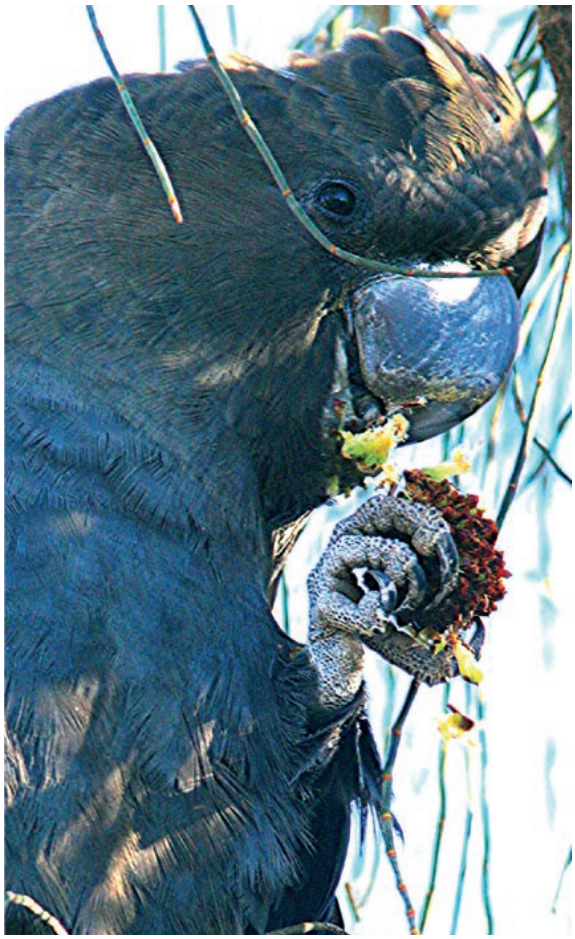
HOTSPOTS FIRE PROJECT
Case Study: Glossy Black Cockatoo



A glossy black cockatoo extracts kernels from a casuarina cone.

The She-oak Eater

Glossy black cockatoo: *Calyptorynchus lathami*

These vulnerable birds are almost totally reliant on the seed kernels of casuarinas. Their feeding and nesting habitat can easily be destroyed by too frequent or intense fire, as well as by land clearing.

Distribution

The main sub-species *Calyptorhynchus lathami subspecies lathami* occurs along the east coast of Australia from south-east Queensland to northern Victoria. There is another sub-species that lives in Northern Queensland and a third, rare sub-species that occurs only on Kangaroo Island off South Australia.

In NSW these parrots are found along the coast with some scattered populations inland.

Life history and fire

Walk under a she-oak and you may hear an odd crunching noise from the branches. This could be glossy black cockatoos crushing casuarina cones with their beaks.

Also known as the casuarina cockatoo, this parrot is the smallest of the black cockatoos. It can be recognised by its browny-black plumage, inconspicuous crest and relatively bulky beak. The male has two bright red panels on the tail while the female has orange-red tail panels as well as patches of yellow feathers around the neck and head.

Its calls are described as soft, plaintive and wheezing but it will sometimes give a harsh alarm screech. These birds often mate with the same partner for life and nest in tree hollows where they rear a single chick.

Glossy black cockatoos gather in small flocks and spend much of the day feeding from mature casuarinas. They grasp the cones in their left feet, crush them with their beaks and then prise out the seed kernels with their tongues.

High fire frequency has been identified as a key threatening process for the glossy black cockatoo under the NSW Threatened Species Conservation Act.

The reason glossy black cockatoos are vulnerable to frequent fire is that they feed largely or exclusively from a few species of casuarinas or she-oaks. These trees are sensitive to certain fire regimes.

Cockatoo Conundrum

Ecologist Michelle Stock, a Griffith University student who is doing her doctoral thesis on glossy black cockatoos, discovered that each bird chews through around 400 to 500 casuarina cones a day. Finding food is a very energy-intensive process as each cockatoo needs to extract and consume thousands of 1-2 mg seed kernels daily.

Stock found that out of 150 casuarina sites she studied in South-east Queensland, high numbers have "no feeding because they are at various stages of regeneration". These areas have been affected by fire and drought or both.

"At any one time there is limited food," says Stock. In the past these birds could probably fly to nearby stands of casuarina that were fruiting. However with land clearing and fragmentation of glossy black cockatoo habitat, these parrots have to rely on fewer stands of casuarinas further apart for their food.

A study on Kangaroo Island in South Australia showed glossy black cockatoos nested within 12 kilometres of their food and water supplies. In areas which have been burned frequently the birds may utilise their strength in finding suitable feeding rather than breeding, according to Stock.

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This project has been assisted by the New South Wales Government through its Environmental Trust.

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Some species of casuarina on which the birds feed can resprout after low intensity fire but are killed by fierce blazes. A high intensity wildfire can wipe out fruiting casuarinas over a large area.

It is many years before the trees provide a plentiful annual crop for cockatoos. Studies have shown the birds prefer casuarinas with numerous cones and large numbers of seed kernels. A Kangaroo Island study found areas of casuarina burnt 22 years previously were still not suitable for glossy black cockatoos.

Associate Professor Clyde Wild, Director of the Centre for Innovative Conservation Strategies at Griffith University in Queensland, says much of the information about glossy black cockatoos and fire has to be deduced from separate studies of the bird and casuarinas.

Wild says: "In southeast Queensland, these cockatoos feed only on the ripe seeds and cones of two species of casuarina, which need long inter-fire periods to re-establish."

Their main food source is the black she-oak, *Allocasuarina littoralis*, which grows in dense stands as well as under open eucalypt forest. The birds also feed from the forest oak *Allocasuarina torulosa*, found in the rainforest understorey of wet sclerophyll forest.

A recent study by Wild and two associates showed that on the Gold Coast, 75 percent of the forest she-oaks and 15 percent of black she-oaks in the bird's feeding range were damaged by fire. The study was aimed at finding a more effective conservation strategy for the bird but also shows how inappropriate fire regimes can affect the birds.

In an interview Wild says: "The important thing with glossy black cockatoos is to have longer intervals between fires. The casuarinas they rely on for food take 10 to 15 years to recover from fire. During that time the birds cannot feed on the saplings because there are not enough cones."

He added that these casuarinas do not develop sufficient crops of cones for cockatoos until they are around 15 years of age. Mature trees can provide seed until they are around 50 to 70 years old.

He says due to frequent fires there are not enough fruiting casuarinas for the cockatoos in the SE Queensland area.

In addition the eucalypts, which provide nest hollows, are disappearing because of a combination of burning, land clearing and urban development. The gentle-natured glossy black cockatoo simply cannot compete with the sulphur crested cockatoos and possums for the few remaining hollows.

WHAT LANDHOLDERS CAN DO

In a fragmented landscape there are still questions about what fire regime best meets the requirements of glossy black cockatoos as well as other species. These birds have to be seen in the context of an entire landscape.

Across a broad area of land it is important to have stands of casuarinas of different ages. So if one stand is killed by an intense fire, there will be other stands that can provide kernels for the birds.

If these birds feed or breed on your land, you need to be aware that their habitat extends across property boundaries. Before planning a controlled burn, consult with the threatened species unit of the Department of Environment and Conservation. Your property may be one of the few that contains mature casuarinas with sufficient cones for the birds.

Remember it is also vital to conserve old hollow trees, usually eucalypts, in which these cockatoos nest. Consider planting black she-oaks or forest she-oaks to provide a future food resource.

In planning any burn consult with your nearest NSW Rural Fire Services Fire Control Centre.

A male glossy cockatoo (left) and female have different coloured tail panels.

Acknowledgements

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Reading

- McNaughton M, 2002, *Australian parrots & finches*, Cameron House, South Australia.
- The NSW Department of Environment and Conservation has information on glossy black cockatoos at http://www.nationalparks.nsw.gov.au/npws.nsf/Content/glossy_black_cockatoos or phone the Threatened Species Unit, DEC North East branch on 02 66515946.

Further Information

The Hotspots Fire Project is managed by the Nature Conservation Council of NSW. It was funded by the New South Wales government through its Environmental Trust.

For further information contact the project co-ordinator on (02) 9279 2466 or visit our website at www.hotspotsfireproject.org.au

Credits

Text: Linda Vergnani

Photographs: Geoffrey Dabb