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Attn Committee Secretary
Senate Standing Committee on Environment, Communications and the Arts
Department of the Senate
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Australia

SUBMISSION

to the

Inquiry into the operation of the *Environment Protection and Biodiversity Conservation Act, 1999*

Prepared for Clarence Environment Centre
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Terms of Reference

- (1) The Senate notes the continuing decline and extinction of a significant proportion of Australia's unique plants and animals, and the likelihood that accelerating climate change will exacerbate challenges faced by Australian species.
- (2) The following matters be referred to the Senate Environment, Communications and the Arts Committee for inquiry and report by 27 November 2008:

The operation of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and other natural resource protection programmes, with particular reference to:

- a. the findings of the National Audit Office Audit 38 Referrals, Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999;
- b. lessons learnt from the first 10 years of operation of the EPBC Act in relation to the protection of critical habitats of threatened species and ecological communities, and potential for measures to improve their recovery;
- c. the cumulative impacts of EPBC Act approvals on threatened species and ecological communities, for example on Cumberland Plain Woodland, Cassowary habitat, Grassy White Box Woodlands and the Paradise Dam;
- d. the effectiveness of responses to key threats identified within the EPBC Act, including land-clearing, climate change and invasive species, and potential for future measures to build environmental resilience and facilitate adaptation within a changing climate;
- e. the effectiveness of Regional Forest Agreements, in protecting forest species and forest habitats where the EPBC Act does not directly apply;
- f. the impacts of other environmental programmes, eg EnviroFund, GreenCorps, Caring for our Country, Environmental Stewardship Programme and Landcare in dealing with the decline and extinction of certain flora and fauna; and
- g. the impact of programme changes and cuts in funding on the decline or extinction of flora and fauna.

Foreword

While it is depressing to note that there is a continuing decline in most of Australia's flora and fauna, it is gratifying to note that the Senate accepts this fact.

We believe the Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act) is a relatively good piece of legislation. However, as with any legislation, its effectiveness is only ever as good as its implementation. In respect to continued declining populations of threatened species, it must be accepted that the Federal Environment Department has been a significant part of the problem, bowing to developer demands, with widespread granting of approvals that allow threatened species to be destroyed.

Being only a relatively small regional organisation, the Clarence Environment Centre is not in a position to research and comment on any of the 4 referenced referrals. However, we were heavily involved in one major local referral, the Coffs Harbour – Clarence Valley Regional Water Supply Project's Shannon Creek dam.

We have therefore used that case to illustrate our point that, when pressure was on, the EPBC Act failed to protect a single federally listed threatened species (see case study Appendix A).

The Shannon Creek dam referral (EPBC 2005/2191),

In the case of the Shannon Creek dam referral, impacts to three threatened plant and one threatened fauna species were put forward by the proponent for assessment,

- * *Melichrus hirsutus* (endangered shrub).
- * *Eucalyptus tetrapleura* (vulnerable tree).
- * *Angophora robur* (vulnerable tree)

- * *Brush-tailed Rock-wallaby* (endangered)

The DEH determined that impacts to five other listed species that we requested be assessed, the Spotted-tailed Quoll; Grey-headed Flying Fox; Long-nosed Potoroo; Swift Parrot; and Needle-tailed Swift (international treaty), all of which had been identified on neighbouring properties, need not be taken into consideration because, **“populations present would not be affected by the action”** (#19, Minister's statement of reasons).

The proponent's ecologists even cast doubt on at least one Quoll sighting because no vouchered specimen had been collected, but post approval monitoring has now confirmed that Spotted-tailed Quoll is present at the site, so impacts are clearly real.

However, the Minister's claim that the removal of 210ha of foraging habitat for Grey-headed Flying Fox, Swift Parrot, and Needle-tailed Swift will have no impact, is difficult to comprehend, given that loss of habitat is identified as the primary cause of the decline in all three species.

Consideration by the Minister of the other four threatened species resulted in the following:

- ***Melichrus hirsutus*: (parts 21, 22, and 23, Minister's Statement of Reasons [SoR])**

In its submission, The Friends of Shannon Creek Action Group (FOSCAG) provided the Minister with GPS readings of all *M. hirsutus* at the spillway site, and accurately measured the actual area of habitat to be lost through construction alone as 3 hectares. FOSCAG also provided GPS readings for another ten specimens that would be lost at a separate location, through inundation, adding a further 5 hectares of known habitat that would be lost. **FOSCAG provided these figures to dispute the proponent's view that the total area of known habitat amounted to just 1.32 hectares.** FOSCAG also disputed the area of stated potential habitat identified by the proponent.

Despite FOSCAG's evidence, the Minister accepted the proponent's word without question, and found (Part 23 of the SoR) that: *“..the remaining approximately 184 hectares of potential habitat for the Melichrus hirsutus would be in the Chambigne Nature Reserve and the Buffer Management Zone for the storage area. I found that the long-term protection and conservation of these compensatory habitat areas would mitigate and compensate for the impacts of the proposed action on Melichrus hirsutus.”*

That statement signed the death warrant for more than 20 endangered *Melichrus hirsutus* shrubs.

Subsequently, those supposedly conserved *M. hirsutus* plants are being assessed as an external monitoring site as part of the threatened species monitoring program. This despite knowing that the root-rot pathogen, *Phytophthora cinnamomi*, has been identified at the nearby dam site. The Autumn and Spring 2007 monitoring reports have reported that **some of the monitored plants have died** with a gray fungus evident. No tests to determine cause of death were undertaken, despite one of the Minister's consent conditions being the requirement to monitor for possible outbreaks of *Phytophthora cinnamomi*. Survival of the conserved population must now be in doubt.

- ***Angophora robur***

FOSCAG had fought hard to have all infrastructure associated with the dam, pipeline, power line, and access road, restricted to a single corridor. In the event of the road being placed along the preferred pipeline corridor, it would have entailed that corridor being widened causing an additional 2.8ha of forest clearing. This led to the Minister reasoning that (part 25): ***“I found that an additional 2.8ha of Angophora robur would be cleared if the access road were co-located with the pipeline route.”***

The Minister totally ignored the fact that if co-location of the access road and pipeline had occurred, the entire 4.5km (12 hectares) of the separate road corridor would have been spared, thus saving approximately 8ha of known habitat containing over 450 specimens of *A. robur*, **all of which were destroyed as a direct result of the Minister's decision.**

When the road easement was finally cleared in September 2006, the promised ***“15m width generally along its length”*** ended up being cleared through the area of *A. robur* habitat to a width of between 30 and 40 metres. **We estimate this additional clearing brought the total of destroyed *A. robur* to more than 600.** Also the DA called for an 18m wide corridor to be cleared for underground pipeline and power supply. That corridor was cleared to a minimum 20m and close to 30m in some places. **DEH appear to have accepted these excesses without question.**

- ***Eucalyptus tetrapleura* (parts 27, 28 and 29)**

23 specimens of vulnerable Square-fruited Ironbark trees were identified along a 200m section of the proposed access road.

Again, had the road been co-aligned with the pipeline, all 23 could have been preserved. The simple moving of the road 30 metres to either side of the grove of Ironbarks would also have avoided the need to destroy them.

Despite FOSCAG putting these facts to the Minister, he approved their destruction finding (Section 28): ***“that approximately 60ha of known and potential habitat of Eucalyptus tetrapleura would be cleared as a result of the access road and storage inundation.”*** He also found that: ***“the proposed access road would result in the clearing of an additional 0.9ha of Eucalyptus tetrapleura compared to co-locating the access road along the pipeline alignment.”***

A simple reference to Figure 2.15 (Vol. 3, SIS 2005) clearly shows there has not been a single recording of *Eucalyptus tetrapleura* within either the proposed compensatory habitat area or the dam's buffer zone, the only areas proposed for conservation. **The Minister failed to accept this fact, and instead claimed there is 1670ha of potential habitat in the vicinity.**

It should be noted that the said 0.9ha of *E. tetrapleura* represented an area containing the 23 specimens that were cleared for the proposed access road. The numbers that were cleared for the upgrade of Shannondale Road, an integral part of the proposed access, were not considered by the Minister.

The failure to consider those trees destroyed in the up-grade and the subsequent excessive clearing for the access road, saw approximately 40 Ironbarks needlessly destroyed, as a direct result of the Minister's decision.

- **Brush-tailed Rock-wallaby (Parts 30 – 35)**

The Shannon Creek dam has effectively divided the Rock-wallaby population at Shannon Creek. The State National Parks and Wildlife Service accepted the dam would result in a decline of the population, but determined this was not considered to be significant at a regional level.

FOSCAG disputed the proponent's claim of 400ha of potential refuge sites in the study area, suggesting the area was closer to 40ha, and funded a professional report by ecologist, Ben Lewis, to support their claims. **However, the Minister again chose to accept the proponent's word, and it is concerning that the Lewis Report was not even referenced in the list of documents assessed as part of the referral process.**

The Minister correctly acknowledged (part 33) that connectivity between the eastern and western escarpments will be reduced by dam infrastructure. However, his finding of, *“no confirmed evidence to date of any crossing by this species at any location along this corridor”*, was ridiculous. We have witnessed animals crossing the valley at that point, and the Lewis Report independently documents sightings of Rock-wallabies on the lower slopes on either side of Shannon Creek within 250 metres of each other.

Any suggestion that there is no evidence of crossing was totally unacceptable, and further evidence that public submissions and the Lewis report were not considered by the Minister.

The current decline in Wallaby scats, identified by the monitoring program, must be accepted as evidence that these animals are already in decline as a consequence of the construction of the dam. The Minister's consent must therefore be acknowledged as a major contributor to their possible demise at the local level.

During the years leading up to the granting of approval for the Shannon Creek dam, we were instrumental in discovering, describing, and naming a *Boronia* species, that is now declared endangered at a State level (TSC Act).

The *Boronia* is just one of three species that are endemic to the Shannon Creek area, occurring nowhere else in Australia, all three are listed as endangered under the TSC Act, two as a result of our nominations to the NSW Scientific Committee.

We forwarded the research material used in our nominations to DEH, along with details on another endangered species that occurs at Shannon Creek and is the only known population in NSW, for consideration as endangered species under the EPBC Act.

After hearing nothing for six months, our inquiries found that our nominations had been put to one side because they were not on the official form, and were therefore unacceptable. Minister Campbell apologised and offered to forward the necessary forms if we would like to renominate them.

However, by that time consent for the Shannon Creek dam project had been granted, and despite having had the opportunity to save considerable numbers of threatened species by combining infrastructure to a common corridor, at no extra financial cost, **the Minister, and the EPBC Act had failed to protect a single specimen of any threatened species. We declined to pursue the matter further, suggesting it would be a waste of everyone's time.**

Compliance Monitoring

The then DEH granted conditional consent to the building of the Shannon Creek dam in February 2006, incorporating a raft of mitigation actions and ameliorative measures promised by the proponent.

On discovering what appeared to be widespread breaches of those mitigation measures, the Clarence Valley Conservation Coalition contacted the consent authority/proponent, Clarence Valley Council for an explanation.

In a written response Council's Assistant General Manager, Mr Des Schroder, claimed: *“North Coast Water proposed alterations to Statement of Environmental Effects’ mitigation measures which were agreed to by Clarence Valley Council in February 2006. North Coast Water advised the DECC of all proposed amendments.”*. Whether or not a similar advice was sent to DEH has yet to be determined.

Requests for copies of NCW's proposed changes, and correspondence from Council to DECC and DEH, relating to those changes, have been ignored. Reportedly, at a recent meeting between CVC's GM and members of the Clarence Valley Conservation Coalition, again attempting to obtain copies of those documents, it was revealed that it is possible that not all the exchanges were in writing.

From this it appears that granting of conditional consent is a joke, being rorted by councils and various government agencies, with no real compliance monitoring occurring.

In conclusion, the Clarence Environment Centre puts forward the following possible actions and changes in relation to the EPBC Act:

- **We would like to see the automatic referral of threatened species listings from a State to Federal level, where those species occur only in the State where the determination is made. This move should see considerable savings, both in money and time, to both those making the nominations, and to the Federal Environment Department.**
- **Compliance monitoring being widened to incorporate the views other stakeholders, particularly those who have previously expressed concerns, or have reported breaches. There should be significant penalties for any consent breaches.**
- **A far greater emphasis on protecting threatened species and communities, as against financial and social considerations (Section 131.2.a, and 136.1.b). Currently there appears to be an enormous disparity, strongly weighted against environmental concerns. We believe there must be a mechanism whereby a dollar value is placed on the environment to compare fairly with social and economic costs on the triple bottom line.**
- **Recommend providing environment groups with funding to actively promote the protection of the environment and biodiversity at the grass roots level.**
- **It is our understanding that the listing of Key Threatening Processes does not require proponents or developers to adopt any of the recommendations made in Threat Abatement Plans. This must be reversed, and proponents compelled to adopt all recommendations.**
- **The Precautionary Principle does not receive the level of consideration it should. In many of the determinations explained in the Minister's Statement of Reasons for approving the Shannon Creek dam (see above), the Precautionary Principle was not invoked.**
- **The Minister informed us that species listed under international treaties such as Rainbow Bee-eater and Needle-tailed Swift were not able to be considered under the Shannon Creek Referral. There is an obligation under the Act (Section 28A.2.d) to take Australia's international obligations into account, but this consideration apparently doesn't go as far as considering the impacts on these species through the Referral process. These species need to be fully incorporated for protection under the Act.**

Appendix A

Case Study – The Shannon Creek dam (EPBC 2005/2191).

The following is FOSCAG's assessment of the 7 part tests as presented for the Shannon Creek dam case, where each response by the proponent, North Coast Water (NCW) is answered by FOSCAG.

IMPACTS UPON *MELICHRUS HIRSUTUS*, AN ENDANGERED PLANT SPECIES EPBC Criteria within the Administrative Guidelines for Determining if an Action will Significantly Impact Upon an Endangered Species

An action has, will have, or is likely to have a significant impact on a critically endangered or endangered species if it does, will, or is likely to: lead to a long-term decrease in the size of a population.

NCW's Response: *“It is possible that the proposal will lead to a reduction in the size of the population.”*

FOSCAG's comment: The destruction of an unknown number of the species has already occurred across two components of the project. A further loss of up to 20 plants at the proposed dam site, spillway and inundation area, and removal of over five hectares of known habitat, cannot be seen as a possible reduction in population size.

An action that will reduce the area of occupancy of the species.

NCW's Response: *“The proposal will slightly reduce the area of occupancy of the species.”*

FOSCAG's comment: Cumberland Ecology have made an inflated estimate of 186ha of habitat for *M. hirsutus* at Shannon Creek. Even if this unlikely figure was adopted, the area of habitat to be destroyed represents in excess of 5%. We suggest this is a significant reduction for a species that only occurs in one other small conservation reserve (refer species profile, SIS, Vol. 3)

An action that will fragment an existing population into two or more populations

NCW's Response: *“It is predicted the proposed action is relatively unlikely to fragment the population into two or more populations.”*

FOSCAG's comment: It would be fair to say, at this point in time, that the population will not be fragmented. The assessment, *relatively unlikely*, may have something to do with the fact that the species was sighted, but never recorded, in at least two locations to the east of the dam site (pers com Dr Robertson, the author of the referral). Those plants seem to have now disappeared. Then again the reason for the term *relatively* may be related to the real threat to the species from *P. cinnamomi* infection or the effects of human-induced climate change.

An action that will adversely affect habitat critical to the survival of a species.

NCW's Response: *“The proposed action could spread *Phytophthora cinnamomi*, which may adversely affect habitat critical to the survival of the species.”*

FOSCAG's comment: Apart from the direct destruction of 10ha of habitat, and the admitted potential for introduction of *P. cinnamomi*, there is also the potential impacts of human-induced climate change, which has yet to be scientifically tested.

An action that will disrupt the breeding cycle of a population.

NCW's Response: “*The proposed action is unlikely to interrupt the breeding cycle of a population.*”

FOSCAG's comment: Should the root rot pathogen, *Phytophthora cinnamomi* become active within the Chambigne Nature Reserve, the disease has the potential to bring about the local extinction of the species. It is doubtful if the author actually understands the breeding requirements of *Melichrus hirsutus*.

An action that will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.

NCW's Response: “*The proposed action is unlikely to cause a significant decline of the species across its range*”

FOSCAG's comment: Again the terms 'unlikely' and 'significant' are used; the precautionary principle ignored. *Melichrus hirsutus* has been identified as belonging to a plant genus known to be susceptible to the pathogen, *Phytophthora cinnamomi*. Should the population become infected, there is little doubt that this rare species, endemic to Kangaroo Creek sandstone, will see a significant decline.

An action that will result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat.

NCW's Response:

*The proposed action could spread *Phytophthora cinnamomi*, which may adversely affect habitat critical to the survival of the species. However, this is already established in the study area.*

FOSCAG's comment: *Melichrus hirsutus* grows mainly throughout the Brown Bloodwood – Sandstone Mahogany Woodland, described in the SIS as community 10. The above statement, that the pathogen is already established in the area, is a deliberate deception suggesting the *Melichrus* population has already been exposed to the disease. The *P. cinnamomi* Plan of Management itself states (pages 3.11.- 3.12) that the Brown Bloodwood Woodland: “*is uninfected and no positive results were recorded.*” The POM, however, rates the risk to *Melichrus* as low (table 3.5). This analysis is curious in light of the fact that two other endangered species that share that habitat, *Bertya longistylar* (pending) and *Boronia hapalophylla*, are rated at high risk. We have already demonstrated that *P. cinnamomi* has the potential to significantly impact on this species, and suggest that the disease poses a very significant risk of harm.

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IMPACTS UPON *ANGOPHORA ROBUR*, A VULNERABLE PLANT SPECIES
EPBC Criteria within the Administrative Guidelines for Determining if an Action will
Significantly Impact Upon a Vulnerable Species

An action has, will have, or is likely to have a significant impact on a vulnerable species if it does, will, or is likely to: lead to a long-term decrease in the size of a population.

NCW's Response: *“The proposal may clear some individuals from an important population. However, the numbers cleared relative to the size of the population is small.”*

FOSCAG's comment: On top of the considerable numbers of the species already destroyed by pipe-laying operations, geotechnical investigations, and survey work, there could be as many as 1000 specimens of *A. robur* destroyed by future construction. There has been no attempt made to minimise that destruction by way of using common corridors for infrastructure. Future expected subdivision, facilitated by the provision of infrastructure, will see further destruction of the species, and fragmentation of its habitat

An action that will reduce the area of occupancy of an important population.

NCW's Response: *“The proposed action will clear habitat and reduce the area of occupancy of an important population.”*

FOSCAG's comment: Agreed. Probably in excess of 100ha of habitat will be destroyed. This species has a limited range, growing only on scattered Kangaroo Creek sandstone outcrops between Glenreagh and Coaldale, a distance of only 60km.

An action that will fragment an existing population into two or more populations.

NCW's Response: *“Some elements of the proposed action (particularly the access road) will bisect patches of habitat. However, this is unlikely to ecologically isolate the patches of habitat on either side of the cleared area, as the width of clearing is relatively narrow.”*

FOSCAG's comment: There will be fragmentation, not only from the access road, but pipeline easement and a network of linking tracks and already existing cleared easements across the study area. Future subdivision will complete the destruction.

An action that will adversely affect habitat critical to the survival of a species.

NCW's Response: *“The proposed action is unlikely to adversely affect habitat critical to the survival of the species.”*

FOSCAG's comment: There is little habitat that can be described a critical to the survival of the species. However, the scale of destruction is a major concern when there are obvious actions that can be taken to reduce that impact.

An action that will disrupt the breeding cycle of a population.

NCW's Response: *“The proposed action is unlikely to disrupt the breeding cycle of an important population.”*

FOSCAG's comment: Agreed, although it is doubtful the author is qualified to comment on this aspect of plant behaviour. The other potential impacts of micro-climatic change and infection by *Phytophthora cinnamomi* are also factors that have not been adequately addressed.

An action that will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.

NCW's Response: *“The proposed action is not likely to cause a significant decline in the abundance of the species.”*

FOSCAG's comment: The proposed destruction and fragmentation of habitat has to be seen as destroying, removing and decreasing the availability or quality of the habitat. Whether or not this level of destruction, coupled with future subdivision in the immediate vicinity, and the potential for impacts through attack by *Phytophthora cinnamomi*, will lead to a decline of the species, only time will tell. The threats however, are significant and the precautionary principle should apply.

An action that will result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.

NCW's Response: *“The proposed action could spread *Phytophthora cinnamomi*, which may adversely affect habitat critical to the survival of the species. However, this is already established in the study area.”*

FOSCAG's comment: The pathogen is already in the area, however, the *P. cinnamomi* Plan of Management clearly states the habitat for much of the *A. robur* is not infected. There is no evidence to suggest the pathogen has not been recently introduced, which would account for the lack of obvious deaths among most species.

An action that interferes substantially with the recovery of the species.

NCW's Response: *“The proposed action is unlikely to interfere substantially with the recovery of this species. Rather, it will benefit the species by providing additional conserved habitat that will be conserved in the long term.”*

FOSCAG's comment: While long term conservation of habitat is applauded, this measure is more than balanced by the probable damaging effects of subdivision which is expected to occur across the remaining 2,000 hectares that is currently prime habitat. Noting also that the area proposed for compensatory habitat is already habitat, and the only area proposed for rehabilitation is a 20ha valley floor which cannot be described as ideal habitat for *A. robur*.

**An important population is one that is necessary for a species' long-term survival and recovery. This may include populations that are:
key source populations either for breeding or dispersal,**

NCW's Response: *“The population/s of *Angophora robur* in the project area are large and important populations for breeding/maintenance of the species.”*

FOSCAG's comment: Agreed; all the more reason not to impact the species unnecessarily.

**An important population is one that is necessary for a species' long-term survival and recovery. This may include populations that are:
populations that are necessary for maintaining genetic diversity.**

NCW's Response: *“The population/s of *Angophora robur* in the project area are large and would make a significant contribution to the genetic diversity of the species. However, the species is well represented in the local area, including nearby conservation reserves such as Chambigne and Koukandowie Nature Reserves.”*

FOSCAG's comment: Agreed, but hardly justification to unnecessarily destroy up to 1,000 trees.

An important population is one that is necessary for a species' long-term survival and recovery. This may include populations that are: populations that are near the limit of the species range.

NCW's Response: *“This species occurs in a relatively narrow geographic area and as such the populations are near the limit of the range.”*

FOSCAG's comment: *Agreed.*

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**IMPACTS UPON *EUCALYPTUS TETRAPLEURA*, A VULNERABLE PLANT SPECIES
EPBC Criteria within the Administrative Guidelines for Determining if an Action will
Significantly Impact Upon a vulnerable Species**

An action has, will have, or is likely to have a significant impact on a vulnerable species if it does, will, or is likely to: lead to a long-term decrease in the size of a population.

NCW's Response: *“The proposal may clear some individuals from an important population. However, the numbers cleared relative to the size of the population is small.”*

FOSCAG's comment: Again it has to be stressed that numbers have already been destroyed by pipeline construction. Those trees, in most cases were never identified prior to destruction. If the proponent had chosen to share the access road with the pipeline easement, all 50 specimens to be destroyed by road construction, would be preserved.

An action that will reduce the area of occupancy of an important population.

NCW's Response: *“The proposed action will clear habitat and reduce the area of occupancy of an important population.”*

FOSCAG's comment: Agreed. Probably in excess of 20ha of habitat will be destroyed. This species has a limited range, growing only around the Grafton area.

An action that will fragment an existing population into two or more populations.

NCW's Response: *“Some elements of the proposed action (particularly the access road) will bisect patches of habitat. However, this is unlikely to ecologically isolate the patches of habitat on either side of the cleared area, as the width of clearing is relatively narrow.”*

FOSCAG's comment: There will be fragmentation, not only from the access road, but pipeline easement, and a network of linking tracks and already existing cleared easements across the study area. Future subdivision, a threat that is completely ignored, will complete the destruction.”

An action that will adversely affect habitat critical to the survival of a species.

NCW's Response: *“The proposed action is unlikely to adversely affect habitat critical to the survival of the species.”*

FOSCAG's comment: The above response is being made scores of times annually as developments slowly eat away habitat for all threatened species. This trend has to be halted, and the question asked; at what point will this destruction of habitat adversely affect the species' survival? That point will be reached only after the species' protection is progressively upgraded to endangered and critically endangered, and is facing a real threat of extinction. As far as this proposal is concerned, there is little habitat that can be described as currently critical to the survival of *E. tetrapleura*. However, the scale of destruction is a major concern when there are obvious actions that can be taken to reduce that impact.

An action that will disrupt the breeding cycle of a population.

NCW's Response: *“The proposed action is unlikely to disrupt the breeding cycle of an important population.”*

FOSCAG's comment: Agreed, although it is doubtful the author is qualified to comment on this aspect of plant behaviour. The other potential impacts of micro-climatic change and infection by *Phytophthora cinnamomi* are also factors that could disrupt the breeding cycle, but have not been adequately addressed.”

An action that will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.

NCW's Response: *The proposed action is not likely to cause a significant decline in the abundance of the species.*

FOSCAG's comment: The proposed fragmentation of habitat has to be seen as destroying, removing and decreasing the availability or quality of the habitat. Whether or not this level of destruction, coupled with future subdivision in the immediate vicinity, and the potential for impacts through attack by *Phytophthora cinnamomi*, will lead to a decline of the species, only time will tell. The threats however, are significant and the precautionary principle considered.

An action that will result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.

NCW's Response: *"The proposed action could spread *Phytophthora cinnamomi*, which may adversely affect habitat critical to the survival of the species. However, this is already established in the study area and *Eucalyptus tetrapleura* is likely to be resistant to this pathogen."*

FOSCAG's comment: The pathogen is already in the area, however, *Eucalyptus tetrapleura* may not be showing any symptoms because the pathogen has only recently been introduced and drought conditions in recent times have been less than ideal for its impact to be observed. There is no evidence to suggest the pathogen may have been at the site for decades as claimed in the SIS.

An action that interferes substantially with the recovery of the species.

NCW's Response: *"The proposed action is unlikely to interfere substantially with the recovery of this species. Rather, it will benefit the species by providing additional conserved habitat that will be conserved in the long term."*

FOSCAG's comment: While long term conservation of habitat is applauded, this measure is more than off-set by the probable damaging effects of subdivision which is expected to occur across the remaining 2,000 hectares of currently prime habitat. It should be noted that no specimens of *E. tetrapleura* have been identified by the proponent within any areas proposed to be retained for conservation, i.e. the proposed buffer zone and compensatory habitat area.

An important population is one that is necessary for a species' long-term survival and recovery. Including: key source populations either for breeding or dispersal

NCW's Response: *"The population/s of *Eucalyptus tetrapleura* in the project area are large and important populations for breeding/maintenance of the species."*

FOSCAG's comment: Agreed; all the more reason not to impact the species unnecessarily. These supposedly large populations have not been sighted by FOSCAG, and all occur within areas that the proponent has identified as surplus to requirement and will be sold, and probably subdivided.

An important population is one that is necessary for a species' long-term survival and recovery. Including: Populations that are necessary for maintaining genetic diversity.

NCW's Response: *"The population/s of *Eucalyptus tetrapleura* in the project area are large and would make a significant contribution to the genetic diversity of the species."*

FOSCAG's comment: We challenge the claim of 'large populations'. However, those populations that have been identified all occur in areas identified as surplus to NCW's requirements. There are few if any *E. tetrapleura* growing within those areas identified for retention by the proponent.

An important population is one that is necessary for a species' long-term survival and recovery. This may include populations that are: near the limit of the species range.

NCW's Response: *“This species occurs in a relatively narrow geographic area and as such the populations are near the limit of the range.*

FOSCAG's comment: *Agreed.*

IMPACTS UPON BRUSH-TAILED ROCK-WALLABY A VULNERABLE SPECIES
EPBC Criteria within the Administrative Guidelines for Determining if an Action will
Significantly Impact Upon a Vulnerable Species

An action has, will have, or is likely to have a significant impact on a vulnerable species if it does, will, or is likely to: lead to a long-term decrease in the size of a population.

NCW's Response: *“The proposal will remove some foraging habitat and a small amount of shelter habitat for this species. However, the majority of the habitat for this species will be untouched.”*

FOSCAG's comment: A critical crossing point between the only two opposing escarpment habitats, including refuge sites on either side of Shannon Creek, will be replaced by an intricate barrier of infrastructure. The core habitat that will remain will enjoy water-front vistas, and suffer the loss of dozens of hectares of important browse. There may not be any short term reduction in numbers, however, the long-term prognosis is possible extinction as the remaining inviable population slowly succumbs to predators.

An action that will reduce the area of occupancy of an important population.

NCW's Response: *“The proposal will remove some foraging habitat and a small amount of shelter habitat for this species. It is possible that the development could slightly reduce population size although this is considered to be unlikely.”*

FOSCAG's comment: As above.

An action that will fragment an existing population into two or more populations

NCW's Response: *“The Shannon Creek Storage will inundate the upper Shannon Creek valley and is likely to have an impact upon the connectivity of habitat for Brush-tailed Rock-wallaby. However, areas downstream (to the north) of the proposed storage will remain as areas where this species can move between escarpment areas. As such the development is not expected to separate the existing population into two discrete smaller populations.”*

FOSCAG's comment: As stated above, a critical crossing point between the only two opposing escarpment habitats, including refuge sites, on either side of Shannon Creek will be replaced by an intricate barrier of infrastructure. A revegetation plan proposed for an area to the north of the dam will prove ineffectual as a wallaby crossing as there is no suitable habitat, refuge sites or other populations of Rock-wallabies that is connected to either end of that proposed 'escape route'.

An action that will adversely affect habitat critical to the survival of a species.

NCW's Response: *“The proposed action will result in some clearance of habitats including foraging and to a lesser extent shelter habitats. However, the great majority of habitat will be retained for this species and the cleared habitat is not expected to significantly affect the survival of the species.”*

FOSCAG's comment: The proponent's response fails to answer the question as to whether critical habitat will be removed. The Warrumbungle Rock-wallaby Recovery Plan (DEC) clearly describes cliff habitat with ledges, and jumbles of fallen rock with a maze of escape tunnels, as habitat critical to the Rock-wallaby's survival. Habitat answering that exact description will be destroyed or inundated at Shannon Creek. The wording of the above response: *“the cleared habitat is not expected to significantly affect the survival of the species”*, does suggest there will be some affect on the wallaby's chances for survival.

An action that will disrupt the breeding cycle of a population.

NCW's Response: “The proposed action is unlikely to disrupt the breeding cycle of a population, modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.”

FOSCAG's comment: The proposed segmentation of the Chambigne Nature Reserve is likely to result in an inviable population (refer Lewis report, 2004. Attachment 5).

An action that will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.

NCW's Response: “*The proposed action is not likely to cause a significant decline in the abundance of the species.*”

FOSCAG's comment: As above. Habitat, critical to the movement of wallabies across Shannon Creek, will be removed. The current population will be segregated (refer Lewis report, 2004)

An action that will result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.

NCW's Response: “*The proposed action has potential to increase access to the site by foxes, which are a major threat to Brush-tailed Rock Wallabies. However, this has been taken into account during the original EIS/SIS for the project and a Threatened Species Management Plan and Vertebrate Pest Management Plan are now in place. Foxes and Brush-tailed Rock-Wallabies are both being monitored and fox control will be implemented as required.*”

FOSCAG's comment: Although fox spoor has been identified at the site during recent monitoring, no action has yet been taken to address the problem. Construction compounds and a ready source of food scraps, along with access roads, will attract foxes in increasing numbers. The advent of tourists after construction will continue that trend. Their effective control may not be possible, and then only at the expense of native species such as Quoll, which receives no consideration in this referral.

An action that interferes substantially with the recovery of the species.

NCW's Response: “*The proposed action is unlikely to interfere substantially with the recovery of this species. Rather, it will benefit the species by providing additional conserved habitat that will be conserved in the long term.*”

FOSCAG's comment: While long term conservation of habitat is applauded, this measure is more than off-set by the probable damaging effects of subdivision which is expected to occur across the remaining 2,000 hectares, introducing dogs and feral species even closer to Rock-wallaby populations. Provision of small amounts of compensatory habitat, which is already serving as habitat, will be no use to the Chambigne Nature Reserve population that will be unable to access the area, due to the barrier effect of the dam and infrastructure.

An important population is one that is necessary for a species' long-term survival and recovery. Including: Key source populations either for breeding or dispersal,

NCW's Response: *“The population of Brush-tailed Rock-Wallaby that occurs in the study area is part of a larger occurrence that extends to the south and north through other areas of Kangaroo Creek Sandstone landscape. This is a sizable population and should be considered important for the species in north-eastern New South Wales.”*

FOSCAG's comment: The above response is meaningless. Brush-tailed Rock-wallaby populations to the north and south are disconnected from that at Shannon Creek. That population will be divided by the project, which will probably result in two separate sub-populations, the viability of which has not been investigated and must be considered in extreme doubt.

An important population is one that is necessary for a species' long-term survival and recovery. Including: Populations that are necessary for maintaining genetic diversity.

NCW's Response: *“The population of Brush-tailed Rock-Wallaby is likely to contribute to the genetic diversity of this species, but the species is widespread and the population is one of a number of populations within northern New South Wales.”*

FOSCAG's comment: Again, the response is meaningless. Throughout the 2005 SIS the Rock-wallaby population at Shannon Creek is described as an important population.

An important population is one that is necessary for a species' long-term survival and recovery. This may include populations that are: Near the limit of the species range.

NCW's Response: *“The species is not at the geographic limit of its range.”*

FOSCAG's comment: Agreed.

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The Committee invites **written submissions** from interested individuals and organisations, preferably in electronic form sent by email, to eca.sen@aph.gov.au. The email must include full postal address and contact details. The closing date for submissions is **5 September 2008**. **On the 21 August 2008, the committee agreed to an extension of time to lodge submissions until Monday, 22 September 2008.**

Alternatively, submissions may be sent to The Secretary, Senate Standing Committee on Environment, Communications and the Arts, PO Box 6100 Parliament House, CANBERRA ACT 2600, or faxed to 02 6277 5818.

Submissions become committee documents and are made public only after a decision by the Committee. Persons making submissions must not release them without the approval of the Committee. Submissions are covered by parliamentary privilege but the unauthorised release of them is not.

Inquiries from hearing and speech impaired people should be directed to the Parliament House TTY number (02) 6277 7799. Adobe also provides tools for the blind and visually impaired to access PDF documents. These tools are available at: <http://access.adobe.com/>. If you require any special arrangements in order to enable you to participate in a committee inquiry, please contact the committee secretary.

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