Office of Environment & Heritage

Date: 1st February 2012
Your reference: SSI 5039
Our reference: DOC13/3081
Contact: Liz Mazzer
68835325

Lisa Mitchell
Manager – Water Projects
NSW Department of Planning & Infrastructure
GPO Box 39
Sydney NSW 2001

Dear Ms Mitchell

RE: Chaffey Dam Augmentation Project (MP SSI 5039) – Exhibition of Environmental Assessment

I refer to your letter dated 11th December 2012 seeking comment from the Office and Environment and Heritage (OEH) on the Environmental Assessment (EA) for the Chaffey Dam Augmentation Project.

Advice regarding biodiversity considerations is provided in Attachment A. In summary, OEH considers that some further information is required.

- Further targeted surveys are required for *Dichanthium setosum*
- That the proponent quantify habitat surrounding the site that is suitable for threatened species identified as using, or potentially using, the area. This could be conducted as part of the offset strategy investigations.
- The assessment of impacts to the Booroolong Frog should be reviewed and amended by adopting a more precautionary approach.
- Adequate population and habitat surveys throughout the Upper Peel should be conducted to inform both the assessment of impacts and the potential for offsets.
- Specific strategies should be considered that mitigate impacts to riparian areas for terrestrial biodiversity that are dependent on such habitat.
- It needs to be demonstrated that the high risks and potentially significant impacts of relocation of affected fauna as a mitigation measure have been considered and will not apply in this case or alternative strategies be formulated.
- The proponent should provide specific alternative strategies for mitigation, or reconsider the level of impact on the Booroolong Frog and Border Thick-tailed Gecko, and how this affects biodiversity offset requirements.
- With regard to environmental flows, OEH recommends that any stimulus flows should, unless advised otherwise by the Environmental Water Manager, be released to reflect the natural rates of the rise and fall for the Peel River system.

A number of points regarding the preparation of a detailed biodiversity offset plan have also been provided in Attachment A.

PO Box 2111 Dubbo NSW 2830
Level 1 48-52 Wingewarra Street Dubbo NSW
Tel: (02) 6883 5312 Fax: (02) 6884 8675
ABN 30 841 387 271
www.environment.nsw.gov.au

With regard to Aboriginal Cultural Heritage, OEH considers that some buffer zones are required to protect particular sites, and some sites need to be registered on the Aboriginal Heritage Information Management System (AHIMS). Clarification of the processes followed is also required.

More detailed advice relating to Aboriginal Cultural Heritage is provided in Attachment B.

If you have any questions regarding this matter further please contact Liz Mazzer on 02 6883 5325 or email liz.mazzer@environment.nsw.gov.au

Yours sincerely

ROBERT TAYLOR
Manager, Environment & Conservation Programs
Conservation and Regulation Division

ATTACHMENT A
Biodiversity

Unless otherwise stated, citations in this section refer to EIS Appendix 8.

OEH understand that the impacts of the proposed project have been estimated to include:

- Removal and/or inundation of approximately 194.25ha of native vegetation, of which 180ha was mapped by the Proponent as TSC Act Box-Gum EEC, including:
    - 134ha of Box-Gum EEC Derived Native Grassland (DNG); and
    - 10ha of Box-Gum CEEC listed under the EPBC Act.
- Removal and/or inundation of habitat for up to 25 threatened fauna species, of which six species are known from the Project Area, including:
    - 1,700m of known stream habitat for the Endangered Booroolong Frog; and
    - 5.26ha of known habitat for the Vulnerable Border Thick-tailed Gecko.

IMPACT ASSESSMENT

ISSUE 1

Selection of threatened flora species for targeted surveys.

Background

Targeted surveys were conducted for the following four threatened flora species (Table 3-2, p. 12-13):

- *Asterolasia* sp. “Dungowan Creek”
- *Dichanthium setosum*
- *Diuris pedunculata*
- *Euphrasia arguta*

In Appendix B (Table B.2), the Proponent considered the habitat of all four of these species to be present within the Project Area. However, Table B2 also considered the habitat of three other threatened flora species to be present, namely *Eucalyptus rubida* subsp. *barbigerorum*, *Thesium australe* and *Bothriochloa biloba* (EPBC Act listed). The Proponent states that following initial surveys, the former four species were considered to potentially occur in the Project Area, and consequently were targeted. However, the Proponent has not adequately justified why the latter three species were not targeted for survey. This decision process should be documented in the EIS.

Recommendations

That the Proponent provide adequate justification for not targeting *Eucalyptus rubida* subsp. *barbigerorum*, *Thesium australe* and *Bothriochloa biloba* as part of this assessment.

ISSUE 2

Timing of surveys for *Dichanthium setosum*.

Background

The Proponent concedes that targeted surveys for *Dichanthium setosum* were undertaken outside the optimal period for detection (p. 12, p. 37). Further, the Proponent recommends that additional targeted surveys be undertaken for this species to accurately determine the potential for and extent of impacts as a result of the Proposal.

Recommendation

That the Proponent undertake additional targeted surveys for *Dichanthium setosum* of an appropriate intensity and during the optimal period for detectability.

ISSUE 3

Assessment of impacts to threatened fauna species.

Background

The assessment presented in Table B-1 indicates that the habitat of a number of fauna species is likely to be affected. This has not been clearly stated in the section of the EIS that discusses Terrestrial Fauna Species (page 133). Many species that have been recorded as having habitat and/or being recorded as present on-site have not been assessed in any detail.

Additionally, for many species Table B-1 considers impact to be low, stating that "abundant habitat is available adjacent to the site". This assumption has not been verified in the EIS.

Recommendation

That the proponent quantify habitat surrounding the site that is suitable for threatened species identified as using, or potentially using, the area. This could be conducted as part of the offset strategy investigations.

ISSUE 4

Assessment of impacts to the Booroolong Frog.

Background

OEH have significant concerns over any impacts that will reduce the availability of habitat to the Booroolong Frog in the Upper Peel. The Booroolong has declined from around 50% of its former range, with the great majority of declines occurring in the northern half of its distribution. The remaining northern populations in the subcatchments of the Cockburn and Upper Peel Rivers (in addition to restricted records from the Isis River east of the Murray Darling Basin) are separated from the nearest population in the Turon River by more than 200km, and are themselves isolated from each other. Consequently, the Upper Peel Booroolong population is extremely important to the species as a whole, and any proposed reduction in this population will reduce the resilience of it to threatening processes, including climate change.

The Proponent has acknowledged (p. 18) that surveys for the Booroolong Frog were undertaken outside of the optimal period for detecting this species. This is particularly important for surveys in areas that are occupied by both the Booroolong Frog and its close congenors *Litoria wilcoxii* and *L. lesueurii* (as in the Upper Peel). In addition, OEH note that Environmental Assessment Requirements provided by the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) provide specific survey requirements for the Booroolong Frog.

Notwithstanding the Proponent's proposal to undertake "additional population and habitat surveys" as part of a Booroolong Frog Management Plan (p. vi), a suitably timed survey was not undertaken for this EIS. Consequently, the Proponent's assessment of impacts to the Booroolong Frog should necessarily have been precautionary: OEH do not believe this to be the case.

The Proponent appears to have over-emphasized the influence of shade as a determinant of habitat (p. 20 and p. 46) in it's assessment of Booroolong Frog habitat within and upstream of the new FSL. While OEH agree that shading of habitat areas may affect Booroolong habitat selection (given potential metabolic implications for juvenile and adult frogs, as well as prey species), OEH assert that the two most important factors affecting Booroolong habitat within its extant distribution are the presence of water and the presence of exposed rocky substrates with crevices. Landuse-related practises that affect either of these factors (i.e. that alter hydrological regimes, facilitate weed invasion and increase sedimentation) will reduce habitat availability and preclude habitat selection by this species. While an important ecological consideration, shading can only be considered secondary to water and rock crevices. Moreover, considerable temporal variation is expected in the amount of shade caused by riparian canopy species subject to natural processes including tree senescence and floods. Unshaded areas of streams can actually be important for the species because the Chytrid fungus is intolerant of such conditions (North West Ecological Services 2009).

Consequently, in the absence of adequate surveys and given a necessity to adopt a precautionary approach, OEH asserts that it should be assumed that the stretch of the Upper Peel to be subsumed within the new FSL should be considered Booroolong Frog habitat. Further, considering the results of surveys by North West Ecological Services (2009), who recorded several hundred individuals at this location, it is likely that this portion of the Upper Peel is of relatively high importance in comparison with other stretches upstream.

Thus, OEH interpret the following impacts to the Booroolong Frog arising from this proposal:

- loss of 1,700m of known habitat, representing at least 15% of the total Upper Peel population, and which may be proportionately greater given the relative importance of this stretch;
- reduced population resilience and increased vulnerability to extinction; and as a consequence
- broader implications for the overall range and security of the species.

Recommendation

That the proponent:

- review and amend the assessment of impacts to the Booroolong Frog by adopting a more precautionary approach; and
- undertake adequate population and habitat surveys throughout the Upper Peel (note: this will inform both the assessment of impacts and the potential for offsets – see below).

MITIGATION & OFFSET STRATEGY

ISSUE 5

Mitigation of indirect impacts associated with construction.

Background

OEH note that the Proponent provides recommended mitigation strategies for potential impacts associated with construction (Section 6.1). Elsewhere in the EIS, the Proponent has made the distinction between aquatic biodiversity and terrestrial biodiversity, on the basis of their relevance under the Fisheries Management Act and the TSC Act (respectively). This distinction is continued in the discussion of mitigation strategies, wherein control of erosion and sediments are discussed in terms of impacts to water quality under the heading of “Aquatic”. OEH emphasize that riparian terrestrial biodiversity should be considered when managing indirect impacts associated with construction, and that this is not limited to weed control. Matters to consider include prevention of any sediments affecting Booroolong Frog habitat, and protocols to prevent the introduction and spread of amphibian chytrid fungus.

Recommendation

That the Proponent specifically consider strategies that mitigate impacts to riparian areas for terrestrial biodiversity that are dependent on such habitat.

ISSUE 6

Relocation of fauna from the impact area.

Background

OEH note that proposed management plans for the Booroolong Frog and Border Thick-tailed Gecko involve the translocation of individuals from the impact area to locations outside the proposed footprint (p. 78). OEH retain serious concerns over the suitability of such a strategy, and the Proponent’s reliance on it.

Prior to relocating animals, the suitability of a receiving site would need to be properly assessed to ensure that appropriate habitat is present and available (i.e. unoccupied), and that relevant threats are adequately managed. For the Border Thick-tailed Gecko, the Goat Mountain receiving site has apparently been assessed and confirmed to contain appropriate habitat (as demonstrated by the presence of this species); however, the availability of unoccupied habitat for relocated individuals has

yet to be addressed, and the management of threats has yet to be ensured. Habitat availability is influenced by both resident conspecifics and other fauna that occupy the same or similar ecological niche: i.e. is the area already at or near carrying capacity? With regard to threats that might influence the success of a relocation exercise, the Proponent has recommended that the wildlife corridor between the Project Area and Goat Mountain be managed for stock and weed impacts; however, the efficacy of such management will depend on the security of tenure (see Issue 7, below); and regardless, no such management has been proposed for the actual receiving site.

By contrast, threat management has been proposed for Booroolong Frog receiving sites, albeit without assurance of the long-term security of such sites. However, concerns surrounding habitat availability are accentuated for the Booroolong Frog when the impacts of augmenting existing populations is considered in the context of the amphibian chytrid fungus. Specifically, the virulence of chytrid will increase with increasing altitude (receiving sites will be located upstream), and increasing population density (augmentation will increase the density of resident populations).

Recommendations

That the Proponent:

- demonstrate consideration of the high risks and potentially significant impacts of relocation of affected fauna as a mitigation measure; and
- provide specific alternative strategies for mitigation, or reconsider the level of impact on the Booroolong Frog and Border Thick-tailed Gecko and how this affects biodiversity offset requirements.

ISSUE 7

Adequacy of the exhibited offset strategy.

Background

OEH note that the Proponent has provided an offset strategy that describes what a future offset proposal would entail and how it would address State and Commonwealth offset policies. However, in the absence of an actual plan, and considering the issues raised above concerning uncertainties around the impact assessment and proposed mitigation strategies, OEH cannot comment in detail on the adequacy of the exhibited offset strategy. Moreover, public consultation on a detailed offset plan is similarly not possible.

Notwithstanding, OEH raise the following points regarding the exhibited offset strategy:

- It is OEH's preference by that the Proponent submit a final offset plan prior to project determination (p. 81, *Terrestrial and Aquatic Flora and Fauna Impact Assessment*).
- OEH emphasize that in addition to considering the SEWPAC *Environmental Offsets Policy*, the Proponent should consider the OEH *Interim policy on assessing and offsetting biodiversity impacts of Part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects* with which OEH would review any future offset plan. This policy includes reference to both the Biobanking Assessment Methodology (BBAM) and the *Principles for the use of Biodiversity Offsets in NSW*.
- OEH considers that the Proponent's reference to the potential use of the Credit Converter for the conversion of outstanding credit requirements to areas of habitat is inappropriate (p. I-2). The Credit Converter is a tool developed under the Biodiversity Certification Assessment Methodology (BCAM); Tier 3 Variation Criteria C of the OEH Offset Policy refers to the use of BBAM (and not BCAM) for the conversion of ecosystem credits into hectares.
- OEH notes the Proponent's reference to the management and security of offset sites, and in particular the likelihood that Conservation Property Vegetation Plans (CPVPs) would be used as a mechanism for doing so (p. I-5 – I-6). The OEH *Guidance on Appropriate Mechanisms for Securing Biodiversity Offsets* asserts that the preferred mechanism for securing offsets are: the establishment of a biobanking site with a Biobanking agreement under the TSC Act; the retirement of biobanking credits; and dedication of land as a public reserve under the NPW Act. Although establishment of CPVPs to secure offsets may be considered where it is not possible to negotiate the use of any other recommended mechanism, the above mechanisms (in addition to

others detailed in the latter *Guidance*) are preferred. Note that rezoning and s88 covenants (as alluded to by the Proponent) are not recommended mechanisms.

- With reference to how the Offset Strategy would address Offset Principle 9, the Proponent claims to have addressed assessment requirements for both the Impact site and the offset sites. Clearly, this has not been undertaken for the offset areas as these have yet to be identified, and uncertainties need to be addressed with regard to specific impacts on several threatened species (as discussed above).
- Section 6.2 of the Terrestrial and Aquatic Flora and Fauna Impact Assessment states,

  The Project will impact upon habitat for listed threatened species and vegetation communities. The exact offset requirements will be calculated according to the EPBC Act Offsets Policy and using the EPBC offset calculator for relevant EPBC listed species and communities. The Biobanking Assessment Methodology and Calculator will be applied for TSC listed species.

  It should be noted that the offset strategy needs to include all native vegetation communities to be affected, not just those listed under the EPBC and TSC Acts.

Recommendations

That the Proponent considers the above points in their preparation of a detailed biodiversity offset plan, and address all known and potential impacts arising from the Project.

ISSUE 8

Stimulus flows

Background

Section 4.8.1 of the Environmental Impact Assessment discusses environmental releases and states,

At present, environmental releases are only provided once a minimum storage volume is reached, only in certain months of the year and only if flood flows of a given magnitude have not occurred. None of these conditions apply after augmentation. The background document to the Peel Valley Water Sharing Plan states that although the magnitude, timing and duration of environmental releases after augmentation is not prescribed, the ECA is likely to be used as a stimulus flow over seven days with a peak on day 2 of 1,200 ML/day.

OEH considers that stimulus flows should, where possible, reflect natural rates of rise and fall.

Recommendation

OEH recommends that any stimulus flows should, unless advised otherwise by the Environmental Water Manager, be released to reflect the natural rates of the rise and fall for the Peel River system.

References

North West Ecological Services (2009). Review of the conservation status of the Booroolong Frog (*Litoria booroolongensis*) within the Namoi River Catchment. Report to Namoi CMA.

ATTACHMENT B

Aboriginal Cultural Heritage

Issue 1

Buffer zones around sites.

Background

Recommendation 2 of the Aboriginal Cultural Heritage Assessment states that:

Sites which fall on the border of the proposed inundation level (CD!F7 and CDIF9) should be fenced off during any construction works associated with the Tamworth-Nundle and Western Foreshore Roads and associated bridge realignments to avoid indirect impacts during construction.

OEH considers that these sites will also require buffer zones to ensure their protection.

Recommendation

That appropriate buffer zones be applied around the sites to ensure their protection.

Issue 2

Sites not included on the Aboriginal Heritage Information Management System (AHIMS)

Background

Site identification cards has not been provided for the following sites. It appears that they have not been registered on the Aboriginal Heritage Information Management System (AHIMS):

- Chaffey A1
- Chaffey A2
- Chaffey A3
- Chaffey A4

Recommendation

Supply OEH with copies of site cards for the above sites so they can be registered onto the AHIMS.

Issue 3:

Aboriginal consultation

Background

In section 4.1 Aboriginal consultation (page 12, 2nd paragraph) of the Aboriginal Cultural Heritage Assessment, the Report states that consultation has complied with the OEH 2010 Aboriginal consultation requirement. OEH considers that the report has not fully complied with these requirements, in particular stages 2 and 3.

4.2 Stage 2 – Presentation of information about the proposed project

Aim: To provide registered Aboriginal parties with information about the scope of the proposed project and the proposed cultural heritage assessment process.

According to the report, stage 2 did not occur.

4.3 Stage 3 – Gathering information about cultural significance

Aim: To facilitate a process whereby registered Aboriginal parties can:

(a) contribute to culturally appropriate information gathering and the research methodology

(b) provide information that will enable the cultural significance of Aboriginal objects and/or places on the proposed project area to be determined

(c) have input into the development of any cultural heritage management options

According to the report, the Representative Aboriginal Parties were not given an opportunity to contribute to culturally appropriate information gathering and the research methodology.

Recommendation

The proponent should either provide further information or remove/amend the statement about complying with the OEH 2010 Aboriginal consultation requirement as the proponent has not complied with these requirements and the statement is therefore misleading.