



## **Consultation Document on Listing Eligibility and Conservation Actions**

### ***Lathamus discolor* (swift parrot)**

You are invited to provide your views and supporting reasons related to:

- 1) the eligibility of *Lathamus discolor* (swift parrot) for inclusion on the EPBC Act threatened species list in the Critically Endangered category; and
- 2) the necessary conservation actions for the above species.

Evidence provided by experts, stakeholders and the general public are welcome. Responses can be provided by any interested person.

Anyone may nominate a native species, ecological community or threatening process for listing under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or for a transfer of an item already on the list to a new listing category. The Threatened Species Scientific Committee (the Committee) undertakes the assessment of species to determine eligibility for inclusion in the list of threatened species and provides its recommendation to the Australian Government Minister for the Environment.

Draft information for your consideration of the eligibility of this species for listing as Critically Endangered starts at page 3 and information associated with potential conservation actions for this species starts at page 9. To assist with the Committee's assessment, the Committee has identified a series of specific questions on which it seeks your guidance at page 11.

Responses are to be provided in writing either by email to:  
[species.consultation@environment.gov.au](mailto:species.consultation@environment.gov.au)

or by mail to:

The Director  
Marine and Freshwater Species Conservation Section  
Wildlife, Heritage and Marine Division  
Department of the Environment  
PO Box 787  
Canberra ACT 2601

**Responses are required to be submitted by 22 January 2016**

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## **General background information about listing threatened species**

The Australian Government helps protect species at risk of extinction by listing them as threatened under Part 13 of the EPBC Act. Once listed under the EPBC Act, the species becomes a Matter of National Environmental Significance (MNES) and must be protected from significant impacts through the assessment and approval provisions of the EPBC Act. More information about threatened species is available on the department's website at: <http://www.environment.gov.au/biodiversity/threatened/index.html>.

Public nominations to list threatened species under the EPBC Act are received annually by the department. In order to determine if a species is eligible for listing as threatened under the EPBC Act, the Threatened Species Scientific Committee (the Committee) undertakes a rigorous scientific assessment of its status to determine if the species is eligible for listing against a set of criteria. These criteria are available on the Department's website at: <http://www.environment.gov.au/biodiversity/threatened/pubs/guidelines-species.pdf>.

As part of the assessment process, the Committee consults with the public and stakeholders to obtain specific details about the species, as well as advice on what conservation actions might be appropriate. Information provided through the consultation process is considered by the Committee in its assessment. The Committee provides its advice on the assessment (together with comments received) to the Minister regarding the eligibility of the species for listing under a particular category and what conservation actions might be appropriate. The Minister decides to add, or not to add, the species to the list of threatened species under the EPBC Act. More detailed information about the listing process is at: <http://www.environment.gov.au/biodiversity/threatened/nominations.html>.

To promote the recovery of listed threatened species and ecological communities, conservation advices and where required, recovery plans are made or adopted in accordance with Part 13 of the EPBC Act. Conservation advices provide guidance at the time of listing on known threats and priority recovery actions that can be undertaken at a local and regional level. Recovery plans describe key threats and identify specific recovery actions that can be undertaken to enable recovery activities to occur within a planned and logical national framework. Information about recovery plans is available on the department's website at: <http://www.environment.gov.au/biodiversity/threatened/recovery.html>.

## **Information about this consultation process**

Responses to this consultation can be provided electronically or in hard copy to the contact addresses provided on Page 1. All responses received will be provided in full to the Committee and then to the Australian Government Minister for the Environment.

In providing comments, please provide references to published data where possible. Should the Committee use the information you provide in formulating its advice, the information will be attributed to you and referenced as a 'personal communication' unless you provide references or otherwise attribute this information (please specify if your organisation requires that this information is attributed to your organisation instead of yourself). The final advice by the Committee will be published on the department's website following the listing decision by the Minister.

Information provided through consultation may be subject to freedom of information legislation and court processes. It is also important to note that under the EPBC Act, the deliberations and recommendations of the Committee are confidential until the Minister has made a final decision on the nomination, unless otherwise determined by the Minister.

# *Lathamus discolor*

swift parrot

## **Taxonomy**

Conventionally accepted as *Lathamus discolor* (Shaw 1790).

## **Species/Sub-species Information**

### **Description**

The swift parrot is mostly bright green in colour, with dark-blue patches on the crown, a prominent red face, and the chin and throat are narrowly bordered with yellow. It is approximately 25 cm in length, the wingspan is 32 to 36 cm and it weighs approximately 65 g. It is a slim, medium-sized parrot with angular pointed wings and a slender tail giving it the characteristic streamlined flight-silhouette (Higgins 1999).

### **Distribution**

The swift parrot breeds in Tasmania during the summer and the entire population migrates north to mainland Australia for the winter. They occupy habitats across all tenures, with the majority of habitats occurring outside formal conservation reserves. The breeding range of the swift parrot is largely restricted to the east and south-east coast of Tasmania. The breeding range closely mirrors the distribution of blue gum (*Eucalyptus globulus*) in Tasmania. The species breeds in the north-west of the state between Launceston and Smithton, however, the number of birds involved and frequency of these breeding events is not well understood. Potential breeding habitat remaining in the north-west is scarce and highly fragmented (Saunders & Tzaros 2011).

Whilst on the mainland the swift parrot disperses widely to forage on flowers and *psyllid* lerps in *Eucalyptus* species, with the majority being found in Victoria and New South Wales. In Victoria, swift parrots are predominantly found in the dry forests and woodlands of the box-ironbark region on the inland slopes of the Great Dividing Range. There are a few records each year from the Melbourne and Geelong districts and they are occasionally recorded south of the divide in the Gippsland region. During periods of drought in central Victoria, swift parrots may concentrate in coastal drought refuge habitats in New South Wales, as observed in 2002 and 2009 (Tzaros et al., 2009; Saunders & Tzaros 2011).

In New South Wales, swift parrots forage in forests and woodlands throughout the coastal and western slopes regions each year. Coastal regions tend to support larger numbers of birds when inland habitats are subjected to drought (Saunders & Tzaros 2011).

Small numbers of swift parrots are observed in the Australian Capital Territory and in south-eastern Queensland on a regular basis. The species is less frequently observed in the southern Mount Lofty Ranges and the Bordertown-Naracoorte area in south-eastern South Australia (Saunders & Tzaros 2011).

Area of occupancy appears to have declined significantly since European settlement, as can be inferred from the extent of habitat loss. For example, 83 percent of box-ironbark habitat (the principal wintering habitat of the swift parrot on the mainland) has been cleared in Victoria, and 70 percent has been cleared in New South Wales (Environment Conservation Council 2001; Robinson & Traill 1996; Siversten 1993). White box-yellow gum-Blakely's red gum woodland, another important habitat in New South Wales, has been reduced to less than 4 percent of its pre-European extent on the south-western slopes and southern tablelands of New South Wales (Saunders 2003); and in Tasmania, approximately 70 percent of grassy Tasmanian Blue Gum forest, the preferred foraging habitat during the breeding season, has been cleared (Swift Parrot Recovery Team 2001).

### **Relevant Biology/Ecology**

Swift Parrots are usually seen in small parties of up to 30 birds, or occasionally in larger flocks (of several hundred birds) around sources of abundant food. There have also been a few extraordinary reports of flocks numbering in excess of 1000 birds (Higgins 1999.). Swift parrots

are migratory. They breed in Tasmania and then move to mainland Australia in autumn for the non-breeding season. Most of the population winters in Victoria and New South Wales, before returning to Tasmania in spring. They are generally gregarious when breeding; many pairs nest in close proximity, and thus are considered loose colonies (Higgins 1999).

Swift parrots breed in tree-hollows in old-growth or other forest with suitable hollows, in relatively close proximity to the main food source, flowering Tasmanian blue gum. Several pairs often nest in close proximity, in the same or neighbouring trees (Webb et al., 2007). Breeding success is correlated with the intensity and extent of flowering, which is highly variable between years. In poor years, swamp (black) gum (*E. ovata*) is used as food source (Brereton et al., 2004).

The species exhibits high site fidelity, returning to locations on an irregular cyclic basis (Saunders 2008). They disperse across eastern Tasmania after breeding and migrate to overwinter on the mainland in flowering woodlands and forests. They feed preferentially in the largest trees available (Kennedy & Overs 2001; Kennedy & Tzaros 2005). Their distribution fluctuates with food availability as they feed on *psyllid* lerps, seeds and fruit (Kennedy & Tzaros 2005). Non-breeding birds preferentially feed in inland box-ironbark and grassy woodlands, and coastal swamp mahogany (*E. robusta*) and spotted gum (*Corymbia maculata*) woodland when in flower; otherwise often in coastal forests from eastern Victorian to the central coast of New South Wales. A generation time of 5.4 years is derived from an age at first breeding of 2.0 years and maximum longevity of 8.8 years, both values estimated by an expert committee (Garnett et al., 2011).

## Threats

*Predation by sugar gliders:* Until recently the main threat to swift parrots was thought to be habitat loss and alteration within breeding and drought refuge habitats. However, predation on the nest by sugar gliders (*Petaurus breviceps*) is now considered to pose a significant threat to the species, as sugar gliders take not only the young or eggs in the nest but also often kill the sitting female (Heinsohn et al., 2015). While a species native to the Australian mainland, sugar gliders are thought to be introduced to mainland Tasmania (Gunn 1851; Rounsevell et al., 1991; Lindenmayer 2002; Hui 2006).

Stojanovic et al. (2014) found that swift parrot nests failed at a very high rate on the Tasmanian mainland, compared to no failure on an offshore islands where sugar gliders were shown to be absent. Most cases of glider predation resulted in the death of the adult female parrot, and always involved the death of either eggs or nestlings. Predation by sugar gliders has been recorded at all locations on mainland Tasmania where swift parrots breed. On the Tasmanian mainland, there was a positive relationship between nest survival and increasing mature forest cover at the landscape scale (a 5 km radius around nests).

*Habitat loss and alteration:* Land clearing for plantation development and native forest silviculture has dramatically reduced landscape cover of nesting and foraging habitat for swift parrots (Prober & Thiele 1995; Saunders et al., 2007). In Tasmania, forest loss has been severe across the entire breeding range of the swift parrot except Maria Island (Saunders & Tzaros 2011). Habitat loss and alteration also occurs via residential, agricultural and industrial development, and dieback and suppression of regeneration in agricultural and urban areas. Habitat loss has impacted swift parrots across their mainland (Wilson & Bennett 1999; Kennedy & Overs 2001; Kennedy & Tzaros 2005) and Tasmanian range (Munks et al., 2004; Forest Practices Authority 2010).

Wildfire impacts swift parrot habitat by altering tree flowering phenology (Woinarski & Recher 1997) and tree cavity availability (Inions et al., 1989; Gibbons et al., 2000). At one known nesting location for swift parrots, greater than 60 percent of nest trees collapsed within one year after a wildfire (Stojanovic et al., In Prep; Webb et al., 2012).

*Collision mortality:* Collisions with wire netting, mesh fences, windows and cars cause mortality to swift parrots in urban areas throughout their range (Pfennigwerth 2008). Continuing urban encroachment into breeding and foraging habitat is likely to worsen this problem. The threat is exacerbated in years when swift parrots occupy urban areas to forage on remnant or planted

eucalypts. Collisions are of particular concern in the greater Hobart and Melbourne areas and the New South Wales central and north coast regions, where injuries and fatalities have been recorded (Tzaros 2002).

**Competition:** Swift parrots can experience increased competition for resources from large, aggressive honeyeaters within altered habitats (Ford et al., 1993; Grey et al., 1998), and from introduced birds and bees (Brown 1989; Paton 1993; Hingston et al., 2004; Heinsohn et al., 2015). Swift parrots compete with honeybees (*Apis mellifera*) and starlings for tree cavities, where nestling parrots can be killed and the cavities usurped (Heinsohn et al., 2015). This competition is worst in forest that is disturbed or fragmented (Stojanovic, D. Unpublished Data).

**Psittacine Beak and Feather Disease:** Psittacine Beak and Feather Disease (PBFD) is a widespread, lethal parrot disease (Department of Environment and Heritage 2005), which is known to occur in swift parrots (Sarker et al., 2013) and has been recorded in swift parrot nestlings in the wild population (Stojanovic, D. Unpublished Data).

**Illegal wildlife capture and trading:** Swift parrots are valued internationally and domestically by bird keepers and breeders and are vulnerable to illegal trade, but the extent of such activities and their impact on the swift parrot population is currently unknown.

### **Assessment of available information in relation to the EPBC Act Criteria and Regulations**

<b>Criterion 1. Population size reduction (reduction in total numbers)</b>			
Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	<b>Critically Endangered Very severe reduction</b>	<b>Endangered Severe reduction</b>	<b>Vulnerable Substantial reduction</b>
<b>A1</b>	<b>≥ 90%</b>	<b>≥ 70%</b>	<b>≥ 50%</b>
<b>A2, A3, A4</b>	<b>≥ 80%</b>	<b>≥ 50%</b>	<b>≥ 30%</b>
<div> <div> A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.  A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.  A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(a) cannot be used for A3]  A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible. </div> <div> based on any of the following </div> <div> (a) direct observation [except A3]  (b) an index of abundance appropriate to the taxon  (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat  (d) actual or potential levels of exploitation  (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites </div> </div>			

### **Evidence:**

Heinsohn et al. (2015) constructed a population viability analysis (PVA) using demographic data gained from an intensive five year field study (Stojanovic et al., 2014; Webb et al., 2014). Five scenarios were considered in the PVA. The first scenario was based on field data from Bruny and Maria Islands, which are both sugar glider free. This scenario estimated growth rates in the absence of sugar glider predation and projected a substantial increase in numbers over time. Four other PVA models were tested which accounted for sugar glider predation but used differing generation times.

The mean decline over the four scenarios that included sugar glider predation was projected at 86.9 percent (range over the four models was 78.8-94.7 percent decline) over three generations.

The preferred model by Heinsohn et al. (2015) projected that swift parrots would undergo an extreme decline of 94.7 percent within a three generation period. This model used a generation time of 5.4 years, which was obtained through expert elicitation (Garnett et al., 2011). While research has found that that breeding success is much higher on sugar glider free islands (Stojanovic et al., 2014), this greater success was insufficient to buffer the population against collapse under the modelled scenarios (Heinsohn et al., 2015).

Heinsohn et al., (2015) suggests that the projections of population decline in swift parrots are conservative because they exclude important factors known to limit swift parrot populations. For instance, excluded from these projections are factors such as lower breeding participation by adults due to nest site limitation (Stojanovic et al., 2012; Webb et al., 2012; Stojanovic et al., 2014), incidental mortality (like collisions), habitat loss, competition and disease (Garnett et al., 2011; Saunders & Tzaros 2011). Also, the population viability analysis (PVA) does not account for the synergistic effect of sugar glider predation and forest loss. Based on the current trajectory of habitat management, where loss of potential breeding habitat is inevitable under management practices used in production forestry (Forest Practices Authority 2010; Chuter & Munks 2011), population viability of swift parrots is likely to worsen as habitat continues to be logged.

The PVA results of Heinsohn et al., (2015) support listing the swift parrot as 'Critically Endangered' under criterion 1 (A3, b, e). Using (b), an index of abundance appropriate to the taxon (population estimates together with high quality demographic data for projecting into the future), and (e), the effects of introduced taxa (sugar gliders), all but one of the models presented by Heinsohn et al., (2015) exceed the minimum threshold for the criterion of an 80 percent reduction, and the mean decline predicted by all models (86.9 percent) is well in excess of the minimum threshold to qualify as 'Critically Endangered'.

The data presented above appear to demonstrate that the species is **eligible for listing as Critically Endangered** under criterion A3be under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

<b>Criterion 2. Geographic distribution as indicators for either extent of occurrence AND/OR area of occupancy</b>			
	<b>Critically Endangered Very restricted</b>	<b>Endangered Restricted</b>	<b>Vulnerable Limited</b>
B1. Extent of occurrence (EOO)	< 100 km <sup>2</sup>	< 5,000 km <sup>2</sup>	< 20,000 km <sup>2</sup>
B2. Area of occupancy (AOO)	< 10 km <sup>2</sup>	< 500 km <sup>2</sup>	< 2,000 km <sup>2</sup>
AND at least 2 of the following 3 conditions indicating distribution is precarious for survival:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

## Evidence:

Given the temporally and spatially variable long-distance movements of swift parrots, and their specialised breeding and foraging requirements, calculating area of occupancy for the species is challenging. Each year swift parrots move long distances to occupy new locations in response to changing food availability at the landscape scale. Swift parrots breed in Tasmania (Higgins, 1999; Garnett et al., 2011) and require rich patches of tree flowering as well as suitable nest cavities for breeding (Webb et al. 2014, Heinsohn 2015). To meaningfully represent area of occupancy for this specialised species, both habitat features must be considered.

Webb (manuscript in-prep) used several methods to calculate area of occupancy for swift parrots over a six year period, from 2009-2014. These approaches included using traditional habitat suitability models and more refined models taking into account required nesting and foraging habitat (including flowering conditions) verified by presence/absence data. Using a traditional habitat suitability model, accounting for presence/absence data and restricting the analysis to areas of mature forest, the nesting area occupied by swift parrots ranged from 41 km<sup>2</sup> in 2014 to 713 km<sup>2</sup> in 2011, with an average area of occupancy of approximately 425 km<sup>2</sup> per year over the six year period.

Webb then refined the above model to include a mature forest layer, which assigns a percentage crown cover of mature trees to each polygon, based on the assumption that mature trees are more likely to contain suitable tree hollows for nesting. Using the refined model incorporating the mature forest layer adjustment, the area of occupancy estimates over the six year period between 2009 and 2014 ranged from 11 km<sup>2</sup> to 297 km<sup>2</sup>. However, even these figures are likely inflated as the mature forest layer used in that analysis was built to estimate timber volume and does not directly account for tree hollow abundance.

In addition to estimating the area of occupied nesting habitat, the area of occupied foraging habitat was also estimated for each year. Based on a map of swift parrot foraging habitat, modified by removing areas of recently logged forest, regrowth forest and areas that contained few of the key feed species, the foraging area occupied by swift parrots ranged from 7.5 km<sup>2</sup> to 98 km<sup>2</sup> over the six year period. Combining foraging habitat and the adjusted mature forest estimates probably represents the most accurate assessment of actual area of occupancy for this species. Using these combined figures, the area of occupancy for swift parrots ranged from 18.5 km<sup>2</sup> to 355 km<sup>2</sup> between 2009 and 2014.

These estimates show not only that swift parrots have a restricted area of occupancy but also that they undergo extreme fluctuations in the area used between years, with the difference being greater than an order of magnitude. The detailed habitat modelling provided in Webb (manuscript in-prep) also shows that within a single year, swift parrots occupy a restricted number of locations, always utilising less than five locations in each of the study years between 2009 and 2014, making them eligible for endangered listing under criterion 2 B2(a).

There is also strong evidence to support a continuing decline in the area of occupancy. Historically, there has been a loss of swift parrot breeding habitat due to land clearing for agricultural expansion (Garnett et al., 2011; Saunders & Tzaros 2011). Ongoing loss of breeding habitat (i.e. both nesting and foraging habitat) is also continuing (Saunders & Tzaros 2011). In addition to the impact of production forestry on the area of occupancy of swift parrots in Tasmania, other processes act to further reduce the availability of habitat. For instance, wildfires degrade the quality of breeding habitat, with one recent fire at the Craigow site (Webb et al., 2012) causing the collapse of over 60 percent of known nest trees while also killing or destabilising an additional proportion of the remaining trees (Stojanovic, D. In Prep). Similarly, destructive wildfires in 2007 (northeast Tasmania) and 2013 (the 'Dunalley fire' – southeast Tasmania) severely burned large tracts of swift parrot breeding habitat. Given the extent and severity of forest loss across the breeding range of swift parrots, and the further deleterious impacts over large areas of mainland Tasmanian by sugar gliders, there is strong evidence to support a continued decline in the area of occupancy of swift parrots.

The data presented above appear to demonstrate the species is **eligible for listing as Endangered** as it meets parts B2 (a) (b)(ii)(iii)(v) (c)(ii) of this criterion; that is there is good evidence to support a restricted distribution and infer ongoing declines in the area of occupancy, area, extent and quality of habitat and number of mature individuals; there is evidence to suggest extreme fluctuations in area of area of occupancy; and swift parrots occupy less than five locations within any single breeding year. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

Criterion 3. Population size and decline			
	Critically Endangered Very low	Endangered Low	Vulnerable Limited
Estimated number of mature individuals	< 250	< 2,500	< 10,000
AND either (C1) or (C2) is true			
C1 An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future)	Very high rate 25% in 3 years or 1 generation (whichever is longer)	High rate 20% in 5 years or 2 generations (whichever is longer)	Substantial rate 10% in 10 years or 3 generations (whichever is longer)
C2 An observed, estimated, projected or inferred continuing decline AND its geographic distribution is precarious for its survival based on at least 1 of the following 3 conditions:			
(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(a) (ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b) Extreme fluctuations in the number of mature individuals			

#### Evidence:

The most recent population estimate for the swift parrot is 2000 birds (Garnett et al., 2011), which is 'low' under criterion 3. This estimate was considered to have a medium reliability. Garnett et al., (2011) also considered that the population was still likely declining and suggested that all individuals were contained in a single subpopulation.

Population viability analysis for swift parrots using high quality field data show that swift parrots are projected to decline very severely in the near future as a result of sugar glider predation (Heinsohn et al., 2015). These models have been discussed in detail under Criterion 1. The average rate of decline over one generation for the swift parrot using the modelled data was approximately 50 percent over the five models (range was 39.67-64.13 percent; Stojanovic et al., (unpublished data)). This steep rate of decline exceeds the 'Critically Endangered' threshold.

The data presented above appear to demonstrate that the species is **eligible for listing as Endangered** as the total population is likely below 2000 mature individuals and because it meets C1, C2(a)(ii) under this criterion as the population is considered low and is projected to undergo a continuing decline over the next generation, and because 100 percent of mature individuals are found in a single subpopulation. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

Criterion 4. Number of mature individuals			
	Critically Endangered Extremely low	Endangered Very Low	Vulnerable Low
Number of mature individuals	< 50	< 250	< 1,000



## Evidence:

The most recent population estimate for the swift parrot is 2000 birds (Garnett et al., 2011). This estimate was considered to have a medium reliability. As the Garnett et al. (2011) estimate was made over five years ago, the total population is now likely to be less than 2000 birds. However, as there is no reliable estimate available, the species is unable to be assessed under this criterion.

The information presented above appears to demonstrate that there is insufficient information with which to assess the species under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

Criterion 5. Quantitative Analysis			
	Critically Endangered Immediate future	Endangered Near future	Vulnerable Medium-term future
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% in 100 years

## Evidence:

The Population Viability Analysis presented by Heinsohn et al., (2015) does not provide a useful estimate of the probability of extinction because of inadequate measures of the variability around some parameters (Heinsohn et al., 2015). There are no other relevant population viability analyses for this species.

The information presented above appears to demonstrate that there is insufficient information with which to assess the species under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the species' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

## Conservation Actions

### Recovery Plan

There is an existing decision to have a recovery plan for the swift parrot. The first national recovery plan was adopted in 2002. A revised recovery plan was made in 2011 (Saunders & Tzaros 2011). At the time that the revised recovery plan was made, the threat to swift parrots from sugar gliders was not known. The current recovery plan should be updated to include measures to reduce the impact from sugar gliders.

### Conservation and Management Priorities

- Develop and implement strategies to reduce predation from sugar gliders
- Install nesting boxes in areas of low sugar glider predation to enhance breeding success
- Encourage and support the protection, conservation management and restoration of swift parrot nesting and foraging habitat through agreements with landowners, incentive programs and community projects.
- Provide recommendations for the revision and update of forestry prescriptions to reflect the most recent habitat information available in Victoria and New South Wales.

- Review and update management prescriptions for swift parrots for use in the Forest Practices System and Local Government land use planning and approvals processes in Tasmania.
- Provide swift parrot conservation information for consideration during the New South Wales Local Government Local Environmental Planning (LEP) review process.
- Investigate the potential impact of climate change on the swift parrot and its habitat.
- Continue to raise public awareness of the risks of collisions and how these can be minimised, targeting known high risk areas such as the greater Hobart, Melbourne and Western Sydney areas, and the central coast region of New South Wales (Wyong, Gosford, Lake Macquarie and Penrith Local Government areas).
- Develop and distribute guidelines on collision risk management to relevant planning authorities.
- Develop and implement a Psittacine Beak and Feather Disease management protocol.

### **Survey and Monitoring priorities**

- Develop an effective population monitoring program during the breeding season.
- Undertake monitoring of breeding distribution on an annual basis to develop a better understanding of the extent and number of important breeding areas in Tasmania and the relative importance of non-aggregated breeding behaviour to the conservation of the swift parrot.
- Establish a process for the coordination of volunteer surveys throughout breeding habitats to complement the existing mainland monitoring program.
- Maintain coordination of the existing long-term volunteer monitoring throughout mainland habitats.

### **Information and research priorities**

- Identify and map foraging and nesting habitat throughout the breeding range and prioritise sites.
- Identify and map foraging and roosting habitat.
- Identify and map roosting habitat throughout the range of the species with an emphasis on communal and repeatedly used roosting sites.
- Establish habitat phenology data collection in existing research and monitoring studies, analyse findings and incorporate into the recovery program.
- Identify and map movement patterns throughout the range of the species.
- Establish and maintain a database for all reported injuries and deaths.
- Monitor the incidence of competition from large aggressive honeyeaters, as well as introduced birds and bees, for nesting and foraging resources.
- Undertake research on breeding success, survival and mortality, as well as genetic structure, to provide insight into currently unknown population regulation parameters.

- Update the PVA using data obtained from the above research to provide a greater understanding of the dynamics and long-term viability of the population.

### **Collective list of questions – your views**

1. Do you agree with the current taxonomic position of the Australian Faunal Directory and Birdlife Australia for this species (as identified in the draft conservation advice)?
2. Can you provide any additional references, information or estimates on longevity, age of maturity, average life span and generation length?
3. Has the survey effort for this species been adequate to determine its national distribution and adult population size?
4. Do you accept the estimate provided in the nomination for the current population size of the species?
5. For any population with which you are familiar, do you agree with the population estimate provided? If not, are you able to provide a plausible estimate based on your own knowledge? If so, please provide in the form:  
 Lower bound (estimated minimum):  
 Upper bound (estimated maximum):  
 Best Estimate:  
 Estimated level of Confidence: %
6. Can you provide any additional data, not contained in the current nomination, on declines in population numbers over the past or next 10 years or 3 generations, whichever is the longer?
7. Is the distribution as described in the nomination valid? Can you provide an estimate of the current geographic distribution (extent of occurrence or area of occupancy in km<sup>2</sup>) of this species?
8. Has this geographic distribution declined and if so by how much and over what period of time?
9. Do you agree that the species is eligible for inclusion on the threatened species list, in the category listed in the nomination?
10. Do you agree that the threats listed are correct and that their effects on the species are significant?
11. To what degree are the identified threats likely to impact on the species in the future?
12. Can you provide additional or alternative information on threats, past, current or potential, that may adversely affect this species at any stage of its life cycle?
13. In seeking to facilitate the recovery of this species, can you provide management advice for the following:
  - What individuals or organisations are currently, or need to be, involved in planning to abate threats, and any other relevant planning issues?
  - What threats are impacting on different populations, how variable are the threats and what is the relative importance of the different populations?
  - What recovery actions are currently in place, and can you suggest other actions that would help recover the species? Please provide evidence and background information.
14. Can you provide additional data or information relevant to this assessment?
15. Can you advise as to whether this species is of cultural significance to Indigenous Australians

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