



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

16 July 2022

Chairman
Environmental Protection Authority
Prime House
8 Davidson Terrace
Joondalup WA 6027

Lots 2 and 10 Rowley Road, Mandogalup. Assessment Number 2197

The Wildflower Society of WA (WSWA) recommends to the Environmental Protection Authority (EPA) that this proposal to disturb 28.4ha, containing 26.2 ha of native vegetation to extend an existing sand quarry extraction operation located on Lots 2 and 10 Rowley Road, Mandogalup, Western Australia be rejected in its entirety.

The reasons for this recommendation are given below, focussing solely on impacts on flora and vegetation.

Mitigation hierarchy

Under the WA Environmental Protection Act ("the Act"), the EPA's mitigation hierarchy is to avoid, minimise, rehabilitate, and offset as the last step before any clearing is approved.

Further, the purpose of the EPBC Act is not and must never be to streamline development approvals. There should be a presumption that a development proposal will not go ahead if it requires clearing or is likely to damage the environment, not a presumption that it must be approved regardless. Decisions must be made in favour of the environment unless very strong evidence is presented by proponents to the contrary. Too many decisions currently favour development with attendant clearing without adequate justification. There is too little emphasis and scrutiny of applications to assess whether the proposal truly meets the hierarchy of 'avoid, minimise, mitigate, offset'.

There needs to be much more evidence presented by the proponent that they have done everything possible in the first place to avoid the need to clear, and then how they have reduced the extent of clearing. Native vegetation clearing must only to be approved if it is determined and demonstrated through thorough investigation and assessment that the project requiring native vegetation to be cleared is of high social and/or economic importance and that there is no viable alternative to the proposal, its size/scale or its location.

The proponent's sections on justification and alternatives (sections 2.1, 2.2 and 5.6 of the PER) are inadequate, and do not address adequately any of the issues listed in the previous paragraph of this submission. The fact that some specific guidelines for specific situations do not match the current situation is no reason to not implement the same or similar actions. The fact that the proposed site is a known occurrence of the resource, that the tenure and the site is zoned for extractive industries, and is near to Perth, is not sufficient reason for the EPA to approve this specific proposal, as similar attributes are sure to be applicable and available for similar, but less high environmental value, locations and these reasons are outside the definition of "environment" in the Act.



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

Further, the specific issue of the proposed conservation site and the decision process regarding why, where and how large it was selected are inadequately discussed or justified (see later in this submission).

In addition, the proponent needs to address the EPA's mandate to implement the principles of ecologically sustainable development set out in section 4A of the Act and to implement "protection" in "the prevention, control and abatement of pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment and for matters incidental to or connected with the foregoing". The proponent also needs to address the EPA's mandate to implement the Precautionary Principle, the Principle of Intergenerational Equity and the Principle of the Conservation of Biological Diversity and Ecological Integrity.

It is not apparent that the proponent has addressed any of these requirements.

The Wildflower Society of WA therefore calls on the EPA to not approve this proposal.

Flora Survey and Threatened Species

The Wildflower Society of WA does not accept the results of the flora survey undertaken by the proponent.

It is demonstrably not scientifically and ecologically tenable that a total of only 74 native vascular plant species from 25 plant families were recorded within the broader Study Area consisting of Banksia woodland which the proponent indicates is of Very Good to Excellent quality. Such results should be compared with another recent flora surveys in uncleared Banksia Woodland in Very Good to Excellent condition in the nearby suburb of Casuarina within 5km and of comparable size to the Rowley Rd of the proposed development site, which recorded 243 taxa in 154 genera and 48 families of vascular plants. Also, the Atlas of Living Australia records 502 taxa within 5km of the site.

Although the proponent claims to have undertaken flora survey on the site in July, August September and October of 2017, 2018 and 2020, many of the surveys were just flora surveys targeted at just 2 Threatened species. In the PER and accompanying Appendices, there are no details and photos of the location of the flora quadrats, as is standard practice in EIA surveys by professional botanists. This raises doubts about the veracity and adequacy of the flora survey because the actual results cannot be scrutinised or re-interpreted by experts.

The average native species richness recorded by the proponent within their Very Good to Excellent quality flora quadrats in the survey area (ie the location or the proposed clearing) was 32.5 species per 100m² (PER p122), though in another place this is quoted as 35.6 species per 100m² (Consolidated Flora and Vegetation Survey Report. Lot 2 and 10 Rowley Road Mandogalup, p36). This inconsistency alone is troubling but should be compared with the average species richness of 55.2 species per plot within FCT28 (as defined in Gibson et al (1994) which is described as the Spearwood Banksia attenuata or Banksia attenuata - Eucalyptus woodlands TEC present on the site (Consolidated Flora and Vegetation Survey Report. Lot 2 and 10 Rowley Road Mandogalup. P20). This should also be compared with the species richness of 50-70 species per 100m² quadrat in the recent flora surveys in uncleared Excellent quality vegetation Banksia Woodland in the nearby suburb of Casuarina.



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

The proponent's botanists should have been getting 74 species in **each** of the flora quadrats in the Banksia woodland which they themselves say is mostly in Very Good to Excellent quality. And even though the vegetation is quite uniform, which can bring the flora inventory down, we would have expected that around 200 flora species would/should have been found in the Very Good to Excellent quality flora quadrats in the Banksia Woodland survey area across the entire site.

The proponent's botanists spent a lot of time and effort, and covered a lot of ground, undertaking targeted surveys for the Threatened flora species *Drakaea elastica* and *Caladenia huegelii*. It is therefore surprising that they did not detect and report any other Threatened or Priority flora such as *Drakaea micrantha*, *Thelymitra variegata* or *Dodonaea hackettiana* which are or were known from Banksia woodland on the Swan Coastal Plain in the Perth metropolitan area. There is an un-identified *Thelymitra* species listed in the species list for flora quadrat RR3. It should have been identified to species, and if not in flower at the time of survey, the proponent's botanists should have returned to the site at its time of flowering to identify it.

It is also surprising that during the extensive foot traverses for *Drakaea elastica* and *Caladenia huegelii* that the proponent's botanists did not opportunistically record any other non-threatened species to increase the total flora species count for the site to above 74.

What is also very surprising and obviously incorrect is that the proponent's botanists identified and listed *Xanthorrhoea gracilis* and *Gastrolobium bilobum* as present on the site. These species do not grow on the Swan Coastal Plain, and certainly not in Banksia woodland. They grow on the Darling Scarp.

These comparisons and issues raise serious doubts about the adequacy and veracity of the entire flora survey, including for Threatened species, and not just those listed on databases, such as FloraBase, DBCA, and Department of the Environment and Energy (DEE) databases, since the recent flora surveys in uncleared Banksia Woodland in the nearby suburb of Casuarina recorded an unlisted Threatened species.

The entire flora survey data should therefore be rejected and the proposal not approved, or at least a new 2-season flora survey required to be undertaken by independent botanists.

Threatened Ecological Communities

Despite the inadequacy of the flora survey, the proponent's flora survey has (correctly) identified that most of the very good to excellent quality vegetation on the site belongs to FCT28, which forms part of the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community which is listed as Endangered under the EPBC Act and is included as part of the DBCA-listed Priority 3 Ecological Community "Banksia dominated woodlands of the Swan Coastal Plain IBRA region".

The proponent quotes on p41 of the PER that approximately 336,489ha of the Banksia Woodlands TEC/PEC was estimated to remain across the extent of its range in 2016 though on p38 of the PER, the extent in 2016 is listed as 253,540ha. However, the proponent failed to indicate what percentage this 253,540ha was of the original extent of the Banksia Woodlands TEC/PEC. The Wildflower Society of WA contends that the original area of the Banksia Woodlands TEC/PEC across the extent of its range was approximately 706,727.7ha.



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

Thus, the 253,540ha to 336,489 ha of the Banksia Woodlands TEC/PEC that the proponent estimated to remain across the extent of its range in 2016, comprised approximately 35.8% to 52.4% of the original extent of this community. However, the proponent did not quote the most recent data for the remaining extent of the TEC which was likely to be much less than 336,000ha given the wholesale to clearing of this TEC in the last 6 years for a wide range of infrastructure and residential projects.

The proponent quotes that the proposed clearing of 26.2ha of Banksia Woodlands TEC/PEC within the Development Envelope represents the removal of approximately 0.007% of the total known extent of the TEC/PEC in 2016 and 0.04% of the known extent of the TEC/PEC within reserves, but again this is undoubtedly an underestimate, as significant areas of Banksia Woodlands TEC/PEC have been cleared in the Perth metropolitan area since 2016 for many infrastructure and residential developments, such as that which has occurred north and south of Rowley Road for residential development immediately west of the Kwinana Freeway since 2019..

The native vegetation on the project Development Envelope is also part of the Bassendean Complex - central and south of which only 23,500ha (26.87%) of the original 87,500ha remains. The proponent justifies the clearing of this vegetation on the basis that the Development Envelope represents only 0.19% of the current extent of this vegetation complex, and the proposal will only result in the loss of about 0.11% of the current extent of this vegetation complex.

Only 1.86% of the pre-European extent of this vegetation complex is securely reserved in IUCN I-IV Reserves, with approximately 55% of the total secure reserve area for the Complex resides within just one area, the eastern block of Lowlands Nature Reserve (885.17 ha) in Mardella. This makes this Vegetation Complex unacceptably prone to significant loss due to adverse, stochastic processes and events. Further, only 1823ha (or 0.21 % of the pre-European extent) of this vegetation complex is securely reserved in IUCN I-IV Reserves in the Jandakot Regional Park and only 5.26 ha is securely reserved in an IUCN I-IV Reserve in the City of Kwinana. In most of the remaining un-reserved area of the Complex, the tree canopy may appear intact on aerial imagery, but ground-truthing shows that the understorey is species-depauperate, degraded and dominated by weeds (after grazing, frequent fire, feral animals and hydrological change).

The extent of this vegetation complex is thus less than 30% which is below the retention threshold that is the level below which species loss appears to accelerate exponentially at the ecosystem level. Much of the remaining area of this vegetation complex has been fragmented and degraded by development, pine plantations, sand mining and grazing.

As a Threatened Ecological Community, the conservation objective for the Banksia Woodlands of the Swan Coastal Plain ecological community is to mitigate the risk of extinction, and help recover its biodiversity and function, through the following:

- protecting it; and
- implementing priority conservation actions.

The three key approaches to achieve the conservation objective are:

- PROTECT the ecological community to prevent further loss of extent and condition;
- RESTORE the ecological community within its original range by active abatement of threats, re-vegetation and other conservation initiatives;



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

COMMUNICATE WITH AND SUPPORT researchers, land use planners, landholders, land managers, community members, including the Indigenous community, and others to increase understanding of the value and function

The first and highest priority of these is to not clear any more of the vegetation that constitutes the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community. Yet that is exactly what is being proposed.

The proponent justifies the clearing of this site on the basis that it is only proposing to clear 26.2ha of this TEC, and that this only constitutes approximately 0.31% of the 1850ha known local extent, and 0.56% of the known local extent of this TEC within reserves. On this basis, the proponent claims that the cumulative impacts to flora and vegetation associated with the proposed development are not considered significant.

The proponent does not justify why they classify this extent of clearing as “not significant”. This is a typical conclusion presented by all proponents who do not present any evidence or argument as to why it is not significant. Is it not enough that this ecological community is classified as “threatened,” since there is very little of this ecological community remaining from its original extent, and are so designated because they are so rare or infrequent or limited in extent or occurrence that they are likely to become extinct?

In summary:

- very little of the previously extensive Bassendean Central and South Vegetation Complex remains
- what does remain and is not securely reserved in ICUN I-IV reserves is mostly in poor condition (except for rare blocks like these Lots 2 and 10 Rowley Rd)
- very little of the Bassendean Central and South Vegetation Complex is securely reserved in ICUN I-IV reserves. That which is reserved is mostly in one block (Lowlands). That is a great risk.
- The Lowlands reserve, being low-lying, is not representative of most of the past (and present) biodiversity resource of the Bassendean Central and South Vegetation Complex which (was and) is the deep sand portion of the Bassendean Dune System. This portion of the Bassendean Central and South Vegetation Complex is highly threatened by sand mining and will be totally removed if the EPA does not act decisively to save it
- It is imperative that lots like Lots 2 and 10 Rowley Rd that are in excellent condition and represent FCT 28, which is a close second to the rare FCT 20a in biodiversity, are conserved. The biodiversity of an entire regional-scale ecosystem (Bassendean Central and South Vegetation Complex) from Gnangara to Capel will be decimated if the EPA does not act decisively to save blocks like Lots 2 and 10 Rowley Rd.

Every project can be, and has in the past been, justified on the basis that it is clearing an insignificant amount of a vegetation complex or threatened ecological community. However, that results in the death of that complex or community by a thousand cuts, and at some point, that must stop or that complex or community will become extinct. The point to stop that in the Perth metropolitan area is now.

The Wildflower Society of WA therefore calls on the EPA to uphold the integrity of the WA EP Act, the Commonwealth EPBC Act and the Threatened Ecological Community Listing and



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

Conservation Advice for the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community and reject this proposal.

Black Cockatoo foraging habitat

The Wildflower Society of WA strongly question the proponent's grading of the quality of Black Cockatoo foraging habitat.

The proponent indicates that all the 26.2ha of the location to be cleared is only of moderate quality Carnaby's Cockatoo habitat Black Cockatoo foraging habitat and is only of low to moderate quality foraging habitat for Forest Red-tailed Black Cockatoo. On what basis do they make this classification? What is the source of the definitions/classifications listed in Table 6.3 (p57) of the PER that apparently are used in assessing the quality of foraging habitat? Has that classification been scientifically peer-reviewed and accepted by State and Commonwealth environmental agencies? Is it part of the approved EPBC Conservation Advice for Carnaby's Cockatoo or the DBCA Carnaby's Cockatoo Recovery Plan?

The proponent seems to discount low woodland of *Banksia menziesii* and *B. attenuata* as only moderate quality foraging habitat (Table 6.4 p58 of the PER). On what basis are ALL of the Banksia woodlands of the Swan Coastal Plain (i.e., all Banksia formations with <40% cover) excluded from the category of Moderate - High forage habitat? The quoted classification also also totally ignores ALL *Banksia sessilis* scrub and heath with > 20% cover as having any value as Carnaby's Cockatoo forage (which contradicts published research and direct observation).

Using this scale, the excellent Banksia Woodland of the site was assessed as 6/10 for Carnaby's Cockatoo forage value. Is this supported by direct observation of use of the site by Black Cockatoos?

The Wildflower Society of WA considers the Black Cockatoo foraging value of the site to be high, not solely based on the vegetation composition and quality, but because habitat of this quality is declining in extent in line with the decline in the extent of the the Bassendean Central and South Vegetation Complex and the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community in the Perth metropolitan area.

The Wildflower Society of WA therefore calls on the EPA to not approve this proposal.

Conservation area

The proposal offers to create a conservation area associated within the current uncleared location to compensate/offset for the proposal to clear other portions of the location. However, the portion of the location proposed to be conserved is illogical and unacceptable for the following reasons:

- The proposed conservation area covers portions of two freehold titles- Lots 2 and 10 - which is bad planning and management
- The shape of the conservation area is totally arbitrary and not regular and will make it more complex to manage. It has curved edges and illogical cut-offs which will be hard to define, manage and audit on the ground
- The proposed conservation area includes an already disturbed area (a road/track) which will have edge effects reducing the value of the entire proposed conservation



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

area. This area will be difficult and costly to restore to the original quality (which the proponent has offered to do), and will likely fail to meet any recommended conditions on the proposal

- The proposed conservation area is at the northern edge of the proposed clearing area, the area closest to the proposed future Rowley Road corridor, and thus sandwiched between a future road and a future residential development and/or sand mine. It is therefore the area most likely to be disturbed and impacted by those activities
- The proposed conservation area does not even go as far north as the cadastral northern edge of Lot 2. What is the reason for that? It makes no sense in either a planning or environmental context
- The proposed conservation area has fewer significant trees and hollows than the most southern portion of the location (see Figure 6.1 and 6.2 of the PER)
- The proposed conservation does not appear to be the most biodiverse, best quality, best protected area of vegetation on the site.

The whole conservation area proposal appears to lack input from a professional land manager with experience in the selection and management of remnant vegetation patches.

Specifically, the proponent advised (Section 5.6 of the PER) that in determining the location and extent of the conservation area, that 91% of the conservation site chosen is covered with vegetation, the entirety of which is of Very Good to Excellent quality. Why was a conservation area following cadastre in the southern portion of the location, which is 100% covered with native vegetation of Very Good to Excellent quality, and has more significant trees and hollows, not chosen? The EPA should reject the offer of a conservation area in the proposed location, and request that an area along the southern boundary of the location be offered instead.

Further, the proponent advised (Section 5.6 of the PER) that in determining the location and extent of the conservation area, where possible, the perimeter to area ratio has been reduced within the confines posed by the location of the future Hamilton Road, the proposed Rowley Road Reserve, and an access track through Lot 2. Why was a conservation area following cadastre in the southern portion of the location, which appears to have a much lower perimeter to area ratio, to have no existing track and not be to affected by any future roads, not chosen?

If the proposal is approved and proceeds (which we oppose), and a conservation area is offered/required, a much more suitable offer from an environmental, ecological and planning perspective would be to have a conservation area following cadastre (excluding the boundary track) in the southern portion of the location. If this site was chosen, there would be no need, and therefore no cost expended by the proponent, to undertake any revegetation/rehabilitation, as is proposed for the currently proposed conservation area, with its attendant risks of failure. This would appear to be a win-win for the proponent and the environment.

With our suggested conservation area, all other attributes would be equal, including location outside proposed road corridors and connectivity to other conservation reserves, as there is a Bush Forever site close to the southern boundary.

Offsets

The proponent has offered two offsets as follows:



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

- Purchase of a minimum of 180 ha of land in the Wheatbelt (PER p119). However, based on the offset calculator with a ratio of land proposed to offset compared to that cleared of 7.56:1 (PER p115), the area of offset land required to be purchased is 198ha. The offset site is located within the Shire of Gingin and is confirmed to contain Banksia Woodlands TEC/PEC
- Planting of Jarrah/Marri trees with on ground management with a ratio of 8 trees proposed to be replanted for every tree cleared

There are several problems with these offsets.

There is no independent verification of the location, quality or value of the land proposed to be purchased in the Shire of Gingin, or of its availability. The proponent has advised on p119 of the PER that site specific, scientific surveys have been undertaken confirming the Banksia Woodlands TEC/PEC occurs on the site and vegetation condition rating is matches calculator inputs, but without sighting the actual data of the flora and vegetation surveys of the proposed offset site, we are not confident of the veracity of the claim to allow adequate scrutiny of the appropriateness of the proposed offset site. We request public release of the data, just as we have asked for full public release of the data of the flora survey on the impact site.

This is in addition to a very important principle of offsets in that they should be close to the area of impact. With the current practice of offsets, offsets are nearly always provided far removed from the site of impact. This means that the offset is usually not the same or even like the area impacted, so that despite acquisition of notionally similar value land, there is still a net loss of specific value.

In this instance, the proposed offset site is 127km north of the proposed project site. This is a long way away from the impact, a development we consider extremely undesirable. The Perth metro area is rapidly losing all its Banksia woodland, an asset that is world renowned and highly valued by its residents, not least for the experience of seeing and hearing Black Cockatoos, but because of the very high biodiversity of the vegetation. This cannot be allowed to continue. Black Cockatoos are also understood to require resting/roosting/feeding sites with 4 km radius of each known site to address their flight patterns. Therefore, sites to provide this ecosystem function for this species needs conserved at a size and diversity to accommodate the behaviour patterns of these species.

In any event, in calculating the quantum of offset, the proponent has nominated a value of 8% for the risk of loss (%) of native vegetation on the proposed acquisition without an offset. We consider this unrealistically low for an area zoned for agricultural uses within the Shire of Gingin and consider it more likely there to be a 50% chance of the vegetation being cleared given the history of permits granted in the Shire of Gingin and adjacent Shire of Chittering.. Unless using a value of 50% in the Calculator results in a smaller area of offset land being required, we recommend a more appropriate value be used in the calculation.

Further, the proponent has nominated a value of 8 for the future quality of the proposed offset site without the offset. This value seems to be inappropriately high as the same value of 8 has been nominated for the future quality of the offset site after acquisition as an offset, because the habitat could be degraded through undesirable vehicle/pedestrian access and inappropriate management, as well as bushfire, in the event the site is not acquired as an offset. We recommend this value be reviewed and a more appropriate value be used in the calculation.



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

In any event, the WSWA expects that the offset site must be acquired and the details made publicly available before there is any clearing at the development site.

With respect to the planting of trees, it is not clear what is defined as a tree and how many trees will be planted, when or where. The WSWA expects that the proposals for planting will be made publicly available before there is any clearing at the development site. In any event, on p116 of the PER, the proponent proposed to replant trees at a ratio of 8:1 for every tree proposed to be cleared. Yet on p121, only 3 trees have been offered to be planted for every tree cleared. This discrepancy needs to be clarified, and ecologically sound reasons need to be provided why a particular offset ratio is chosen. If the biomass cleared was to be replaced by planted trees, it is estimated 5000 seedlings would need to be planted for each mature Banksia tree removed. The ratio of 8 replaced for 1 removed has no foundation in science.

Further, the completion criterion of 80% survival after 5 years is overly optimistic. In the Wildflower Society of WA experience, survival over a 5 year period is likely to be less than 50%, and will require watering in winter as well as summer to achieve even that level of survival. This has been evident of the last summer (see plant loss rates on plantings on NorthLink and on recently constructed sections of Kwinana Freeway).

Conclusion

Very good to excellent quality Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community is no place to clear and dig up for a sand quarry and no longer appropriate for a residential sub-division. If sand is required as a Basic Raw Material, degraded, cleared land should be used instead. If more housing is required, then higher density living, particularly around transportation nodes, should be developed. Developing sand quarries should not be used as an excuse to release more land for housing.

The flora survey should be redone and documented properly, with more quadrats, to detail the expected full extent of the flora, and to look for other Threatened species.

If the project is approved, the conservation area chosen as a mitigation measure should be in the most ecologically appropriate, rather than in the most degraded and convenient part of the site, as currently proposed.

If an offset is required, the entire offset calculation should be reviewed to ensure it is correct, and more public information to document and verify that what is proposed is suitable, appropriate, and achievable should be made publicly available.

However, an offset, especially one 25 or more km north of Perth, is not an appropriate response to approving the clearing of a very good to excellent quality, biodiverse Banksia Woodland. More suitable sites are known to exist in areas to the south of this site and within 25km of it and these should be acquired for that purpose.

The Wildflower Society of WA objects very strongly to this proposal and recommends it be rejected.



WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)



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