

Table 1: Assessment against the Ten Clearing Principles.

Principle	Assessment	Conclusion
<p>a.) Native vegetation should not be cleared if it comprises a high level of biological diversity</p>	<p>Vegetation mapping (Heddl <i>et al.</i> 1980) indicates that the original vegetation complexes within the clearing area would have included:</p> <ul style="list-style-type: none"> Abba Complex - is dominated by an open-forest of marri, jarrah, banksia and a woodland of marri with the presence of the occasional mountain gum adjacent to the Whicher Scarp. Common plant species include <i>Nuytsia floribunda</i>, <i>Kingia australis</i>, <i>Persoonia longifolia</i> and <i>Banksia grandis</i>. The low-lying areas along the creeks and on the flood plains support a woodland of <i>E. rudis</i>, <i>Melaleuca</i> spp., with common species including <i>M. preissiana</i>, <i>M. raphiophylla</i>, <i>Regelia ciliata</i>, <i>Hypocalymma angustifolia</i>, <i>Pericalymma ellipticum</i>, <i>Hakea varia</i>, <i>Acacia saligna</i>, <i>Astartea scoparia</i>, <i>A. leptophylla</i>, <i>Viminaria juncea</i> and sedges of the <i>Chaetanthus</i>, <i>Schoenus</i>, <i>Hypolaena</i> and <i>Anarthria</i> genera. <p>Vegetation Complex statistics for the Swan Coastal Plain indicate the vegetation extent remaining of the Abba Complex to be 6.7%. (Webb <i>et al.</i> 2016).</p> <p>The clearing area is considered to be in a Completely Degraded (Keighery 1994) condition due to a history of anthropogenic impacts which has resulted in an altered vegetation structure (i.e. absence of under and mid-storey). The clearing area contains limited floristic characteristics associated with the abovementioned vegetation complex and therefore is not considered representative of the Abba complex. Notwithstanding, the removal of 10 trees will have a negligible impact on the vegetation extent remaining of the Abba Complex at a local and regional scale.</p> <p>Along surveyed portions of the Capel Tutunup Road, three Priority 4 species, <i>Aponogeton hexatepalus</i>, <i>Acacia semitrullata</i> and <i>Eucalyptus rudis</i> subsp. <i>cratyantha</i>, were identified (Ecosystem Solutions 2019). Analysis of the project footprint revealed that the clearing area does not contain any of the identified Priority flora species (refer to Figure 1).</p> <p>As discussed above, the clearing area is not comprised of a consistent vegetation structure and composition, therefore comparable vegetation types associated with Priority or Threatened Ecological communities (PEC or TECs) cannot be assigned.</p>	<p>Based on the extent of disturbance within the subject site, and the limited clearing footprint, the subject site is not likely to comprise high biodiversity. The proposed clearing is not at variance to this principle.</p>

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	<p>Based on a desktop investigation, a total of 15 conservation significant species that have the potential to utilize the clearing area were identified (Ecosystem Solutions 2019). Several targeted field surveys were subsequently undertaken along Capel Tutunup Road to determine the presence of the identified conservation significant fauna species during the desktop investigation. Habitat for the three threatened species of Black Cockatoo was identified within the clearing area. No evidence of other fauna species of conservation significance occurring within the clearing area was recorded (Ecosystem Solutions 2019).</p> <p>The clearing area for the project contains two (2) potential Black Cockatoo habitat trees, none of which contain hollows. Overall, the ten trees subject to clearing are considered unlikely to provide significant foraging habitat for Black Cockatoos given that the majority of the trees are juvenile, providing a limited foraging resource for the species.</p> <p>The clearing will result in the removal of, at most, ten native trees (<i>Corymbia calophylla</i>). The removal of these trees is not considered likely to significantly impact on the biological diversity of the area.</p> <p>The proposal is not at variance to this principle.</p>	
<p>b.) Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.</p>	<p>The flora, vegetation and fauna survey (Ecosystem Solutions 2019) involved a desktop investigation whereby it was identified a total of 15 conservation significant species have the potential to utilize the clearing area.</p> <p>Several targeted field surveys were subsequently undertaken along Capel Tutunup Road to determine the presence of the identified conservation significant fauna species during the desktop investigation. Habitat for the three threatened species of Black Cockatoo was identified within the clearing area.</p> <p>The clearing area for the project contains two (2) potential Black Cockatoo habitat trees, none of which contain hollows. Overall, the ten trees subject to clearing are considered unlikely to provide significant foraging habitat for Black Cockatoos given that the majority of trees are juvenile, providing a limited foraging resource for the species.</p>	<p>Removal of vegetation within the subject site is not considered to be at variance to this principle as the limited clearing of low quality habitat will not impact the success of any fauna indigenous to Western Australia.</p> <p>Furthermore, proposed mitigation measures will include the provision of a fauna spotter onsite prior to and during clearing to monitor tree removal to ensure no animals are present at the time of clearing.</p>

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	<p>Furthermore, available mapping data indicates that there is approximately 850 ha of remnant native vegetation within 5 km radius of the clearing area, the majority of which is described as 'Jarrah, marri and wandoo <i>Eucalyptus marginata</i>, <i>Corymbia calophylla</i>, <i>E. wandoo</i> woodland' (DPIRD 2020). In addition, the Whicher Scarp which contains approximately 20,000 ha of jarrah forest is located 8 km south-east and west of the clearing area. On this basis, the removal of ten trees (including two potential habitat trees) will have negligible impact on the availability of breeding and foraging habitat for black cockatoos on a local and regional scale.</p> <p>No evidence of other fauna species of conservation significance occurring within the clearing area was recorded (Ecosystem Solutions 2019). While no other animals of significance were observed, either directly or through signs, the lack of this data should not be taken directly as an indication that those species are absent from the clearing area. Accordingly, as a mitigation measure, a fauna spotter will be onsite prior to and during clearing to monitor tree removal to ensure no animals are present at the time of clearing.</p> <p>The limited clearing area is not considered to provide significant habitat for conservation significant fauna recorded within the local area.</p>	
<p>c.) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.</p>	<p>Extracts from the Department of Biodiversity and Conservation (DBC) NatureBase database and the Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Protected Matters Search Tool were obtained to determine if records of any rare or threatened flora are known within the boundary or in vicinity of the study area. The database search identified 15 Threatened (T) species and 34 Priority species which are likely to occur within the area or the critical habitat for a species is likely to occur within the area (Ecosystem Solutions 2019).</p> <p>During the flora and vegetation survey, there were no Declared Rare Flora species observed within the survey area, three Priority 4 species, <i>Aponogeton hexatepalus</i>, <i>Acacia semitrullata</i> and <i>Eucalyptus rudis</i> subsp. <i>cratyantha</i>, were identified (Ecosystem</p>	<p>Removal of the vegetation within the subject site is not considered to be at variance with this principle as no rare flora will be directly impacted.</p>

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	<p>Solutions 2019). The project has undergone a redesign to ensure that no clearing will occur within proximity to areas identified as containing Priority flora (refer to Figure 1).</p> <p>Furthermore, the following mitigation and management measures will be implemented to ensure that no direct impacts to Priority flora occur as a result of the project:</p> <ul style="list-style-type: none"> • Trees subject to clearing will be marked with flagging tape. • Machinery or stockpiling of material shall be prohibited from vegetated areas within the road reserve that are outside of the clearing area. • Areas containing Priority flora will be demarcated during the project and all staff shall be advised that access to these areas is prohibited. <p>Based on the above, the proposed clearing is not at variance to this principle.</p>	
<p>d.) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.</p>	<p>The DBCA defines an ecological community as “a naturally occurring assemblage that occurs in a particular type of habitat” (PWS 2015). A TEC is one that has declined in area or was originally limited in distribution. Uncommon ecological communities that do not strictly meet TEC defined criteria, or are inadequately defined, are listed by the DBCA as a PEC.</p> <p>As well as protection under State legislation, selected ecological communities are also afforded statutory protection at a Federal level pursuant to the EPBC Act. The EPBC Act provides for the protection of TECs, which are listed under section 181 of the Act, and are defined as “Critically Endangered”, “Endangered” or “Vulnerable” under Section 182.</p> <p>A search of the DBCA’s and EPBC databases found one PEC, and one TEC endorsed under State and Commonwealth legislation recorded within proximity to the subject site. This included the ‘Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region’ ecological community.</p> <p>The clearing area does not contain the floristic composition or structure consistent with this PEC/TEC, and contains vegetation in a completely degraded condition. On this basis,</p>	<p>Clearing of the subject site is not considered to be at variance to this principle as vegetation consistent with the mapped TEC/PEC is not present within the clearing area. The clearing area is unlikely to be representative of any vegetative communities given its degraded condition.</p>

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<p>e.) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.</p>	<p>the subject site is not likely to comprise or be necessary for the maintenance of a TEC and therefore the proposed clearing is not at variance to this principle.</p> <p>Vegetation within the clearing area has previously been cleared and subjected to a history of anthropogenic disturbances. Historically, the vegetation would have been representative of the Abba complex. The clearing area does not contain the floristic composition or structure consistent with this vegetation complex. Accordingly, the clearing of ten trees in a completely degraded area will not impact the extent of the Abba complex.</p> <p>Furthermore, the subject site does not comprise high biological diversity, is not likely to impact upon significant habitat for fauna indigenous to Western Australia, priority or threatened flora and is not likely to comprise a PEC or TEC. On this basis the subject site is not considered to be a significant remnant within an extensively cleared landscape.</p> <p>The proposed clearing is not at variance to this principle.</p>	<p>Clearing within the clearing area is not considered to be at variance to this principle as the vegetation is not considered significant as a remnant of native vegetation.</p>
<p>f.) Native vegetation should not be cleared if it is growing in, or in association with an environment associated with a watercourse or wetland.</p>	<p>The DBCA's <i>Geographic Wetlands Swan Coastal Plain</i> database shows a palusplain Multiple Use wetland mapped across the clearing area. The vegetation subject to clearing is not representative of riparian vegetation.</p> <p>The closest surface water feature of environmental significance is a Conservation Category watercourse located approximately 950 m north-east of the clearing area. The project will not result in any impacts to this watercourse or associated vegetation. Vegetation associated with this wetland is not contained within the subject site. The project will not involve clearing of any riparian native vegetation or clearing of vegetation in proximity to a watercourse.</p> <p>The proposed clearing will not impact any riparian vegetation and is not located in proximity to a watercourse or wetland. Accordingly, the Proposal is not at variance to this principle.</p>	<p>Clearing within the subject site is not considered to be at variance with this principle as no riparian vegetation or clearing in proximity to a watercourse will be undertaken.</p>
<p>g.) Native vegetation should not be cleared if the clearing of the</p>	<p>The sandy soils present within the subject site can be prone to wind and water erosion. However, given the narrow and sporadic nature of the proposed clearing of vegetation</p>	<p>Clearing of the subject site is not considered to be at variance to this</p>

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<p>vegetation is likely to cause appreciable land degradation.</p>	<p>which is in a completely degraded condition, the proposed clearing is not likely to cause appreciable land degradation in the form of wind or water erosion.</p> <p>The proposed clearing is not likely to be at variance to this principle.</p>	<p>principle given the nature of the site and the proposed works.</p>
<p>h.) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.</p>	<p>There are no crown reserves or conservation areas in proximity to the clearing area. The closest is State Forest 12 which is located approximately 3.5 km north-west of the clearing area.</p> <p>The proposed clearing will not result in any impacts to the environmental values of any adjacent or nearby conservation areas. Given the limited amount of clearing proposed, fragmentation of vegetation within the road reserve will not occur.</p> <p>In consideration of the above, the clearing is not at variance to this principle.</p>	<p>The proposed clearing is not considered to be at variance to this principle as there will be no direct or indirect impacts to conservation areas in proximity to the subject site.</p>
<p>i.) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.</p>	<p>Clearing within the subject site will not impact surface water run-off given the linear and sporadic nature of the clearing area, the small clearing footprint and the short-term nature of the project.</p> <p>Alterations to surface water from the clearing will be extremely localized and will likely be diverted through the adjacent road stormwater system. The project will not result in any groundwater interactions.</p> <p>The proposed clearing is not likely to be at variance to this principle.</p>	<p>The clearing is not considered to be at variance to this principle as it is unlikely that the clearing will alter natural surface water flows or involve groundwater interactions.</p>
<p>j.) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.</p>	<p>The subject site does not contain a watercourse. The limited clearing along an existing road reserve is highly unlikely to substantially increase runoff and therefore the incidence or intensity of flooding.</p> <p>The proposed clearing is not likely to be at variance to this principle.</p>	<p>Clearing within the subject site is not considered to be at variance to this principle as it is unlikely to increase runoff and therefore intensity or incidence of flooding.</p>

Management Measures

Given proximity to flora of conservation significance and the presence of Black Cockatoo habitat within the clearing area (albeit limited in extent and marginal in quality), the following management measures are proposed during clearing:

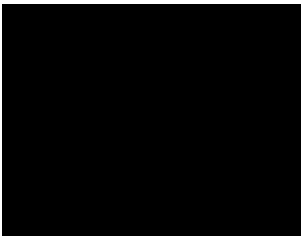
- Trees subject to clearing will be marked with flagging tape.
- Machinery or stockpiling of material shall be prohibited from vegetated areas within the road reserve that are outside of the clearing area.
- Areas containing Priority flora will be demarcated during the project and all staff shall be advised that access to these areas is prohibited.
- A suitably licensed fauna spotter shall be onsite prior to and during clearing to monitor tree removal to ensure no animals are present at the time of clearing.

Summary

The above assessment of the proposed clearing against the Ten Clearing Principles demonstrates that the clearing is not at variance to any of the principles. Furthermore, given the degraded condition of the vegetation within the subject site and the history of anthropogenic disturbances, it is anticipated that there will be no residual impacts that will require the implementation of offsets.

I trust this information is sufficient for your purposes. Should you have any queries or require further information, please do not hesitate to contact the undersigned.

Yours sincerely,



FIGURES



Legend

- Habitat Tree to be cleared
- Tree to be cleared, not habitat

Priority Flora

- *Eucalyptus rudis subsp. cratyantha*



PROJECT	Capel Tutunup Clearing Permit	Project Number	2060	Drawing Number	Figure 1	Revision	A
DRAWING TITLE	Figure 1 Site Extent	Designed	PN	Checked	PN	Approved	
CLIENT	City of Busselton	Date	1 / 12 / 2020	Local Authority	City of Busselton		
		Sheet 1 of 1					



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