Mallee Emu-wren; Management Burning and Toxic Waste Dump Spark Concerns for a Listed Threatened Species

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Mallee Emu-wren *Stipiturus mallee* is an enigmatic cousin of the fairy wrens found almost exclusively in National Parks of northwest Victoria and eastern South Australia (see Map, below). Its listing as vulnerable under Part 3 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ["EPBC Act"][3] however belies its true status. It has a restricted range and a heavily fragmented population.[4] In 1992 the Department of Environment and Heritage (DEH) placed the population at 'less than 10,000' birds[5] over 2000km2 and decreasing.[6] Its status as 'vulnerable' under Schedule 8 of the *National Parks and Wildlife Act 1972* (SA) in South Australia is under review as it is thought to be in serious decline, even in previous strongholds such as Ngarkat Conservation Park where it has been lost from 90% of sites in the last 15 years.[7] It is currently considered 'vulnerable' in Victoria[8], which now holds most of the population, but the species has become increasingly difficult to find. As in South Australia, it has been seriously affected by habitat loss and fragmentation due to deforestation, overgrazing and burning. Ornithological experts such as Dave Paton at University of Adelaide believes the species warrants re-listing in the Critically Endangered category (see Appendix 1).

Mallee Emu-wren is a material constraint for a proposed toxic waste facility at Nowingi/Hattah in the northwest Victorian mallee.[9] The site and adjacent environs are widely recognised as one of the species' last strongholds. At the same time management burning in Murray Sunset National Park, Wyperfeld National Park and Hattah-Kulkyne National Park is set to destroy and / or fragment significant habitat across most of the bird's range. A program that began in spring 2004 aims to burn over 500km2 of mallee vegetation in northwest Victoria by 2006.[10] With these pressures it is feared that Mallee Emu-wren could face a serious and irreversible decline to extinction like other mallee birds such as the mallee form of the Western Whipbird *Psophodes nigrogularis leucogaster*.

Mallee Emu-wrens principally occupy relict mature spinifex (*Triodia* sp.) vegetation in the northern half of their range and older growth mallee heathland communities in the southern portion of their range. Both habitats are becoming increasingly uncommon and fragmented as a result of vegetation clearance and widespread fires. Burning of mallee vegetation destroys Mallee Emu-wren habitat in the short term and may result in extinction unless remnant populations can survive while habitat recovers, which can take years.

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3 Department of Environment and Heritage, *National List of Threatened Fauna* <http //www deh gov au/cgi-bin/sprat/public/publicthreatenedlist pl?wanted=fauna> at 21 October 2004

4 S T Garnett and G M Crowley, *The Action Plan for Australian Birds* (2000) Environment Australia, Canberra

5 The adoption of a population of 10,000 (rather then less than 10,000) by other authors may be a perpetuation of a misquote from Garnett and Crowley (see above, n2)

6 Department of Environment and Heritage, *Recovery Outline, Mallee Emu-Wren* <www deh gov au/biodiversity/threatened/ action/birds2000/pubs/mallee-emu-wren pdf> at 21 October 2004

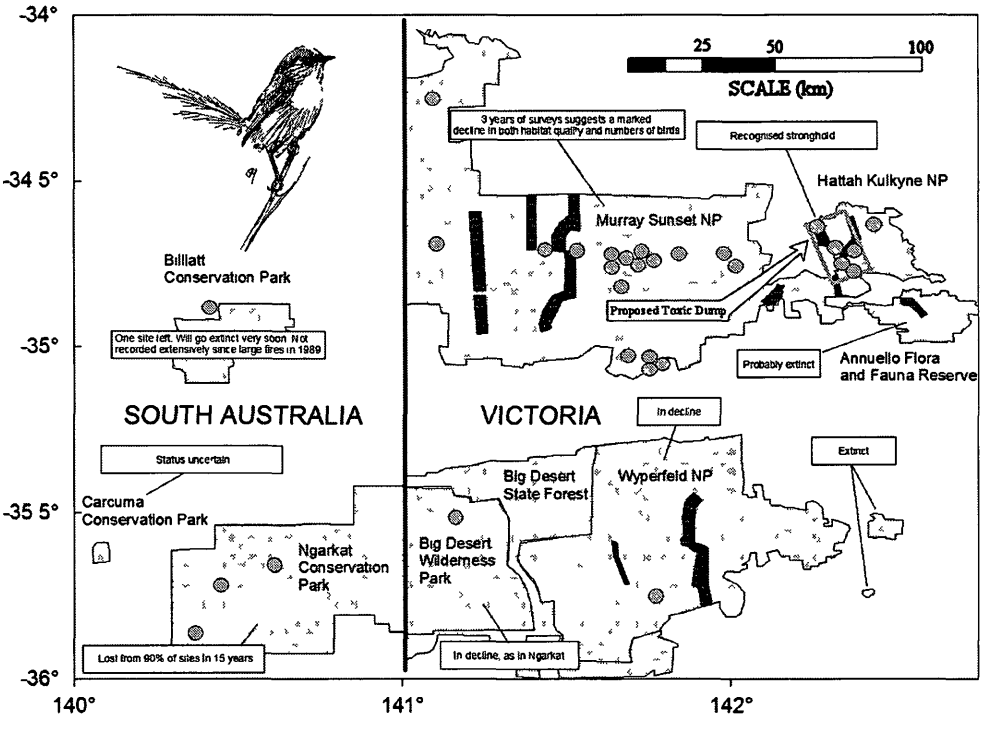
7 D Paton, Umversity of Adelaide (In litt)

8 Department of Sustainability and Environment, *Threatened Species Advisory List 2003*, (2003)

9 For background on the toxic waste facility proposal see http //www majorprojects vic gov au/ then look under Innovation and Investment/Industrial waste management

10 Department of Sustainability and Environment, *Fire Operations Plan - Mildura Fire District 2004 – 2007* <http //www dse vic gov au/dse/nrenfoe nsf/LinkView/925D00C5FFADE2B1CA256DB800183C9CD9C990890459F50D4A256DEA0013F040> at 4 November 2004

Map 1: Distribution of Mallee Emu-wren.



This map illustrates the entire distribution of Mallee Emu-wren. Locations, shown as dots on the maps, are indicative of sites where the species has been recorded in recent years. Data are taken from extensive survey work by ornithologists at the University of Adelaide, Latrobe University and the Black-eared Miner Recovery Group. These data indicate that the species is in serious decline in Ngarkat Conservation Park in South Australia. This area is contiguous with Big Desert Wilderness Park and Wyperfeld National Park where the species is also considered to be in decline. The majority of the population now exists in the dune fields that run east to west through Murray Sunset National Park and Hattah-Kulkyne National Park. Only three broad locations now support reasonable numbers of birds. This includes western areas of Hattah-Kulkyne National Park, which is earmarked for fuel reduction burns in 2006, and the site of the proposed toxic waste facility.

A visit to Murray Sunset National Park in early October to search areas where Mallee Emu-wren have occurred in the past found vast areas of spinifex habitat senescing, possibly due to continued drought in the area. Over three days of searching several known sites in the eastern and western portions of the park no Mallee Emu-wrens were heard or seen. Like many small birds that occupy semi-arid environments Mallee Emu-wrens populations are likely to fluctuate widely, with population increases during a series of above average seasons and substantial population reductions in periods of drought. While these fluctuations are natural, when populations are down— as is likely at present—the species is most sensitive to human induced impacts. Actions that further reduce and fragment already stressed populations could be the trigger for irreversible population decline.

In contrast to efforts in Murray Sunset National Park, Mallee Emu-wrens were found easily in Hattah/Nowingi including the area proposed for the toxic waste facility. A second visit to the site by concerned ornithologists in mid-October recorded eight encounters including more birds within the 'footprint' of the proposed development (these were the first birds recorded on site by any ornithologists since the toxic waste facility project inception). The bird was also recorded and is known to occur in reasonable density in spinifex on the opposite side of the Calder Highway in Hattah-Kulkyne National Park. This habitat is within a stone throw east.

Despite the fact that burning is an essential component of mallee ecology, fire is a potentially significant threat to Mallee Emu-wren. Anecdotal information suggests that a close relative, the Rufous-crowned Emu-wren, has been recently lost from most traditional sites in the West Macdonnell Ranges near Alice Springs following extensive 'ecological management' burns. Uncontrolled burning is recognised as a major threat in the Draft Federal Recovery Plan for various mallee species including Mallee Emu-wren.[11]

Back-burning is proposed as a fire prevention measure for the perimeter of the proposed toxic waste facility. If the whole buffer area out to 500m around a 45 hectare facility is burnt, as is implied in the Referral document, this would threaten over 2 square kilometres of prime habitat[12] whilst it is feared that prevailing winds from the west could drive fire into Hattah Kulkyne National Park, posing a significant risk to most of the Mallee Emu-wren stronghold. To add to this burden a significant proportion of Hattah Kulkyne National Park is also marked for extensive fuel reduction burning in 2006 as part of the State's burning program.[13]

Mallee Emu-wren is a matter of national environmental significance formally protected under Part 3 section 18, 18A of the EPBC Act making it an offence to take an action that would have a significant impact on the species.

The proposal for a toxic waste facility is subject to a section 75 notice under the EPBC Act that has determined the action requires assessment under Part 8.[14] The notification of decision specifically names Mallee Emu-wren as a controlling provision[15] despite the proponent's referral (EPBC 2004/1666)[16] stating that the action was not likely to have a significant impact on any matter of national environmental significance. The referral however only referenced Atlas of Victorian Wildlife data[17] and a three-day Stage 1 Flora and Fauna Assessment in winter[18] saying that Mallee Emu-wren was '[l]ikely but no evidence [was] found during preliminary survey'. The Stage 1 report more precisely cited states '[t]he study area provides suitable mallee woodland habitat [for Mallee Emu-wren]' and '[t]he fauna survey was a preliminary habitat assessment and reconnaissance inspection in preparation for more detailed fauna survey at a more appropriate time of year.' It was not likely therefore that the information available could support any assertion that the action was not controlled.

Breeding birds vary in detectability over relatively short time periods and standard methods should ideally relate to the main breeding period of individual species.[19] It is generally understood that Mallee Emu-wren are at their most conspicuous – as are most birds— just before the breeding season in early spring (late September to late October). Outside the breeding season and when the average daytime temperature begins to rise, they become more secretive. If surveys are not done at an appropriate time of year then the likelihood of detecting a species falls. As exemplified by the winter 2003 Stage 1 Assessment, fieldworkers may not be successful in finding birds. If the methodology fails to adequately determine their onsite status then it would become impossible to develop precise management recommendations or assess the significance of impacts in a formal ecological assessment.

The toxic waste facility proposal also requires an Environment Effects Statement (EES) under the Victorian *Environment Effects Act* 1978 (Vic) which has recently been named as the accredited process for assessment

11 David Baker-Gabb, *Recovery Plan For The Mallee Emu Wren* Stipiturus mallee, *Red-Lored Whistler* Pachycephala rufogularis, *Western Whipbird* Psophodes mgrogularis leucogaster, *and Other Threatened Mallee Birds SECOND DRAFT* (2004)

12 The precise area of burning is unknown as it is only implied in the Referral document and other material at present that the buffer area will be burnt The buffer area will comprise 500m around a facility up to 45Ha in size If it is assumed that all this area is burnt, this would represent a loss of habitat of about 2 5 square kilometres

13 Above, n7

14 A section 75 notice is a formal decision by the Commonwealth Environment Minister A controlled action is a decision that an action is likely to have a significant impact on a Matter of National Environmental Significance, that includes listed threatened species such as Mallee Emu-wren Controlled actions require that an environmental impact assessment is done before the Minister can make a decision whether or not to approve the action

15 Letter from Mark Flanigan, Assistant Secretary Policy and Compliance Branch, Department of Environment and Heritage to Mr Rod McLelland, Projects Manager, Major projects Victoria, 18 August 2004 titled 'Notification of Decision under the Commonwealth EPBC Act Major Projects Victoria/Waste Management/Nowingi/VIC/Long Term Containment Facility for the Storage and Management of Prescribed Industrial Wastes/EPBC 2004/1666'

16 Major Projects Victoria/Waste Management/Nowingi/VIC/Long Term Containment Facility for the Storage and Management of Prescribed Industrial Wastes/EPBC 2004/1666

17 Atlas of Victorian Wildlife is a database of community wildlife sightings maintained by the Victorian government's Department of Sustainability and Environment Although useful, the Atlas rarely provides comprehensive information and almost never at a spatial or temporal scale suited to ecological impact assessment at any given site

18 Biosis Research Pty Ltd, *Stage 1 Flora and Fauna Assessment of the Area Proposed for the Long Term Containment Facility, Nowingi, Victoria Report to Major Projects Victoria by J Miller, S Koehler, N Barnes, M Venosta, & L Brown* (2004)

19 C J Bibby, N D Burgess, D A Hill and S H Mustoe, *Bird Census Techniques 2nd Edition* (2000) 38

under the EPBC Act. If as the Draft Assessment Guidelines[20] of the EES suggest there is an assessment deadline of March 2005, this may be too soon to permit surveys to be redone if the survey window for Mallee Emu-wren is missed.

Mallee Emu-wren is also listed on the Victorian *Flora and Fauna Guarantee Act 1988* (Vic) and the *Wildlife Act 1975* (Vic), section 43 of which makes it a general offence to 'hunt, take or destroy protected wildlife'[21], without a license or authorisation. Under section 22 however, the Secretary may grant a wildlife license authorising a person to take or destroy wildlife. The conditions under which licenses are given are largely at the discretion of the Secretary although one of the purposes (section 1A) of the *Wildlife Act 1975* (Vic) is 'the prevention of taxa of wildlife from becoming extinct'. These provisions however do not seem to be commonly applied when it comes to preventing the destruction of nests and eggs. Only after public opposition to plans to use heavy plant to drill exploratory groundwater boreholes on the site in late October for example, did the proponent consider imposing management requirements to minimise potential risk of egg destruction on ground-nesting Mallee Emu-wrens. What should have been a simple process of careful management to avoid nests was prevented by a lack of assessment data and has resulted in costly and unnecessary delays.

Unlike the toxic waste facility proposals, extensive management burning in Victoria's National Parks has not been referred to the Commonwealth Minister for the Environment for a decision on whether the proposal is likely to have a significant impact on any matter of national environmental significance, whilst burning has already begun. There is a strong risk that burning large areas in the northwest without first identifying sites important for biodiversity and implementing appropriate management to ensure that there is enough recovery potential could have serious and irreversible consequences for fire sensitive threatened birds such as Mallee Emu-wren.

Between March and September 2004, 9 650 Hectares (1.5%) of Murray Sunset National Park were burnt. This has created a 3km wide swathe across the heart of the park and would have destroyed any vegetation critical for protected species such as Mallee Emu-wren, Black-eared Miner *Manorina melanotis* and Malleefowl *Leipoa ocellata*, all of which depend on old growth mallee. Some burning proceeded under conditions that could be considered high risk despite earlier concerns raised by the Recovery Team for the Black-eared Miner and a lack of any assessment to determine the likely impact of the action on threatened fauna. Planned burning for 2005 and 2006 may result in over 3% of Murray Sunset National Park and 7% of Hattah-Kulkyne National Park vegetation being deliberately burnt in a short period of time. The extent to which this may destroy or fragment remaining populations of Mallee Emu-wren is currently unknown.

These proposals therefore have important connotations not only for bird conservation but also for the fabric of ecological assessment and administration of environmental law in Australia. There is already considerable precedent for standards required in ecological assessment, particularly under the EPBC Act, as well as a statutory duty to provide accurate information to obtain approvals and permits under section 489 of the Act. The objectives of management burning in Murray Sunset National Park are apparently conservation driven but the EPBC Act process is still material and without first doing a fauna survey and assessment it is impossible to ensure that management will be beneficial. Similarly a lack of reliable survey methodology indicating the numbers and location of birds at the proposed Hattah/Nowingi toxic waste facility site could be tantamount to a lack of assessment as it would be impossible to scientifically justify siting of the facility to have minimum impact on the species.

Despite this, development of toxic waste facilities and ecological management / fuel reduction burning need not necessarily be at the expense of Mallee Emu-wren conservation. The problem, as all too often, is that serious constraints have either (a) been identified too late in development (with respect to seasonal constraints for assessment work); or (b) not been identified at all. The existence of environmental law if nothing else is to ensure that decisions that could have a significant impact are considered carefully upfront; that all the facts are objectively assessed and that decision-makers and the public can make an informed judgment, even if environmental considerations ultimately give way to socio-economics. This requires that someone with independent ecological authority provides the right advice to the right people at the right time. Not least, the rigorous design and application of appropriate survey methods at an appropriate time of year is the cornerstone of any ecological assessment. Without timely and robust research, decision-makers are put under undue pressure to make uninformed decisions and there is inevitable public outcry. As is becoming apparent already in the Nowingi/Hattah toxic waste dump proposals, failure to predict these requirements and address them before it is too late can be very costly in both financial and public relations terms. The message to developers and regulatory authorities should be clear.

20 Department of Sustainability and Environment, Draft Assessment Guidelines, Environment Effects Statement, Containment Facility for Industrial Waste at Nowingi June 2004 (2004)

21 Protected wildlife includes all native wildlife, with limited exception

appendix 1

Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) REG 7.01 Criteria for listing threatened species.

For section 179 of the [EPBC] Act, a native species is in the critically endangered, endangered or vulnerable category if it meets any of the criteria for the category mentioned in the following table:

Item	Criterion	•Category		
		Critically Endangered	Endangered	Vulnerable
1	It has undergone, is suspected to have undergone or is likely to undergo in the immediate future:	a very severe reduction in numbers	a severe reduction in numbers	a substantial reduction in numbers
2	Its geographic distribution is precarious for the survival of the species and is:	very restricted	Restricted	limited
3	The estimated total number of mature individuals is: and (a) evidence suggests that the number will continue to decline at: or (b) the number is likely to continue to decline and its geographic distribution is:	very low a very high rate precarious for its survival	low a high rate precarious for its survival	limited a substantial rate precarious for its survival
4	The estimated total number of mature individuals is:	extremely low	very low	Low
5	The probability of its extinction in the wild is at least:	50% in the immediate future	20% in the near future	10% in the medium-term future