Australian Capital Territory

Nature Conservation (Threatened Ecological Communities and Species) Glossy Black-Cockatoo Action Plan 2013 (No 1)*

Disallowable instrument DI2013–275

made under the

***Nature Conservation Act* 1980, s 42 (Preparation of action plan)**

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1 Name of instrument

This instrument is the *Nature Conservation (Threatened Ecological Communities and Species) Glossy Black-Cockatoo Action Plan 2013 (No 1).*

2 Commencement

This instrument commences on the day after notification.

3 Details of Instrument

The following Action Plan, as attached (Attachment A) has been prepared:

- Action Plan No. 33 Glossy Black-Cockatoo (*Calyptorhynchus lathami*)

Note: Copies of the above Action Plan are available from http://www.environment.act.gov.au/cpr/conservation_and_ecological_communities/threatened_species_action_plans

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Conservator of Flora and Fauna
07 November 2013

*Name amended under Legislation Act, s 60

ACTION PLAN No. 33

The Glossy Black-Cockatoo *Calyptorhynchus lathami* was declared a vulnerable species on 23 August 2010 (Determination DI2012-11) in accordance with section 38 of the *Nature Conservation Act 1980.* Section 40 of the Act requires the Conservator of Flora and Fauna to prepare an Action Plan in response to each declaration. This is the Action Plan for the:

Glossy Black-Cockatoo
Calyptorhynchus lathami

Preamble

The *Nature Conservation Act 1980* establishes the ACT Flora and Fauna Committee with responsibilities for assessing the conservation status of ACT flora and fauna and the ecological significance of potentially threatening processes. Where the Committee believes that a species or ecological community is threatened with extinction or a process is an ecological threat, it is required to advise the responsible Minister and recommend that a declaration be made accordingly.

Flora and Fauna Committee assessments are made on nature conservation grounds only and in a regional context. They are guided by criteria set out in its publication *Threatened Species and Communities in the ACT: criteria for assessment, July 2008*.

In making its assessment of the Glossy Black-Cockatoo, the Committee concluded that the criteria for a vulnerable species were satisfied as indicated in Table 1. In response to a Committee recommendation, the Minister made a corresponding declaration.

The Conservator of Flora and Fauna is required to develop a management response to each declaration by way of an Action Plan. The plan must contain proposals for the identification, protection and survival of a declared species.

This is the Action Plan for the Glossy Black-Cockatoo *Calyptorhynchus lathami*. Whilst its legal authority is confined to the Australian Capital Territory, management considerations are addressed in a regional context.

Table 1 Criteria satisfied

2.2 Species is observed, estimated, inferred or suspected to be at risk of premature extinction in the ACT region in the medium-term future, as demonstrated by:

2.2.4 Seriously fragmented distribution for a species currently occurring over a moderately small range, or having a moderately small area of occupancy within its range.

Conservation status

Australian Capital Territory
Vulnerable. *Nature Conservation Act 1980*.
Special Protection Status Species. *Nature Conservation Act 198*0

New South Wales
Vulnerable. Listed in Part 1 of Schedule 2 of the *NSW Threatened Species Conservation Act 1995*.

Victoria
Threatened. Listened under Section 10 the *Flora and Flora Guarantee Act 1988*. Gazette G 42, p. 2571, published on 21 October 2010.

Queensland
Vulnerable under the Queensland *Nature Conservation Act 1992, Nature Conservation (Wildlife) Regulation 2006.*

Links with other plans

Measures proposed in this Action Plan complement those proposed in:

- Action Plan No. 27: Woodlands for Wildlife: ACT Lowland Woodland Conservation Strategy
- Plans of Management for reserve areas in the ACT where the Glossy Black-Cockatoo occurs

Species description and ecology

DESCRIPTION

The Glossy Black-Cockatoo *Calyptorhynchus lathami* is the smallest of the black-cockatoos, with an average length of 48 cm, a wingspan of 90 cm and weighing around 425 g. Its flight is buoyant with a shallow, effortless beating of the wings. The adult male has a dusky blackish brown plumage on the head, breast and belly and is dull black on the back and tail. The tail has distinctive solid bright red panels. The crest is inconspicuous and the bulbous bill, eye ring and legs are dark grey. The female is similar in appearance to the male except for irregular yellow patches around the neck and head, and orange/red and black horizontal barred tail panels. Immature birds of both sexes have fine yellow spotting on the face, shoulder and underwing, large spots or bars on the underbody and broad bars in the tail panel (Forshaw 1989; Crome and Shields 1992; Flegg and Longmore 1994; Higgins 1999; Cameron 2007).

The population of Glossy Black-Cockatoos in south-eastern Australia (which is the subspecies that occurs in the ACT) *Calyptorhynchus lathami lathami* differs from the population in central eastern Queensland (*C. l. erebus*) and the isolated population in South Australia (*C. l. halmaturinus*) in the morphology of the beak and wing (Schodde et al.1993).

HABITAT

Glossy Black-Cockatoos in south-eastern Australia inhabit open forests and woodlands of the coast and the Great Dividing Range (up to 1000 metres elevation), preferring drier forests within intact landscapes (NPWS 1999). Within these habitats the species typically occurs at low density. Habitat for Glossy Black-Cockatoos usually includes stands of sheoak species, such as Black Sheoak (*Allocasuarina littoralis*), Forest Sheoak (*A. torulosa*) or Drooping Sheoak (*A. verticillata*) (Higgins 1999; DEC NSW 2011). In the ACT and region the distribution of the Glossy Black-Cockatoo typically reflects the distribution of *A. verticillata* (Holliday 2004).

Glossy Black-Cockatoos are dependent on large hollow-bearing eucalypts for nest sites. The hollows used by the birds have been found to be a minimum of 14 cm in diameter (Garnett et al. 1999).

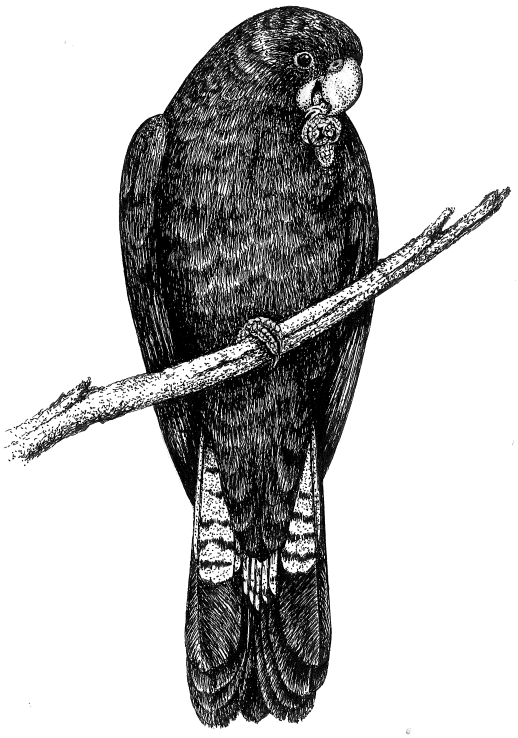

Figure 1. Glossy Black-Cockatoo

BEHAVIOUR AND ECOLOGY

Glossy Black-Cockatoos are social birds, and are typically observed in pairs or family groups. These small groups often aggregate to form larger feeding flocks. The birds are highly specialised in their food choice, feeding almost exclusively on the seeds of a range of sheoak species (Forshaw 1989; Cameron 2007). In the ACT region their food trees are largely restricted to *A. verticillata*. The rarity of *A. littoralis* in the ACT (G Baines pers. com. 2011) suggests this sheoak species is unlikely to be a significant food source for the birds in the ACT.

Glossy Black-Cockatoos concentrate their feeding in larger stands of *Allocasurina* containing mature trees and large cone and seed crops (Cameron and Cunningham 2006).

Larger stands also reduce the need to move between trees, which may lower overall foraging requirements (energy expenditure) and may also reduce predation risk (Cameron and Cunningham 2006). The birds are highly selective of both the trees and the cones they favour, often showing fidelity to particular trees in which they have foraged previously (Pepper *et al.* 2000). The birds may need to feed for much of the day to obtain sufficient food (Clout 1989). Depending on the abundance of food supply each bird requires between 83 and 122 sheoak cones per day (Lenz 2004). Breeding birds feed on more cones per day and spend more time foraging than non-breeding birds (Chapman and Paton 2005). A breeding male forages for up to 6.1 hours of the day as he is required to feed himself and the female whilst she is brooding. Males have also been found to forage more efficiently than females and subadults forage less efficiently than adults (Pepper *et al.* 2000; Cameron 2005). The birds use their left foot to rotate the cone and their large bill to crack and shred the cones and access the kernels (Joseph 1982). They also select the younger, red coloured, more nutritious cones with a high seed weight in order to yield as much seed as possible for their cone-opening efforts. However, the birds will use older cones when no fresh ones are available (Crowley and Garnett 2001; Chapman and Paton 2006).

Glossy Black-Cockatoos are strong fliers and in sustained flight can average over 45 km/h and can fly 14 km between feeding and nesting areas. Largely sedentary, individuals tend to remain close to their familial flock but can disperse when required. When they do disperse, they can move large distances of between 44 km to 78 km (Mooney and Pedler 2005). There is evidence that Glossy Black-Cockatoos have crossed 300 km of mostly unsuitable habitat in northern Queensland (Cameron 2007).

The life expectancy of the Glossy Black-Cockatoo is not known, but is likely to exceed 15 years (Mooney and Pedler 2005), and could possibly extend to 50 years or more (Hill, 1954 in Australian Government 2011). As a long-lived species, effects of habitat loss on a population may be difficult to assess in the short-term.

Glossy Black-Cockatoos nest in tree hollows and prefer to nest close to each other, therefore preferring areas with a relatively high density of suitably-sized hollows. They do not appear to be territorial and pairs have been observed to nest in the same tree as another nesting pair (Garnett *et al.*1999). Nests are usually located in a large vertical or near vertical hollow relatively high in aging or standing dead eucalypt trees (Cameron 2006b). In central NSW Glossy Black-Cockatoos have been found nesting in Blakelys Red Gum, a tree species which also occurs in woodlands in the ACT (Cameron 2007).

In NSW, Glossy Black-Cockatoos breed from March to August, laying in autumn and nesting over winter. Breeding times can vary across their range and this is thought to be timed with the reproduction of their local feed-tree species (Clout 1989; Crome and Shields 1992; Cameron 2007; Cameron 2009). Breeding has been recorded at Mt Majura with a clutch being produced in early May (Lenz *et al*. 2004). The birds lay a single egg in a hollow that may be lined with wood chips chewed from the edge of the hollow (Forshaw 1989). The same hollow is often used again in subsequent years by the same or different females (Higgins 1999; Mooney and Pedler 2005).

The egg is incubated for around 30 days during which time the female usually remains on the nest and is fed by the male. The nestling is fledged after about 90 days following egg laying and around 77% of nestlings survive to fledging. If the egg or small young is lost, females can lay another egg within 26 days (Garnett *et al.* 1999). Only one young is produced per season and a juvenile will associate with its parents for at least the first year following fledging, in which time it learns to forage (Forshaw 1981; Cameron 2007).

Glossy Black-Cockatoos can forage up to 12 km from their nest site without breeding success being compromised, but prefer to forage closer when food is available (Cameron, 2007). The birds drink at least once a day and more when temperatures are high.

Nests are often located close to water (Cameron 2006b). A record of a breeding pair at Mt Majura was located about 1.5 km from its drinking site (Lenz *et al*. 2004) and nests on Kangaroo Island have been found within 1.5 km of water (Cameron 2007). The relationship between nest sites and water may reflect the presence of larger trees in low parts of the landscape, with large trees more likely to form suitable nest hollows.

DISTRIBUTION AND ABUNDANCE

The Glossy Black-Cockatoo is distributed at low densities in a patchy distribution across south eastern Australia from central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. An isolated population exists on Kangaroo Island, South Australia. Their highest densities occur east of Great Dividing Range with a more scattered distribution inland (Forshaw 1989; Garnett 1992). It is probable that Glossy Black-Cockatoos breed throughout their range. They are also occasionally recorded well beyond their usual range suggesting that the species moves between different areas when required (Garnett and Crowley 2000; Forshaw 2002).

C. l. lathami, the eastern sub-species (to which the ACT Glossy Black-Cockatoo belongs), is distributed from Eungella (Queensland) to Mallacoota (Victoria). The two outlying regional populations*, C. l. erebus* in central coastal Queensland and *C. l. halmaturinus* on Kangaroo Island, are separate subspecies to the core population, *C. l. lathami* (Garnett 1992; Schodde *et al.* 1993).

Overall there has been a national decline in the species with the population having possibly as few as 10,000 mature individuals (Garnett *et al.* 2011). *C. l. lathami* is now rare or has become locally extinct in many parts of its former range. In the Riverina there has been a major decline in the population with an estimate of no more than 40 birds (Forshaw 2002; Garnett *et al.* 2011).

The Queensland subspecies (*C. l. erebus*) is listed as vulnerable under the Queensland *Nature Conservation Act 1992.* The South Australian (Kangaroo Island) subspecies *(C. l. halmaturinus)* is listed as endangered under the *National Parks and Wildlife Act 1972 (South Australia)*, and nationally as endangered under the *Environment Protection and Biodiversity Act 1999.* It is also listed in the *Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).* The Kangaroo Island population numbers increased from 195 individuals in 1995 to an estimated 310-330 individuals in 2006, which was associated with significant conservation efforts (L Pedler in Australian Government 2011), and is currently estimated at 340-360 birds (Garnett *et al.* 2011).

The first published record of the Glossy Black-Cockatoo in the ACT was in 1946 and the species was subsequently recorded occasionally through the 1970s and 1980s. There are no records of the species in the three years of the ACT bird atlas census undertaken between 1986 and 1989 and at the time it was considered to be an uncommon visitor (Taylor and COG 1992; Barrett *et al.* 2003). Sightings of the species in the ACT are uncommon, though a relatively high number of sightings were reported from the Majura Range in 2003 and 2004. The highest single count of the species recorded in the ACT was 16 birds on Majura Range in 2004 (Holliday 2004) and the first record of breeding in the ACT was on Mount Majura in 2004 (Lenz *et al*. 2004).

Recent records by Canberra's community-based ornithologists (Canberra Ornithologists Group) from October 2003 to the end of November 2010 show that 92 % of observations in the ACT were at Mount Majura or Mount Ainslie. The remaining 8 % were single records taken at Goorooyarroo Nature Reserve, the Pinnacle Nature Reserve, the National Botanical Gardens, Kowen Forest Park and Rob Roy Nature Reserve. Flock sizes have been recorded between 1 and 16 birds.

These recent recordings of the species from Mount Majura and Mount Ainslie suggest this area is an important local refuge for the species (Holliday 2004).

In nearby NSW significant sightings of Glossy Black-Cockatoos have been recorded from the Burra Valley (Burra Creek area), Googong Nature Reserve, and a location east of Bungendore on the Kings Highway.

Allocasuarina verticillata

The distribution of Glossy Black-Cockatoos is closely tied to that of their feed trees. Whilst Glossy Black-Cockatoos can feed on both *Casuarinas* and *Allocasurainas*, the latter provide a food supply all year round with a large canopy seed store which they hold for a number of years (Cameron 2007). In the ACT Glossy Black-Cockatoos are dependent on *A. verticillata* (Drooping Sheoak) as their principal food source*.* With this highly specialised diet they are vulnerable to any changes in supply of *A. verticillata* seed. Their selection of foraging sites and individual trees demonstrates preference for high-yield food sources and therefore it is likely that the quality of habitat is critical in maintaining populations

of these birds (Pepper *et al.* 2000; Cameron and Cunningham 2006).

A. verticillata is a small tree to 10 m with drooping branches. Stands are comprised of both male and female trees, with female trees having large, cylindrical or barrel-shaped fruiting cones up to 50 mm long. The diameter of the cones is much greater at the apex than the base (Schweickle and Baines 2009). *A. verticillata* in the ACT flowers from May-October (autumn to spring) and produces a large summer seed output (Hueneke 1976).

Seed cones are first produced when trees reach 5 to 8 years old and seed may be stored in cones on the tree and shed some years later. The seed is shed in January and February following long hot days with dry winds. A study in 1976 showed that stands in Canberra of 23 to 50 years old shed more than ten times as much seed as a 12 year old stand (Hueneke 1976). As not all seed is shed and the remainder is held in closed cones, Glossy Black-Cockatoos are able to access seed of this species all year round.

Regeneration

A. verticillata is a colonising species, becoming quickly dominant where forest is disturbed. It germinates in disturbed soil in moist, cool conditions and seeds lose viability 6 months after falling to the ground if these conditions are not met (Hueneke 1976).

Low intensity fire and slashing can cause coppicing of young saplings, which produces several stems. New seedlings can also shoot following disturbance. An example of a highly dense stand of *A. verticillata* forming after disturbance can be seen on Mount Taylor as the result of a fire in 2003. Attempts to reduce the number of *A. verticillata* on Mount Stromlo from 1952 to 1973 through burning, bulldozing and sheep grazing only served to thicken the regeneration. Regeneration is dense and mortality is highest when *A. verticillata* reaches the age of 10-25 years (Ingwersen *et al.* 1974; Hueneke 1976; Schweickle and Baines 2009).

Frequent fire can prevent mature trees producing seed and severe fire or slashing of all the branches will kill *A. verticillata.* A series of large wildfires in a stand of *A. verticillata* within a ten to fifteen year period could reduce the number and size of the trees in a stand and significantly limit the food available for the Glossy Black-Cockatoo because 10 years or more are required for the stand to recover fruiting capacity (Mooney and Pedler 2005).

Frequent or severe fire could eliminate a stand of sheoak if there is insufficient seed stored on the trees to regenerate the stand. Similarly, a fire after a drought (when trees have shed most of their seed) could result in the loss of a stand. If left undisturbed, *A. verticillata* will form sparse stands of trees with a high cone density (Hueneke 1976).

The fire history varies between stands of *A. Verticillata* in the ACT. Mt Stromlo and Mt Taylor were burnt relatively recently (2003). The last major fires in *A. verticillata* stands at Mt Majura were burnt in 1979 and 1985. Fire records of Tuggeranong Hill show only one burn in 1985, where there is a small stand of *A. verticillata* over 100 years old.

Optimal habitat for the Glossy Black-Cockatoo

Intermediate to infrequent disturbance of *A. verticillata* appears to provide the most suitable stands of feed trees for the Glossy Black-Cockatoo. Frequent disturbance will prevent the maturation of the trees and therefore the production of significant cone crops. Infrequent disturbance can result in stands thinning out, for example at Tuggeranong Hill. Older trees probably produce more cones, but wider spacing between trees in older stands might result in increased overall foraging effort, and possibly increased predation risk, compared to denser stands produced by intermediate disturbance (Schweickle and Baines 2009).

Distribution and Abundance of A. verticillata

Nationally, *A. verticillata* is distributed in south-eastern Australia on rocky coastal headlands as well as on dry rocky slopes of inland hills. In the ACT *A. verticillata* is found on dry, stony ridges and low hills to 1000 m ASL and occurs primarily on the Campbell soil landscape with minor occurrences in the Burra soil landscape (Schweickle and Baines 2009).

Historic plantings of *A. verticillata* in the ACT are unknown, but may have occurred on Mount Majura in the 1920s (Ingwersen *et al.* 1974). A small number of trees were planted at Goorooyarroo Nature Reserve in 2008 and within five years had developed seed cones. Recent plantings have also occurred at Tuggeranong Hill, Isaacs Ridge Nature Reserve, Wanniassa Hills Nature Reserve, Red Hill Nature Reserve and at the newly established National Arboretum. There have also been plantings of the species in nearby NSW, including sites at Sutton, Queanbeyan, Royalla, Fernleigh, Little Burra, Colinton, Michelago, Williamsdale and Bredbo.

The most significant stands of *A. verticillata* for the Glossy Black-Cockatoo in the ACT are in the Mount Majura/Mount Ainslie complex. *A. verticillata* also occurs in stands at Rob Roy Nature Reserve, Mt Stromlo, Mount Taylor Nature Reserve, Red Hill Nature Reserve, Mount Mugga Mugga Nature Reserve, Tharwa Hill, Fitz's Hill, Booth Range and Mount Tennant. Tuggeranong Hill has a sparse stand including trees in excess of 100 years old.

In the ACT around 3810 ha of woodland contains *A. verticillata*. The majority of this, around 1860 ha, is in reserves with the remainder principally on rural leased land and on land zoned in the Territory Plan as Hills, Ridges and Buffers.

Within the reserves in Canberra, there are around 2680 ha of suitable planting areas for *A. verticillata* (Schweickle and Baines 2009).

Threats

The main apparent threat to the Glossy Black-Cockatoo is the degradation, loss and fragmentation of foraging and breeding habitat. In particular the loss of canopy seed banks of feed trees by clearing or regular burning, as well as poor regeneration of these trees due to grazing, can significantly reduce available food sources. Loss of hollow bearing nesting trees within the proximity of feed tree stands is also likely to be a significant impediment to successful breeding (Garnett and Crowley 2000; Mooney and Pedler 2005).

Fragmentation of native vegetation has significantly limited connectivity across the ACT. Glossy Black-Cockatoos avoid foraging in areas of sparse canopy cover, and therefore corridors of native vegetation are important for birds to locate new sources of food when local resources deplete. Regionally, corridors can help to assist genetic diversity by allowing dispersal of populations between NSW and the ACT and boosting populations to ensure viable numbers (Cameron 2007).

Loss of suitable hollow-bearing trees, hollows not being replaced, and competition for hollows of a suitable size, are all significant threats (Cameron 2007). Glossy Black-Cockatoos prefer to nest close to each other, and so areas with stands of trees containing multiple hollows (a minimum of 14 cm) are a key resource. In the ACT loss of suitable nest trees is mostly due to the encroachment of urban development on remnant woodland.

Approximately 80% of the estimated area of lowland woodland in the ACT at the time of European settlement has been lost (ACT Government 2011). These issues are not confined to the ACT. In NSW over 50% of forest and woodland has been cleared (Lunney 2004).

Nest predation by possums (recorded in a Glossy Black-Cockatoo nest on Kangaroo Island) may also be a factor though there is no clear evidence of this in the ACT. It is unknown to what extent competition for nest hollows from other Psittaciformes, such as Galahs, Corellas and Sulphur-Crested Cockatoos, may affect Glossy Black-Cockatoos.

Frequent fires may have also reduced available habitat. For example, the bushfires in 2003 killed many cone-bearing Drooping Sheoaks on Mt Taylor. In 2004 a widespread severe fire in Goonoo State Forest in NSW destroyed much of the feeding habitat and nest trees used by Glossy Black-Cockatoos. The only known major feeding and breeding area in the ACT, the Mount Ainslie/ Mount Majura complex, is vulnerable to similar outcomes from potential future wildfire events.

In dry years Glossy Black-Cockatoos have a lower breeding rate when their food source is in lower supply. *Allocasuarina* have reduced seed productivity in dry years, and as such, any increase in drought frequency/length due to climate change is likely to have negative effects on populations of Glossy Black-Cockatoos (Cameron 2006a; Cameron 2009).

Illegal harvesting is a potential concern as there is evidence suggesting that Glossy Black-Cockatoos from the Riverina district in NSW have been trapped for the illegal bird trade (DEC NSW 2011), though this has not been reported in the ACT.

Mount Majura and Mount Ainslie are the only known significant patches of feeding and nesting habitat within the ACT. Rob Roy Nature Reserve might provide another area of significant habitat, as suggested by the relatively large numbers of chewed cones observed in the area. There are a number of other small sites distributed around the Canberra area where suitable feed trees are known to occur though these are widely dispersed and occur across a significantly fragmented landscape.

Major conservation objective

The objective of this Action Plan is to maintain in the long term a viable, wild population of Glossy Black-Cockatoos as a component of the indigenous biodiversity of the ACT and region.

This objective is to be achieved through the following strategies:

Survey, Monitoring and Research

Promoting and participating in a program of survey, monitoring and research, aimed at better understanding of the ecology of the species and identifying and managing causes of population decline.

Protection/expansion of habitat

Identifying and protecting nesting and foraging habitat critical to survival of the species in the ACT, including expansion of suitable areas of *Allocasurina verticillata*.

Regional Co-operation

Co-operating with state and local government agencies in formulating and implementing conservation measures.

Community Engagement

Increasing community awareness of the need to protect the species and its habitat, and supporting related community-based conservation action.

Conservation issues and intended management actions

The primary conservation issue for the Glossy Black-Cockatoo in the ACT is retention and re-establishment of adequate foraging and breeding habitat comprising Drooping Sheoak (*Allocasurina verticillata*) and large hollow-bearing eucalypt trees, preferably close to a reliable water supply.

SURVEY, MONITORING AND RESEARCH

Critical to effective conservation actions for the ACT population of the Glossy Black-Cockatoo is a greater understanding of their distribution and movement, demographics, habitat requirements (including preference for feed and nesting trees and their locations) and competition for hollows. Such information will assist in identifying ecological threats, determining research needs, and developing protection and management strategies.
No systematic survey and monitoring of the Glossy Black-Cockatoo has occurred in the ACT. Information in the ACT and region has been collected for the most part by community-based naturalists (Canberra Ornithologists Group). It is highly desirable that this community-based data collection is encouraged and continues. Records of chewed *A.verticillata* cones can provide information on the presence and foraging ecology of the Glossy Black-Cockatoo.

Objective

An improved understanding of the ecology of the Glossy Black-Cockatoo is gained and used to identify and manage causes of population decline.

Actions

1. Participate in and support survey, monitoring and research by tertiary institutions; support involvement by community-based organisations to:
    - monitor the distribution, movement, abundance, demographics and breeding success of the Glossy Black-Cockatoo;
    - better understand the species habitat requirements, including preference for nesting and feed trees and their locations, and competition for hollows.
2. Survey and map known and potential habitat (taking into consideration nearness to water, suitable hollow size and size of stands of feed trees when identifying potential habitat).
3. Monitor core feeding and nesting habitat so that long-term trends in habitat extent and quality are identified, with the Mount Ainslie/Mount Majura complex as a priority.
4. Investigate methods (such as fire or controlled grazing) to promote adequate regeneration within *A. verticillata* stands to provide an ongoing food source for the Glossy Black-Cockatoo in the ACT.

Indicators

1. There is improved understanding of the ecology of the Glossy Black-Cockatoo (in particular, distribution, movement, abundance, demographics, breeding success and habitat requirements) and this information is used to inform conservation actions to protect the species.

2. Habitat areas are mapped and this information is taken into consideration in land management and planning.
3. Information on core feeding and nesting habitat for the Glossy Black-Cockatoo in the ACT is maintained so that long-term trends can be identified in habitat extent and quality.
4. There is improved understanding of *A. verticillata* regeneration that will assist in expanding feeding habitat for the Glossy Black-Cockatoo.

PROTECTION: IDENTIFYING AND PROTECTING/EXPANDING CORE HABITAT

The primary threat to the Glossy Black-Cockatoo is loss of habitat, including nest sites and foraging areas. The preferred habitat for the species in the ACT is woodland in which stands of *A. verticillata* occur.

Conservation objectives and actions for these habitat types are set out in the relevant plans, namely:

- Action Plan No. 27: Woodlands for Wildlife: ACT Lowland Woodland Conservation Strategy; and
- Plans of management for reserve areas in the ACT where the Glossy Black-Cockatoo occurs.

These plans provide the main vehicle for identification and protection of habitat for the Glossy Black-Cockatoo in a landscape context. However, additional actions will be required to identify and protect nesting sites and foraging habitat. The *Nature Conservation Act 1980* (s. 43) provides for protection of nest sites. Other statutory protection mechanisms are outlined below:

1. **Reservation**: The strongest statutory mechanism for protecting sites of conservation significance. Canberra Nature Park is protected in this way.

2. **Land Management Agreement (LMA) for leased rural land**: LMAs establish an agreed framework for sustainable management of the land. Management standards may be agreed in recognition of particular conservation issues.

3. **Off-reserve conservation on Public or Unleased Land within the urban area**: Not all public land is reserved for nature conservation, but conservation values may be present notwithstanding. The general provisions of the *Nature Conservation Act 1980* apply, including the protection of nests. The *Nature Conservation Act 1980* also has provisions for the Conservator to give directions for the protection of native plants and animals. A formal management agreement may also be put in place to control specified activities.

Objective

Retain or improve the current extent, condition and connectivity of Glossy Black-Cockatoo habitat in the ACT.

Actions

1. Apply formal measures (reservation, land management agreements, off-reserve conservation mechanisms) to protect and manage Glossy Black-Cockatoo habitat in the ACT that complement actions in ACT conservation strategies (Action Plans 27 and plans of management for reserve areas in the ACT).
2. Give identified nest sites and foraging areas a high priority for protection, which may include the designation of buffer areas around specific nesting trees or feeding sites.
3. Undertake management actions on ACT Government managed land, and provide specifications and advice to other landholders and managers, aimed at protecting Glossy Black-Cockatoo nesting and foraging habitat.

Indicators

1. Formal measures have been taken to protect and manage Glossy Black-Cockatoo habitat in the ACT, with a high priority given to nest sites and important foraging areas.
2. Management actions have been taken on ACT Government managed land aimed at protecting nesting and foraging habitat and improving connectivity between habitat patches.
3. Specifications and advice on conserving Glossy Black-Cockatoo habitat has been provided to other landholders and managers.

Objective

Stands of feed trees *(A. verticillata*) in woodlands in the ACT are enhanced to extend and connect suitable feeding habitat for the Glossy Black-Cockatoo.

Actions

1. Identify any areas that could be established as a second significant feeding

area (in addition to Majura/Ainslie) and identify at least one of these areas to be established for that purpose.

2. Support planting of *A. verticillata* in suitable areas of the ACT with priority given to increasing the existing size and connectivity of stands, and in particular for the establishment of a second significant feeding area (identified in Action 1).
3. Identify management actions for important *A. verticillata* stands and provide this information for incorporation into relevant management plans (such as management plans for reserves, fire management plans and grazing management plans).
4. Planning and management of Mount Majura/Mount Ainslie Reserve complex takes into account the protection and management of stands of *A.verticillata*.

Indicators

1. Areas that could be established as a second significant feeding area (in addition to Majura/Ainslie) have been identified, and one of these has been identified to be established for this purpose.
2. Stands of *A. verticillata* are improved and expanded in areas of suitable core habitat for the Glossy Black-Cockatoo. If a suitable location for a new second significant feeding area has been identified (in addition to Ainslie Majura) then this area is managed (including any necessary plantings) for this purpose. Patches of foraging habitat that have not been used previously by the birds are being used because of improvement in quantity, quality or connectivity of habitat.
3. Management actions for important *A. verticillata* stands are incorporated into relevant management plans.
4. Planning for the Mount Majura/Mount Ainslie Reserve is undertaken in a manner that protects or improves existing stands of *A. verticillata*.

REGIONAL CO-OPERATION

Habitat for the Glossy Black-Cockatoo in the South Eastern Highlands bioregion is under ecological stress generally and regional population decline of the species is evident. Liaison with agencies outside the ACT which are involved in the conservation of the Glossy Black-Cockatoo is essential for a regional conservation effort.

Objective

The ACT participates in a coordinated regional approach to conserve the Glossy Black-Cockatoo.

Action

The ACT is proactive in ongoing communication with NSW Government authorities and relevant community groups, such as Landcare, Catchment and the K2C project, to improve habitat (including connectivity) for the Glossy Black-Cockatoo and to foster research (particularly distribution, demographics and movements).

Indicator

The ACT participates in regional efforts to conserve the Glossy Black-Cockatoo and its habitat.

COMMUNITY ENGAGEMENT

Community engagement can assist the achievement of conservation goals by fostering an appreciation of both the issues involved (particularly the ecological, economic and social effects of land planning and land management) and of the actions required to conserve biodiversity. Community engagement is also important for accessing community knowledge and resources (for example, wildlife expertise or capacity to undertake volunteer activities). In the case of the Glossy Black-Cockatoo, knowledge of its conservation status and threats to its future well-being in the ACT are, to a significant extent, a product of community knowledge and efforts.

Objective

The community is informed of conservation issues relating to the Glossy Black-Cockatoo and the community assists in habitat improvement initiatives for the Glossy Black-Cockatoo.

Actions

1. Provide the community with information about the conservation measures for the Glossy Black-Cockatoo.
2. Encourage and support the continuation and further development of community-based conservation activities related to the Glossy Black-Cockatoo, particularly with regard to improvement of habitat.
3. Encourage reporting of sightings of Glossy Black-Cockatoos and chewed cones in the ACT.

Indicator

There is active, well-informed and ongoing involvement of the community in the conservation of the Glossy Black-Cockatoo.

Legislative provisions

The following legislation applies to the conservation of flora and fauna in the ACT:

ACT Legislation

Nature Conservation Act 1980

The *Nature Conservation Act 1980* protects native plants and animals and the nests of native animals. It establishes the Conservator of Flora and Fauna and specified activities are controlled via a licensing system. The Conservator may give the occupier of land directions for the protection or conservation of native plants and animals on the land. The Act also provides authority for the management of public land that is reserved for conservation of the natural environment. Special measures for conservation of a species or community of concern can be introduced.

Planning and Development Act 2007

The object of this Act is to provide a planning and land system that contributes to the orderly and sustainable development of the ACT. The Act establishes the Territory Plan; provides for the identification, reservation and management of Public Land; and outlines requirements for environmental impact assessment.

Heritage Act 2004

This Act establishes a system for the recognition, registration and conservation of natural and cultural heritage places and objects. A list of these places is maintained on the ACT Heritage Register.

Commonwealth Legislation

Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the primary Commonwealth legislation for environment protection. Under the EPBC Act, an action will require approval from the (Commonwealth) Environment Minister if the action has, will have, or is likely to have a significant impact on a matter of national environmental significance and it is not subject to certain specified exceptions. Matters of national environmental significance are: World Heritage and National Heritage properties, Ramsar wetlands of international importance, nationally listed threatened species and ecological communities, migratory species protected under international agreements, Commonwealth marine environment and nuclear actions.

The Glossy Black-Cockatoo Eastern subspecies (*C.l.lathami*) is not currently a species listed under the EPBC Act. However, it utilises Yellow Box – Red Gum grassy woodland which is a component of the EPBC listed ecological community: White Box – Yellow Box – Red Gum Grassy Woodland and Derived Native Grassland (listed as critically endangered).

Implementation and review

The ACT Government (Environment and Sustainable Development Directorate) has responsibility for coordinating implementation of this Action Plan. Some actions will involve collaboration between government agencies, research organisations and the community.

The Flora and Fauna Committee will review implementation of this Action Plan after three years. The review will comprise an assessment of achievement of the objectives of the Action Plan, recognising that the timeframe for achieving some objectives are necessarily longer than the duration of this Action Plan. Assessment of progress will be based on achieving the relevant indicator for each Action.

The review will provide an opportunity for both the Flora and Fauna Committee and relevant section(s) of the ACT Government to assess progress; take account of new knowledge of the species and threats; consider new developments in policy and administration; and review directions and priorities for future conservation actions.

Acknowledgements

Martine Franco, Murray Evans, Greg Baines and Michael Mulvaney contributed to the preparation of this Action Plan. Matt Cameron provided comments on an early draft. The illustration of the species (Figure 1) was prepared for the ACT Government by Leslie Wallington. The Canberra Ornithologists Group prepared and submitted the nomination

(Bounds 2011) to list the Glossy Black-Cockatoo as a threatened species in the ACT.

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List of Action Plans

In accordance with Section 23 of the *Nature Conservation Act 1980*, Action Plans are prepared by the Conservator of Flora and Fauna. The following are current:

No. 5: A subalpine herb (*Gentiana baeuerlenii*) —an endangered species.
No. 6: Corroboree Frog (*Pseudophryne corroboree*)—a vulnerable species.
No. 22: Brush-tailed Rock-wallaby (*Petrogale penicillata*)—an endangered species.
No. 23: Smoky Mouse (*Pseudomys fumeus*)—an endangered species.
No. 27: Woodlands for Wildlife: ACT Lowland Woodland Conservation Strategy.

Incorporating Action Plans for the following threatened species and communities:

- Yellow Box – Red Gum Grassy Woodland
- A Leek Orchid (*Prasophyllum petilum*)
- Small Purple Pea (*Swainsona recta*)
- Hooded Robin (*Melanodryas cucullata*)
- Swift Parrot (*Lathamus discolor*)
- Superb Parrot (*Polytelis swainsonii*)
- Brown Tree creeper (*Climacteris picumnus*)
- Painted Honeyeater (*Grantiella picta*)
- Regent Honeyeater (*Xanthomyza phrygia*)
- Varied Sitella (*Daphoenositta chrysoptera*)
- White-winged Triller (*Lalage sueurii*)

No. 28: A Vision Splendid of the Grassy Plains Extended: ACT Lowland Native Grassland Conservation Strategy.

Incorporating Action Plans for the following threatened species and communities:

- Natural Temperate Grassland

- Striped Legless Lizard (*Delma impar*)
- Grassland Earless Dragon (*Tympanocryptis pinguicolla*)
- Golden Sun Moth (*Synemon plana*)
- Perunga Grasshopper (*Perunga ochracea*)
- Button Wrinklewort (*Rutidosis leptorrhynchoides)*
- Ginninderra Peppercress (*Lepidium ginninderrense*)

No. 29: Ribbons of Life: ACT Aquatic Species and Riparian Zone Conservation Strategy.

Incorporating Action Plans for the following threatened species and communities:

- Two-spined Blackfish (*Gadopsis bispinosus*)
- Trout Cod (*Maccullochella macquariensis*)
- Macquarie Perch (*Macquaria australasica)*
- Murray River Crayfish (*Euastacus armatus*)
- Silver Perch (*Bidyanus bidyanus*)
- Tuggeranong Lignum (*Muehlenbeckia tuggeranong)*
- Pink-tailed Worm Lizard (*Aprasia parapulchella*)

No. 30: Spotted-tailed Quoll (*Dasyurus maculatus*)—a vulnerable species.
No. 31: Canberra Spider Orchid (*Caladenia actensis*) – an endangered species
No. 32: Brindabella Midge Orchid (*Corunastylis ectopa*) – an endangered species
No. 33: Glossy Black-Cockatoo (*Calyptorhynchus lathami*) – a vulnerable species
No. 34: Murrumbidgee bossiaea (*Bossiaea grayi*) K. L. McDougall - an endangered species

FURTHER INFORMATION

Further information on this Action Plan or other threatened species and ecological communities can be obtained from:
Environment and Sustainable Development
ACT Government
Phone: (02) 132281
Website: http://www.environment.act.gov.au

This document should be cited as:
ACT Government 2013. Glossy Black-Cockatoo *(Calyptorhynchus latham)* Action Plan No. 33. ACT Government, Canberra.