

NSW SCIENTIFIC COMMITTEE

Black-eared Miner *Manorina melanotis*

Review of Current Information in NSW

May 2008

Current status:

The Black-eared Miner *Manorina melanotis* is currently listed as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act), Threatened in Victoria under the *Flora & Fauna Guarantee Act* 1988 (FFG Act; Endangered on Advisory List) and Endangered in South Australia (as *M. flavigula melanotis*) under the *National Parks and Wildlife Act* 1972 (NPW Act). The NSW Scientific Committee recently determined that the Black-eared Miner meets criteria for listing as Critically Endangered in NSW under the *Threatened Species Conservation Act* 1995 (TSC Act), based on information contained in this report and other information available for the species.

Species description:

The Black-eared Miner is a medium-sized (25 cm), mostly grey honeyeater. The species has an orange bill and legs, black mask, yellow eye skin, a slight yellow tinge on the forehead and below the ears, an olive-yellow tinge in the wings and tail, and a white belly. It is very difficult to distinguish from the Yellow-throated Miner *Manorina flavigula*, which is paler with a white rump and slightly more yellow tinge on the forehead and throat. Hybrids between these two species occur commonly, and have intermediate plumage characters.

Taxonomy:

Manorina melanotis Wilson 1911 (Meliphagidae) is monotypic (*i.e.* no subspecies) and an endemic species in an endemic Australian genus and endemic Australasian family. The Black-eared Miner is sometimes considered a subspecies of the Yellow-throated Miner Gould 1840, but recent DNA study has confirmed its specific status (Higgins *et al.* 2001).

Distribution and number of populations:

In NSW the Black-eared Miner is restricted, as a single subpopulation at one isolated location, to the far south-western Mallee (Scotia Station, a reserve owned by the Australian Wildlife Conservancy, and Tarawi Nature Reserve) adjoining South Australia and north-west Victoria (Clarke *et al.* 2005). The species is globally Endangered, with the core population being in South Australia where the largest of four global subpopulations (about 240 birds) occurs (Garnett & Crowley 2000; Clarke *et al.* 2005). About 95% of the global population occurs as a single subpopulation in one large reserve in South Australia (Clarke *et al.* 2005).

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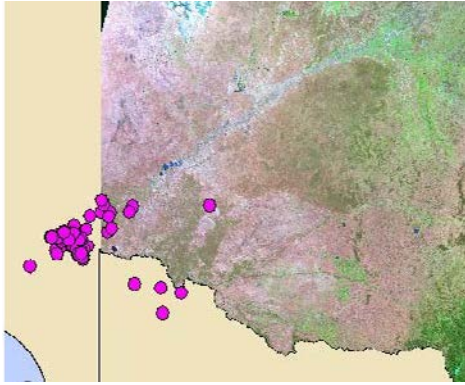


Figure 1. Records since 1980 of the Black-eared Miner (NSW Wildlife Atlas). Note: the outlying record near Mungo NP is suspected to be invalid (possibly misidentified Yellow-throated Miner: a Birds Australia Atlas record for 1998 that was not included in Barrett *et al.* 2003 or Clarke *et al.* 2005).

Ecology:

Some aspects of the ecology of the Black-eared Miners is moderately understood, however general biology is poorly understood (Ewen *et al.* 2001; Higgins *et al.* 2001; Clarke *et al.* 2001, 2002, 2003, 2005).

Key habitat requirements

The Black-eared Miner inhabits large blocks of mature mallee that have been unburnt for more than 50 years, with an open shrubby understorey and spinifex ground layer. Much of this habitat has been cleared and remnants are vulnerable to wildfire.

Breeding biology

The Black-eared Miner builds an open cup nest of twigs, plant fibres and cobweb in forks of the mallee canopy, or sometimes in cypress-pines or tall understorey shrubs. A clutch of two or three eggs is laid in spring and possibly autumn. The incubation period is probably about 16 days, the nestling period is probably about 16 days, and the post-fledging dependence period is probably about five weeks (by analogy with other miner species). Nests and fledglings are probably susceptible to predation by cats and foxes (as for the Yellow-throated Miner). Isolated Black-eared Miner colonies have a low recruitment rate (Garnett & Crowley 2000; Higgins *et al.* 2001). The generation length of the Black-eared Miner is estimated as 1.5 years (Garnett & Crowley 2000).

The Black-eared Miner is colonial, with multiple breeding units each consisting of a primary pair and up to 12 helpers (usually males).

Diet

The Black-eared Miner feeds mostly on insects, gleaned from foliage and bark of mature mallees, and from leaf litter; also nectar from mallee blossom and shrubs. Its foraging habitat and food supply are vulnerable to overgrazing and fire.

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Territoriality/home range

Sedentary colonies of Black-eared Miners maintain large communal breeding territories and home ranges of about 10 ha in the breeding season, and 40-60 ha or more in the non-breeding season (Higgins *et al.* 2001).

Ability to disperse/susceptibility to population fragmentation

Adult Black-eared Miners are highly sedentary, though juveniles can disperse up to 15 km (Higgins *et al.* 2001). The species is highly susceptible to habitat fragmentation and hence population fragmentation, largely because Yellow-throated Miners colonise fragmented habitat and hybridise with the Black-eared Miner.

Number of mature individuals:

The number of Black-eared Miners in NSW is extremely low, with few records of the species since 1980. Intensive surveys in 1993 found three colonies of hybrids on Scotia Station, and no Black-eared Miners in nearby areas (Higgins *et al.* 2001). Otherwise, since 1980 there have been sightings of six Black-eared Miners in two groups in 1985, and sightings of single Black-eared Miners in 1981 and 1985 (Higgins *et al.* 2001). Annual bird reports 2000-2004 have reported small numbers of Black-eared Miners (two birds each) in Tarawi NR and Scotia Station, in 2001 and 2002 only (NSW Field Ornithologists Club data). The core population in SA is estimated as around 3 750 pure Black-eared Miners and around 2 250 hybrids in 150 colonies, but with an effective population size of 390 Black-eared Miners and 234 hybrids, owing to the skewed sex ratio and complex social organisation (Clarke *et al.* 2005). The number is much smaller in Victoria (about 53 colonies, of unknown ratio of pure birds to hybrids, estimated by Clarke *et al.* 2005). However, only four colonies of about 12 birds each (= c. 50 birds) were found in Victoria (Clarke *et al.* 2005). On the basis of distribution and reporting rate, and number of colonies (Higgins *et al.* 2001; Barrett *et al.* 2003; Clarke *et al.* 2005), the number in NSW is estimated to be much fewer than 50 birds (about 20% of that in Victoria, or between 10 and 20 birds). The most recent survey, in spring 2007, in Scotia and Tarawi, found a total of six birds classified as Black-eared Miners (expert advice). The South Australian and Victorian populations are at high risk of extinction from wildfire (Clarke *et al.* 2005), and the same is inferred to apply to the smaller NSW population.

Threats:

The main threats to the Black-eared Miner are clearing and fragmentation of mallee, and consequent hybridisation and genetic introgression by the Yellow-throated Miner, which readily colonises fragmented mallee. Threats to the remaining habitat of the species include wildfire and predation by cats and foxes. 'High frequency fire resulting in the disruption of life processes in plants and animals and loss of vegetation structure and composition', 'Predation by the European Red Fox *Vulpes vulpes*' and 'Predation by the Feral Cat *Felis catus*' are listed as Key Threatening Processes in NSW under the TSC Act. Genetic introgression from Yellow-throated Miners is

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also spreading into Black-eared Miner colonies in intact mallee (Garnett & Crowley 2000; Clarke *et al.* 2001; Higgins *et al.* 2001).

Extreme fluctuations:

There is no evidence of extreme fluctuations, or of the Black-eared Miner's population decline being temporary.

Population reduction and continuing declines:

A comparison of historical and current records shows that the NSW distribution of the Black-eared Miner has contracted from the Darling Anabranch and the Murray River, east of Mildura (south of Mallee Cliffs NP), to the SA border area, around Scotia Station and Tarawi Nature Reserve (Figure 1 of Clarke *et al.* 2005). The species was recorded in two 1-degree grids in western NSW in the first national bird atlas in 1977-1981, at high reporting rates (more than 40% of surveys per grid), with one breeding record (Blakers *et al.* 1984). It was reported in the same two grids in the second national bird atlas in 1998-2002, at low reporting rates (less than 10% of surveys per grid), with no breeding records in NSW (Barrett *et al.* 2003). Thus, there has been a substantial decline in index of abundance (reporting rate) in 20 years. It is known, with high confidence, to be decreasing globally (Garnett & Crowley 2000). Remaining large areas of mallee in the Black-eared Miner's historical range in NSW are not fragmented, but there has been loss of habitat of a suitable seral stage because of fire, the habitat has been degraded by stock, and there has been some small-scale clearing of continuous mallee around stock watering points (expert advice). The population decline and hybridisation are explained by the presence of abundant Yellow-throated Miners in surrounding habitats, and stock watering points in uncleared mallee that attract dispersing Yellow-throated Miners into Black-eared Miner habitat and allow the former to persist in areas they may not have occupied before European settlement (expert advice). Provision of free water has made conditions more suitable for Yellow-throated Miners, and the associated piosphere effect may further enhance opportunities for Yellow-throated Miners, while concurrently reducing opportunities for Black-eared Miners (expert advice). Given recent drought conditions, the current situation for the Black-eared Miner is inferred to be worse than in 2000-2002 (expert advice).

Extent of Occurrence (EOO) & Area of Occupancy (AOO):

Global EOO is estimated as 1 750 km², and global AOO as 450 km², both with medium reliability (Garnett & Crowley 2000). This estimate for EOO includes non-core habitat, but core habitat covers 900 km² (Clarke *et al.* 2005). As less than one-quarter of the species' range falls in NSW, maximum EOO is thus about 400 km², and maximum AOO is about 100 km². However, as recent surveys found pure Black-eared Miners at only one location in NSW (Clarke *et al.* 2005), EOO and AOO are almost certainly less than 100 km² and less than 10 km², respectively. Clarke *et al.* (2005) recommend that IUCN (2008) standards for AOO could be relaxed for fire-sensitive species such as the Black-eared Miner in fire-prone habitat, to better reflect the risk of

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extinction, because uncontrollable wildfires on the present scale can burn out whole mallee reserves and thus eliminate entire Miner populations.

Severe fragmentation:

The species' NSW population and habitat are inferred to have been severely fragmented historically, owing to the extent of clearing of mallee for agriculture in western NSW. The largest of four global subpopulations is about 240 birds (in South Australia). Therefore, if the Victorian subpopulation is about 130 birds, the other two subpopulations are inferred to number fewer than 50 birds. The single remaining subpopulation in NSW is estimated to number 10-20 birds. Colonies of Black-eared Miners are fragmented by the existence of colonies of Yellow-throated Miners and hybrids on intervening land.

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IUCN (2008) 'Guidelines for using the IUCN Red List Categories and Criteria. Version 7.0.'
(Standards and Petitions Working Group of the IUCN Species Survival Commission
Biodiversity Assessments Sub-committee: Switzerland).
(<http://intranet.iucn.org/webfiles/doc/SSC/RedList/RedListGuidelines.pdf>).

NSW Field Ornithologists Club (1988-2007) NSW annual bird reports and unusual sighting reports, published in *Australian Birds* and *Birding NSW Newsletter*.

Explanatory note

Between 2007 and 2009 the NSW Scientific Committee undertook a systematic review of the conservation status of a selection of plant and animal species listed under the Threatened Species Conservation Act. This species summary report provides a review of the information gathered on this species at the time the Review was undertaken.

The Scientific Committee's report on the Review of Schedules project and final determinations relating to species that were either delisted or had a change in conservation status can be found on the following website: www.environment.nsw.gov.au.

The Committee gratefully acknowledges the past and present Committee members and project officers who ably assisted the Committee in undertaking the Review of Schedules Project. Information on the people involved in the project can be found in the Acknowledgement section of the project report entitled "Review of the Schedules of the Threatened Species Conservation Act 1995. A summary report on the review of selected species" which is available on the abovementioned website.

This species summary report may be cited as:

NSW Scientific Committee (2008) Black-eared Miner *Manorina melanotis*. Review of current information in NSW. May 2008. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville.