New South Wales

Threatened Species Conservation Amendment (Listing Criteria) Regulation 2005

under the

Threatened Species Conservation Act 1995

Her Excellency the Governor, with the advice of the Executive Council, has made the following Regulation under the *Threatened Species Conservation Act 1995*.

BOB DEBUS, M.P.,
Minister for the Environment

Explanatory note

The object of this Regulation is to prescribe criteria under sections 10–12 of the *Threatened Species Conservation Act 1995* for the listing of critically endangered species, endangered species, vulnerable species, endangered populations, critically endangered ecological communities, endangered ecological communities and vulnerable ecological communities.

The Minister has certified pursuant to section 14 of the Act that:

(a)   the criteria are based on scientific principles only, and

(b)   any criteria for listing under the *Environment Protection and Biodiversity Conservation Act 1999* of the Commonwealth were given due consideration before this Regulation was made.

This Regulation is made under the *Threatened Species Conservation Act 1995*, including sections 10–12 and section 150 (the general regulation-making power).

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1   Name of Regulation

This Regulation is the *Threatened Species Conservation Amendment (Listing Criteria) Regulation 2005*.

2   Commencement

This Regulation commences on 31 October 2005.

3   Amendment of Threatened Species Conservation Regulation 2002

The *Threatened Species Conservation Regulation 2002* is amended as set out in Schedule 1.

Schedule 1   Amendment

(Clause 3)

Part 3

Insert after Part 2:

Part 3   Listing criteria

Note. This Part prescribes the criteria for a determination by the Scientific Committee of the matters required to establish eligibility for listing in accordance with Part 2 of the Act:

(a)   of a species as a critically endangered species, endangered species or vulnerable species (*see Division 1*), or

(b)   of a population as an endangered population (*see Division 2*), or

(c)   of an ecological community as a critically endangered ecological community, endangered ecological community or vulnerable ecological community (*see Division 3*).

Division 4 provides for the interpretation and application of the prescribed criteria.

Division 1   Criteria for listing of species

13   Criteria for listing determinations by Scientific Committee

(1)   **Critically endangered species**

For the purposes of section 10 (2) of the Act, a species is facing an extremely high risk of extinction in New South Wales in the immediate future if, in the opinion of the Scientific Committee, it meets the criteria specified for critically endangered species in one or more of the other clauses in this Division.

(2)   **Endangered species**

For the purposes of section 10 (3) of the Act, a species is facing a very high risk of extinction in New South Wales in the near future if, in the opinion of the Scientific Committee, it meets the criteria specified for endangered species in one or more of the other clauses in this Division.

(3)   **Vulnerable species**

For the purposes of section 10 (4) of the Act, a species is facing a high risk of extinction in New South Wales in the medium-term future if, in the opinion of the Scientific Committee, it meets the criteria specified for vulnerable species in one or more of the other clauses in this Division.

14   Criteria—reduction in population size of species

The species has undergone, is observed, estimated, inferred or reasonably suspected to have undergone or is likely to undergo within a time frame appropriate to the life cycle and habitat characteristics of the taxon:

(a)   for *critically endangered species*—a very large reduction in population size, or

(b)   for *endangered species*—a large reduction in population size, or

(c)   for *vulnerable species*—a moderate reduction in population size,

based on either:

(d)   an index of abundance appropriate to the taxon, or

(e)   geographic distribution, habitat quality or diversity, or genetic diversity.

15   Criteria—restricted geographic distribution of species, and certain other conditions

The geographic distribution of the species is estimated or inferred to be:

(a)   for *critically endangered species*—very highly restricted, or

(b)   for *endangered species*—highly restricted, or

(c)   for *vulnerable species*—moderately restricted,

and either:

(d)   a projected or continuing decline is observed, estimated or inferred in either:

(i)   an index of abundance appropriate to the taxon, or

(ii)   geographic distribution, habitat quality or diversity, or genetic diversity, or

(e)   at least 2 of the following 3 conditions apply:

(i)   the population or habitat is observed or inferred to be severely fragmented,

(ii)   all or nearly all mature individuals are observed or inferred to occur within a small number of populations or locations,

(iii)   extreme fluctuations are observed or inferred to occur in either:

>> (A) an index of abundance appropriate to the taxon, or
>> (B) geographic distribution, habitat quality or habitat diversity.

16 Criteria—low numbers of mature individuals of species, and certain other conditions

The estimated total number of mature individuals of the species is:

(a) for *critically endangered species*—very low, or

(b) for *endangered species*—low, or

(c) for *vulnerable species*—moderately low (that is, not as low as for paragraph (b)),

and either:

(d) a projected or continuing decline is observed, estimated or inferred in either:

> (i) an index of abundance appropriate to the taxon, or

> (ii) geographic distribution, habitat quality or diversity, or genetic diversity, or

(e) at least 2 of the following 3 conditions apply:

> (i) the population or habitat is observed or inferred to be severely fragmented,

> (ii) all or nearly all mature individuals are observed or inferred to occur within a small number of populations or locations,

> (iii) extreme fluctuations are observed or inferred to occur in either:

>> (A) an index of abundance appropriate to the taxon, or

>> (B) geographic distribution, habitat quality or habitat diversity.

17 Criteria—low numbers of mature individuals of species

The total number of mature individuals of the species is observed, estimated or inferred to be:

(a) for *critically endangered species*—extremely low, or

(b) for *endangered species*—very low, or

(c) for *vulnerable species*—low.

18   Criteria—very highly restricted geographic distribution of species

For *vulnerable species*, the geographic distribution of the species is observed, estimated or inferred to be very highly restricted such that it is prone to the effects of human activities or stochastic events within a very short time period.

Division 2   Criteria for listing of endangered populations

19   Criteria for listing determinations by Scientific Committee

For the purposes of section 11 (1) of the Act, a population is facing a very high risk of extinction in New South Wales in the near future if, in the opinion of the Scientific Committee, it satisfies any one or more of the following paragraphs and also meets the criteria specified in one or more of the other clauses in this Division:

(a)   it is disjunct or near the limit of its geographic range,

(b)   it is or is likely to be genetically, morphologically or ecologically distinct,

(c)   it is otherwise of significant conservation value.

20   Criteria—large reduction in population size

The size of the population has undergone, is observed, estimated, inferred or reasonably suspected to have undergone or is likely to undergo within a time frame appropriate to the life cycle and habitat characteristics of the taxon a large reduction based on either:

(a)   an index of abundance appropriate to the taxon, or

(b)   geographic distribution, habitat quality or diversity, or genetic diversity.

21   Criteria—highly restricted geographic distribution of population, and certain other conditions

The geographic distribution of the population is estimated or inferred to be highly restricted and either:

(a)   a projected or continuing decline is observed, estimated or inferred in either:

(i)   an index of abundance appropriate to the taxon, or

(ii)   geographic distribution, habitat quality or diversity, or genetic diversity, or

(b)   at least two of the following three conditions apply:
- (i)   the population or habitat is observed or inferred to be severely fragmented,
- (ii)   all or nearly all mature individuals are observed or inferred to occur within a small number of locations,
- (iii)   extreme fluctuations are observed or inferred to occur in either:
    - (A)   an index of abundance appropriate to the taxon, or
    - (B)   geographic distribution, habitat quality or habitat diversity.

22   Criteria—low numbers of mature individuals in population, and certain other conditions

The estimated total number of mature individuals in the population is low and either:
- (a)   a projected or continuing decline is observed, estimated or inferred in either:
    - (i)   an index of abundance appropriate to the taxon, or
    - (ii)   geographic distribution, habitat quality or diversity, or genetic diversity, or
- (b)   at least two of the following three conditions apply:
    - (i)   the population or habitat is observed or inferred to be severely fragmented,
    - (ii)   all or nearly all mature individuals are observed or inferred to occur within a small number of locations,
    - (iii)   extreme fluctuations are observed or inferred to occur in either:
        - (A)   an index of abundance appropriate to the taxon, or
        - (B)   geographic distribution, habitat quality or habitat diversity.

23   Criteria—very low numbers of mature individuals in population

The estimated total number of mature individuals of the population is observed, estimated or inferred to be very low.

Division 3   Criteria for listing of ecological communities

24   Criteria for listing determinations by Scientific Committee

(1)   **Critically endangered ecological communities**

For the purposes of section 12 (1) of the Act, an ecological community is facing an extremely high risk of extinction in New South Wales in the immediate future if, in the opinion of the Scientific Committee, it meets the criteria specified for critically endangered ecological communities in one or more of the other clauses in this Division.

(2)   **Endangered ecological communities**

For the purposes of section 12 (2) of the Act, an ecological community is facing a very high risk of extinction in New South Wales in the near future if, in the opinion of the Scientific Committee, it meets the criteria specified for endangered ecological communities in one or more of the other clauses in this Division.

(3)   **Vulnerable ecological communities**

For the purposes of section 12 (3) of the Act, an ecological community is facing a high risk of extinction in New South Wales in the medium-term future if, in the opinion of the Scientific Committee, it meets the criteria specified for vulnerable ecological communities in one or more of the other clauses in this Division.

25   Criteria—reduction in geographic distribution of ecological community

The ecological community has undergone, is observed, estimated, inferred or reasonably suspected to have undergone or is likely to undergo within a time span appropriate to the life cycle and habitat characteristics of its component species:

(a)   for *critically endangered ecological communities*—a very large reduction in geographic distribution, or

(b)   for *endangered ecological communities*—a large reduction in geographic distribution, or

(c)   for *vulnerable ecological communities*—a moderate reduction in geographic distribution.

26 Criteria—restricted geographic distribution of ecological community

The ecological community's geographic distribution is estimated or inferred to be:

(a) for *critically endangered ecological communities*— very highly restricted, or

(b) for *endangered ecological communities*—highly restricted, or

(c) for *vulnerable ecological communities*—moderately restricted,

and the nature of its distribution makes it likely that the action of a threatening process could cause it to decline or degrade in extent or ecological function over a time span appropriate to the life cycle and habitat characteristics of the ecological community's component species.

27 Criteria—reduction in ecological function of ecological community

The ecological community has undergone, is observed, estimated, inferred or reasonably suspected to have undergone or is likely to undergo within a time span appropriate to the life cycle and habitat characteristics of its component species:

(a) for *critically endangered ecological communities*—a very large reduction in ecological function, or

(b) for *endangered ecological communities*—a large reduction in ecological function, or

(c) for *vulnerable ecological communities*—a moderate reduction in ecological function,

as indicated by any of the following:

(d) change in community structure,

(e) change in species composition,

(f) disruption of ecological processes,

(g) invasion and establishment of exotic species,

(h) degradation of habitat,

(i) fragmentation of habitat.

Division 4   Interpretation

28   Application of Division

(1)   This Division applies for the purposes of the interpretation and application of the criteria prescribed by this Part (with a note to each provision of this Division specifying which provisions of this Part the provision applies in respect of).

(2)   Use in a provision of this Division of the term "population" does not limit the operation of the provision to Division 2 and use of the term "species" does not limit the operation of a provision to Division 1.

29   Ecological function

(1)   Ecological function encompasses the ecological processes and interactions that occur within an ecological community.

(2)   Ecological function includes the following:

(a)   provision of habitat for native biota,

(b)   provision of food and other resources for native biota,

(c)   maintenance of interactions between species (for example, pollination, dispersal, mutualism, competition, predation),

(d)   cycling, filtering and retention of nutrients,

(e)   carbon storage or sequestration,

(f)   maintenance of soil processes,

(g)   maintenance of catchment scale hydrological and geochemical processes,

(h)   maintenance of landscape scale ecological processes.

(3)   Some of the processes and interactions within ecological communities may depend upon the presence of non-living components such as leaf litter and fallen or standing dead trees.

Note. This clause applies in respect of Division 3.

30   Mature individuals

(1)   Mature individuals are individuals in the wild known, estimated or inferred to be capable of producing viable offspring. The total number of mature individuals excludes individuals that are too young (juvenile), too old (senescent), too moribund (for example, diseased) or otherwise unable to produce viable offspring (for example, due to low population density).

(2) Special cases:

(a) In populations with biased sex ratios, it is appropriate to use a lower value for the total number of mature individuals in a way that takes this into account.

(b) In populations that fluctuate, the number of mature individuals will refer to a minimum number of individuals that are present most of the time (in a time span appropriate to the life cycle and habitat characteristics of the species), and will thus usually be much less than the mean number present.

(c) In clonal organisms, reproducing units may be regarded as mature individuals, so long as they survive independently of one another. However, if clonally reproduced individuals are more limited in viability or dispersal ability than sexually reproduced individuals, the total number of mature individuals may be reduced accordingly to take this into account.

(d) For species in which individuals have synchronous dormant life stages, the number of mature individuals should be assessed during, or projected for, a time when mature individuals are available for breeding.

(e) Re-introduced individuals must have produced viable offspring (after the individuals were re-introduced) before they are counted as mature individuals.

(f) Captive, cultivated, or artificially maintained individuals cannot be counted as mature individuals.

Note. This clause applies in respect of Divisions 1 and 2.

31 Geographic distribution

(1) Geographic distribution is the area or areas in which a species or ecological community occurs, excluding cases of vagrancy in species.

(2) This may be assessed by estimating:

(a) the extent of occurrence (the area of the total geographic range that includes all extant populations of the species or all extant occurrences of the ecological community), or

(b) the area of occupancy (the area within the total range that is currently occupied by the species or ecological community, that is it excludes unsuitable and unoccupied habitat), or

(c) the area of suitable habitat (the area within the total range that includes occupied and unoccupied suitable habitat, but excludes unsuitable habitat).

(3) The scale at which a geographic distribution is assessed should be appropriate to the biology of the species (or component species in ecological communities), the nature of threats and available data.

Note. This clause applies in respect of Divisions 1, 2 and 3.

32 Severely fragmented

The population or habitat of a species is severely fragmented if individuals of the species are distributed among subpopulations or patches of habitat that are small and isolated relative to the life cycle and habitat characteristics of the species.

Note. This clause applies in respect of Divisions 1 and 2.

33 Extreme fluctuations

Extreme fluctuations occur when the population or distribution of a species varies reversibly, widely and frequently, as:

(a) indicated by changes in:

(i) an index of abundance appropriate to the taxon, or

(ii) geographic distribution, habitat quality or habitat diversity, or

(b) inferred from the life history or habitat biology of the species.

Note 1. The cause of fluctuations must be understood or inferred so that they may be distinguished from declines or reductions.

Note 2. This clause applies in respect of Divisions 1 and 2.