



Land and Environment Court New South Wales

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Medium Neutral Citation:

**Friends of Tumblebee Incorporated v ATB Morton Pty Limited (No 2) [2016]
NSWLEC 16**

Hearing dates:

20 and 21 August, 29 and 30 October 2014 and 3, 4, 5 and 6 February 2015

Date of orders:

11 March 2016

Decision date:

11 March 2016

Jurisdiction:

Class 4

Before:

Pepper J

Decision:

See orders at [233].

Catchwords:

JUDICIAL REVIEW: whether development application required a species impact statement – whether development proposal likely to significantly affect a threatened species and/or its habitat – applicable legal principles - species impact statement required – development consent set aside.

Legislation Cited:

Environmental Planning and Assessment Act 1979, ss 4(1), 5, 5A, 78A(8)(b)

Environment Protection and Biodiversity Conservation Act 1999, s 178

Threatened Species Conservation Act 1995, Pt 7A, ss 3, 4(1), 10, 13, 94A, 110, Sch 3

Environmental Planning and Assessment Regulation 2000, cl 64

Cessnock Local Environmental Plan 2011

Cessnock Local Environmental Plan (Amendment No 60) 1989

Cases Cited:

BT Goldsmith Planning Services v Blacktown City Council [2005] NSWLEC 210

Corowa v Geographe Point Pty Ltd [2007] NSWLEC 121; (2007) 154 LGERA 117

Davis v Gosford City Council [2014] NSWCA 343; (2014) 87 NSWLR 699

Fullerton Cove Residents Action Group Incorporated v Dart Energy Ltd (No 2)
[2013] NSWLEC 38; (2013) 195 LGERA 229

Leatch v National Parks and Wildlife Service (1993) 81 LGERA 270

Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council and Stoneco Pty Limited [2010] NSWLEC 48; (2010) 210 LGERA 126
Project Blue Sky Inc v Australian Broadcasting Authority [1998] HCA 28; (1998) 194 CLR 355
SHCAG Pty Ltd v Hume Coal Pty Ltd [2015] NSWLEC 122; (2015) 209 LGERA 347
Telstra Corporation Ltd v Hornsby Shire Council [2006] NSWLEC 133; (2006) 67 NSWLR 256
Timbarra Protection Coalition Inc v Ross Mining NL [1999] NSWCA 8; (1999) 46 NSWLR 55

Category:

Principal judgment

Parties:

Friends of Tumblebee Incorporated (Applicant)
ATB Morton Pty Limited (First Respondent)
Cessnock City Council (Second Respondent)

Representation:

Counsel:

Mr J Lazarus with Ms J Walker (Applicant)
Ms H Irish (First Respondent)
N/A (Second Respondent)

Solicitors:

Environmental Defender's Office NSW (Applicant)
ATB Morton Pty Limited (First Respondent)
Marsdens Law Group (Second Respondent)

File Number(s):

40027 of 2014

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Judgment

ATB Morton Seeks to Develop Potential Habitat of the Endangered Regent Honeyeater

1. In a gloomily lit room in the Tasmanian Museum and Art Gallery patrons can watch silent black and white motion picture footage of the last known living thylacine, or Tasmanian Tiger, taken in 1933 by naturalist Mr David Fleay. In the profoundly sad grainy 62 second clip, the animal, seemingly agitated, repeatedly paces backwards and forwards in its enclosure at Beaumaris Zoo in Hobart. Captured in 1933, the thylacine, named “Benjamin”, died a mere three years later on 7 September 1936. There have been no officially recorded sightings of the species since. It is considered extinct.
2. The permanent exhibition dedicated to the Tasmanian Tiger at the Museum is a poignant memorial to, and a powerful reminder of, how easily and quickly a species can, through human intervention, vanish forever.
3. The subject-matter of these proceedings, the Regent Honeyeater (*Anthochaera phrygia*) is a bird in grave peril. In the face of ongoing habitat loss, over the past decade it has undergone a severe population reduction and subject to periodic fluctuations its overall numbers continue to decline. In 2011, the total global population of the Regent Honeyeater was estimated to be between 350-400 mature birds, of which the majority are located in New South Wales. It is no exaggeration to describe the species as perched on the brink of extinction. It has been listed as a critically endangered species.
4. These proceedings concern a proposal for construction of a steel fabrication workshop and distribution facility in Weston, in New South Wales, by the first respondent, ATB Morton Pty Limited (“ATB”). The second respondent, Cessnock City Council (“the council”), purported to grant consent to the proposal. However, the development application was not accompanied by a species impact statement (“SIS”) as the applicant, Friends of Tumblebee Incorporated (“Tumblebee”), contend was required by s 78A(8)(b) of the *Environmental Planning and Assessment Act 1979* (“the EPAA”). A SIS was necessary because, Tumblebee submits, the proposed development was likely to significantly affect a threatened species – the Regent Honeyeater – and/or its habitat. Declaratory and consequential relief is sought.
5. Having regard to the evidence I am of the opinion that the proposal has the effect claimed by Tumblebee and that in the absence of a SIS, the council was not empowered to grant the development consent, which must therefore be set aside. My reasons for arriving at this conclusion are explained below.
6. The council filed, quite properly given the presence of a contradictor, a submitting appearance save as to costs.

Statutory Framework

7. Section s 78A(8)(b) of the EPAA states as follows:

(8) A development application (other than an application in respect of State significant development) must be accompanied by:

...

(b) if the application is in respect of development on land that is, or is a part of, critical habitat or is likely to significantly affect threatened species, populations or ecological communities, or their habitats – a species impact statement prepared in accordance with Division 2 of Part 6 of the *Threatened Species Conservation Act 1995*.

8. The content of a SIS is detailed and is relevantly prescribed in s 110 of the *Threatened Species Conservation Act 1995* (“the TSCA”):

110 Content of species impact statement

(1) A species impact statement must include a full description of the action proposed, including its nature, extent, location, timing and layout and, to the fullest extent reasonably practicable, the information referred to in this section.

(2) A species impact statement must include the following information as to threatened species and populations:

(a) a general description of the threatened species or populations known or likely to be present in the area that is the subject of the action and in any area that is likely to be affected by the action,

(b) an assessment of which threatened species or populations known or likely to be present in the area are likely to be affected by the action,

(c) for each species or population likely to be affected, details of its local, regional and State-wide conservation status, the key threatening processes generally affecting it, its habitat requirements and any recovery plan or threat abatement plan applying to it,

(d) an estimate of the local and regional abundance of those species or populations,

(e) an assessment of whether those species or populations are adequately represented in conservation reserves (or other similar protected areas) in the region,

(e1) an assessment of whether any of those species or populations is at the limit of its known distribution,

(f) a full description of the type, location, size and condition of the habitat (including critical habitat) of those species and populations and details of the distribution and condition of similar habitats in the region,

(g) a full assessment of the likely effect of the action on those species and populations, including, if possible, the quantitative effect of local populations in the cumulative effect in the region,

(h) a description of any feasible alternatives to the action that are likely to be of lesser effect and the reasons justifying the carrying out of the action in the manner proposed, having regard to the biophysical, economic and social considerations and the principles of ecologically sustainable development,

- (i) a full description and justification of the measures proposed to mitigate any adverse effect of the action on the species and populations, including a compilation (in a single section of the statement) of those measures,
- (j) a list of any approvals that must be obtained under any other Act or law before the action may be lawfully carried out, including details of the conditions of any existing approvals that are relevant to the species or population.

9. The expression “threatened species” is defined in s 4(1) of the EPAA to mean:

"threatened species" has the same meaning as in the *Threatened Species Conservation Act 1995* or (subject to section 5C) Part 7A of the *Fisheries Management Act 1994*.

10. Accordingly, the expression is defined in the TSCA in s 4(1) to mean:

"threatened species" means a species specified in Part 1 or 4 of Schedule 1, Part 1 of Schedule 1A or Part 1 of Schedule 2.

11. Schedule 1A of the TSCA deals with “Critically endangered species and ecological communities”. Under Pt 1, “Birds”, the Regent Honeyeater is listed.

12. A species is eligible to be listed as a “critically endangered species” if, “in the opinion of the Scientific Committee, it is facing an extremely high risk of extinction in New South Wales in the immediate future, as determined in accordance with criteria prescribed in the regulations” (s 10(2) of the TSCA). The reference to the “Scientific Committee” is a reference to the Scientific Committee constituted under Pt 8 of the TSCA (see the definition in s 4 of that Act).

13. The term “habitat” is defined in s 4(1) of the EPAA to mean:

"habitat" has the same meaning as in the *Threatened Species Conservation Act 1995* or (subject to section 5C) Part 7A of the *Fisheries Management Act 1994*

14. Thus the term is given the following meaning in s 4(1) of the TSCA:

"habitat" means an area or areas occupied, or periodically or occasionally occupied, by a species, population or ecological community and includes any biotic or abiotic component.

15. Critically, s 5A of the EPAA states that:

5A Significant effect on threatened species, populations or ecological communities, or their habitats

(1) For the purposes of this Act and, in particular, in the administration of sections 78A, 79B, 79C, 111 and 112, the following must be taken into account in deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats:

- (a) each of the factors listed in subsection (2),
- (b) any assessment guidelines.

(2) The following factors must be taken into account in making a determination under this section:

(a) in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

(b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,

(c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

(d) in relation to the habitat of a threatened species, population or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,

(e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

(f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,

(g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

(3) In this section:

"assessment guidelines" means assessment guidelines issued and in force under section 94A of the *Threatened Species Conservation Act 1995* or, subject to section 5C, section 220ZZA of the *Fisheries Management Act 1994*.

"key threatening process" has the same meaning as in the *Threatened Species Conservation Act 1995* or, subject to section 5C, Part 7A of the *Fisheries Management Act 1994*.

16. The term “population” is defined in s 4(1) of the EPAA to have “the same meaning as in the” TSCA or, subject to s 5C, Pt 7A of the *Fisheries Management Act 1994* (the latter of which is not presently relevant).
17. In the TSCA the term is defined (also in s 4(1) of that Act) to mean “a group of organisms, all of the same species, occupying a particular area.”
18. Schedule 3 of the TSCA deals with “key threatening processes”. Relevantly the following are given:
 1. the aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, *Manorina melanocephala*;
 2. anthropogenic climate change; and
 3. the clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process).
19. A threatening process is eligible for listing as a key threatening process if (s 13 of the TSCA):

13 Threatening processes eligible for listing as key threatening processes

(1) A threatening process is eligible to be listed as a **"key threatening process"** if, in the opinion of the Scientific Committee:

- (a) it adversely affects threatened species, populations or ecological communities, or
- (b) it could cause species, populations or ecological communities that are not threatened to become threatened.

(2) The regulations may prescribe criteria for the determination of matters under this section.

20. With respect to s 5A(1)(b) of the EPAA, s 94A(1) of the TSCA provides for the preparation of assessment guidelines to assist in the interpretation and application of the factors of assessment:

94A Assessment guidelines

(1) The Minister may, by order published in the Gazette, issue guidelines ("**assessment guidelines**") relating to the determination of whether an action is likely to significantly affect threatened species, populations or ecological communities, or their habitats.

Factual Background to the Consent

21. Some of the facts underpinning the challenge were uncontentious and were contained in an agreed statement of facts and an agreed bundle of documents, as distilled below. Others, such as those underpinning the expert evidence were more contentious.

The Regent Honeyeater

22. The Regent Honeyeater has been listed as a critically endangered species by the Scientific Committee under Pt 1 of Sch 1A of the TSCA. It is also listed as endangered under s 178 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (“the EPBC”).
23. The proposed development site is located in an area of land known as the “Hunter Economic Zone” (“the HEZ”) in the lower Hunter Valley and has been predictively modelled by Mr Michael Roderick (an ecologist, who also gave evidence in these proceedings) as containing high value habitat for Regent Honeyeaters.
24. The parties agreed that, consistent with the TSCA, the main threats to the Regent Honeyeater are habitat clearance, habitat degradation, and exclusion from areas of otherwise suitable habitat by abundant Noisy Miners, which are an aggressive bird endemic to eastern Australia.

Hunter Economic Zone

25. The HEZ is located in the lower Hunter Valley close to the townships of Weston, Kurri Kurri and Pelaw Main, and is a short drive from Cessnock.
26. During the late 1990s the site was identified by the council, and the Hunter Economic Development Corporation, as a potential location for re-zoning to support industrial development in the Hunter Valley.
27. In 1998, the CSIRO publication *Emu* (Vol 98, 1998) included an article entitled “Breeding Success and Nest Site Selection of the Regent Honeyeater *Xanthomyza phrygia* near Armidale, New South Wales” by Damon Oliver, Andrew Ley and Beth Williams. The article stated that, based on studies in the Bundarra-Barraba region, Regent Honeyeaters nested in Box-Ironbark woodland and that factors other than poor reproductive success were responsible for the current low population in that area. More specifically, in relation to nest building, the article stated that it was generally not possible to establish the time taken for nest building but that from observations, incubation appeared to take place 10-11 days after nests were first located. Nest building appeared to be quicker later in the breeding season.
28. As for resources, the article opined that the breeding of the species was associated with the flowering of the Yellow Box and Mugga Ironbark. In the absence of flowering eucalypts, flowering mistletoe was also sufficient to support breeding. The value of the latter resource appeared to “have been previously understated and is probably very important as it occurs at a time of the year when there is very little flowering of the key eucalypt species.”
29. On 26 February 1999, the *Flora and Fauna Investigations and Planning Assessment for the Tomalpin Employment Zone Within Cessnock City Local Government Area* was prepared by Ecotone Ecological Consultants Pty Ltd for Harper Somers Pty Ltd and the council (“the Ecotone report”). The study area contained in the investigation included the HEZ. In Table 5, dealing with the assessment of the potential for threatened fauna species to utilise the study area, the Regent Honeyeater was listed. It was deemed a potential subject species, but site presence would be “occasional and infrequent”. It was noted that records occurred in close proximity to the Tomalpin Employment Zone. In section 5.2, which discussed the threatened fauna species considered likely to occur within the study area but not recorded during field surveys, it was observed that the likelihood of site presence of the Regent Honeyeater was considered to be low, but that some visitation may occur. Hence, retention of areas that contained well developed eucalypt tree diversity should be retained, along with areas where mature trees were well represented, together with representative portions

of other habitats, to potentially allow for future site visitation. The Ecotone report concluded in respect of this species that the siting of industrial development within areas of low ecological significance was not expected to affect any possible use of the site by the species.

30. On 28 March 2002 the *Cessnock Local Environmental Plan 1989 (Amendment No 60)* was gazetted (“Amendment No 60”). It defined the HEZ as an area of approximately 3,293 ha.
31. Pursuant to Amendment No 60, the greater part of the HEZ lands were zoned as follows:
 1. 877.21 ha were zoned 4(h) Hunter Employment;
 2. 286.45 ha were zoned 1(a) Rural (heritage provisions apply); and
 3. 809.49 ha were zoned 7(b) Environmental Protection (Conservation).
32. In addition, approximately 1,280 ha were zoned 8(a) National Parks and Nature Reserves (part Werakata National Park) and 1(f) Rural (Forestry) (State Forest).
33. A draft *Ecological Constraints Master Plan (ECMP) for the Hunter Economic Zone (HEZ)* report (version 1 for the State and Commonwealth Government) was released in February 2004 (“the ECMP”). Figure 3-3 was a “Revised Vegetation Map” which depicted the widespread prevalence of Lower Hunter Spotted Gum Ironbark Forest within the HEZ. Threatened fauna species recorded within the study area (all of the land covered by Amendment 60) included the Regent Honeyeater. However, during surveys carried out by Harper Somers O’Sullivan, no further records of the Regent Honeyeater were obtained. This was due primarily, the ECMP opined, to a lack of suitable conditions, namely, no significant flowering of Spotted Gum within the locality since 2000.
34. Results of grid pattern surveys noted (in Table 3-4 of the ECMP) the occurrence of mistletoe, a preferred foraging resource for the Regent Honeyeater. Mistletoe was, however, absent in the proposed development site.
35. In March 2005 the then Department of Environment and Conservation (“DEC”) issued an assumed concurrence under cl 64 of the *Environmental Planning and Assessment Regulation 2000* (“the EPA Regulations”) to the council for the HEZ, subject to conditions. DEC advised the council that it could assume concurrence for permissible development of identified lands within the HEZ. Furthermore, DEC stated that it would, within 30 days of being notified of any such records, assess whether the assumed concurrence and the *Cessnock Local Environmental Plan 1989* (“the 1989 LEP”) would provide adequate protection for any newly listed or discovered threatened species subsequently identified in the HEZ.
36. In September 2005, a draft *Habitat Management Strategy* for the HEZ prepared by Harper Somers O’Sullivan, Ecotone and the Cessnock Council HEZ Planning Unit was published (“the draft Strategy”). The draft Strategy stated that (p A-21):

***Xanthomyza phrygia* Regent Honeyeater**

This species occurs in drier open forest and woodland habitats that contain preferred foraging tree species. Within the region, mostly recorded in box-ironbark Eucalypt associations along creek flats, river valleys and foothills.

Two Altas of NSW Wildlife recorded locations for this species exist from the HEZ, both within the 4(h) zone in the northern section. No signs of this species were noted during any

formal surveys undertaken across the HEZ. Therefore it is likely that this species is an irregular visitor to the HEZ during appropriate periods such as the flowering to Spotted Gums. No nesting records exist from the HEZ, although nesting attempts have been made by the species at Quorrobolong, to the south of the study area (A Morris *pers. comm.*).

Potential habitat for this species exists within the vegetation communities that contain winter-flowering Eucalypts. Within the HEZ these generally refer to the Lower Hunter Spotted Gum / Ironbark Forest and Hunter Lowland Redgum Forest. Such habitat is widespread within the HEZ and it is likely to represent a significant habitat resource for this species on a regional scale.

37. But in July 2008, DEC wrote to the Department of Planning in order to provide them with more information about the Regent Honeyeater, in particular, about a breeding event within forested portions of the HEZ industrial estate during October 2007 to January 2008. The letter noted the endangered nature of the bird, and that (at that time) only 1000 to 1500 birds were estimated to remain. The letter observed that only three remaining core breeding areas were currently recognised within the species range: the Capertee Valley, Bundarra-Barraba, and the Chiltern-Albury area. More recently, however, the Lower Hunter appeared to be a supplementary breeding area.
38. In respect of the 2007/2008 breeding event, the letter stated the following:

2007 / 2008 Breeding Event

Between October 2007 and January 2008 the Regent Honeyeater was recorded breeding [in] the forested areas near the township of Kurri Kurri, within forested portions of the HEZ industrial estate. Documentation of the event by DECC officers, including David Geering (Regent Honeyeater Recovery Coordinator) and other experienced observers has shown that a significant recruitment of juveniles occurred into the population. This represented the most significant known breeding event for the species across its entire range during the 2007/2008 season and was the most successful in terms of the proportion of fledged nestlings to frequency of nests over several past seasons throughout its range.

In an area covering approximately 5km² an estimated 30+ adult birds were present, 12 nests were located, and at least 25+ fledgling / juvenile birds were recruited into the wider population. Nesting requirements during the recent breeding event were noted as being quite specific, including within mistletoe[,] in small Spotted Gums (*Corymbia maculata*), or in the forks of high branches in mature Broad-leaved Ironbarks (*Eucalyptus fibrosa*), Grey Gums (*Eucalyptus punctata*) and occasionally *Eucalyptus* sp. aff. *agglomerata* (undescribed Stringybark). A map of the recorded nesting locations of the Regent Honeyeaters during 2007 / 2008 is shown in Attachment A.

Given the size of the area and limitations with survey effort and accessibility, it is considered that a number of additional nests / individuals exist despite not being located. The majority of these birds were observed breeding within areas zoned for industrial development (Zone 4(h)), although a number of individuals were also observed in sections of Werakata National Park and areas zoned for conservation (Zone 7(b)) under the Cessnock City Council Local Environmental Plan (LEP).

This breeding event is considered to be highly significant due to the fact that breeding forays in core areas (where the species is expected to breed) did not occur successfully. Another

factor pertaining to the significance of this breeding event was that the species was displaying site fidelity and is considered likely to continue visiting this location during periods when Eucalypts are flowering. Anecdotal evidence also suggests that breeding has taken place on this site in previous years and as such the species appears to have returned to the area once again to breed.

Previous assessments undertaken for the HEZ, including by Harper Somers O'Sullivan (2004) Ecological Constraints Master Plan for the Hunter Economic Zone has shown that the majority of the HEZ site contains potential habitat for the species.

Impact Assessment / Management Implications

Whilst the Regent Honeyeater is known to frequent the lower Hunter, it has not been previously recorded successfully breeding in the region to this extent. As aforementioned, this species is known to display site fidelity and further breeding attempts / visitation to the region is considered likely during periods of resource availability (e.g. extensive flowering of Eucalypts). Whilst the species was primarily recorded breeding in the western portions of the industrially zoned lands, further breeding events may occur elsewhere on the site, depending on the extent and availability of suitable foraging resources.

On the basis of information currently available to DECC it is considered that the Spotted Gum-dominated forests of the lower Hunter region provide a vital resource for the species. The key habitat areas for the species in the lower Hunter are considered to include the 'Tomalpin' forests around Kurri Kurri / HEZ, Quorrobolong, Ellalong / Pelton, and Kitchener.

The Hunter Region, with its coastal rainfall influence, provides a key refuge for more western species such as the Regent Honeyeater (and the nationally endangered Swift Parrot) when drought reduces resource availability (e.g flowering of Eucalypts) further west. Regent Honeyeaters are particularly vulnerable to changes in flowering patterns, as their breeding opportunities are closely tied to flowering events. This scenario is likely to be exacerbated with the predicted changes to rainfall patterns and timing and frequency of flowering events as a consequence of climate change, in which areas of western NSW are considered to be particularly vulnerable. Hence, it is expected that a greater reliance and significance is likely to be placed on the woodlands / forests of the Hunter Valley.

The protection of new breeding areas is considered to be critical to the longer-term survival of the Regent Honeyeater and a range of further conservation measures are warranted to protect the species against the potential impacts of climate change and other stochastic events (e.g. high intensity fire event in the core breeding area of Capertee Valley).

The extent of protected areas within the Hunter region is considered to be inadequate to protect species such as the Regent Honeyeater. Hence conservation initiatives, such as DECC's Draft Lower Hunter Regional Conservation Plan have attempted to direct and drive conservation efforts in the lower Hunter Valley.

An issue of management concern for the species is related to the potential loss of habitat within the HEZ site. Whilst the Regent Honeyeater had been recorded on the HEZ site and was considered during previous assessments and approvals for the HEZ, the species has not been previously recorded breeding in the locality. The former National Parks & Wildlife

Service (NPWS) and Department of Environment and Conservation (DEC) worked with the proponent of the HEZ and negotiated a conservation outcome on the site which culminated in the Director-General of DEC issuing an 'assumed concurrence' for the HEZ in March 2005, which included a number of environmental protection conditions such as 'deferring development' from 89ha of the 4(h) lands for conservation purposes. However, the current data shows the breeding sites are located in the 4(h) Hunter Employment Zone and thus [are] not protected by a conservation zone.

39. The letter concluded by indicating that the council should take the information contained in the letter into account in its assessment of development applications.
40. The 2007/2008 breeding event was not, however, observed on the site.
41. On 28 October 2008, Biosis Research Pty Ltd ("Biosis") was commissioned to provide updated information following the detection of breeding of the Regent Honeyeater in the greater HEZ area in 2007/2008, and to assess the impacts of a proposed Precinct 1 HEZ development under Pt 3A of the EPAA ("the Biosis report").
42. The Biosis Report was admitted into evidence subject to a limitation as to its use under s 136 of the *Evidence Act 1995*, given that the authors of the Biosis report (which were essentially expert in nature) were not available for cross-examination.
43. Because the Biosis Report was carried out on the basis of an assessment under Pt 3A of the EPAA, this meant that no assessment under the TSCA was required, rather DEC assessment guidelines were applied. The Biosis report noted the following in respect of Regent Honeyeater assessments:
 1. there were only three known breeding stronghold areas for the Regent Honeyeater, one in north-east Victoria and two in New South Wales (Capertee Valley and the Bundarra-Barraba region);
 2. breeding usually occurred between July and January after which, responding to flowering events, or a lack of food resources in the breeding areas, the birds would migrate near to the coast to forage on winter flowering eucalypts (particularly Spotted Gum). Occasionally birds would stay in their coastal foraging sites until the following season if food resources were available;
 3. surveys had found the majority of the HEZ LEP study area (the HEZ area covered by Amendment 60) contained good quality Regent Honeyeater habitat both in respect of breeding and foraging. Two of the dominate vegetation types, including Lower Hunter Spotted Gum Ironbark Forest, contained abundant winter-flowering food resources as well as abundant summer flowering food resources;
 4. a total of 14 nests were located within the greater HEZ area;
 5. competition from larger, aggressive birds, particularly the Noisy Miner, was considered a threat to Regent Honeyeaters. Noisy Miners affected avian diversity abundance by the aggressive exclusion of other species. In a study in Victoria, it was found that the penetration depth differed significantly but commonly ranged from 150m to more than 300m from the forest edge (known as 'edge effect'), although this was a conservative use of the findings and the actual penetration distance may be less;
 6. the HEZ study area should be considered to support an ecologically significant proportion of the population of the Regent Honeyeater. The clearing of habitat would impact upon potential breeding and foraging habitat within that area. The land where the majority of breeding records were located was, however, privately owned, and was therefore not protected. Further clearing would create edges which would likely lead to colonisation by Noisy Miners and possibly other hyper aggressive species

known to aggressively exclude Regent Honeyeaters. This would reduce the area of available breeding foraging habitat for the species. Disruption of habitat would likely reduce the potential for breeding within the locality, which would cause a long term decline in the genetic diversity of the species within the locality;

7. the cumulative impacts of the HEZ development (those currently approved and those subject to Pt 3A applications) was 151 ha of potential habitat for Regent Honeyeaters, which represented 2.6% of potential habitat within the locality. This was considered likely to reduce the long term viability of the local population of the species;
8. within the HEZ LEP area, invasion by Noisy Miners is an important limiting factor in the potential breeding and foraging areas for the Regent Honeyeater. Noisy Miners are known to invade up to 300m from a cleared edge. Accordingly, calculating indirect impacts must include a buffer of 300m around large cleared areas, as habitat in this buffer is likely to become unsuitable due to the presence of Noisy Miners;
9. forests within the HEZ site were found to contain good quality habitat for the Regent Honeyeater. The area immediately west of the HEZ site is where known breeding has occurred. The area directly south of the HEZ site is considered to provide good quality habitat and is protected. The area east of the HEZ site contains younger forests and is considered to provide moderate quality habitat for the Regent Honeyeater. The area north of the HEZ is, however, mostly cleared and developed and does not contain suitable habitat for the species. The further clearing of vegetation would fragment areas of good quality habitat, but this would not affect movement of the Regent Honeyeater because it is highly mobile. However, fragmentation of habitat could affect the Regent Honeyeater by allowing invasion of the hyper aggressive Noisy Miner;
10. a breeding event in 2007 / 2008 within the greater HEZ area resulted in the significant recruitment of juveniles; and
11. approximately 5.2 ha of non-edge affected potential foraging and breeding habitat would be impacted (directly and indirectly) by Pt 3A applications, which would represent 0.1% of potential habitat in the locality. It was not considered to represent a significant proportion of the species habitat. However, the cumulative impacts of the HEZ development involved the clearing of 109 ha of potential habitat and, taking into account existing edge effects, resulted in 151 ha of potential habitat for the Regent Honeyeater being impacted, or 2.6% of potential habitat within the locality, and therefore it was concluded that:

The population in the HEZ LEP area is considered an ecologically significant proportion of the entire Regent Honeyeater population. Given the significance of recent the breeding event [sic] in the immediate area, the potential for breeding in the future, and that the habitat to be impacted by the proposal is considered to be highly important for the long term survival of the species in the locality, and probably, for the species as a whole, there is a possibility that cumulative impacts of the action could lead to a long-term decrease in the size of the local Regent Honeyeater population.

44. In 2009, Chris Tzaros and Dean Ingwersen published an *Update on Swift Parrot and Regent Honeyeater surveys in 2009*. The authors noted that “the star region for Regent Honeyeaters this year has undoubtedly been the Hunter Valley”. Commencing in late May, up to 40 birds were found foraging actively on Spotted Gum blossoms by Mr Roderick. However, by mid-July, following the birds switching to eating flowering Stringybark, the number of birds remaining in the Hunter Valley had reduced to 30, found across eight sites.

45. In July 2010 the same authors issued a survey update. They noted that in the Hunter Valley sightings had declined despite good summer rains and that they were mainly located in the Upper Hunter Valley. Nevertheless the authors noted the growing importance of the Hunter Valley region as an area of refuge for the species.
46. A document entitled *The action plan for Australian Birds 2010* by S T Garnett, J K Szabo and G Dutson, published in 2011, noted that in respect of the Regent Honeyeater, a captive breeding population was well established, and that a number of captive birds had been successfully released into the wild in Capertee and Chiltern.
47. The *Cessnock Local Environmental Plan 2011* (“the 2011 LEP”) redefined the boundaries of the HEZ to exclude the National Park and most of the State Forest land. The remaining HEZ land comprised an area of approximately 2,022 ha.
48. Under the 2011 LEP, the greater part of the HEZ lands are presently zoned as follows:
 1. approximately 877 ha (or 43%) as IN1 – General Industrial; and
 2. approximately 809 ha (or 40%) as E2 – Environment Conservation.
49. On 5 November 2010, the New South Wales Scientific Committee’s Final Determination in relation to the Regent Honeyeater was gazetted, listing it as a critically endangered species under Pt 1 of Sch 1A of the TSCA. It had previously been listed as an endangered species (including in March 2005). It was eligible to be listed as critically endangered because, in the opinion of the Committee, the bird was “facing an extremely high risk of extinction in New South Wales in the immediate future”. The Final Determination stated that:

10. Historically, the main threat to Regent Honeyeaters was clearing for agriculture in the sheep-wheat belt, with about 75% of habitat containing the species’ favoured vegetation types now cleared (Garnett & Crowley 2000). Even though broad scale clearing has mostly ceased, Regent Honeyeater habitat is continuing to be degraded. Much valuable habitat (Mugga Ironbark-box communities) remains in Travelling Stock Routes and reserves which in the future may become freehold lands. The preferred richer habitat types on creek or river flats and foothills have been targeted for agricultural clearing, and much remnant habitat is degraded by logging, grazing and decline in tree health (rural eucalypt dieback). Habitat alteration may also lead to the proliferation of Noisy Miners (*Manorina melanocephala*) which can disadvantage species such as the Regent Honeyeater.

11. The Regent Honeyeater’s habitat is severely fragmented. However, the species is capable of dispersing more than 530 km (based on sightings of colour-banded individuals at known breeding areas, Geering 2004; 2006) and can therefore move between remnants. A major current threat to the species is the loss or failure (e.g. non-flowering in particular years) of key sites, or ‘stepping-stones’ in the chain of productive habitat in the honeyeater’s annual cycle of movement (Geering 2004; 2006). Different sites are used by the birds in different years, presumably depending on food availability at favoured sites. The location of these key sites is poorly known. ‘Clearing of native vegetation’ is listed as a Key Threatening Process under the *Threatened Species Conservation Act 1995*. Droughts, and consequent failure of the Regent Honeyeaters food resources (i.e. flowering eucalypts), are likely to become more frequent with climate change. ‘Anthropogenic Climate Change’ is listed as a Key Threatening Process under the *Threatened Species Conservation Act 1995*.

50. In May 2012, Tzaros and Ingwersen published a Swift Parrot and Regent Honeyeater update. The update noted that a number of birds had returned to the Capertee Valley to breed.
51. A July 2012 update by the same authors noted that the Hunter Valley provided ample Spotted Gum flowering in the lead up to the surveys. A total of 100 Regent Honeyeaters were found across several sites. As many as 50 birds were found on a private property in the Lower Hunter Valley, with the remaining birds spread across a mix of private and Crown land, including several new sites. Of particular note was the number of young birds being found in flocks. This was the largest known concentration of the species for many years. The update also added further weight to the growing importance of the Hunter Valley to the conservation of the bird and “demonstrates that the area [the Hunter Valley] is probably as valuable for the species in the modern era as any of the historical core areas within the range”.

The Development Proposal

52. On 19 November 2012 development application no 8/2012/586/1 (“the DA”) was lodged by ATB. The determining authority for the DA was the council. As is well known, the DA was not accompanied by a SIS.
53. The DA is for erection and use of a steel fabrication workshop and distribution facility, associated offices, storage and new access road (“the development proposal”) at Lot 1, DP 1037092, Cessnock Road in Weston, New South Wales (also known as Lot 1, DP 1037092, HEZ Spine Road, Kurri Kurri) (“the site”).
54. The site occupies approximately 3.2 ha or approximately 0.1% of the potential habitat within the wider HEZ study area (including adjoining areas of Werakata National Park), or approximately 0.16% of the HEZ LEP (excluding Werakata National Park).
55. The Statement of Environmental Effects accompanying the DA (dated October 2012) (“the SEE”) confirmed the presence of Lower Hunter Spotted Gum Ironbark Forest, an endangered ecological community (“EEC”) under the TSCA, on the site. The development proposal includes the clearing of 0.85 ha of regenerating, and 2.36 ha of mature Lower Hunter Spotted Gum Ironbark Forest. The SEE also noted that a population of endangered Regent Honeyeaters was recorded within 10km from the site.
56. On 28 February 2013 the council wrote to ATB advising them that on the basis of the assessment by council’s ecologist, a SIS would need to be prepared. It stated that the impact of the proposed development would be significant due to the removal of the 3.21 ha of habitat and the cumulative effect of the removal when considered “in conjunction with existing approved development within the HEZ and the potential future development within the land zoned General Industrial.”
57. A report entitled *Swift Parrots and Regent Honeyeaters in the Lower Hunter Region of New South Wales* was published in May 2013 by BirdLife Australia (otherwise known as “the 2013 Roderick report”). The 2013 Roderick report relevantly stated the following:

This report has found that along with the recognised importance of the Lower Hunter, conservation of identified key habitats and specific sites is currently inadequate and ongoing loss / fragmentation of habitat is further contributing to the factors that could place these species at the risk of extinction. This loss / fragmentation of habitat is also giving rise to other threats, such as increased potential for invasive / aggressive bird species to flourish,

degradation of critical habitat resources, higher fire frequency and erosion of movement corridors.

These threats have been exacerbated by planning decisions that have resulted in poor outcomes for the conservation of habitat for Swift Parrots and Regent Honeyeaters and are likely to continue should development proceed in areas of important habitat that have been identified as future development sites. Whilst some important habitat does occur within existing conservation reserves there remains a significant proportion outside of formally protected areas. The area known as the Hunter Economic Zone (HEZ), which has been shown to be one of the most important sites in the region for both species and in particular for the Regent Honeyeater, requires the most immediate and substantial action for resolution of conservation and development outcomes.

...

2012 Widely recorded and monitored at several sites in the Cessnock-Kurri area over 7 months of the year, with >100 birds likely...

...

2.7.2 Results of Monitoring of Subject Species within the Study Area In 2012

Concurrent with the review of previously collated data, there was a significant presence of both Swift Parrots and Regent Honeyeaters in the Lower Hunter. This was due to widespread flowering of Spotted Gum within the Cessnock-Kurri forests that saw an influx of nectivorous species in the area. The coastal forests did not produce any reports of either species, owing to the failure of the Swamp Mahogany trees to produce blossom. BA, along with volunteers from HBOC, undertook monitoring of these birds along with collecting records from other observers.

This monitoring showed that it was likely that more than 100 Regent Honeyeaters were present within the Lower Hunter during this time, representing potentially around 20-25% of the total known current population. Of importance, records spanned from mid-autumn (6th May) virtually until summer (28th November) and it is feasible that the species may have bred in the region but went undetected. Birds were distributed across seven main sites, which included two sites where the species had not been recorded previously. All sites were dominated by Spotted Gum-Ironbark forests. Refer to *Roderick and Ingwersen (2012)* for specific details.

...

2.7.4 Analysis of Threats to Subject Species

Although not reviewed in full as part of the desktop assessment, a number of threats to Swift Parrots and Regent Honeyeaters have been identified within the study area. Foremost, the historical loss and degradation of habitat for these species continues to place pressures on the local (and likely total) populations of both species. Both Swift Parrots and Regent Honeyeaters are "rich patch specialist" species that are dependent on high-yielding habitats on fertile soils, which have traditionally been the most cleared vegetation types in South-eastern Australia. Approximately 85% of Australia's temperate woodlands have been cleared

since European settlement (Robinson and Traill 1996) and one in five obligate woodland bird species are now listed as threatened and up to one in four have been shown to be in decline (Ingwersen et al 2010).

Although wholesale clearing doesn't appear to be a major issue in coastal areas, the Swamp Mahogany forests are being increasingly fragmented by ongoing development along the NSW coast (with other associated pressures likely to result). Spotted Gum-Ironbark associations are under increased development pressures in areas such as many parts of the Hunter Valley, including the Lower Hunter. This is particularly so in the vicinity of Kurri Kurri (associated with HEZ), on privately owned land south of Ashtonfield and east of the Sugarloaf Range around Minmi-Wakefield, as depicted in development scenarios in the Regional Strategy. Incremental loss of habitat via smaller-scale developments will result in the further reduction of habitat available and will likely contribute to decreased mobility between larger patches of habitat. In general, the continued loss of habitat likely to occur as a result of identified development scenarios is likely to have detrimental impacts on Swift Parrots and Regent Honeyeaters.

Modified fire regimes are another threat that particularly impacts upon habitat in the Cessnock LGA. Rubbish dumping in the dry forests of the Cessnock LGA has been recognised as major problem facing land managers (NPWS rangers, pers. comms.) and in some cases the rubbish (including dumped vehicles) is set alight, resulting in a higher frequency of fires in the area. Arson has also been implicated as a problem. This contributes to the degradation of habitat in the area, as well as posing direct threats to birds themselves. It is worth noting that a large (200ha) fire burnt through the area within the HEZ where the majority of Regent Honeyeater nests were located during the 2007 breeding event in early January 2013.

Aggressive native species also pose a threat to the subject species. Direct observations have been made in the area by several observers (including the authors) of native species showing aggression towards both subject species, in particular larger species such as Rainbow Lorikeets *Trichoglossus haematodus* (towards Swift Parrots), Noisy Friarbirds *Philemon corniculatus* and Noisy Miners *Manorina melanocephalus* (to both species) as well as smaller species such as Fuscous Honeyeaters *Lichenostomus fuscus* (towards Regent Honeyeaters). Whilst this type of aggression is normally seen in a "natural" functioning environment, it is believed that the incidence (and hence impact) of such aggression has increased from some species over time, associated with the fragmentation of areas of habitat, making them more suitable to species that would not normally have been so prevalent. This is particularly true for Noisy Miners, and a Preliminary Determination has recently been made to list them as a Key Threatening Process (KTP) by the NSW Scientific Committee. Specifically, the KTP is titled "Decline in woodland and forest birds due to aggressive exclusion by abundant Noisy Miners" and it is considered that the processes leading to this determination apply to the Lower Hunter region.

58. Habitat modelling was undertaken in relation to the Regent Honeyeater which indicated that the HEZ was considered to be of "high value". Figure 6 in the 2013 Roderick report depicted records of the bird species showing identified priority vegetation types, including Spotted Gum Ironbark Forest in the HEZ area. The HEZ was located within the Hunter Valley Important Bird Area, which was defined by Spotted Gum and Box Ironbark woodland and remnants used by, amongst other species, the Regent Honeyeater.

59. In June 2013, RPS Australia East Pty Ltd (“RPS”) prepared the *Flora and Fauna Assessment* for the site for ATB (“the Flora and Fauna Assessment”). The Flora and Fauna Assessment concluded that the proposal was unlikely to significantly impact any of the identified species or communities listed under the TSCA, including the Regent Honeyeater.
60. The field work underpinning the Flora and Fauna Assessment was undertaken on a single event on 5 June 2012, the objective of which was to detect a suite of flora and fauna. It was not fauna species specific. Rather, opportunistic surveys conducted using audio and visual recognition methods were undertaken to record the presence of, primarily, avifauna and herpetofauna.
61. The Regent Honeyeater was not recorded within the site during field surveys. The Flora and Fauna Assessment noted however, that the bird preferred winter flowering trees species which were known on the site and that previous surveys had found the species occurring in the HEZ. Thus the Flora and Fauna Assessment noted that “the species is therefore considered to have potential to occur”.
62. In respect of the Regent Honeyeater, the Flora and Fauna Assessment stated that:

Regent Honeyeater

The Regent Honeyeater occurs throughout south-eastern Australia and in NSW breeds in several areas along the western slopes of the Great Dividing Range. Movements outside of the breeding season are poorly understood, and numbers fluctuate greatly between years and sites. The species is mostly recorded in box-ironbark Eucalypt associations although birds will also use other woodland types and wet lowland coastal forest dominated by Swamp Mahogany or Spotted Gum (Garnett and Crowley 2000).

This species was not recorded within HEZ during the formal ECMP fauna surveys (see HSO 2004); however, the species was addressed due to two Atlas of Wildlife records within the HEZ both within the 4(h) zone in the northern section of the site. Subsequent to the ECMP surveys, the Regent Honeyeater has been recorded within the HEZ on at least two occasions and breeding of the species has been recorded within the adjacent Werakata National Park. Within HEZ, the Regent Honeyeater was recorded during Swift Parrot surveys conducted in July 2005. This record was of a single bird within a spotted Gum tree in an ecotonal area between KSSW to LHS GIF in the north-eastern corner of the 4(h) zone, within DECC Deferred Conservation Area No 7. In 2007 RPS Ecologists recorded a single Regent Honeyeater within the edge of Hunter Lowland Redgum Forest and adjacent to the 7(b) corridor and the Spine Road. It appears that the species has been recorded several times within the HEZ area between 1993 and 2000 and more recently in 2007, in numbers of up to 15 individuals. It is considered likely that this species is an irregular visitor to the HEZ during appropriate periods (such as the winter flowering of tree species such as *Corymbia maculata* and *Eucalyptus tereticornis*). No nesting records exist from within the HEZ, although nesting attempts have been made by the species within the adjacent Werakata National Park (Biosis Research pers. comm).

Potential habitat for this species exists within the vegetation communities that contain winter-flowering Eucalypts. Within the HEZ these generally refer to the LHS GIF and HLRF. Such habitat is widespread within the HEZ and it is likely to represent a significant habitat resource for this species on a regional scale.

The removal of approximately 3.21ha of potential habitat as a result of the current proposal is unlikely to place the local population at risk of extinction in isolation. However, any removal of habitat within an area identified as being potentially significant habitat on a local scale must be regarded as incrementally impacting upon the Regent Honeyeater.

63. The Flora and Fauna Assessment omitted, however, any reference to the important 2007/2008 breeding event.
64. On 14 August 2013, the Office of Environment and Heritage (“OEH”) wrote to the council noting that in assessing the DA the council had determined that the proposal had the potential to have a significant impact upon a threatened species and that therefore it had requested a SIS, and further, that an assumed concurrence was applicable for the DA. In relation to a review of the conditions of the assumed concurrence, OEH observed that:

The assumed concurrence also advises that OEH “will assess whether the assumed concurrence and/or the LEP and/or the amended LEP provide adequate protection for any newly-listed or discovered threatened species subsequently identified at the HEZ site within 30 working days of being notified of such records and will advise the consent authority and the proponent accordingly”.

Since the issuing of the assumed concurrence in March 2005 a number of additional threatened species have been listed under Schedules 1 & 2 of the *Threatened Species Conservation Act 1995* (TSC Act) which are known or likely highly [sic] to occur on the HEZ site. Based on a review of the OEH Atlas of NSW Wildlife database and other publically available information this is likely to include the following species (but not limited to): Gang-gang cockatoo, Flame Robin, Scarlet Robin, Little Eagle, Spotted Harrier, Little Lorikeet, Regent Honeyeater (critically endangered species listing), and Varied Sittella.

At this point in time, as OEH has not been formally notified by the landholder/proponent of the occurrence and distribution of these species within the site and therefore cannot provide further comment on whether they are adequately protected by the HEZ LEP or whether additional conservation outcomes are potentially required. However, it would appear that the assumed concurrence does not cover the additional threatened fauna species mentioned above.

65. A copy of this letter was not provided by the council to ATB prior to the determination of ATB’s DA for the proposed development.
66. Further correspondence passed between ATB and the council between 7 June to 17 September 2013.
67. On 18 September 2013 a council officer’s report recommending refusal of the DA was tabled at an ordinary meeting of the council. At that meeting, the council resolved “that the report be deferred for a one month period to enable a site inspection to be carried out and that draft conditions be prepared for Council’s consideration”.
68. On 23 October 2013 the council resolved to grant consent to the DA (“the consent”).
69. Statements of reasons for the decision dated 24 and 26 February 2014 were produced on behalf of a number of councillors pursuant to a request by Tumblebee’s solicitors. While not identical, the reasons contained in each statement were not dissimilar in content. In short, the councillors who voted in favour of approving the development (eight in favour and two against) did so because, in their opinion, and based on extensive ecological studies undertaken when the area was rezoned, the 3.2 ha of land

to be cleared was insignificant given the total area of the rezoned land and the known habitat of the Regent Honeyeater, and the site did not encroach on the buffer areas allocated to the HEZ land. Many councillors believed the development to be “in the public interest” because of the resulting economic, especially employment, benefits to the surrounding communities.

70. In the period up to April 2014, a total of 17 approvals were granted for development in the HEZ, which cumulatively permitted clearing of up to 135 ha of native vegetation.
71. The DA was modified on 1 October 2014, to extend the period to comply with the deferred consent conditions from 12 months to 36 months.

Issues for Determination

72. The following issues were identified by the parties for determination:

1. whether the DA involves the clearing of approximately 3.2 ha of “habitat” (as defined in the EPAA) for the threatened species Regent Honeyeater;
2. whether the DA is in respect of development on land that is likely to significantly affect the Regent Honeyeater and/or its habitat for the purposes of s 78A(8)(b) of the EPAA;
3. if so, whether the DA was required to be accompanied by a SIS prepared in accordance with Div 2 Pt 6 of the TSCA; and
4. if so, whether, as a result of the fact that the DA was not accompanied by a SIS, the consent is invalid and of no effect.

73. Because of the textual structure of s 78A(8)(b) of the EPAA it is largely convenient to deal with the issues compendiously rather than separately.

74. ATB had initially raised an issue concerning the concurrence under cl 64 of the EPA Regulations but this was abandoned during the hearing.

Legal Principles Applicable to s 78A(8)(b) of the EPAA

75. In determining whether or not a SIS is required in any particular case pursuant to s 78A(8)(b) of the EPAA, the following legal principles apply. First, whether a SIS is required is a jurisdictional fact, and therefore, the Court must decide for itself whether the application is in respect of land which is (in this instance) likely to significantly affect a threatened species or its habitat (*Timbarra Protection Coalition Inc v Ross Mining NL* [1999] NSWCA 8; (1999) 46 NSWLR 55, *Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council and Stoneco Pty Limited* [2010] NSWLEC 48; (2010) 210 LGERA 126 at [81] per Preston J, and by analogy with equivalent wording in s 112 of the EPAA concerning environmental impact statements, *Fullerton Cove Residents Action Group Incorporated v Dart Energy Ltd (No 2)* [2013] NSWLEC 38; (2013) 195 LGERA 229 at [300] and *Davis v Gosford City Council* [2014] NSWCA 343; (2014) 87 NSWLR 699 at [36]).

76. Second, satisfaction of the requirement is an essential precondition to the granting of consent to a development application (*Newcastle & Hunter Valley Speleological Society* at [81]). If a SIS is required but does not accompany the development application, then the consent cannot be granted (*Timbarra* at [94] and [108] per Spigelman CJ and *Newcastle & Hunter Valley Speleological Society* at [81]).

77. Third, the section focuses on the development proposed in the development application (*Corowa v Geographe Point Pty Ltd* [2007] NSWLEC 121; (2007) 154 LGERA 117 at [53] per Jagot J. Hence, because development applications may be amended after lodgement, the relevant time for the inquiry is immediately prior to the determination of the application (*Newcastle & Hunter Valley Speleological Society* at [82]).
78. Fourth, the description of the development the subject of a development application is not restricted to the nature, extent and other features of the development, but can also include measures that ameliorate or mitigate, prevent, remedy or offset the impacts of the development (*Newcastle & Hunter Valley Speleological Society* at [82]). This means that ameliorative measures not proposed as part of the development, but that are imposed later as conditions to the consent, are not able to be considered because the statutory inquiry is directed to the likely impact of the proposed development prior to, and not after, the determination of the application (*Newcastle & Hunter Valley Speleological Society* at [83] and the cases cited thereat).
79. Fifth, the word “likely” with respect to “significant affect” means a “real chance or possibility” (*Newcastle & Hunter Valley Speleological Society* at [84] and the cases cited thereat). It does not mean “more probable than not” (*Fullerton Cove* at [227] and the cases cited thereat).
80. Sixth, the term “significant” qualifying the verb “affect” means “important”, “notable”, “weighty” or “more than ordinary” (*Newcastle & Hunter Valley Speleological Society* at [84] and the cases cited thereat).
81. Seventh, in deciding whether there is likely to be a significant effect on a threatened species or its habitat, the Court must consider (as a mandatory requirement) the factors in s 5A of the EPAA, especially the seven part test in s 5A(2) of that Act. A positive or negative answer to any one or more factors contained in the seven part test does not prescribe an affirmative answer to the inquiry, nor does it preclude a negative result (*Newcastle & Hunter Valley Speleological Society* at [86] and *Davis* at [93] and the cases referred to thereat).
82. Eighth, the Court is not restricted to the factors contained in the seven part test in its deliberation. The factors are, in other words, not exhaustive (*Davis* at [92]). There may be additional facts and circumstances relevant to the inquiry (*Newcastle & Hunter Valley Speleological Society* at [85] and the cases cited thereat).
83. Other relevant matters include, as in the present case, the cumulative impacts of the proposed development (*Newcastle & Hunter Valley Speleological Society* at [104] and *BT Goldsmith Planning Services v Blacktown City Council* [2005] NSWLEC 210 at [89]–[90] per Pain J) and, in my opinion, the potential application of the precautionary principle (*Leatch v National Parks and Wildlife Service* (1993) 81 LGERA 270 at 282 per Stein J).

The Precautionary Principle

84. The underlying premise of the precautionary principle was articulated by Stein J in the seminal decision of *Leatch* (at 282):

...the precautionary principle is a statement of commonsense and has already been applied by decision-makers in appropriate circumstances prior to the principle being spelt out. It is directed towards the prevention of serious or irreversible harm to the environment in situations of scientific uncertainty. Its premise is that where uncertainty or ignorance exists

concerning the nature or scope of environmental harm (whether this follows from policies, decisions or activities), decision-makers should be cautious.

85. In *Telstra Corporation Ltd v Hornsby Shire Council* [2006] NSWLEC 133; (2006) 67 NSWLR 256, Preston J analysed in comprehensive and careful detail the principles of ecologically sustainable development, including the precautionary principle. As elaborated upon by his Honour in that case, the precautionary principle may be summarised as follows:

1. the application of the precautionary principle and the concomitant need to take appropriate measures, is triggered by the satisfaction of two conditions precedent: first, a threat of serious or irreversible environmental damage; and second, a lack of scientific certainty as to that damage (at [128]). These conditions are cumulative. Once both of these conditions or thresholds are satisfied, precautionary measures should be taken to avert the anticipated threat of environmental damage, but they should be proportionate (at [128]);
2. it is not necessary that serious or irreversible environmental damage has actually occurred, it is the threat of such damage that is required. Moreover, the threatened environmental damage must attain the threshold of being serious or irreversible (at [129]). If there is no threat of serious or irreversible environmental damage, or if there is no (or no considerable) scientific uncertainty, the precautionary principle does not apply (at [130]-[149]);
3. if the two conditions precedent or thresholds are satisfied, the precautionary principle will be activated. At this point there is a shifting of the evidentiary burden of proof and a decision maker must assume that the threat of serious or irreversible environmental damage is no longer uncertain but is a reality. The burden of showing that this threat does not in fact exist, or is negligible, effectively reverts to the proponent of the development (at [150]-[155]);
4. the precautionary principle permits the taking of preventative measures without having to wait until the reality and seriousness of the threats become fully known (the concept of preventative anticipation) (at [156]);
5. the precautionary principle should not be used to try to avoid all risks. A zero risk precautionary standard is inappropriate. Similarly, the precautionary principle cannot be based on a purely hypothetical approach to the risk founded on mere conjecture which has not been scientifically verified (at [157]-[160]);
6. the type and level of precautionary measures that will be appropriate will depend on the combined effect of the degree of seriousness and irreversibility of the threat and the degree of uncertainty. The more significant and more uncertain the threat, the greater the degree of precaution required. Some margin for error should be retained until all of the consequences of the decision to proceed with a development are known. One means of retaining a margin for error is to implement a step-wise or adaptive management approach, whereby uncertainties are acknowledged and the area affected by the development is expanded as the extent of the uncertainty is reduced (at [161]-[165]);
7. the precautionary principle embraces a concept of proportionality. That is to say, measures should not go beyond what is appropriate and necessary in order to achieve the objectives in question. Where there is a choice between several appropriate measures, recourse should be had to the least onerous measure. A reasonable balance must be struck between the stringency of the precautionary measures, which may

- have associated financial, livelihood and opportunity costs, and the seriousness and irreversibility of the potential threat (at [166]-[178]); and
8. the precautionary principle, where triggered, does not necessarily prohibit the carrying out of development until full scientific certainty is attained. Were it otherwise, it would result in a “paralysing bias” in favour of the status quo and would ban “the very steps that it requires” (at [179]-[181]).

Expert Evidence Relied Upon by the Parties

86. The determination of the jurisdictional fact identified above required the Court to have regard to expert evidence. Tumblebee relied upon three affidavits of Dr Stephen Debus, affirmed 8 May, 19 August, and 9 October 2014. Dr Debus is an experienced ornithologist with academic qualifications in the ecology of declining woodland birds. He has served on the Regent Honeyeater Recovery Team for Birds Australia and worked as a Project Officer of the Threatened Species Unit of DEC. He is widely published in his area of expertise, namely, birds (over 90 journal articles and 12 books).
87. By way of summary, in the report attached to his first affidavit (his “first report”), having regard to, amongst other materials, an article co-authored by Mr Roderick in 2012 (“the 2012 Roderick report”), and applying the seven part EPAA test, Dr Debus opined that the Regent Honeyeater continues to decline in the face of ongoing habitat loss, fragmentation and degradation, and invasion of remnant habitat by aggressive competitor species such as the Noisy Miner. The Lower Hunter eucalypt forests and woodlands, centred on the HEZ, are now key remaining areas of habitat and population for the species. In particular, he opined that the proposed development site supports habitat that is essentially the same as, and contiguous with, known foraging and breeding habitats of the bird in the adjoining forests of the HEZ. Accordingly, he was of the view that the development proposal was likely to significantly affect the Regent Honeyeater and its habitat, especially given the wider off-site ramifications as part of an ongoing process of adverse cumulative impacts that are collectively likely to place the local population, and possibly the species, at risk of extinction.
88. Dr Debus’ second affidavit attached a map of an aerial view of the site visually demonstrating the 50 ha area that could potentially be impacted by the invasion of Noisy Miners as a result of the proposed clearing occasioned by the proposed development (his “second report”).
89. The opinions Dr Debus expressed in his first report were qualified in the report he annexed to his third affidavit (his “third report”). The changes were caused by the publication of a “key paper” on the HEZ population of the Regent Honeyeater, again co-authored by the three foremost Regent Honeyeater experts in Australia, including Mr Roderick, published in 2014 (“the 2014 Roderick report”), received by Dr Debus on 26 September 2014.
90. According to Dr Debus, the new information contained in the 2014 Roderick report was to the effect that the “highly significant HEZ breeding event of 2007-08 indeed did appear to be restricted to the HEZ, and was not widespread in contiguous bushland”, whereas his first report was based on the assumption that the breeding event was more widespread. Accordingly, it was his opinion that the HEZ was even more important than he initially perceived and that Regent Honeyeater breeding could not be assumed to occur throughout a more expansive area modelled as suitable habitat. Furthermore, the 2014 Roderick report revealed that not only were Regent Honeyeaters present in the HEZ in 2012, but that they had nested there, and in

adjacent Crown land, with up to 50 birds present. This also reinforced the importance of the HEZ. In his view, therefore, the HEZ was now potentially more important for the Regent Honeyeater than the Capertee Valley, another well known location of the bird.

91. Tumblebee also relied upon two affidavits deposed to by Mr Roderick on 30 October 2014 and 30 January 2015. Mr Roderick is, as described earlier, an ecologist who works as the coordinator of the Woodland Birds Biodiversity project at BirdLife Australia. He has experience in performing ecological surveys and reporting, with particular expertise in bird surveys. As referred to above, Mr Roderick has prepared a number of papers relating to the Regent Honeyeater, including the co-authored 2012, 2013 and 2014 Roderick reports.
92. According to Mr Roderick, BirdLife Australia manages a national database of Regent Honeyeater records. For his 2013 report he participated in an exercise that involved updating and amending the existing national database for that avian species using records of sightings within the five Lower Hunter local government areas. After its completion, Mr Roderick used a spreadsheet that he created for the exercise to write the 2013 Roderick report. The spreadsheet contains raw sightings data, and therefore, he conceded, it was likely to include multiple counts of some individual birds, and that it was possible that not all birds in the area were counted.
93. On behalf of ATB, three affidavits were affirmed by Mr Craig Anderson, on 15 July, 20 and 22 October 2014. Mr Anderson is a consultant ecologist. His *curriculum vitae* did not disclose if, prior to these proceedings, he had carried out substantive research in the field of ornithology. In cross-examination, Mr Anderson agreed that he is not a specialist ornithologist.
94. The report attached to Mr Anderson's initial affidavit noted, first, that despite many field studies and surveys, no records of Regent Honeyeaters existed for the site. Second, it was his opinion that the 0.85 ha of regenerating Lower Hunter Spotted Gum Ironbark Forest offered only marginal potential habitat for the Regent Honeyeater, and the 2.36 ha of mature Ironbark Forest only offered potential habitat for the bird, which equated to less than 0.1% of potential habitat for this mobile species within the wider HEZ study area, and moreover, that the HEZ was part of a much larger extent of habitat of the Regent Honeyeater in the Lower Hunter. Accordingly, the development would not "significantly impact" the bird. Third, he conceded, however, that the cumulative impact of "large scale development" within the HEZ area did have the potential to lead to significant impact on the Regent Honeyeater. Fourth, that, "for the most part", he agreed with the status and ecology of the Regent Honeyeater as described by Dr Debus and the importance of the wider HEZ area to the species as a component of the Lower Hunter habitat area. But that, fifth, he disagreed with Dr Debus' application of the seven part test, especially its application to the cumulative impacts of the development insofar as it included "supposition regarding potential future development activity and possible associated impacts".
95. Mr Anderson's second affidavit was in response to an allegation of misleading conduct levelled at him during the hearing by Tumblebee following an abortive Joint Expert Supplementary Statement of Agreed Facts dated 20 August 2014, concerning the possible impact zone of the clearing required for the development with respect to Noisy Miner colonisation of disturbed vegetation. It was alleged by Tumblebee that Mr Anderson had deliberately sought to mislead Dr Debus, and thus the Court, by failing to distinguish on a map, areas of vegetation surrounding the development site which had been entirely cleared of vegetation and areas of reduced vegetation (in

short, the shading gave the impression that a larger proportion of vegetation had been entirely cleared, which was incorrect). The result was that Dr Debus was actually misled as to the potential Noisy Miner impact zone arising from the development, conceding that it was smaller than it actually was. The explanation for the provision of the misleading map was, according to Mr Anderson's second affidavit, his failure to properly review a map he had commissioned to be produced by a third party, as a correct representation of the vegetation surrounding the site.

96. Mr Anderson's explanation was confirmed by Mr Joel Stibbard, an ecologist employed by RPS, in an affidavit affirmed 21 October 2014. Mr Stibbard prepares Geographic Information Systems maps. He deposed that on 18 August 2014, at Mr Anderson's request, he prepared two maps for Mr Anderson depicting ATB's HEZ development site with a 300m buffer around it and the surrounding cleared land and areas with reduced vegetation. Mr Stibbard prepared the maps and then emailed them to Mr Anderson. One of the maps was inaccurate.
97. Although I do not in any way accept that Mr Anderson deliberately sought to engage in a course of misleading conduct, the incident nevertheless left a lingering sense of unease with the Court as to the overall credibility of Mr Anderson's expert evidence. A matter that I shall return to below.
98. In his final individual report (attached to his third affidavit), which was in response to Dr Debus' third report concerning the information contained in the 2014 Roderick report, Mr Anderson stated that not "enough (new) information exists to change my opinion on the importance of the HEZ area for the Regent Honeyeater" because the 2014 Roderick report did no more than formalise the findings of events widely reported and "known in an informal sense". He conceded, however, that "the wider HEZ locality unquestionably has value as part of a larger network of known and possibly other unknown breeding sites for the species within its extensive range", but he emphasised that it was important to consider all of the records for the Regent Honeyeater, not merely records within the HEZ. These records show that the birds are dispersed widely throughout their range and have recently bred or attempted to breed in previous breeding areas not utilised for some period, or in areas not previously documented.
99. Three joint reports were produced by Dr Debus and Mr Anderson. In the Joint Report of Experts dated 25 July 2014, the experts nominated the "HEZ LEP area" as that defined by the 2011 LEP, including the HEZ zone map sheet, and the "wider HEZ study area" as that defined by Amendment No 60, including the Werakata National Park and State Forest (approximately 3,200 ha). The experts agreed that the main population centres for the bird in NSW were in Bundarra-Barraba, the Capertee Valley and in the Lower Hunter, of which the latter two were the most important. They also did not dispute that the wider HEZ study area and contiguous forests periodically supported an important population of 40-100 birds, or 10-25% of the global population and 15-25% of the NSW population. As alluded to above, they disagreed, however, on the application of the seven part test and whether it could only apply to the specific development in question or whether it could apply to the indirect and cumulative effects of additional development beyond the site. Dr Debus was of the opinion that it could, whereas Mr Anderson took the more restricted view.
100. The Expert Supplementary Joint Report dated 25 September 2014, addressed the issue of the potential Noisy Miner impact of the proposed development. Attached to the report was an (now accurate) aerial map created by Mr Stibbard showing the site and a hypothesised potential 300m Noisy Miner impact zone around it and the

existing areas of cleared vegetation near and along the length of the existing Spine Road adjacent to the site.

101. Both experts inspected the development site and surrounding area, including the areas of cleared vegetation along the Spine Road. Mr Anderson concluded that, despite witnessing very few birds, some of the cleared areas would constitute potential habitat for Noisy Miners, including along the Spine Road and associated verges.
102. By contrast Dr Debus concluded, on the basis of his surveys, other fauna surveys of the site recording no Noisy Miners, his work on Noisy Miners, and the literature, that because anthropogenic habitat alteration (that is to say, clearing) encourages high Noisy Miner densities, which in turn promotes aggressive behaviour towards other smaller birds such as the Regent Honeyeater, further clearing along the Spine Road (where the project site is located) would see the increase and spread of Noisy Miners in that area.
103. The Expert Supplementary Joint Report dated 6 January 2015 concerned the 2014 Roderick report, and in particular, the spreadsheet annexed to that report of Regent Honeyeater database records compiled by BirdLife Australia for five local government areas in the Lower Hunter Valley. The experts had also been provided with the national 2012 records of Regent Honeyeaters. Analysing these records, the experts agreed, amongst other things, that out of 240 sightings of the Regent Honeyeater in NSW in 2012, there were 48 sightings over four sites in the HEZ (that is to say, approximately 20% of all sightings in 2012), 94 sightings over five sites in the remaining Lower Hunter Valley, and 88 sightings over eight sites in Capertee Valley.
104. The experts were extensively cross-examined. Where appropriate and relevant the cross-examination is referred to below.
105. Overall, I preferred the evidence of Dr Debus to Mr Anderson for the following reasons:
 1. first, Dr Debus is an ornithologist with particular expertise in the ecology of declining woodland birds, including the Regent Honeyeater, whereas Mr Anderson is a general consultant ecologist, whose *curriculum vitae* did not disclose any research carried out by him in the field of ornithology. In cross-examination he agreed that he is not a specialist ornithologist and that in his role as a consultant ecologist, he relied on the research of others (T122.35-123.04);
 2. second, Mr Anderson has been closely associated with extractive and development industries. He was, until recently, the general manager of a coal mining company. While these facts of themselves did not speak of partiality, more concerning was the fact that in the past he has provided consulting services to HEZ Pty Ltd which was, at one stage, the overall proponent of staged development within the HEZ and the owner of a significant proportion of land within it. He has also had a relationship with RPS, the firm responsible for preparing the Flora and Fauna Assessment for the proposed development;
 3. third, the circumstances surrounding the preparation of the aborted joint report relating to the potential impact of Noisy Miners, which I accept was in no way intentional on the part of Mr Anderson, nevertheless demonstrated a degree of carelessness by him in the preparation of evidence, which in fact misled Dr Debus and, had the error not been detected by Tumblebee, would have misled the Court to the benefit of ATB;

4. fourth, and of concern, Mr Anderson appeared to be confused by the correct meaning to be attributed to the term “likely” in the context of s 78A(8)(b) of the EPAA. He did not state in his written evidence what he meant by the word for the purpose of opining whether or not the development proposal was likely to have a significant effect on a threatened species and/or its habitat. In cross-examination he stated initially that he believed that “likely” (wrongly) meant “more chance than not” (T260.11), and that at the time of writing his reports he would have referred to the TSA Guidelines. However, as he later agreed, the Guidelines do not define the term (T261.46). Subsequently, he recanted his earlier oral evidence to say that he was mistaken and that he understood that the term meant “a real possibility”, and moreover, that at the time he wrote his initial report he would have had this meaning in his mind based on his experience carrying out environmental assessments (T264.09-264.30). I do not accept as credible Mr Anderson’s latter definitional change of heart. I find it more likely that Mr Anderson’s first answer most accurately reflected his true understanding of the word “likely”, that is to say, that “likely” incorrectly meant “more chance than not”;
5. fifth, Mr Anderson stated, also incorrectly, that the words “more likely than not” were equivalent to a “more than 50% probability” (T262.37). This, as Tumblebee submitted, is a much higher threshold than the Court’s interpretation of the word in the context of s 78A(8)(b) of the EPAA, namely, (see above) “a real chance or possibility”. This error, and the one immediately above, diminishes the weight that can be attributed to Mr Anderson’s ultimate conclusion that the development proposal is unlikely to have a significant impact on a threatened species and/or its habitat;
6. sixth, Mr Anderson took an overly (but not strictly, as was suggested by Tumblebee) quantitative approach in assessing the development proposal, an approach that is inconsistent with the TSA Guidelines and the authorities. He agreed under cross-examination that the “primary basis” for his conclusion of no significant impact was the small proportion of area to be cleared when compared with the total amount of habitat available for the Regent Honeyeater in the Lower Hunter (T266.36); and
7. seventh, Mr Anderson did not take into account the following factors that are relevant to a qualitative assessment of the impact of the development proposal, notwithstanding that he agreed that they were relevant (T267):
 1. the significance of the HEZ as a core breeding area for the Regent Honeyeater;
 2. the fact there were only 350-400 Regent Honeyeaters estimated to be remaining in the wild;
 3. the fact that the bird faced a high risk of extinction;
 4. the vulnerability of the Regent Honeyeater to the clearing of forest;
 5. the fact that the Regent Honeyeater relies on “stepping stones” of habitat; and
 6. the possible effects of drought on the Regent Honeyeater.

106. Mr Anderson agreed that any assessment which failed to take into account these factors would be “short of the mark” (T268.46). This must be so. Notwithstanding that these factors were not discussed in any transparent manner in his reports, Mr Anderson nevertheless claimed that these factors had formed part of his thought process in reaching his final conclusion that the development was unlikely to have a significant effect on the Regent Honeyeater (T269.12-269.15).

107. By contrast, Dr Debus was to all intents and purposes a model expert witness who made concessions where appropriate and readily admitted to errors in his reports put to him in cross-examination.

Whether the Development is Likely to Significantly Affect the Regent Honeyeater and Its Habitat

108. Of the factors contained in the seven part test described in s 5A(2) of the EPAA, Tumblebee conceded that subparagraphs (b), (c) and (e) did not apply because the proposal would not have a significant impact on an endangered population, endangered ecological community, or critical habitat. In addition, sub-paragraph (f) did not apply because there was no current recovery plan in force for the Regent Honeyeater.
109. This leaves the factors listed in subparagraphs (a) (whether the development proposal is likely to have an adverse effect on the life cycle of the Regent Honeyeater such that a viable local population of the bird is likely to be placed at risk of extinction), (d) (whether the habitat of the Regent Honeyeater is likely to be removed, modified, fragmented or isolated, and the importance of that habitat to the bird's long term survival), and (g) (whether the development proposed constitutes, is part, or is likely to result in the operation or increase the impact, of a key threatening process), as relevant and applicable.

The Threatened Species Assessment Guidelines

110. As stated above, the Court must have regard to any applicable assessment guidelines (s 5A(1)(b) of the EPAA). In this instance, the *Threatened Species Assessment Guidelines* published in January of 2008 by the Department of Environment & Climate Change NSW ("DECC") ("the TSA Guidelines") must therefore also be taken into account.
111. Throughout the TSA Guidelines the following defined terms are used (pp 3-4):

Subject site means the area directly affected by the proposal.

Study area means the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly. The study area should extend as far as is necessary to take all potential impacts into account.

Direct impacts are those that directly affect the habitat and individuals. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat. When applying each factor, consideration must be given to all of the likely direct impacts of the proposed activity or development.

Indirect impacts occur when project-related activities affect species, populations or ecological communities in a manner other than direct loss. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas. As with direct impacts, consideration must be given, when applying each factor, to all of the likely indirect impacts of the proposed activity or development.

112. From the outset the following observations concerning the TSA Guidelines are pertinent. First, the TSA Guidelines, although plainly relevant and a mandatory matter to take into account (s 5A(1) of the EPAA), do not constitute a legislative stricture to the effect that if one of the definitions contained in the Guidelines is not met, then s 78A of the EPAA must be answered negatively. There is no warrant, having regard to the text, context and purpose of that provision, for such a construction.
113. Second, the TSA Guidelines emphasise that the focus on likely impacts should be at the local, rather than the regional, environment. This is because, as stated in the Introduction to the Guidelines, “the long term loss of biodiversity at all levels arises mainly from the accumulation of losses and depletions of populations at a local level”. It is this “broad principle” that underpins the TSCA. This must be borne in mind when assessing the impacts of the size of the area to be cleared by the proposed development.
114. Third, it is the assessment of significance that is the “first step” in considering the potential impacts of a proposed development. As the TSA Guidelines caution, “when a significant effect is likely, further consideration is required and is more appropriately carried out when preparing a *species impact statement*” (p 1). Furthermore (p 2):

The assessment of significance should not be considered a ‘pass or fail’ test but a system allowing applicants/proponents to undertake a qualitative analysis of the likely impacts, and ultimately, whether further assessment needs to be undertaken through a species impact statement. All factors must be considered and an overall conclusion must be drawn from all factors in combination. Where there is reasonable doubt regarding the likely impacts, or where detailed information is not available, a species impact statement should be prepared. Other issues not specifically addressed by the factors of assessment should be included and discussed in the broader impact assessment process, for example, in a review of environmental factors or an environmental impact statement.

115. Fourth, and importantly, in making an assessment of significance, the TSA Guidelines advocate a precautionary approach to the assessment of significance. They state that (p 12):

The threatened species assessment of significance should **not** be considered a ‘pass or fail’ test. Instead, consideration of the factors will inform the decision-making process of the likelihood of significant effect. Where necessary, the process will trigger further assessment in the form of a species impact statement.

All factors should be considered as well as any other information deemed relevant to the assessment. The assessment of significance should not be used as a substitute for a species impact statement. Application of the precautionary principle requires that a lack of scientific certainty about the potential impacts of an action does not itself justify a decision that the action is not likely to have a significant impact. If information is not available to conclusively determine that there will not be a significant impact on a threatened species, population or ecological community, or its habitat, then it should be assumed that a significant impact is likely and a species impact statement should be prepared.

Proposed measures that mitigate, improve or compensate for the action, development or activity should not be considered in determining the degree of the effect on threatened

species, populations or ecological communities, unless the measure has been used successfully for that species in a similar situation.

In many cases where complex mitigating, ameliorative or compensatory measures are required, such as translocation, bush restoration or purchase of land, further assessment through the species impact statement process is likely to be required.

In determining the nature and magnitude of an impact, it is important to consider matters such as:

pre-construction, construction and occupation/maintenance phases

all on-site and off-site impacts, including location, installation, operation and maintenance of auxiliary infrastructure and fire management zones

all direct and indirect impacts

the frequency and duration of each known or likely impact/action

the total impact which can be attributed to that action over the entire geographic area affected, and over time

the sensitivity of the receiving environment

the degree of confidence with which the impacts of the action are known and understood.

Recovery and threat abatement plans, priorities action statements, threatened species profiles and other fact sheets prepared by DECC and DPI may provide further guidance on whether an action or activity is likely to be significant.

116. Fifth, the TSA Guidelines state that when assessing the impact of the development on habitat under s 5A(2)(d) of the EPAA, the decision-maker, which to all practical effect, in this instance is the Court, should take both a “quantitative and qualitative approach” and consider both direct and indirect impacts.

117. The application of the TSA Guidelines is further discussed below.

Relevance of the Council’s Determination to Approve the Development

118. It is convenient at this juncture to deal with a submission by ATB as to the weight to be accorded to the determination of the council to grant approval to the development application, together with the statements of reasons for the decision. In short, ATB submitted that considerable weight should be given to these documents, particularly the eight councillors who voted in favour of the motion to grant consent. I do not agree given the task the Court must undertake pursuant to s 78A(8)(b) of the EPAA.

119. But even if I am wrong and I were to take into account this material, in my view, minimal, if any, weight ought to be given to the views expressed therein. This is because, first, the councillors, who were not themselves experts, voted in a manner

contrary to the recommendation of their own ecologist, Ms Rebecca Burley, who concluded that a SIS was required to be prepared. No reasons were given by the councillor's for eschewing Ms Burley's recommendation. While some of the councillors did undertake a site inspection of the area the subject of the DA, it is not clear how this, in the absence of any ecological expertise, assisted the councillors in making their determination. Second, it appears that many of the councillors who voted to approve the proposal did so for economic reasons which can have no bearing whatsoever on the question of whether the activity was likely to significantly affect a threatened species or its habitat.

Potential Noisy Miner Impacts

120. The impact of the development proposal will not be limited to the cleared area. There was no real debate among the experts that the clearing of bushland on the site is a process of fragmentation that is likely to encourage the penetration of Noisy Miners into the surrounding bushland.
121. Rather, the issue is the extent to which clearing on the site would cause a Noisy Miner colonisation. To reiterate, Noisy Miners are aggressive competitors which have a tendency to exclude other bird species such as the Regent Honeyeater.
122. The evidence as to the potential impact zone of the Noisy Miners evolved during the course of the trial. In his supplementary affidavit dated 19 August 2014, Dr Debus arrived at an estimate of 50 ha as the total area potentially affected by Noisy Miner incursion as a result of the proposed development by drawing a line on a map 300m out from the boundary of the site and calculating the area of the resultant polygon.
123. In their Supplementary Joint Expert Report dated 26 September 2014, Dr Debus and Mr Anderson agreed that an appropriate buffer for modelling Noisy Miner impacts was 300m into the open forest or woodland from the edge of the cleared area at the site.
124. What is in dispute is the extent to which this 50 ha impact zone is in addition to the area already impacted by Noisy Miners. To put it succinctly, Mr Anderson, based on a site visit recording that identified the presence of Noisy Miners in the area close to the site, determined that a potential Noisy Miner impact zone was already in existence, and that the proposed development would produce an additional potential Noisy Miner impact zone of only 7.7 ha. Dr Debus, however, disputed the suitability of the habitat for Noisy Miners in the area proximate to the development site and noted that the area where Mr Anderson observed birds was more open than areas nearby, and furthermore, was close to an area of disturbance (powerline easement) which could explain their presence.
125. In addition, any unsuitable habitat for Noisy Miners in the land adjacent to the proposed development site should be, according to Dr Debus, contrasted with the albeit assumed, clearing associated with the proposal which would create suitable Noisy Miner habitat, for example, open areas, mown grass, scattered trees or shrubs, and bushfire protection zone areas of thinned understory. While Dr Debus was not shown the conditions of consent, it is axiomatic that the clearing will result in open areas attractive to Noisy Miners.
126. Both experts expressed their opinions in terms of probabilities and potentialities, and not certainties, and that the short term risk of Noisy Miner colonisation was low.

127. In my view, the opinion proffered by Dr Debus as to the extent of the potential Noisy Miner impact zone ought to be preferred for several reasons. First, Mr Anderson has, as Tumblebee submitted, failed to take a precautionary approach in his assumptions concerning the area attractive to Noisy Miners. As he conceded in cross-examination, there were differences in habitat edge characteristics and vegetation (T273.04-273.17 and 280.36-280.40). Second, Mr Anderson gave, in my opinion, too much weight to the sighting of four Noisy Miners 1.25kms from the site. As Dr Debus explained, this could have been a single occurrence or a “vanguard” group of colonisers (T279.07-279.16), rather than any permanent occupation. Third, Dr Debus’ evidence was based on superior ornithological qualifications and he was willing, unlike Mr Anderson to err on the side of caution, with a consideration of the different habitat values of different areas.
128. The implications of the 50 ha Noisy Miner impact zone are discussed further below.

Whether the Action Proposed is Likely to Have an Adverse Effect on the Life Cycle of the Regent Honeyeater Such That a Viable Local Population of the Species is Likely to be Placed at Risk of Extinction (Factor (a))

129. With respect to the factor contained in s 5(2)(a) of the EPAA, the TSA Guidelines relevantly state (pp 5-6):

Interpretation of key terms used in this factor

Life cycle: the series or stages of reproduction, growth, development, ageing and death of an organism.

Viable: the capacity to successfully complete each stage of the life cycle under normal conditions.

Local population: the population that occurs in the study area. The assessment of the local population may be extended to include individuals beyond the study area if it can be clearly demonstrated that contiguous or interconnecting parts of the population continue beyond the study area, according to the following definitions.

...

The *local population of resident fauna* species comprises those individuals known or likely to occur in the study area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area.

The *local population of migratory or nomadic fauna* species comprises those individuals that are likely to occur in the study area from time to time.

In cases where multiple populations occur in the study area, each population should be assessed separately.

Risk of extinction: the likelihood that the local population will become extinct either in the short-term *or* in the long-term as a result of direct or indirect impacts on the viability of that population.

Application

The key assessment is risk of extinction of the local population. The risk of extinction will increase if any factor operates to reduce population size or reproduction success. The components of the life cycle of a species are dependent on its habitat and affected by threats to the species. The removal or modification of habitat or changes to the nature of important periodic disturbances such as fire or flood may affect the survival of that species. Therefore, it is important that the applicant/proponent not only has an understanding of the species' life cycle, but also an understanding of the way in which a species makes use of its habitat, the way this may change at particular times or in certain seasonal conditions, and whether the life cycle is dependent on particular disturbance.

Demonstrating that a population is not viable would require considerable effort and study. Therefore any known or presumed local population should be assumed viable unless to contrary can be conclusively demonstrated through analysis of local ecological information, records, references and knowledge of species' behaviour and habitat or through a comprehensive on-site ecological study.

130. Both Mr Anderson and Dr Debus agreed that the "local population" should be regarded as viable.

131. Turning first to Mr Anderson, who defined the "local population" of the Regent Honeyeater as, given their mobility (remembering that the bird is highly mobile), all birds that frequented and utilised the resources within the Lower Hunter and not just the HEZ, he assumed the local population was viable, especially given the breeding event in 2007/2008 in the HEZ. In addition, Mr Anderson was (first report p 14):

...for the most part in agreement with the [first] report produced by Dr Debus as relates to the status and ecology of the Regent Honeyeater, the importance of the HEZ LEP area to the species as a component of the Lower Hunter habitat area, and the possible outcomes relating to cumulative impacts of large scale development in the HEZ LEP area.

132. However, he concluded that the proposed development would be unlikely to have an adverse effect on the lifecycle of the species such that a viable local population of the species would be placed at risk of extinction. This was because:

1. the level of impact of the development was only the direct loss of 2.36 ha of potential habitat and 0.85 ha of marginal potential habitat, the total of which equated to less than 0.1% of potential habitat within the HEZ study area, and an even lower proportion within the Lower Hunter. Accordingly, given the mobility of the species, the loss associated with the proposal was not of a magnitude that was statistically significant;
2. there were no known records of the Regent Honeyeater within the proposed site and no attribute of the site had been identified as being critical to the survival of the species; and

3. other existing developments and clearing within the HEZ had not prohibited site usage by the bird, including breeding, as evidence by records demonstrating that the bird had been sighted and had nested within close proximity to large cleared areas.

133. Dr Debus came to the opposite conclusion for the following reasons. In terms of its lifecycle and ecology, it was his evidence that the Regent Honeyeater is a mobile nectar-feeding bird of eucalypt-dominated open forest and woodlands, which requires eucalypt blossoms for foraging and mature eucalypts and she-oaks for nesting. Food species are typically flowering eucalypt species (including Ironbarks) and mistletoe on She-oaks. However, while mistletoe is a potential source of food for the Regent Honeyeater, it is not its primary source, the latter being flowering eucalypts.

134. Because of its mobility, its annual cycle requires a seasonal succession of flowering eucalypts in a series of locations and is “susceptible to loss of links in the chain” caused by habitat fragmentation and clearance. The habitat of the Regent Honeyeater is severely fragmented and a major current threat to the species is the loss or failure of key sites or “stepping stones” of productive habitat for the bird’s annual cycle of movement. Droughts and consequent failure of the species’ food resources was, in his opinion, likely to intensify with anthropogenic climate change.

135. In terms of breeding, Dr Debus opined that (p 13 of his first report):

The Regent Honeyeater is a nectar-feeding bird, of eucalypt-dominated open forests and woodlands, which requires eucalypt blossom for foraging and mature eucalypts (including rough-barked *Angophora* species) and she-oaks (*Casuarina*) for nesting. Food species are typically eucalypts (box trees, ironbarks and gums, but also some stringybarks and mahoganies) and mistletoe on she-oaks, in the more fertile parts of the landscape. It also feeds on the sugary secretions of insects (eg lerps), which become an important part of the diet when breeding. The foregoing and following ecological information is summarised, for example, by the NSW Scientific Committee (2010) and Garnett *et al.* (2011), from the scientific literature; I have personally observed many of these aspects and contributed to that scientific literature.

The Regent Honeyeater builds a cup-shaped nest of fibres located in forks in the live eucalypt (including *Angophora*) or she-oak canopy. A clutch of two or three eggs is laid from the late winter to early summer, with multiple attempts at clutches and chick rearing per season. The incubation period is 14 days, the nestling period 16 days and the post-fledging dependence period is 3-4 weeks. The species experiences a high rate of breeding failure, which is typical of open-nesting songbirds in woodland, mainly through nest predation (eg by the Pied Currawong, *Strepera graculina*). Individuals may breed in more than one location within a year, or the species may not breed at all in some locations in some years. Generation length is estimated at 6 years (Garnett *et al.* 2011).

136. The forest type used by Regent Honeyeaters in the area of the development site is Spotted Gum Broad-leaved and Ironbark-stringybark with some other eucalypts. In his view, the mature forest type of the proposed development area was essentially the same species mix with the same dominant species. It was non-regenerating forest.

137. The development site, recognised as Regent Honeyeater habitat, or at the very least potential habitat, which was contiguous with known habitat for the local population of Regent Honeyeaters, once cleared, would, according to Dr Debus, cause

incremental habitat loss, increase competitive exclusion by Noisy Miners, and reduce the potential of a breeding event in the future. In summary (at p 14 of his first report):

Being a mobile species, in its annual cycle the Regent Honeyeater requires a seasonal succession of profusely flowering eucalypts in a series of locations, and is susceptible to loss of links in the chain, caused by habitat clearance and fragmentation. Loss of food resources, breeding sites, stepping stones and wooded corridors could hinder breeding success, and also survival in the non-breeding season by hindering dispersal, increasing predation risk while travelling, and removing food resources at critical distances or intervals.

138. And therefore (at p 25):

Any proposal that removes habitat in the area is therefore considered likely to have an adverse impact on the life cycle (foraging, feeding) of the species, such that incremental habitat loss is likely to place a viable local population at risk of extinction. The proposal would reduce the area of potential habitat and hence the probability of a breeding event in the future, and increase the impact of competitive exclusion by Noisy Miners, and thus be likely to reduce the long-term viability of the local population.

139. The most recent comprehensive survey of the site was carried out in 2004, which resulted in the ECMP. According to Mr Anderson, this involved 14 months of surveying by “capable birders” (T152.29-152.47). The ECMP failed to locate a Regent Honeyeater on the site or anywhere in the HEZ, including, however, in areas which were the subject of the later 2007/2008 breeding event.

140. The evidence detailed above demonstrates, in my opinion, that the HEZ, from time to time, supports a significant, or at the very least a material, breeding population of Regent Honeyeaters. This view is based on the highly significant 2007/2008 breeding event, which appeared to be restricted to the vicinity of the HEZ and was not widespread in contiguous bushland, and the attempted breeding event in 2012, or even at the very least nesting of Regent Honeyeaters in the HEZ and the adjacent Crown lands (records indicate that up to 50 Regent Honeyeaters were present in the HEZ in 2012). Indeed 10-20% of the global population in some years may be found in the HEZ (40-100 birds out of the 350-400 wild population). Any proposal that therefore removes habitat or even potential habitat in the HEZ, given the significance of that habitat to a successful breeding event, would likely result in a reduction in the long-term viability of the local population. This is elaborated upon below.

141. It is correct to note, as ATB did, that there have been no recorded sightings of the bird on the proposed development site. But no real significance should be attached to the lack of Regent Honeyeater records with respect to the site because, as Dr Debus pointed out, the absence may be explained by an inadequate survey effort, seasonal timing (any targeted survey should ideally occur when the spotted gums are flowering) and difficulties with access to the site, which is on private land. And as Mr Anderson agreed, the Regent Honeyeater is “very difficult” to detect (T150.12). Put another way, the absence of evidence is not evidence of absence given the lack of a recent comprehensive survey of the proposed development site.

142. Dr Debus, conceded in cross-examination that he had used the wrong definition of “local population” in his written reports insofar as he had not properly applied the definition of “local population” in the TSA guidelines for a nomadic bird such as the Regent Honeyeater (T155.20-156.1). He instead had regarded the “local population” as (at p 15 of his first report) “the population within the study area unless

there is contiguous or proximate habitat and there is movement or genetic exchange across the boundary”, which was a much more sedentary or static population. As a result of this, Dr Debus had identified in his first report the local population as the birds occupying the mapped areas of high value habitat in the Rodderick 2013 report (the blue polygon in Figure 8), or the HEZ, overlooking the definition for “local population” for “migratory or nomadic fauna” in the TSA Guidelines

143. This error appeared to be compounded further when in cross-examination (T156.41-156.49) Dr Debus seemingly adopted a narrow view of what the “study area” was (see the definition of that term in the TSA Guidelines), namely, the 50 ha potential Noisy Miner impact zone.
144. Much was made of his mistake by ATB in light of the fact that, as was correctly noted by both parties, the Regent Honeyeater is a non-seasonal nomad which is more likely to be found in areas of trees that are flowering, rather than in one particular locality.
145. It is fair to characterise Dr Debus’ evidence on this point as somewhat confusing, but ultimately in oral evidence he stated, correctly in my view, that the local population included the population occupying from time to time (given the migratory nature of the birds) the blue polygon of the Lower Hunter habitat identified by Mr Rodderick in the 2013 Rodderick report (approximately 26,000 ha), and he accepted that it could even comprise the larger meta-population of birds moving between the Lower Hunter and Capertee Valley breeding areas (T322.43-323.14). Further, his adoption of the correct local population cohort did not cause him to alter his conclusions. Finally, the definition of “local population” that Dr Debus orally accepted was consistent with that of Mr Anderson (p 17 of the report attached to his first affidavit).
146. There is certainly evidence of successful breeding in the Capertee Valley in 2012, which was not included in Dr Debus’ evidence or his consideration of the seven part assessment, a matter that was also the subject of cross-examination and criticism of Dr Debus. But irrespective of the breeding events occurring within the Capertee Valley in 2012, the HEZ continues to remain a significant area in this respect. This is all the more so if there is one meta-population of Regent Honeyeaters due to their high mobility rather than a single local population in the HEZ, or the Lower Hunter area.
147. Ultimately, the relative importance of the HEZ to the Capertee Valley is, in my opinion, misplaced. The fact remains that the necessity to retain breeding habitat in the Lower Hunter, including the HEZ, is, as the evidence of Dr Debus attests, acutely important for the survival of the Regent Honeyeater given its limited population. Any proposal which impacts, directly, as this development proposal does, on 3.2 ha, and indirectly on 50 ha of habitat (or even potential habitat) is likely to have a significant effect on the viability of the bird.
148. To a large extent, the importance of the HEZ rests primarily on the breeding event of 2007/2008, as described in the material referred to above, including the DEC letter dated 4 July 2008 and the 2014 Roderick report. The number of juvenile birds (estimated to be at least 25) recruited to the total population was dramatic relative to the estimated total population of the Regent Honeyeater in the wild. There was some evidence of sightings but little evidence of breeding elsewhere in the Lower Hunter region in the same period.
149. And true it is that there was a very approximate correlation between this major breeding event and the presence of mistletoe mapped in the area in 2004 by the

ECMP. But in Dr Debus' opinion this was a matter of coincidence (T254.10), and for the reasons elaborated upon below (at [156]) does not matter.

150. This is because there is also evidence of the continued presence of the Regent Honeyeater in the Lower Hunter in 2009 and 2012. Both experts agreed that there were 10-30 birds observed in the Lower Hunter from May to August 2009 and a small number of birds were observed in the HEZ in October of that year. Although Dr Debus resiled under cross-examination from his initial evidence that there had been a breeding "event" in the HEZ in 2012, and described instead the presence of the Regent Honeyeater in the HEZ in 2012 as a breeding "attempt", nonetheless both experts again agreed that the Regent Honeyeater was present in the HEZ in 2012 in not insignificant numbers, with a total of 142 Regent Honeyeaters in the Lower Hunter recorded.
151. While it is correct to note that the same bird may have been observed on multiple occasions in 2012 and that there were discrepancies in some of the record keeping (as revealed during Dr Debus' cross-examination), the importance of the sizable number of sightings in the Lower Hunter, and more specifically in the HEZ, cannot seriously be disputed or discounted.
152. Further, it was not a matter of contention among the experts that in relation to the 2012 records that of the 142 sightings in the Lower Hunter Valley, 48 occurred in the HEZ. This included observed nest building within the HEZ in October. Thus, as Tumblebee submitted, the HEZ accounted for approximately 33% of sightings in the Lower Hunter in 2012 notwithstanding that it represents only around 8% of the modelled suitable habitat.
153. And while it is also correct to note that Regent Honeyeaters were sighted in the Capertee Valley area in 2012, including observations in respect of breeding activity, and in greater numbers than suggested by Dr Debus, this does not diminish the relative, or even overall, importance of the Lower Hunter and, in particular, the HEZ, given the 2007/2008 breeding event and the Regent Honeyeater sightings in 2009 and 2012.
154. Dr Debus was cross-examined on a purported failure by him to take into account a fire event in 2013. The event, in my opinion, should be accorded very little weight. First, neither expert had given any consideration to it as part of their assessment of significant effect. Second, ATB has not adduced any evidence to demonstrate whether, or for what length of time, the fire event affected the habitat values of the HEZ or Lower Hunter more generally. Third, the ECMP reveals that the 2013 fire was not the first fire affecting the HEZ, yet it has retained its high habitat value.
155. As stated above, the proposed clearing of 3.2 ha of Lower Hunter Spotted Gum Ironbark Forest includes 2.36 ha of mature forest. The mature forest is, as Dr Debus deposed, the same forest type and structure as that which occurs on sites elsewhere in the HEZ where there have been recorded sightings and breeding events of the Regent Honeyeater, including the 2007/2008 breeding event.
156. The fact that the ECMP mapped the development site as an area of mistletoe absence in 2004 (as Dr Debus conceded) does not, of itself, render the site as unsuitable Regent Honeyeater habitat. Neither expert opined that the presence or absence of mistletoe was likely to affect breeding success. Moreover, no targeted survey has occurred since the ECMP 2004 survey to determine the presence or absence of mistletoe on either the proposed site, or for that matter, the 2007/2008 breeding event site. And in any event, as Dr Debus said in his evidence, mistletoe is not the primary source of food for Regent Honeyeaters (T253.46). In addition, its use

is site specific and tends to occur when Regent Honeyeaters nest in she-oaks near a river (T253.47). The proposed development site is not near a river.

157. Mr Anderson concluded that the site was not known as Regent Honeyeater habitat (p 19 of his report to his first affidavit). But this opinion was premised primarily on his own site visits which were not conducted in order to specifically look for Regent Honeyeaters. Furthermore, the ecological site investigation carried out specifically for the purpose of the DA consisted of an opportunistic survey in June 2012 for the purpose of vegetation mapping where any birds observed or heard during the visit were listed. None of these surveys were targeted surveys and none occurred when the Spotted Gum was flowering. Ultimately Mr Anderson conceded the vegetation on the subject land may be Regent Honeyeater habitat and that no affirmative conclusion could be drawn concerning the absence of the Regent Honeyeater on the site merely because no one had recorded its presence at that location. It was for this reason there was the need for “habitat assessment” (T150.34-150.40). As Mr Anderson conceded, “it’s just that they haven’t been located on the land” (T151.06). This was entirely consistent with Dr Debus’ evidence.
158. In addition, Mr Anderson stated both orally (T151.12) and in his report to his first affidavit (p 19), that the vegetation type on the site and the forest elsewhere in the HEZ was the same in terms of the composition of the plants, the only variation being the density of the vegetation (T151.12-151.17). Indeed, he opined that “the vegetation type, condition and structural attributes of the mature forest [are] similar to vegetation occurring elsewhere within the HEZ area where the Regent Honeyeater has been recorded” (p 19 of his first report). He also agreed that the closest recording of a Regent Honeyeater to the subject site was 625m, in other words, “an easy flying distance” for the bird (T151.35).
159. In my opinion, the site contains Regent Honeyeater habitat that makes it likely that on occasion it will host the species. This conclusion is elaborated upon below in respect of factor d(i).
160. The clearing for the proposal will only impact 0.1% of the habitat in the wider HEZ study area, a fact repeatedly stressed by ATB. But to this proportionately small area, the impacts of the Noisy Miner must also be taken into account, which could amplify the potential impact of the clearing up to (accepting the evidence of Dr Debus) 1.8% of the HEZ study area or 2.5% of the HEZ, as defined in the 2011 LEP.
161. ATB tried to argue that because the local population of the Regent Honeyeater *could* comprise the meta-population of birds as described above (especially given its nomadic nature. The bird has been known to travel up to 530 km to find the flowering resources it relies upon to breed), that the Court ought to have regard to the Capertee Valley habitat as well, namely, an additional 71,493 ha.
162. In my view, this position is overly speculative and, in any event, both experts ultimately tended to regard, which I accept, the “local population” of Regent Honeyeaters as those occurring from time to time in the blue polygon area in the 2013 Roderick report.
163. Moreover, it is not necessarily appropriate to apply a quantitative approach to determining whether a proposed development is significant (*Newcastle & Hunter Valley Speleological Society* at [104] and *BT Goldsmith Planning Service Pty Ltd v Blacktown City Council* [2005] NSWLEC 210 at [80]-[82] per Pain J). Other factors are relevant, including as Preston J stated in *Newcastle & Hunter Valley Speleological Society* (at [104](d) and (e)):

(d) the viability (or conversely the vulnerability) of the local occurrence of the EEC and the proposal's likely adverse effect on or modification of this viability (or vulnerability), having regard to its location; size; shape, configuration and edge to area ratio; fragmentation; isolation or connectivity; condition; threatening processes; and other factors;

(e) the cumulative effect of the proposal with other existing and likely future actions;...

164. Although ATB went to some lengths to distinguish *BT Goldsmith*, including to suggest that Pain J's reasoning was erroneous, I am nevertheless of the opinion that the reasoning is both correct and apposite, notwithstanding that it concerned the application of the former s 5A(c) of the then eight part test (with its emphasis on the regional distribution, rather than the local occurrence, of the subject threatened species). I note that the decision was cited with implicit approval by Preston J in *Newcastle & Hunter Valley Speleological Society* (at [104]). I intend to apply the reasoning in *BT Goldsmith* where appropriate, albeit mindful of the cautionary note sounded in *Newcastle & Hunter Valley Speleological Society* concerning the context within which it was decided.

165. In the present case, the amount of clearing, although quantitatively small, is likely to reduce the likelihood of a successful breeding event in the future, which, given the bird's limited population would be catastrophic. Put another way, the clearing is likely to have an adverse effect on the lifecycle of the Regent Honeyeater, such that the viable local population of the bird is likely to be placed at risk of extinction. The extremely low number of Regent Honeyeaters at the local level, and the fact that it relies, as Dr Debus has opined, on a sequence of habitat "stepping stone" resources to survive in different seasons and under different climatic conditions, make a wholly quantitative evaluative approach to assessing whether or not the proposed development will place the local population at an increased risk of extinction inappropriate in all the circumstances.

166. ATB was critical of the fact that the development proposal involved, it submitted, the clearing of 3.2 ha of "potential" habitat rather than actual habitat. Again, whether or not the site should be considered habitat for Regent Honeyeaters is discussed further below. Suffice it to say that in respect of this factor, as Dr Debus emphasised in his evidence, the development site within the HEZ contains habitat contiguous with and of the same general type as habitat within the wider HEZ where Regent Honeyeaters have been sighted. Mr Anderson's evidence was not inconsistent in this regard, and on this basis it is reasonable to infer that the site is on occasion likely to be occupied by the Regent Honeyeater.

167. There can, moreover, and contrary to the submissions of ATB, be no doubt that the Court can, and indeed should, consider the cumulative impacts of the development proposal (*Newcastle & Hunter Valley Speleological Society* at [104] and *SHCAG Pty Ltd v Hume Coal Pty Ltd* [2015] NSWLEC 122; (2015) 209 LGERA 347 at [255] and [256]). This is, more as a matter of convenience, discussed separately below in the judgment but it is apposite to refer to it now given the definition of "risk of extinction".

168. In respect of the risk of extinction of the Regent Honeyeater, the species has been assessed as critically endangered. The Regent Honeyeater's population, although periodically fluctuating has been in a dramatic decline, plunging in abundance 80% in the past three generations, at both a State and national level. Its population was estimated in the 1990s to be approximately 1000-1500 birds, "down from sightings of flocks of thousands in the previous century" (p 12 of Dr Debus' first report).

According to Dr Debus, the national database “shows a significant ongoing decline in the number of Regent Honeyeaters recorded” (p 13).

169. Nevertheless, Dr Debus frankly agreed that in the short term (five years, according to him), the direct effect of the proposed development was unlikely to give rise to a risk of extinction of the local population in the study area due to direct impacts of the proposal (T335.13). He was, however, slightly more equivocal with respect to the risk of extinction in the short term due to the indirect impacts of the proposal (T337.30-337.50 and 342.14). And Dr Debus agreed that in the long term, the direct impacts of the development would also be unlikely to lead to a risk of extinction of the local population of Regent Honeyeaters (T342.35-342.41).
170. However, with respect to the long term indirect impacts of the proposed development, Dr Debus did not resile in any way from his conclusion that the indirect impacts of the development would mean that the local population of Regent Honeyeaters would become extinct (T346.12). Thus it remained his firm belief that there was a risk of extinction (as that term is defined in the TSA Guidelines) to the local population of Regent Honeyeaters by the development. For the purpose of the factor contained in s 5A(2)(a) of the EPAA, this is sufficient.
171. Dr Debus was similarly unequivocal about the detrimental cumulative impacts of habitat clearing both in the HEZ, and more generally, on the survival of the bird (T380.27-381.16).
172. The impacts of the proposed development, or to use the language of s 5(2)(a), “the action proposed”, cannot, in my view, be limited to the cleared area the subject of the development when regard is had to other approved development in the HEZ. To submit otherwise, as ATB does (it stated in its written submissions that Tumblebee was “preoccupied with actions other than the ‘proposed action’”), is to ignore established authority dealing with the need to consider the cumulative impacts of the proposed development under s 78A of the EPAA and to construe the composite phrase “the action proposed” in s 5(2) of the EPAA in an overly narrow manner, while ignoring the wider context and statutory purpose of both ss 5(2) and 78A of the EPAA.
173. Although I am inclined to agree with ATB that for present purposes to take into account potential development, including proposed developments that have not yet been approved, is arguably too speculative (I therefore place very limited weight on the *Summary of Permissible Development Within the Hunter Economic Zone* provided by Tumblebee), consideration must nonetheless be given to the cumulative impacts from the clearing associated with approvals already granted to other developments in the HEZ.
174. In this regard, a *Revised Summary of Development Approvals Involving Clearing of Native Vegetation Within Hunter Economic Zone Granted Up To April 2014* tendered by Tumblebee showed that a total of 135.2 ha of clearing had been approved in the HEZ. This is not inconsiderable. The clearing of 3.2 ha associated with the proposed development, together with the 50 ha potential Noisy Miner impact zone must therefore be assessed in this context. While it must be acknowledged that not all approvals are necessarily acted upon, and that the figure of 135.2 ha represents the total maximum additional clearing that may occur in the HEZ up to April 2014, the figure should nevertheless be taken into account when assessing the overall impact of the loss of Regent Honeyeater habitat that will be caused by the proposed development, particularly when the dominant ecological species in the HEZ is the Lower Hunter Spotted Gum Ironbark Forest, a food source for the Regent Honeyeater. It is not, in my opinion, appropriate to view, as urged upon the Court by ATB, the

clearing of the development site in isolation. It was no doubt for this reason that Mr Anderson agreed that any recovery plan for the Regent Honeyeater would include the adoption of measures to prevent the clearing of actual or potential habitat (T257.16-257.23).

175. It was put to Dr Debus that not all four stages of the lifecycle (reproduction, growth, development and death) of the local population of Regent Honeyeaters would occur in the relevant study area. His response was, "not necessarily in every year or most years; some of them could occur in some years" (T326.32), and he agreed with the proposition that the bird spends part of its year outside the study area as he defined it (T326.49). However, in my view, it is unclear whether or not Dr Debus in fact agreed with the suggestion that it was unlikely that a bird in the local population would complete all stages of its lifecycle in the study area: see the exchange at T326.44-326.50. Dr Debus may equally have been agreeing with the proposition that the Lake Macquarie area was not in the study area).

176. The following exchange then took place (T327.08-328.11):

IRISH: You'll see that the test involves whether the population being a viable local population is likely to be placed at risk of extinction, and viable is a term which is given meaning in the definition on the fifth page of the assessment guidelines, which, your Honour, is at tab 29 of the evidence book at page 662, and it means the capacity to successfully complete each stage of the lifecycle under normal conditions. Do you see that?

WITNESS DEBUS: Yes, I do, yes.

IRISH: I need your assistance as to what you say normal conditions are for the Regent Honeyeater, each stage of the lifecycle under normal conditions. We already know the complexities of the relationship between this bird and its flight patterns and flowering resources, so can you tell the Court what the Court should accept as your evidence is the meaning of normal conditions.

WITNESS DEBUS: For the Regent Honeyeater there's a concept been developed of regularly used areas, important habitat in regularly used areas, so I would say under normal conditions a heavy flowering event providing their food resources in a regularly used area of important habitat would enable the Regent Honeyeater to both survive the winter and to reproduce and its young to grow and develop and become mature in that location.

IRISH: Dr Debus, isn't that at the upper end of the spectrum of normality to expect heavy flowering in regularly used areas.

WITNESS DEBUS: Yes. Well, I can modify that and say flowering. In my experience, the numbers of birds that turn up is dependent on the degree of flowering. In heavy flowering years, we have in the past, in Bundarra and Barraba, we've had numbers of birds turn up. And when there's moderate flowering or little flowering, a few might turn up. And when there's no flowering, none will turn up. So--

IRISH: Well, what I want - I apologise.

HER HONOUR: Please let the witness finish.

WITNESS DEBUS: So what's normal, yeah, I guess over the long term, normal is, I guess - or average, whatever flowering is punctuated by these bouts of heavy flowering, and these birds try to find them. And because of their low population, they don't seem to have the protection these days of colonial nesting as they used to. They're a species that does like to nest colonially or semi-colonially if it can, but - as protection against more aggressive species and so on. But nowadays it's a bit stretched. It's not normal now, in terms of the numbers of birds that can breed at a site, and colonial breeding is no longer the norm. So that's an extra stressor on it.

IRISH: Dr Debus, when you use the word "colonial," you mean a colony of birds, do you?

WITNESS DEBUS: An aggregation of birds. Nesting - Regent Honeyeaters nesting within short distance of each other, and they'll combine to attack nest predators or whatever, or other honeyeaters that might be competing for resources. But nowadays that doesn't happen so much. They're not in the thousands they were reported in in previous decades, or last century.

177. Thus having regard to the normal fluctuations in both flowering and breeding that occurs in regularly used areas (T329.25), it was Dr Debus' position that the local population was viable, a position not disagreed with by Mr Anderson.

178. Ultimately, Dr Debus' conclusion that the possible loss of approximately 50 ha affected by the proposal (having regard to the potential Noisy Miner incursion zone) out of the larger 26,000 ha of estimated habitat in the Lower Hunter was still likely to place the "local population" of the bird at risk because it would reduce the chance of a breeding event in the area, an event obviously critical to the survival of the species in light of the very small number of individual Regent Honeyeaters left in the wild (T321.43-322.29):

IRISH: Now, Dr Debus, are you saying that that reduced chance of a breeding event within the site and the potential noisy minor impact zone is significantly likely to reduce the long term viability of the local population?

WITNESS DEBUS: Well, yes, that's my position, because, for a bird with that population level and that amount of pressure on its habitat elsewhere and so on and the trends in its population, I would have to say that if it can't breed successfully or if it has reduced breeding and population recruitment, then it's going to continue on its downward spiral. So I think, with a population of birds that small, every breeding event is critical to population improvement and therefore viability.

IRISH: Are you seriously suggesting that the local population that occupies, from time to time, 26,000 hectares of Roderick's blue polygon, is likely to be placed at the risk of extinction because of the reduced chance of a breeding event on the site and the potential noisy minor impact zone? Is that what you're telling the Court?

WITNESS DEBUS: Yes, I'm saying that any reduction in the likelihood of a successful breeding event would contribute to the pretty serious situation the bird is in now, because resources will be patchy in space and time over that whole blue polygon and I don't think the whole area is available all the time to the bird. Which is why we see concentrations in certain areas at certain times.

IRISH: So there'll be - if you deduct your 50 hectare potential noisy minor impact zone from the local population area, which is on your estimate, agreed with Mr Anderson, 26,000 hectares - notwithstanding that there will be 25,950 hectares of remaining, available, suitable, modelled, high value habitat, you're saying that the reduced chance of a breeding event on the remaining 50 hectares is likely to place that local population at the risk of extinction. Is that what you're telling the Court?

WITNESS DEBUS: I am, that's my position, for the reasons given, that a population that small. If there was a flowering event in that vicinity, or could have been, that they missed out on and there was nothing much happening elsewhere, then that's extra pressure on the bird and I think any extra pressure on a bird with a population that small - any pressure is a risk.

179. This was, and remains, powerful and compelling evidence. Having regard to the definition of "direct impacts" and "indirect impacts" in the TSA Guidelines, I accept it notwithstanding the persistent attempt by ATB to undermine it.

180. In addition to Dr Debus' evidence as to the likely deleterious effect of the proposed development on the ability of the local population to breed, consideration must also be given to the negative impact the clearing of habitat or potential habitat would have on the ability of the bird to forage for food, having regard to its ecology and the inextricable relationship between foraging and breeding, as described above by Dr Debus.

Application of the Precautionary Principle

181. I accept the submission of Tumblebee that the precautionary principle ought to be applied in this case, especially in respect of this factor, and that the Court should err on the side of caution when weighing up the impact of the clearing associated with the proposed development for the purpose of making its overall assessment of significance.

182. An application of the precautionary principle, in conformity with the edict contained in the TSA Guidelines, almost compels the conclusion that there is a real chance or possibility that the clearing proposed on the development site will have an adverse effect on the lifecycle of the Regent Honeyeater such that the viable local population will be placed at risk of extinction.

183. First, the proposed development poses, for the reasons Dr Debus gives, a threat (not an actuality) of serious or irreversible environmental damage: at the very worst, extinction; at the very best, the continuing decline of this critically endangered species through loss of habitat, with a possible concomitant diminution of the genetic base of the species. As both Dr Debus and Mr Anderson observed (T256.48-557.35):

LAZARUS: And in addition to the risk of extinction, you would agree, wouldn't you, that such low numbers potentially give rise to what I might describe as genetic issues?

WITNESS ANDERSON: I couldn't really answer that. Potentially, yes, in terms of what I know of general population dynamic theory, but in terms of this specific example, I wouldn't know what numbers would bring about that effect.

LAZARUS: Dr Debus, are you able to assist with that question?

WITNESS DEBUS: Only to the extent that concern about genetic aspects prompted Taronga Zoo to take a few more birds from the wild to sort of broaden the genetic base in their captive breeding stock, but as far as the wild population goes, I think there's been no suggestion of a genetic crisis yet, but in genetic theory I think a population of about 500 is sometimes suggested as a sort of a safety net figure, if you like, below which genetics might become an issue. Yeah.

LAZARUS: Thank you for that, Dr Debus. Mr Anderson, if you were involved, and I'm not suggesting you are, but if you were involved in preparing a recovery plan for the Regent Honeyeater, can I suggest [sic] to you that the first recommendation you would make would be to adopt measures to prevent the clearing of actual or potential habitat? Do you agree with that?

WITNESS ANDERSON: It would certainly be one of the immediate primary measures. I think that the matter you just raised will probably also require some examination as well because it may well be that no matter what we do or don't do with the habitat, if it's becoming genetically unavailable, as you may have inferred there, then it's all in vain.

LAZARUS: So are you suggesting nothing should be done?

WITNESS ANDERSON: No, I didn't suggest that at all.

LAZARUS: So does that mean that you're suggesting that clearing should take place because it's genetically unviable?

WITNESS ANDERSON: No, I didn't. No, no, I didn't say that at all.

184. Second, there certainly exists a lack of scientific certainty as to the resultant environmental harm or damage. This uncertainty includes:

1. uncertainty as to the number of Regent Honeyeaters left in the wild. Although the best estimate is between 350-400, the Joint Expert Report acknowledged that it "could be less than 250";
2. uncertainty as to the absence or presence of Regent Honeyeaters on the subject site. Dr Debus stated in his first report (p 26) that it was reasonable to assume that the bird was likely to use the development site. Mr Anderson agreed in oral evidence that the absence of sightings could be explained by a lack of records (T150.39);
3. uncertainty as to the extent of Regent Honeyeater habitat in the Lower Hunter. The estimate of 26,000 ha of available habitat is just that. It has not been measured or surveyed on the ground. There is therefore uncertainty as to the actual amount of suitable Regent Honeyeater habitat remaining in the Lower Hunter;
4. uncertainty as to the potential exclusionary impacts of the Noisy Miner, as elaborated upon above;
5. uncertainty as to the presence of Regent Honeyeaters in different areas in 2012. The raw sightings data compiled by Birdlife Australia in order to arrive at maximum counts, as the Further Supplementary Joint Expert Report and oral evidence revealed, could be either an overestimate or an underestimate;
6. uncertainty as to the identity of the local population. It was not certain whether the Lower Hunter and HEZ population of Regent Honeyeaters was part of the same (that

is to say, part of a meta-population), or a different population of birds from those in the Capertee Valley;

7. as will be further elucidated below, uncertainty as to whether the vegetation cleared is Regent Honeyeater habitat or merely potential habitat;
8. uncertainty over the risk of genetic diversity, as discussed above;
9. uncertainty as to the long term effect of the clearing associated with the development proposal on the viability of the local population of Regent Honeyeater; and
10. uncertainty as to the cumulative effect of clearing associated with other approved developments within the HEZ, and the amount of that clearing, as mentioned above.

185. Given the threat of serious, if not irreversible, harm to the Regent Honeyeater, and given the scientific uncertainty surrounding many aspects of this species' continued existence, applying the precautionary principle it can comfortably be concluded that it is likely that the development proposal will have an adverse effect on the lifecycle of the Regent Honeyeater such that the viable local population will be placed at risk of extinction.

In Relation to the Habitat of the Threatened Species, the Extent to Which Habitat is Likely to be Removed or Modified as a Result of the Proposed Development; Whether an Area of Habitat is Likely to Become Fragmented or Isolated from Other Areas of Habitat; and the Importance of the Habitat to be Removed, Modified, Fragmented or Isolated to the Long Term Survival of the Species (Factor (d))

186. In relation to the assessment of the proposed development under s 5A(2)(d) of the EPAA, the TSA Guidelines state the following (p 8):

Interpretation of key terms used in this factor

Habitat: the area occupied, or periodically or occasionally occupied, by any threatened species, population or ecological community and includes all the different aspects (both biotic and abiotic) used by species during the different stages of their life cycles.

Extent: the physical area removed and/or to the compositional components of the habitat and the degree to which each is affected.

Importance: related to the stages of the species' life cycles and how reproductive success may be affected.

Locality: the same meaning as ascribed to local population of a species or local occurrence of an ecological community.

Application

When applying this factor, consideration must be given to all short- and long-term impacts (direct and indirect) on habitat which are likely to support threatened species, populations and ecological communities regardless of whether the habitat occurs on the subject site. This applies to both occupied and unoccupied habitat because the recovery of threatened species, populations and ecological communities relies on them having access to suitable habitat to move into as numbers increase.

187. Notwithstanding the definition given to the term “habitat” in the Guidelines, the term “habitat” has been statutorily defined to mean “an area or areas occupied, or periodically or occasionally occupied, by a species, population or ecological community and includes any biotic or abiotic component” (see s 4(1) of the TSCA picked up by s 4(1) of the EPAA).
188. In conformity with the reasons discussed above, it is appropriate that the precautionary principle also be applied to the consideration of this factor.

The Extent to Which Habitat is Likely to Become Removed or Modified as a Result of the Proposed Development (Factor (d)(i))

189. The TSA Guidelines state the following in relation to the application of this factor (p 8):

The extent to which habitat is likely to be removed or modified should be determined by estimating the total area of habitat to be directly and indirectly impacted by the proposed development, activity or action. This may be an estimation of the surface area of land to be affected, and/or in some cases the number of key habitat components to be affected.

190. As is tolerably clear from the material and the evidence referred to and discussed above, it may readily be inferred that the proposed development site is within an “area” which is occupied by the Regent Honeyeater having regard to the relevant definition of “habitat”.
191. The site has been modelled as part of a larger area of suitable habitat by Biosis (the 2008 Biosis report) and by Mr Roderick (the 2013 Roderick report). Regent Honeyeaters were recorded in the 2007/2008 breeding event in the same forest type in the vicinity of the development site, and there was a recorded breeding attempt in 2012. The site is within easy flying distance of both the breeding event and the breeding attempt.
192. Notwithstanding that the proposed site may also be considered to be an “area” and that the Regent Honeyeater had not been detected on that site, the development will nevertheless remove habitat of the bird. First, as has been referred to above, the lack of records of the Regent Honeyeater actually using the site may be explained by a lack of recent targeted surveying and a lack of access to the site, which is on private land (see above at [141]).
193. Second, actual observations are only one method of establishing that a species occurs in a particular area. Another is to infer the likely occupation, even if only occasional, as the definition of “habitat” permits, based on the habitat characteristics of the site and sightings of the species in similar contiguous vegetation surrounding the site. As Tumblebee submitted, this may be a preferable approach to adopt when the species is as rare as the Regent Honeyeater. Mr Anderson in effect concurred

when he stated that “you need to assess this bird by habitat” (T148.34 and again at T150.40). In the present case, the evidence demonstrates a sufficient similarity between the vegetation composition of the subject site and the vegetation composition of areas where the bird has been previously observed. It may be reasonably inferred that the proposed development site is likely to be at least occasionally occupied by the Regent Honeyeater.

194. Third, in any event, as the TSA Guidelines state in relation to s 5A(2)(d), the factor must be considered in relation to both “occupied and unoccupied habitat”.
195. Fourth, to hold otherwise would be to adopt an overly restrictive construction of the definition of “habitat” by confining the “area” to the subject site in a manner that is not supported by its text, context, or the objects of the TSCA (see s 3), a piece of beneficial legislation. Rather, the preferable construction of the term “area”, and thus “habitat”, is one that includes the subject site and surrounding land, especially in circumstances where there is a large section of contiguous vegetation with similar habitat characteristics nearby.
196. I therefore accept that Regent Honeyeater habitat will be removed as a result of the proposed development.
197. As to the “extent” of the removal, ATB again sought to draw comfort from the fact that only 3.2 ha of habitat was sought to be removed and that the “extent” was relatively modest.
198. There is no doubt that the extent of the removal or modification of habitat initially appears small. But, and consistent with the TSA Guideline for this factor, consideration must be given to the short and long term impacts, both direct and indirect, on habitat that are likely to support the Regent Honeyeater regardless of whether the habitat occurs on the subject site. This permits a more nuanced approach to assessing the extent of the removal or modification of the habitat. For example, it includes contemplation of the 50 ha potential Noisy Miner impact zone (an indirect impact of the clearing of the 3.2 ha) and to the further fragmentation of Regent Honeyeater habitat generally, particularly when regard is had to the other approved developments in the HEZ and their associated clearing impacts. Once these factors are considered, the “extent” of the removal or modification of the Regent Honeyeater is not, in my view, as modest as ATB suggests.

Whether an Area of Habitat is Likely to Become Fragmented or Isolated from Other Areas of Habitat as a Result of the Development (Factor d(ii))

199. In respect of this factor the TSA Guidelines state (p 8):

When deciding whether an area of habitat is likely to become fragmented or isolated from other areas of habitat, it is necessary to identify and assess the patterns and extent of habitat connectivity, the affected habitat may form part of a habitat corridor, cul-de-sac or isolated area. Recent Landsat imagery, aerial photographs, vegetation maps, topographic maps and data obtained from on-ground investigations are useful information sources for assessing this. The dispersal and genetic exchange mechanisms of individual species should be considered. For example, will the isolation of habitat for threatened species, populations or ecological communities that are currently connected or near to each other adversely affect the maintenance of gene flow and the ability to sustain viable populations. It should also be noted

that isolation can occur through a variety of habitat modifications and is not confined to the clearing of vegetation.

200. While Dr Debus concluded that the proposed development would, when other developments approved in the HEZ were taken into account, cumulatively lead to habitat fragmentation in the HEZ, he nevertheless accepted that the proposed clearing of 3.2 ha, of itself, “would not cause an area of habitat to become fragmented or isolated” (p 27 of his first report).

The Importance of the Habitat to be Removed, Modified, Fragmented or Isolated in the Long-Term Survival of the Regent Honeyeater in the Locality (Factor d(iii))

201. The term “locality” in this factor is defined to the same effect as “local population” in factor (a) in the TSA Guidelines. The concept of “importance” relates to the stages of a species’ life cycle and how reproductive success may be affected.
202. Both a qualitative and quantitative approach should be adopted when assessing the importance of the habitat likely to be removed, modified, fragmented or isolated in the locality. The TSA Guidelines state that this approach should encompass (p 8-9):
- An assessment of the area and quality of habitat of the threatened species, population or ecological community that occurs within the locality from recent Landsat imagery, vegetation mapping, topographic maps, air photos and in some cases data obtained from on-ground investigations.
 - An estimate of the area and quality that the habitat of the study area represents in relation to the area and quality of that habitat within the locality.
 - An assessment of the role of the habitat to be affected in sustaining habitat connectivity in the locality.
 - An assessment of the ecological integrity of the habitat to be affected in the study area, in relation to the ecological integrity, tenure and security of the habitat which will remain both in the study area and in the locality.
203. Dr Debus agreed in cross-examination that he had not properly carried out the analysis required by s 5A(2)(d)(iii) of the EPAA in his first report insofar as he had not considered the local population to be the Regent Honeyeaters that occupied from time to time that area identified in “Roderick 2013’s mapped blue polygon” (T366.42).
204. However, this is not the end of the matter. As Dr Debus made tolerably clear both orally and in his written reports, and as much of the evidence makes plain (see above at [178]-[179]), the retention of habitat is very important to the long-term survival of the species. As Mr Anderson agreed (T257.37-257.41), habitat clearance is “one of the main threats to the Regent Honeyeater”. Some of this habitat, particularly the Lower Hunter Spotted Gum Ironbark Forest (the dominant species within the HEZ), is located in the HEZ, the relative importance of which (that is to say, relative to other areas of habitat in, for example, the Capertee Valley) has been established on the material before the Court having regard to the breeding event of 2007/2008, the subsequent sightings since in the HEZ (for example, in 2009), the breeding attempt in 2012, and the long term adverse impact of the fragmentation of habitat caused by this and other developments in the HEZ.

Whether the Proposed Development Constitutes or is Part of a Key Threatening Process or is Likely to Result in the Operation of, or Increase the Impact of, a Key Threatening Process (Factor (g))

205. This factor refers to those key threatening processes listed in Sch 3 of the TSCA.
206. The TSA Guidelines relevantly state that (p 11):

In addition to deciding whether the action/activity constitutes a KTP [key threatening process], consideration must be given to whether the proposal is likely to exacerbate a KTP. Species listed in the determination as being ‘at risk’ warrant particular consideration if these species are known or likely to occur within the study area of the development or activity.

207. The development proposal involves the clearing of native vegetation, a fact conceded by ATB in its written submission. The clearing of native vegetation is listed as a key threatening process under Sch 3 of the TSCA. In addition, both experts agreed in the Joint Experts Report that habitat clearance was one of the primary threats to the Regent Honeyeater. The clearing of native vegetation was also specifically mentioned as a threat to the Regent Honeyeater in the decision to list the species as critically endangered in 2010.
208. ATB relied on the small size of clearing (ignoring the 50 ha potential Noisy Miner impact zone) occasioned by the development to argue that limited weight should be given to this factor. But, as stated above, a simple numerical analysis alone is inappropriate to determine the relative importance of the habitat to be destroyed by the proposal and should not, despite the urgings of ATB, result in minimal weight being accorded to this factor, especially in light of the negative cumulative impacts of habitat clearing in the HEZ for the long term survival of the bird.
209. Another key threatening process is the “aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners”.
210. It is true that records exist of Regent Honeyeaters having been sighted and having bred within the HEZ on the edge of land that has already been cleared (the power line easements) which is potential Noisy Miner habitat. But adopting a precautionary approach it is nevertheless reasonable to draw the inference, based on the available evidence, that the clearing of habitat necessitated by the development is likely to expose the surrounding forest to an increased risk of incursion by Noisy Miners, thereby decreasing the likelihood that it will be attractive for use by the Regent Honeyeater.
211. Several additional observations may be made about this issue:
1. first, that this *will* occur (aggressive exclusion by abundant Noisy Miners) cannot be, and is not required to be, stated categorically; it is sufficient that it is, as I have accepted, likely to occur, albeit in the longer term (the short term risk of this occurring given the slow rate of colonisation is low: T372.42-373.03 and 374.46-375.01);
 2. second, even if the development is not part of this key threatening process, it is nevertheless likely to result in the operation of, or increase the impact of, aggressive

exclusion of Regent Honeyeaters from woodland and forest habitat by abundant Noisy Miners;

3. third, the Noisy Miners do not need to be presently “abundant” for this factor to apply (this has not been demonstrated by Tumblebee). It suffices, as stated immediately above, that the clearing is likely to result in the operation of a key threatening process, which, given the correlation between clearing and the colonisation of the edge of cleared areas by Noisy Miners (the so-called ‘edge effect’), is an inference I am prepared to draw; and
4. fourth, even though Dr Debus made assumptions about the landscaping component of the proposed development absent recourse to the conditions of consent, the fact remains that the proposed action will result in clearing of native forest and where such clearing occurs, Noisy Miners have a tendency to colonise and exclude other avian species.

212. Anthropogenic climate change is also listed as a key threatening process for threatened species generally. Although in his first report Dr Debus relied upon anthropogenic climate change insofar as it led to increasingly severe and frequent droughts adversely impacting upon the Regent Honeyeater’s food resources (p 29), he frankly admitted in cross-examination that the proposed action would not contribute to climate change or heighten the threat of anthropogenic climate change (T376.49-377.16). On this basis it may be presently ignored as a key threatening process.

213. I find that the proposed development constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process for the purpose of s 5A(2)(g) of the EPAA.

Cumulative Impact of the Proposed Development

214. The cumulative impact of the development is a relevant matter to consider not only when applying the seven part test under the EPAA as discussed above, but also, in my opinion, as a separate factor given the broad discretion given to a decision-maker under s 78A(8)(b) of the EPAA. I do not, for the reasons given already (see at [163]-[164]), accept the criticisms levelled at *BT Goldsmith* by ATB in this regard.

215. I accept the submission of Tumblebee that based on the evidence presented to the Court in this case, it may be concluded that the Regent Honeyeater habitat in the HEZ is likely to suffer from cumulative impacts associated with the clearing associated with other approved developments and the clearing associated with the proposed development.

216. Dr Debus maintained his written position in his oral evidence that he had no doubt that cumulative incremental habitat clearance was likely to have a significant impact on the Regent Honeyeater’s continued existence. He stated during cross-examination that (T380.27-380.32):

...if there’s ongoing clearing, then that leaves no room for doubt that the impact could be cumulative. Incremental habitat loss – I don’t see how it can be any other way than it would undoubtedly have a cumulative impact, if we’re talking about incremental habitat clearance related to other clearing approvals in addition to the project site. ...

217. The cumulative impact was “significant” because, according to Dr Debus, “I equate incremental habitat clearance with significant cumulative impact on a species

that occupies those sorts of habitats and has that sort of population level and trend, and I don't – I can't conclude otherwise" (T381.13-381.16).

218. True it is that, as discussed above, there is no certainty as to what or when the other approvals granted for the development in the HEZ will be carried out, but it is reasonable to conclude that a reasonable proportion of the 135 ha will be cleared given that:

1. 877 ha or 43% of the land in the HEZ is zoned IN1 – General Industrial in the 2011 LEP;
2. the selection of land for industrial zoning with the HEZ was based on the 26 February 1999 Ecotone report which assumed that the Regent Honeyeater was only an "occasional and infrequent" visitor to the site, and therefore, did not include conservation zones designed to protect the habitat of the Regent Honeyeater;
3. in March 2005 DEC issued an assumed concurrence under cl 64 of the EPA Regulations for permissible development within the HEZ which did not apply to the Regent Honeyeater and its habitat; and
4. although the significance of the industrial zoned lands in the HEZ to the Regent Honeyeater was recognised in January 2008 in connection with the assessment of the major project application for Precinct 1 of HEZ (and see also the 2008 Biosis report), approval was nonetheless granted in respect of Precinct 1 on 29 April 2009, with no changes to planning controls mooted in response to the Biosis report.

219. Finally, it should be noted that the 135 ha of approved clearing within the HEZ presently excludes any potential Noisy Miner impact zone that may be associated with each cleared area. This area will magnify the impacts of the clearing beyond the boundary of each development thereby exacerbating the impacts of the clearing.

220. In my view, the cumulative impact of the proposed development, having regard to the detrimental effect of continuing incremental loss of Regent Honeyeater habitat within the HEZ, serves to exacerbate the decline in numbers of the bird and is a factor that must be taken into account.

Ameliorative Measures

221. The ameliorative measures proposed by the development may also be considered by the Court in assessing its impact on the Regent Honeyeater (*BT Goldsmith* at [12], *Corowa* at [57] and *SHCAG* at [154] and the authorities referred to thereat).

222. The following terms of the development consent were submitted by ATB to be salient in this context:

Landscaping and Clearing Considerations

8. This consent allows the removal of trees and other vegetation from the site of approved buildings, structures, permanent access ways and car parks. It does not authorise the clearing of land in contravention of any other Act or instrument made under an Act concerned with soil erosion, protection of riverbank vegetation or catchment areas or the like, or threatened species, populations or communities.

Prior to any clearing of the subject land, the registered proprietor of the land shall obtain any relevant approval required under the Native Vegetation Conservation Act, 1979, and/or the Threatened Species Conservation Act, 1995.

Reason

To ensure that only trees and vegetation directly affected by the development are removed from the site, and to grant approval for such removal and to avoid any unnecessary or excessive clearing and ensure appropriate approvals are obtained.

9. All reasonable measures shall be taken to protect all other vegetation on the site from damage during construction. All useable trees and shrubs shall be salvaged for re-use, either in log form, or as woodchip mulch for erosion control or site rehabilitation.

Reason

To protect the landscape and scenic quality of the locality, to maintain ground surface stability to ensure sensitive management of vegetation and other natural resources.

10. The landscape proposal for the site shall be modified, as shown on red upon the approved plan, to provide for increased vegetated buffer width of ten (10) metres adjacent to the site boundary, sufficient to accommodate suitable taller growing trees and/or screening shrubs.

Reason

To ensure that site landscaping works include appropriate tree planting and screening adjacent to the said boundary in order to provide visual relief to the paved areas and increased privacy to adjacent premises.

11. Landscaping works shall be carried out in compliance with the provisions of the Habitat Management Strategy including the list of plants recommended for use in landscaping and bush regeneration works provided as Appendix F of the Habitat Management Strategy and the details indicated on the submitted landscape design plan, except as required to be modified under the terms of this consent.

Reason

To ensure that adequate and appropriate provision is made for landscaping of the site in association with the proposed development, to enhance the external appearance of the premises and to contribute to the overall landscape quality of the locality.

12. Clearing is to be undertaken as per the Vegetation Clearing Plan by RPS dated October 2012. The boundary of the area to be cleared is to be clearly marked and trees are to be felled so that they fall within the area to be cleared. No machinery or vehicles are to enter the vegetation outside the development footprint. No stockpiling of soil or cleared vegetation is to occur within vegetation outside of the development footprint. A qualified ecologist must be present during all clearing.

Reason

To reduce the impact that the clearing of the endangered ecological community has on adjoining vegetation.

...

15. Any landscaping is to use native species of local provenance. Native species must be characteristic of the endangered ecological community Lower Hunter Spotted Gum-Ironbark Forest

Reason

To enhance foraging opportunities for native fauna.

223. Of these conditions, condition 15 is the most important insofar as it provides that any landscaping must use native species of local provenance which must be characteristic of the Lower Hunter Spotted Gum Ironbark forest, the habitat of the Regent Honeyeater.
224. Several responses may be made to ATB's submission. First, these conditions were imposed by the development consent and do not form part of the DA. They do not constitute ameliorative measures that form part of the development proposal, and therefore, ought not be taken into account for the purpose of the determination under s 78A(8)(b) of the EPAA, which is directed to the DA and not the consent (*Corowa* at [57] and *Newcastle & Hunter Speleological Society* at [83] and the cases referred to thereat).
225. Second, even if the conditions were relevant, they nevertheless permit the clearing of habitat of the Regent Honeyeater in the HEZ, an area where the bird has been observed and has previously bred, and moreover, they may result in the colonisation of the area by aggressive Noisy Miner birds which tend to exclude species such as the Regent Honeyeater.

The Consent is Invalid Absent a SIS

226. Although mutually listed as an issue by the parties at the commencement of the hearing, neither party submitted that if the Court concluded, as a jurisdictional fact, that the proposed development was likely to significantly affect the Regent Honeyeater and a SIS was required, that the consent could nevertheless be valid. Because an essential precondition to the exercise of power by the council to grant approval has not been met, having regard to the principles espoused in *Project Blue Sky Inc v Australian Broadcasting Authority* ([1998] HCA 28; (1998) 194 CLR 355) and the cases cited above (at [76]), this position was correct.

Conclusion and Orders

227. There remain, at best guess, 350-400 Regent Honeyeaters left in the wild in the world. The number may be lower (less than 250). The majority of these birds are located in New South Wales, with approximately 20% of the population of the remaining birds located from time to time in the HEZ due to the presence of suitable habitat. Preservation of this area is therefore of vital importance to the long term

survival of the species. Habitat destruction is a primary reason for its imperilled status.

228. As the preponderance of the material before the Court, including the expert evidence of Mr Anderson and Dr Debus, and the discussion above demonstrates, the clearing proposed in the development application, although relatively small in area, will indirectly or in the long-term be likely to significantly affect the Regent Honeyeater (a threatened species), or its habitat. This is sufficient for the purposes of s 78A(8)(b) of the EPAA.

229. It follows that a SIS was required to be prepared. Because none was, a consequential declaration of invalidity must follow.

230. ATB made no submissions to the effect that a restraint ought not be ordered by the Court if the consent was set aside and I propose to order one.

231. Finally, it is apposite to observe, in light of some of the statements made by ATB during the hearing, that this ruling does not mean that the development (or indeed others like it in the HEZ) cannot not be approved by the council in the future.

232. This judgment does no more than mandate that this particular DA, if it is to be re-lodged, must be accompanied by a SIS, which, because of the prescriptive content of that document (as governed by s 110 of the TSCA), will permit the council to make a fully informed decision as to the ecological impact of the proposed development on this critically endangered species. The council will not be precluded from weighing up other considerations, such as the economic benefits of the proposed development, in its consideration of the DA. And the result, of course, may ultimately be the same, namely, approval of the development. This will be a matter for the council after proper consideration of all of the material before it.

233. The orders of the Court are therefore as follows:

1. the Court declares that development application no 8/2012/586/1 determined by the second respondent on 23 October 2013 ("the consent") is invalid and of no effect;
2. the first respondent is restrained from undertaking any development in reliance on the consent;
3. the first respondent is to pay the applicant's costs of the hearing unless, within 14 days of the publication of these reasons, a different costs order is sought by notice of motion by any party; and
4. the exhibits are to be returned.

Amendments

14 March 2016 - Amendments from paragraphs to quotes

Slip Rule Amendment at paragraph 233(3) from:

"(3) the second respondent is to pay the applicant's costs of the hearing unless, within 14 days of the publication of these reasons, a different costs order is sought by notice of motion by any party; and"

"(3) the first respondent is to pay the applicant's costs of the hearing unless, within 14 days of the publication of these reasons, a different costs order is sought by notice of motion by any party; and"

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Decision last updated: 14 March 2016