



Consultation Document on Listing Eligibility and Conservation Actions

Cyclopsitta diophthalma coxeni (Coxen's Fig-Parrot)

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

- 1) the eligibility of *Cyclopsitta diophthalma coxeni* (Coxen's Fig-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.

Responses are to be provided in writing either by email to:

species.consultation@environment.gov.au

or by mail to:

The Director
Migratory Species Section
Biodiversity Conservation Division
Department of Agriculture, Water and the Environment
PO Box 858
Canberra ACT 2601

Responses are required to be submitted by 18 March 2022.

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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/system/files/pages/d72dfd1a-f0d8-4699-8d43-5d95bbb02428/files/tssc-guidelines-assessing-species-2018.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>.

Privacy notice

The Department will collect, use, store and disclose the personal information you provide in a manner consistent with the Department's obligations under the *Privacy Act 1988* (Cwth) and the Department's Privacy Policy.

Any personal information that you provide within, or in addition to, your comments in the threatened species assessment process may be used by the Department for the purposes of its functions relating to threatened species assessments, including contacting you if we have any questions about your comments in the future.

Further, the Commonwealth, State and Territory governments have agreed to share threatened species assessment documentation (including comments) to ensure that all States and Territories have access to the same documentation when making a decision on

the status of a potentially threatened species. This is also known as the '[common assessment method](#)'. As a result, any personal information that you have provided in connection with your comments may be shared between Commonwealth, State or Territory government entities to assist with their assessment processes.

The Department's Privacy Policy contains details about how respondents may access and make corrections to personal information that the Department holds about the respondent, how respondents may make a complaint about a breach of an Australian Privacy Principle, and how the Department will deal with that complaint. A copy of the Department's Privacy Policy is available at: <http://environment.gov.au/privacy-policy>.

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.

Consultation document for *Cyclopsitta diophthalma coxeni* (Coxen's Fig-Parrot)

In effect under the *Environment Protection and Biodiversity Conservation Act 1999* from **dd month yyyy**.

This document combines the draft conservation advice and listing assessment for the subspecies. It provides a foundation for conservation action and further planning.

Conservation status

Cyclopsitta diophthalma coxeni (Coxen's Fig-Parrot) is listed in the Endangered category of the threatened species list under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwth) (EPBC Act) effective from 16 July 2000.

Cyclopsitta diophthalma coxeni is being reassessed by the Threatened Species Scientific Committee and appears to be eligible for listing as Critically Endangered under criterion 4. The Committee's assessment is at Attachment A. The Committee assessment of the species' eligibility against each of the listing criteria is:

- Criterion 1: Insufficient data
- Criterion 2: Not eligible
- Criterion 3: Not eligible
- Criterion 4: D Critically Endangered
- Criterion 5: Insufficient data

The main factors that make the species eligible for listing in the Critically Endangered category is the consistently low and scattered sightings, suggests greater rarity than previously assumed. The population estimates have been around 100 mature individuals in the past two decades (Garnett & Crowley 2000; Garnett et al. 2011). The most recent estimation ranges from 50 – 250 birds (Gynther & Garnett 2021), this assessment has used the precautionary approach of 50 mature individuals, placing the subspecies in the Critically Endangered Category.

Species can also be listed as threatened under state and territory legislation. For information on the current listing status of this species under relevant state or territory legislation, see the [Species Profile and Threat Database](#).

Species information

Taxonomy

Currently accepted as *Cyclopsitta diophthalma coxeni* Gould, 1867, the subspecies is commonly known as Coxen's Fig-Parrot. It is one of three subspecies of the Double-eyed Fig-parrot found in Australia. The other two subspecies, Marshall's Fig-parrot (*C. d. marshalli*) and Macleay's Fig-

Parrot (*C. d. macleayana*) are Least Concern. There are five other subspecies, found on New Guinea and nearby islands.

The taxonomy of Coxen's Fig-parrot is contentious, due to its large body size (compared to the other two Australian subspecies) and the lack of dimorphism between the sexes (Foreshaw 1967). Some authorities recognise the subspecies as a full species (*Cyclopsitta coxeni*; del Hoyo et al. 2014; BirdLife International 2021). In the past the Double-eyed Fig-Parrot have also been assigned to other genera, *Psittacula*, *Opopsitta* and *Psittaculirostris*.

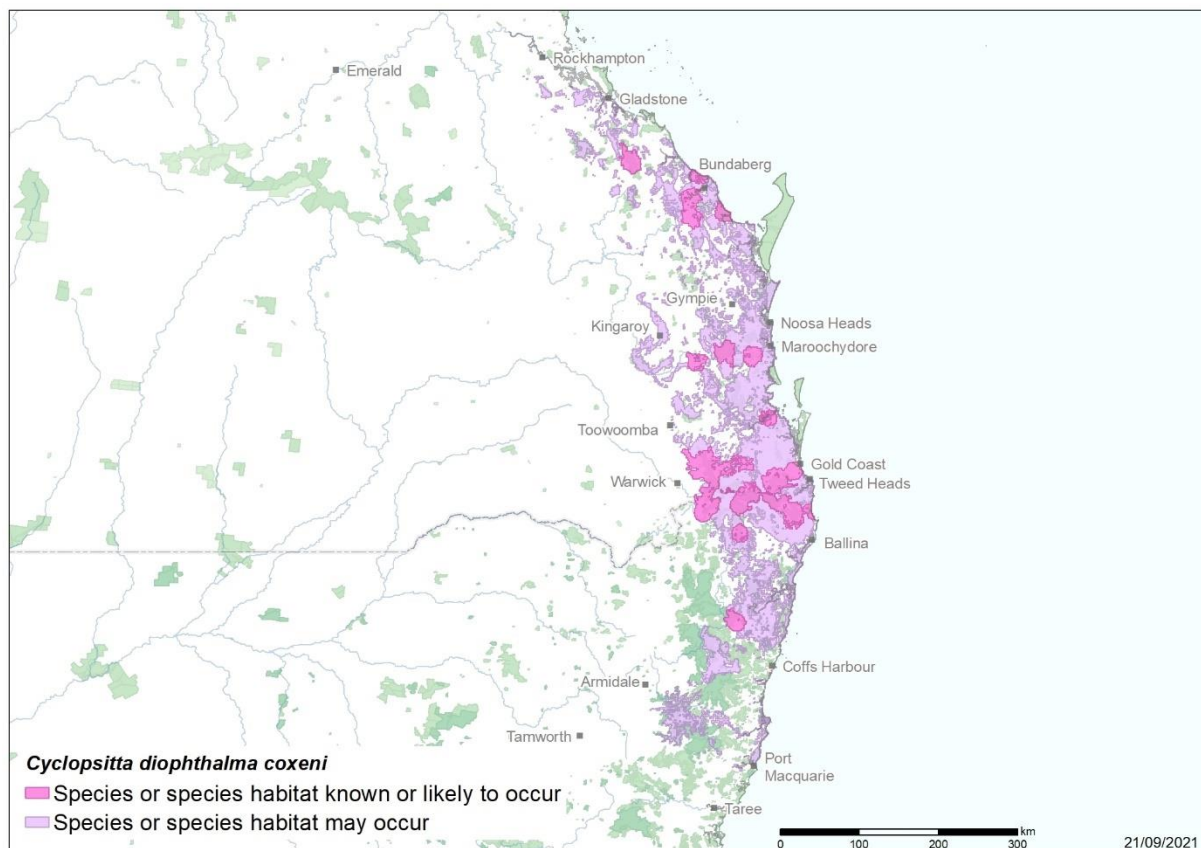
Description

Coxen's Fig-Parrot is a small, green and blue parrot with an overlarge head and bill, and a short tail. Its appearance resembles an exotic lovebird (*Agapornis* spp.) (Coxen's Fig-Parrot Recovery Team 2001). It has a length of 16 cm (Pizzey & Knight 1997). Both sexes are green above and yellowish-green below with a yellow-sided upper breast and flanks (Coxen's Fig-Parrot Recovery Team 2001). The wings are green with the outer sections of the primary feathers dark blue and inner sections dark grey. The bill is two-toned: pale grey with a dark grey or black tip. The eye is brown. The male has a distinctive blue forehead surrounded by a few red feathers and an orange-red cheek patch bordered below by a mauve-blue band (Coxen's Fig-Parrot Recovery Team 2001). The female is similar but with a smaller blue forehead patch with less or no red, and a duller, smaller orange-red cheek patch (Pizzey & Knight 1997).

Distribution

Coxen's Fig-parrot is currently only known in the wild from a low number of reliable records in Queensland and New South Wales (Coxen's Fig-Parrot Recovery Team 2001; NSW National Parks & Wildlife Service 2002; Department of Environment and Science 2018). It has been recorded between Rockhampton in central Queensland to the Richmond River in north-eastern New South Wales, and west to the Bunya Mountains, Main Ranges, Richmond Range and Koreelah Range (Coxen's Fig-Parrot Recovery Team 2001). Additional plausible but unconfirmed records have been reported from further south in New South Wales (Department of Environment and Science 2018). In Queensland, birds were reported from Thompson Point in November 2008, the southern Blackall Range and its foot slopes between 2008 and 2014, Lamington National Park in July 2009, the upper Mary Valley between 2009 and 2013, Craignish in October 2011 and Forest Glen in January 2013. In New South Wales, there were records from Cougal in April 2009, Dunoon in February 2011, Huonbrook in December 2011, Richmond Range National Park in September 2013 and the Limpinwood Nature Reserve in April 2020 (I Gynther unpublished data cited in Gynther & Garnett 2021).

Map 1 Modelled distribution of Coxen's Fig-Parrot



Source: Base map Geoscience Australia; species distribution data [Species of National Environmental Significance](#) database.

Cultural and community significance

Coxen's Fig-Parrot may occur on the lands of at least the following Indigenous Peoples: Bundjalung, Butchulla, Turrbal, Yugara, Waka Waka and Yaegl. The cultural and community significance is unknown, further research into this area may contribute to conservation planning by providing insights into traditional land management.

Relevant biology and ecology

The life history and ecology of Coxen's Fig-parrot are largely unknown. Information is pieced together from incidental sightings and, where appropriate and possible, extrapolated from knowledge of the other subspecies. Holmes (1990, 1994, 1995) summarises knowledge that is currently available (Coxen's Fig-Parrot Recovery Team 2001).

Coxen's Fig-Parrot is a cryptic species. Most observations are of single birds or pairs feeding in fruiting trees or flying above the forest canopy (Coxen's Fig-Parrot Recovery Team 2001). They feed quietly, moving swiftly and silently along the branches (Brenan 1924; Chisholm 1924, Irby 1930 cited in Coxen's Fig-Parrot Recovery Team 2001). Often, they are only detected by the continual stream of fruit debris, the unwanted pulp of figs falling to the ground (Chisholm 1924).

The primary habitat is lowland subtropical rainforest, dry rainforest, littoral and developing littoral rainforest, sub-littoral mixed scrub, riparian corridors in woodland, open woodland and across cleared land, and urbanised and agricultural areas with fig trees *Ficus* spp. Birds feed on the seeds of figs, but also on fruit of other native and exotic trees, as well as nectar, lichen, and insect larvae (Higgins 1999; Coxen's Fig-Parrot Recovery Team 2001).

Reproductive biology of the Coxen's Fig-Parrot is almost entirely unknown. The breeding season is thought to be from August to December. The nest is placed in a chamber that is excavated in the rotting wood of a decaying limb or trunk of a living or dead tree (Coxen's Fig-Parrot Recovery Plan 2001). Clutch size is probably two (Holmes 1995; Pizzey & Knight 1997). Other information based on the subspecies *C. d. macleayana*, in captivity, suggests an incubation period of 20-24 days and fledging of young around 36-42 days after hatching (Romer & Spittall 1994). The estimated generation length is 4.4 years (three generations of 13.2 years; Bird et al. 2020).

Habitat critical to the survival

Coxen's Fig-Parrot Recovery Team (2001) suggested that areas with abundant fig trees appears to be an important habitat component for Coxen's Fig-Parrot. Otherwise, it is not possible to state definitively what constitutes habitat critical to the survival of the subspecies, given the poor state of knowledge about the distribution, movement, and ecology of the Coxen's Fig-Parrot.

No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat.

Important populations

Gynther & Garnett (2021) estimated, with low reliability, up to 4 subpopulations that may be isolated from each other throughout the range of the subspecies. Although these populations may mix, and with a very low estimated number of mature individuals. Coxen's Fig-Parrot should be considered as one important population during any conservation planning.

Threats

The poor understanding on the subspecies' population size and trend, distribution, movement, and ecology means that there is also a lack of understanding on the threats affecting the subspecies' survival. While most clearance of lowland rainforest occurred over a century ago (TSSC 2016), it is thought to have created a temporal gap in food availability throughout the year (Coxen's Fig-Parrot Recovery Team 2001), particularly during drought (Spencer et al. 1996). Climate change may further exacerbate the threat of reduced and seasonal gaps in food availability, as longer and more frequent droughts are expected (Evans et al. 2017). Other potential threats faced by the subspecies include genetic drift due to the extremely low population size, invasive weeds reducing habitat quality, and illegal poaching of eggs and birds.

Table 1 Threats impacting Coxen's Fig-Parrot

Threat factor	Threat status and severity ^a	Evidence base
Habitat loss, fragmentation and degradation		
Fragmented & inadequate extent/quality of habitat	<ul style="list-style-type: none"> • Status: historical & current • Confidence: inferred • Consequence: severe • Trend: static • Extent: across the entire range 	<p>Likely one of the major causes for the decline of the subspecies is the clearing of lowland subtropical rainforest for agriculture and housing in the mid-1800s, and then the logging of rainforest timbers until 1984 (Coxen's Fig-Parrot Recovery Team 2001), leading to a substantial amount of habitat fragmentation.</p> <p>The loss of connectivity between habitats may lead to other issues such as requiring the birds to cross open areas, which exposes them to predators. The species has disjunct</p>

		feeding grounds, leading to difficulties in finding food (Coxen's Fig-Parrot Recovery Team 2001).
Seasonal gaps in food availability	<ul style="list-style-type: none"> • Status: current & future • Confidence: inferred • Consequence: severe • Trend: unknown • Extent: unknown 	<p>In addition to difficulties in finding food due to habitat fragmentation (see above), seasonal food shortages may also lead to abnormal resource competition (NSW National Parks & Wildlife Service 2002). This could pose a substantial threat in conjunction with the threat of demographic stochasticity (see <i>Demographic and genetic stochasticity</i>).</p> <p>With increase in frequency and length of drought due to climate change (Evans et al. 2017), this may have a significant impact on the subspecies as the production of figs is reduced by drought (Spencer et al. 1996).</p>
Invasive weeds	<ul style="list-style-type: none"> • Status: current • Confidence: suspected • Consequence: moderate • Trend: unknown • Extent: unknown 	<p>Another factor that contributes to the habitat degradation is invasion of weeds, which could affect both food availability and quality of breeding grounds by slowing the regeneration rate or changing the floristic structure of suitable habitat. Some of the weeds threatening lowland subtropical rainforests include: Cat's Claw Creeper (<i>Macfadyena unguis-cati</i>), Camphor Laurel (<i>Cinnamomum camphora</i>), Madeira Vine (<i>Anredera cordifolia</i>), Balloon Vine (<i>Cardiospermum grandiflorum</i>), Large-leaved Privet (<i>Ligustrum lucidum</i>), Small-leaved Privet (<i>L. sinense</i>), Wandering Dew (<i>Tradescantia alba</i>), Coral Berry (<i>Rivina humilis</i>), Asparagus Fern (<i>Protasparagus</i> spp.), Micky Mouse Plant (<i>Ochna serrulate</i>), and Dutchman's Pipe (<i>Aristolochia elegans</i>) (NSW National Parks & Wildlife Service 2002).</p>
Fragmented populations and low population size		
Demographic and genetic stochasticity	<ul style="list-style-type: none"> • Status: current & future • Confidence: suspected • Consequence: severe • Trend: unknown • Extent: across the entire range 	<p>Demographic stochasticity refers to the unpredictable variability in factors that determines a population's persistence, such as population growth rates arising from differences amongst individuals in seasonal survival, reproduction and sex ratios (Frankham et al. 2002). With a very low number of mature individuals, the subspecies is particularly vulnerable to stochasticity, especially to extreme events (Coxen's Fig-Parrot Recovery Team 2001).</p> <p>Another potential threat to small, isolated populations is genetic drift, which can lead to consequences such as the loss of genetic diversity, inbreeding depression and the accumulation of deleterious mutation. These could result in a lower capacity to respond to environmental changes or fluctuations, and increased expression of deleterious recessive alleles, could reduce individual survival and reproductive capacity (Frankham et al. 2002)</p>
Climate change		

Increased likelihood of extreme events (e.g. wildfire, heatwave and drought)	<ul style="list-style-type: none"> • Status: current & future • Confidence: known • Consequence: severe • Trend: increasing • Extent: across the entire range 	<p>Mean temperature in Australia has increased by around 1.4 °C since 1910, and is expected to continue to rise (BOM & CSIRO 2020; IPCC 2021). In Queensland, by 2070, the projected range of warming is between 1.2 – 3.9°C (Department of Environment and Science 2019). Rainfall patterns may also be affected, with decreasing rainfall expected in south-eastern Queensland (Department of Environment and Science 2019; BOM & CSIRO 2020), which would result in longer, and more severe droughts (Evans et al. 2019). The number of dangerous fire weather days is expected to increase significantly across the subspecies' range (BOM & CSIRO 2020).</p> <p>The cumulative effect of the climate anomalies has led to, and will continue to increase the likelihood of extreme events such as wildfire, heatwave, and drought (BOM & CSIRO 2020), which may have detrimental effect on the subspecies and their habitats.</p>
Disease		
Psittacine beak and feather disease (PBFD)	<ul style="list-style-type: none"> • Status: future • Confidence: inferred • Consequence: moderate • Trend: unknown • Extent: unknown 	<p>Psittacine beak and feather disease (PBFD) is a viral disease affecting many species of parrots throughout Australia (DEE 2016). It is currently not a known threat to <i>C. d. coxeni</i> as there have been no known case of PBFD in the population, and the disease probably did not contribute to the decline of <i>C. d. coxeni</i> (DEE 2016). Additionally, as the Coxen's Fig-Parrot excavate their nests rather than using existing hollows, transmission of PBFD would be less likely compared to other psittacine species.</p> <p>However, the subspecies is still likely to be susceptible to the disease. Mass mortality events caused by the disease are uncommon, but in the case of <i>C. d. coxeni</i>, small population size means that the loss of a few breeding individuals could have significant impact on the population persistence.</p>
Illegal avicultural trade		
Bird or egg collection	<ul style="list-style-type: none"> • Status: current • Confidence: suspected • Consequence: severe • Trend: unknown • Extent: unknown 	<p>This is a possible threat to the subspecies (Coxen's Fig-Parrot Recovery Team 2001; Department of Environment and Science 2018) that would be extremely detrimental if on-going, due to the critically low population size.</p>

Status—identify the temporal nature of the threat;

Confidence—identify the extent to which we have confidence about the impact of the threat on the species;

Consequence—identify the severity of the threat;

Trend—identify the extent to which it will continue to operate on the species;

Extent—identify its spatial content in terms of the range of the species.

Each threat has been described in Table 1 in terms of the extent that it is operating on the subspecies. The risk matrix (Table 3) Table 2 Risk prioritisation

Likelihood	Consequences				
	Not significant	Minor	Moderate	Major	Catastrophic
Almost certain	Low risk	Moderate risk	Very high risk	Very high risk	Very high risk
Likely	Low risk	Moderate risk	High risk	Very high risk	Very high risk
Possible	Low risk	Moderate risk	High risk	Very high risk	Very high risk
Unlikely	Low risk	Low risk	Moderate risk	High risk	Very high risk
Unknown	Low risk	Low risk	Moderate risk	High risk	Very high risk

Categories for likelihood are defined as follows:

Almost certain – expected to occur every year

Likely – expected to occur at least once every five years

Possible – might occur at some time

Unlikely – such events are known to have occurred on a worldwide basis but only a few times

Rare or Unknown – may occur only in exceptional circumstances; OR it is currently unknown how often the incident will occur

Categories for consequences are defined as follows:

Not significant – no long-term effect on individuals or populations

Minor – individuals are adversely affected but no effect at population level

Moderate – population recovery stalls or reduces

Major – population decreases

Catastrophic – population extinction

Table 3 Coxen's Fig-Parrot risk matrix) provides a visual depiction of the level of risk being imposed by a threat and supports the prioritisation of subsequent management and conservation actions. In preparing a risk matrix, several factors have been taken into consideration, they are: the life stage they affect; the duration of the impact; and the efficacy of current management regimes, assuming that management will continue to be applied appropriately. The risk matrix and ranking of threats has been developed in consultation with in-house expertise using available literature.

Table 2 Risk prioritisation

Likelihood	Consequences				
	Not significant	Minor	Moderate	Major	Catastrophic
Almost certain	Low risk	Moderate risk	Very high risk	Very high risk	Very high risk
Likely	Low risk	Moderate risk	High risk	Very high risk	Very high risk
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Table 3 Coxen's Fig-Parrot risk matrix

Likelihood	Consequences				
	Not significant	Minor	Moderate	Major	Catastrophic
Almost certain					
Likely				<ul style="list-style-type: none"> Increased likelihood of extreme events (e.g. wildfire, heatwave and drought) 	<ul style="list-style-type: none"> Fragmented & Inadequate extent/quality of habitat
Possible					
Unlikely					
Unknown			<ul style="list-style-type: none"> Invasive weeds Psittacine beak and feather disease (PBFD) Bird or egg collection 	<ul style="list-style-type: none"> Seasonal gaps in food availability 	<ul style="list-style-type: none"> Demographic and genetic stochasticity

Priority actions have then been developed to manage the threat particularly where the risk was deemed to be 'very high' or 'high'. For those threats with an unknown or low risk outcome it may be more appropriate to identify further research or maintain a watching brief.

Conservation and recovery actions

Primary conservation outcome

- The size of the wild population has increased, and a captive population has been established as insurance against further decline in the wild and for reintroduction.
- Extent, quality and connectivity of habitat extended.

Conservation and management priorities

Fragmented & Inadequate extent/quality of habitat

- Protect and enhance quality of known suitable habitats for Coxen's Fig-Parrot, with the goal of reconnecting fragmented habitats.
- Restore habitat in locations likely to be significant for maintenance of the subspecies population.

Seasonal gaps in food availability

- Protect and enhance quality of known suitable habitats for Coxen's Fig-Parrot.
- Restore and revegetate sites with feed plant species that will provide reliable food supply.

Ex-situ management

- A captive population of the Red-browed Fig-Parrot has been established to develop husbandry skills for the potential application to Coxen's Fig-Parrot.

Stakeholder engagement/community engagement

- Prepare a site- or regional-based management strategy with input from local experts (e.g. Coxen's Fig-Parrot Recovery Team).
- Engage with landholders and incentivise their involvement in habitat restoration and the implementation of management actions on private properties.
- Raise awareness with the public and encourage submission of sightings.
- Raise the profile of the species and important habitats with landholders.
- Undertake extension to private landholders with potential habitat.

Survey and monitoring priorities

- Conduct range-wide systematic surveys across potential sites across multiple seasons to monitor the population size and trends over time.
- Respond rapidly to verify credible reported sightings.
- If wild birds observed, or captive population established, monitor for cases of PBF.

Information and research priorities

- Further research required to understand the impact of seasonal fluctuation of food availability on feeding, survival and reproduction of the subspecies.
- Use climate modelling technique to investigate the potential impact of climate change on the subspecies and habitat critical to its survival.
- Ensure currency of a contingency plan in the event of reliable sightings or the discovery of a nest.
- Improve knowledge on the ecological requirements of the species.
- Develop a reliable technique for finding the birds.

Recovery plan decision

A decision about whether there should be a recovery plan for this species has not yet been determined. The purpose of this consultation document is to elicit additional information to help inform this decision.

Links to relevant implementation documents

- Threat Abatement Advice for the key threatening process 'Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species (DEE 2016).

Conservation Advice and Listing Assessment references

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THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

The Threatened Species Scientific Committee finalised this assessment on DD Month Year.

Attachment A: Listing Assessment for *Cyclopsitta diophthalma coxeni*

Reason for assessment

The Coxen's Fig-Parrot was listed as Endangered under the *Endangered Species Protection Act 1992* and transferred to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) when it commenced in July 2000.

This assessment follows prioritisation of a nomination from the TSSC.

Assessment of eligibility for listing

This assessment uses the criteria set out in the [EPBC Regulations](#). The thresholds used correspond with those in the [IUCN Red List criteria](#) except where noted in criterion 4, sub-criterion D2. The IUCN criteria are used by Australian jurisdictions to achieve consistent listing assessments through the Common Assessment Method (CAM).

Key assessment parameters

Table 4 includes the key assessment parameters used in the assessment of eligibility for listing against the criteria.

Table 4 Key assessment parameters

Metric	Estimate used in the assessment	Minimum plausible value	Maximum plausible value	Justification
Number of mature individuals	50	50	250	<p>There were 30 sightings of Coxen's Fig-Parrots in New South Wales, and 90 in Queensland between 1970 and 2000 (TSSC 2016). In addition, incidental sightings continue to be reported sporadically by the public (I Gynther unpublished data cited in Gynther & Garnett 2021), suggesting a very small population continues to exist. However, none of these sightings have been backed up by photos, audio recordings, or evidence of a nest, therefore some of these may have been misidentifications.</p> <p>The estimated population size has been around 100 mature individuals in the last two decades (Garnett & Crowley 2000; Garnett et al. 2011). Most recently, Gynther & Garnett (2021) estimated a range of 50 – 250 individuals. Due to the lack of records, and the extremely low estimated number of mature individuals, this assessment used the precautionary estimation of 50 mature individuals.</p>
Trend	Stable			

Metric	Estimate used in the assessment	Minimum plausible value	Maximum plausible value	Justification
Generation time (years)	4.4	2.9	5.1	Bird et al. (2020)
Extent of occurrence (EOO)	66,000 km ²	64,000 km ²	70,000 km ²	The EOO estimate encompasses all high-quality records since 1990. The minimum only includes records from the last three generations (Gynther & Garnett 2021).
Trend	Stable			
Area of Occupancy (AOO)	268 km ²	56 km ²	500 km ²	The AOO estimation is derived from the number of 2x2 km squares that encompass all high-quality records since 1990. The minimum value includes only records from the last three generations (Gynther & Garnett 2021).
Trend	Stable			
Number of subpopulations	4	1	4	Gynther & Garnett (2021)
Trend	Stable			
Basis of assessment of subpopulation number	Records are clumped in four areas, with intervening records and many habitat gaps. Although they may all be in one subpopulation (Gynther & Garnett 2021).			
No. locations	>10			
Trend	Not calculated			
Basis of assessment of location number	The spatial nature of the threats is such that there is a number of geographically or ecologically distinct areas where a single threat could affect all individuals present within a period of three generations. Severe drought could affect a large part of the AOO but is unlikely to affect all food resources at once. All other putative threats are affected by tenure and management regime, all of which are diverse and numerous within the AOO (Gynther & Garnett 2021).			
Fragmentation	Not severely fragmented.			
Fluctuations	Not subject to extreme fluctuations in EOO, AOO, number of subpopulations, locations or mature individuals.			

Criterion 1 Population size reduction

Reduction in total numbers (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered Very severe reduction	Endangered Severe reduction	Vulnerable Substantial reduction
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3, A4	≥ 80%	≥ 50%	≥ 30%
<p>A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.</p> <p>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.</p> <p>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]</p> <p>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.</p> <p>Based on any of the following</p> <ul style="list-style-type: none"> (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 			

Criterion 1 evidence

Insufficient data to determine eligibility

The estimated population size has been around 100 mature individuals in the last two decades (Garnett & Crowley 2000; Garnett et al. 2011). Most recently, Gynther & Garnett (2021) estimated a range of 50 – 250 individuals. Due to the lack of records, and the extremely low estimated number of mature individuals, this assessment uses the precautionary estimation of 50 mature individuals.

Although the possibility of some decline cannot be ruled out, continuing decline appears unlikely, otherwise the subspecies would already be extinct given the extremely low number of mature individuals recorded since 1970.

The Committee considers that there is insufficient information to determine the eligibility of the subspecies for listing in any category under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies' 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 2 Geographic distribution as indicators for either extent of occurrence AND/OR area of occupancy

	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following 3 conditions:			
(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			

Criterion 2 evidence

Not eligible

Coxen's Fig-Parrot has an estimated EOO of 66,000 (range 64,000 – 70,000) km², and an AOO of 268 (range 56 – 500) km². Birds have been recorded between Rockhampton in central Queensland to the Richmond River in north-eastern New South Wales, and west to the Bunya Mountains, Main Ranges, Richmond Range and Koreelah Range (Coxen's Fig-Parrot Recovery Team 2001). Additional plausible but unconfirmed records have been reported from further south in New South Wales (Department of Environment and Science 2018). In Queensland, birds were reported from Thompson Point in November 2008, the southern Blackall Range and its foot slopes between 2008 and 2014, Lamington National Park in July 2009, the upper Mary Valley between 2009 and 2013, Craignish in October 2011 and Forest Glen in January 2013. In New South Wales, there were records from Cougal in April 2009, Dunoon in February 2011, Huonbrook in December 2011, Richmond Range National Park in September 2013 and the Limpinwood Nature Reserve in April 2020 (I Gynther unpublished data cited in Gynther & Garnett 2021).

Although the subspecies' AOO is restricted, however there are insufficient data available to judge whether there are threats operating that would make the subspecies' geographic distribution precarious for its survival. Therefore, the subspecies has not met this required element of this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies' status. This conclusion should therefore be considered to be tentative at this state, 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 generation (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			

Criterion 3 evidence

Not eligible

The estimated number of individuals is 50 (range 50 – 250), this assessment has used the precautionary approach due to the lack of high confidence data, and the consistently low estimated population estimation (Garnett & Crowley 2000; Garnett et al. 2011; Gynther & Garnett 2021). However, it is unlikely the subspecies is experiencing a continuing decline, or it would mean that it should already be extinct (Gynther & Garnett 2021).

The data presented above appear to demonstrate the subspecies is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies' status. This conclusion should therefore be considered to be tentative at this state, 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
D. Number of mature individuals	< 50	< 250	< 1,000
D2. ¹ Only applies to the Vulnerable category Restricted area of occupancy or number of locations with a plausible future threat that could drive the species to critically endangered or Extinct in a very short time			D2. Typically: area of occupancy < 20 km ² or number of locations ≤ 5

¹ The IUCN Red List Criterion D allows for species to be listed as Vulnerable under Criterion D2. The corresponding Criterion 4 in the EPBC Regulations does not currently include the provision for listing a species under D2. As such, a species cannot currently be listed under the EPBC Act under Criterion D2 only. However, assessments may include information relevant to D2. This information will not be considered by the Committee in making its recommendation of the species' eligibility for listing under the EPBC Act, but may assist other jurisdictions to adopt the assessment outcome under the [common assessment method](#).

Criterion 4 evidence

Eligible under Criterion 4 D for listing as D Critically Endangered

There were 30 sightings of Coxen's Fig-Parrots in New South Wales, and 90 in Queensland between 1970 and 2000 (TSSC 2016). In addition, incidental sightings continue to be reported sporadically by the public (I Gynther unpublished data cited in Gynther & Garnett 2021), suggesting a very small population continues to exist. However, none of these sightings have been backed up by photos, audio recordings, or evidence of a nest, therefore some of these may have been misidentifications.

The estimated population size has been consistently low in the last two decades, with low reliability (Garnett & Crowley 2000; Garnett et al. 2011; Gynther & Garnett 2021), suggesting greater rarity than previously assumed.

This assessment has adopted the precautionary approach and use the estimated number of mature individuals of 50 due to the very low incidental reporting rate, lack of high confidence data, and the consistently low estimated population size in the last two decades.

The data presented above appear to demonstrate that the subspecies is eligible to be listed under this criterion as **Critically Endangered**. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies' status. This conclusion should therefore be considered to be tentative at this state, 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

Criterion 5 evidence

Insufficient data to determine eligibility

Population viability analysis has not been undertaken. Therefore, there is insufficient information to determine the eligibility of the species for listing in any category under this criterion.

Adequacy of survey

There has been virtually no monitoring program for the subspecies as the birds are so rare and elusive, there are no photographs and attempts to detect birds using acoustic remote sensors have not so far yielded results.

CONSULTATION QUESTIONS FOR *Cyclopsitta diophthalma coxeni* (Coxen's Fig-Parrot)

SECTION A - GENERAL

1. Is the information used to assess the nationally threatened status of the species/subspecies robust? Have all the underlying assumptions been made explicit? Please provide justification for your response.
2. Can you provide additional data or information relevant to this assessment?
3. Have you been involved in previous state, territory or national assessments of this species/subspecies? If so, in what capacity?

PART 1 – INFORMATION TO ASSIST LISTING ASSESSMENT

SECTION B DO YOU HAVE ADDITIONAL INFORMATION ON THE ECOLOGY OR BIOLOGY OF THE SPECIES/SUBSPECIES? (If no, skip to section C)

Biological information

4. Can you provide any additional or alternative references, information or estimates on longevity, average life span and generation length?
5. Do you have any additional information on the ecology or biology of the species/subspecies not in the current advice?

SECTION C ARE YOU AWARE OF THE STATUS OF THE TOTAL NATIONAL POPULATION OF THE SPECIES/SUBSPECIES? (If no, skip to section D)

Population size

6. Has the survey effort for this taxon been adequate to determine its national adult population size? If not, please provide justification for your response.
7. Do you consider the way the population size has been derived to be appropriate? Are there any assumptions and unquantified biases in the estimates? Did the estimates measure relative or absolute abundance? Do you accept the estimate of the total population size of the species/subspecies? If not, please provide justification for your response.
8. If not, can you provide a further estimate of the current population size of mature adults of the species/subspecies (national extent)? Please provide supporting justification or other information.

If, because of uncertainty, you are unable to provide a single number, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of possible species/subspecies numbers, and also choose the level of confidence you have in this estimate:

Number of mature individuals is estimated to be in the range of:

☐ <50 ☐ 50–100 ☐ 101–250 ☐ 251–500 ☐ >500

Level of your confidence in this estimate:

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much information to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, information suggests this range
- ☐ 95–100% - high level of certainty, information indicates quantity within this range
- ☐ 99–100% - very high level of certainty, data are accurate within this range

SECTION D ARE YOU AWARE OF TRENDS IN THE OVERALL POPULATION OF THE SPECIES/SUBSPECIES? (If no, skip to section E)

9. Does the current and predicted rate of decline used in the assessment seem reasonable? Do you consider that the way this estimate has been derived is appropriate? If not, please provide justification of your response.

Evidence of total population size change

10. Are you able to provide an estimate of the total population size during the late 2000s (*at or soon after the start of the most recent three generation period*)? Please provide justification for your response.

If, because of uncertainty, you are unable to provide a single number, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of possible species/subspecies numbers, and also choose the level of confidence you have in this estimate.

Number of mature individuals is estimated to be in the range of:

- ☐ <50 ☐ 50–100 ☐ 101–250 ☐ 251–500 ☐ >500

Level of your confidence in this estimate:

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much information to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, information suggests this range
- ☐ 95–100% - high level of certainty, information indicates quantity within this range
- ☐ 99–100% - very high level of certainty, data are accurate within this range

11. Are you able to comment on the extent of decline in the species/subspecies' total population size over the last approximately 13 years (i.e., three generations)? Please provide justification for your response.

If, because of uncertainty, you are unable to provide an estimate of decline, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of decline, and also choose the level of confidence you have in this estimated range.

Decline estimated to be in the range of:

☐ 1–30% ☐ 31–50% ☐ 51–80% ☐ 81–100% ☐ 90–100%

Level of your confidence in this estimated decline:

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much information to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, suggests this range of decline
- ☐ 95–100% - high level of certainty, information indicates a decline within this range
- ☐ 99–100% - very high level of certainty, data are accurate within this range

12. Please provide (if known) any additional evidence which shows the population is stable, increasing or declining.

SECTION E ARE YOU AWARE OF INFORMATION ON THE TOTAL RANGE OF THE SPECIES/SUBSPECIES? (If no, skip to section F)

Current Distribution/range/extent of occurrence, area of occupancy

13. Does the assessment consider the entire geographic extent and national extent of the species/subspecies? If not, please provide justification for your response.
14. Has the survey effort for this species/subspecies been adequate to determine its national distribution? If not, please provide justification for your response.
15. Is the distribution described in the assessment accurate? If not, please provide justification for your response and provide alternate information.
16. Do you agree that the way the current extent of occurrence and/or area of occupancy have been estimated is appropriate? Please provide justification for your response.
17. Can you provide estimates (or if you disagree with the estimates provided, alternative estimates) of the extent of occurrence and/or area of occupancy.

If, because of uncertainty, you are unable to provide an estimate of extent of occurrence, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of extent of occurrence, and also choose the level of confidence you have in this estimated range.

Current extent of occurrence is estimated to be in the range of:

☐ <50,000 km² ☐ 50,000 – 75,000 km² ☐ 75,001 – 100,000 km² ☐ >100,000 km²

Level of your confidence in this estimated extent of occurrence

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much data to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence

- ☐ 51–95% - reasonably certain, data suggests this range of decline
- ☐ 95–100% - high level of certainty, data indicates a decline within this range
- ☐ 99–100% - very high level of certainty, data is accurate within this range

If, because of uncertainty, you are unable to provide an estimate of area of occupancy, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of area of occupancy, and also choose the level of confidence you have in this estimated range.

Current area of occupancy is estimated to be in the range of:

- ☐ <50 km² ☐ 50 – 100 km² ☐ 101 – 250 km² ☐ 251 – 500 km² ☐ >500 km²

Level of your confidence in this estimated extent of occurrence:

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much data to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, data suggests this range of decline
- ☐ 95–100% - high level of certainty, data indicates a decline within this range
- ☐ 99–100% - very high level of certainty, data is accurate within this range

SECTION F ARE YOU AWARE OF TRENDS IN THE TOTAL RANGE OF THE SPECIES/SUBSPECIES? (If no, skip to section G)

Past Distribution/range/extent of occurrence, area of occupancy

18. Do you consider that the way the historic distribution has been estimated is appropriate?
Please provide justification for your response.
19. Can you provide estimates (or if you disagree with the estimates provided, alternative estimates) of the former extent of occurrence and/or area of occupancy?

If, because of uncertainty, you are unable to provide an estimate of past extent of occurrence, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of past extent of occurrence, and also choose the level of confidence you have in this estimated range.

Past extent of occurrence is estimated to be in the range of:

- ☐ <50,000 km² ☐ 50,000 – 75,000 km² ☐ 75,001 – 100,000 km² ☐ >100,000 km²

Level of your confidence in this estimated extent of occurrence

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much data to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, data suggests this range of decline

☐ 95–100% - high level of certainty, data indicates a decline within this range

☐ 99–100% - very high level of certainty, data is accurate within this range

If, because of uncertainty, you are unable to provide an estimate of past area of occupancy, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of past area of occupancy, and also choose the level of confidence you have in this estimated range:

Past area of occupancy is estimated to be in the range of:

☐ <50 km² ☐ 50 – 100 km² ☐ 101 – 250 km² ☐ 251 – 500 km² ☐ >500 km²

Level of your confidence in this estimated extent of occurrence:

☐ 0–30% - low level of certainty/ a bit of a guess/ not much data to go on

☐ 31–50% - more than a guess, some level of supporting evidence

☐ 51–95% - reasonably certain, data suggests this range of decline

☐ 95–100% -high level of certainty, data indicates a decline within this range

☐ 99–100% - very high level of certainty, data is accurate within this range

PART 2 – INFORMATION FOR CONSERVATION ADVICE ON THREATS AND CONSERVATION ACTIONS

SECTION G DO YOU HAVE INFORMATION ON THREATS TO THE SURVIVAL OF THE SPECIES/SUBSPECIES? (If no, skip to section H)

20. Do you consider that all major threats have been identified and described adequately?
21. To what degree are the identified threats likely to impact on the species/subspecies in the future?
22. Are the threats impacting on different populations equally, or do the threats vary across different populations?
23. Can you provide additional or alternative information on past, current or potential threats that may adversely affect the species/subspecies at any stage of its life cycle?
24. Can you provide supporting data/justification or other information for your responses to these questions about threats?

SECTION H DO YOU HAVE INFORMATION ON CURRENT OR FUTURE MANAGEMENT FOR THE RECOVERY OF THE SPECIES/SUBSPECIES? (If no, skip to section I)

25. What planning, management and recovery actions are currently in place supporting protection and recovery of the species/subspecies? To what extent have they been effective?

26. Can you recommend any additional or alternative specific threat abatement or conservation actions that would aid the protection and recovery of the species/subspecies?
27. Would you recommend translocation (outside of the species' historic range) as a viable option as a conservation actions for this species/subspecies?

SECTION I DO YOU HAVE INFORMATION ON STAKEHOLDERS IN THE RECOVERY OF THE SPECIES/SUBSPECIES?

28. Are you aware of other knowledge (e.g., traditional ecological knowledge) or individuals/groups with knowledge that may help better understand population trends/fluctuations, or critical areas of habitat?
29. Are you aware of any cultural or social importance or use that the species/subspecies has?
30. What individuals or organisations are currently, or potentially could be, involved in management and recovery of the species/subspecies?
31. How aware of this species/subspecies are land managers where the species/subspecies is found?
32. What level of awareness is there with individuals or organisations around the issues affecting the species/subspecies?
 - a. Where there is awareness, what are these interests of these individuals/organisations?
 - b. Are there populations or areas of habitat that are particularly important to the community?

PART 3 – ANY OTHER INFORMATION

33. Do you have comments on any other matters relevant to the assessment of this species/subspecies?