From: s. 22(1)(a)(ii)
Sent: Monday, 23 August 2021 4:55 PM
To: s. 22(1)(a)(ii)
Cc: s. 22(1)(a)(ii)
Subject: RE: Enquiry for Offsets Strategy Plan [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)
Thank you for your valuable feedback and comments on the Offsets Strategy Plan. I will talk to you in this regard.

Regards,
s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii) @environment.gov.au>
Sent: Monday, 23 August 2021 2:58 PM
To: s. 22(1)(a)(ii) @environment.gov.au>
Cc: s. 22(1)(a)(ii) @environment.gov.au>; s. 22(1)(a)(ii) @environment.gov.au>
Subject: RE: Enquiry for Offsets Strategy Plan [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

I've had a chance to look through the Land Acquisition Offset Strategy for the Yalyalup sand mine (EPBC 2017/8094). I have some general comments on the strategy, as well as some specific recommendations concerning the proposed offsets.

General comments

- More detail is required in the Offset Strategy, specifically concerning rehabilitation details (species to be planted, timeframes for establishment, time to ecological benefit (i.e. foraging resource becomes available), location for revegetation/rehabilitation (onsite and offsite at proposed offsets), etc). Alternatively, you may wish to require a separate rehabilitation plan to address activities for mitigation onsite. (All revegetation activities for the proposed offset sites should be included in this Offset Strategy.)
- Offset Assessment Guides need some adjustment to be accurate, particularly for risk of loss and time until ecological benefit.
- I have included some OAGs (see attached) with adjusted figures for the TEC (still reaches 100% direct offset, so ok), Carnaby's black cockatoo (also covers the other 2 species (Baudin's as endangered and Forest Red-tailed black cockatoo as vulnerable) and for *Banksia squarrosa* subsp. *argillacea* (Whicher Range Dryandra). Please note that the OAG for Carnaby's includes a count for the loss of 5 hollows likely to be suitable for breeding (bottom part of sheet). The full direct offset of 100% should be both foraging and breeding combined. This is assuming the breeding hollows are to be offset – if, for some reason, they are not, then additional foraging habitat may be required.
- It isn't clear if/where offsets for Western Ringtail Possum are included. Given this species is critically endangered, this should definitely be considered (see comments below on this).

Mitigation and rehabilitation

With respect to the proposed rehabilitation/revegetation (mitigation), as set out in Tables 1 (pp.7-9) and 2 (pp.12-14), there is insufficient information provided to determine the likelihood of success.

- Additional information is required to support the claim that the approval holder has had success in rehabilitating black cockatoo foraging habitat, e.g. published papers, reports detailing how completion criteria have been successfully achieved, etc. This would need to be provided to indicate the proposed rehabilitation is likely to be successful.
- Further, the claim of 5-7 years is misleading. This claim appears to concern establishing the plantings. However, the time to ecological benefit, as required to be achieved in the Offset Assessment Guide, would

be the time until the plantings can provide foraging resources for black cockatoos. This is likely to be at least 10 years and possibly longer, depending on environmental conditions.

- Separate timeframes may be required for plantings to address loss of Western Ringtail Possum habitat. The plantings would need to include *Agonis flexuousa* (peppermint) and these requirements would also need to be clearly set out, e.g. time to ecological benefit for WRP, location for plantings with respect to known locations of possums and their habitat, etc. Rehabilitating close to roads and/or near the site of the proposal may not be appropriate when considering threats to the possums.
- It is unclear if the rehabilitation also includes *Banksia squarrosa* subsp. *argillacea* (Whicher Range Dryandra).

Offsets

For the proposed offsets, there are several issues not fully addressed, requiring clarification and/or re-consideration.

- The proposed offsets don't appear to include breeding hollows for black cockatoos. Table 2 states there are 5 hollows considered possibly suitable (either they are suitable or they are not). Assuming these hollows are suitable, these need to be included in any proposed offset package – this is currently not the case. These are included in the attached OAGs and can assist in providing the 100% direct offset. Without the hollows, the total area proposed for the offset is not sufficient unless management measures over 20 years are included.
- The proposed offset for Shrublands on the Swan Coastal Plain Ironstones TEC looks ok based on the figures used in the tables and Offset Assessment Guide. However, the claim that DBCA has agreed to take on management of the offset and include this in their conservation estate requires better evidence. The email thread provided at Appendix 4 is not evidence, particularly as the conversation is about determining the boundary. We would require a specific statement that the proposed offset will be accepted by DBCA and can be incorporated into their conservation estate by a certain date. Shapefiles should be required as well, to confirm the total area being provided.
- The Offset Strategy states that the offsets must be 90% - this is not correct, the package for each MNES must total 100% direct offsets (there are no other compensation measures being proposed).
- There is considerable confusion concerning the timeframes for management. Section 5.2 proposes a 75% survival rate for plantings for the black cockatoo offset site, but doesn't indicate over which time period this would be. Table 6 sets out some timeframes that appear to indicate the offset would be managed for 20 years. However, the Offset Assessment Guides for black cockatoos (Appendix 3) has the time until ecological benefit as 1 year. This must be clarified – if the management measures described (pest and weed management, management of new plantings in revegetation areas for the offset) are to be undertaken, the time period for this must be reflected in the OAG and in the document itself.
- Some of the figures used in the OAG are not correct. For example, the proposed TEC offset should have a risk of loss of 0% once incorporated into the DBCA conservation estate, as that will be permanently protected (currently the risk of loss is 1% - this seems to reflect an ongoing misunderstanding about protecting offset sites, noting that the OAG does not consider stochastic events such as fire or storms, but only those factors arising from human actions, such as clearing).
- Also note that the current risk of loss for the proposed black cockatoo offset site should be 0%. This is because the approval holder already owns the site. Unless there is an immediate risk that the entire site will be cleared, there is no risk of loss.
- Note also that Baudin's black cockatoo is listed as endangered, not vulnerable (it was uplisted in 2018). The OAG (Appendix 3) has it as vulnerable, so this needs to be corrected.
- There should also be clarification concerning how the proposed black cockatoo offset site will be protected into the future. Again, there should be either confirmation from DBCA they will incorporate the site into their conservation estate, or a specified conservation mechanism to secure the site, and by a certain date.
- The timeframes included in Tables 4 and 6 (Section 5) will also need to be updated, for example, for securing the proposed offsets.
- There doesn't appear to be an offset proposed for WRP, but this should be considered. This is a critically endangered species and the proposal will severely impact the possums recorded along the road (see map at Figure 6). Roads are a primary impact that prevent possums from moving through the landscape and the sand mine will likely cut off possums from travelling across this area. Recommend an offset be proposed to address the likely significant residual impact on this species.
- There doesn't appear to be any management of Phytophthora. The Offset Strategy should include data on the extent of Phytophthora in the proposed offset areas and information on how this will be managed.

Phytophthora is a key threat to the TEC and *Banksia squarrosa* subsp. *argillacea*, and possibly also the black cockatoo foraging habitat, depending on which species are present.

- There doesn't appear to be a specific proposed offset for the likely loss of 9 *Banksia squarrosa* subsp. *argillacea* plants. This should be factored into the OAG – see attached. 15 plants do not appear to be sufficient to provide a 100% direct offset.

Discount rates for hollows and plants

I should mention how I have accounted for the loss of hollows (and Dryandras) over time in the OAGs. I've attached here a paper by Ron Johnstone and Tony Kirkby, black cockatoo experts. Their work shows an average loss of hollows for Forest Red-tails of c. 46% every decade (p.11; i.e. 92% over 20 years in the OAG), which is very high. I've have used half this percentage for this proposed offset (46% over 20 years), because it is located in an agricultural area rather than forests and, presumably, fire risk would be actively supressed, as well as the tree density being somewhat less. Also, Forest Red-tails need larger hollows than Carnaby's and Baudin's (yes, all three species are included in the Offset Strategy, but a slightly smaller hollow will accommodate both Carnaby's and Baudin's). I have reduced the confidence in result in the OAGs because it isn't clear if the hollows would be maintained, either with or without management measures (there is no reference to this in the Offset Strategy).

For the Whicher Range Dryandra, I've assumed a loss of 2 plants per year over 20 years. I have no specific data for this assumption, other than the likely presence of Phytophthora, as well as recent drought, and the inundations that may occur in this TEC, if the Banksias are co-located, as they seem to be (Banksias don't like wet feet, but the TEC can be subject to inundation). The OAG shows 26 plants would be required as a separate offset consideration, so more than the proposed 15.

There are quite a few issues raised here, so please feel free to give me a call (phone or Teams) if you'd like to discuss these further – happy to chat.

Regards,s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii) @environment.gov.au>
Sent: Wednesday, 18 August 2021 10:15 AM
To: s. 22(1)(a)(ii) @environment.gov.au>
Cc: s. 22(1)(a)(ii) @environment.gov.au>
Subject: RE: Enquiry for Offsets Strategy Plan [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Thanks for the respond. As I explained it for s. 22(1)(a)(ii) I was wondering, how PAS could be involved with offsets strategy management plan which we received from proponent during assessment stage. This project has been assessed by WA under accredit assessment and as a part of assessment stage, proponent has been asked to provide any relevant management plan like offsets. As previously we asked PAS to provide us any comment in relation to Rehabilitation and Vegetation Management plan (EPBC2017/8066), I thought, is there any possibility to have the same support for offsets plan? I am reviewing this document from our consideration and I hope I could receive any important comments especially tables 1 – 6 (page 7 to page 19) of main text and tables Appendix 2. Any response by the following Monday, would be great (COB 30 / 08 /2021).

Regards,
s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii) @environment.gov.au>
Sent: Wednesday, 18 August 2021 9:56 AM
To: s. 22(1)(a)(ii) @environment.gov.au>
Cc: s. 22(1)(a)(ii) @environment.gov.au>
Subject: FW: Enquiry for Offsets Strategy Plan [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

s. 22(1)(a)(ii) has passed this request on to me. I'm just wondering if there was something in particular you were looking for advice on? Also, when do you need a response? It's helpful for me to know how best to prioritise.

Cheers s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii) @environment.gov.au>
Sent: Wednesday, 18 August 2021 9:18 AM
To: s. 22(1)(a)(ii) @environment.gov.au>
Cc: s. 22(1)(a)(ii) @environment.gov.au>
Subject: RE: Enquiry for Offsets Strategy Plan [SEC=OFFICIAL]

Morning s. 22(1)(a)(ii)

RE: Yalyalup Mineral Sands Project, southeast of Busselton,WA (EPBC 2017/8094)

The proponent has provided the LAND ACQUISITION OFFSET STRATEGY (See attachment). The Offset Strategy has been prepared to meet Ministerial Statement No. 1168, Condition 11 and to further support environmental assessment of the Proposal impacts by DAWE. Condition 11 requires Doral to undertake offsets set out in conditions 11-2 to 11-9 to achieve the objective of counterbalancing the significant residual impact on the following environmental values:

• 0.34ha indirect impact of SCP10b - *Shrublands on southern Swan Coastal Plain Ironstones* (Busselton area), listed as a TEC with threat status of "Critically Endangered" under the BC Act and "Endangered" under the EPBC Act;

• Indirect impact of nine individuals of *Banksia squarrosa subsp. Argillacea,* listed as Threatened under the BC Act and Endangered under the EPBC Act;

• 1.78ha direct impact of potential breeding and foraging habitat for the following three species of Black Cockatoos:
  o Carnaby`s Black-Cockatoo *Calyptorhynchus (Zanda) latirostris* – listed as Endangered under the BC Act and EPBC Act;
  o Baudin's Black-Cockatoo *Calyptorhynchus (Zanda) baudinii* – listed as Endangered under the BC Act, and Vulnerable under the EPBC Act;
  o Forest Red-tailed Black-Cockatoo *Calyptorhynchus banksii naso* – listed as Vulnerable under the BC Act and EPBC Act.

I would be very appreciative it if PAS could provide us any comments in this regard! Look forward to hearing from you.

Kind regards,
s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Environmental Impact Assessment Officer | South WA Section| s. 22(1)(a)(ii)
Department of Agriculture, Water and the Environment
Environment Assessments West (WA, SA, NT) Branch | Environment Approvals Division
John Gorton Building, King Edward Terrace, Parkes ACT
GPO Box 787, Canberra City, ACT 2601
www.awe.gov.au

From: s. 22(1)(a)(ii) @environment.gov.au>
Sent: Tuesday, 17 August 2021 5:59 PM
To: s. 22(1)(a)(ii) @environment.gov.au>
Subject: FW: Enquiry for Offsets Strategy Plan [SEC=OFFICIAL]

G'day s. 22(1)(a)(ii)

Yes, PAS does support assessment teams negotiating offsets during the assessment phase. This is help ensure consistent practice and comparable outcomes irrespective of the phase in which the offset is being determined.

I manage the PAS team covering WA. Let me know the protected matter and I'll put you in touch with the most appropriate officer (which might include me).

Cheers

s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Tuesday, 17 August 2021 1:00 PM
To: postapproval@awe.gov.au; s. 22(1)(a)(ii) @environment.gov.au>
Subject: FW: Enquiry for Offsets Strategy Plan [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Thank you, I am well. I hope you are too.

I think this query is best to go through the PAS Inbox, I've included the inbox in this email.

Cheers,
s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii) @environment.gov.au>
Sent: Tuesday, 17 August 2021 12:22 PM
To: s. 22(1)(a)(ii) @environment.gov.au>
Subject: Enquiry for Offsets Strategy Plan [SEC=OFFICIAL]

Good afternoon s. 22(1)(a)(ii)

s. 22(1)(a)(ii) Just want to double check one task; I know we usually ask your section to provide us technical comments on Management Plans (like Rehabilitation and Vegetation Management Plan) like what we did for EPBC2017/8066 Farral Road Residential Project! The question is: do we have the same procedures for offsets strategy plan during the assessment stage of approval? Look forward to hearing from you in this regard!

Regards,
s. 22(1)(a)(ii)

s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Wednesday, 1 September 2021 1:19 PM
To: s. 22(1)(a)(ii)
Cc: s. 47F(1) s. 22(1)(a)(ii)
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Thanks for that, and sorry I got straight into it yesterday and just realised I hadn't responded yet to say thanks.

We will work through the comments and when we get a bit closer to finalising will be in contact if this is ok so that we can talk it though briefly prior to submission

Anyway I will keep you posted with our progress

Thanks
s. 47F(1)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Tuesday, 31 August 2021 3:18 PM
To: s. 47F(1) @doral.com.au>
Cc: s. 47F(1) @abecenv.com.au>; s. 22(1)(a)(ii)
s. 22(1)(a)(ii)@environment.gov.au>s. 22(1)(a)(ii) @environment.gov.au>
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s. 47F(1)

As discussed, and according to previous correspondence, the s132 stop clock is tied to the following:

- The Ministerial Statement – provided
- The revegetation management plan – provided
- The updated GROUNDWATER LICENCE OPERATING STRATEGY (GLOS) – provided
- An adequate offsets strategy – outstanding. Once we receive an updated offset strategy which addresses the following comments as well as the provision of a document which demonstrates the land purchase has been finalised for the offset area, then our approval clock will initiate.

In this regard, we've had a chance to look through the Land Acquisition Offset Strategy for the Yalyalup sand mine (EPBC 2017/8094). We have some general comments on the strategy, as well as some specific recommendations concerning the proposed offsets. Please consider these comments as follows:

General comments

- Firstly, in page 2 and then for the entire of the document, scientific names for black cockatoos should be corrected based on the new name as follows:
    - Carnaby`s Black-Cockatoo ***Zanda latirostris*** – listed as Endangered under the *BC Act* and *EPBC Act*.

- Baudin's Black-Cockatoo ***Zanda baudinii*** – listed as Endangered under the *BC Act*, and **Endangered** under the *EPBC Act.*
- Forest Red-tailed Black-Cockatoo *Calyptorhynchus banksii naso* – listed as Vulnerable under the *BC Act* and *EPBC Act.*

- Note also that Baudin's black cockatoo is listed as **Endangered**, not vulnerable (it was up listed in 2018). The Offset Assessment Guides (OAG) (Appendix 3) has it as vulnerable, so this needs to be corrected too.
- In addition, on Page 12 (Table 2), it seems the following sentence should be corrected:
  - This has resulted in the avoidance of 951 of the **1053** (and not 1.053) potential Black Cockatoo breeding trees within the Development Envelope.

- More detail is required in the Offset Strategy, specifically concerning rehabilitation details (species to be planted, timeframes for establishment, time to ecological benefit (i.e., foraging resource becomes available), location for revegetation/rehabilitation (onsite and offsite at proposed offsets), etc). All revegetation activities for the proposed offset sites should be included in this Offset Strategy.
- The OAG requires some adjustment to be accurate, particularly for risk of loss and time until ecological benefit.
- We have included sample OAGs (see attached) with adjusted figures for the TEC (still reaches 100% direct offset, so ok), Carnaby's black cockatoo (also covers the other 2 species (Baudin's as endangered and Forest Red-tailed black cockatoo as vulnerable) and for *Banksia squarrosa* subsp. *argillacea* (Whicher Range Dryandra). Please note that the OAG for Carnaby's includes a count for the loss of 5 hollows likely to be suitable for breeding (bottom part of sheet). The full direct offset of 100% should be both foraging and breeding combined. This is assuming the breeding hollows are to be offset – if, for some reason, they are not, then additional foraging habitat may be required.
- It isn't clear if/where offsets for Western Ringtail Possum (WRP) are included. Given this species is **critically endangered**, this should definitely be considered (see more comments below on this).

Mitigation and rehabilitation

With respect to the proposed rehabilitation/revegetation (mitigation), as set out in Table 1 (pp.7-9) and Table 2 (pp.12-14), there is insufficient information provided to determine the likelihood of success:

- Additional information is required to support the claim that the approval holder has had success in rehabilitating black cockatoo foraging habitat, e.g., published papers, reports detailing how completion criteria have been successfully achieved, etc. This would need to be provided to indicate the proposed rehabilitation is likely to be successful.
- Further, the claim of 5-7 years is misleading. This claim appears to concern establishing the plantings. However, the time to ecological benefit, as required to be achieved in the Offset Assessment Guide, would be the time until the plantings can provide foraging resources for black cockatoos. This is likely to be at least 10 years and possibly longer, depending on environmental conditions.
- Separate timeframes may be required for plantings to address loss of Western Ringtail Possum habitat. The plantings would need to include *Agonis flexuousa* (peppermint) and these requirements would also need to be clearly set out, e.g., time to ecological benefit for WRP, location for plantings with respect to known locations of possums and their habitat, etc. Rehabilitating close to roads and/or near the site of the proposal may not be appropriate when considering threats to the possums.
- It is unclear if the rehabilitation also includes *Banksia squarrosa subsp. argillacea* (Whicher Range Dryandra).

Offsets

For the proposed offsets, there are several issues not fully addressed, requiring clarification and/or re-consideration:

- The proposed offsets don't appear to include breeding hollows for black cockatoos. Table 2 states there are 5 hollows considered possibly suitable (either they are suitable, or they are not). Assuming these hollows are suitable, these need to be included in any proposed offset package – this is currently not the case. These are included in the attached OAGs and can assist in providing the 100% direct offset. Without the hollows, the total area proposed for the offset is not sufficient unless management measures over 20 years are included.

- The proposed offset for Shrublands on the Swan Coastal Plain Ironstones TEC looks ok based on the figures used in the tables and Offset Assessment Guide. However, the claim that DBCA has agreed to take on management of the offset and include this in their conservation estate requires better evidence. The email thread provided at Appendix 4 is not evidence, particularly as the conversation is about determining the boundary. We would require a specific statement that the proposed offset will be accepted by DBCA and can be incorporated into their conservation estate by a certain date. Shapefiles should be required as well, to confirm the total area being provided.

- The Offset Strategy states that the offsets must be 90% - **this is not correct**, the package for each MNES must total 100% direct offsets (there are no other compensation measures being proposed).

- There is considerable confusion concerning the timeframes for management. Section 5.2 proposes a 75% survival rate for plantings for the black cockatoo offset site but doesn't indicate over which time period this would be. Table 6 sets out some timeframes that appear to indicate the offset would be managed for 20 years. However, the Offset Assessment Guides for black cockatoos (Appendix 3) has the time until ecological benefit as 1 year. This must be clarified – if the management measures described (pest and weed management, management of new plantings in revegetation areas for the offset) are to be undertaken, the time period for this must be reflected in the OAG and in the document itself.

- Some of the figures used in the OAG are not correct. For example, the proposed TEC offset should have a risk of loss of 0% once incorporated into the DBCA conservation estate, as that will be permanently protected (currently the risk of loss is 1% - this seems to reflect an ongoing misunderstanding about protecting offset sites, noting that the OAG does not consider stochastic events such as fire or storms, but only those factors arising from human actions, such as clearing).

- Also note that the current risk of loss for the proposed black cockatoo offset site should be 0%. This is because the approval holder already owns the site. Unless there is an immediate risk that the entire site will be cleared, there is no risk of loss.

- Note also that Baudin's black cockatoo is listed as endangered, not vulnerable (it was up listed in 2018). The OAG (Appendix 3) has it as vulnerable, so this needs to be corrected.

- There should also be clarification concerning how the proposed black cockatoo offset site will be protected into the future. Again, there should be either confirmation from DBCA they will incorporate the site into their conservation estate, or a specified conservation mechanism to secure the site, and by a certain date.

- The timeframes included in Tables 4 and 6 (Section 5) will also need to be updated, for example, for securing the proposed offsets.

- There doesn't appear to be an offset proposed for WRP, but this should be considered. This is a critically endangered species, and the proposal will severely impact the possums recorded along the road (see map at Figure 6). Roads are a primary impact that prevent possums from moving through the landscape and the sand mine will likely cut off possums from travelling across this area. Recommend an offset be proposed to address the likely significant residual impact on this species.

- There doesn't appear to be any management of Phytophthora. The Offset Strategy should include data on the extent of Phytophthora in the proposed offset areas and information on how this will be managed. Phytophthora is a key threat to the TEC and *Banksia squarrosa* subsp. *argillacea*, and possibly also the black cockatoo foraging habitat, depending on which species are present.

- There doesn't appear to be a specific proposed offset for the likely loss of 9 *Banksia squarrosa* subsp. *argillacea* plants. This should be factored into the OAG – (see attached). 15 plants do not appear to be sufficient to provide a 100% direct offset.

Discount rates for hollows and plants

We should mention how we have accounted for the loss of hollows (and Dryandras) over time in the OAGs. We've attached here a paper by Ron Johnstone and Tony Kirkby, black cockatoo experts. Their work shows an average loss of hollows for Forest Red-tails of c. 46% every decade (p.11; i.e., 92% over 20 years in the OAG), which is very high. We've have used half this percentage for this proposed offset (46% over 20 years), because it is located in an agricultural area rather than forests and, presumably, fire risk would be actively supressed, as well as the tree density being somewhat less. Also, Forest Red-tails need larger hollows than Carnaby's and Baudin's (yes, all three species are included in the Offset Strategy, but a slightly smaller hollow will accommodate both Carnaby's and Baudin's). We have reduced the confidence in result in the OAGs because it isn't clear if the hollows would be maintained, either with or without management measures (there is no reference to this in the Offset Strategy).

For the Whicher Range Dryandra, we've assumed a loss of 2 plants per year over 20 years. We have no specific data for this assumption, other than the likely presence of Phytophthora, as well as recent drought, and the inundations that may occur in this TEC, if the Banksias are co-located, as they seem to be (Banksias don't like wet feet, but the TEC can be subject to inundation). The OAG shows 26 plants would be required as a separate offset consideration, so more than the proposed 15.

Please don't hesitate to contact me if you have any further questions regarding this matter.

Kind regards

s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Environmental Impact Assessment Officer | South WA Section|s. 22(1)(a)(ii)
Department of Agriculture, Water and the Environment
Environment Assessments West (WA, SA, NT) Branch | Environment Approvals Division
John Gorton Building, King Edward Terrace, Parkes ACT
GPO Box 787, Canberra City, ACT 2601
www.awe.gov.au

From: s. 47F(1) @doral.com.au>
Sent: Tuesday, 31 August 2021 11:51 AM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>
Subject: Re: Yalyalup offsets comments [SEC=OFFICIAL]

Ok thanks s. 22(1)(a)(ii)

s. 47F(1)

On 31 Aug 2021, at 9:38 am, s. 22(1)(a)(ii) @awe.gov.au> wrote:

s. 47F(1)

I have been talking with my Director right now, and he said he will try to confirm the comments and whole package by this afternoon or tomorrow morning. I did my entire best to speeded up as much as I could! They are super busy and all proponents do have the same expectation like your case! Once I got it, I will send them to you (immediately).

Regards,
s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Monday, 30 August 2021 11:14 AM
To: s. 22(1)(a)(ii) @awe.gov.au>
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Yes, thanks for that and I understand your position. Sorry to keep asking but I'm under a lot of pressure from my company with the scheduled start up being so close

I will wait for the comments and will be sure to respond the revised plan accurately with regards to them

Thanks
s. 47F(1)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Monday, 30 August 2021 8:22 AM
To: s. 47F(1) @doral.com.au>
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

s. 47F(1)

According to the confirmed schedule, the date to provide you guys the comments is: tomorrow (end of August). So, I cannot push them to make it quick as explained for you before! On the other hand, I cannot provide you the comments before my supervisor's conformation! I am sure you understand the obligation!

In my understanding, if you guys work on the comments and update the offset plan ASAP (we need a new PDF version which has been amended), and resend it to me as directed below with a clear and reliable document which show the purchase of the land done! In your response, you have to mention that all comments were considered in details (see the update version of offset strategy plan – September 2021)! Then , we could start the clock in the next two weeks (by middle of Sep)!

It really depends on you guys. If the offset plan was not updated based on the comments provided, the final approval will confront with extended time frame circumstance (beyond the 30 business

days) as I explained you last week. Delegate needs to have enough confident about all management plans especially offset strategy plan, otherwise she will not sign off the approval.

Is that clear what I am talking about?

s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Monday, 30 August 2021 9:58 AM
To: s. 22(1)(a)(ii) @awe.gov.au>
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

Ok, thanks s. 22(1)(a)(ii)

s. 47F(1)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Monday, 30 August 2021 7:56 AM
To: s. 47F(1) @doral.com.au>
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

Hi s. 47F(1)

Yes, I did my job and sent all comments and attachments to my supervisor to confirm it. Once she send it back to me, I will send whole package and comments which need to be addressed by you guys and resend to me the amended offset plan as soon as possible with a clear document which show land purchase has been done for offset plan. To address , the s132 stop clock, you have been asked to do the following:

- The Ministerial Statement – already provided
- The revegetation management plan – already provided
- The updated GLOS – already provided
- An adequate offsets strategy – once we received this updated offset strategy (when you addressed the comments provided by PAS and Assessment Section) as well as a clear document which show the land purchase has been done for offset area, our approval clock will initiate.

Cheers,
s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Monday, 30 August 2021 9:45 AM
To: s. 22(1)(a)(ii) @awe.gov.au>
Subject: Yalyalup offsets comments

Hi s. 22(1)(a)(ii)

Hope you had a nice weekend, just thought I'd drop in a desperate plea to see if the Yalyalup comments were available yet ?

Thanks

s. 47F(1)

s. 47F(1)

Doral Mineral Sands Pty Ltd

<image001.png>

An Iwatani Company

T s. 47F(1)
M s. 47F(1)
E s. 47F(1) @doral.com.au
www.doral.com.au

25 Harris Road | Picton | WA | 6229

s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Friday, 3 September 2021 1:53 PM
To: s. 22(1)(a)(ii)
Cc: s. 47F(1)
Subject: 210831 Offsets MP DAWE comments_response
Attachments: 210831 Offsets MP DAWE comments_response.docx

Hi s. 22(1)(a)(ii)

s. 47F(1) and I have been through your comments as sent through on Tuesday and have created a table of responses which I would like to discuss before we go into the formal resubmission process

The two key issues for which we need to discuss (which we were of the understanding was considered by DAWE to be acceptable) are the comments relating to WRP offsets and the number of Banksia squarrosa Sp. in the TEC offset

I had a quick chat with s. 22(1)(a)(ii) this morning and it was really nice for him to call you to discuss and he informed me of the recent change to include post approvals at this late stage, which has obviously contributed to our concerns

Anyway, I'd appreciate if you could please have a look through the comments attached and it would be great to be able to discuss them via teams and possibly following that we can tee up a meeting with the Post approvals team.

Please let me know what you think, and although s. 47F(1) in unavailable this afternoon I will make myself available for when you can talk

Thanks

s. 47F(1)

	General Comments	Response	Action
1.	Firstly, in page 2 and then for the entire of the document, scientific names for black cockatoos should be corrected	Abbreviated references to black cockatoos will be corrected	Correct abbreviations
2.	Note also that Baudin's black cockatoo is listed as **Endangered**, not vulnerable (it was up listed in 2018). The Offset Assessment Guides (OAG) (Appendix 3) has it as vulnerable, so this needs to be corrected too.	Baudin's reference to vulnerable will be upgraded to endangered in document and in OAG	Upgrade vulnerable to endangered
3.	On Page 12 (Table 2), it seems the following sentence should be corrected: This has resulted in the avoidance of 951 of the **1053** (and not 1.053) potential Black Cockatoo breeding trees within the Development Envelope	The typo on page 12 will be rectified	Fix typo
4.	More detail is required in the Offset Strategy, specifically concerning rehabilitation details (species to be planted, timeframes for establishment, time to ecological benefit (i.e., foraging resource becomes available), location for revegetation/rehabilitation (onsite and offsite at proposed offsets), etc). All revegetation activities for the proposed offset sites should be included in this Offset Strategy	Revegetation details at BC site to be updated to include species, timeframes, location No proposed revegetation at DBCA managed site as direct offset of present TEC habitat inclusive of 15 individual plants of Banksia Sq. is proposed. Offset site is controlled and managed by DBCA and not under control of Doral	Gather reveg species list and develop closure criteria table for BC site similar to Reveg management plan
5.	The OAG requires some adjustment to be accurate, particularly for risk of loss and time until ecological benefit	Noted	
6.	We have included sample OAGs (see attached) with adjusted figures for the TEC (still reaches 100% direct offset, so ok), Carnaby's black cockatoo (also covers the other 2 species (Baudin's as endangered and Forest Red-tailed black cockatoo as vulnerable) and for Banksia squarrosa subsp. argillacea (Whicher Range Dryandra). Please note that the OAG for Carnaby's includes a count for the loss of 5 hollows likely to be suitable for breeding (bottom part of sheet). The full direct offset of 100% should be both foraging and breeding combined. This is assuming the breeding hollows are to be offset – if, for some reason, they are not, then additional foraging habitat may be required	BC offsets based on area and tree count. The low likelihood of breeding was discussed as was the offer for Doral to contribute to the larger DBCA Black Cockatoo projects was not taken up by DBCA. Doral can install 10 tree hollows if required TEC habitat was considered inclusive of Banksia squarrosa subsp. argillacea. and was deemed appropriate following consultation with DAWE and EPA officers over several meetings in 2021. Recommendations from DAWE, EPA and DBCA officers has led to the negotiation and purchase of a very valuable TEC offset under the understanding of it being suitable as 100% direct offset for the comparative potential for in-direct impacts resulting from the project. Further land purchase is not feasible due to availability of suitable land.	Update OAG to include 10 artificial hollows Consult with DAWE with regards to previous understanding with DAWE Officers which has led to recommendation and now purchase of the Ironstone offset land as suitable for direct offset.

7.	It isn't clear if/where offsets for Western Ringtail Possum (WRP) are included. Given this species is **critically endangered**, this should definitely be considered (see more comments below on this).	WRP numbers have shown steady decline from 5 individuals first observed in 2017 to 1 individual in 2019 to not identified in 2021. Doral revised the disturbance areas of the mine, following discussion with DAWE/EPA, to avoid ALL direct impacts to WRP habitat. As such the only potential impact to WRP habitat is through groundwater drawdowns. Doral subsequently prepared a GDE Management Plan to minimise and monitor groundwater levels and vegetation health parameters within the WRP habitat and have also prepared a Revegetation Management Plan which includes revegetation of 4.7ha, as required by DAWE, to provide additional WRP habitat (and BC habitat) adjacent to the existing WRP habitat. As such Doral have adequately followed the mitigation hierarchy for impacts to WRP habitat (avoid, minimise and rehabilitate) to a level that is not considered to be a significant impact. Discussion between EPA (s. 47F(1)) and DAWE s. 22(1)(a)(ii) was undertaken to discuss appropriate wording for the EPA Ministerial Statement that would suit both the State and Federal requirements (refer to Condition 12 of the Min Statement)	s. 47F(1) (EPA) to respond regarding conversations with DAWE at the time of developing the Ministerial condition regarding contingent WRP offsets based on the event of actual habitat impact.
	Mitigation and Rehabilitation		
	With respect to the proposed rehabilitation/revegetation (mitigation), as set out in Table 1 (pp.7-9) and Table 2 (pp.12-14), there is insufficient information provided to determine the likelihood of success:		
8.	Additional information is required to support the claim that the approval holder has had success in rehabilitating black cockatoo foraging habitat, e.g., published papers, reports detailing how completion criteria have been successfully achieved, etc. This would need to be provided to indicate the proposed rehabilitation is likely to be successful.	Annual compliance reports for Dardanup offsets issued to DAWE since 2013 (EPBC 2011/6087) and (EPBC 2013/6897). Annual compliance reports for Yoongarillup offsets (EPBC 2012/6521) and revegetation plan	Attached Dardanup offset veg report and Yoongarillup 2020 State Forest revegetation report

9.	Further, the claim of 5-7 years is misleading. This claim appears to concern establishing the plantings. However, the time to ecological benefit, as required to be achieved in the Offset Assessment Guide, would be the time until the plantings can provide foraging resources for black cockatoos. This is likely to be at least 10 years and possibly longer, depending on environmental conditions.	Of the 4.15ha offset, only approx. 0.67ha is proposed for revegetation. This represents ~15% of the entire offset. So given almost 85% of the offset is provided immediately, 5-7 years to achieve foraging status seems appropriate. Preparations are already underway to enable proposed planting to commence in 2022.	For discussion regarding DAWE guideline regarding time to achieve foraging
10.	Separate timeframes may be required for plantings to address loss of Western Ringtail Possum habitat. The plantings would need to include Agonis flexuousa (peppermint) and these requirements would also need to be clearly set out, e.g., time to ecological benefit for WRP, location for plantings with respect to known locations of possums and their habitat, etc. Rehabilitating close to roads and/or near the site of the proposal may not be appropriate when considering threats to the possums.	See above and refer to Revegetation management plan, WRP habitat is included to commence from beginning of project. No direct loss to WRP habitat from project, GDE Management Plan to be implemented and contingent WRP Offset as per Ministerial Statement Condition 12-1 Rehabilitation site allows expansion of existing habitat area and connectivity to revegetation refuge site away from road reserve	
11.	It is unclear if the rehabilitation also includes Banksia squarrosa subsp. argillacea (Whicher Range Dryandra).	The rehabilitation does not include Banksia squarrosa subsp. argillacea. The offset provided for the TEC, which includes the Banksia squarrosa sp. is to be provided as >100% direct offset and does not require improvement (revegetation) to meet the DAWE calculator given the excellent condition and the area of TEC to be provided as the offset as discussed above.	
	Offsets		
12.	The proposed offsets don't appear to include breeding hollows for black cockatoos. Table 2 states there are 5 hollows considered possibly suitable (either they are suitable, or they are not). Assuming these hollows are suitable, these need to be included in any proposed offset package – this is currently not the case. These are included in the attached OAGs and can assist in providing the 100% direct offset. Without the hollows, the total area proposed for the offset is not sufficient unless management measures over 20 years are included.	Considered possibly suitable due to less than ideal orientation and structure as well as lack of breeding observations in local area. Not considered 'unsuitable' due to hollows having some potential therefore hollows are to be considered suitable. Doral can install 10 artificial hollows in offset site if required	Artificial hollows to be discussed with DAWE and advice required on calculator in this regard

13.	The proposed offset for Shrublands on the Swan Coastal Plain Ironstones TEC looks ok based on the figures used in the tables and Offset Assessment Guide. However, the claim that DBCA has agreed to take on management of the offset and include this in their conservation estate requires better evidence. The email thread provided at Appendix 4 is not evidence, particularly as the conversation is about determining the boundary. We would require a specific statement that the proposed offset will be accepted by DBCA and can be incorporated into their conservation estate by a certain date. Shapefiles should be required as well, to confirm the total area being provided.	DBCA has been instrumental in the negotiation and acquisition of the land and placing it into state reserve. Signed land acceptance has been received by DBCA and shall issue Doral an invoice for payment	s. 47F(1) DBCA) has acknowledged and will provide letter. Shapefile may take some time due to formal subdivision and survey process. Area to be determined by land transfer Formal email of commitment sent from Doral to DBCA and funds have been prepared for transfer
14.	The Offset Strategy states that the offsets must be 90% - **this is not correct**, the package for each MNES must total 100% direct offsets (there are no other compensation measures being proposed).	Doral has always worked off 100% (90% stated on OAG form is misleading). Doral will update document to state 100%	Amend 90% to 100% in document
15.	There is considerable confusion concerning the timeframes for management. Section 5.2 proposes a 75% survival rate for plantings for the black cockatoo offset site but doesn't indicate over which time period this would be. Table 6 sets out some timeframes that appear to indicate the offset would be managed for 20 years. However, the Offset Assessment Guides for black cockatoos (Appendix 3) has the time until ecological benefit as 1 year. This must be clarified – if the management measures described (pest and weed management, management of new plantings in revegetation areas for the offset) are to be undertaken, the time period for this must be reflected in the OAG and in the document itself.	75% survival rate of 100 trees per hectare therefore 50 surviving trees. There is not much more room for more. Time until ecological benefit was entered as 1 year, given 85% of the offset is to be provided immediately, the remaining 0.67ha to revegetation of foraging habitat is 5-7 yrs as discussed above. 20 years was put in as a commitment from Doral for ongoing maintenance not for ecological benefit which will be realised much earlier. Conservation covenant is commitment on Certificate of title thus ongoing pest and weed management shall be maintained in perpetuity by the landowner.	For discussion regarding DAWE guideline regarding time to achieve foraging
16.	Some of the figures used in the OAG are not correct. For example, the proposed TEC offset should have a risk of loss of 0% once incorporated into the DBCA conservation estate, as that will be permanently protected (currently the risk of loss is 1% - this seems to reflect an ongoing misunderstanding about protecting offset sites, noting that the OAG does not consider stochastic events such as fire or storms, but only those factors arising from human actions, such as clearing).	In accordance with Table 2 of *Guidance for deriving Risk of Loss estimates when evaluating biodiversity offset proposals under the EPBC Act 2017,* the risk of loss with offset would be 0%. However, as discussed with DAWE, Doral have used a figure of 1%.	Discussion to determine which figure is DAWE guidance Request Teams meeting with DAWE to work through OAG

			tables again as was done previously in May 2021
17.	Also note that the current risk of loss for the proposed black cockatoo offset site should be 0%. This is because the approval holder already owns the site. Unless there is an immediate risk that the entire site will be cleared, there is no risk of loss.	In accordance with Table 2 of *Guidance for deriving Risk of Loss estimates when evaluating biodiversity offset proposals under the EPBC Act 2017,* the risk of loss with offset would be 0%. However, as discussed with DAWE previously in 2021, Doral were advised to use a figure of 1%.	Discussion to determine which figure is DAWE guidance Request Teams meeting with DAWE to work through OAG tables again as was done previously in May 2021
18.	Note also that Baudin's black cockatoo is listed as endangered, not vulnerable (it was up listed in 2018). The OAG (Appendix 3) has it as vulnerable, so this needs to be corrected.	OAG for Baudin's to be corrected to endangered	OAG for Baudin's to be corrected to endangered
19.	There should also be clarification concerning how the proposed black cockatoo offset site will be protected into the future. Again, there should be either confirmation from DBCA they will incorporate the site into their conservation estate, or a specified conservation mechanism to secure the site, and by a certain date.	Black cockatoo offset site is not suitable for DBCA management. Offset land will be placed under DBCA conservation covenant on the land title as documented in last paragraph of 5.2. which shall secure the site in perpetuity. As stated this process will commence immediately upon approval. From personal experience this process can take up to 2 years as has been done successfully by Doral under (EPBC 2011/6087) and (EPBC 2013/6897).	Refer DAWE to section 5.2
20.	The timeframes included in Tables 4 and 6 (Section 5) will also need to be updated, for example, for securing the proposed offsets.		
21.	There doesn't appear to be an offset proposed for WRP, but this should be considered. This is a critically endangered species, and the proposal will severely impact the possums recorded along the road (see map at Figure 6). Roads are a primary impact that prevent possums from moving through the landscape and the sand mine will likely cut off possums from travelling across this area. Recommend an offset be proposed to address the likely significant residual impact on this species.	See comment 7 above regarding implementation of the Mitigation hierarchy (avoid, minimise, rehabilitate) Doral have applied to reduce the residual impact to a level that is not considered significant. A contingency to provide an offset has been included as Condition 12-1 in the Min Statement.	

22.	There doesn't appear to be any management of Phytophthora. The Offset Strategy should include data on the extent of Phytophthora in the proposed offset areas and information on how this will be managed. Phytophthora is a key threat to the TEC and Banksia squarrosa subsp. argillacea, and possibly also the black cockatoo foraging habitat, depending on which species are present.	Dieback survey of the TEC area has not yet been conducted due to sensitivities of the TEC habitat and DRF as discussed with DBCA. Proposed fencing will provide an effective control to minimise any future risk for dieback spread within the TEC. Future management of TEC site will be by dieback experienced DBCA staff. Dieback survey of Stratham BC offset has been deemed as 'Excluded' due to the grazing disturbance and lack of indicator species within the area. Fencing and restrictive conservation covenant will minimise risk and future management by Doral will incorporate dieback hygiene protocols as practiced at existing Doral sites (eg Yoongarillup EPBC 2017/8094)	
23.	There doesn't appear to be a specific proposed offset for the likely loss of 9 Banksia squarrosa subsp. argillacea plants. This should be factored into the OAG – (see attached). 15 plants do not appear to be sufficient to provide a 100% direct offset.	No specific offset is proposed for Banksia squarrosa subsp. argillacea as discussion with DAWE in 2021 indicated that the 15 Banksia squarrosa subsp. argillacea plants are included in the identified TEC habitat and therefore only need to offset the TEC (as you can't double dip). The identified TEC offset habitat was deemed appropriate as a 100% direct offset following consultation with DAWEs. 22(1)(a)(ii) s. 22(1)(a)(ii) EPA (s. 47F(1)) and DBCA Officers s. 47F(1) in 2021. This included the DAWE review of draft OAG's and acceptance resulting in the OAG as included in the Draft Offset Management plan (26 June 2021) Recommendations from DAWE, EPA and DBCA officers has therefore led to the negotiation and purchase of the identified TEC offset under the understanding of it being suitable as 100% direct offset for the comparative potential for in-direct impacts resulting from the project. Further land purchase is not feasible due to availability of suitable land.	Consultation required to confirm previous understanding between Doral and DAWE
	Discount rates for hollows and plants		

24.	We should mention how we have accounted for the loss of hollows (and Dryandras) over time in the OAGs. We've attached here a paper by Ron Johnstone and Tony Kirkby, black cockatoo experts. Their work shows an average loss of hollows for Forest Red-tails of c. 46% every decade (p.11; i.e., 92% over 20 years in the OAG), which is very high. We've have used half this percentage for this proposed offset (46% over 20 years), because it is located in an agricultural area rather than forests and, presumably, fire risk would be actively supressed, as well as the tree density being somewhat less. Also, Forest Red-tails need larger hollows than Carnaby's and Baudin's (yes, all three species are included in the Offset Strategy, but a slightly smaller hollow will accommodate both Carnaby's and Baudin's). We have reduced the confidence in result in the OAGs because it isn't clear if the hollows would be maintained, either with or without management measures (there is no reference to this in the Offset Strategy).	Although breeding is unlikely, Doral can install 10 artificial hollows as discussed above	
25.	For the Whicher Range Dryandra, we've assumed a loss of 2 plants per year over 20 years. We have no specific data for this assumption, other than the likely presence of Phytophthora, as well as recent drought, and the inundations that may occur in this TEC, if the Banksias are co-located, as they seem to be (Banksias don't like wet feet, but the TEC can be subject to inundation). The OAG shows 26 plants would be required as a separate offset consideration, so more than the proposed 15.	Doral are providing an offset for the potential indirect impacts to the TEC which includes 9 Banksia plants and a comprehensive GDE Management Plan will be implemented to minimise the risk of impacts. Previous discussions with DAWE have indicated that the Banksia are part of the SCP10b TEC and we do not need to provide two offsets (double dip). However, Doral have revised the OAG for the Banksia using different assumptions to DAWE (revised OAG provided to Doral) which indicate that 15 plants are suitable. The assumptions include: Future value without offset **Value of 0** (not 10 used by DAWE) Given no protection to this TEC without offset, it is assumed (using DAWE assumption that 2 plants per yr would be lost), that all plants would be lost without protection, management and security)	This assumption requires further discussion if it is likely to impact on the suitability of the identified TEC offset as 100% Banksia squarrosa subsp. Argillacea are not susceptible to 'wet feet' as detailed by DBCA Flora Conservation Officer Andrew Webb

		Future value with offset **Value of 15** (not 26 used by DAWE) As the offset would be managed by DBCA and fenced to restrict access (kangaroos, people) it is considered very likely that the 15 plants will be protected and will even continue to expand in population. Dieback risk would be minimised and effectively controlled by fencing and access only by DBCA officers experienced with dieback protocols. No dieback impact is presently observed and no reason this will change with DBCA proposed management. DBCA feedback 02.09.21 states "***Dryandra squarrosa ssp. argillacea (which I assume they are calling the Whicher Range Dryandra) typically grows in ironstone soils that experience varying levels of seasonal saturation, this species does not behave like a typical "Banksia" in regards to wet feet"*** Applying these numbers indicates that the offset of 15 plants meets the OAG 100% offset.	

s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii)
Sent: Monday, 6 September 2021 9:05 AM
To: s. 22(1)(a)(ii)
Cc: s. 22(1)(a)(ii)
Subject: RE: Enquiry for Offsets Strategy Plan [SEC=OFFICIAL]
Attachments: 210831 Offsets MP DAWE comments_response.docx

Good morning s. 22(1)(a)(ii)

As noted, proponent has provided us a table which addressed comments on Offsets Strategy Plan. I would be very appreciative it if you could review their respond and let me know about it. It seems DAWE's previous team was involved with them since the project started and provided them some technical advice.

Regards,
s. 22(1)(a)(ii)

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s. 22(1)(a)(ii)

	General Comments	Response	Action
1.	Firstly, in page 2 and then for the entire of the document, scientific names for black cockatoos should be corrected	Abbreviated references to black cockatoos will be corrected	Correct abbreviations
2.	Note also that Baudin's black cockatoo is listed as **Endangered**, not vulnerable (it was up listed in 2018). The Offset Assessment Guides (OAG) (Appendix 3) has it as vulnerable, so this needs to be corrected too.	Baudin's reference to vulnerable will be upgraded to endangered in document and in OAG	Upgrade vulnerable to endangered
3.	On Page 12 (Table 2), it seems the following sentence should be corrected: This has resulted in the avoidance of 951 of the **1053** (and not 1.053) potential Black Cockatoo breeding trees within the Development Envelope	The typo on page 12 will be rectified	Fix typo
4.	More detail is required in the Offset Strategy, specifically concerning rehabilitation details (species to be planted, timeframes for establishment, time to ecological benefit (i.e., foraging resource becomes available), location for revegetation/rehabilitation (onsite and offsite at proposed offsets), etc). All revegetation activities for the proposed offset sites should be included in this Offset Strategy	Revegetation details at BC site to be updated to include species, timeframes, location No proposed revegetation at DBCA managed site as direct offset of present TEC habitat inclusive of 15 individual plants of Banksia Sq. is proposed. Offset site is controlled and managed by DBCA and not under control of Doral	Gather reveg species list and develop closure criteria table for BC site similar to Reveg management plan
5.	The OAG requires some adjustment to be accurate, particularly for risk of loss and time until ecological benefit	Noted	
6.	We have included sample OAGs (see attached) with adjusted figures for the TEC (still reaches 100% direct offset, so ok), Carnaby's black cockatoo (also covers the other 2 species (Baudin's as endangered and Forest Red-tailed black cockatoo as vulnerable) and for Banksia squarrosa subsp. argillacea (Whicher Range Dryandra). Please note that the OAG for Carnaby's includes a count for the loss of 5 hollows likely to be suitable for breeding (bottom part of sheet). The full direct offset of 100% should be both foraging and breeding combined. This is assuming the breeding hollows are to be offset – if, for some reason, they are not, then additional foraging habitat may be required	BC offsets based on area and tree count. The low likelihood of breeding was discussed as was the offer for Doral to contribute to the larger DBCA Black Cockatoo projects was not taken up by DBCA. Doral can install 10 tree hollows if required TEC habitat was considered inclusive of Banksia squarrosa subsp. argillacea. and was deemed appropriate following consultation with DAWE and EPA officers over several meetings in 2021. Recommendations from DAWE, EPA and DBCA officers has led to the negotiation and purchase of a very valuable TEC offset under the understanding of it being suitable as 100% direct offset for the comparative potential for in-direct impacts resulting from the project. Further land purchase is not feasible due to availability of suitable land.	Update OAG to include 10 artificial hollows Consult with DAWE with regards to previous understanding with DAWE Officers which has led to recommendation and now purchase of the Ironstone offset land as suitable for direct offset.

7.	It isn't clear if/where offsets for Western Ringtail Possum (WRP) are included. Given this species is **critically endangered**, this should definitely be considered (see more comments below on this).	WRP numbers have shown steady decline from 5 individuals first observed in 2017 to 1 individual in 2019 to not identified in 2021. Doral revised the disturbance areas of the mine, following discussion with DAWE/EPA, to avoid ALL direct impacts to WRP habitat. As such the only potential impact to WRP habitat is through groundwater drawdowns. Doral subsequently prepared a GDE Management Plan to minimise and monitor groundwater levels and vegetation health parameters within the WRP habitat and have also prepared a Revegetation Management Plan which includes revegetation of 4.7ha, as required by DAWE, to provide additional WRP habitat (and BC habitat) adjacent to the existing WRP habitat. As such Doral have adequately followed the mitigation hierarchy for impacts to WRP habitat (avoid, minimise and rehabilitate) to a level that is not considered to be a significant impact. Discussion between EPA s. 47F(1) and DAWE s. 22(1)(a)(ii) was undertaken to discuss appropriate wording for the EPA Ministerial Statement that would suit both the State and Federal requirements (refer to Condition 12 of the Min Statement)	s. 47F(1) (EPA) to respond regarding conversations with DAWE at the time of developing the Ministerial condition regarding contingent WRP offsets based on the event of actual habitat impact.
	Mitigation and Rehabilitation		
	With respect to the proposed rehabilitation/revegetation (mitigation), as set out in Table 1 (pp.7-9) and Table 2 (pp.12-14), there is insufficient information provided to determine the likelihood of success:		
8.	Additional information is required to support the claim that the approval holder has had success in rehabilitating black cockatoo foraging habitat, e.g., published papers, reports detailing how completion criteria have been successfully achieved, etc. This would need to be provided to indicate the proposed rehabilitation is likely to be successful.	Annual compliance reports for Dardanup offsets issued to DAWE since 2013 (EPBC 2011/6087) and (EPBC 2013/6897). Annual compliance reports for Yoongarillup offsets (EPBC 2012/6521) and revegetation plan	Attached Dardanup offset veg report and Yoongarillup 2020 State Forest revegetation report

9.	Further, the claim of 5-7 years is misleading. This claim appears to concern establishing the plantings. However, the time to ecological benefit, as required to be achieved in the Offset Assessment Guide, would be the time until the plantings can provide foraging resources for black cockatoos. This is likely to be at least 10 years and possibly longer, depending on environmental conditions.	Of the 4.15ha offset, only approx. 0.67ha is proposed for revegetation. This represents ~15% of the entire offset. So given almost 85% of the offset is provided immediately, 5-7 years to achieve foraging status seems appropriate. Preparations are already underway to enable proposed planting to commence in 2022.	For discussion regarding DAWE guideline regarding time to achieve foraging
10.	Separate timeframes may be required for plantings to address loss of Western Ringtail Possum habitat. The plantings would need to include Agonis flexuousa (peppermint) and these requirements would also need to be clearly set out, e.g., time to ecological benefit for WRP, location for plantings with respect to known locations of possums and their habitat, etc. Rehabilitating close to roads and/or near the site of the proposal may not be appropriate when considering threats to the possums.	See above and refer to Revegetation management plan, WRP habitat is included to commence from beginning of project. No direct loss to WRP habitat from project, GDE Management Plan to be implemented and contingent WRP Offset as per Ministerial Statement Condition 12-1 Rehabilitation site allows expansion of existing habitat area and connectivity to revegetation refuge site away from road reserve	
11.	It is unclear if the rehabilitation also includes Banksia squarrosa subsp. argillacea (Whicher Range Dryandra).	The rehabilitation does not include Banksia squarrosa subsp. argillacea. The offset provided for the TEC, which includes the Banksia squarrosa sp. is to be provided as >100% direct offset and does not require improvement (revegetation) to meet the DAWE calculator given the excellent condition and the area of TEC to be provided as the offset as discussed above.	
	Offsets		
12.	The proposed offsets don't appear to include breeding hollows for black cockatoos. Table 2 states there are 5 hollows considered possibly suitable (either they are suitable, or they are not). Assuming these hollows are suitable, these need to be included in any proposed offset package – this is currently not the case. These are included in the attached OAGs and can assist in providing the 100% direct offset. Without the hollows, the total area proposed for the offset is not sufficient unless management measures over 20 years are included.	Considered possibly suitable due to less than ideal orientation and structure as well as lack of breeding observations in local area. Not considered 'unsuitable' due to hollows having some potential therefore hollows are to be considered suitable. Doral can install 10 artificial hollows in offset site if required	Artificial hollows to be discussed with DAWE and advice required on calculator in this regard

s. 47F(1)

13.	The proposed offset for Shrublands on the Swan Coastal Plain Ironstones TEC looks ok based on the figures used in the tables and Offset Assessment Guide. However, the claim that DBCA has agreed to take on management of the offset and include this in their conservation estate requires better evidence. The email thread provided at Appendix 4 is not evidence, particularly as the conversation is about determining the boundary. We would require a specific statement that the proposed offset will be accepted by DBCA and can be incorporated into their conservation estate by a certain date. Shapefiles should be required as well, to confirm the total area being provided.	DBCA has been instrumental in the negotiation and acquisition of the land and placing it into state reserve. Signed land acceptance has been received by DBCA and shall issue Doral an invoice for payment	DBCA) has acknowledged and will provide letter. Shapefile may take some time due to formal subdivision and survey process. Area to be determined by land transfer Formal email of commitment sent from Doral to DBCA and funds have been prepared for transfer
14.	The Offset Strategy states that the offsets must be 90% - **this is not correct**, the package for each MNES must total 100% direct offsets (there are no other compensation measures being proposed).	Doral has always worked off 100% (90% stated on OAG form is misleading). Doral will update document to state 100%	Amend 90% to 100% in document
15.	There is considerable confusion concerning the timeframes for management. Section 5.2 proposes a 75% survival rate for plantings for the black cockatoo offset site but doesn't indicate over which time period this would be. Table 6 sets out some timeframes that appear to indicate the offset would be managed for 20 years. However, the Offset Assessment Guides for black cockatoos (Appendix 3) has the time until ecological benefit as 1 year. This must be clarified – if the management measures described (pest and weed management, management of new plantings in revegetation areas for the offset) are to be undertaken, the time period for this must be reflected in the OAG and in the document itself.	75% survival rate of 100 trees per hectare therefore 50 surviving trees. There is not much more room for more. Time until ecological benefit was entered as 1 year, given 85% of the offset is to be provided immediately, the remaining 0.67ha to revegetation of foraging habitat is 5-7 yrs as discussed above. 20 years was put in as a commitment from Doral for ongoing maintenance not for ecological benefit which will be realised much earlier. Conservation covenant is commitment on Certificate of title thus ongoing pest and weed management shall be maintained in perpetuity by the landowner.	For discussion regarding DAWE guideline regarding time to achieve foraging
16.	Some of the figures used in the OAG are not correct. For example, the proposed TEC offset should have a risk of loss of 0% once incorporated into the DBCA conservation estate, as that will be permanently protected (currently the risk of loss is 1% - this seems to reflect an ongoing misunderstanding about protecting offset sites, noting that the OAG does not consider stochastic events such as fire or storms, but only those factors arising from human actions, such as clearing).	In accordance with Table 2 of *Guidance for deriving Risk of Loss estimates when evaluating biodiversity offset proposals under the EPBC Act 2017,* the risk of loss with offset would be 0%. However, as discussed with DAWE, Doral have used a figure of 1%.	Discussion to determine which figure is DAWE guidance Request Teams meeting with DAWE to work through OAG

			tables again as was done previously in May 2021
17.	Also note that the current risk of loss for the proposed black cockatoo offset site should be 0%. This is because the approval holder already owns the site. Unless there is an immediate risk that the entire site will be cleared, there is no risk of loss.	In accordance with Table 2 of *Guidance for deriving Risk of Loss estimates when evaluating biodiversity offset proposals under the EPBC Act 2017,* the risk of loss with offset would be 0%. However, as discussed with DAWE previously in 2021, Doral were advised to use a figure of 1%.	Discussion to determine which figure is DAWE guidance Request Teams meeting with DAWE to work through OAG tables again as was done previously in May 2021
18.	Note also that Baudin's black cockatoo is listed as endangered, not vulnerable (it was up listed in 2018). The OAG (Appendix 3) has it as vulnerable, so this needs to be corrected.	OAG for Baudin's to be corrected to endangered	OAG for Baudin's to be corrected to endangered
19.	There should also be clarification concerning how the proposed black cockatoo offset site will be protected into the future. Again, there should be either confirmation from DBCA they will incorporate the site into their conservation estate, or a specified conservation mechanism to secure the site, and by a certain date.	Black cockatoo offset site is not suitable for DBCA management. Offset land will be placed under DBCA conservation covenant on the land title as documented in last paragraph of 5.2. which shall secure the site in perpetuity. As stated this process will commence immediately upon approval. From personal experience this process can take up to 2 years as has been done successfully by Doral under (EPBC 2011/6087) and (EPBC 2013/6897).	Refer DAWE to section 5.2
20.	The timeframes included in Tables 4 and 6 (Section 5) will also need to be updated, for example, for securing the proposed offsets.		
21.	There doesn't appear to be an offset proposed for WRP, but this should be considered. This is a critically endangered species, and the proposal will severely impact the possums recorded along the road (see map at Figure 6). Roads are a primary impact that prevent possums from moving through the landscape and the sand mine will likely cut off possums from travelling across this area. Recommend an offset be proposed to address the likely significant residual impact on this species.	See comment 7 above regarding implementation of the Mitigation hierarchy (avoid, minimise, rehabilitate) Doral have applied to reduce the residual impact to a level that is not considered significant. A contingency to provide an offset has been included as Condition 12-1 in the Min Statement.	

22.	There doesn't appear to be any management of Phytophthora. The Offset Strategy should include data on the extent of Phytophthora in the proposed offset areas and information on how this will be managed. Phytophthora is a key threat to the TEC and Banksia squarrosa subsp. argillacea, and possibly also the black cockatoo foraging habitat, depending on which species are present.	Dieback survey of the TEC area has not yet been conducted due to sensitivities of the TEC habitat and DRF as discussed with DBCA. Proposed fencing will provide an effective control to minimise any future risk for dieback spread within the TEC. Future management of TEC site will be by dieback experienced DBCA staff. Dieback survey of Stratham BC offset has been deemed as 'Excluded' due to the grazing disturbance and lack of indicator species within the area. Fencing and restrictive conservation covenant will minimise risk and future management by Doral will incorporate dieback hygiene protocols as practiced at existing Doral sites (eg Yoongarillup EPBC 2017/8094)	
23.	There doesn't appear to be a specific proposed offset for the likely loss of 9 Banksia squarrosa subsp. argillacea plants. This should be factored into the OAG – (see attached). 15 plants do not appear to be sufficient to provide a 100% direct offset.	No specific offset is proposed for Banksia squarrosa subsp. argillacea as discussion with DAWE in 2021 indicated that the 15 Banksia squarrosa subsp. argillacea plants are included in the identified TEC habitat and therefore only need to offset the TEC (as you can't double dip). The identified TEC offset habitat was deemed appropriate as a 100% direct offset following consultation with DAWE s. 22(1)(a)(ii) s. 22(1)(a)(ii) EPA (s. 47F(1) s. 47F(1) and DBCA Officers s. 47F(1) in 2021. This included the DAWE review of draft OAG's and acceptance resulting in the OAG as included in the Draft Offset Management plan (26 June 2021) Recommendations from DAWE, EPA and DBCA officers has therefore led to the negotiation and purchase of the identified TEC offset under the understanding of it being suitable as 100% direct offset for the comparative potential for in-direct impacts resulting from the project. Further land purchase is not feasible due to availability of suitable land.	Consultation required to confirm previous understanding between Doral and DAWE
	Discount rates for hollows and plants		

24.	We should mention how we have accounted for the loss of hollows (and Dryandras) over time in the OAGs. We've attached here a paper by Ron Johnstone and Tony Kirkby, black cockatoo experts. Their work shows an average loss of hollows for Forest Red-tails of c. 46% every decade (p.11; i.e., 92% over 20 years in the OAG), which is very high. We've have used half this percentage for this proposed offset (46% over 20 years), because it is located in an agricultural area rather than forests and, presumably, fire risk would be actively supressed, as well as the tree density being somewhat less. Also, Forest Red-tails need larger hollows than Carnaby's and Baudin's (yes, all three species are included in the Offset Strategy, but a slightly smaller hollow will accommodate both Carnaby's and Baudin's). We have reduced the confidence in result in the OAGs because it isn't clear if the hollows would be maintained, either with or without management measures (there is no reference to this in the Offset Strategy).	Although breeding is unlikely, Doral can install 10 artificial hollows as discussed above	
25.	For the Whicher Range Dryandra, we've assumed a loss of 2 plants per year over 20 years. We have no specific data for this assumption, other than the likely presence of Phytophthora, as well as recent drought, and the inundations that may occur in this TEC, if the Banksias are co-located, as they seem to be (Banksias don't like wet feet, but the TEC can be subject to inundation). The OAG shows 26 plants would be required as a separate offset consideration, so more than the proposed 15.	Doral are providing an offset for the potential indirect impacts to the TEC which includes 9 Banksia plants and a comprehensive GDE Management Plan will be implemented to minimise the risk of impacts. Previous discussions with DAWE have indicated that the Banksia are part of the SCP10b TEC and we do not need to provide two offsets (double dip). However, Doral have revised the OAG for the Banksia using different assumptions to DAWE (revised OAG provided to Doral) which indicate that 15 plants are suitable. The assumptions include: Future value without offset **Value of 0** (not 10 used by DAWE) Given no protection to this TEC without offset, it is assumed (using DAWE assumption that 2 plants per yr would be lost), that all plants would be lost without protection, management and security)	This assumption requires further discussion if it is likely to impact on the suitability of the identified TEC offset as 100% Banksia squarrosa subsp. Argillacea are not susceptible to 'wet feet' as detailed by DBCA Flora Conservation Officer Andrew Webb

		Future value with offset **Value of 15** (not 26 used by DAWE) As the offset would be managed by DBCA and fenced to restrict access (kangaroos, people) it is considered very likely that the 15 plants will be protected and will even continue to expand in population. Dieback risk would be minimised and effectively controlled by fencing and access only by DBCA officers experienced with dieback protocols. No dieback impact is presently observed and no reason this will change with DBCA proposed management. DBCA feedback 02.09.21 states "***Dryandra squarrosa ssp. argillacea (which I assume they are calling the Whicher Range Dryandra) typically grows in ironstone soils that experience varying levels of seasonal saturation, this species does not behave like a typical "Banksia" in regards to wet feet"*** Applying these numbers indicates that the offset of 15 plants meets the OAG 100% offset.	

s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii)
Sent: Monday, 30 August 2021 9:48 AM
To: s. 22(1)(a)(ii)
Subject: Offset Strategy comments - FOR the Yalyalup sand mine - EPBC 2017/8094 [SEC=OFFICIAL]
Attachments: s. 47F(1)docx; offset-assessment-guide-Banksia squarrosa.xlsm; offset-assessment-guide-CBC.xlsm; offset-assessment-guide-CBC-management.xlsm; offset-assessment-guide-SSCPI TEC.xlsm; Black Cockatoo Research Project - Final Report 2019 DOH.pdf

Morning s. 22(1)(a)(ii)

As discussed last week, we need to clear what the proponent needs to do for this stage of assessment and approval stage. I have integrated all comments from my review and PAS in the attachment and would be great if you could have a look and give me your thought in this regard. We need to send them the comments and other attachments (Offset Assessment Guides and a paper by Ron Johnstone and Tony Kirkby, black cockatoo experts) today (this afternoon or tomorrow morning) as we promised them to provide what they need to know.

Cheers,
s. 22(1)(a)(ii)

LEX-26320

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Banksia squarrosa subsp. argillacea
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	Yes	9 plants impacted by drawdown	9		Count	

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	Yes	9	Count	26	20		26		10		26		16	60%	9.60	9.22	102.49%	Yes		

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	9	9.22	102.49%	**Yes**	$0.00	N/A	$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	1.78	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	0.71	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	5 hollows	5		Count	
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	0.71	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	5	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	90%	0.00	0.00	0.35	48.57%	No	
									Future area without offset (adjusted hectares)	5.0	**Future area with offset (adjusted hectares)**	5.0								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**4**	1.00	70%	0.70	0.69				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	5	Count	12	20		12		7		12		5	70%	3.50	2.76	55.14%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	5	2.76	55.14%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	0.712	0.35	48.57%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's black cockatoo
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	1.78	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	0.71	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	5 hollows	5		Count	
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	0.71	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	4.15	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	4.2	**Future area with offset (adjusted hectares)**	4.2	0.00	90%	0.00	0.00	0.46	64.28%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**5**	2.00	70%	1.40	1.10				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	5	Count	12	20		12		7		12		5	70%	3.50	2.76	55.14%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	5	2.76	55.14%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	0.712	0.46	64.28%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

LEX-26320

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Shrublands on SCP Ironstones
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	Yes		**Area**	0.34	Hectares	
			Quality	**5**	Scale 0-10	
			Total quantum of impact	0.17	Adjusted hectares	
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	Yes	0.17	Adjusted hectares	2.58	**Risk-related time horizon (max. 20 years)**	20	**Start area (hectares)**	2.58	**Risk of loss (%) without offset**	5%	**Risk of loss (%) with offset**	0%	0.13	90%	0.12	0.09	157.01%	Yes		
									Future area without offset (adjusted hectares)	2.5	**Future area with offset (adjusted hectares)**	2.6				0.27				
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**7**	**Future quality with offset (scale of 0-10)**	**8**	1.00	80%	0.80	0.79				
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0.17	0.27	157.01%	**Yes**	$0.00	N/A	$0.00
					$0.00	**$0.00**	**$0.00**

s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii)
Sent: Monday, 6 September 2021 9:24 AM
To: s. 22(1)(a)(ii)
Subject: FW: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]
Attachments: 210831 Offsets MP DAWE comments_response.docx

Hi s. 22(1)(a)(ii)
As discussed, they provided this response in relation to the PAS comments. Could you please confirm their statement regarding previous advices and technical consultation with DAWE for the offsets strategy plan?

Cheers,
s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Friday, 3 September 2021 1:53 PM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>; s. 47F(1) @doral.com.au>
Subject: 210831 Offsets MP DAWE comments_response

Hi s. 22(1)(a)(ii)

s. 47F(1) and I have been through your comments as sent through on Tuesday and have created a table of responses which I would like to discuss before we go into the formal resubmission process

The two key issues for which we need to discuss (which we were of the understanding was considered by DAWE to be acceptable) are the comments relating to WRP offsets and the number of Banksia squarrosa Sp. in the TEC offset

I had a quick chat with s. 22(1)(a)(ii) this morning and it was really nice for him to call you to discuss and he informed me of the recent change to include post approvals at this late stage, which has obviously contributed to our concerns

Anyway, I'd appreciate if you could please have a look through the comments attached and it would be great to be able to discuss them via teams and possibly following that we can tee up a meeting with the Post approvals team.

Please let me know what you think, and although s. 47F(1) in unavailable this afternoon I will make myself available for when you can talk

Thanks
s. 47F(1)

	GENERAL COMMENTS	DORAL RESPONSE
1.	Firstly, in page 2 and then for the entire of the document, scientific names for black cockatoos should be corrected	Abbreviated references to black cockatoos corrected as per the following: • Carnaby`s Black-Cockatoo ***Zanda latirostris*** – listed as Endangered under the *BC Act* and *EPBC Act*. • Baudin's Black-Cockatoo ***Zanda baudinii*** – listed as Endangered under the *BC Act*, and the *EPBC Act.* • Forest Red-tailed Black-Cockatoo *Calyptorhynchus banksii naso* – listed as Vulnerable under the *BC Act* and *EPBC Act.*
2.	Note also that Baudin's black cockatoo is listed as **Endangered**, not vulnerable (it was up listed in 2018). The Offset Assessment Guides (OAG) (Appendix 3) has it as vulnerable, so this needs to be corrected too.	Baudin's listing under the EPBC ACT changed to endangered in document and in OAG
3.	On Page 12 (Table 2), it seems the following sentence should be corrected: This has resulted in the avoidance of 951 of the **1053** (and not 1.053) potential Black Cockatoo breeding trees within the Development Envelope	The typo on page 12 has been corrected to 1,053.
4.	More detail is required in the Offset Strategy, specifically concerning rehabilitation details (species to be planted, timeframes for establishment, time to ecological benefit (i.e., foraging resource becomes available), location for revegetation/rehabilitation (onsite and offsite at proposed offsets), etc). All revegetation activities for the proposed offset sites should be included in this Offset Strategy	Revegetation details at BC site including species list, timeframes, location, completion criteria have been provided in the Stratham Offsets Revegetation Plan Appendix 6 of the Offset Strategy document. No proposed revegetation at DBCA managed site as direct offset of present TEC habitat inclusive of 15 individual plants of Banksia Sq. is proposed. Offset site is controlled and managed by DBCA and not under control of Doral
5.	The OAG requires some adjustment to be accurate, particularly for risk of loss and time until ecological benefit	Noted

6.	We have included sample OAGs (see attached) with adjusted figures for the TEC (still reaches 100% direct offset, so ok), Carnaby's black cockatoo (also covers the other 2 species (Baudin's as endangered and Forest Red-tailed black cockatoo as vulnerable) and for Banksia squarrosa subsp. argillacea (Whicher Range Dryandra). Please note that the OAG for Carnaby's includes a count for the loss of 5 hollows likely to be suitable for breeding (bottom part of sheet). The full direct offset of 100% should be both foraging and breeding combined. This is assuming the breeding hollows are to be offset – if, for some reason, they are not, then additional foraging habitat may be required	SCP10b TEC OAG – Doral has updated the OAG with the DAWE adjusted figures. Carnaby's BC OAG – Doral have reviewed the OAG for Carnaby's BC provided by DAWE which includes provision of 10 artificial hollows to offset the potential breeding hollows. Doral generally agrees with the inputs into this OAG and as such will adopt this for the BC OAG. It is noted that as the Carnaby's BC OAG also covers the other two BC species (Baudin's as endangered and Forest Red-tailed black cockatoo as vulnerable), however Doral have provided three OAG for BC's.
7.	It isn't clear if/where offsets for Western Ringtail Possum (WRP) are included. Given this species is **critically endangered**, this should definitely be considered (see more comments below on this).	No offsets for WRP are proposed based on previous discussion with DAWE and EPA. It was agreed that Doral had successfully applied the mitigation hierarchy for impacts to WRP habitat (avoid, minimise and rehabilitate) to a level that is not considered to be a significant impact (see below). Doral revised the disturbance areas of the mine, following discussion with DAWE/EPA, to avoid ALL direct impacts to WRP habitat. As such the only potential impact to WRP habitat is through groundwater drawdowns. Doral subsequently prepared a GDE Management Plan to minimise and monitor groundwater levels and vegetation health parameters within the WRP habitat and have also prepared a Revegetation Management Plan which includes revegetation of 4.7ha, as required by DAWE, to provide additional WRP habitat (and BC habitat) adjacent to the existing WRP habitat. WRP numbers have also shown steady decline from 5 individuals first observed in 2017 to 1 individual in 2019 to not identified in 2021. Discussion between EPA s. 47F(1) and DAWE s. 22(1)(a)(ii) s. 22(1)(a)(ii) was undertaken to discuss appropriate wording for the EPA Ministerial Statement that would suit both the State and Federal requirements (refer to Condition 12 of the Min Statement) as a contingency if an offset is required at a later stage.
	Mitigation and Rehabilitation	

	With respect to the proposed rehabilitation/revegetation (mitigation), as set out in Table 1 (pp.7-9) and Table 2 (pp.12-14), there is insufficient information provided to determine the likelihood of success:	Noted, see responses below
8.	Additional information is required to support the claim that the approval holder has had success in rehabilitating black cockatoo foraging habitat, e.g., published papers, reports detailing how completion criteria have been successfully achieved, etc. This would need to be provided to indicate the proposed rehabilitation is likely to be successful.	Annual compliance reports for Dardanup offsets issued to DAWE since 2013 (EPBC 2011/6087) and (EPBC 2013/6897). Annual compliance reports for Yoongarillup offsets (EPBC 2012/6521) and revegetation plan.
9.	Further, the claim of 5-7 years is misleading. This claim appears to concern establishing the plantings. However, the time to ecological benefit, as required to be achieved in the Offset Assessment Guide, would be the time until the plantings can provide foraging resources for black cockatoos. This is likely to be at least 10 years and possibly longer, depending on environmental conditions.	Noted. Table 3 under 'Likely Rehab Success' column (as part of mitigation measures) has been amended to 10 years for foraging habitat to be established and self-sustaining Noted, 10 years for Time Until Ecological Benefit has now been used in the OAG for the Black Cockatoos.
10.	Separate timeframes may be required for plantings to address loss of Western Ringtail Possum habitat. The plantings would need to include Agonis flexuousa (peppermint) and these requirements would also need to be clearly set out, e.g., time to ecological benefit for WRP, location for plantings with respect to known locations of possums and their habitat, etc. Rehabilitating close to roads and/or near the site of the proposal may not be appropriate when considering threats to the possums.	No WRP habitat or plantings are proposed as an offset. The Revegetation Management Plan, addresses revegetation requirements of 4.7ha suitable for BC and WRP habitat. No direct loss to WRP habitat from project, GDE Management Plan to be implemented and contingent WRP Offset as per Ministerial Statement Condition 12. Rehabilitation site allows expansion of existing habitat area and connectivity to revegetation refuge site away from road reserve.
11.	It is unclear if the rehabilitation also includes Banksia squarrosa subsp. argillacea (Whicher Range Dryandra).	The rehabilitation does not include Banksia squarrosa subsp. argillacea. The offset provided for the TEC, which includes the Banksia squarrosa sp. is to be provided as >100% direct offset and does not require improvement (revegetation) to meet the OAG given the excellent condition and the area of TEC to be provided as the offset.
	Offsets	

12.	The proposed offsets don't appear to include breeding hollows for black cockatoos. Table 2 states there are 5 hollows considered possibly suitable (either they are suitable, or they are not). Assuming these hollows are suitable, these need to be included in any proposed offset package – this is currently not the case. These are included in the attached OAGs and can assist in providing the 100% direct offset. Without the hollows, the total area proposed for the offset is not sufficient unless management measures over 20 years are included.	The proposed BC offset (refer to OAG's for BC's) has been updated to include both foraging and breeding habitat combined (totalling >100%), based on the OAG example provided by DAWE. This now includes 4.15ha of foraging habitat and installation of 10 artificial hollows.
13.	The proposed offset for Shrublands on the Swan Coastal Plain Ironstones TEC looks ok based on the figures used in the tables and Offset Assessment Guide. However, the claim that DBCA has agreed to take on management of the offset and include this in their conservation estate requires better evidence. The email thread provided at Appendix 4 is not evidence, particularly as the conversation is about determining the boundary. We would require a specific statement that the proposed offset will be accepted by DBCA and can be incorporated into their conservation estate by a certain date. Shapefiles should be required as well, to confirm the total area being provided.	DBCA has been instrumental in the negotiation and acquisition of the land and placing it into state reserve. Signed land acceptance has been received by DBCA and shall issue Doral an invoice for payment. Appendix 4 has been updated to include evidence.
14.	The Offset Strategy states that the offsets must be 90% - **this is not correct**, the package for each MNES must total 100% direct offsets (there are no other compensation measures being proposed).	Section 4.2.1 of DAWE's EPBC Act 1999 Environmental Offsets Policy (DSEWPaC, 2012) and the OAG excel spreadsheet states that direct offsets need to be at least 90%. Notwithstanding, Doral has used 100% as the direct offset in the Offset Strategy document and the relevant OAG's and have updated Section 2.2.3 (and elsewhere) of the Offset Strategy document to state 100% direct offset.
15.	There is considerable confusion concerning the timeframes for management. Section 5.2 proposes a 75% survival rate for plantings for the black cockatoo offset site but doesn't indicate over which time period this would be. Table 6 sets out some timeframes that appear to indicate the offset would be managed for 20 years. However, the Offset Assessment Guides for black cockatoos (Appendix 3) has the time until ecological benefit as 1 year. This must be clarified – if the management measures described (pest and weed management, management of new plantings in revegetation areas for the offset) are to be undertaken, the time period for this must be reflected in the OAG and in the document itself.	Further detail on the revegetation component of the BC habitat has now been included in the Offset Strategy (Appendix 6) including timing of plantings. Time until ecological benefit was entered as 1 year, given 85% of the offset is to be provided immediately, however this has now been amended to 10 years based on DAWE advice that foraging habitat is more likely to take 10 years not 5-7 years. Doral also now understands that that time until ecological benefit is for the whole timeframe needed to provide the entire offset. 20 years has been included as a commitment from Doral for ongoing maintenance, not the time until ecological benefit which will be realised much earlier (10 years).

16.	Some of the figures used in the OAG are not correct. For example, the proposed TEC offset should have a risk of loss of 0% once incorporated into the DBCA conservation estate, as that will be permanently protected (currently the risk of loss is 1% - this seems to reflect an ongoing misunderstanding about protecting offset sites, noting that the OAG does not consider stochastic events such as fire or storms, but only those factors arising from human actions, such as clearing).	In accordance with Table 2 of *Guidance for deriving Risk of Loss estimates when evaluating biodiversity offset proposals under the EPBC Act 2017,* the risk of loss with offset would be 0%. However, as requested by the previous DAWE assessment team. Doral used a figure of 1%. This has now been amended to 0%.
17.	Also note that the current risk of loss for the proposed black cockatoo offset site should be 0%. This is because the approval holder already owns the site. Unless there is an immediate risk that the entire site will be cleared, there is no risk of loss.	In accordance with Table 2 of *Guidance for deriving Risk of Loss estimates when evaluating biodiversity offset proposals under the EPBC Act 2017,* the risk of loss without offset would be 0%. However, as requested by the previous DAWE assessment team. Doral used a figure of 1%. This has now been amended to 0%.
18.	Note also that Baudin's black cockatoo is listed as endangered, not vulnerable (it was up listed in 2018). The OAG (Appendix 3) has it as vulnerable, so this needs to be corrected.	OAG for Baudin's has been updated to endangered.
19.	There should also be clarification concerning how the proposed black cockatoo offset site will be protected into the future. Again, there should be either confirmation from DBCA they will incorporate the site into their conservation estate, or a specified conservation mechanism to secure the site, and by a certain date.	Black cockatoo offset site is not suitable for DBCA management. Offset land will be placed under DBCA conservation covenant on the land title as documented in last paragraph of 5.2. which shall secure the site in perpetuity. As stated, this process will commence immediately upon approval. From previous experience, this process can take up to 2 years as has been done successfully by Doral under (EPBC 2011/6087) and (EPBC 2013/6897).
20.	The timeframes included in Tables 4 and 6 (Section 5) will also need to be updated, for example, for securing the proposed offsets.	Tables 4 and 6 (now Tables 5 and 7)have been updated to include current timeframes.
21.	There doesn't appear to be an offset proposed for WRP, but this should be considered. This is a critically endangered species, and the proposal will severely impact the possums recorded along the road (see map at Figure 6). Roads are a primary impact that prevent possums from moving through the landscape and the sand mine will likely cut off possums from travelling across this area. Recommend an offset be proposed to address the likely significant residual impact on this species.	See comment 7 above regarding implementation of the Mitigation hierarchy (avoid, minimise, rehabilitate) Doral have applied to reduce the residual impact to a level that is not considered significant. A contingency to provide an offset has been included as Condition 12-1 in the Min Statement.

22.	There doesn't appear to be any management of Phytophthora. The Offset Strategy should include data on the extent of Phytophthora in the proposed offset areas and information on how this will be managed. Phytophthora is a key threat to the TEC and Banksia squarrosa subsp. argillacea, and possibly also the black cockatoo foraging habitat, depending on which species are present.	Dieback survey of the TEC area has not yet been conducted due to sensitivities of the TEC habitat and Threatened flora as discussed with DBCA. Proposed fencing will provide an effective control to minimise any future risk for dieback spread within the TEC. Future management of TEC site will be by dieback experienced DBCA staff. Dieback survey of the proposed Black Cockatoo offset (see BARK Environmental report included as Appendix 5) has been deemed as 'Excluded' due to the grazing disturbance and lack of indicator species within the area. Fencing and restrictive conservation covenant will minimise risk and future management by Doral will incorporate dieback hygiene protocols as practiced at existing Doral sites (eg Yoongarillup EPBC 2017/8094).
23.	There doesn't appear to be a specific proposed offset for the likely loss of 9 Banksia squarrosa subsp. argillacea plants. This should be factored into the OAG – (see attached). 15 plants do not appear to be sufficient to provide a 100% direct offset.	No specific offset is proposed for *Banksia squarrosa* subsp. *argillacea* as discussion with DAWE in 2021 indicated that the 15 Banksia squarrosa subsp. argillacea plants are included in the identified TEC habitat and therefore only need to offset the TEC (as you can't double dip). The identified TEC offset habitat was deemed appropriate as a 100% direct offset following consultation with DAWE s. 22(1)(a)(ii) , EPA s. 47F(1) and DBCA Officers s. 47F(1) in 2021. This included the DAWE review of draft OAG's and acceptance resulting in the OAG as included in the Draft Offset Management plan (26 June 2021) Recommendations from DAWE, EPA and DBCA officers has therefore led to the negotiation and purchase of the identified TEC offset under the understanding of it being suitable as 100% direct offset for the comparative potential for in-direct impacts resulting from the project. Further land purchase is not feasible due to availability of suitable land.
	Discount rates for hollows and plants	
24.	We should mention how we have accounted for the loss of hollows (and Dryandras) over time in the OAGs. We've attached here a paper by Ron Johnstone and Tony Kirkby, black cockatoo experts. Their work shows an average loss of hollows for Forest Red-tails of c. 46% every decade (p.11; i.e., 92% over 20 years in the OAG), which is very high. We've have used half this percentage for this proposed offset (46% over 20 years), because it is located in an agricultural area rather than forests and, presumably, fire risk would be actively supressed, as well as the tree density being somewhat less. Also, Forest Red-tails need larger hollows than Carnaby's and Baudin's (yes, all three species are included in the Offset Strategy, but a slightly smaller hollow will accommodate both	Doral propose to install 10 artificial hollows as discussed above and included in the OAG's for the Black Cockatoos. Visual assessment of hollows (using drones) will be conducted annually to determine use of hollows or any maintenance that may be required and has been included in Table 6.

	Carnaby's and Baudin's). We have reduced the confidence in result in the OAGs because it isn't clear if the hollows would be maintained, either with or without management measures (there is no reference to this in the Offset Strategy).	
25.	For the Whicher Range Dryandra, we've assumed a loss of 2 plants per year over 20 years. We have no specific data for this assumption, other than the likely presence of Phytophthora, as well as recent drought, and the inundations that may occur in this TEC, if the Banksias are co-located, as they seem to be (Banksias don't like wet feet, but the TEC can be subject to inundation). The OAG shows 26 plants would be required as a separate offset consideration, so more than the proposed 15.	Doral are providing an offset for the potential indirect impacts to the TEC which includes 9 Banksia plants and a comprehensive GDE Management Plan will be implemented to minimise the risk of impacts. Previous discussions with DAWE have indicated that the Banksia are part of the SCP10b TEC and we do not need to provide two offsets.

s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii)
Sent: Tuesday, 14 September 2021 8:10 AM
To: s. 47F(1)
Cc: s. 47F(1) ; s. 22(1)(a)(ii) ; s. 47F(1) @dwer.wa.gov.au
Subject: RE: EPBC 2017/8094 Yalyalup Mineral Sands Project Land Acquisition Offsets Strategy Sept 2021 [SEC=OFFICIAL]

Good morning s. 47F(1)

Thanks for sending the updated version (September 2021) of the Doral Yalyalup Project Land Acquisition Land Offsets Strategy (EPBC2017/8094) and written evidence from DBCA for the procurement of the Ironstone Block. These documents and information will be reviewed within next 10 business day from today (14/09/2021), and following confirmation of adequacy of received information, the clock for the proposed and final decision stage will be started for 30 business day. If you have any question in this regard, please do not hesitate to contact me.

Regards,
s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Monday, 13 September 2021 8:19 PM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>; s. 47F(1) @doral.com.au>s. 22(1)(a)(ii) s. 22(1)(a)(ii) @environment.gov.aus. 22(1)(a)(ii) @environment.gov.au>; s. 47F(1) @dwer.wa.gov.au
Subject: EPBC 2017/8094 Yalyalup Mineral Sands Project Land Acquisition Offsets Strategy Sept 2021

Hi s. 22(1)(a)(ii)

Please see attached the updated version of the Doral Yalyalup Project Land Acquisition Land Offsets Strategy. Please note that written evidence from DBCA for the procurement of the Ironstone Block is within Appendix 4.

I have also attached the updated table of the earlier comments with Doral responses

I appreciate your understanding of the timing issues for Doral, and if you have any queries please don't hesitate to contact me either by phone or email

Thanks
s. 47F(1)

s. 47F(1)

Doral Mineral Sands Pty Ltd

Doral

An Iwatani Company

T s. 47F(1)
M s. 47F(1)
E s. 47F(1) @doral.com.au
www.doral.com.au

25 Harris Road | Picton | WA | 6229

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Thursday, 9 September 2021 12:42 PM
To: s. 47F(1) @doral.com.au>
Cc: s. 47F(1) @abecenv.com.au>; s. 47F(1) @doral.com.au>s. 22(1)(a)(ii)
s. 22(1)(a)(ii) @environment.gov.au>; s. 22(1)(a)(ii) @environment.gov.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

Good afternoon s. 47F(1)

Thank you for your prompt response following our comments on Offsets Strategy Plan EPBC2017-8094 Yalyalup Mineral Sands Project, WA. Your response has been reviewed by our team and Post Approval Section and now we need to receive the updated Offsets Strategy Plan (September 2021) regarding minor amendment and evidences which show us land purchases for offsets plan have been provided.

Once we receive the above requirements, under the *EPBC Act* regulation and regarding s132, we will let you know about the adequacy of the documents (withing 10 business day) and if it's confirmed that the further information (requested) is adequate, the clock for the final decision stage will be activated (for 30 business day). Please don't hesitate to contact me if you have any further questions regarding this matter.

Kind regards

s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Environmental Impact Assessment Officer | South WA Section|s. 22(1)(a)(ii)
Department of Agriculture, Water and the Environment
Environment Assessments West (WA, SA, NT) Branch | Environment Approvals Division
John Gorton Building, King Edward Terrace, Parkes ACT
GPO Box 787, Canberra City, ACT 2601
www.awe.gov.au

From: s. 47F(1) @doral.com.au>
Sent: Friday, 3 September 2021 1:53 PM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>; s. 47F(1) @doral.com.au>
Subject: 210831 Offsets MP DAWE comments_response

Hi s. 22(1)(a)(ii)

s. 47F(1) and I have been through your comments as sent through on Tuesday and have created a table of responses which I would like to discuss before we go into the formal resubmission process

The two key issues for which we need to discuss (which we were of the understanding was considered by DAWE to be acceptable) are the comments relating to WRP offsets and the number of Banksia squarrosa Sp. in the TEC offset

I had a quick chat with s. 22(1)(a)(ii) this morning and it was really nice for him to call you to discuss and he informed me of the recent change to include post approvals at this late stage, which has obviously contributed to our concerns

Anyway, I'd appreciate if you could please have a look through the comments attached and it would be great to be able to discuss them via teams and possibly following that we can tee up a meeting with the Post approvals team.

Please let me know what you think, and although s. 47F(1) in unavailable this afternoon I will make myself available for when you can talk

Thanks
s. 47F(1)

s. 22(1)(a)(ii)

From: s. 22(1)(a)(ii)
Sent: Tuesday, 31 August 2021 5:18 PM
To: s. 47F(1)
Cc: s. 47F(1) s. 22(1)(a)(ii)
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]
Attachments: offset-assessment-guide-Banksia squarrosa.xlsm; offset-assessment-guide-CBC.xlsm; offset-assessment-guide-CBC-management.xlsm; offset-assessment-guide-SSCPI TEC.xlsm; Black Cockatoo Research Project - Final Report 2019 DOH.pdf

Hi s. 47F(1)

As discussed, and according to previous correspondence, the s132 stop clock is tied to the following:

- The Ministerial Statement – provided
- The revegetation management plan – provided
- The updated GROUNDWATER LICENCE OPERATING STRATEGY (GLOS) – provided
- An adequate offsets strategy – outstanding. Once we receive an updated offset strategy which addresses the following comments as well as the provision of a document which demonstrates the land purchase has been finalised for the offset area, then our approval clock will initiate.

In this regard, we've had a chance to look through the Land Acquisition Offset Strategy for the Yalyalup sand mine (EPBC 2017/8094). We have some general comments on the strategy, as well as some specific recommendations concerning the proposed offsets. Please consider these comments as follows:

General comments

- Firstly, in page 2 and then for the entire of the document, scientific names for black cockatoos should be corrected based on the new name as follows:
    - Carnaby`s Black-Cockatoo ***Zanda latirostris*** – listed as Endangered under the *BC Act* and *EPBC Act*.
    - Baudin's Black-Cockatoo ***Zanda baudinii*** – listed as Endangered under the *BC Act*, and **Endangered** under the *EPBC Act.*
    - Forest Red-tailed Black-Cockatoo *Calyptorhynchus banksii naso* – listed as Vulnerable under the *BC Act* and *EPBC Act.*
- Note also that Baudin's black cockatoo is listed as **Endangered**, not vulnerable (it was up listed in 2018). The Offset Assessment Guides (OAG) (Appendix 3) has it as vulnerable, so this needs to be corrected too.
- In addition, on Page 12 (Table 2), it seems the following sentence should be corrected:
    - This has resulted in the avoidance of 951 of the **1053** (and not 1.053) potential Black Cockatoo breeding trees within the Development Envelope.
- More detail is required in the Offset Strategy, specifically concerning rehabilitation details (species to be planted, timeframes for establishment, time to ecological benefit (i.e., foraging resource becomes available), location for revegetation/rehabilitation (onsite and offsite at proposed offsets), etc). All revegetation activities for the proposed offset sites should be included in this Offset Strategy.

- The OAG requires some adjustment to be accurate, particularly for risk of loss and time until ecological benefit.

- We have included sample OAGs (see attached) with adjusted figures for the TEC (still reaches 100% direct offset, so ok), Carnaby's black cockatoo (also covers the other 2 species (Baudin's as endangered and Forest Red-tailed black cockatoo as vulnerable) and for *Banksia squarrosa* subsp. *argillacea* (Whicher Range Dryandra). Please note that the OAG for Carnaby's includes a count for the loss of 5 hollows likely to be suitable for breeding (bottom part of sheet). The full direct offset of 100% should be both foraging and breeding combined. This is assuming the breeding hollows are to be offset – if, for some reason, they are not, then additional foraging habitat may be required.

- It isn't clear if/where offsets for Western Ringtail Possum (WRP) are included. Given this species is **critically endangered**, this should definitely be considered (see more comments below on this).

Mitigation and rehabilitation

With respect to the proposed rehabilitation/revegetation (mitigation), as set out in Table 1 (pp.7-9) and Table 2 (pp.12-14), there is insufficient information provided to determine the likelihood of success:

- Additional information is required to support the claim that the approval holder has had success in rehabilitating black cockatoo foraging habitat, e.g., published papers, reports detailing how completion criteria have been successfully achieved, etc. This would need to be provided to indicate the proposed rehabilitation is likely to be successful.

- Further, the claim of 5-7 years is misleading. This claim appears to concern establishing the plantings. However, the time to ecological benefit, as required to be achieved in the Offset Assessment Guide, would be the time until the plantings can provide foraging resources for black cockatoos. This is likely to be at least 10 years and possibly longer, depending on environmental conditions.

- Separate timeframes may be required for plantings to address loss of Western Ringtail Possum habitat. The plantings would need to include *Agonis flexuousa* (peppermint) and these requirements would also need to be clearly set out, e.g., time to ecological benefit for WRP, location for plantings with respect to known locations of possums and their habitat, etc. Rehabilitating close to roads and/or near the site of the proposal may not be appropriate when considering threats to the possums.

- It is unclear if the rehabilitation also includes *Banksia squarrosa subsp. argillacea* (Whicher Range Dryandra).

Offsets

For the proposed offsets, there are several issues not fully addressed, requiring clarification and/or re-consideration:

- The proposed offsets don't appear to include breeding hollows for black cockatoos. Table 2 states there are 5 hollows considered possibly suitable (either they are suitable, or they are not). Assuming these hollows are suitable, these need to be included in any proposed offset package – this is currently not the case. These are included in the attached OAGs and can assist in providing the 100% direct offset. Without the hollows, the total area proposed for the offset is not sufficient unless management measures over 20 years are included.

- The proposed offset for Shrublands on the Swan Coastal Plain Ironstones TEC looks ok based on the figures used in the tables and Offset Assessment Guide. However, the claim that DBCA has agreed to take on management of the offset and include this in their conservation estate requires better evidence. The email thread provided at Appendix 4 is not evidence, particularly as the conversation is about determining the boundary. We would require a specific statement that the proposed offset will be accepted by DBCA and can be incorporated into their conservation estate by a certain date. Shapefiles should be required as well, to confirm the total area being provided.

- The Offset Strategy states that the offsets must be 90% - **this is not correct**, the package for each MNES must total 100% direct offsets (there are no other compensation measures being proposed).

- There is considerable confusion concerning the timeframes for management. Section 5.2 proposes a 75% survival rate for plantings for the black cockatoo offset site but doesn't indicate over which time period this would be. Table 6 sets out some timeframes that appear to indicate the offset would be managed for 20 years. However, the Offset Assessment Guides for black cockatoos (Appendix 3) has the time until ecological benefit as 1 year. This must be clarified – if the management measures described (pest and weed management, management of new plantings in revegetation areas for the offset) are to be undertaken, the time period for this must be reflected in the OAG and in the document itself.

- Some of the figures used in the OAG are not correct. For example, the proposed TEC offset should have a risk of loss of 0% once incorporated into the DBCA conservation estate, as that will be permanently protected (currently the risk of loss is 1% - this seems to reflect an ongoing misunderstanding about protecting offset sites, noting that the OAG does not consider stochastic events such as fire or storms, but only those factors arising from human actions, such as clearing).

- Also note that the current risk of loss for the proposed black cockatoo offset site should be 0%. This is because the approval holder already owns the site. Unless there is an immediate risk that the entire site will be cleared, there is no risk of loss.

- Note also that Baudin's black cockatoo is listed as endangered, not vulnerable (it was up listed in 2018). The OAG (Appendix 3) has it as vulnerable, so this needs to be corrected.

- There should also be clarification concerning how the proposed black cockatoo offset site will be protected into the future. Again, there should be either confirmation from DBCA they will incorporate the site into their conservation estate, or a specified conservation mechanism to secure the site, and by a certain date.

- The timeframes included in Tables 4 and 6 (Section 5) will also need to be updated, for example, for securing the proposed offsets.

- There doesn't appear to be an offset proposed for WRP, but this should be considered. This is a critically endangered species, and the proposal will severely impact the possums recorded along the road (see map at Figure 6). Roads are a primary impact that prevent possums from moving through the landscape and the sand mine will likely cut off possums from travelling across this area. Recommend an offset be proposed to address the likely significant residual impact on this species.

- There doesn't appear to be any management of Phytophthora. The Offset Strategy should include data on the extent of Phytophthora in the proposed offset areas and information on how this will be managed. Phytophthora is a key threat to the TEC and *Banksia squarrosa* subsp. *argillacea*, and possibly also the black cockatoo foraging habitat, depending on which species are present.

- There doesn't appear to be a specific proposed offset for the likely loss of 9 *Banksia squarrosa* subsp. *argillacea* plants. This should be factored into the OAG – (see attached). 15 plants do not appear to be sufficient to provide a 100% direct offset.

Discount rates for hollows and plants

We should mention how we have accounted for the loss of hollows (and Dryandras) over time in the OAGs. We've attached here a paper by Ron Johnstone and Tony Kirkby, black cockatoo experts. Their work shows an average loss of hollows for Forest Red-tails of c. 46% every decade (p.11; i.e., 92% over 20 years in the OAG), which is very high. We've have used half this percentage for this proposed offset (46% over 20 years), because it is located in an agricultural area rather than forests and, presumably, fire risk would be actively supressed, as well as the tree density being somewhat less. Also, Forest Red-tails need larger hollows than Carnaby's and Baudin's (yes, all three species are included in the Offset Strategy, but a slightly smaller hollow will accommodate both Carnaby's and

Baudin's). We have reduced the confidence in result in the OAGs because it isn't clear if the hollows would be maintained, either with or without management measures (there is no reference to this in the Offset Strategy).

For the Whicher Range Dryandra, we've assumed a loss of 2 plants per year over 20 years. We have no specific data for this assumption, other than the likely presence of Phytophthora, as well as recent drought, and the inundations that may occur in this TEC, if the Banksias are co-located, as they seem to be (Banksias don't like wet feet, but the TEC can be subject to inundation). The OAG shows 26 plants would be required as a separate offset consideration, so more than the proposed 15.

Please don't hesitate to contact me if you have any further questions regarding this matter.

Kind regards

s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Environmental Impact Assessment Officer | South WA Section|s. 22(1)(a)(ii)
Department of Agriculture, Water and the Environment
Environment Assessments West (WA, SA, NT) Branch | Environment Approvals Division
John Gorton Building, King Edward Terrace, Parkes ACT
GPO Box 787, Canberra City, ACT 2601
www.awe.gov.au

From: s. 47F(1) @doral.com.au>
Sent: Tuesday, 31 August 2021 11:51 AM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>
Subject: Re: Yalyalup offsets comments [SEC=OFFICIAL]

Ok thanks s. 22(1)(a)(ii)

s. 47F(1)

On 31 Aug 2021, at 9:38 am, s. 22(1)(a)(ii) @awe.gov.au> wrote:

s. 47F(1)

I have been talking with my Director right now, and he said he will try to confirm the comments and whole package by this afternoon or tomorrow morning. I did my entire best to speeded up as much as I could! They are super busy and all proponents do have the same expectation like your case! Once I got it, I will send them to you (immediately).

Regards,

s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Monday, 30 August 2021 11:14 AM

To: s. 22(1)(a)(ii) @awe.gov.au>
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Yes, thanks for that and I understand your position. Sorry to keep asking but I'm under a lot of pressure from my company with the scheduled start up being so close

I will wait for the comments and will be sure to respond the revised plan accurately with regards to them

Thanks

s. 47F(1)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Monday, 30 August 2021 8:22 AM
To: s. 47F(1) @doral.com.au>
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

s. 47F(1)

According to the confirmed schedule, the date to provide you guys the comments is: tomorrow (end of August). So, I cannot push them to make it quick as explained for you before! On the other hand, I cannot provide you the comments before my supervisor's conformation! I am sure you understand the obligation!

In my understanding, if you guys work on the comments and update the offset plan ASAP (we need a new PDF version which has been amended), and resend it to me as directed below with a clear and reliable document which show the purchase of the land done! In your response, you have to mention that all comments were considered in details (see the update version of offset strategy plan – September 2021)! Then , we could start the clock in the next two weeks (by middle of Sep)!

It really depends on you guys. If the offset plan was not updated based on the comments provided, the final approval will confront with extended time frame circumstance (beyond the 30 business days) as I explained you last week. Delegate needs to have enough confident about all management plans especially offset strategy plan, otherwise she will not sign off the approval.

Is that clear what I am talking about?

s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Monday, 30 August 2021 9:58 AM
To: s. 22(1)(a)(ii) @awe.gov.au>
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

Ok, thanks s. 22(1)(a)(ii)

s. 47F(1)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Monday, 30 August 2021 7:56 AM
To: s. 47F(1) @doral.com.au>
Subject: RE: Yalyalup offsets comments [SEC=OFFICIAL]

Hi s. 47F(1)

Yes, I did my job and sent all comments and attachments to my supervisor to confirm it. Once she send it back to me, I will send whole package and comments which need to be addressed by you guys and resend to me the amended offset plan as soon as possible with a clear document which show land purchase has been done for offset plan. To address , the s132 stop clock, you have been asked to do the following:

- The Ministerial Statement – already provided
- The revegetation management plan – already provided
- The updated GLOS – already provided
- An adequate offsets strategy – once we received this updated offset strategy (when you addressed the comments provided by PAS and Assessment Section) as well as a clear document which show the land purchase has been done for offset area, our approval clock will initiate.

Cheers,
s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Monday, 30 August 2021 9:45 AM
To: s. 22(1)(a)(ii) @awe.gov.au>
Subject: Yalyalup offsets comments

Hi s. 22(1)(a)(ii)

Hope you had a nice weekend, just thought I'd drop in a desperate plea to see if the Yalyalup comments were available yet ?

Thanks

s. 47F(1)

s. 47F(1)

Doral Mineral Sands Pty Ltd

<image001.png>

An Iwatani Company

T s. 47F(1)
M s. 47F(1)
E s. 47F(1)

www.doral.com.au

25 Harris Road | Picton | WA | 6229

LEX-26320

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Banksia squarrosa subsp. argillacea
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	Yes	9 plants impacted by drawdown	9		Count	

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	Yes	9	Count	26	20		26		10		26		16	60%	9.60	9.22	102.49%	Yes		

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	9	9.22	102.49%	**Yes**	$0.00	N/A	$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

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Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	1.78	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	0.71	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	5 hollows	5		Count	
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	0.71	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	5	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	90%	0.00	0.00	0.35	48.57%	No	
									Future area without offset (adjusted hectares)	5.0	**Future area with offset (adjusted hectares)**	5.0								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**4**	1.00	70%	0.70	0.69				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	5	Count	12	20		12		7		12		5	70%	3.50	2.76	55.14%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	5	2.76	55.14%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	0.712	0.35	48.57%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

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Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's black cockatoo
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	1.78	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	0.71	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	5 hollows	5		Count	
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	0.71	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	4.15	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	4.2	**Future area with offset (adjusted hectares)**	4.2	0.00	90%	0.00	0.00	0.46	64.28%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**5**	2.00	70%	1.40	1.10				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	5	Count	12	20		12		7		12		5	70%	3.50	2.76	55.14%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	5	2.76	55.14%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	0.712	0.46	64.28%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

LEX-26320

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Shrublands on SCP Ironstones
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	Yes		**Area**	0.34	Hectares	
			Quality	**5**	Scale 0-10	
			Total quantum of impact	0.17	Adjusted hectares	
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	Yes	0.17	Adjusted hectares	2.58	**Risk-related time horizon (max. 20 years)**	20	**Start area (hectares)**	2.58	**Risk of loss (%) without offset**	5%	**Risk of loss (%) with offset**	0%	0.13	90%	0.12	0.09	157.01%	Yes		
									Future area without offset (adjusted hectares)	2.5	**Future area with offset (adjusted hectares)**	2.6				0.27				
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**7**	**Future quality with offset (scale of 0-10)**	**8**	1.00	80%	0.80	0.79				
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0.17	0.27	157.01%	**Yes**	$0.00	N/A	$0.00
					$0.00	**$0.00**	**$0.00**

APPENDIX 11

OFFSET CALCULATIONS

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Western Ringtail Possum
EPBC Act status	Critically Endangered
Annual probability of extinction Based on IUCN category definitions	**6.8%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Total direct and indirect impact to WRP habitat	**Area**	2.61	Hectares	Fauna Assessment (Harewood 2020a)
			Quality	**5**	Scale 0-10	
			Total quantum of impact	1.31	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)		% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																					
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**		**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**										
										0.0		0.0									
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**										
Threatened species habitat																					
Area of habitat	yes	1.31	Adjusted hectares	4.5	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	4.5	**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**	20% 3.6	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**	5% 4.3	0.67	90%	0.61	0.16	1.33	101.73%	Yes		
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**7**	4.00	90%	3.60	3.37					
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**		**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																				
Condition of habitat Change in habitat condition, but no change in extent	No																				
Threatened species																					
Birth rate e.g. Change in nest success	No																				
Mortality rate e.g Change in number of road kills per year	No																				
Number of individuals e.g. Individual plants/animals	No																				

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	1.305	1.33	101.73%	**Yes**	$0.00	N/A	$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	SWAFCT10b
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	Yes	Indirect drawdown impacts to SWAFCT10b	**Area**	0.34	Hectares	Flora and vegetation surveys (Ecoedge)
			Quality	**6**	Scale 0-10	
			Total quantum of impact	0.20	Adjusted hectares	
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	Yes	0.20	Adjusted hectares	0.7	**Risk-related time horizon (max. 20 years)**	20	**Start area (hectares)**	0.7	**Risk of loss (%) without offset**	20%	**Risk of loss (%) with offset**	5%	0.11	80%	0.08	0.07	0.22	109.51%	Yes		
									Future area without offset (adjusted hectares)	0.6	**Future area with offset (adjusted hectares)**	0.7								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**7**	4.00	80%	3.20	3.16				
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0.204	0.22	109.51%	**Yes**	$0.00	N/A	$0.00
					$0.00	**$0.00**	**$0.00**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

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Matter of National Environmental Significance	
Name	Black Cockatoos
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Black Cockatoo potential breeding habitat trees (canopy area of 102 trees)	**Area**	1.78	Hectares	Fauna Survey (Harewood, 2020a and 2020b)
			Quality	**5**	Scale 0-10	
			Total quantum of impact	0.89	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Habitat trees	102		Count	Fauna Survey (Harewood, 2020a and 2020b)
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)		% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																					
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**	 0.0	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**	 0.0									
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**										
Threatened species habitat																					
Area of habitat	Yes	0.89	Adjusted hectares	3.5	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	3.5	**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**	20% 2.8	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**	5% 3.3	0.52	90%	0.47	0.37	0.97	109.03%	Yes		
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**6**	3.00	90%	2.70	2.67					
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**		**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	102	Count	365			365		250		365		115	90%	103.50	103.50		101.47%	Yes		
Condition of habitat Change in habitat condition, but no change in extent	No																				
Threatened species																					
Birth rate e.g. Change in nest success	No																				
Mortality rate e.g Change in number of road kills per year	No																				
Number of individuals e.g. Individual plants/animals	No																				

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	102	103.50	101.47%	**Yes**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0.89	0.97	109.03%	**Yes**	$0.00	N/A	$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	SWAFCT02
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	Yes	Direct and indirect impacts to DBCA listed TEC (not MNES)	**Area**	2.44	Hectares	Flora and vegetation surveys (Ecoedge)
			Quality	**6**	Scale 0-10	
			Total quantum of impact	1.46	Adjusted hectares	
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)		% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																					
Area of community	Yes	1.46	Adjusted hectares	6	**Risk-related time horizon (max. 20 years)**	20	**Start area (hectares)**	6	**Risk of loss (%) without offset**	20%	**Risk of loss (%) with offset**	5%	0.90	80%	0.72	0.57	1.48	101.00%	Yes		
									Future area without offset (adjusted hectares)	4.8	**Future area with offset (adjusted hectares)**	5.7									
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**6**	3.00	80%	2.40	2.37					
Threatened species habitat																					
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**										
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0									
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**										
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**		**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																				
Condition of habitat Change in habitat condition, but no change in extent	No																				
Threatened species																					
Birth rate e.g. Change in nest success	No																				
Mortality rate e.g Change in number of road kills per year	No																				
Number of individuals e.g. Individual plants/animals	No																				

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	1.464	1.48	101.00%	**Yes**	$0.00	N/A	$0.00
					$0.00	**$0.00**	**$0.00**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	SWAFCT01b
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	Yes	DBCA listed TEC (not MNES)	**Area**	0.17	Hectares	Flora and Vegetation surveys (Ecoedge)
			Quality	**6**	Scale 0-10	
			Total quantum of impact	0.10	Adjusted hectares	
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	Yes	0.10	Adjusted hectares	0.4	**Risk-related time horizon (max. 20 years)**	20	**Start area (hectares)**	0.4	**Risk of loss (%) without offset**	20%	**Risk of loss (%) with offset**	5%	0.06	80%	0.05	0.05	102.27%	Yes		
									Future area without offset (adjusted hectares)	0.3	**Future area with offset (adjusted hectares)**	0.4				0.10				
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**6**	3.00	80%	2.40	2.40				
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0.102	0.10	102.27%	**Yes**	$0.00	N/A	$0.00
					$0.00	**$0.00**	**$0.00**

Australian Government
Department of Agriculture, Water and the Environment

APPROVAL

Yalyalup Mineral Sands Project, Southeast of Busselton, WA (EPBC 2017/8094)

This decision is made under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth).* Note that section 134(1A) of the **EPBC Act** applies to this approval, which provides in general terms that if the approval holder authorises another person to undertake any part of the action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such condition.

Details

Person to whom the approval is granted (approval holder)	Doral Mineral Sands Pty Ltd
ACN or ABN of approval holder	ACN: 096 342 451
Action	To construct and operate a mineral sands mine at the Yalyalup mineral sands deposit, approximately 11 km southeast of Busselton, Western Australia [See EPBC Act referral 2017/8094] subject to the variation of the action accepted by the Minister under Section 156B on Friday, 29 May 2020

Approval decision

My decisions on whether or not to approve the taking of the action for the purposes of each controlling provision for the action are as follows.

Controlling Provisions

Wetlands of international importance	
Section 16	Approve
Section 17B	Approve

Listed Threatened Species and Communities	
Section 18	Approve
Section 18A	Approve

Listed migratory species	
Section 20	Approve
Section 20A	Approve

Period for which the approval has effect

This approval has effect until 30 November 2071.

Decision-maker

Name and position	Kylie Calhoun Assistant Secretary Environment Assessment West (WA, SA, NT) Branch
Signature	
Date of decision	12 November 2021

Conditions of approval

This approval is subject to the conditions under the EPBC Act as set out in ANNEXURE A.

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

1. For the protection of **EPBC Act listed species and ecological communities** the approval holder must not **clear** more than:
    a. 1.78 ha of habitat for **Black Cockatoos**, including no more than 102 trees with a diameter at breast height of greater than 500 mm and no more than a total of five trees containing **suitable nesting hollows**.
    b. 0.34 ha of ***Shrublands on southern Swan Coastal Plain Ironstones (Busselton area)*** including as a consequence of **dewatering**.
    c. Nine ***Banksia squarrosa*** **subsp.** ***Argillacea*** including as a consequence of **dewatering**.
2. The approval holder must ensure that no **clearing** occurs outside the **disturbance footprint.**
3. To mitigate impacts to nesting **black cockatoos**, the approval holder must, within two days prior to **clearing** any **suitable nesting hollows**, have a **suitably qualified field ecologist** investigate that **suitable nesting hollow** to determine if it is currently utilised by any **black cockatoos** for nesting. If any **black cockatoo** is detected utilising any hollow in any tree, the approval holder must:
    a. clearly identify and mark the tree in which a **black cockatoo** is identified utilising any hollow; and
    b. not **clear** any tree containing a currently utilised **suitable nesting hollow** or any vegetation within a ten metre radius of any such tree until after the year's **breeding season**.
4. To mitigate the loss of five **suitable nesting hollows** within the **development envelope**, the approval holder must:
    a. install, in accordance with **artificial hollow installation guidelines**, at least fifteen **artificial nesting hollows** prior to the beginning of the first **breeding season** that will commence after the date of this approval decision.

b. ensure that each installed **artificial nesting hollow** is:

i. monitored and maintained in accordance with the **artificial hollow maintenance guidelines** for the **life of the approval**, with maintenance actions undertaken outside of the **breeding season**.

ii. not installed in a manner that requires additional **clearing** of **black cockatoos foraging and breeding habitat** or within 10 metres of the edge of any part of the nearest road or building, to reduce the risk of vehicle strike and human disturbance.

c. ensure that each installed **artificial nesting hollow** is inspected at least twice each year, and at least 4 weeks apart, by a **suitably qualified field ecologist** during the **breeding season** for nine years following **commencement of the action**, to record any evidence of use by **black cockatoos** and to identify any maintenance requirements. The identified maintenance requirements must be implemented.

5. If, after nine years from **commencement of the action**, the approval holder is unable to provide the verification by a **suitably qualified field ecologist** of use by **Black Cockatoos** during the **breeding season** for three consecutive years the approval holder must, within ten years after **commencement of the action**:

a. submit to the **Minister** for approval the details of an offset that meets the requirements of the **EPBC Act Environmental Offsets Policy** and will compensate for the permanent loss of the five **suitable nesting hollows**.

b. submit to the **Department** a detailed assessment of the factors that caused the failure to achieve **black cockatoos nesting** in any **artificial nesting hollow**.

6. All data, enquiries and findings of the monitoring required by Condition 4 must be published and remain publicly accessible for the remainder of the life of the approval on the **website** to contribute to potential research into the use of **artificial nesting hollows** by **Black Cockatoos**. These must be published within 60 **business days** of a **suitably qualified field ecologist** providing verification as required under Condition 4.c., or within 25 **business days** after submitting the assessment report required under Condition 5.b.

7. To minimise impacts to the **Western Ringtail Possum** and **Black Cockatoos**, the approval holder must implement the **Revegetation Management Plan.**

8. To mitigate impacts to the **Vasse-Wonnerup System Ramsar Site**, the approval holder must implement the **Groundwater Licence Operating Strategy**.

9. The approval holder must comply with and implement all **WA conditions** to the extent they relate to **protected matters**.

Environment Offset Requirements

Offset Strategy

10. To compensate for the residual significant impacts to **Black Cockatoos**, ***Shrublands on southern Swan Coastal Plain Ironstones (Busselton area)*** and ***Banksia squarrosa* subsp. *Argillacea,*** the approval holder must submit an Offsets Strategy for approval by the **Minister**. The Offsets Strategy should be signed off by the **Minister** in writing within 3 months from **commencement of the action**. The approval holder must implement the Offset Strategy approved by the **Minister**.

11. The Offsets Strategy must:

a) Identify a suitable environmental offset(s) for the impacts on **EPBC Act listed threatened species and communities**, that satisfies the requirements of the **EPBC Act Environmental Offsets Policy**;

b) Include summary information on the impacted areas and detailed baseline information on the proposed offset(s) and commit to achievable ecological benefits, and timeframes for their

achievement, for the proposed offset(s) that will meet the requirements of the **EPBC Act Environmental Offsets Policy**;

c) Describe the monitoring program(s) to be implemented that will determine progress towards, attainment of and maintenance of the ecological benefits for the **EPBC Act listed threatened species and communities** at the proposed offset(s);

d) Specify how and at what frequency offset(s) management results, monitoring program findings and assessments of ecological benefits will be reported to the **Department** and the public; and

e) Detail how the offset(s) will be protected, and ecological benefits maintained, in perpetuity.

Offset Management Plan(s)

12. The approval holder must submit for the **Minister**'s approval, within 3 months of the date of approval of the Offset Strategy, an Offset Management Plan for each of the offset sites specified in the approved Offset Strategy. Each Offset Management Plan must be consistent with the **Department's Environmental Management Plan Guidelines**, and must include the following:

    a. A summary of the residual impacts to **protected matters** that will be compensated for by the offset. This summary must include the area(s) of habitat for **protected matters** and its condition and quality at all impact sites which the particular Offset is to address.

    b. The relevant **protected matters** and a reference to the **EPBC Act** approval conditions to which the particular Offset Management Plan refers.

    c. A table of commitments made in the Offset Management Plan to achieve the ecological benefits for relevant protected matters, and a reference to where the commitments are detailed in the Offset Management Plan.

    d. Reporting and review mechanisms, and documentation standards to inform others annually regarding compliance with management and environmental commitments, and attainment and maintenance of ecological benefits, as specified in the Offset Management Plan.

    e. An assessment of risks to achieving the ecological benefit(s) and what risk management strategies will be applied to address these.

    f. A monitoring program, which must include:

        i. evidence that effectively determine progress towards, attainment of and maintenance of the ecological benefits for the **protected matters**

        ii. measurable performance indicators to monitor attainment of the ecological benefits for the **protected matters**;

        iii. trigger values for corrective actions; and

        iv. the timing and frequency of monitoring to detect trigger values and changes in the performance indicators;

    g. proposed corrective actions to ensure ecological benefits for the **protected matters** are attained or maintained, if trigger values are reached or performance indicators not attained; and

    h. links to referenced plans and applicable conditions of approval (including State approval conditions) if any.

The approval holder must implement each approved Offset Management Plan.

Note: A single Offset Management Plan providing the above in respect of all offset sites specified in the approved Offset Strategy may be submitted in place of separate Offset Management Plans.

13. If the Offset Management Plan for each of the offset sites specified in the approved Offset Strategy has not been approved by the **Minister** in writing within 4 months of the approval of the Offset Strategy, and the **Minister** notifies the approval holder that one or more submitted Offset Management Plans is/are not suitable for approval, the **Minister** may, at least two months after so notifying the approval holder, approve a version of the Offset Management Plan revised by the **Department**. The approval holder must implement each approved Offset Management Plan for the remainder of the life of the approval.

Part B – Standard administrative conditions

Notification of date of commencement of the action

14. The approval holder must notify the **Department** in writing of the date of **commencement of the action** within 10 **business days** after the date of **commencement of the action.**

15. If the **commencement of the action** does not occur within 5 years from the date of this approval, then the approval holder must not **commence the action** without the prior written agreement of the **Minister**.

Compliance records

16. The approval holder must maintain accurate and complete **compliance records**.

17. If the **Department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **Department** within the timeframe specified in the request.

Note: **Compliance records** may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the **Department**'s website or through the general media.

Submission and publication of plans

18. The approval holder must:

    a. submit **plans** electronically to the **Department**;

    b. unless otherwise agreed to in writing by the **Minister,** publish each **plan** on the website within 20 **business days** of the date:

        i. of this approval, if the version of the **plan** to be implemented is specified in these conditions; or

        ii. that the **plan** is submitted to the **Minister** or the **Department** if the **plan** does not require the approval of the Minister but was not finalised before the date of this approval; or

        iii. that the **plan** is approved by the Minister;

    c. exclude or redact **sensitive ecological data** from **plans** published on the **website** or provided to a member of the public; and

    d. keep **plans** published on the **website** until the end date of this approval.

19. The approval holder must ensure that any **monitoring data** (including **sensitive ecological data**), surveys, maps, and other spatial and metadata produced under a **plan**, is prepared in accordance with the **Department's** *Guidelines for biological survey and mapped data* (2018) and submitted electronically to the **Department** in accordance with the requirements of the **plan**.

Annual compliance reporting

20. The approval holder must prepare a **compliance report** for each 12 month period following the date of **commencement of the action**, or otherwise in accordance with an annual date that has been agreed to in writing by the **Minister**. The approval holder must:

a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;

b. notify the **Department** by email that a **compliance report** has been published on the **website** and provide the weblink for the **compliance report** and documentary evidence providing proof of the date of publication of the report within 5 **business days** of the date of publication;

c. keep all **compliance reports** publicly available on the **website** until this approval expires;

d. exclude or redact **sensitive ecological data** from **compliance reports** to be published on the **website**; and

e. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.

Note: **Compliance reports** may be published on the **Department**'s website.

Reporting non-compliance

21. The approval holder must establish a **compliance risk management system**, prior to the **commencement of the action** to prevent incidents of non-compliance with these approval conditions, prior to the **commencement of the action.**
22. The approval holder must provide evidence of the **compliance risk management system** to the **Department** prior to the **commencement of the action.**

23. The approval holder must implement the **compliance risk management system** from the **commencement** of the action for the remainder of the **life of the approval**.

24. The approval holder must notify the **Department** in writing of any: **incident;** non-compliance with the conditions; or non-compliance with the commitments made in **plans**. The notification must be given as soon as practicable, and no later than two **business days** after becoming aware of the **incident** or non-compliance. The notification must specify:

    a. any condition which is or may be in breach;

    b. a short description of the **incident** and/or non-compliance; and

    c. the location (including co-ordinates), date, and time of the **incident** and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.

25. The approval holder must provide to the **Department** the details of any **incident** or non-compliance with the conditions or commitments made in **plans** as soon as practicable and no later than 10 **business days** after becoming aware of the **incident** or non-compliance, specifying:

    a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;

    b. the potential impacts of the **incident** or non-compliance; and

    c. the method and timing of any remedial action that will be undertaken by the approval holder.

Independent audit

26. The approval holder must ensure that **independent audits** of compliance with the conditions are conducted as requested in writing by the **Minister**

27. For each **independent audit**, the approval holder must:

    a. provide the name and qualifications of the independent auditor and the draft audit criteria to the **Department**;

    b. only commence the **independent audit** once the audit criteria have been approved in writing by the **Department**; and

c. submit an audit report to the **Department** within the timeframe specified in the approved audit criteria.

28. The approval holder must publish the audit report on the **website** within 10 **business days** of receiving the **Department's** approval of the audit report and keep the audit report published on the **website** until the end date of this approval.

Revision of action management plans

29. The approval holder may, at any time, apply to the **Minister** for a variation to an action management plan approved by the **Minister**, by submitting an application in accordance with the requirements of section 143A of the **EPBC Act**. If the **Minister** approves a revised action management plan (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of the previous action management plan.

Completion of the action

30. Within 30 **business days** after the **completion of the action**, the approval holder must notify the **Department** in writing and provide **completion data**.

Part C - Definitions

In these conditions, except where contrary intention is expressed, the following definitions are used:

Artificial hollow installation guidelines the WA Department of Parks and Wildlife Publication *"How to design and place artificial Hollows for Carnaby's cockatoo"* (28 April 2015) available at https://www.dpaw.wa.gov.au/images/plants-animals/threatened-species/carnabys_artificial_hollows_-_design_and_place_2015.pdf.

Artificial hollow maintenance guidelines means the WA Department of Parks and Wildlife publication "*How to monitor and maintain artificial hollows for Carnaby's cockatoo*" (28 April 2015) available from: https://www.dpaw.wa.gov.au/images/plants-animals/threatened-species/carnabys_artificial_hollows_-_monitor_and_maintain_2015.pdf.

Artificial nesting hollow/s means deliberately positioned artificial or repurposed natural structures suitable for **black cockatoos nesting** constructed in accordance with the **Artificial hollow installation guidelines.**

Banksia squarrosa* subsp. *Argillacea is the EPBC Act listed Banksia squarrosa subsp. Argillacea, as defined within the *Conservation Advice Banksia squarrosa subsp. argillacea Whicher Range banksia, Whicher Range dryandra* (2015) available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/82769-conservation-advice-01102015.pdf.

Black Cockatoo/s means the **EPBC Act** listed threatened species Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*), Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) and Baudin's Black Cockatoo (*Calyptorhynchus baudinii*).

Black Cockatoos Nesting means occupation of **suitable nesting hollows** by **Black Cockatoos** during the **breeding season** for the purpose of reproduction.

Breeding season means the period of 1 March to 31 December in any year.

Business day/s means a day that is not a Saturday, a Sunday or a public holiday in Western Australia.

Clear/Cleared/Clearing means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of vegetation (but not including weeds – see the *Australian weeds strategy 2017 to 2027* for further guidance), available from

http://www.agriculture.gov.au/pests-diseases-weeds/pest-animals-and-weeds/review-aus-pest-animal-weed-strategy/aus-weeds-strategy**.**

Commence/Commencement of the action means the first instance of any specified activity associated with the action including **clearing** and **construction** and does not include minor physical disturbance necessary to:

i. undertake pre-clearance surveys or monitoring programs;

ii. install signage and /or temporary fencing to prevent unapproved use of the project area;

iii. protect environmental and property assets from fire, weeds and pests, including **construction** of fencing, and use/maintenance of existing surface access tracks;

iv. install temporary site facilities for persons undertaking pre-commencement activities so long as these are located where they have no impact on the **protected matters**.

Completion data means an environmental report and spatial data clearly detailing how the conditions of this approval have been met. This information must include the actual total area **cleared** within the **development envelope**. The **Department**'s preferred spatial data format is **shapefile**.

Completion of the action means all specified activities associated with the action have permanently ceased.

Compliance records means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession or that are within the approval holder's power to obtain lawfully.

Compliance report/s means written reports:

i. providing accurate and complete details of compliance, **incidents**, and non-compliance with the conditions and the **plans**;
ii. consistent with the **Department's** *Annual Compliance Report Guidelines* (2014): found at https://www.environment.gov.au/epbc/publications/annual-compliance-report-guidelines;
iii. include a **shapefile** of any clearance of any **protected matters**, or their habitat, undertaken within the relevant 12 month period; and
iv. annexing a schedule of all **plans** prepared and in existence in relation to the conditions during the relevant 12 month period.

Compliance risk management system means policies, frameworks and processes established to ensure compliance with these approval conditions.

Construction means the erection of a building or structure that is or is to be fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; preliminary site preparation work which involves breaking of the ground (including pile driving); the laying of pipes and other prefabricated materials in the ground, and any associated excavation work; but excluding the installation of temporary fences and signage.

Department means the Australian Government agency responsible for administering the **EPBC Act**.

Department's Environmental Management Plan Guidelines means *the Environmental Management Plan Guidelines* (2014). Available on the **Department**'s website at: https://www.awe.gov.au/sites/default/files/documents/environmental-management-plan-guidelines.pdf

Development envelope means the location of the action shown marked with a blue outline and labelled 'Development Envelope' on the map at Attachment A and Attachment B which includes the **Disturbance footprint** at Attachment B. The location of 'Yalyalup Development Envelope' with coordination shown marked with a yellow outline on the map at Attachment C.

Dewatering is a term to describe the removal of groundwater or surface water from for example a construction site. In construction the water is pumped from wells or sumps to temporarily lower the groundwater levels, to allow excavation in dry and stable conditions below natural groundwater level.

Disturbance footprint means the project area that is subject to **clearing**, shown marked shaded grey and labelled 'Disturbance Footprint' on the map at Attachment C.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

EPBC Act Environmental Offsets Policy means the Commonwealth of Australia (2012) *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (October 2012)*. Available on the **Department**'s website at: https://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy.

EPBC Act listed species and ecological communities means **Black Cockatoos**, ***Shrublands on southern Swan Coastal Plain Ironstones (Busselton area)*** and ***Banksia squarrosa* subsp. *Argillacea***.

Foraging and breeding habitat means as defined in the *EPBC Act Referral Guidelines for three species* of *Western Australian black cockatoos: Carnaby's cockatoo* (endangered) *(Calyptorhynchus latirostris), Baudin's cockatoo (vulnerable) (Calyptorhynchus baudinii) and Forest red-tailed black cockatoo (vulnerable) (Calyptorhynchus banksii* naso) (October 2012).

Groundwater Licence Operating Strategy means *FINAL GROUNDWATER LICENCE OPERATING STRATEGY FOR THE DORAL MINERALS SANDS PTY LTD, YALYALUP MINERAL SANDS PROJECT, 23 September 2021 (AQ2; September 2021)*.

Incident/s means any event which has the potential to, or does, impact on one or more **protected matter(s)**, other than as authorised by this approval.

Independent audit/s means an audit conducted by an independent and **suitably qualified auditor** as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines* (2019), available from: http://www.environment.gov.au/epbc/publications/independent-audit-report-guidelines.

Life of the approval means the period for which this approval has effect.

Minister means the Australian Government Minister administering the **EPBC Act** including any delegate thereof.

Monitoring data means the data required to be recorded under the conditions of this approval.

Plan/s means any of the documents required to be prepared, approved by the **Minister**, and/or implemented by the approval holder and published on the **website** in accordance with these conditions (includes action management plans and/or strategies).

Protected matter/s refers to the matters protected under a controlling provision in Part 3 of the **EPBC Act**. For this approval the relevant protected matters are Vasse-Wonnerup Ramsar wetland system, Western Ringtail Possum (*Pseudocheirus occidentalis*), Whicher Range Dryandra (*Banksia squarrosa subsp. Argillacea*), Vasse Featherflower (*Verticordia plumose var. vassensis*), Shrublands on the southern Swan Coastal Plain Ironstones, Carnaby`s Black-Cockatoo (*Calyptorhynchus latirostris*), Baudin's Black-Cockatoo (*Calyptorhynchus baudinii*), Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*), Wood sandpiper (*Tringa glareola*), Sharp-tailed sandpiper (*Calidris acuminate*) and Long-toed stint (*Calidris subminuta*).

Revegetation Management Plan means *Yalyalup Mineral Sands Project, Revegetation Management Plan, Prepared for Doral Mineral Sands, 12 February 2021 (Cape Life; Feb 2021)*.

Sensitive ecological data means data as defined in the Australian Government Department of the Environment (2016) *Sensitive Ecological Data – Access and Management Policy V1.0* available from http://www.environment.gov.au/about-us/environmental-information-data/information-policy/sensitive-ecological-data-access-and-management-policy.

Shapefile means location and attribute information of the action provided in an Esri shapefile format. Shapefiles must contain '.shp', '.shx', '.dbf' files and a '.prj' file that specifies the projection/geographic coordinate system used. Shapefiles must also include an '.xml' metadata file that describes the shapefile for discovery and identification purposes**.**

Shrublands on southern Swan Coastal Plain Ironstones (Busselton area) is the EPBC Act listed Shrublands on southern Swan Coastal Plain Ironstones (Busselton area), as defined within the *Shrubland Association on Southern Swan Coastal Plain Ironstone (Busselton area) (Southern Ironstone Association) Recovery Plan, Interim recovery plan no. 215.* (2015).

Suitably qualified auditor means a person who has relevant professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.

Suitably qualified field ecologist means a person who has relevant professional qualifications and at least three (3) years of work experience designing and implementing surveys for **Black Cockatoos/ Western Ringtail Possum** using relevant protocols, standards, methods and/or literature.

Suitable nesting hollow/s means any hollow that appears to be deep enough and with an opening large enough to be used by **Black Cockatoos** for **black cockatoos nesting,** as determined by a **suitably qualified ecologist.**

Vasse-Wonnerup System Ramsar Site the Vasse-Wonnerup System Ramsar Site was designated as a Wetland of International Importance (Ramsar Wetland) on 7 June 1990.

WA Conditions refers to the approved environmental conditions for the proposed action as specified in WA Ministerial Statement No. 1168 (17 May 2021).

Website means a set of related web pages located under a single domain name attributed to the approval holder and available to the public.

Western Ringtail Possum is the **EPBC Act** listed threatened species which defines through *Western Ringtail Possum (Pseudocheirus occidentalis) Recovery Plan* (2017).

ATTACHMENTS

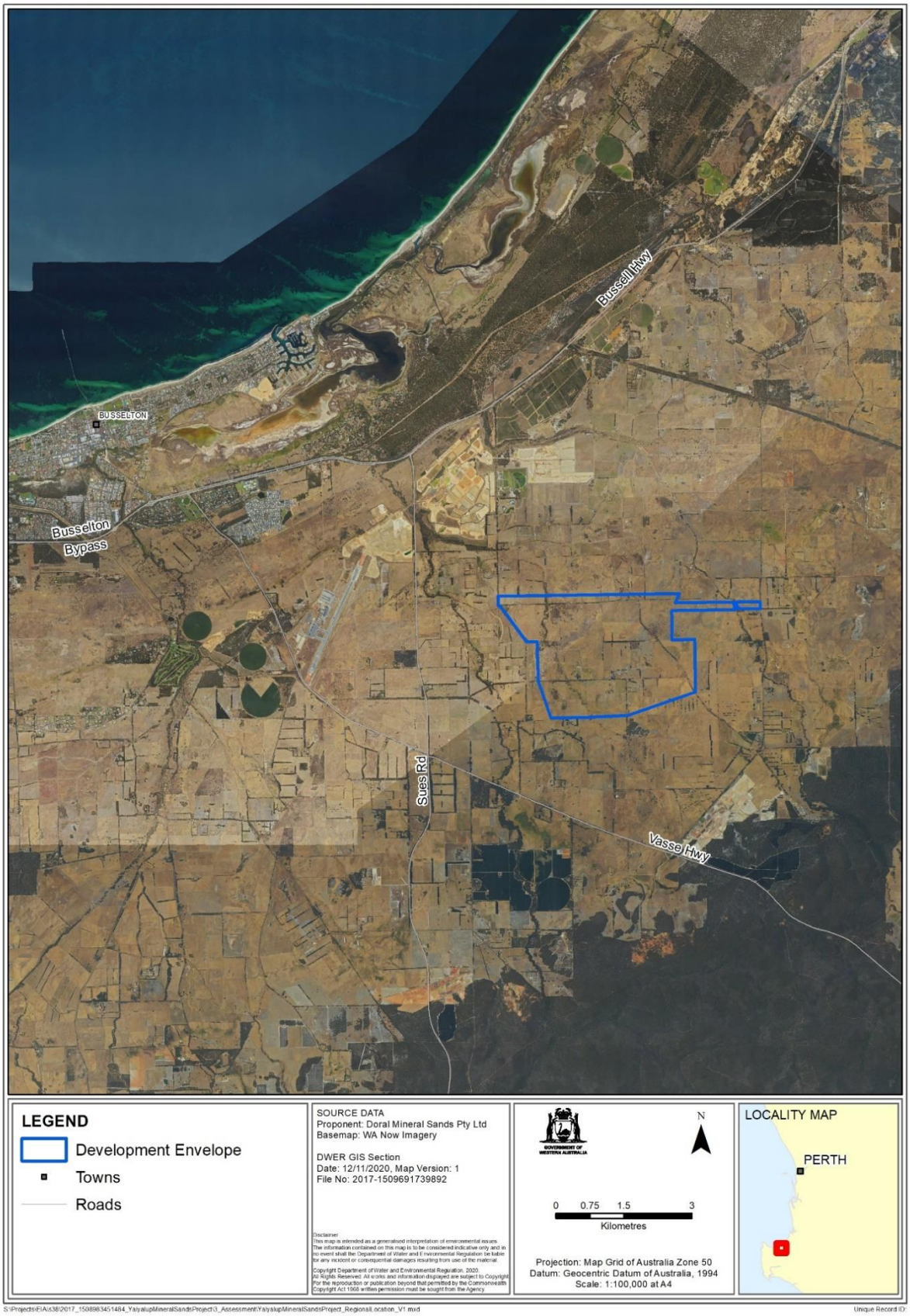
A: Map of Regional Location of Yalyalup Mineral Sands Project – Development Envelope

B: Map of Development Envelope and Disturbance Footprint

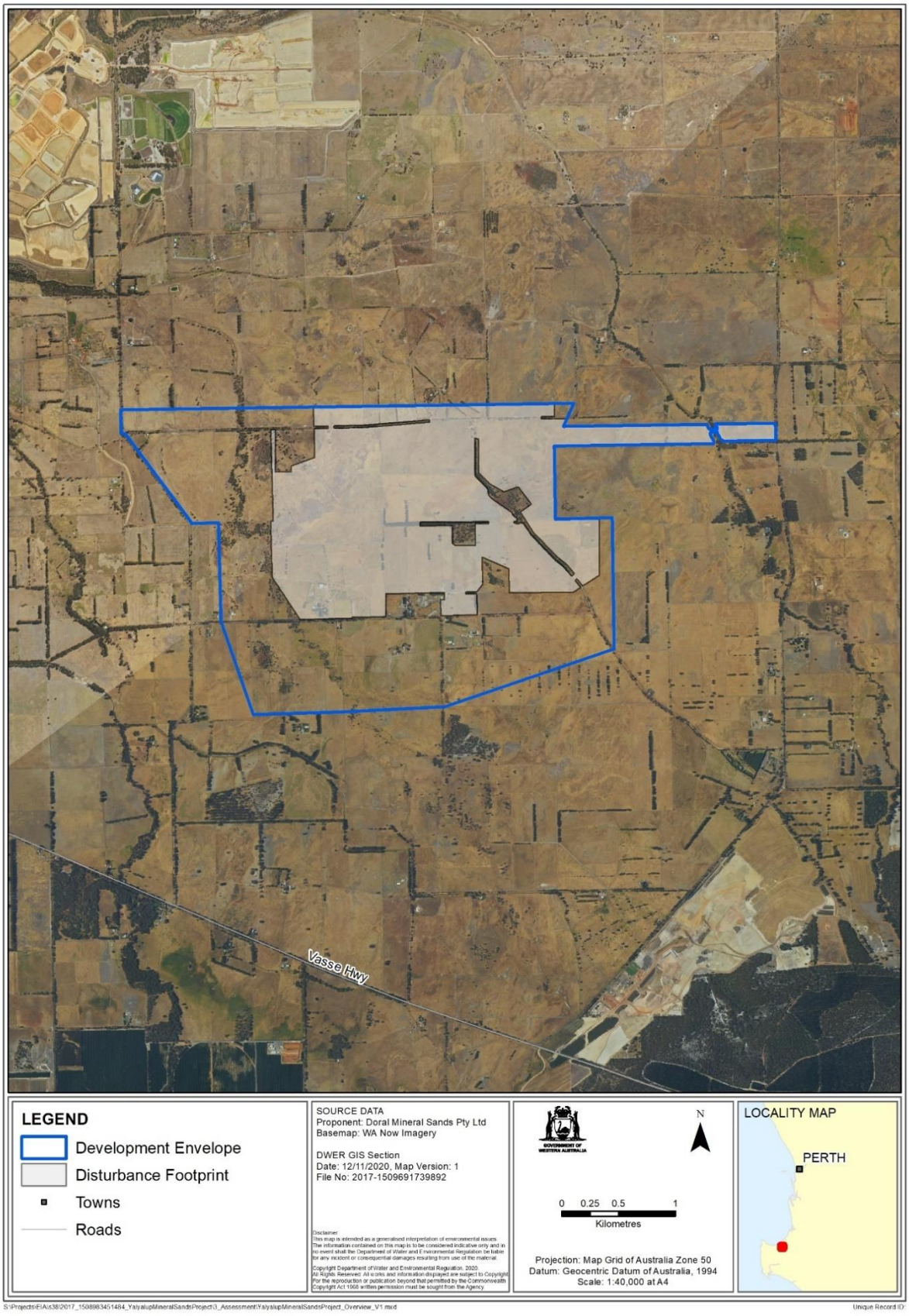
C: Location of Yalyalup Development Envelope - Coordinated

ATTACHMENTS

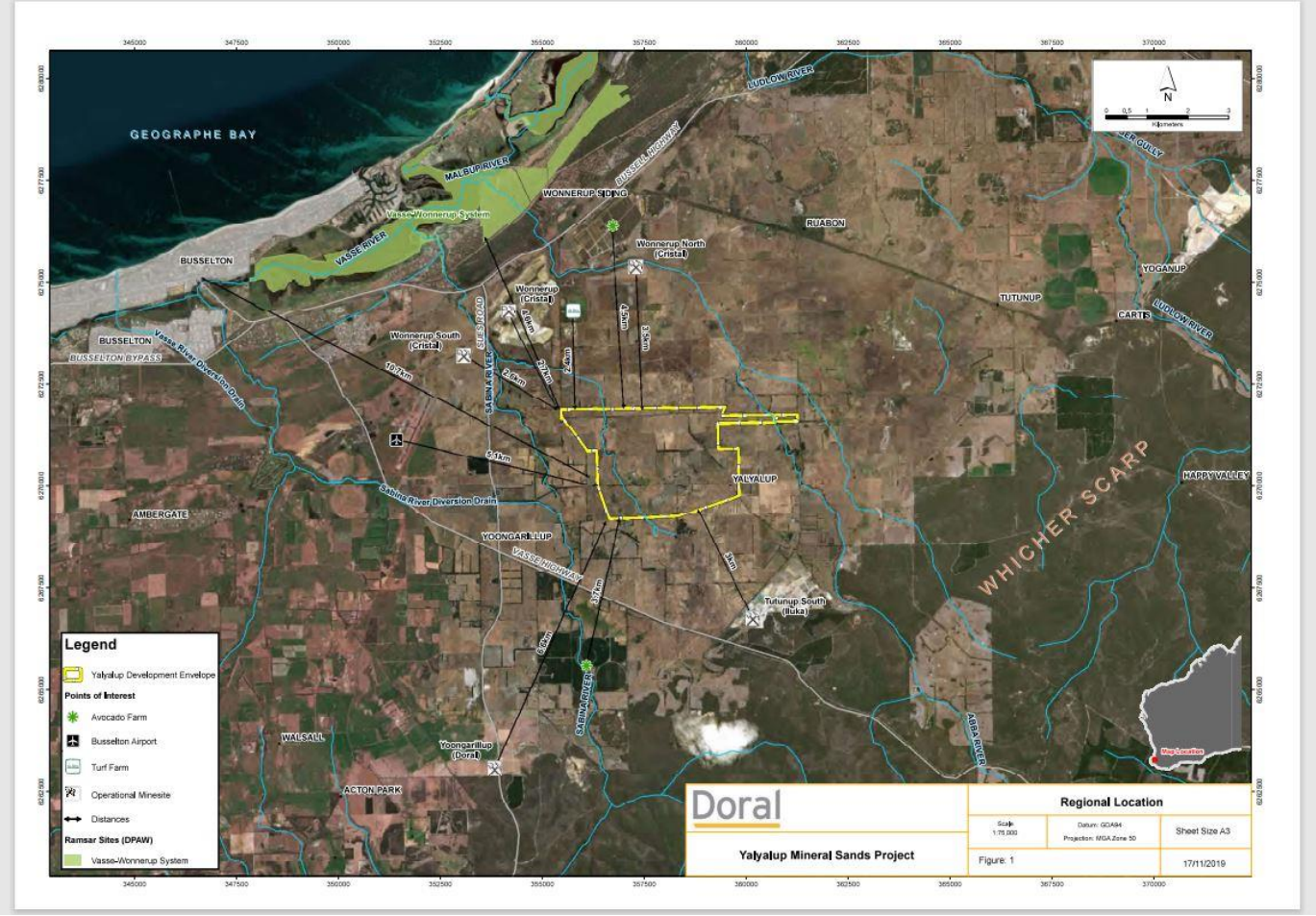
1. **Attachment A** - Regional Location of Yalyalup Mineral Sands Project – Development Envelope



2. **Attachment B** – Development Envelope and Disturbance Footprint



3. **Attachment C** – Location of Yalyalup Development Envelope - Coordinated



To: Kylie Calhoun, Assistant Secretary, Environment Assessments West (WA, SA, NT) Branch (for decision)

Approval Decision Brief (Assessment report) Yalyalup Mineral Sands Project, southeast of Busselton, WA (EPBC 2017/8094)

Timing: ASAP - EPBC Act statutory timeframe – 30 November 2021

Recommendation/s:

1. Consider the assessment report at Attachment A.

Considered / Please discuss

2. Consider the responses to the invitation for comment on the proposed decision.

Considered / Please discuss

3. Approve for each controlling provision, the action as summarised in the table below.

Approved / Not approved

4. Agree to attach the conditions of approval as set out in Attachment B.

Agreed / Not agreed

5. If you agree to 3 and 4, accept the reasoning in the departmental briefing package as the reasons for your decision.

Accepted / Not accepted

6. Sign the notice of your decision at Attachment B.

Signed / Not signed

7. Sign the letters at Attachment C and D, advising the proponent and the WA Department of Water and Environmental Regulation of your decision.

Signed / Not signed

Summary of recommendations on each controlling provision:

Controlling Provisions for the action	**Recommendation**	
	Approve	**Refuse to Approve**
Wetlands of international importance (ss 16, 17B)	Approve	
Listed threatened species and communities (ss 18, 18A)	Approve	
Listed migratory species (ss 20, 20A)	Approve	

Kylie Calhoun

12 November 2021

Kylie Calhoun
Assistant Secretary
Environment Assessments West (WA, SA, NT) Branch

Date:

Comments:

Key Points:

1. Doral Mineral Sands Pty Ltd proposes to extract mineral sands ore from the Yalyalup Mineral Sands Deposit, 11 km southeast of Busselton, Western Australia. The ore will be extracted from a disturbance area of approximately 453 ha, within an approximately 925 ha development envelope. Under the proposal, approximately 12-16 million tonnes will be extracted over 4.5 to 5.5 years. Mining will be undertaken through passively dewatered open-cut pits. The pits are not expected to exceed a depth of 12 m below ground level. Processing will occur onsite and include use of a tailing storage facility. The mine pits will be backfilled with tailings material. The land is proposed to be returned to grazing or other agricultural use after rehabilitation (Attachment E).

2. The proposed action will:

    a. clear 1.78 ha of foraging and breeding habitat for Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*), Baudin's Black-Cockatoo (*Calyptorhynchus baudinii*) and Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*);

    b. clear 5 trees with suitable nesting hollows for Carnaby's Black-Cockatoo, Baudin's Black-Cockatoo and Forest Red-tailed Black-Cockatoo;

    c. clear of 0.34 ha Whicher Range Dryandra (including nine individuals of *Banksia squarrosa subsp. Argillacea*) and *Shrublands on the southern Swan Coastal Plain Ironstones*;

    d. risk contamination to the Vasse-Wonnerup Ramsar wetland system from dewatering;

    e. risk contamination of resting and foraging habitat (wetland site) for listed migratory species; and

    f. potential significant impacts to listed endangered Vasse Featherflower (*Verticordia plumose var. vassensis*), and critically endangered Western Ringtail Possum (*Pseudocheirus occidentalis*).

Background

3. On 8 February 2018, a delegate of the Minister determined that the proposal was a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to likely significant impacts on Listed threatened species and communities (ss18 & 18A), the ecological character of a declared Ramsar Wetland (ss16 and 17B) and migratory species (ss20 and 20A). A delegate of the Minister determined that the proposed action would be assessed as an accredited assessment by the Western Australia Environmental Protection Authority (WA EPA) under the *Environmental Protection Act 1986* (WA) (EP Act) (Attachment E).

4. On 29 May 2020, a delegate of the Minister accepted the variation to the proposal in accordance with section 156B of the EPBC Act. The variation increased the size of the development envelope from 894.17 ha to 924.80 ha and the total disturbance footprint from 372.67 ha to 453.34 ha (Attachment E).

5. On 17 December 2020, the Department provided the WA EPA with comments on their draft conditions and on 21 December 2020, a delegate of the Minister 'Stopped the Clock' on the assessment (Attachment E) to request the proponent provide:

   a. a copy of the final WA Government Ministerial Statement; and

   b. an Offset Strategy, Revegetation Management Plan and an updated version of the Groundwater Licence Operating Strategy.

6. On 18 January 2021, the WA EPA published the Report and Recommendations of the Environmental Protection Authority (EPA) (Assessment Report 1695 - Attachment A) (No appeals were received) and on 17 May 2021, the Ministerial Statement was released (Attachment F).

7. On 27 September 2021, the Department received the additional information requested on 21 December 2020 and on 28 October 2021, you extended the timeframe on the approval decision to allow for consideration of the outcomes of a compliance investigation by the Environment Compliance Branch (ECB) into land clearing on the project site. This investigation has been finalised and the proponent was issued a warning letter for taking an action before a decision has been made on the proposal. This matter is considered resolved and will not impede finalisation of this approval decision (Attachment E).

Consultation:

8. The matters for consideration and factors to be taken into account for your decision remain primarily as set out in the proposed approval decision brief of 3 November 2021 (Attachment E).

9. As recommended in the proposed approval decision brief, you wrote to the proponent and the WA Department of Water and Environmental Regulation seeking comments on your proposed decision and attached conditions. The conditions require the proponent to implement a Revegetation Management Plan, a Groundwater Licence Operating Strategy, an Offsets Strategy and Offset Management Plan(s) (Attachment E).

10. The outcome of the consultation on your proposed decision is as follows:

Stakeholder	**Comment**
Designated Proponent	*Agree*
Department of Water and Environmental Regulation (Western Australia)	*Agree*
Environmental Audit & Post Approvals Section	*Agree*

Comments:

11. On 5 November 2021, the proponent confirmed it was happy with the proposed approval conditions and asked for a minor amendment in Condition 10 of proposed decision notice which was considered, and the amended condition was replaced, accordingly.

12. On 12 November 2021, the Department of Water and Environmental Regulation (Western Australia) advised that DWER has reviewed the Commonwealth's proposed approval decision and draft conditions of approval and has no further comment.

13. The Environmental Audit and Post Approvals sections were involved in the drafting of the proposed conditions and were not further consulted given that no considerable changes to the conditions have been proposed.

Departmental advice:

14. The department considers the risk of potential/significant impacts to the matters of national environmental significance will be acceptable, provided the proposed action is undertaken in accordance with the recommended conditions and consistent with the mitigation and offset measures proposed by the proponent.

15. The department's advice has had regard to:

    a. the likely impacts of the proposed action as they relate to each controlling provision and the relevant social and economic considerations in accordance to section 136 of the EPBC Act; and

    b. conditions imposed by the WA EPA and has sought to ensure consistency with these conditions (Attachment F).

16. The department recommends that under section 133 of the EPBC Act, you approve the proposed action with the proposed conditions (Attachment B).

17. Should you agree with this advice, the department will:

    a. Inform the proponent and WA Department of Water and Environmental Regulation of your decision to approve the proposed action with conditions (Attachments C and D); and

    b. publish your decision with the approval conditions on the public EPBC referrals portal.

18. On 1 November 2021, the Species Policy section advised that no changes to the documents relating to threatened species referred to in the proposed decision brief were anticipated in the coming six weeks (Attachment G).

s. 22(1)(a)(ii)

s. 22(1)(a)(ii)

South WA Section

s. 22(1)(a)(ii)

Director
South WA Section
s. 22(1)(a)(ii)
12 November 2021

ATTACHMENTS

A: Assessment Report

B: Approval Decision Notice

C: Notification letter to the proponent of Approval Decision

D: Notification letter to WA DWER of Approval Decision

E: Proposed Approval Decision Brief:

E1: Proposed Approval Decision Brief with attachments

E2: Signed Proposed Decision Brief – 3 November 2021

F: WA EPA conditions – Ministerial Statement 1168

G: The Species Listing, Information and Policy Section – 1 November 2021

DEPARTMENT OF AGRICULTURE, WATER AND THE ENVIRONMENT

To: Kylie Calhoun, Assistant Secretary, Environment Assessments West (WA, SA, NT) Branch (for decision)

Proposed Approval Decision Brief (assessment report) – Yalyalup Mineral Sands Project, southeast of Busselton,WA (EPBC 2017/8094)

Timing: As soon as possible before 4 November 2021 to allow consultation on proposed conditions – Final Statutory timeframe is 30 November 2021.

Recommendation/s:

1. Consider the WA assessment report at Attachment B1.

Considered / please discuss

2. Agree that the recommended decision at Attachment A, and summarised in the table below, reflects your proposed decision.

Agreed / Not agreed

3. Agree to the proposed conditions of approval as set out in Attachment A.

Agreed / Not agreed

4. Sign the letters at Attachment C1 and C2 to consult with WA Department of Water and Environmental Regulation and the proponent on your proposed decision.

Signed / Not signed

5. Agree to not publish the proposed decision (Attachment A) on the internet for public comment.

Agreed / Not agreed

Summary of recommendations on each controlling provision:

Controlling Provisions for the action	**Recommendation**	
	Approve	**Refuse to Approve**
Wetlands of international importance (ss 16, 17B)	Approve	
Listed threatened species and communities (ss 18, 18A)	Approve	
Listed migratory species (ss 20, 20A)	Approve	

Kylie Calhoun

3 November 2021

Kylie Calhoun
Assistant Secretary
Environment Assessments West (WA, SA, NT) Branch
(for decision)

Date:

Comments:

Key Points:

1. Doral Mineral Sands Pty Ltd proposes to extract mineral sands ore from the Yalyalup Mineral Sands Deposit, 11 km southeast of Busselton, Western Australia. The ore will be extracted from a disturbance area of approximately 453 ha, within an approximately 925 ha development envelope. Under the proposal, approximately 12-16 million tonnes will be extracted over 4.5 to 5.5 years. Mining will be undertaken through passively dewatered open-cut pits. The pits are not expected to exceed a depth of 12 m below ground level. Processing will occur onsite and include use of a tailing storage facility. The mine pits will be backfilled with tailings material. The land is proposed to be returned to grazing or other agricultural use after rehabilitation (see Attachments E and F).

2. The proposed action will:

    a. clear 1.78 ha of foraging and breeding habitat for Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*), Baudin's Black-Cockatoo (*Calyptorhynchus baudinii*) and Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*).

    b. clear 5 trees with suitable nesting hollows for Carnaby's Black-Cockatoo, Baudin's Black-Cockatoo and Forest Red-tailed Black-Cockatoo.

    c. clear of 0.34 ha Whicher Range Dryandra (including nine individuals of *Banksia squarrosa subsp. Argillacea*) and Shrublands on the southern Swan Coastal Plain Ironstones.

    d. risk contamination to the Vasse-Wonnerup Ramsar wetland system from dewatering.

    e. risk contamination of resting and foraging habitat (wetland site) for listed migratory species.

3. The referral decision (Attachment F2) also identified potential significant impacts to listed endangered Vasse Featherflower (*Verticordia plumose var. vassensis*), critically endangered Western Ringtail Possum (*Pseudocheirus occidentalis*) and listed migratory species. Given the additional information provided during the assessment process, the Department considers significant impacts to these are unlikely.

4. The Department considers that the impacts of the proposal are acceptable if the recommended conditions (Attachment A) are applied, and that management plans, revegetation and offsets measures will be sufficient to compensate for the impacts of the proposal.

Background

5. On 8 Feburary 2018, a delegate of the Minister determined that the proposal was a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to likely or precautionary significant impacts on Listed threatened species and communities (ss18 & 18A), the ecological character of a declared Ramsar Wetland (ss16 and 17B) and migratory species (ss20 and 20A) (Attachment E).

6. On 8 February 2018, a delegate of the Minister determined that the proposed action would be assessed as an accredited assessment by the Western Australia Environmental Protection Authority (WA EPA) under the *Environmental Protection Act 1986* (WA) (EP Act) (Attachments E and F).

7. On 29 May 2020, a delegate of the Minister accepted the variation to the proposal in accordance with section 156B of the EPBC Act. The variation increased the size of the development envelope from 894.17 ha to 924.80 ha and the total disturbance footprint from 372.67 ha to 453.34 ha (Attachments E and F).

8. On 17 December 2020, the Department provided the WA EPA with comments on their draft conditions (Attachment F6).

9. On 21 December 2020, a delegate of the Minister 'Stopped the Clock' on the assessment (Attachment F9) to request the proponent provide:

    a. a copy of the final WA Government Ministerial Statement to reduce regulatory burden and align conditions, and

    b. an Offset Strategy, Revegetation Management Plan and an updated version of the Groundwater Licence Operating Strategy.

10. On 18 January 2021, the WA EPA published the Report and Recommendations of the Environmental Protection Authority (EPA) (Assessment Report 1695) (Attachment B1). No appeals were received.

11. On 17 May 2021, the Ministeral Statement was released (Attachment B2). The WA EPA has recommended that the proposal may be implemented, provided it is carried out in accordance with Appendix 4 of the Recommended Environmental Conditions (Attachment B1). Appendix 4 aligns with Ministerial Statement 1168 (Attachment B2).

12. On 27 September 2021, the Department received the additional information (Attachment E29) requested on 21 December 2020, which triggered the 30-business day approval decision timeframe:

    - Yalyalup Mineral Sands Project Revegetation Management Plan
    - signed Ministerial Statement 1168
    - Land Acquisition and Offset Strategy Plan; and
    - Groundwater Licence Operating Strategy Version D.

13. On 28 October 2021, you extended the timeframe on the approval decision (Attachment F23) to allow for consideration of the outcomes of a compliance investigation by the Environment Compliance Branch (ECB) into land clearing on the project site. This investigation has been finalised and the proponent was issued a warning letter for taking an action before a decision has been made on the proposal. This matter is considered resolved and will not impede finalisation of this approval decision.

Issues/ Sensitivities

14. The proposal will, or is likely to have, a potential or significant impact on the following Matters of National Environmental Significance (MNES):

    • Listed threatened species and communities (s18 and s18A):

- Western Ringtail Possum (*Pseudocheirus occidentalis*) – Critically Endangered (potential impacts)
- Whicher Range Dryandra (*Banksia squarrosa* subsp*. argillacea*) – Vulnerable (significant impacts)
- Vasse Featherflower (*Verticordia plumose var. vassensis*) – Endangered (potential impacts)
- Shrublands on Southern Swan Coastal Plain ironstones – Endangered (significant impacts)
- Carnaby`s cockatoo (*Calyptorhynchus latirostris*) – Endangered (significant impacts)
- Baudin's cockatoo (*Calyptorhynchus baudinii*) – Endangered (significant impacts)
- Forest Red-tailed black cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable (significant impacts).

• The ecological character of a declared Ramsar Wetland (s16 and s17B):

- Vasse-Wonnerup Wetlands (significant impacts)

• Migratory species (s20 and s20A) (potential impacts):

- wood sandpiper (*Tringa glareola*) – Migratory
- sharp-tailed sandpiper (*Calidris acuminata*) – Migratory
- long-toed stint (*Calidris subminuta*) – Migratory.

The impacts on the MNES are detailed further in the Assessment Report (Attachment B1) and Legal Considerations (Attachment D).

15. Based on the WA EPA Assessment Report and the Department's own assessment, the proposed action is likely to have significant residual impacts on 1.78 ha of habitat for Black Cockatoos, 0.34 ha of *Shrublands on southern Swan Coastal Plain Ironstones (Busselton area)* and nine individuals of *Banksia squarrosa* subsp. *Argillacea*. To offset these impacts, the proponents draft offset strategy (Attachment E24) includes:

    a. Land acquisition, enhancement and protection of 4.15 ha of potential breeding and foraging habitat for Black Cockatoos.

    b. Land acquisition and protection of 2.58 ha excellent quality *Shrublands on southern Swan Coastal Plain ironstones (Busselton area)* (SCP10b) Threatened Ecological Community (TEC) including 15 individual plants of *Banksia squarrosa subsp. argillacea* within total offset of 8.3 ha (approximately).

16. There have been two EPBC Act species listing status changes since the proponent referred their proposal to the Department in 2017. The Department recommends considering these changes at the higher protection level during consideration of the proposed decision. The following table shows the change in listing status of the two species:

Species	Listing status in 2017 (first proposal)	Current listing status	Date on which listing status changed
Western Ringtail Possum	Vulnerable	Critically Endangered	11 May 2018
Baudin's Black Cockatoo	Vulnerable	Endangered	15 February 2018

Considerations

17. Under sections 136 and 139 of the EPBC Act, there are a number of matters that must be considered in deciding whether or not to approve the taking of the proposed action. Attachment D outlines those legal matters that are required to be considered and how they have been addressed.

18. The Department considers that the proposed conditions at Attachment A are fully consistent with the conditions proposed by the WA EPA Ministerial Statement (1168) (Attachment B2).

19. The Department recommends that you approve the proposed action, subject to the proposed conditions of approval at Attachment A. In making this recommendation, the Department has considered the controlling provisions, economic and social matters, and factors to be accounted for under section 136(2) of the EPBC Act.

20. The advice of the Species Listing, Information and Policy Section of 1 November 2021 (Attachment F11), the Environment Reporting Tool (ERT) report of 1 November 2021 (Attachment F14), and the EPBC Act Species and Ecological Communities Weekly Report of 29 October 2021 (Attachment F15) have been taken into consideration in the recommended proposed approval and conditions. This advice states that the Recovery Plans (Attachment G), Threat Abatement Plans (Attachment H) and the Approved Conservation Advice (Attachment I) documents attached and referred to in this briefing package are the current documents that you are required to consider under the EPBC Act. The Department advises that all relevant statutory documents have been attached and considered as required for the purposes of the approval decision.

Public submissions on assessment documents

Number	Nil	For		Against		Not specified	

Consultation:

21. The Department's Office of Compliance and Post Approvals Section were consulted regarding the draft conditions (see Attachments F12 and F13). The comments have been fully incorporated in the proposed conditions at Attachment A.

22. Office of Compliance was also consulted in relation to the Environmental History of proponent (Attachment F10):

    a. The Environment Compliance Branch advised on 15 and 29 October 2021 that in standard checks it appeared that the proponent may have commenced the action. The

Environment Compliance Branch followed standard procedures and contacted the proponent and requested information.

b. The Environment Compliance Branch advised on 27 October 2021 (Attachment F10) that the proponent and/or its Executive Director and nominated contact person, DORAL MINERAL SANDS PTY LTD, had some adverse environmental history in relation to contraventions of national environmental law. The Department has considered the Environment Compliance Branch advice in the assessment of the proposed action and in the recommended decision and proposed conditions.

23. Before deciding whether or not to approve the proposal, you are required under section 131 and 131 AA of the EPBC Act to consult with the person proposing to take the action and any other minister you, as delegate of the Minister, believe has administrative responsibilities relating to the action. The Department recommends that you consult with:

    a. s. 47F(1) , General Manager, Doral Mineral Sands Pty Ltd (Proponent; Attachment C1)

    b. Ms Michelle Andrews, Director General, Western Australian Department of Water and Environmental Regulation (WA DWER; Attachment C2).

24. No significant comments were received from Commonwealth Ministers during the referral stage and the Department therefore recommends that comments are not sought from Commonwealth Ministers in regard to this proposed approval.

Length of Approval

25. The Department is proposing an expiry date of 30 November 2071, which allows sufficient time for the proposal to commence and be completed, as well as providing ample time to fulfil the completion criteria for the management plans, revegetation and offsets works required in the conditions.

s. 22(1)(a)(ii)

s. 22(1)(a)(ii)

Director
South WA Section
s. 22(1)(a)(ii)
2 November 2021

South WA Section
s. 22(1)(a)(ii)

Attachments as listed in SPIRE		
	Quality Assurance Checklist	
A	Proposed Decision Notice	
B	Assessment Reports	
	B1	Assessment Report and Recommended Environmental Conditions (EPA Report 1695)
	B2	Ministerial Statement 1168
C:	Letters FOR SIGNATURE	
	C1	To Proponent
	C2	To WA DWER
D	Legal Considerations	
E	Assessment documents	
	E1	Referral
	E2	Environmental Review Document (Version 3)
	E3	Appendix 1 - Environmental Scoping Document
	E4	Appendix 2 - Referral Decision letter
	E5	Appendix 3 Mine Closure Plan
	E6	Appendix 4A – 4D – Vegetation, Flora and Ground Water Dependent Ecosystems (GDE)
	E7	Appendix 4E – 4F – GDE Management Plan (May 2020) and Dieback Assessment
	E8	Appendix 5 – Acid Sulfate Soils Management Plan
	E9	Appendix 6A – 6B – Fauna and Habitat
	E10	Appendix 7A Hydrological Assessment (Part A, B & C)
	E11	Appendix 7B - Surface Water Assessment
	E12	Appendix 7C - Site Water Balance
	E13	Appendix 7D – Surface Water Discharge Assessment
	E14	Appendix 7E – Draft Groundwater Licence Operating Strategy (GLOS) May 2020
	E15	Appendix 8 – Noise Assessment
	E16	Appendix 9A – 9B Ethnographic and Archaeology Assessments

	E17	Appendix 10 – NGER Emissions and Energy Threshold Calaculations
	E18	Appendix 11 – Environmental Offset Calculations
	E19	Figures 1 to Figure 4-23
	E20	Figure 4-24 to Figure 4-32
	E21	Response to Submissions Document
	E22	Economic / Social Benefit
	E23	Revised GDE Management Plan (October 2020)
	E24	Offsets Strategy (September 2021)
	E25	Revised GLOS (September 2021)
	E26	Fauna Environmental Management Plan (Novemeber 2020)
	E27	Flora and Vegetation Environmental Management Plan (Novemeber 2020)
	E28	Revegetation Management Plan (February 2021)
	E29	Requested Information Received from Proponent (September 2021)
F	Other information	
	F1	Referral Decision Notice
	F2	Referral Decision Brief
	F3	Variation Request
	F4	Approval Variation Request
	F5	Draft State Conditions (Novemeber 2020)
	F6	Departments Response to Draft Conditions
	F7	Draft Assessment Report (November 2020)
	F8	Departments Response to Draft Assesment Report (14 October 2020)
	F9	Section 132 Stop Clock letter
	F10	Proponent Environmental History Check
	F11	Statutory Document Check (1 November 2021)
	F12	Compliance Comments on Draft Conditions
	F13	Post Approvals Comments on Draft Conditions
	F14	ERT Report (1 November 2021)
	F15	EPBC Species and Ecological Communities Update (29 October 2021)

	F16	ECD Vasse-Wonnerup Wetlands Ramsar Site
	F17	RIS Vasse-Wonnerup Wetlands Ramsar Site
	F18	Operational Policy 5.08 - Use of operating strategies in the water licensing process
	F19	DWER Guidelines for the preparation of Operating Strategies for mineral sand mine dewatering licences in the South West Region
	F20	OWS Line Area Advice (06 October 2020)
	F21	Wetlands Referral Advice
	F22	Wetlands Assessment Advice (29/1/2021)
	F23	Timeframe Extension Package (Brief with Attachments and Signed Notice)
G	Recovery Plans	
	G1	Carnaby's Black Cockatoo
	G2	Forest Red-tailed Black Cockatoo and Baudin's Black Cockatoo
	G3	Western Ringtail Possum
	G4	Shrubland Association on Southern Swan Coastal Plain Ironstone
H	Threat Abatement Plans	
	H1	Phytophthora cinnamomi
	H2	Feral Cats
	H3	European red fox
I	Conservation Advices	
	I1	Baudin's Black Cockatoo
	I2	Forest Red-tailed Black Cockatoo
	I3	Banksia Squarrosa Subsp. Argillacea
	I4	Verticordia Plumosa Var. Vassensis
	I5	Western Ringtail Possum

s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Tuesday, 21 September 2021 12:12 PM
To: s. 22(1)(a)(ii)
Cc: s. 47F(1)
Subject: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]
Attachments: RE: Doral Yalyalup progress [SEC=OFFICIAL]; DAWE-S132 Stop Clock Letter-SIGNED.pdf

Hi s. 22(1)(a)(ii) and sorry for the delayed response as I was out of the office yesterday arvo

Thanks for your emails and although it feels a bit like we are covering old ground we will get together whatever you need to help start the clock and get on to the next stage

So as I understand from your email, the Offsets Strategy and GLOS are good to go however there is a question regarding the version of the Revegetation Strategy. I can confirm that the version of the plan sent from s. 47F(1) to you on the 2nd August 2021 (correspondence attached) is the current and latest version of the Revegetation Strategy. This document was prepared in accordance with the '*A guide to preparing revegetation management plans for clearing permits (DWER 2018)*' and with particular attention taken to meet the requirements of the DAWE stop the clock letter of 21/12/20 (also attached).

Given this, I am a bit unsure of the need for a revised document, it would effectively only be a date change, that is unless there is something specifically within the strategy which has been identified by the new supervisory team as needing to be revised/changed

If there is anything which has been identified as needing to be changed, I would appreciate if you could list down specifically what this is so that we can revise the document as suggested. Otherwise from our point of view the January 2021 version is the previously agreed and therefore the current version

I'm fully conscious of the Friday deadline, and will wait for your guidance to make sure we can do what is needed to assist with this meeting

Please don't hesitate to give me a call on s. 47F(1) or tee up a short Teams meeting if needed

Thanks
s. 47F(1)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Tuesday, 21 September 2021 6:50 AM
To: s. 47F(1) @doral.com.au>
Cc: s. 47F(1) @abecenv.com.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s. 47F(1)

If you have any question in relation to what I have sent you yesterday, please let me know earlier! As we need to finalise s132 stop the clock stage very soon and I need a final and minor work to sort it out. As mentioned, new

supervisory team needs to be aware of any previous agreement and arrangement. Hence, I have been asked for all details. Saying that, this offsets plan is not needed because of previous arrangement, would not be enough for us and hence, even though, there is no drama to stop the process and ask you guys to do something more (like providing another offset land or having offset for Possum or ….), just I need to provide more clarification and evidences which allow us to continue the final assessment process. One tricky thing is, the Revegetation Management Strategy (January 2000), according to previous correspondences, we have been waiting for revised Revegetation Management Strategy (assuming 2021). When I try to integrate all minor issues mentioned in the last email, there is a challenge that how the previous Revegetation Management Strategy is compatible with the new outcomes and other management plans like offset and revised GLOS plan.

So, I need to receive: either a new Revised Revegetation Management Strategy (like September 2021) or a clear statement by you guys revealing everything the same because of these particular reasons! If these can be done by Friday (because I do have a final possible meeting with my supervisor on Thursday as said), the clock will be started immediately on Friday or next Monday for 30 business day final assessment.

Cheers,

s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Friday, 17 September 2021 12:13 PM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Thanks once again and I appreciate your commitment to help us work through this as efficiently as we can. Although the word 'November' will rattle a few cages I can see you are trying to work within your process as best you can

When there are proposed decision comments please send them through asap and given that I think we worked through the comments quite well last week I'm confident we shall be able to respond to them very quickly

Once again if there is anything I can do to help please let me know and I'll drop everything to get onto it

Cheers

s. 47F(1)

s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Tuesday, 14 September 2021 9:36 AM
To: s. 22(1)(a)(ii) @awe.gov.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Thanks for that, and my apologies for not delaying the calculator as you suggested, the pressure back here is intense and I just had to get it out. And we were confident that it was good, so I appreciate your feedback.

I appreciate also that a lot of the next stage is beyond your control but what ever you can do to help is great. We have tried to do everything to help make that process easier at your end, so if there is anything we need to clarify or touch up please let me know and we can edit the plan immediately

Thanks and good luck

s. 47F(1)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Tuesday, 14 September 2021 6:20 AM

To: s. 47F(1) @doral.com.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

Hi s. 47F(1)

The BC Offset calculator is fine and compatible with Post Approval Section advice. Please consider my obligation to have 10 business day to review the updated offset strategy plan under EPBC Act and Regulation. I need to discuss all details with my supervisor and Director, update EIAS system and check and fix S132 stop the clock based on relevant procedures. I will try to sort out all above in the next couple of days and I am sure you understand, something is not under my control and I can not push more than this. Just bear in mind, couple of weeks delay is much better than one more year to purchase another land for offsets plan (if we wanted to follow PAS's initial comments and fortunately it has not happened). I hope, the clock's started in the next week!

Cheers,
s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Monday, 13 September 2021 1:32 PM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Hope you had a nice weekend

Did you get a chance to have a look at the BC Offset calculator ? We are planning to submit today and I'd appreciate your feedback if possible so that we can incorporate any changes if needed

Thanks
s. 47F(1)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Friday, 10 September 2021 6:10 AM
To: s. 47F(1) @doral.com.au>
Cc: s. 47F(1) @abecenv.com.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

Morning s. 47F(1)

What sent yesterday, was an official letter, and I could not mention all details, however, I assume we have been in contact during the last two weeks and we knew what is going on! As a matter of fact, the previously agreed offsets still stand and the Ironstone TEC offset is adequate with the Banksia Squarrosa numbers and also that the EPA condition relating to the WRP conditional offset is adequate. You need to amend the rest of the minor corrections (precisely) and send back to us a new and updated version of offsets strategy plan (dated September 2021), and other legal documents in relation to land purchases.

Please send whole package to me and cc s. 22(1)(a)(ii) . As said, according to Department's regulation, we have to update our internal system (EIAS) in terms of s132 and double check all stop the clock steps and adequacy of information with relevant section. It usually takes 10 business day but I will try to make it quick and start the clock even earlier!

In connection with excel calculator, I will try to have a look today or Monday morning, because I am super busy today with three tasks.

Cheers,

s. 22(1)(a)(ii)

From: s. 47F(1) @doral.com.au>
Sent: Thursday, 9 September 2021 5:09 PM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Yes I did send an email, but I had attached the excel calculator as mentioned

I will send it as a pdf

Thanks

s. 47F(1)

From: s. 47F(1)
Sent: Thursday, 9 September 2021 2:01 PM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

Hi s. 22(1)(a)(ii)

Thanks so much once again for following up for us

Just to be sure and before I open the champagne, does you email below confirm that the previously agreed offsets still stand? That is, the Ironstone TEC offset is adequate with the Banksia Squarrosa numbers and also that the EPA condition relating to the WRP conditional offset is adequate also ?

I need to be sure of this for the revision of the Offset MP

Also, we have the revised calculator for the Black Cockatoo offset (attached) from the example one which was sent recently, with the inclusion for foraging and breeding combined and amended the values from the comments. Would you mind please having a look at this prior to our formal submission so we have a better understanding of what is expected/acceptable and also to save time going back and forth

Thanks again

s. 47F(1)

From: s. 22(1)(a)(ii) @awe.gov.au>
Sent: Thursday, 9 September 2021 12:42 PM
To: s. 47F(1) @doral.com.au>
Cc: s. 47F(1) @abecenv.com.au>; s. 47F(1) @doral.com.au>;s. 22(1)(a)(ii)
s. 22(1)(a)(ii) @environment.gov.au>; s. 22(1)(a)(ii) @environment.gov.au>
Subject: RE: 210831 Offsets MP DAWE comments_response [SEC=OFFICIAL]

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Good afternoon s. 47F(1)

Thank you for your prompt response following our comments on Offsets Strategy Plan EPBC2017-8094 Yalyalup Mineral Sands Project, WA. Your response has been reviewed by our team and Post Approval Section and now we need to receive the updated Offsets Strategy Plan (September 2021) regarding minor amendment and evidences which show us land purchases for offsets plan have been provided.

Once we receive the above requirements, under the *EPBC Act* regulation and regarding s132, we will let you know about the adequacy of the documents (withing 10 business day) and if it's confirmed that the further information (requested) is adequate, the clock for the final decision stage will be activated (for 30 business day). Please don't hesitate to contact me if you have any further questions regarding this matter.

Kind regards

s. 22(1)(a)(ii)

s. 22(1)(a)(ii)
Environmental Impact Assessment Officer | South WA Sections. 22(1)(a)(ii)
Department of Agriculture, Water and the Environment
Environment Assessments West (WA, SA, NT) Branch | Environment Approvals Division
John Gorton Building, King Edward Terrace, Parkes ACT
GPO Box 787, Canberra City, ACT 2601
www.awe.gov.au

From: s. 47F(1) @doral.com.au>
Sent: Friday, 3 September 2021 1:53 PM
To: s. 22(1)(a)(ii) @awe.gov.au>
Cc: s. 47F(1) @abecenv.com.au>; s. 47F(1) @doral.com.au>
Subject: 210831 Offsets MP DAWE comments_response

Hi s. 22(1)(a)(ii)

s. 47F(1) and I have been through your comments as sent through on Tuesday and have created a table of responses which I would like to discuss before we go into the formal resubmission process

The two key issues for which we need to discuss (which we were of the understanding was considered by DAWE to be acceptable) are the comments relating to WRP offsets and the number of Banksia squarrosa Sp. in the TEC offset

I had a quick chat with s. 22(1)(a)(ii) this morning and it was really nice for him to call you to discuss and he informed me of the recent change to include post approvals at this late stage, which has obviously contributed to our concerns

Anyway, I'd appreciate if you could please have a look through the comments attached and it would be great to be able to discuss them via teams and possibly following that we can tee up a meeting with the Post approvals team.

Please let me know what you think, and although s. 47F(1) in unavailable this afternoon I will make myself available for when you can talk

Thanks

s. 47F(1)