

Submission regarding Referral Reference Number: 2015/7520

Title of Referral: Roads and Maritime Services/Transport - land/east of King Georges Road and St Peters/NSW/Construction and operation of the Westconnex New M5

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra 2601

By Email: epbc.referrals@environment.gov.au

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To the Minister for the Environment

Wolli Creek Preservation Society (WCPS) submits that the “New M5”, being the proposed action, will have a significant impact on matters of national environmental significance protected by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and should be rejected as unacceptable under section 74 of the EPBC Act, as detailed below.

We ask the Minister to call a public enquiry in relation to the referred action.

A. Incorrect or misleading information concerning the Referral of proposed action document

Issue summary

This referral document in its current form, based on our review, is gravely deficient in a number of areas and misleading in others. We believe there are a number of shortcomings in various content areas where we consider we have some expertise. These include insufficient and misleading information and incorrect or unsubstantiated claims. We have also identified a widespread failure throughout the document to present and cite relevant references. This all leads to a failure to inspire confidence in the calibre of the information conveyed and the assessments made in these and other content areas. In short, the overall quality of the referral is not of a sufficient standard and does not allow the public to adequately consider the referred action or to comment on it. We object to the ‘parallel’ running of the construction design phase and the EIS document preparation for the proposed Westconnex New M5 project.

Conclusion

We submit therefore that the proposed action should be rejected as unacceptable under section 74B EPBC Act.

Details

1. In the absence of details regarding the final design and configuration for the works i.e. “The final configuration of the twin main alignment tunnels, surface road connections and ancillary surface facilities” (page 9), we also submit that a determination of the proposed action by the Department of the Environment cannot and should not be made. The absence of a Construction Environmental Management Plan (referral page 45), and an offset package in relation to the identified Cooks River Castlereagh Ironbark Forest CEEC (referral page 22), and offset areas for the Green and Golden Bell Frog (referral page 24) compounds this lack of detail.

2. The acronym “MNES” is not defined in the referral documentation. We believe MNES is meant to stand for “Matters of National Environmental Significance”, but the general public may not be aware of this and therefore this omission by the proponent could cause confusion. We found the acronym “MNES” used in the main referral document on pages 10, 11, 13, 17, 45, and 51. The omission of the definition of the acronym adds to the deficient informational value of the referral document.

3. Page 9 - Section 2

This section is headed “Detailed description of proposed action” but contains only a summary of “key components” as stated in the beginning of the second paragraph. This leads to the conclusion that there are other components not mentioned in the referral documentation, rendering the document inadequate to allow the general public to arrive at proper judgments of likely impacts on the environment.

When trying to ascertain the exact route the proposed M5 tunnels would take or exact location of mentioned tunnel stubs, no clear description can be found in the referral or its attachments. The summary of the proposed action in section 1 includes a list of geographic coordinates (section 1.2) given to indicate the project corridor location and attachment 1 includes a number of maps as spatial files, but the exact run of the tunnels or proposed M5 in relation to the existing M5 route remain unknown. For this reason it appears that the referral information published is incomplete, and therefore the proposed action should be rejected under section 74B EPBC Act.

4. Page 17 - Section 3

Subsection 3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

The referral document states: “A search of the Australian Wetlands Database as listed on the DotE website was undertaken on 2 July 2015. Wetlands of International Importance (declared Ramsar wetlands) occur within the vicinity of the proposed action.” “Nature and extent of likely impact NA”.

This section is incomplete, thereby creating confusion. The proponent needs to clarify whether there are or whether there are not any such wetlands, and if yes, discuss the likely impacts. This omission adds to the inadequacy of the whole referral document, in relation to describing the proposed action, in relation to the likely impacts of the proposed action on the environment, and in relation to properly informing the public. For this reason we believe that the proposed action should be rejected under section 74B EPBC Act.

B. Section 3 - Subsection 3.1 (d) Listed threatened species and ecological communities

P. 19 - 22 Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion

Issue summary

The RMS referral for the Westconnex New M5 does not adequately address the impacts of destroying a remnant of the Critically Endangered Ecological Community **Cooks River/ Castlereagh Ironbark Forest of the Sydney Basin Bioregion** listed under the EPBC Act 1999. The referral describes the permanent loss of 1.4 ha of this Critically Endangered Ecological Community (CEEC) and we contend that certain information regarding this remnant in the referral is inaccurate and misleading. This would seriously limit genuine, properly informed public comment. The destruction of this bushland remnant which is of very high conservation value (although this is not acknowledged in the referral), would result in decline of functionally important species for this example of Cooks River Castlereagh Ironbark Forest. This bushland remnant was specifically protected in the original M5 motorway construction and is entitled to protection under the EPBC Act from any future works. With the final configuration of the tunnel and surface parts of the M5 yet to be determined, we contend that the impacts of an undetermined route cannot be adequately assessed by the public, or the proponent.

Conclusion

We request that the *proposed action be rejected as unacceptable under section 74B EPBC Act.*

Details

The RMS referral for the Westconnex New M5 does not adequately address the impacts of destroying a remnant of the Critically Endangered Ecological Community **Cooks River/ Castlereagh Ironbark Forest of the Sydney Basin Bioregion** listed under the EPBC Act 1999.

This Referral describes the permanent loss of 1.4 ha of this Critically Endangered Ecological Community (CEEC). We found information regarding this remnant in the referral inaccurate and misleading as summarised in Table 1 below.

Issue	Referral document quote	Conclusion
The permanent loss of 1.4 ha of a critically endangered ecological community is downplayed and treated as uncertain.	p. 21 “The proposal will result in a permanent loss of 1.4 ha of the extent of CRCIF within Area 1 of the project corridor”. p. 20 “The footprint will likely be reduced once a final design has been selected and tenderers have been further encouraged to avoid areas of high biodiversity value.”	Genuine public comment is limited when there are contradictory statements of impacts. Genuine public comment is limited because the final route of the motorway is unknown.
The referral inaccurately claims removing 77% of the occurrence of a CEEC at this site will not remove any functionally important species.	p. 21 “The removal of 1.4 hectares would not remove any specific functionally important species from the area.”	A comparative species list of the two sites would show functionally important species only in the larger 1.4 ha remnant.
The referral inaccurately implies the 1.4 ha remnant is ‘disturbed’ and ‘not critical’ to the survival of this CEEC.	p. 20 “The proposed action will occur in previously disturbed and fragmented areas. No habitat has been declared as critical habitat for this community in the Critical Habitat Register.”	The 1.4 ha remnant has very high conservation value and its location, size and good condition meet the criteria for remnants critical for the survival of this CEEC.
Clearing an offset area for a previous project compounds biodiversity loss.	The cumulative effects of destroying a biodiversity offset area is not addressed.	Offsets require meaningful legislative protection in perpetuity.

- **“Will the proposed action interfere with the recovery of an ecological community:** The proposal will result in a permanent loss of 1.4 hectares of the extent of CRCIF within Area 1 of the project corridor.” (referral, page 21).

This loss is downplayed in sections of the report by vague references to a possible design change in the motorway route. In all seriousness, how can the impacts of an undetermined route be adequately assessed by the public or the proponent?

This CEEC remnant in question is adjacent to Canterbury Golf Course and known as ‘Beverly Grove’.

Land clearing is as a key threatening process for this critically endangered ecological community (TSSC 2015). The Westconnex New M5 proposal must be modified to ensure the project does not contribute to this key threatening process through the permanent loss of a very high conservation value remnant of this CEEC. Clearing 1.4 ha of this community fulfils the Significant Impact Criteria under the EPBC Act 1999 because it will both **reduce the extent of an ecological community fragment** and **increase fragmentation of an ecological community**. These are identified as criteria for significant impact under the Australian Government Department of Environment Significant Impact Guidelines for Matters of National Environmental Significance (DotE 2013, page 11).

The information in the new M5 motorway referral regarding this bushland remnant is inaccurate because it does not acknowledge its very high conservation value.

- **“Will the proposed action cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species:** The works will result in the removal of 1.4 ha of CRCIF. As above, this is less than 0.1 percent of the total estimated remaining CRCIF. The community in Area 1 contains native species in all structural layers. The removal of 1.4 hectares would not remove any specific functionally important species from the area. All vegetation is expected to be removed within the 1.4 hectares impact area, while 0.4 hectares would be retained including species characteristic of this community.” (referral page 21).

This paragraph implies that retaining the smaller 0.4 ha remnant prevents the decline or loss of functionally important species for this occurrence of this critically endangered ecological community. This is inaccurate because the larger remnant has been described as of higher species richness and higher conservation value than the smaller remnant in a previous ecological assessment (Cumberland Flora 1997). A remnant of 0.4 ha is likely to contain a subsample of the species in the larger 1.4 ha remnant, and dispersal of native seeds from the larger remnant would contribute to genetic and population diversity of the smaller remnant. Losing the larger remnant would result in decline of functionally important species for this occurrence of Cooks River Castlereagh Ironbark Forest.

- **“Will the proposed action adversely affect habitat critical to the survival of an ecological community.** The proposed action will occur in previously disturbed and fragmented areas. No habitat has been declared as critical habitat for this community in the Critical Habitat Register. There is no national recovery plan for this community that identifies areas that are considered critical habitat. However, by reducing the extent of the patch, the recovery potential at Area 1 would be limited and the long-term evolutionary development of this particular patch will be impacted.” (referral page 20).

This paragraph implies the remnant is ‘disturbed’ and ‘not critical’ to the survival of this CEEC. However, this bushland remnant has been identified as having **very high conservation value** by previous environmental assessment (Cumberland Flora 1997). This remnant is **critical to the survival of this CEEC** because of the size, condition and location of the remnant given in the key diagnostics given in the conservation advice for this CEEC (TSSC 2015).

The ecological value of the site was assessed in 1997, and the consultants report describes the bushland as having **high botanical integrity**, only weed-affected at edges, with a **relatively weed-free** core area.

“The conservation value of this site is very high and all care needs to be taken during motorway construction to avoid physical damage.”

p. 11 Cumberland Flora and Fauna Interpretive Services (1997).

This bushland remnant has been **managed for conservation** by RMS in accordance with the environmental approval conditions for the M5 East motorway (RTA 2006, approval condition 86).

The WestConnex Delivery Authority described Beverly Grove as “...a biodiversity offset area which was set aside during the initial construction of the M5 East Motorway” (p. 41 AECOM 2014). This bushland was set aside during the initial construction because of its **high conservation value**.

We refer to the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (s266B) **Approved Conservation Advice (including listing advice) for Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion** (TSSC 2015).

“National listing focuses legal protection on remaining patches of the ecological community that are most functional, relatively natural (as described by the ‘Description’) and in relatively good condition.” (Page 6, DotE).

*“Given reduced extent of the already limited distribution of the Cooks River/Castlereagh Ironbark Forest, areas that meet the minimum (moderate class) condition thresholds are **considered critical to the survival** of*

the ecological community.” (Page 10 DotE)

The Approved Conservation Advice for this CEEC states bushland areas meeting the moderate class condition thresholds are considered **critical for the survival** of this community.

The Beverly Grove bushland remnant is clearly of moderate-high condition given the criteria and diagnostics provided in the Approved Conservation Advice for this CEEC (see Table 2). Based upon the previous environmental assessment the remnant is largely weed-free, and it is greater than 0.5 ha in area, and it is East of Riverstone. If the understory is >70% native species then it is a remnant of **high condition** and therefore should be considered critical habitat for this community.

In addition to this, the combined remnant bushland area of 1.8 ha makes this one of the **larger** remaining stands of Cooks River/Castlereagh Ironbark Forest, almost all patches (83%) have an area of less than 10 ha (Tozer et al 2010). This is the only remaining patch in the Wolli Creek Valley. It therefore has high conservation value because of its **geographical location** in the eastern part of the range for this CEEC.

The good condition, size and geographical location of this bushland remnant qualify it for protection as **critical for the survival** of this Critically Endangered Ecological Community under the EPBC Act 1999.

The clearing of this bushland remnant will confer a significant impact upon the Critically Endangered Cooks River/ Castlereagh Ironbark Forest Ecological Community. This bushland remnant was protected in the original M5 motorway construction and is entitled to protection under the EPBC Act from any future works on the M5.

The NSW Biodiversity Offsets policy (OEH, 2014) imposes stringent restrictions on the use of offsets for Critically Endangered Ecological Communities. There must be a ‘like for like’ offset and there should be further consideration by decision-makers even if an offset is found. It is highly unlikely a ‘like for like’ offset for this bushland remnant can be located near the existing remnant, because it is the only remnant of this size in high condition in the locality. We recommend that the project does not proceed with this particular impact in place (p. 18, OEH 2014).

Moreover, this remnant is already designated an offset for previous project impacts- is there a process under which the compounded impacts of both developments can be assessed? Will we see a continuous replacement of offset areas until this community is extinct?

If we cannot guarantee the protection of biodiversity offsets of high conservation value from previous developments then the credibility of the offset approach to impact mitigation is seriously compromised. Without protection in perpetuity offsets will gradually be eroded and the extinction of ecological communities in urban areas is inevitable. We cannot continue to justify the clearing of remnant communities of high conservation value by declaring areas of lower value further away to be managed as ‘biodiversity offsets’ unless these offsets have meaningful legislative protection.

We call on the Federal Minister for the Environment to **protect the nationally listed Critically Endangered Cooks River/ Castlereagh Ironbark Forest Ecological Community** threatened by the current RMS Westconnex New M5 proposal.

We object to the ‘parallel’ running of the design phase and the EIS document preparation for the Westconnex New M5 project.

We question the ability of the proponent to judge that the likely impacts can be mitigated by mitigation measures proposed to be included in a future EIS while the route for the motorway is yet to be determined.

Genuine public consultation in this process has been greatly limited because the final design of the motorway route was not publicly available.

<p>A. Moderate condition class</p> <p>Represented by medium to large-size patch as part of a larger native vegetation remnant and/or with mature trees</p>	<p>Patch size >0.5 ha (Patch size >0.1 ha in areas east of Riverstone (150° 51' 38"E))</p> <p>And</p> <p>>30% of the perennial understorey vegetation cover is made up of native species.</p> <p>And</p> <p>The patch is contiguous with a native vegetation remnant (any native vegetation where cover in each layer present is dominated by native species) >1ha in area.</p> <p>Or</p> <p>The patch has at least one tree with hollows or at least one large locally indigenous tree (>80 cm dbh).</p>
<p>B. Moderate condition class</p> <p>Represented by medium to large size patch with high quality native understorey</p>	<p>Patch size >0.5 ha (Patch size >0.1 ha in areas east of Riverstone (150° 51' 38"E))</p> <p>And</p> <p>>50% of the perennial understorey vegetation cover is made up of native species.</p>
<p>C. High condition class</p> <p>Represented by medium to large size patch with very high quality native understorey</p>	<p>Patch size >0.5 ha</p> <p>And</p> <p>>70% of the perennial understorey vegetation cover is made up of native species.</p>
<p>D. High condition class</p> <p>Represented by large size patch with high quality native understorey</p>	<p>Patch size >2 ha</p> <p>And</p> <p>>50% of the perennial understorey vegetation cover is made up of native species.</p>

Table 2. Thresholds for condition categories for Cooks River/ Castlereagh Ironbark Forest. (TSSC 2015)

References regarding Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion

AECOM (2014). *Westconnex, The New M5 State Significant Infrastructure Application Report*. AECOM for the WDA.

DotE (2013). *Matters of National Environmental Significance. Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999*.

Cumberland Flora and Fauna Interpretive Services (1997). *Beverly Grove Bushland Flora Survey. A report provided for Roads and Maritime Services of NSW*.

OEH (2014). *NSW Biodiversity Offsets Policy for Major Projects*. Office of Environment and Heritage for the NSW Government

RTA (2006) *Appendix A. M5 East Motorways Conditions of Approval*.

Tozer MG, Turner K, Keith DA, Tindall D, Pennay C, Simpson C, MacKenzie B, Beukers P & Cox S (2010). *Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands*. *Cunninghamia* 11(3), 359–406.

TSSC (Threatened Species Scientific Committee) (2015). *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (s266B) Approved Conservation Advice (including listing advice) for Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion*.

P. 24-27 Green and Golden Bell Frog (*Litoria aurea*) (GGBF)

Issue summary

The disturbance site (Area 3) will destroy habitat of the Green and Golden Bell Frog (GGBF). The proposed management and mitigation actions are not detailed and appear insufficient to save the population from declining or from perhaps becoming locally extinct. Descriptions of the habitat located on Kogarah Golf Course are missing many references to the map provided in figure 4 (attachment 1). Potential habitat in the Marsh Street wetland cannot be judged for suitability due to little or complete lack of monitoring. Therefore the referral is inadequate and fails to fully inform about the extent of the significant impact of the referred action on the GGBF. Further, the referral document fails to mention details of the planned F6, which is likely to cause further stress on the GGBF population, because of the planned tunnel connection M5/F6 near Kogarah Golf Course. Proposed offset areas to accommodate the frog population are not considered in any detail and, as scientific research suggests, would most likely be insufficient in size to prevent the decline of the frog population at Kogarah Golf Course.

Conclusion

We request that the proposed action be rejected as unacceptable under section 74B EPBC Act.

Details

The Green and Golden Bell Frog (GGBF) (*Litoria aurea*) is a frog species found only in south-eastern Australia, and only along the coast between northern New South Wales and south Victoria, which can be seen on the distribution map of the Department of the Environment http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1870. The rapid decline of the frog has left heavily fragmented populations found only in approximately 20% of the described area (Burns, 2004). The description in the referral of the proposed action that the frog species can be found in NSW in a wide range of water bodies (page 23) cannot distract from the fact that the species is listed as endangered in NSW and as vulnerable in Australia.

The referral, main document and attachments, state that works in relation to the proposed action would create a disturbance site, marked as Area 3, located on the Kogarah Golf Course (figure 4, attachment 1), thereby likely to significantly impact on the frog population found on the golf course.

The descriptions of various habitats said to be located within the Kogarah Golf Course together with the map provided (figure 4, attachment 1) are largely insufficient for judging the movements of the GGBF population across the whole golf course. Breeding habitats and are marked in figure 4, also other habitats within the disturbance area, but it is not clear from the descriptions where else the GGBF has established habitat. Several sections of attachment 3, for example section 3.1 of the GGBF monitoring Aug 2004 to May 2005, refer to "Crescent Lake" and certain fairways as frog habitat, but neither the lake nor the fairways are marked on the map (figure 4). In order to arrive at a judgement of the extent of the significant impact on the GGBF population it is imperative that all habitat forms and locations are shown on the map provided. Therefore we consider the supplied map (figure 4) insufficient to support the referral. Further, the section in attachment 3 titled *Green and Golden Bell Frog Monitoring - August 2004 to May 2005* shows consistently the erroneous dates "August 2002 to May 2003" in the header of each page of this report. It nevertheless appears from some descriptions in the referral, that the GGBF population, which is said to have increased according to monitoring by Dr Arthur White (referral document, page 25), is not only inhabiting the breeding ponds in the west but also areas in the east of the golf course. The missing habitat map referencing (figure 4) together with incorrect page titles, create confusion over habitats and movements of the GGBF on the golf course and do not support proper judgment of, or comment on likely impacts of the referred action on the GGBF population. It is imperative that adequate map material is provided by the proponent of the referred action, indicating all described habitats, including fairways and golf course ponds mentioned. Therefore, the referred action should be rejected under section 74B EPBC Act.

A visual inspection of the map in attachment 4 shows that the disturbance site (Area 3) would cover approximately 25% of the golf course. A large part of the indicated shape of the area, bordering onto Marsh St in the north-west and running south-east parallel to the existing M5. This area would leave an elongated and narrow band as habitat for the GGBF population, which would be locked out from construction Area 3 (referral page. 46).

The most recent monitoring report of the GGBF, as presented in attachment 3, dated September 2013 to April 2014, states that during that period the street breeding habitat in the Marsh Street wetland could not be surveyed at all because of lack of access. Other surveys of the Marsh Street wetland, as presented in referral attachment 3, show that either no frogs were found (surveys 9/2012 - 4/2013) or only few surveys were conducted (surveys 9/2010 - 4/2011, 9/2011 - 4/2012). Those surveys do not support judgement of a GGBF population within the Marsh Street wetland, which could mean that the Marsh Street wetland has insufficient quality as breeding habitat for the GGBF. A study of the physical and chemical characteristics would be needed to ascertain whether the Marsh Street wetland is a potential breeding habitat (Hamer et al., 2002). If it is not, then the GGBF would not be able to use it as habitat and would not be able to disperse there, which would be necessary to ensure the population's survival in this area, should Area 3 cut off their dispersal to the north and east across the golf course. The referral says on page 24 that breeding of the GGBF has not been observed outside the golf course ponds, which confirms that the GGBF population has nowhere to go should it expand and need to disperse for survival. Other ponds within the golf course were excluded by the referral (page 24) as suitable breeding habitat.

The GGBF population was said to be increasing since 2003 within the golf course habitat (referral page 25). This means that dispersal rates should be expected to increase while members of the frog population will venture to find their own breeding habitats. New habitat could potentially be found at the Marsh Street wetland. As explained above, it cannot be said whether the Marsh Street wetland would offer the GGBF appropriate breeding habitat. The population in the existing breeding ponds on the golf course may expand in situ, and be negatively affected by higher population density and potential water shortages (as reported in the referral attachment 3). Dispersal of frogs would be expected across the golf course, but also limited by their exclusion from disturbance Area 3. Dispersal across remaining golf course areas cannot be judged because of missing habitat map referencing as described earlier. We conclude that areas outside the disturbance Area 3 would be insufficient to support the current GGBF population, and therefore that the proposed action would severely impact on it.

The GGBF population across NSW and Victoria has experienced “a widespread yet unexplained contraction in south-eastern Australia” (Hamer et al., 2002). Based on this scientific lack of explanation for the growing disappearance of the GGBF, we consider it impossible that the GGBF population at Kogarah golf course could be maintained by any mitigating actions after M5 construction was completed, in particular considering that 25% of their golf course habitat may be destroyed in the meantime.

The referral document implies on page 27 that mitigating actions, which we find have not been not specified, would reduce the likely significant impact of the proposed action on the GGBF population. Further, on the same page it is mentioned that offset areas would be created only for “residual impacts”. This clearly indicates that neither the impact on the GGBF species has been understood or investigated thoroughly, in particular relating to the habitat area required for the frog species.

It has been best practice to create offset areas where needed in order to protect any species, threatened or not (Pickett et al., 2013). The GGBF population in particular would require a disproportionately large offset area to ensure its survival at the site (Pickett et al., 2013). Therefore it appears impossible to maintain the GGBF population at its current level, even if mitigation activities should include offset areas. Although the GGBF is said to have the ability to disperse over longer distances and to find new breeding habitats, its decline has to date remained largely a mystery. The species is said to have disappeared from about 80% of its original habitat range and research shows that the protection of local populations is important in order to halt further decline (Burns, 2004). Changes to habitat and its loss are amongst the reasons noted for the decline of species (Pickett et al., 2013). Considering the habitat requirements of the species described above and the planned destruction of habitat within disturbance area 3, the planned provision of a buffer zone and a

corridor for movement (referral page 14) would clearly be insufficient in preventing the GGBF population at Kogarah golf course from being severely impacted by the proposed action.

Further to the likely significant impact of the proposed action on the GGBF population, the negative impact is bound to remain permanent, should the proposed F6 road (as described in another section of this submission) be constructed. Considering the added pressure on the frog habitat by the proposed F6 project, it is clear that mitigation measures for area 3 outlined in sections 3.1(d) and 4 will be insufficient to protect the frog population, because the GGBF population would be under severe stress for years to come. Construction of both roads, M5 and F6, would likely impact on the GGBF population significantly, to the extent that the population may not survive in this location. Such a decline of the GGBF population would mean one further step in rendering the species nationally endangered, whereas they are currently nationally listed as vulnerable. This establishes that the proposed action is likely to have a significant impact on the whole GGBF species nationally. The significance of a likely impact an action could have on an area or species outside the exact location of a proposed action referred under the EPBC Act was established in the “Flying Fox case” (Reference. 4).

Considering the information presented above, we conclude that the loss and changes to the GGBF breeding and foraging habitats are likely to significantly impact on the population found on Kogarah Golf Course, to the extent that it will most likely cause its local extinction. This in turn would likely cause the change of its listing from nationally vulnerable to endangered. Therefore we request that the proposed action be dismissed as unacceptable under section 74B EPBC Act.

References regarding GGBF

- Burns, E. L. (2004). *Phylogeography, Population History and Conservation Genetics of the Endangered Green and Golden Bell Frog (Litoria aurea)*. Ph. D. Thesis - School of Biological, Earth and Environmental Sciences University of New South Wales. Available from:
http://www.unsworks.unsw.edu.au/primo_library/libweb/action/dlDisplay.do?vid=UNSWORKS&docId=unsworks_679&fromSitemap=1&afterPDS=true
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- Pickett, E. J., Stockwell, M. P., Bower, D. S., Garnham, J. I., Pollard, C. J., Clulow, J., & Mahony, M. J. (2013). *Achieving no net loss in habitat offset of a threatened frog required high offset ratio and intensive monitoring*. *Biological Conservation*, 157, 156–162.

P. 29-30 Grey-headed Flying-fox (Pteropus poliocephalus)

Issue summary

The camp of the Grey-headed Flying Foxes (GHFF) at Turrella is indicated as a camp of National Importance in the Draft EPBC Act Policy Statement (DotE Dec. 2014). The information provided in the referral document in relation to the GHFF lacks clarity, is imprecise, presents deficient data, makes unsubstantiated assertions and fails to present or cite appropriate evidence. The data quoted is quite limited and not very informative as it represents a small number of monitoring sessions over a limited period of time. That GHFF camps fluctuate in number is a well-known phenomenon: they are a highly mobile species on both a temporal and spatial basis because they are dependent on occurrences of flowering and fruiting of native trees. Removal of any of the GHFF food trees in Areas 1 and 3 for the “twin main alignment tunnels, surface road connections and ancillary surface facilities” (which includes works and service compounds) will result in a reduction in available foraging habitat and so will impact on the species. There is a cumulative impact aspect to the reduction in foraging habitat. The construction works associated with the recently commenced King Georges Rd interchange upgrade have already removed some GHFF food trees. The

proposed future monitoring of the Turrella population alone will not ensure that there are no significant impacts. The Turrella camp is also important because of dispersal activities of GHFF populations from other Sydney camps, such as the recent Botanic Gardens Trust, Sydney action. While currently there is no national recovery plan for this species, and therefore no important populations of this species have been identified, the Turrella colony should nonetheless be considered a significant population of a species listed as vulnerable under the EPBC Act.

Conclusion

We request that the *proposed action be rejected as unacceptable under section 74B EPBC Act.*

Details

The information provided in this section of the referral document lacks clarity, is imprecise, presents deficient data, makes unsubstantiated assertions and fails to present or cite appropriate evidence.

The referral has failed to indicate the conservation status of the Grey-Headed Flying Foxes (GHFF) – namely “vulnerable” – under the EPBC Act.

The Wolli Creek Preservation Society (WCPS) first identified the Wolli Creek Valley GHFF camp located between the creek itself, and a major rail corridor at Turrella in mid 2007.

WCPS has been carrying out population monitoring surveys via fly-out exit counts on the third Friday of each month, without exception, since April 2008 to date, during periods of camp occupancy. At each count, between 8 to 15 volunteer counters are involved. This method of counting is commonly used and is in line with CSIRO methodology used in the national flying-fox monitoring program (census) initiated in 2013 for camps that are physically difficult to access – as the Turrella camp is. It is also the same method used by the Royal Botanic Gardens Sydney to monitor the Turrella camp. The data collected by WCPS from April 2008 to February 2015 is included in the ELA (ref 2015b page 12 & Figure 1). We note that the monitoring referred to in the referral consists only of quarterly monitoring, during 2013 and 2014 and has only reported on certain months within that period (ref DotE 2015). This monitoring is possibly part of the National census referred to earlier, however this is not made clear, and there is no relevant DotE 2015 reference listed in the information, resources and attachments at the end of the referral document.

The data quoted is quite limited and not very informative as it represents a small number of monitoring sessions over a limited period of time, particularly when compared to the much longer term monthly data available in the ELA 2015b document referenced. That GHFF camps fluctuate in number is a well-known phenomenon: they are a highly mobile species on both a temporal and spatial basis because they are dependent on occurrences of flowering and fruiting.

It is stated that the "site was not visited during the preliminary surveys (ELA 2015a) due to the high likelihood of females still carrying young and/or lactating. Therefore the assessment relies on the monitoring carried out and recorded on the DotE 'interactive flying fox viewer' (DotE 2015)" (referral, page 29). Again, details of this reference have not been listed and it is not possible to evaluate the appropriateness and relative accuracy of this monitoring methodology for assessing the specific Wolli camp population over time. Compared to the available long term data provided in ELA 2015b, the referral is presenting an unnecessarily limiting choice with what appears to be a 'snap shot' and/or extrapolated data.

The referral also states that "the GHFF is considered to have potential to forage within parts of the project corridor, particularly Area 1 and Area 3, however, recent surveys indicate the GHFF flies to the south west in search of seasonal foraging habitat." (referral, page 29). The GHFF do forage within the project corridor in Areas 1 and 3. That they do forage within the project corridor is known because:

1. The population monitoring data collected by the WCPS includes information on relative numbers flying out to the N/NW/NE, the S/SE/SW and to the W/NW, in turn, based on counting 'station' locations, and

2. There are known stands of many native trees especially *Eucalyptus* species in the project corridor that provide food for GHFF and that would be subject to impact by the proposed action. For example, there are numerous stands of planted Tallowood trees that occur in the Kingsgrove to Beverly Hills area (Area 1) that are accessed by GHFF flying in a westerly direction along the Wolli Valley. These in particular, provide important food in winter, a time when other food sources are scarce in the Sydney area.

Area 3, the Arncliffe/Kogarah Golf Course area is also visited by GHFF flying to the SE and contains a number of GHFF food trees. Some of these will be impacted by the proposed action. Removal of any of the GHFF food trees in Areas 1 and 3 for the “twin main alignment tunnels, surface road connections and ancillary surface facilities” (which includes works and service compounds) will result in a reduction in available foraging habitat and so will impact on the species.

There is a cumulative impact aspect to this reduction in foraging habitat. The construction works associated with the recently commenced King Georges Rd interchange upgrade have already removed some trees. Further removals of GHFF foraging habitat are expected. This includes both Council-owned and Crown land managed by Council; parklands which have already been "surrendered" for the current King Georges Rd construction works; and those which are planned to be surrendered in the proposed referral action. It should also be noted that the reduction in the availability of the native food source of GHFF from such removals inevitably leads to GHFF accessing exotic fruit trees in gardens which often leads to conflict with humans, and frequently injuries and fatalities to GHFF from net entanglement.

The indicated construction of “tunnel stubs” (referral, page 9) for the purpose of connecting the ‘New M5’ with a potential future southern F6 connection to Sydney will also result in the removal of very significant foraging habitat (in area and quality) of GHFF in the Rockdale wetland corridor, should the F6 be constructed, thereby adding further cumulative impacts.

We note that the reference ELA 2015b, states on page 19, 3.4: *Future Planning Issues*, that “However, it is worth noting that proposed construction of the F6 above ground and expansion of the M5 (east) would result in loss of foraging habitat for GHFF, which may affect the sustainability of the camp. Potential impacts would require detailed investigation if development is proposed in these areas in future.”

In relation to this, the referral fails to report on “detailed investigations” into the foraging habitat impacts of the ‘New M5’. Indeed, none of the above repercussions and impacts are acknowledged in this section of the referral, and therefore are not evaluated as they should be.

The concluding statement in the referral about potential foraging habitat within parts of the project corridor viz "however, recent surveys indicate the GHFF flies to the south west into the valley in search of seasonal foraging habitat" (referral, page 29) is implicitly suggesting that this is the direction primarily or most commonly taken on exit by most GHFF now, and will be at most times, possibly into the future. WCPS records clearly show that this is incorrect, and we consider the information given in the referral document to this respect as misleading.

This information presented in the referral is also in conflict with the earlier statement about the variability of exit flight: "The GHFF fly out of the Wolli Creek camp in most directions, although generally not to the east. The direction is determined by the location of food sources" (ELA 2015b)" (referral, page 29). As we have indicated earlier, the “location of food sources” includes many parts of the project corridor. There is further imprecise, unreferenced and unsubstantiated information here. It is not indicated who conducted these “recent surveys” and provided this information, nor when - exactly how recently - they were conducted, and the nature of the surveys. It is implicit in the claims wording that fly-out exit counts were conducted, yet this methodology is not made explicit earlier when outlining the quarterly monitoring, nor when indicating the assessment’s reliance on the DotE 'interactive flying fox viewer' (DotE 2015). Nor indeed is it indicated whether the “recent surveys” were also part of the quarterly surveys no data beyond the quarterly survey in August 2014 is mentioned.

It is similarly imprecise to say "to the south west into the valley". If they are exiting in this direction, based on WCPS' long experience of observing fly-outs they are flying into the Bardwell Valley - not the Wolli Valley - where they may also then fly to the SW, S and SE, and into Area 3. The most recent surveys ie fly-out counts, conducted by WCPS in June and July 2015 indicated that 50% and 36% respectively of total GHFF counted flew to the west, into and up the Wolli Valley (unpublished data from ongoing WCPS surveys available on request). This is to be expected given the availability in particular of flowering Tallowood trees in the upper Wolli Valley areas mentioned earlier.

The referral is accurate when it states that "A monitoring program will continue to be undertaken consistent with the CSIRO method by Wolli Creek Preservation Society and Royal Botanic Gardens." (referral, page 29). This paraphrases 4.3, page 25 of the ELA 2015b reference above (although again, it is not referenced in the referral). The conclusion that such monitoring - essentially fly-out population counts - will "ensure there are no impacts by the proposed action" defies belief. Population counts in themselves alone cannot ensure that there are no impacts; certainly no illustration is provided of the implied causal connection.

The referral claims that the Turrella colony is unlikely to be a key source for dispersal or breeding (referral, page 30). This is very difficult to verify, to confirm or disconfirm, as there is no explanation provided or research basis indicated for the claim. The claim that the Turrella camp is not considered to be an important population (referral, page 30) is quite misleading. Earlier it is stated (referral, page 29), that "there is no national recovery plan for this species and therefore no important populations have been identified in accordance with such a plan". If this is the case, then the Wolli Creek Valley's Turrella colony shares this status as "not an important population" with all other known GHFF camps/colonies. In the absence of scientific evidence whether or not the Turrella colony is a key source for dispersal or breeding, the colony should plainly be considered as part of the species listed as vulnerable under the EPBC Act.

This section of the referral concludes with a summary of five summary of reasons why it is considered that it is highly unlikely that significant impacts to the GHFF will occur from the proposed development.

1. "The colony at Turrella is not an important population".

As indicated above this is misleading and applies to all known GHFF camps. It cannot be legitimately used as a reason to make claims about the unlikelihood of significant impacts. Given the dispersal actions occurring elsewhere in the region the importance of the Turrella camp is clear and increasing. In fact the camp at Turrella has been identified as a camp of National Importance in the Draft EPBC Act Policy Statement – Camp Management guidelines for the Grey-headed and Spectacled flying-fox (DotE Dec. 2014) see Attachment 2 – Map of Nationally Important Grey-headed Flying-fox camps <http://www.environment.gov.au/biodiversity/threatened/species/flying-fox-policy-statement>

2. "Recent surveys indicate the species is not flying out in the direction of any areas within the project corridor".

As explained earlier this is false.

3. "There will be no loss to the only identified GHFF camp nearby the project corridor".

If loss of roosting habitat is being referred to here, then given the current physical location of the camp, this is currently factually correct on the basis of what information is in the public domain about the putative new M5 route and associated "surface road connections and ancillary surface facilities" (referral, page 9). However it is false as regards loss of foraging habitat. And it is false in terms of potential deaths of individual GHFF that frequent that camp.

4. "Monitoring will be continued into the future to allow informed decision making about the camp and adaptive management".

Monitoring action alone will not ensure that there are no significant impacts. That requires a management response that includes maximum retention of foraging habitat, and indeed the longer-term provision of new foraging areas. This point in the summary is more relevant to general good camp management practice than to anything specific about the referral action. As no direct physical impacts are predicted in relation to the roosting and maternity camp in its Turrella location, any likely adaptive management

response relevant to the proposed action would relate to foraging habitat and any impact such as loss in quantity and quality. There is a long time frame involved in moving from recognising that removing trees of a reproductive age has a negative impact to an adaptive management response of replacing them with reproductive aged trees that take time to grow.

5. “The GHFF has a large home range and is able to utilize a variety of food and water sources over significant areas, making them less sensitive to habitat fragmentation.”

If this is the case - again no reference was cited to support this claim -, it does raise the question of what is the threshold level regarding habitat fragmentation becoming a significant impact.

While GHFF are able to make nightly foraging journeys over several kilometres, the energy required is broadly proportional to the distance needing to be flown to access suitable food resources. Every time there is a diminution of suitable foraging habitat close to the camp, the GHFF are to fly further in search of it. This exposes them to more energy use, time away from the camp (including from dependent juveniles) reduction in time spent actually consuming food, increased fatigue and thereby to dangers that may have fatal consequences, e.g. collision with structures and electrocution on power lines (a significant risk to females with young).

Finally, the referral fails to take account of the possible impacts of planned GHFF camp dispersal actions in the Sydney Basin. Such actions are planned for a further two more camps in addition to the ongoing dispersal action commenced by the Botanic Gardens Trust, Sydney on 1/6/2012. The planned dispersal of the Kareela camp is highly likely to have some impact on the Turrella camp (c. 12 kms to the NNE as the FF flies), for example in terms of population increases and pressure on close foraging habitat.

While currently there is no national recovery plan for this species, and therefore no important populations of this species have been identified, the Turrella colony should nonetheless be considered a significant population of a species listed as vulnerable under the EPBC Act.

It is highly likely that the proposed referral will have a significant impact on the GHFF population. Such an impact - considering other stresses on the species - may have the potential of causing the species to reduce in numbers to an extent which could lead to its listing as a threatened species to change from “vulnerable” to “endangered” under the EPBC Act. In this light, the proposed action should be rejected as unacceptable under section 74B EPBC Act.

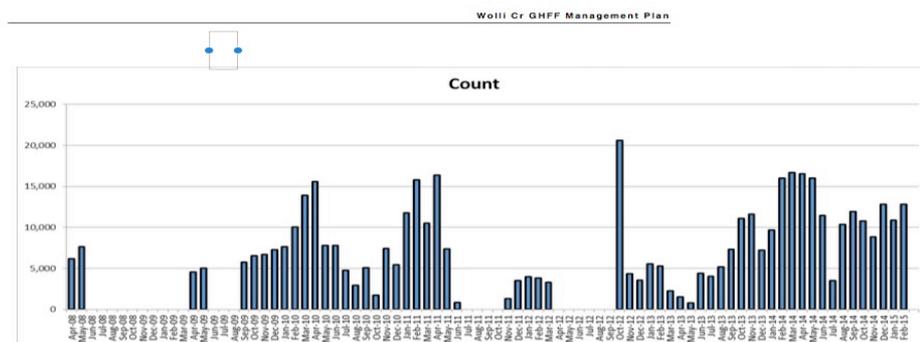


Figure 5: GHFF count data collected by WCPS from 2008 to 2015

Figure 1. GHFF fly-out data April 08 to Feb 2015, Eco Logical Australia (ref. 2015b, page 12)

References regarding GHFF

Eco Logical Australia (ref. 2015b). *Wolli Creek Grey-headed Flying-fox Camp*. Prepared for Rockdale City Council: 16th July, 2015.

Wolli Creek Preservation Society (WCPS). *Turrella camp fly-out data – April 2008-July 2015*. Unpublished data.

DotE (2014). *Draft EPBC Act Policy Statement – Camp Management Guidelines for the Grey-headed and Spectacled flying-fox: Attachment 2 – map of Nationally Important Grey-headed Flying-fox camps*. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/flying-fox-policy-statement>.

C. The proposed action as a stand-alone project

Issue summary

The proposed action is described as a part of the 'WestConnex' plan of infrastructure works in NSW and that it does not include the other “stand-alone” components, such as M4 or the Southern Extension. We disagree with the notion that the referred action, the New M5, is a stand-alone action. The referral omits details of route and tunnel design. The referral on the other hand indicates tunnel design and tunnel stubs for future road/tunnel connections, but omits to specify location or details of other proposed roads. The “Southern Extension” mentioned in the referral (p.4) seems to refer to a well-known planned road corridor, the F6, leading south. It appears that planning for the proposed M5 includes planning and works for a F6. Therefore both projects are intertwined and their combined impacts on the environment, in particular on the Green and Golden Bell Frog population at the Kogarah Golf Course, as well as the foraging habitat for the GHFF need to be established as one whole action.

Conclusion

We request that the proposed action be rejected as a single action. Instead, it should be combined with the proposed F6 and referred to the Minister as a larger action under section 74A of the EPBC Act.

Details

The action is described as a part of the 'WestConnex' plan of infrastructure works in NSW and that it does not include the other “stand-alone” components, such as M4 or the Southern Extension. We disagree with the notion that the referred action, the New M5, is a stand-alone action. We contend that the “New M5” cannot be seen as a stand-alone action.

The “Southern Extension” mentioned in the referral (page 4) seems to refer to a well-known road corridor, the F6.

A high-level map included in the *WestConnex Community Update November 2014* (Ref.1, Australian Government, 2014) indicates that this “Southern Extension” is not only planned but also will connect to the proposed New M5 west of Kingsford-Smith Airport, thereby passing the Kogarah Golf Course to the west at Arncliffe. The Kogarah Golf Course is marked in the referral as part of the project corridor of the proposed action and indicated as one of the disturbance sites, being “Area 3”. Area 3 is known to contain breeding and foraging habitat to the Green and Golden Bell Frog, a listed endangered species, as described in the referral document (section 3.1 d).

The referral document only summarises that the four mentioned disturbance areas are designated for emerging tunnels or at-surface infrastructure, but fails to clarify in detail the work to be undertaken, for example at area 3.

The publicly available document *WestConnex The New M5 Project Overview* (Ref.2, Australian Government, n.d.) states in section 2.2. *Scope Overview* that “The New M5 will also link ... to the proposed Southern Connection into the F6 corridor”. The same document states in section 2.3 *Main Tunnels* that “The tunnel design will also provide for the proposed Southern Extension in the F6 corridor.” This “proposed Southern Extension” is shown in the map in section 1.3 *WestConnex Scope* in the same location as in the map in the *Community Update November 2014* (Ref.1). This clearly indicates that the proposed action is planned to be designed to accommodate a connection to another major infrastructure project, a proposed road numbered F6.

On the other hand, the referral documentation for the proposed action does not specify the location or details of the tunnel design, mentioned in the referral as necessary for a connection to an F6. A connection between the M5 and F6 is only indicated in high-level maps and other public information as described above. An indicative mention is made in the referral on page 9, section 2, being “tunnel stubs” that would allow for a potential future connection to southern Sydney. Further, the referral documentation does not provide a definition of those “stubs” or whether further construction works would be needed later on to connect future roads to them. The lack of information about the New M5, and works included in the referred action but associated with a planned F6, are further indicated on page 9 of the referral, where the document states 'that the final configuration of the twin main alignment tunnels, surface road connections and ancillary surface facilities would be determined as part of the design development process'. The missing information and details, as described in the above paragraph, render the referral documentation deficient in adequately informing the public about the proposed action and its extent. Therefore we request that the proposed action be rejected under section 74B EPBC Act.

Furthermore, the location of the proposed disturbance site, Area 3, is where the proposed action is indicated to meet the planned F6. This indicates that this construction area, which contains habitat of the endangered Green and Golden Bell Frog, may also be necessary to undertake works designated to tunnel design needed to connect the proposed action to the planned F6. This clearly indicates that the proposed action is not an independent part of the WestConnex set of works, but that it is an integral part of it. This is further supported by the close geographic relationship of the proposed action to the planned F6 road leading south, as well as by the fact that the proponent of the proposed action is also planning the F6, being Roads and Maritime Services NSW. For this reason, the proposed action should be seen as part of a larger action and as such should be referred to the Minister as a whole under section 74A of the EPBC Act.

The referral of such a larger action would also be justified because of the potentially greater impact on nationally significant environmental matters, as outlined below.

Current publicly available information on the WestConnex website (Ref 1, 2) indicates that a road numbered F6 is proposed, but none of the information, including the referral of the proposed action, inform of any details, such as route, design, or potential environmental impacts.

Nevertheless, the proposed F6 is a known proposed project and has been considered for example in the document called *F6 Corridor Public Transport Use Assessment Final Draft Report*, commissioned in 2004 by the Roads and Traffic Authority NSW (Ref 3, Department of Infrastructure, 2004), now Roads and Maritime Services. Figure 1.1 in this document indicates the location of the F6 corridor, then planned heading from Campbell Rd St Peters to Royal National Park at Loftus. This map shows route alignment west of the Kogarah Golf Course, as also indicated in public documents regarding the proposed action, the planned New M5. Should the planned F6, about which no information is available from the WestConnex website or in the referral of the proposed action, continue along the same route going south as described in 2004, its corridor would cross the Georges River following Rocky Point Rd, Sans Souci, to Taren Point Rd, Taren Point. At this location the proposed F6 would run approximately 1.5km to the west of Towra Point

Nature Reserve. Towra Point Nature Reserve is a wetland of international importance (Ramsar Wetland) under the EPBC Act. It can be found on the Australian Wetlands Database on the DotE website and has Australian Ramsar site number 23 (<http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=23#>). According to the information on this website, the wetland is also home to 34 migratory bird species listed under international migratory bird conservation agreements.

The F6 corridor itself, as described in 2004 (Ref 3, Department of Infrastructure, 2004), includes other wetlands, the Georges River, and other important environmental areas, the ecosystems of which potentially support many of the listed migratory bird species present at Towra Point Nature Reserve. Considering that the proposed F6 project may, directly or indirectly, impact on nationally significant environmental matters, it would itself require future referral under the EPBC Act. The 1.5km distance between the potential construction corridor and the Ramsar Wetland does not exclude that consideration would need to be given to likely impacts on environmental matters of national significance by the construction of the F6. A significant impact such an action located outside the Ramsar wetland could have on the wetland, even indirectly, may render such a project a controlled action under the EPBC Act. This notion was one of the key issues discussed in the “Flying Fox case” (Ref. 4, Queensland Environmental Law Association, 2001).

As mentioned above, the publicly available information on the WestConnex website (Ref 1, 2) shows that the proposed F6 would run past the western side of the Kogarah Golf Course, Arncliffe, which is habitat to the Green and Golden Bell Frog (*Litoria aurea*), a listed threatened species and described in the referral documentation of the proposed action. The referral describes the impact on area 3, GGBF habitat, as temporary (up to three years) for the bulk of the construction of the proposed action. Construction of the proposed F6 would, whether considered under a separate referral or together with the proposed M5, place further pressure on the GGBF population, should Kogarah Golf Course be used again to meet construction requirements, and by the construction activities themselves.

Since the proposed action (M5) makes reference in its planned design to the F6, because of the geographic proximity of both M5 and F6 to each other, and because both proposed roads are planned by the same proponent (RMS NSW), both M5 and F6 should be referred as a whole action and not as individual actions. Together, M5 and F6, would have a greatly increased likely impact on matters of national environmental significance. For this reason, the proposed action should be rejected as a single action. Instead, it should be referred as part of a larger action combined with the proposed F6 and referred to the Minister as a whole under section 74A of the EPBC Act.

References regarding the proposed action as a stand-alone project

Ref. 1

Australian Government (2014). *WestConnex Community Update November 2014 New M5 St Peters Interchange*. Available from: http://www.westconnex.com.au/documents/st_peters_interchange_community_update_nov_14.pdf

Ref. 2

Australian Government (n.d.). *WestConnex The New M5 Project Overview*. Available from: http://www.westconnex.com.au/documents/new_m5_project_overview.pdf

Ref. 3

Department of Infrastructure, Planning and Natural Resources, Roads and Traffic Authority, NSW (2004). *F6 Corridor Public Transport Use Assessment - Final Draft Report*. Available from: http://www.planning.nsw.gov.au/plansforaction/pdf/f6_report_allchapters.pdf

Ref. 4

Queensland Environmental Law Association (2001). *First litigation under the EPBC Act - The Flying Fox case*. Available from: https://qela.com.au/wp-content/uploads/2014/11/01_12_03flyingfoxwebp65.pdf

