BIODIVERSITY CONSERVATION ACT 2016

MINISTERIAL GUIDELINE NUMBER 4

THREATENED ECOLOGICAL COMMUNITIES LISTING SPECIFICATIONS AND CRITERIA

1. LEGISLATIVE BASIS FOR THESE GUIDELINES

1.1. The *Biodiversity Conservation Act 2016* (the Act) provides for the Minister for Environment (the Minister) to list ecological communities as threatened ecological communities in the categories of critically endangered, endangered or vulnerable (section 27 of the Act).

1.2. The Act provides that the Minister may issue *Ministerial Guidelines* establishing criteria for, and setting out other matters relevant to, the listing of threatened ecological communities (section 260(1)(d)).

1.3. This *Ministerial Guideline* (Number 4) provides:

- the specifications for the ecological community that may be considered for listing; and,
- the detailed criteria to be used for listing ecological communities in the categories - critically endangered (section 28 of the Act), endangered (section 29 of the Act), vulnerable (section 30 of the Act).

1.4. This *Ministerial Guideline* (Number 4) should be read in conjunction with *Ministerial Guideline* (Number 1) which provides the procedure for any person to make a nomination for assessment and for the Minister to assess such a nomination. It also provides for the establishment of the Threatened Ecological Communities Scientific Committee (TECSC) and that their role is to consider nominations and make a recommendation to the Minister for listing.

1.5. The TECSC will apply the specifications and criteria as set out in this *Ministerial Guideline* (Number 4) in making recommendations to the Minister on ecological communities to be listed and the categories to which they should be allocated.

1.6. The criteria for listing an ecological community as a collapsed ecological community are set out in section 32 of the Act, not this *Ministerial Guideline* (Number 4). Section 32 provides that:

> *An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time —*
>
> *(a) there is no reasonable doubt that the last occurrence of the ecological community has collapsed; or*
>
> *(b) the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover —*
>
> *(i) its species composition or structure; or*
>
> *(ii) its species composition and structure.*

2. SPECIFICATIONS FOR ECOLOGICAL COMMUNITIES THAT MAY BE CONSIDERED FOR LISTING

2.1. To be considered for listing, an ecological community must be identified with a name and a short description that includes key features that can be used to identify the community including the biotic attributes and/or geographical location in such a way that it can be distinguished from other ecological communities.

2.1.1. The description of an ecological community must include a summary of the biological and physical attributes of the ecological community that facilitate its recognition. The description can vary depending on the nature of the ecological community and the parameters that define it. Ecological communities are rarely completely uniform within or between occurrences, and the description may describe the features that vary within the community, and if appropriate, confidence limits for that variability.

2.1.2. The description should include distinguishing features of the ecological community, especially where these are necessary for differentiating the ecological community from other similar ecological communities. Diagnostic features are those elements that are used to assist in determining whether it is a particular ecological community based on their presence or absence.

2.2. Before an ecological community can be assessed for listing it is necessary to establish that the level of survey is sufficient.

2.2.1. There must have been adequate surveys to establish its range and status.

2.2.2. Identification of an ecological community may, in some situations, require the use of specific survey methods or data analysis. Where this is the case, the description should include (or refer to) the method that was followed to identify the ecological community.

2.3. Only ecological communities that are known to occur, or have occurred, in Western Australia will be considered for listing as a threatened or collapsed ecological community under the Act.

3. CRITERIA FOR LISTING AN ECOLOGICAL COMMUNITY AS A THREATENED ECOLOGICAL COMMUNITY

3.1. The Act provides for listing threatened ecological communities in the categories of:

3.1.1. critically endangered (section 28), that is, the ecological community is facing an extremely high risk of becoming eligible for listing as a collapsed ecological community in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines, or

3.1.2. endangered (section 29), that is, the ecological community is facing a very high risk of becoming eligible for listing as a collapsed ecological community in the near

future, as determined in accordance with criteria set out in the ministerial guidelines, or

3.1.3. vulnerable (section 30), that is, the ecological community is facing a high risk of becoming eligible for listing as a collapsed ecological community in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines.

3.2. The risks referred to in paragraph 3.1 should be determined by applying the criteria set out at **Appendix 1**.

3.3. Appendix 1 adopts the criteria in the internationally recognised *International Union for Conservation of Nature's Red List of Ecosystems* (IUCN RLE) published in the *IUCN Red List of Ecosystems Categories and Criteria, Version 2.2* (IUCN 2017 and later editions).

3.3.1. The IUCN RLE is a global standard for criteria that can be used to assess the status of ecosystems, and is applicable at local, national, regional and global levels.

3.3.2. Adoption of this standardised system allows for objective, transparent and repeatable assessments of the risk that an ecosystem will collapse. These assessments are scientifically comparable, allowing assessors from different parts of the world and at different geographical scales to systematically compare their results.

3.3.3. The IUCN RLE categories describe the risk of ecosystem collapse by assessing: declining distribution (A), restricted distribution (B), environmental degradation (C), disruption of biotic processes (D) or quantitative estimates of risk of collapse (E).

4. INFORMATION REGARDING AMENDMENT AND REVIEW

4.1. This *Ministerial Guideline* (Number 4) may be amended in accordance with section 262 and Regulation 161 of the *Biodiversity Conservation Regulations 2018*.

4.2. This *Ministerial Guideline* (Number 4) may be amended if the IUCN RLE is reviewed by the IUCN and as a result, a change or changes are made. The TECSC will provide a report to the Minister on whether the changes should be adopted in this Guideline.

4.3. An ecological community may be reviewed against these criteria:

4.3.1. When the ecological community falls due for review *(Ministerial Guideline (Number 1)),* or

4.3.2. If new information becomes available that is likely to affect the assessed listing category, or

4.3.3. If the Minister requests that the ecological community be reviewed, or

4.3.4. If a change is made to this *Ministerial Guideline* (Number 4), an ecological community listed under a criterion affected by the change will be assessed when the ecological community falls due for review.

APPENDIX 1

CRITERIA FOR ASSESSING ECOLOGICAL COMMUNITIES FOR LISTING IN THE CATEGORIES OF CRITICALLY ENDANGERED, ENDANGERED, AND VULNERABLE

The following criteria are adapted from the IUCN Red List of Ecosystems Criteria, published in the following reference *IUCN Red List of Ecosystems Categories and Criteria, Version 2.2* (IUCN 2017 and later editions).

This document can be downloaded from: https://www.iucn.org/resources/conservation-tools/iucn-red-list-ecosystems.

When using these criteria, the TECSC will also consult the following document *Guidelines for the application of IUCN Red List of Ecosystems Categories and Criteria* that can be downloaded from: https://portals.iucn.org/library/node/45794.

Note: The term 'ecosystem type' or 'ecosystem' rather than 'ecological community' is applied throughout the IUCN Red List of Ecosystems criteria and guidelines. The IUCN guidelines state that other terms applied in conservation assessments including ecological communities are regarded as operational synonyms of ecosystem type provided that they are adequately defined in accordance with the procedures described in the IUCN assessment process.

CRITICALLY ENDANGERED (CR)

An ecological community is eligible for listing in the category of critically endangered at a particular time if, at that time, it is considered to be facing an extremely high risk of becoming eligible for listing as a collapsed ecological community in the immediate future when the best available evidence indicates that it meets any of the criteria A to E.

Criterion A:

A. Reduction in geographic distribution over **ANY** of the following time periods:

A1. ≥ 80% in the past 50 years

A2a. ≥ 80% in the next 50 years

A2b. ≥ 80% in any 50 year period including the past, present and future

A3. ≥ 90% since approximately 1750.

Criterion B:

B. Restricted geographic distribution indicated by **ANY** of B1 or B2:

B1. Extent of a minimum convex polygon enclosing all occurrences (extent of occurrence, EOO) is no larger than **2,000 km^2**

AND at least one of the following (a-c):

(a) An observed or inferred continuing decline in **ANY** of:

i. a measure of spatial extent appropriate to the ecological community, **OR**

ii. a measure of environmental quality appropriate to characteristic biota of the ecological community, **OR**

iii. a measure of disruption to biotic interactions appropriate to the characteristic biota of the ecological community.

(b) Observed or inferred threatening processes that are likely to cause continuing declines in geographic distribution, environmental quality or biotic interactions within the next 20 years.

(c) Ecological community exists at one threat-defined location.

B2. The number of 10 × 10 km grid cells occupied (area of occupancy, AOO) is no more than **2**

AND at least one of the following (a-c):

(a) An observed or inferred continuing decline in **ANY** of:

i. a measure of spatial extent appropriate to the ecological community, **OR**

ii. a measure of environmental quality appropriate to characteristic biota of the ecological community, **OR**

iii. a measure of disruption to biotic interactions appropriate to the characteristic biota of the ecological community.

(b) Observed or inferred threatening processes that are likely to cause continuing declines in geographic distribution, environmental quality or biotic interactions within the next 20 years.

(c) Ecological community exists at one threat-defined location.

Criterion C:

C. Environmental degradation over **ANY** of the following time periods:

C1. The past 50 years, based on change in an abiotic variable affecting **≥ 80%** of the extent of the ecological community and with **≥ 80%** relative severity.

C2a. The next 50 years, based on change in an abiotic variable affecting **≥ 80%** of the extent of the ecological community and with **≥ 80%** relative severity, **OR**

C2b. Any 50-year period including the past, present and future, based on change in an abiotic variable affecting **≥ 80%** of the extent of the ecological community and with **≥ 80%** relative severity.

C3. Since 1750, based on change in an abiotic variable affecting **≥ 90%** of the extent of the ecological community and with **≥ 90%** relative severity.

Criterion D:

D. Disruption of biotic processes or interactions over **ANY** of the following time periods:

D1. The past 50 years, based on change in a biotic variable affecting **≥ 80%** of the extent of the ecological community and with **≥ 80%** relative severity.

D2a. The next 50 years, based on change in a biotic variable affecting **≥ 80%** of the extent of the ecological community and with **≥ 80%** relative severity, **OR**

D2b. Any 50-year period including the past, present and future, based on change in a biotic variable affecting **≥ 80%** of the extent of the ecological community and with **≥ 80%** relative severity.

D3. Since 1750, based on change in a biotic variable affecting **≥ 90%** of the extent of the ecological community and with **≥ 90%** relative severity.

Criterion E:

E. Quantitative analysis that estimates the probability of ecological community collapse to be:

≥ 50% within 50 years.

ENDANGERED (EN)

An ecological community is eligible for listing in the category of endangered at a particular time if, at that time, it is considered to be facing a very high risk of becoming eligible for listing as a collapsed ecological community in the near future when the best available evidence indicates that it meets any of the criteria A to E.

Criterion A:

A. Reduction in geographic distribution over **ANY** of the following time periods:

A1. ≥ 50% in the past 50 years

A2a. ≥ 50% in the next 50 years

A2b. ≥ 50% in any 50 year period including the past, present and future

A3. ≥ 70% since approximately 1750.

Criterion B:

B. Restricted geographic distribution indicated by **ANY** of B1 or B2:

B1. Extent of a minimum convex polygon enclosing all occurrences (extent of occurrence, EOO) is no larger than **20,000 km^2**

AND at least one of the following (a-c):

(a) An observed or inferred continuing decline in **ANY** of:

i. a measure of spatial extent appropriate to the ecological community, **OR**

ii. a measure of environmental quality appropriate to characteristic biota of the ecological community, **OR**

iii. a measure of disruption to biotic interactions appropriate to the characteristic biota of the ecological community.

(b) Observed or inferred threatening processes that are likely to cause continuing declines in geographic distribution, environmental quality or biotic interactions within the next 20 years.

(c) Ecological community exists at ≤ 5 threat-defined locations.

B2. The number of 10 × 10 km grid cells occupied (area of occupancy, AOO) is no more than **20**

AND at least one of the following (a-c):

(a) An observed or inferred continuing decline in **ANY** of:

i. a measure of spatial extent appropriate to the ecological community, **OR**

ii. a measure of environmental quality appropriate to characteristic biota of the ecological community, **OR**

iii. a measure of disruption to biotic interactions appropriate to the characteristic biota of the ecological community.

(b) Observed or inferred threatening processes that are likely to cause continuing declines in geographic distribution, environmental quality or biotic interactions within the next 20 years.

(c) Ecological community exists at ≤ 5 threat-defined locations.

Criterion C:

Environmental degradation over **ANY** of the following time periods:

C1. The past 50 years, based on change in an abiotic variable either -

affecting **≥ 80%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 80%** relative severity.

C2a. The next 50 years, based on change in an abiotic variable either -

affecting **≥ 80%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 80%** relative severity, **OR**

C2b. Any 50-year period including the past, present and future, based on change in an abiotic variable either affecting **≥ 80%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 80%** relative severity.

C3. Since 1750, based on change in an abiotic variable either -

affecting **≥ 90%** of the extent of the ecological community and with **≥ 70%** relative severity, **OR**

affecting **≥ 70%** of the extent of the ecological community and with **≥ 90%** relative severity.

Criterion D:

D. Disruption of biotic processes or interactions over **ANY** of the following time periods:

D1. The past 50 years, based on change in a biotic variable either -

affecting **≥ 80%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 80%** relative severity.

D2a. The next 50 years, based on change in a biotic variable either -

affecting **≥ 80%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 80%** relative severity, **OR**

D2b. Any 50-year period including the past, present and future, based on change in a biotic variable either -

affecting **≥ 80%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 80%** relative severity.

D3. Since 1750, based on change in a biotic variable either -

affecting **≥ 90%** of the extent of the ecological community and with **≥ 70%** relative severity, **OR**

affecting **≥ 70%** of the extent of the ecological community and with **≥ 90%** relative severity.

Criterion E:

E. Quantitative analysis that estimates the probability of ecological community collapse to be:

≥ 20% within 50 years.

VULNERABLE (VU)

An ecological community is eligible for listing in the category of vulnerable at a particular time if, at that time, it is considered to be facing a high risk of becoming eligible for listing as a collapsed ecological community in the medium-term future when the best available evidence indicates that it meets any of the criteria A to E.

Criterion A:

A. Reduction in geographic distribution over **ANY** of the following time periods:

A1. ≥ 30% in the past 50 years

A2a. ≥ 30% in the next 50 years

A2b. ≥ 30% in any 50 year period including the past, present and future

A3. ≥ 50% since approximately 1750.

Criterion B:

B. Restricted geographic distribution indicated by **ANY** of B1, B2 or B3:

B1. Extent of a minimum convex polygon enclosing all occurrences (extent of occurrence, EOO) is no larger than **50,000 km^2**

AND at least one of the following (a-c):

(a) An observed or inferred continuing decline in **ANY** of:

i. a measure of spatial extent appropriate to the ecological community, **OR**

ii. a measure of environmental quality appropriate to characteristic biota of the ecological community, **OR**

iii. a measure of disruption to biotic interactions appropriate to the characteristic biota of the ecological community.

(b) Observed or inferred threatening processes that are likely to cause continuing declines in geographic distribution, environmental quality or biotic interactions within the next 20 years.

(c) Ecological community exists at ≤ 10 threat-defined locations.

B2. The number of 10 × 10 km grid cells occupied (area of occupancy, AOO) is no more than **50**

AND at least one of the following (a-c):

(a) An observed or inferred continuing decline in **ANY** of:

i. a measure of spatial extent appropriate to the ecological community, **OR**

ii. a measure of environmental quality appropriate to characteristic biota of the ecological community, **OR**

iii. a measure of disruption to biotic interactions appropriate to the characteristic biota of the ecological community.

(b) Observed or inferred threatening processes that are likely to cause continuing declines in geographic distribution, environmental quality or biotic interactions within the next 20 years.

(c) Ecological community exists at ≤ 10 threat-defined locations.

B3. The number of threat-defined locations is:

Very small (generally fewer than five) **AND** prone to the effects of human activities or stochastic events within a very short time period in an uncertain future, and thus capable of collapse or becoming critically endangered within a very short time period (B3 can only lead to a listing as VU).

Criterion C:

C. Environmental degradation over **ANY** of the following time periods:

C1. The past 50 years, based on change in an abiotic variable either –

affecting **≥ 80%** of the extent of the ecological community and with **≥ 30%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 30%** of the extent of the ecological community and with **≥ 80%** relative severity.

C2a. The next 50 years, based on change in an abiotic variable either –

affecting **≥ 80%** of the extent of the ecological community and with **≥ 30%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 30%** of the extent of the ecological community and with **≥ 80%** relative severity, **OR**

C2b. Any 50-year period including the past, present and future, based on change in an abiotic variable either –

affecting **≥ 80%** of the extent of the ecological community and with **≥ 30%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 30%** of the extent of the ecological community and with **≥ 80%** relative severity.

C3. Since 1750, based on change in an abiotic variable either –

affecting **≥ 90%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 70%** of the extent of the ecological community and with **≥ 70%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 90%** relative severity.

Criterion D:

D. Disruption of biotic processes or interactions over **ANY** of the following time periods:

D1. The past 50 years, based on change in a biotic variable either –

affecting **≥ 80%** of the extent of the ecological community and with **≥ 30%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 30%** of the extent of the ecological community and with **≥ 80%** relative severity.

D2a. The next 50 years, based on change in a biotic variable either –

affecting **≥ 80%** of the extent of the ecological community and with **≥ 30%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 30%** of the extent of the ecological community and with **≥ 80%** relative severity, **OR**

D2b. Any 50-year period including the past, present and future, based on change in a biotic variable either –

affecting **≥ 80%** of the extent of the ecological community and with **≥ 30%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 30%** of the extent of the ecological community and with **≥ 80%** relative severity.

D3. Since 1750, based on change in a biotic variable either –

affecting **≥ 90%** of the extent of the ecological community and with **≥ 50%** relative severity, **OR**

affecting **≥ 70%** of the extent of the ecological community and with **≥ 70%** relative severity, **OR**

affecting **≥ 50%** of the extent of the ecological community and with **≥ 90%** relative severity.

Criterion E:

E. Quantitative analysis that estimates the probability of ecological community collapse to be:

≥ 10% within 100 years.