Australian Government

Department of Agriculture, Water and the Environment

Consultation Document on Listing Eligibility and Conservation Actions

Platycercus elegans melanopterus (Kangaroo Island Crimson Rosella)

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

1) the eligibility of *Platycercus elegans melanopterus* (Kangaroo Island Crimson Rosella) for inclusion on the EPBC Act threatened species list in the Vulnerable 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 2 July 2021.

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.

Conservation Advice for *Platycercus elegans melanopterus* (Kangaroo Island Crimson Rosella)

Conservation status

Platycercus elegans melanopterus is being assessed by the Threatened Species Scientific Committee to be eligible for listing under the EPBC Act. The Committee's preliminary assessment is at Attachment A. The Committee's preliminary assessment of the subspecies' eligibility against each of the listing criteria is:

- Criterion 1: A2c: Vulnerable

- Criterion 2: Not eligible

- Criterion 3: Not eligible

- Criterion 4: Not eligible

- Criterion 5: Insufficient data

The main factor that appears to make the subspecies eligible for listing in the Vulnerable category is that the population has declined by an estimated of 30–50 percent over the last three generations (20 years) (Paton et al. 2021). This major reduction in population was caused by the 2019/2020 wildfires on Kangaroo Island. A post-fire survey found few survivors in unburnt fragments or any indication that Kangaroo Island Crimson Rosellas had managed to flee successfully, suggesting the fires were sufficiently severe to have killed over a third of the population (Paton et al. 2021). The Kangaroo Island Crimson Rosella extent of occurrence (EOO) is estimated to be stable (6,000 km^2), however the area of occupancy (AOO) has contracted to 1,530 km^2. There are estimated to be 42,000 mature individuals in the wild with a declining trend (medium reliability), however this decline is probably not continuing (Paton et al. 2021).

Analysis by the Wildlife and Threatened Species Bushfire Recovery Expert Panel, based on intersecting the modelled distribution of the Kangaroo Island Crimson Rosella and the National Indicative Aggregated Fire Extent Dataset, indicates that 76 percent of the range of the subspecies was within the extent of the 2019/2020 bushfires (Legge et al. 2020). Further analysis of the severity and nature of the impacts of the fires on Kangaroo Island Crimson Rosella is underway by the Threatened Species Recovery Hub of the National Environmental Science Program and other organisations. The Threatened Species Scientific Committee will update the description of the fire impacts in this Conservation Advice to incorporate the latest evidence, prior to providing the assessment of this subspecies to the Minister for the Environment.

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

Species information

Taxonomy

Conventionally accepted as *Platycercus elegans melanopterus* (North 1906), a subspecies of Crimson Rosella (*Platycercus elegans*).

There are six other recognised subspecies of Crimson Rosella *(Platycercus elegans)* which occur within Australia (del Hoyo & Collar 2014). *P. e. nigrescens* and *P. e. filewoodi* occur throughout Queensland. *P. e. elegans* occurs from south-east Queensland to south-east South Australia. *P. e. flaveolus* occurs in south-east Australia, centred on the Murray-Murrumbidgee river systems. The remaining two subspecies, *P. e. subadelaidae* and *P.e. fleurieuensis* occur within South Australia, but not on Kangaroo Island.

Description

The Kangaroo Island Crimson Rosella is a medium-sized broad-tailed parrot, weighing up to 150 g, with a wingspan of up to 53 cm (Higgins 1999). Adults are characterised by mostly crimson plumage, with the lower hindneck and wing coverts, black boldly scaled crimson, blue shoulder patches and a mostly blue tail, with females generally duller in colour than males (Higgins 1999). Females are best distinguished by a short narrow white underwing-bar, which is not present in males (Higgins 1999). Juveniles are mostly olive-green in colour with a crimson forehead and foreneck (Higgins 1999).

Distribution

The Kangaroo Island Crimson Rosella is endemic to Kangaroo Island, South Australia. Potential suitable habitat occurs widely across the island however, recent habitat modelling suggests that the western side of the island is key habitat for Crimson Rosellas (Figure 1). Kangaroo Island was affected heavily during the 2019/2020 bushfires where around half of the island, mostly the western side, was burnt (Todd & Maurer 2020). The extent of occurrence is based on all records since 1990. The estimated area of occupancy is the area of habitat thought likely to have been supporting birds immediately after the 2019/2020 fire.

There is insufficient information available to describe the distribution in more detail. Further surveys and monitoring programs are required to assess the area of occupancy, population size and trend of the subspecies post 2019/2020 bushfires.

Map 1 Modelled distribution of Kangaroo Island Crimson Rosella
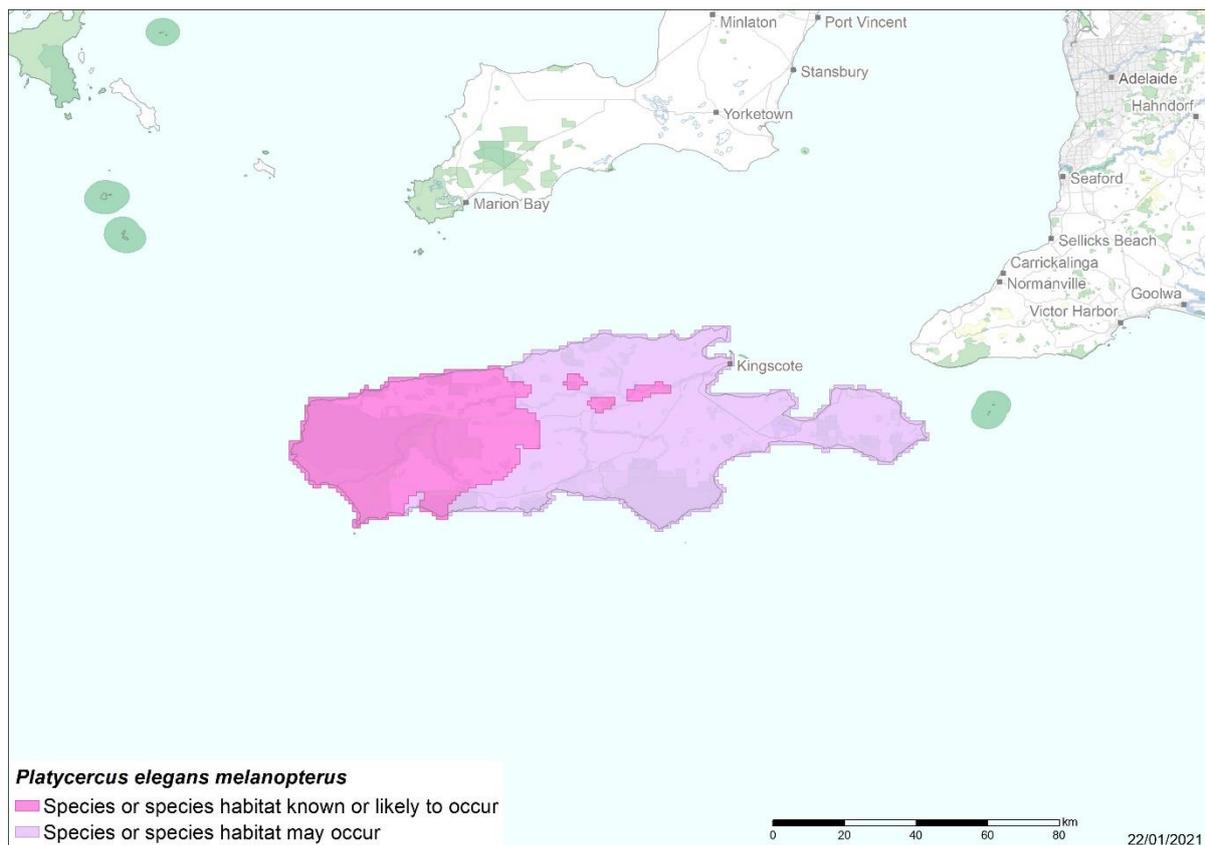
Source: Base map Geoscience Australia; species distribution data Species of National Environmental Significance database.

Cultural and community significance

The lands and waters of and around Kangaroo Island are of high cultural and spiritual significance to a number of Aboriginal Nations, particularly the Ramindjeri, Ngarrindjeri, Kaurna and Narungga, and all have cultural stories associated with the Island. The cultural and community significance of the subspecies is not known. Further research into the subject area may benefit the conservation of the subspecies by providing insights about traditional culture and land management.

Relevant biology and ecology

Kangaroo Island Crimson Rosellas occupy mesic forests and woodlands with dense, open or grassy understoreys, with a higher tendency to inhabit older, wetter forests (Higgins 1999; Forshaw & Cooper 2002). The subspecies often forage in pairs or small flocks, feeding on a wide variety of plant material consisting of the seeds of grasses, weeds, shrubs and trees, fruits, nuts, flowers, nectar, as well as insects and their larvae (Magrath & Lill 1985; Higgins 1999). Foraging occurs on the ground, and more commonly, in shrubs and trees (Higgins 1999).

Kangaroo Island Crimson Rosellas form monogamous bonds that last for several years, often life (Higgins 1999). The female incubates and broods the eggs, with the male feeding the female during the laying, incubation and early fledging stages (Higgins 1999). Both the male and female feed nestlings. Typically, the subspecies nests in natural hollows of trees. Nests consist of wood debris at the bottom of the hollow, obtained from scratching and chewing wood from the wall of the hollow (Higgins 1999). Females typically lay 4–7 eggs (Higgins 1999; Paton et al. 2021). Eggs

are rounded oval in shape, smooth, slightly lustrous to glossy and typically white or stained yellow in colour (Higgins 1999). In South Australia, eggs are typically laid from early September to mid-November (Higgins 1999).

Habitat critical to the survival

Habitat critical to the survival of the Kangaroo Island Crimson Rosella is likely linked to its breeding and feeding biology. Any trees with natural hollows (particularly those where breeding pairs have already established nests) can be considered habitat critical to the survival of the subspecies. Previously unoccupied, but suitable habitat on Kangaroo Island is considered necessary for the long-term recovery of the subspecies and should be considered habitat critical to the survival. Areas that are not currently occupied by the subspecies because they have been burnt (either in the 2019/2020, or in future fires), but should become suitable again in the future, should also be considered habitat critical to its survival.

The whole of Kangaroo Island has been identified as a Key Biodiversity Area (KBA). Although this subspecies has not been identified as a KBA trigger species, conservation actions implemented would likely benefit other already threatened species and other species with similar ecological needs which were also impacted by the 2019/2020 bushfires.

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

Threats

Wildfire is considered to be the most serious current threat, as all individuals of the subspecies and all habitat critical to the survival are potentially threatened. The subspecies occurs in a fire prone area that has been heavily impacted by wildfires in the past. The 2019/2020 fires were unprecedented in their scale and intensity. Climate change is likely to exacerbate the extent of impact that extreme events (e.g., severe drought and more frequent and intense wildfire) may have in the future.

Additional threats to the subspecies include introduced predators and habitat loss and degradation. Historically, the main threats faced by the Kangaroo Island Crimson Rosella included habitat loss, degradation, and fragmentation.

Table 1 Threats impacting Kangaroo Island Crimson Rosella

Threat	Status and severity [a]	Evidence
Fire		
Increase in frequency and/or intensity of wildfires	- Status: current, future - Confidence: known - Consequence: severe - Trend: increasing - Extent: across the entire range	Currently the main threat faced by the Kangaroo Island Crimson Rosella is wildfire as it causes direct catastrophic loss of habitat and individuals. In the 2019/2020 wildfire events, it was estimated that 51 percent of the island was burnt (Todd & Maurer 2020). Initial fire mapping has indicated that many bird species have lost major proportions of their habitat in these fire-affected areas (Boulton et al. 2020).

Threat	Status and severity [a]	Evidence
Climate change		
Increased frequency or length of extreme events (i.e., heatwave, wildfire and drought)	- Status: current & future - Confidence: known - Consequence: severe - Trend: increasing - Extent: across the entire range	Average temperatures in Australia have increased by over 1 degree Celsius (ABOM & CSIRO 2018), and global temperatures are expected to rise another 1.5 to 2 degrees Celsius by 2050 (IPCC 2018). More frequent and extreme heatwaves are also expected across Australia. Furthermore, rainfall patterns have also been affected, with record low rainfall recorded across parts of South Australia (BOM & CSIRO 2018). Fires that are too frequent, too infrequent but too hot, or too extensive can have negative effects on birds (Woinarski & Recher 1997). The most significant impacts occur after fire through loss of habitat and food, increased predation, reduced fecundity or local extinction (Brooker & Rowley 1991; Baker 1997; Whelan et al. 2002). The cumulative effect of the climate anomalies has led to, and will continue to increase, the likelihood of extreme events such as wildfire, drought, flood and storm (BOM & CSIRO 2010, 2018; Di Virgilio et al. 2019; Government of South Australia 2015, 2020) which may have a detrimental effect on the subspecies and their habitats.
Habitat loss, degradation and modification		
Pest animals (i.e., pigs and peacocks)	- Status: current & future - Confidence: known - Consequence: moderate - Trend: static - Extent: across the entire range	Pest animals poses a threat to native fauna and flora on Kangaroo Island as they cause habitat degradation and increases competition for resources. With unmanaged goat and deer eradicated, current main pest species are the feral pig (*Sus scrofa*) and the Peafowl (*Pavo cristatus*). Feral pigs can cause serious habitat degradation through grazing, trampling and digging (Commonwealth of Australia 2017a, 2017b). Additionally, they may also spread the plant pathogen *P. cinnamomi* (see above) and cause severe diebacks of native vegetation (Commonwealth of Australia 2017a). The impacts of peafowls are not well studied. They mostly feed on agricultural crops and pasture, impacting livestock. However, they are susceptible to diseases and parasites, which could be spread to native species (Latham 2011). Cunningham et al. (2016) mapped the habitat suitability and modelled

Threat	Status and severity [a]	Evidence
		the projection of population size of peafowl on Kangaroo Island and the results indicated if unmanaged, the population of peafowls on the island could exceed 2000 individuals after 10 years, therefore it is important for management actions to be in place.
Phytophthora cinnamomi induced diebacks	- Status: future - Confidence: inferred - Consequence: moderate - Trend: unknown - Extent: across part of its range	*P. cinnamomi* is a plant pathogen which infects a wide range of native plants, altering the structural and floristic characteristics of the vegetation. The disease is potentially threatening due to its capacity to kill key habitat species, reducing habitat quality (Hardham & Blackman 2018). Kangaroo Island has been identified as being vulnerable to *Phytophthora* (Doyle et al. 2006).
Land clearing and loss of tree hollows	- Status: future - Confidence: suspected - Consequence: severe - Trend: unknown - Extent: across the entire range	Habitat loss removes essential food, shelter and nest sites (Ford et al. 2001). Cavity nesting species, such as the Kangaroo Island Crimson Rosella, are likely to be limited by a decline of available nesting hollows (Golingay & Stevens 2009). A reduction in the number of available and suitable nesting hollows will cause an increase in intra and inter-specific competition for nesting habitat. Such competition may lead to a destruction of nests, eggs and decreased breeding success.
Invasive species (including threats from grazing, trampling, predation)		
Predation by cats	- Status: historical, current and future - Confidence: known - Consequence: moderate - Trend: static - Extent: across the entire range	The main species that pose a predation threat to Kangaroo Island Crimson Rosellas are feral cats (*Felis catus*) (Taggart et al. 2019). Feral cats are known to prey on this taxon (Woinarski et al 2017). Kangaroo Island has a higher average density of cats than that on the mainland (Taggart et al. 2019 & Hohnen et al. 2020), with a total of around 1600 individuals on the island (Hohnen et al. 2020). The threat of cats is also amplified by bushfires as they take advantage of recently burnt areas (McGregor et al. 2016), as they prefer to hunt in open habitats (McGregor et al. 2015). Management actions are in place and the current goal is to eradicate feral cats from Kangaroo Island by 2030 (Kangaroo Island Landscape Board 2015, 2020).

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) 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 (Table 2). The risk matrix (Table 3) and ranking of threats has been developed in consultation with experts, community consultation and by 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
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 Kangaroo Island Crimson Rosella risk matrix

Likelihood	Consequences				
	Not significant	Minor	Moderate	Major	Catastrophic
Almost certain	Predation by cats		Pest animals	Climate change	Wildfire
Likely		*P. cinnamomi* induced diebacks			
Possible		Land clearing and loss of tree hollows			
Unlikely					
Unknown					

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

- Increase the population size of Kangaroo Island Crimson Rosella to estimated pre-2020 levels.

Conservation and management priorities

Wildfire

- Fire management protocols in place to prevent fires affecting more than 25 percent of the population per decade.

- Develop approaches to stop fire on hot, windy days.

- Actively manage the landscape to minimise the risk of very large wildfires.

- Develop a site-based fire management strategy with local authorities which considers the ecological needs of the subspecies.

- Monitor bushfire-affected areas to assess the impact of wildfire on the subspecies and their habitats, and the capacity of the subspecies to recover from such events.

- Protect unburnt areas within or adjacent to recently burnt ground that may provide refuge, until the burnt areas have recovered sufficiently to support the subspecies once again.

Climate change

- Use climatic modelling techniques to investigate the potential impact of climate change on habitat critical to the survival. For example, examining the likely reduction in inter-fire intervals and comparing that with the recovery rates of Crimson Rosella populations would be valuable.

Pest animals

- Continue to implement the Kangaroo Island Feral Cat Eradication Program with the aim of eradicating feral cats on the island by 2030.

- Continue to implement Feral Cat Threat Abatement Plan (Commonwealth of Australia 2015b).

- Assess the impact of pest animals on the subspecies and its habitats, and the effectiveness of current control programs and incorporate new knowledge into management interventions.

P. cinnamomi induced diebacks

- Review the risk of *P. cinnamomi* and monitor for sites of infection regularly.

- Undertake surveys to assess the effectiveness of the control program for *P. cinnamomi* and incorporate new knowledge into management preventions.

Land clearing and loss of tree hollows

- Prior to consideration of removing any habitat, an ecological survey should be undertaken by a suitably qualified person and using appropriate survey protocol as described in the *Survey guidelines for Australia's threatened birds* should occur.

- Protect, restore and enhance known habitat critical to the survival of the Kangaroo Island Crimson Rosella.

- Identify priority locations as targets for conservation investment.

- Provide information to, and liaise with, state and local government in order to facilitate consideration development assessment policies and procedures.

Stakeholder engagement/community engagement

- Coordinate conservation efforts with other Kangaroo Island species affected by the 2019/2020 bushfires. Consider the possibility for a regional plan which includes all fire affected species on Kangaroo Island.

- Liaise with landholder/land managers to encourage their involvement in conservation.

- Continue to raise awareness with the public on the impacts *P. cinnamomi* and pest animals have on native vegetation and species.

- Encourage the community in research and citizen science (e.g., submit sighting of birds and report signs of *P. cinnamomi* infection).

Survey and monitoring priorities

- Conduct surveys around the island to determine the distribution and abundance of the subspecies, with a particular focus on the fire affected areas, and the rate of recovery of both habitat and birds within these areas.

- Coordinate surveys and monitoring programs with other bushfire affected species on the island.

Information and research priorities

- Improve knowledge of the impacts wildfire have on the subspecies and their habitat, and their ability to re-colonise recently burnt areas.

- Accurately describe habitat critical to the survival for the subspecies. Use climate modelling techniques to investigate potential influence of climate change on breeding and foraging habitats, and on fire regimes that could affect the subspecies.

- Determine Kangaroo Island Crimson Rosella's sensitivity/resilience to climate change and disturbance by extreme climate events.

Recovery plan decision

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

Links to relevant implementation documents

Threat Abatement Plans:

- [Threat abatement plan for predation by feral cats](#) (Commonwealth of Australia 2015b).

- [Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*)](#) (Commonwealth of Australia 2017b).

- [Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi*](#) (Commonwealth of Australia 2018b).

Other relevant implementation documents:

- [Bushfire recovery where it matters most: Impacts and actions in Key Biodiversity Areas affected by the 2019/20 Bushfire Crisis](#) (BirdLife Australia 2020)

- [Feal cat eradication on Kangaroo Island 2015-2030 PROSPECTUS](#) (Kangaroo Island Landscape Board 2015).

- [Kangaroo Island Feral Cat Eradication Program](#) (Kangaroo Island Landscape Board 2020).

- [Kangaroo Island Biosecurity Strategy 2017-2027](#) (Triggs 2017).

- [Australian Weeds Strategy 2017-2027](#) (Invasive Plants and Animals Committee 2016).

- [Kangaroo Island Wildlife and Habitat Recovery Planning Workshop Summary Report DRAFT](#) (National Environmental Science Program 2020)

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Attachment A: Listing Assessment for *Platycercus elegans melanopterus*

Reason for assessment

This assessment follows prioritisation of a nomination from the public/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	42,000	38,000	46,000	The population estimate of Kangaroo Island Crimson Rosellas is based on densities recorded over 300 ha at Cygnet Park, Kangaroo Island, in September of 2018 and 2019 (0.21–0.25 birds/ha), the area of vegetation types likely to have been occupied before the 2019/2020 fire, maps of fire severity in 2019/2020 within the pre-fire range and initial assumptions about mortality at different fire severity classes (fire severity low: mortality of 0% assumed; medium: 20%; high: 60%; very high: 100%) (Paton et al. 2021).
Trend	Contracted			Paton et al. (2021)
Generation time (years)	6.6	5.9	7.3	Bird et al. (2020)
Extent of occurrence	6,000 km²	5,600 km²	6,400 km²	The EOO is based on all records since 1990 (Paton et al. 2021).
Trend	Stable			
Area of Occupancy	1,530 km²	189 km²	1,830 km²	The estimated AOO is the area of habitat thought likely to have been supporting birds immediately after the 2019/2020 fire. The minimum is the number 2x2 km squares encompassing sites at which birds have been documented since 1990 that were unburnt. The maximum is the area of suitable habitat before the fires (Paton et al. 2021).

Metric	Estimate used in the assessment	Minimum plausible value	Maximum plausible value	Justification
Trend	Contracted			Paton et al. (2021)
Number of subpopulations	1	1	1	Paton et al. (2021)
Trend	Stable			Paton et al. (2021)
Basis of assessment of subpopulation number	The population on the island is assumed to be panmictic.			
No. locations	>10			Paton et al. (2021)
Basis of assessment of location number	The spatial nature of the threats, although stochastic in space and time, is such that there are >10 geographically or ecologically distinct areas where a single fire could affect all individuals of the subspecies present within a period of one generation.			
Fragmentation	Not severely fragmented.			
Fluctuations	Not subject to extreme fluctuations in EOO, AOO, number of subpopulations, locations or mature individuals – no parameter was changed by an order of magnitude by the 2019/2020 fires.			

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%

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.

} Based on any of the following

(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

Eligible under Criterion 1 A2c **for listing as** Vulnerable

Kangaroo Island Crimson Rosellas are endemic to Kangaroo Island, occurring widely across the island (Baxter 2015). Kangaroo Island was heavily impacted during the 2019/2020 bushfires, where around half of the island was burnt (DEW 2020; Todd & Maurer 2020). The fire extent overlapped with the taxon's distribution by 76 percent (Legge et al 2020), and an estimated 58 percent of suitable habitat was burnt (Paton et al. 2021). It is estimated that 35 percent of the Kangaroo Island Crimson Rosella population perished in the fires with a spread of estimates from 28 percent to 52 percent, depending on the fire-related mortality assumed under different scenarios (Paton et al. 2021). The extent of occurrence (EOO) for the subspecies is stable, however the area of occupancy (AOO) for the subspecies has contracted (Paton et al. 2021). The average reporting rate for the period before the fire was 0.41 (1977–1981, 1998–2018; BirdLife Australia 2020) and 0.30 in 465 lists collected from 375 sites in 2012–2014 (DC Paton unpublished, cited in Paton et al. 2021). Two months after the 2019–20 fire it was 0.17 in 110 unburnt fragments within the burnt area and zero in 35 plots outside it (Boulton et al. 2020).

The data presented above appear to demonstrate that the subspecies is **eligible for listing as Vulnerable** 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 km²	< 5,000 km²	< 20,000 km²
B2.	Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
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

The EOO is estimated at 6000 km² (range 5600–6400 km²) and the AOO estimated at 1530 km² (range 189–1830 km²) (Paton et al. 2021). The EOO is based on all records since 1990. The estimated AOO is the area of habitat thought likely to have been supporting birds immediately

after the 2019/2020 fire. The minimum is the number 2x2 km squares encompassing sites at which birds have been documented since 1990 that were unburnt. The maximum is the area of suitable habitat before the fires. The 2019/2020 fire burnt an estimated 76 percent of all 1x1 km squares from which birds have been recorded since 1990 (Legge et al 2020), and 58 percent of suitable habitat (Paton et al. 2021). The EOO for the subspecies is thought to be stable, however the AOO for the subspecies has contracted (Paton et al. 2021). The subspecies is estimated to occur at more than 10 locations and is not severely fragmented. The subspecies is not subject to extreme fluctuations in EOO, AOO, number of subpopulations, locations or mature individuals. No parameter was changed by an order of magnitude by the 2019/2020 fire.

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 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 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:				
(a)	(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
	(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 subspecies consists of a single population (Paton et al. 2021). The total population size is now generally accepted to be 42,000 mature individuals (range 38,000–46,000) (Paton et al. 2021). The population appears to have declined by 28 to 52 percent due to the 2019/2020 fires on Kangaroo Island, but is unlikely to be experiencing ongoing, continuous decline. The subspecies is not subject to extreme fluctuations (Paton et al. 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 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
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

Not eligible

The total population size of the subspecies is estimated to be 42,000 mature individuals (range 38,000–46,000) (Paton et al. 2021). This estimate is based on densities recorded over 300 ha at Cygnet Park, Kangaroo Island, in September of 2018 and 2019 (0.21–0.25 birds/ha), the area of vegetation types likely to have been occupied before the 2019/2020 fire, maps of fire severity in 2019/2020 within the pre-fire range and initial assumptions about mortality at different fire severity classes (fire severity low: 0 percent; medium: 20 percent; high: 60 percent; very high: 100 percent) (Paton et al. 2021).

The data presented above appear to demonstrate that 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 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

Criterion 5 evidence

Insufficient data to determine eligibility

Population viability analysis appears not to have been undertaken, and therefore there is insufficient data to demonstrate if the subspecies is 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 stage, as it may be changed as a result of responses to this consultation process.

Adequacy of survey

The information used in this assessment is considered adequate and there is sufficient scientific evidence to support the assessment of this subspecies under Criterion 1.

CONSULTATION QUESTIONS FOR *Platycercus elegans melanopterus* (Kangaroo Island Crimson Rosella)

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:

   ☐ 1–2500 ☐ 2501–10 000 ☐ 10 001–50 000 ☐ >50 000 ☐ >75 000

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 early 2000s *(at or soon after the start of the most recent 10 year 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:

    ☐ 1–2500 ☐ 2501–10 000 ☐ 10 001–50 000 ☐ >50 000 ☐ >75 000

    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 20 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:

    ☐ <100 km^2 ☐ 100 – 5 000 km^2 ☐ 5 001 – 20 000 km^2 ☐ >20 000 km^2

    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:

☐ <10 km^2 ☐ 11 – 500 km^2 ☐ 501 – 2000 km^2 ☐ >2000 km^2

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:

    ☐ <100 km^2 ☐ 100 – 5 000 km^2 ☐ 5 001 – 20 000 km^2 ☐ >20 000 km^2

    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:

☐ <10 km^2 ☐ 11 – 500 km^2 ☐ 501 – 2000 km^2 ☐ >2000 km^2

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?