

The Ecological Triangle: *Threatened Wildlife Species, Nature Conservation Legislation and the Bureaucracy*

Dr Ted Christie, 18 November 2018



Disclosure Statement

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TAGS: Nature conservation; threatened wildlife; endangered species legislation – USA, UK, Australia; listing; critical habitat - *legal, scientific meaning*; critical habitat - *evaluation*; scientific uncertainty; Queensland Audit Report 2018.

The USA's *Endangered Species Act of 1973* has been a model for nature conservation legislation throughout the world.

For example, the key legislative cornerstones for the regulatory control of threatened species in Australia and the UK have been based on this USA statute and provide the legislative framework in all three countries:

- Listing of a threatened species into different conservation categories, based on their risk of extinction;
- Identification and description of the habitat critical for the survival of each listed species; and
- The development of a recovery plan.

Past experience in the United States, following the first 20 years operation of its *Endangered Species Act*, highlights concerns where legislative approaches to protect a threatened species may become problematic:

*“[With] 382 recovery plans put in place
for listed species*

only five of the listed species have recovered ...

some two hundred species will probably never recover¹”.

The low recovery rate for the listed species in the USA has largely been attributed to habitat destruction and fragmentation.

*The USA experience highlights a crucial need for the conservation of threatened species:
For the designation of **critical habitat**
and the development and implementation of a **recovery plan**,
to keep pace with the **listings**.*

Case Study: Threatened Species - Queensland's *Nature Conservation Act 1992*

A Report, [“*Conserving threatened species Report 7: 2018–19 \(November 2018\)*”](#), prepared by the Queensland Government’s Audit Office, was posted online in November 2018.

Its objective was to assess whether a Queensland public sector entity, the *Department of Environment and Science*, was effectively identifying, protecting and conserving threatened species of native flora and fauna.

The Report referred to a decline in Australia’s native flora and fauna. Yet, nature conservation legislation to protect Australia’s wildlife, based on the *USAs Endangered Species Act of 1973*, was introduced in the early 1990s.

Some of the Report’s findings have proved controversial:

- *That the Department of Environment and Science’s overall response to conserving threatened species ... is unlikely to effectively conserve and recover many threatened species;*
- *Protection of threatened species was compromised because of delays between the scientific assessment process and Ministerial approval for listing. Some species assessed as threatened were not listed for years;*
- *The average period between assessment and listing for the 404 species listed in 2014-15 was three years and 10 months. Delays of more than seven years occurred in some cases; and*
- *Following listing under one of Queensland Nature Conservation Act’s existing conservation categories for wildlife - “Extinct”, “endangered”, “vulnerable”, “near threatened” or “least concern” - the Department does not periodically or systematically review their current status. As a result, the Department is unaware of the trend in extinction risk for listed species e.g. declining, steady, improving?*

But a far greater problem in Queensland for protecting threatened species goes beyond the delays between assessment and listing.

For the Queensland Government to make a commitment “to take the protection of our threatened species very seriously”² the legislative approach to critical habitat, as prescribed in the Nature Conservation Act 1992, needs to be amended.

In the United States and the UK, listing of a species, and the designation of its critical habitat, are both determined at the same time.

*The **elephant in the room** under the Queensland (and Federal) legislation, is that the assessment and designation of critical habitat is out of phase with the listing process.*

- Queensland’s *Nature Conservation Act 1992* requires critical habitat to be identified at some later time following listing e.g. when a conservation plan is prepared.
- Under the Federal *Environment and Biodiversity Protection Act 1999* (“*EPBC Act*”), critical habitat is not identified at listing – but at the time a recovery plan is made.

Comment:

The recommendation of the Audit Office Report to accelerate the listing process warrants immediate action to make the “listing cornerstone” effective.

It is one thing for the *Department of Environment and Science* to currently list 955 species as “*threatened*”, 301 species as “*endangered*” and 621 species as “*vulnerable*” under *Queensland’s Nature Conservation Act*.

But is it prudent to place an inordinate focus on only one cornerstone to achieve the Government’s commitment - “*take the protection of our threatened species very seriously*” - independently of the other two cornerstones?

By far, the principal threat to a threatened species at risk of extinction is habitat loss, fragmentation and degradation. But neither Queensland's *Nature Conservation Act*, or the Federal EPBC Act, prescribe habitat to be identified at listing.

The Queensland Government's commitment to protect threatened species under the its legislative framework may prove to be an ***illusory bargain*** if the legislation for the "habitat cornerstone" is not amended.

That is, an amendment is required to prescribe the critical habitat of each threatened species to be designated concurrently with listing - as is the case in the UK and USA.

Critical Habitat: Legal ~v~ Scientific Meaning

Science has long been aware that a basic need for the conservation of threatened species is to identify, then protect, habitat that is critical for a species survival; in turn, to restrict any consideration of development proposals to the least sensitive habitat.

Legal Meaning of Critical Habitat

Queensland's *Nature Conservation Act* provides the following legal meaning for "Critical Habitat" (at Section 13):

"(1) Critical habitat is habitat that is essential for the conservation of a viable population of protected wildlife or community of native wildlife, whether or not special management considerations and protection are required.

(2) A critical habitat may include an area of land that is considered essential for the conservation of protected wildlife, even though the area is not presently occupied by the wildlife".

The problem for this definition is that the 'Part (1) element' may be open to many interpretations and so lead to scientific uncertainty making effective decision-making problematic.

Scientific Meaning of Critical Habitat

There is a long and accepted body of scientific knowledge for defining and evaluating *critical habitat*³.

The evaluation of *critical habitat* needs to focus on two elements: “*habitat quality*” and “*conservation value*”. Both elements are critical for the survival of a listed threatened species.

- **Habitat quality** “reflects the extent to which the physical, biological and other environmental characteristics of an area correspond to the habitat characteristics of the species”.

*The process of evaluation of habitat quality
leads to areas being identified
that contain a unique set of physical and biological characteristics
necessary to support a listed species.*

- **Conservation value** means “the ability of an area to support a species over the long term”.

*The conservation of threatened species
depends on complementing scientific data
on habitat quality
with data on conservation value*

***Appendix 1 sets out the objective scientific criteria that can be used
as part of an ecological methodology
for evaluating the critical habitat of listed threatened species.***

Conclusions

1. Amending Queensland’s Nature Conservation Act (and the Federal EPBC Act) requiring the critical habitat of each threatened species to be designated concurrently with listing will extend the flow on benefits beyond a commitment by government to take the protection of threatened species very seriously.
2. The amendment would overcome the scientific uncertainty where a threatened species is listed but the habitat critical for its survival is unknown.

3. *Decision-making on development proposal applications subject to environmental assessment - where sustainability and natural resource management and use is a legislative issue - would be more effective where the critical habitat of listed species is known.*
4. *Systematic monitoring by the Queensland Government of the trend in extinction risk for listed species would be enhanced as trend could be correlated with the linkage between critical habitat and the recovery plan.*
5. *To protect threatened species, the legal meaning of "critical habitat" in Queensland's nature conservation legislative framework needs to be more adequately defined by giving effect to the elements of "habitat quality" and "conservation value".*

To read more on:

- *'Legislative approaches to nature conservation in the United States, the UK and Australia';*
- *'Science, land degradation and habitat change';*
- *'Evaluating critical habitat';*
- *'Resolving biodiversity and threatened species conflict: Comparative approaches in the United States, the UK and Australia'; and*
- *'Alternative dispute resolution & sustainable solutions'*

See Chapter 9, "Biodiversity and threatened species" at 235-262
in the Author's book: -

["Finding Solutions for Environmental Conflicts: Power and Negotiation"](#).

Appendix 1: Objective Criteria for Evaluating Critical Habitat

Habitat Quality

For an individual listed species, “*habitat quality*” may be considered in terms of scientific data in relation to:

- *Physical characteristics* — such as soil type, slope, aspect and elevation; and
- *Biological characteristics* — such as vegetation structure (trees, shrubs, herbs), species composition and diversity or the presence of “indicator species” that reflect the biological condition (or status) of the area in response to disturbance, e.g. land degradation.

Conservation Value

For an individual listed species, “*conservation value*” may be considered in terms of scientific data in relation to:

- i. The size of the area;
- ii. Configuration (or shape of the area), e.g. a “rounder” shape is preferred to a shape that is linear or irregular;
- iii. Spatial connectivity of patches of habitat that have become fragmented following human use activities, e.g. land-clearing for agriculture or human settlements — or through natural causes such as fire, drought or non-native species;
- iv. Length and width of habitat corridors;
- v. Exposure of habitat to unprotected edges;
- vi. Threats from non-native species; and
- vii. The role of unoccupied habitats and habitat refugia in population persistence.

Sources:

Olson, Todd (1996), ‘Biodiversity and Private Property; Conflict or Opportunity’, in William Snape III (ed.), *Biodiversity and the Law*, 67–79, Island Press, Washington D.C., USA.

Dale, V., S. Brown, R. Haeuber, N. Hobbs, N. Huntly, R. Naiman, W. Riebsame, M. Turner and T. Valone (2000), ‘Ecological principles and guidelines for managing the use of land’, *Ecological Applications*, **10**, 639-70.

End Notes

¹ Hardy, S. (1992), ‘The Endangered Species Act: on a collision course with human needs’, *Public Land Law Review*, **13**, 87.

² Chris Honnery “*Bumbling bureaucrats main threat to wildlife*”, Brisbane Courier Mail, 14 November 2018.

³ Olson, Todd (1996), ‘Biodiversity and Private Property; Conflict or Opportunity’, in William Snape III (ed.), *Biodiversity and the Law*, 67–79, Island Press, Washington D.C., USA.