



Birds after wildfire

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Bushland near St Andrews soon after Black Saturday. Photo: Lynlee Tozer.

The Black Saturday fires were close to home for many BOCA members. Familiar, favourite birding sites throughout Victoria have been impacted by the fires and many birders may be wondering what will happen to the bird communities in these areas in the months and years to come. While no one can put reliable figures on the direct impacts of the fires on birds or accurately predict recovery patterns, past studies and observations can help to frame our thoughts and understandings about ‘birds after wildfire’.

IMMEDIATE IMPACTS

Wildfires of the intensity, magnitude and speed of those that occurred on Black Saturday will have a high bird death toll. Sedentary or ground-dwelling species such as thornbills, treecreepers, scrubwrens and lyrebirds are more likely to succumb to heat, smoke and flames than highly mobile groups such as honeyeaters and cockatoos. BOCA's Horsham branch reported finding many dead birds, including Red-rumped Parrot and Bush Stone-curlew, after a fire near Horsham in western Victoria on Black Saturday (Horsham Branch Newsletter, March 2009).

Gullies and unburnt patches provide refuges for many species and the capacity for individual birds to escape fire and find shelter should not be underestimated. Shortly after the Black Saturday fires, five Superb Lyrebirds were found sheltering in a gully in Strathewan; an area badly affected by the fires and dominated by dry woodland that is not normally Superb Lyrebird habitat (M. Gooy, pers. comm.). Immediately after the fire, an Eastern Whipbird appeared in the unburnt section of a garden in Steels Creek, a long way from its normal habitat (J. Calder, pers. comm.).

Fires do not burn uniformly so impacts will vary across burnt areas. Fire intensity varies with site characteristics, such as slope and vegetation type, and weather conditions at the time of the fire. The Black Saturday fires lasted for many days, so impacts across the burnt areas are highly variable. Many of the areas that were burnt under the extreme fire conditions on February 7 burnt more intensely and with greater impacts than areas that

burnt under the cooler conditions on the days that followed. The patchiness of fire intensity and impacts will affect localised recovery patterns of bird communities.

RECOVERY

Immediately after fire, survival of resident species depends on the availability of food and shelter. Birds that survive the fire face an increased risk of starvation and predation and nearby unburnt patches will have a limited capacity to cater for individuals emigrating from burnt sites (Loyn 1999). He stated that resource availability seems to be more important than escape ability in determining the composition of the bird fauna after fire.

In the longer term, recovery of bird communities is determined by a complex interplay of factors. For the Black Saturday fires, climate will be an overriding factor and the ongoing drought in south-eastern Australia is of particular concern. After a decade of drought and an extremely dry summer, birds and their habitats were in a stressed state prior to the fires and this will affect their capacity to recover. Patterns of recovery will be strongly linked to recovery of vegetation and structural elements of habitat which in turn will be influenced by weather. Recovery of hollow-nesting species may take many decades where the fires have led to losses of large hollow-bearing trees. However, the relationship between fire and hollow formation is complex. Fire may alter hollow dimensions, kill mature trees that then become hollow bearing stags or completely destroy hollow-bearing trees (Woinarski 1999).

LIKELY TRENDS AND OBSERVATIONS

For some insectivores and raptors, the more open nature of burnt areas increases access to prey species. Many insectivores that feed on open ground (eg. Scarlet Robin, Flame Robin, Australian Magpie, Buff-rumped Thornbill) and bark-foragers (eg. Treecreepers) move into burnt areas, despite the lack of shelter. This trend was observed as early as 3 weeks after the 2006 fire in the Brisbane Ranges to the west of Melbourne (Hewish 2006). Birds of prey such as Laughing Kookaburra and Nankeen Kestrel may move into burnt areas to take advantage of the more open

canopy and the presence of dead or injured animals. Anecdotally, Wedge-tailed Eagles, goshawks and falcons have been observed in the Kinglake area in much higher numbers than usual, and small insectivores have been observed busily foraging on the scorched ground (L. Tozer, pers. comm.). Tall shrub insectivores (eg. Brown Thornbill) may be able to forage for insects on scorched foliage soon after the fires but full recovery of this group is dependent on shrub regeneration in the longer term (Loyn 1997; Woinarski 1999).

Nectarivores such as honeyeaters and large seed-eating birds such as cockatoos are much less likely to be found in burnt areas immediately after fires due to the loss of food resources (Loyn 1997; Woinarski 1999). These mobile species have the capacity to escape the fires (see above) and in suburban Melbourne, many observers have noted higher numbers of Gang-gang Cockatoo, Yellow-tailed Black-Cockatoo and Australian King-Parrot than is usual for this time of year. Other species that may be noticeably absent from burnt areas of tall forest or woodland include Golden Whistler, Rose Robin and Mistletoebird (Woinarski 1999).

Canopy insectivores such as Rufous Whistler, Striated Pardalote and Spotted Pardalote are likely to return once there has been a flush of epicormic shoots and associated flushes of leaf-sucking insects such as psyllids (Loyn 1997). Over the coming years, migratory species such as White-winged Triller, Rufous Songlark and Dusky Woodswallow may become more common than usual in burnt areas of temperate woodland (Woinarski 1999), as was observed after the fires in Canberra (Holland 2005).

As the understorey thickens and the area of open ground is reduced, species such as Flame Robin, Scarlet Robin and Buff-rumped Thornbill decline and species that are more characteristic of mature ecosystems begin to return (Loyn 1997). However, the rate of recovery will also be dependent on the proximity of sites from which re-colonisation can occur. For highly mobile species this may not limit the potential for re-colonisation but, for more sedentary species, habitat quality and connectivity can limit individual species' ability to re-colonise an area after fire. With the ongoing drought in south-eastern Australia and large areas of Victoria still recovering from the extensive fires that have occurred in the last decade, we can only hope that all species and ecosystems are resilient enough to make a full recovery from the fires of Black Saturday.



Some Lyrebirds escape fires - on occasions sharing shelter with humans!
Photo: Louise Cole



Strathewan, looking out towards Kinglake National Park. Wildfire knows no boundaries. Large areas of public and private land were affected by the Black Saturday fires. Despite the fact that the majority of the fires started on private land and only around a quarter of the total area burnt is classified as National or State Park, public perceptions and debates about the role of National Parks in fire management have become alarmingly polarised. Photo: Lynlee Tozer.

References

Hewish, M. and Hewish, D. (2006). 'Birds in the Brisbane Ranges three weeks after the fire.' *Geelong Naturalist* 41(10): pp 4-6.

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Further reading

Olsen, P. and Weston, M. Eds (2005) '*Fire and Birds: Fire Management for Biodiversity.*' Supplement to *Wingspan*, 15(3). Birds Australia, Carlton.

For some interesting comments on the impact of drought and fires on some of the dominant tree species found in the north-east of Melbourne, see page 3 of the autumn Nillumbik newsletter at: www.nillumbik.vic.gov.au/Files/FringeFocusautumn09.pdf



Loss of understorey from hot fires affects the preferred habitat of Golden Whistlers.
Photo: Louise Cole