



Office of
Environment
& Heritage

Our Ref: DOC15/514183

Your Ref: SSD 6624

Mr Thomas Watt
Senior Planning Officer
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Mr Watt

Re: Major Project - Proposed Expansion of Sly's Quarry SSD 6624

Thank you for your email dated 19 February 2016 regarding the Biodiversity Assessment Report (BAR) for the above the expansion of Sly's quarry, requesting comments from the Office of Environment and Heritage (OEH). I appreciate the opportunity to provide input.

We understand that the application relates to the proposed expansion of an existing sandstone quarry by 11.1 hectares and an increase in the extraction rate up to 500,000 tonnes per annum. The primary purpose of the quarry would be to supply substantial quantities of quarry materials required for the current and proposed Pacific Highway works, and for supply to Clarence Valley Council and local contractors.

We have reviewed the BAR and advise that we have identified a number of issues with the species-credit species assessment, which is required to be prepared in accordance with the Framework for Biodiversity Assessment (FBA). These issues are discussed in detail in **Attachment 1** to this letter.

In summary, we recommend the following:

- a) Due to the incorrect selection of the 'development' assessment type tab in the credit calculator, the assessor will need to re-do and resubmit the credit calculations following selection of the correct 'major project' assessment type. Due to the underlying functions of the calculator, we recommend the assessor begin a new 'major project' assessment, rather than amending the current calculations, to avoid errors being created within the tool.
- b) The BAR does not contain all of the information required to be documented in the BAR, as listed in Appendix 7 of the FBA (Reporting requirements for the FBA). Amendments will need to be made to the layout and content of the BAR to reflect the layout and requirements of the FBA.
- c) The Department of Planning and Environment and the applicant note the list compiled by the OEH at *Table 1* in Attachment 1, which contains those species considered to be 'candidate' species-credit species for which, according to the assessor, habitat exists within the proposed expansion footprint. This list was compiled with reference to Table 15 and the Appendix 1 'Likelihood of Occurrence' table contained within the BAR.

- d) Given that only two species (the squirrel glider and koala) have been assumed to be present on site, no expert report has been prepared for any other species predicted to occur, and only a small number of candidate species were targeted by threatened species surveys, targeted surveys are to be undertaken for all those remaining candidate species identified in *Table 1*, where suitable habitat is verified to be present on site, in accordance with 6.6.1.3 of the FBA.
- e) As required by Section 6.6.1.5 of the FBA and the Secretary's Environmental Assessment Requirements (SEARs), threatened species surveys for any species other than amphibians are to be undertaken in accordance with the OEH threatened species survey guidelines. Similarly, as required by Section 6.6.1.6 and the SEARs, threatened species surveys for amphibians are to be undertaken in accordance with the OEH threatened species survey guidelines for amphibians. Detailed information regarding the techniques, effort, timing and location of surveys are to be documented in the BAR.
- f) The timing of all surveys is to be consistent with the survey timing information provided within the OEH's Threatened Species Profiles Database (TSPD), as relevant to each threatened species being targeted.
- g) Information detailing the survey undertaken in 2015 which targeted threatened flora, including the techniques, effort, timing, and location of the threatened flora surveys is to be provided in the BAR for each of the remaining nine flora species identified in *Table 1*, as required by the FBA (refer to Appendix 7 of the FBA).
- h) It appears that the threatened species guidelines have not been referenced in the design and carrying out of the targeted common planigale survey. As such, an additional survey that is consistent with the guidelines is required for the common planigale wherever suitable habitat exists within the development footprint.
- i) If the surveys reveal additional threatened species occurring on the subject site, or if additional species are assumed to occur, consideration will need to be given as to whether these species can withstand further loss. Species that cannot withstand further loss require additional consideration under the FBA.
- j) The BAR needs to be updated to provide information relating to the species polygon for the bordered guinea flower (*Hibbertia marginata*) which is known to occur on site, as required by section 6.5.1.14 of the FBA.
- k) Where additional threatened species are assumed to occur, or detected on the subject site in subsequent surveys, the preparation of species polygons will be necessary to enable the accurate calculation of species credits. The polygons for assumed species are to be prepared by an expert, in accordance with section 6.5.1.15 of the FBA.

If you have any further questions about this issue, Ms Nicky Owner, Conservation Planning Officer, Regional Operations, OEH, can be contacted on 6659 8254 or at nicky.owner@environment.nsw.gov.au.

Yours sincerely



15 March 2016

DIMITRI YOUNG
Senior Team Leader Planning, North East Region
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Contact officer: NICKY OWNER
 6659 8254

Enclosure: Attachment 1: Detailed OEH Comments – Slys Quarry Biodiversity Assessment Report.

Attachment 1: Detailed OEH Comments – Slys Quarry Biodiversity Assessment Report.

The OEH has undertaken a comprehensive review of the Biodiversity Assessment Report (BAR) for the proposed Sly's Quarry expansion, which is required to be prepared in accordance with the Department of Planning and Environment's (DPE) Secretary's Environmental Assessment Requirements (SEARs), the NSW Biodiversity Offsets Policy for Major Projects, and the Framework for Biodiversity Assessment (FBA). The application of these documents and their associated methodologies and rule sets is a statutory requirement for the assessment and offsetting of the biodiversity impacts of major projects, such as Sly's Quarry, which, due to its proposed size and extraction rate, is deemed to be State Significant Development.

We understand that the quarry operation would be carried out in stages and in response to demand, in accordance with the following:

- Stage 1 already has approvals in place under an existing development application. The BAR therefore only relates to subsequent stages 2 and 3, as described below.
- Stage 2 would involve expanding the quarry to the north and south and to a depth of 44 m AHD. Stage 2 (south) would be exhausted prior to Stage 2 (north) being developed. This would expand the quarry by approximately 5.7 hectares and involve the extraction of approximately 2.8 million tonnes of material. This would involve the removal of 5.27 hectares of native vegetation.
- Stage 3 would be the final stage and would expand the quarry further north and south. Stage 3 (south) would be exhausted prior to Stage 3 (north) being developed. Stage 3 would involve an expansion of approximately 5.4 hectares to a depth of 44 m AHD. This would involve extracting approximately 1.8 million tonnes of material. This would include the removal of approximately 5.2 hectares of native vegetation.

As outlined by the FBA, a Biodiversity Assessment Report (BAR) must be prepared to describe the biodiversity values present at the site, assess impacts of the proposal and determine the number of biodiversity credits required to offset impacts of the proposal. Given the proponent for the Sly's Quarry expansion is proposing to establish an offset for the project, the Biobanking Assessment Methodology (BBAM) must be used to assess the biodiversity values of the offset site and to identify the number and type of biodiversity credits that may be created on the offset site.

As required by Section 3.2.1.1 of the FBA, *'The BAR must be prepared by an accredited assessor (which it has) and must contain the matters identified in Appendix 7.'*

We have reviewed the BAR in accordance with the requirements of Appendix 7. A number of deficiencies have been identified, as outlined in the following sections. We have also reviewed the data entered into the FBA credit calculator, which is supported by the BAR.

Stage 1 Biodiversity Assessment

Use of the FBA Credit Calculator

One of the very first steps in the BioBanking Credit Calculator is the selection of the appropriate assessment type. Given the Sly's Quarry Expansion Project relates to a major project assessed in accordance with the FBA, the 'Major project' tab should have been selected. However, despite advice to the contrary within the BAR, it appears that the assessor has selected the 'development' tab, which relates to the application for a BioBanking Statement and not the application of the FBA.

As such, the assessor will need to re-do and resubmit the credit calculations, beginning with the correct selection of the assessment type. Due to the underlying functions of the calculator, we recommend the assessor begin a new calculation, rather than amending the current calculations, to avoid errors being created within the tool.

Documentation provided within the BAR

Generally, the OEH agrees with the contents of the BAR in terms of the assessment of landscape features and native vegetation present within the inner and outer assessment circles and on the development site, including the correct identification of IBRA region and subregion, Mitchell Landscape and Plant Community Types (PCTs), and the correct identification and consideration of ecosystem credit species.

However, we have identified a number of discrepancies with the identification and/or assessment of species credit species, as outlined below. Additionally, the BAR does not contain all of the information required to be documented in the BAR, as documented in Appendix 7 of the FBA (Reporting requirements for the FBA). We recommend that amendments be made to the layout and content of the BAR to more closely reflect the layout and requirements of the FBA. Many of the necessary improvements are documented in the following sections.

Assessing Species Credit Species

Threatened species that cannot reliably be predicted to occur on a development site based on PCT, distribution and habitat criteria are identified in the OEH's Threatened Species Profiles Database (TSPD) as 'species-credit species'.

The assessor must identify and assess species-credit species on the development site in accordance with the steps set out at Section 6.5 of the FBA.

The FBA credit calculator uses two primary filters (being IBRA subregion and PCT), to prepare a list of 'predicted' species-credit species that potentially occur on the development site. (The list of species-credit species predicted by the credit calculator has been replicated within Table 15 of the BAR.)

The list of species predicted by the FBA calculator is considered only the first approach to identify the candidate species potentially present on the development site. To ensure a comprehensive assessment of species-credit species, Step 1 of Section 6.5 of the FBA outlines an additional process for assessors to use to identify species-credit species that have the potential to be present, to supplement the information filtered out by the calculator. This process is required by the FBA to be documented in the BAR.

Although there is no evidence in the BAR that step 1 of Section 6.5 of the FBA has been strictly followed, we note that the assessor has compiled a "Likelihood of Occurrence table" within Appendix 1 of the BAR which lists those species-credit species (and ecosystem-credit species) that potentially occur on site, derived at least in part using the steps identified at Step 1. For the purpose of the FBA, the species listed within Appendix 1 of the BAR are taken to be candidate species as identified by Step 1.

Based on those species predicted by the calculator (derived from Table 15 of the BAR) combined with the additional species-credit species identified in the 'Likelihood of Occurrence' table contained at Appendix 1 of the BAR, and for which the assessor has identified suitable habitat on site, the following species listed in *Table 1* below are considered by the OEH to be candidate species-credit species potentially affected by the proposed quarry expansion.

Table 1 – Candidate species credit species with suitable habitat present on site.

Common Name	Species Name
Common planigale**	<i>Planigale maculata</i>
Green-thighed frog**	<i>Litoria brevipalmata</i>
Giant Barred Frog**	<i>Mixophyes iteratus</i>
Red-tailed Black Cockatoo (coastal subspecies)	<i>Calyptorhynchus banksii</i> subsp. <i>banksii</i>
Little Bent-wing Bat*	<i>Miniopterus australis</i>
Eastern Bent-wing Bat*	<i>Miniopterus schreibersii oceanensis</i>
Eastern Long-eared Bat*	<i>Nyctophilus bifax</i>
Grey Headed Flying-fox*	<i>Pteropus poliocephalus</i>
Stephen's Banded Snake	<i>Hoplocephalus stephensii</i>
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>
Moonee Quassia**	<i>Quassia</i> sp. Mooney Creek
<i>Paspalidium grandispiculatum</i>	<i>Paspalidium grandispiculatum</i>
Sandstone Rough-barked apple	<i>Angophora robur</i>
Spiny mint-bush	<i>Prostanthera spinosa</i>
<i>Tephrosia filipes</i>	<i>Tephrosia filipes</i>
Leafless Tongue Orchid	<i>Cryptostylis hunteriana</i>
Tall Knotweed	<i>Persicaria elatior</i>
Native Milkwort	<i>Polygala linariifolia</i>
Swamp Mint-bush	<i>Prostanthera palustris</i>

Species credit species in relation to breeding habitat *

Targeted threatened species surveys undertaken**

Based on an examination of the candidate species listed in *Table 1*, it appears that not all species for which habitat is considered present has been assessed appropriately by the assessor.

Each species for which suitable habitat exists must be addressed by either:

- assuming it is present, or
- undertaking a threatened species survey (in accordance with Section 6.6) of the FBA, or
- obtaining an expert report in accordance with Section 6.6.2 of the FBA.

(Given the koala and squirrel glider have been assumed to be present by the assessor, these species have been removed from *Table 1*. Furthermore, the bordered guinea flower has also been removed from the table as this species is known to occur on site. *Table 1* also recognises that limited threatened species surveys have been undertaken for a small number of species-credit species.)

Therefore, given only limited species were targeted by surveys, the squirrel glider and koala are assumed to be present on site, and no expert report has been prepared for any other species predicted to occur, targeted surveys should be undertaken for all those remaining candidate species identified in *Table 1*, for which suitable habitat is present on site, in accordance with 6.6.1.3 of the FBA.

Threatened Species Surveys

The BAR states at Section 3.3.5 that 'The site survey methodology included limited targeted fauna survey techniques because the FBA assess the majority of threatened fauna species that could occur based on habitat surrogates'. This is relevant in the context of ecosystem-credit species, but in relation to species-credit species, where potential habitat exists on site, detailed targeted fauna surveys are required to confirm whether the species occurs on site or not. If the presence of a species-credit species is confirmed, an appropriate offset must be provided. If it is not found to be occurring on site, no further assessment is required.

Examination of the BAR indicates that targeted species surveys have been undertaken for *Hibbertia marginata*, giant barred frog, green-thighed frog and common planigale. The OEH questions why the other candidate species were not subject to further targeted survey given the availability of habitat on site (or an explanation provided in the BAR to remove species from the list of candidate species if it was later deemed that habitat is not present).

Additionally, it is clearly stated at Section 6.6.1.5 of the FBA that threatened species surveys for any species other than amphibians must be undertaken in accordance with the OEH threatened species survey guidelines. Similarly, Section 6.6.1.6 states that a threatened species survey for amphibians must be undertaken in accordance with the OEH threatened species survey guidelines for amphibians.

The timing of all surveys is to be consistent with the survey timing information provided within the OEH's Threatened Species Profiles Database (TSPD), as relevant to each threatened species being targeted.

The following comments are offered in respect to the threatened species surveys that have been undertaken and discussed within the BAR.

a) *Flora – Species-Credit Species Surveys*

- Bordered guinea flower (*Hibbertia marginata*) surveys

According to the BAR, targeted surveys were undertaken for the bordered guinea flower to quantify the number of individuals being impacted by the proposal. The data was collected between 2 and 4 February 2015 by walking along transects spaced approximately 5 to 10 metres apart within Stages 2 and 3 of the proposed expansion footprint, and recording the location and number of *Hibbertia marginata* plants that were encountered. This survey is considered to satisfy the requirements of the BAR including the threatened species survey guidelines.

- All other flora species

It is documented within Table 15 of the BAR that a number of additional threatened flora species were subject to targeted flora survey. However, other than the surveys for the bordered guinea flower, very little information detailing the survey technique, effort, timing, and location of these threatened flora surveys has been provided in the BAR for the remaining nine flora species identified in Table 1 above, despite this being a clear requirement of the FBA (refer to Appendix 7 of the FBA). This information should be provided in the BAR, and be described for each threatened flora species targeted.

b) *Fauna – Species-Credit Species Surveys*

Whilst koalas and squirrel gliders are assumed to be present and therefore not subject to further survey, targeted surveys have been undertaken for the common planigale, green-thighed frog and giant-barred frog. Comments on these surveys are provided below.

The OEH recommends that targeted fauna surveys be undertaken for those fauna species identified in Table 1 above where suitable habitat is confirmed to exist.

In relation to the fauna surveys that have been undertaken, the OEH offers the following advice:

- Common Planigale.

The common planigale is an elusive small mammal that is known to occupy a wide range of habitat types. According to GHD (2016) further targeted surveys were undertaken in an effort to detect the common planigale between 10 and 12 February 2016. The planigale survey was restricted to the placement of four 30 metre pit falling lines with three pitfalls and one infra-red motion camera on each trap line.

Based on these figures, 24 trap nights were undertaken over two consecutive nights.

As per the Secretary's Environmental Impact Assessment Requirements (SEARs) and the requirements of the FBA, threatened species surveys (excluding amphibians) are required to be undertaken in accordance with the OEH's threatened species survey guidelines. It appears that these

guidelines have not been referenced in the design and carrying out of the targeted common planigale survey.

Table 5.8 of the assessment guidelines outlines the survey effort required for targeting non-flying mammals. The table indicates the following methods should be utilised for the detection of small mammals within each stratification unit (up to 50 hectares). For the purpose of the FBA, the site should be stratified based on vegetation zones, described at Section 3.3.2 of the BAR.

As such, the following survey effort should be undertaken wherever habitat for the common planigale exists within vegetation zone 1 and vegetation zone 2.

1. Small Elliott traps – 100 trap nights over 3-4 consecutive nights, and
2. Pitfall traps with drift nets – 24 trap nights over 3-4 consecutive nights, and
3. Hairtubes – 10 large and 10 small tubes in pairs for at least 4 days and 4 nights.

- Giant-barred and Green-thighed Frog

Surveys for the giant-barred and green-thighed frogs were undertaken on one night on 3 November 2015 using a combination of spotlighting and call playback techniques. It is stated within the BAR that this species is unlikely to occur on site due to unsuitability of habitat present. We agree with this conclusion based on the absence of streams with permanent pools present on site (required for the giant-barred frog) and the absence of areas that are likely to pool ephemerally, and that are suitable for the green-thighed frog.

Species that cannot withstand further loss

A number of candidate species-credit species are recognised as species that cannot withstand further loss. These species include little bent-wing bat (breeding habitat), eastern long-eared bat (breeding habitat), Moonee quassia, spiny mint-bush, leafless tongue orchid, tall knotweed, native milkwort and swamp mint-bush. Species that cannot withstand further loss require additional consideration under the FBA if found or assumed to be present on site following additional survey effort.

Species-Credit Species polygons

It is apparent from review of the BAR that no specific species polygons have been prepared for the species known and assumed to occur.

For those species-credit species which are assumed to occur (ie koala and squirrel glider), section 6.5.1.15 of the FBA requires the assessor to use an expert report to determine the location and areas of the species polygon to include the fauna habitat (or number of individual flora species) assumed to be present on the development site.

Although the BAR gives no direct reference to the preparation of species polygons, it is apparent that the assessor has considered that the entire subject site forms the species polygon for the koala and squirrel glider, which are assumed to be present on the site. The result of this is that 100% of the site is considered to be habitat for these species and the offset has been calculated accordingly. The FBA requires that species polygons be based on an expert report. However, in this instance, given that 100% of the site has been assigned as the species polygons for the koala and squirrel glider, OEH is able to accept these polygons without an expert report.

However, the BAR needs to be updated to provide information relating to the species polygon for the bordered guinea flower (*Hibbertia marginata*) which is known to occur on site, as required by section 6.5.1.14 of the FBA.

As described in sections 6.5.1.14 – 6.5.1.18 of the FBA, where further targeted surveys confirm the presence of a threatened species, or where a species is assumed to be present, the assessor must prepare species polygons for each of those species-credit species, from which credits can be

calculated accordingly (and in the case of a species assumed to be present, polygons are to be developed by an expert as per section 6.5.1.15 of the FBA).

Stage 2 – Impact Assessment (Biodiversity Values)

This stage cannot be adequately assessed prior to the corrections and additional work recommended in relation to species-credit species above.

Stage 3 – Biodiversity Offset Strategy

This stage cannot be adequately assessed prior to the corrections and additional work recommended in relation to species-credit species above.