. Observations at one site suggest that they have been unable to colonize apparently suitable habitat that is separated by 200 m of open paddock from an area where young have been successfully reared. (W. O'Shea, pers. observ.). However, Rufous Bristlebirds have been observed along roadsides that contain dense understorey vegetation, suggesting that linkages such as these could assist dispersal and increase the persistence and survival of populations in remnants.

The development of tourist facilities at Loch Ard Gorge in 1992 resulted in the loss of part of the prime habitat of the Rufous Bristlebird. To compensate for the loss of habitat, local residents initiated a project to provide additional habitat for this species and to link apparently-suitable isolated habitats with habitats known to contain bristlebirds. This chapter summarises the project, as a practical example of community and government co-operation and involvement in the restoration of habitat for a threatened species in a rural environment.

HABITAT RESTORATION AND REVEGETATION

The first restoration project was along an unused road reserve, selected to provide a corridor between prime habitat on the coast where the core population of Rufous Bristlebirds occurs, and an isolated inland population approximately 0.6 km distant in four ha of remnant bushland. As this was a road reserve, permission from the Shire of Heytesbury and the Department of Conservation and Environment was obtained to formally close the unused road. The area was designated an "authorized revegetation project", which enabled the road lease to be reduced to a token $1.00 per year payable by the landowner.

Community involvement by the Port Campbell Environment Group and a group of venturer scouts began when seed for the revegetation area was collected from local seed sources. Other groups were involved in identifying remnant habitat areas and bird populations, and in sowing seed in selected areas.

In September 1992, an area of 600 × 20 m (1.2 ha) was sprayed with "Roundup" at 2.5 L/ha. One month later it was mouldboard ploughed. This method turns the soil sod over, burying grass and weed seed which would compete with native vegetation seed. The site was rolled by driving a tractor along it. Mounds of unrolled soil were left as hills between the flattened areas. The collected seed (Table 1) was then mixed with coarse sand in a ratio of 10 sand: 1 seed (by volume) and hand broadcast on the site at a rate of approximately 180 seeds per m^2. The area was rolled again to press the seed into the soil. The unrolled mounds provided some shelter from prevailing winds. Seed-laden Prickly Tea-tree *Leptospermum continentale* was cut from a nearby table drain and laid on the windward side of the site and secured by baling twine. This technique, known as "brushing", results in seed falling to the ground, germinating beneath the brush and providing a dense ground cover which provides further shelter for the hand broadcast seed.

The spring of 1992 provided excellent germinating conditions resulting in a dense seedling cover. All species except *Gahnia* sp. germinated. *Gahnia* is difficult to propagate in nursery conditions and may only germinate after prolonged wet conditions or after fire (G. Beilby, pers. comm.). Some seedlings (all the eucalypts) had grown to 20 cm height within two months; a year later some plants were up to one metre high (eucalypts, Blackwood *Acacia melanoxylon* and Common Cassinia *Cassinia aculeata*), and at a density of eight per m^2.

During 1993 a further area, 2.9 km long and 20 m wide was seeded using the same technique and then fenced. This site complements and connects with that seeded in the previous year. In addition, a total of approximately 30 ha of remnant habitat at Peterborough (3 ha and 18 ha) and Nirranda (about 20 km west of Port Campbell) (2 ha, 2 ha, and 5 ha) have been fenced to protect them from stock. All of these areas are connected directly

to the coastal reserve, or indirectly by roadside vegetation to the coastal reserve and another reserve having bristlebird populations.

A further four sites, totalling 3 ha, were seeded at Nirranda, partly to connect the three sites recently fenced, but also to develop a dense "buffer strip" to the west and south of each site to enable more rapid regeneration of the fenced remnants.

Future Directions

It is proposed to continue developing the corridor system to link other isolated populations of Rufous Bristlebirds identified by Belcher (1993), and potential areas of suitable remnant habitat in the region. However, it is important that the effectiveness of the habitat restoration for this species (and its value for other species) is assessed. Several selected sites, including seeded areas, will be monitored on a regular basis. The distribution and density of singing birds (the Rufous Bristlebird has a loud penetrating call) will be used to assess the success of the project.

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