HOTSPOTS FIRE PROJECT

Case Study: Volunteering for a superb cause

Researcher Chris Davey sets up a microphone to record the lyrebird calls he will later spend days listening to.

Can the lyrebird make a comeback?

For Chris Davey and others, the bush just wouldn't be the same without the antics of one of its most charismatic residents - the superb lyrebird. But since the apparent devastation of the 2003 Canberra bushfires, how have the lyrebirds fared?

Touch of Tidbinbilla magic

Tidbinbilla Nature Reserve has long been a favourite amongst bird watchers in the ACT. The reserve is home to a great variety of native plants and animals but is perhaps best known for its population of superb lyrebirds.

Superb lyrebirds inhabit the moist forests of the south east Australian mainland and southern Tasmania. Preferring to stay put, these sedentary ground dwelling birds reside in territories of about 4 hectares. To feed, they use their long claws to sift the soil and leaves for invertebrates. Lyrebirds are not the best of fliers, but will use their wings to jump and glide from branch to branch. This is handy for escaping predators and roosting in trees overnight but not so great for escaping a major fire.

At Tidbinbilla, only a few people are ever lucky enough to spot one of these shy animals. Others listen for their calls or try spotting their display mounds and tracks.

TIDBINBILLA NATURE RESERVE IN BRIEF

Location: 40 km south west of Canberra in the Tidbinbilla Valley, Australian Capital Territory (ACT)

Area: 5,450 ha

Mean annual rainfall: 650-950 mm

Land use: Logged until the 1960s, now a nature reserve for conservation, public education, recreation and study

Vegetation types: Wet sclerophyll forest, patches of dry sclerophyll forest and other vegetation types

Landform and soil types: Large valley floor with steep, heavily forested slopes, rounded corestones, alluvium and colluvium deposits

In the fire path

In January 2003, three bushfires merged into a 35 km front that swept through Tidbinbilla Nature Reserve with incredible speed and intensity. That day fires burnt through more than two thirds of the ACT and caused devastating losses to human life and property. In Tidbinbilla, flames destroyed both the canopy and understorey, along with the humus (organic matter) in the soil. Most of the reserve burnt, leaving few unburnt patches from which plants and animals could recolonise. Given that the devastation seemed complete, those who know and love the reserve held grave concerns for the native wildlife.

Tracking recovery

The post fire plight of Tidbinbilla's lyrebirds caught the attention of three retired CSIRO researchers - Peter Fullagar, Ederic Slater and Chris Davey. They immediately joined forces to find out if the population was recovering.

For starters, they were keen to know whether any recovery would be from existing stock or thanks to outside birds moving into the area. One way to tell would be if the lyrebirds were mimicking whipbirds. If they *were*, then the latter might be true (since whipbirds don't occur within the reserve).

In June 2003 the three researchers set up an automatic listening station to record sounds. Testimony to their

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incredible dedication, the researchers have been known to spend 16 days a month listening to the recordings. As well as listening for lyrebirds, they've been able to gain insights into the post fire recovery of other species.

The trio has also been counting display mounds, observing calls on walking surveys and using sandplots to monitor footprints. By January 2004, the undergrowth had become too dense for actual lyrebird sightings. To help locate the birds, the researchers began playing lyrebird calls, the idea being that a lyrebird hears the call and calls back.

A welcome comeback

Peter, Ederic and Chris have reason to believe the lyrebirds are slowly coming back. Two years after the fires, numbers appeared to be very low. The researchers found no display mounds and no real evidence of breeding. Evidence of one or two lyrebirds was concentrated in the flatter parts of the creekline where surface water was available.

However, more recent surveys in 2005 and 2006 indicate that numbers may be on the rise. The lyrebirds appear to be moving out from the creekline and up towards the ridges - an indication that the birds may be re-establishing their territories. In another positive sign, Chris recorded a pilot bird in March 2006. This species is known to be strongly associated with lyrebirds. He hasn't picked up any whipbird mimicry which suggests the lyrebirds hail from existing stock (presumably survivors of the Tidbinbilla fires).

So how could these birds have survived the fires? At least part of the answer may be found underground. During their surveys, the researchers witnessed lyrebirds disappearing down wombat burrows. Common wombats are known to have survived the fires - just four months on, their scats and scratchings had become a common sight. The researchers speculate that burrows and holes may have meant the difference between life and death for at least some of the lyrebirds trying to escape the fire.

Chris Davey: "It's as if the crowns of the trees have fallen and are now at their feet" (eucalypts resprouting, three years after fire).

WHAT LAND MANAGERS CAN DO

Consider undertaking fire management planning in collaboration with your neighbours to try to mimimise the likelihood or impact of a devastating wildfire (recognising that sometimes, even the best of planning may not be enough to avert such a fire).

Don't burn the whole place at once. Patchiness provides refuges for animals and a seed source for plants to recolonise burnt areas.

Over many thousands of years the Australian bush has evolved ways to live successfully with fire. Don't assume everything is lost after a fire that appears to have been highly destructive. Many plants and animals are able to bounce back, particularly if another high intensity fire doesn't follow soon after.

Photo courtesy of Dave Watts

Acknowledgements

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Reading

- Davey, C., Fullagar, P. and Slater, E. (2005) Lyrebirds and Bushfire, article in *Wingspan* - member magazine of Birds Australia, Vol 15, No.3: September 2005, Birds Australia, Hawthorn East.
- Drought and Bushfire Recovery, article in *Bird Notes* - quarterly newsletter of the Birds Australia Southern NSW & ACT Group, No. 57: December 2005.

Further Information

The Hotspots Fire Project is managed by the Nature Conservation Council of NSW, with funding from the New South Wales Government through its Environmental Trust.

For further information contact the Project Coordinator on (02) 9279 2466, email hotspots@nccnsw.org.au or visit www.hotspotsfireproject.org.au.

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