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| **EARTH SCIENCES AND CULTURAL HERITAGE**  **EVALUATION SHEET** | |
| **Name:** |  |
| **Date:** |  |
| **Location (Grid Reference - GDA94):** |  |
| **Forest Practices Plan (FPP):** |  |
| **FPP area (ha):** |  |
| **Coupe name:** |  |
| **Operational area (ha):**  (area in which operations are proposed, for example harvesting or reforestation or site preparation within the FPP area) |  |
| **Operation Type:** |  |

# DOCUMENTS AND DATABASES CONSULTED

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| **Databases** |
| LISTmap - <http://maps.thelist.tas.gov.au/listmap/app/list/map> |  |
| LISTmap – Geology |  |
| LISTmap – Historic Sites Register |  |
| Tasmanian Geoconservation Database (TGD) - [www.naturalvaluesatlas.tas.gov.au](http://www.naturalvaluesatlas.tas.gov.au) |  |
| Mineral Resources Tasmania – digital geological maps;  see [www.mrt.tas.gov.au/portal/digital-geological-atlas-1-25000-scale-series](http://www.mrt.tas.gov.au/portal/digital-geological-atlas-1-25000-scale-series)  for 1:25000 maps |  |
| Aboriginal Heritage Register [Aboriginal Herita​ge Property Search​​](https://www.aboriginalheritage.tas.gov.au/propertysearch) |  |
| *Other databases (specify):* | |
| **Documents** |
| Karst categories (*An Atlas of Tasmanian Karst* volume 2, p. 297) [Karst Categories](https://www.fpa.tas.gov.au/__data/assets/pdf_file/0023/3488/Karst_Categories_Kiernan_1995_vol_2_p_297.pdf) |  |
| *Forest Operations around Sinkholes* (McIntosh 2014) – see [Sinkhole guidelines](https://www.fpa.tas.gov.au/__data/assets/pdf_file/0019/3484/Sinkhole_guidelines_FPA_January_2014.pdf) |  |
| *Forest Soils of Tasmania* (Grant et al. 1996) |  |
| *Forest Soil Fact Sheets* – see [www.fpa.tas.gov.au/Planning/earth\_sciences](http://www.fpa.tas.gov.au/Planning/earth_sciences) |  |
| [Basalt talus guidelines](https://www.fpa.tas.gov.au/__data/assets/pdf_file/0022/3478/Basalt_talus_guidelines.pdf) |  |
| [Earth Sciences Technical Note 1 - operations on high and very high erodibility soils](https://www.fpa.tas.gov.au/__data/assets/pdf_file/0020/5186/Earth_Sciences_Technical_Note_-_operations_on_high_and_very_high_erodibility_soils.pdf) |  |
| *Dolerite talus guidelines* – see [www.fpa.tas.gov.au](http://www.fpa.tas.gov.au) |  |
| *Procedures for managing Aboriginal Cultural Heritage when preparing Forest Practices Plans* – see [Procedures for managing Aboriginal cultural heritage when preparing FPPs](https://www.fpa.tas.gov.au/__data/assets/pdf_file/0016/3472/Procedures_for_managing_Aboriginal_Cultural_Heritage_Forest_Practices_Plans_version_1.12.pdf) |  |
| *Procedures for managing Historic Cultural Heritage when preparing Forest Practices Plans* – see [Procedures for managing historic cultural heritage when preparing FPPs](https://www.fpa.tas.gov.au/__data/assets/pdf_file/0018/3474/Procedures_for_Managing_Historic_~_preparing_forest_practices_plans,_version_2.1_01SEP2017.pdf) |  |
| *The Strahan Guidelines – see* [The Strahan guidelines](https://www.fpa.tas.gov.au/__data/assets/pdf_file/0021/3486/Strahan_Guidelines_Version_2.1,_September_2017.PDF) |  |
| *Other documents (specify):* | |

**EARTH SCIENCES**

**Does the proposed operation satisfy any of the “triggers” listed below?**

|  |  |  |
| --- | --- | --- |
| CLEARANCE and CONVERSION *and/or* CLEARING to REMAIN CLEARED | Yes | No |
| The proposed operational area involves ‘clearance and conversion’ of native forest and/or threatened native non-forest vegetation, or ‘clearing to remain cleared’ of native forest or threatened native non-forest vegetation |  |  |

**The proposed operational area . . .**

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| --- | --- | --- |
| **KARST ISSUES** | Yes | No |
| K1 contains Category A or B karst as defined in the Karst Atlas of Tasmania (Kiernan 1995) or features typical of Category A and B karst (Kiernan 1995, volume 2, p. 297 [Karst Categories](https://www.fpa.tas.gov.au/__data/assets/pdf_file/0023/3488/Karst_Categories_Kiernan_1995_vol_2_p_297.pdf)), *or* land in which sinkholes are evident in LIDAR images or the hillshade layer of LISTmap, *or* land in which caves or subsurface watercourses are known to exist, *or* land which contains mound springs |  |  |
| K2 is immediately adjacent to land showing the above features |  |  |
| K3 is a planned **quarry** in any area displaying karst features |  |  |
| K4 contains unmapped karst, *or* undescribed caves, *or* cracks or holes in the ground through which there is air movement, *or* enclosed basins and depressions (not stump holes) |  |  |
| *Notes:* | | |

**The proposed operational area . . .**

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| --- | --- | --- |
| **TGD ISSUES** | Yes | No |
| T1 is in (or contains) an area listed in the latest version of the Tasmanian Geoconservation Database (TGD) – but not the Central Plateau Terrain (ID 2684), the Central Highlands Cenozoic Glacial Area (ID 2953), or the Arthur Lineament (ID 2837) or the Castle Cary Structure Landform (ID 2833). |  |  |
| T2 is a planned quarry within (or containing) an area listed on the latest version of the Tasmanian Geoconservation Database (TGD) |  |  |
| T3 contains exposures showing   * buried soils (dark organic layers beneath later lighter coloured deposits) * charcoal * finely laminated or prominently layered sediments * fossils (other than the common *Fenestella* and shells in Permian rocks) |  |  |
| *Notes:* | | |

**The proposed operational area . . .**

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| --- | --- | --- |
| **AEOLIAN LANDFORMS** | Yes | No |
| A1 is in sand-dune country |  |  |
| A2 contains isolated sandy or silty dune landforms, or lunettes downwind of dry  or seasonal lakes |  |  |
| *Notes:* | | |

**The proposed operational area . . .**

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| --- | --- | --- |
| **STREAMS AND CATCHMENTS** | Yes | No |
| S1 has multiple channels on floodplains |  |  |
| S2 has Class 2, 3 or 4 streams that ‘peter out’ on fans or floodplains |  |  |
| S3 contains springs (cold or warm) or significant seepages |  |  |
| S4 has Class 4 streams for which consultation with the FPA is required by Appendix 5 of the *Forest Practices Code* 2020, except for those for which advice has previously been provided, still applies and will be implemented |  |  |
| S5 is a native forest clearfell coupe >50 ha in area with >50% of its area on slopes >20o |  |  |
| *Notes:* | | |

**Note:** if the coupe is within 2 km (upstream) of a known domestic water supply intake, is in the catchment of a Town Water Intake or freshwater aquaculture facility, or is within a Town Water supply catchment, a notification is not required, but special prescriptions may need to be included in the FPP. Consult with the FPA if unsure about what measures are appropriate.

**The proposed operational area . . .**

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| --- | --- | --- |
| **UNUSUAL LANDFORMS** | Yes | No |
| U1 contains large (car-size) boulders, or contains boulder mounds at the foot of hilly or steep slopes |  |  |
| U2 contains moraines or moraine-like features, e.g. linear mounds of bouldery sediment |  |  |
| U3 contains terrace landforms and/or exposures of rounded gravels at levels above active floodplains of rivers |  |  |
| U4 contains caves or overhangs or significant cliffs (in any rock type) |  |  |
| *Notes:* | | |

**The proposed operational area . . .**

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| --- | --- | --- |
| **SALVAGE OPERATIONS** | Yes | No |
| V1 includes an area requiring salvage harvest as defined on page 55 of the *Forest Practices Code* 2020*,* for which CFPO approval is required and procedures have not previously been agreed to |  |  |
| *Notes:* | | |

**The proposed operational area . . .**

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| --- | --- | --- |
| **LANDSLIDES** | Yes | No |
| L1 contains field evidence of landslides, e.g.:   * a steep backwall, often crescentic in shape * a steep backwall with a flattish poorly drained area (or pond) at its foot * a recent debris flow * cracks in the soil * trees with curved trunks (“J form” or “hockey stick” shape) |  |  |
| L2 exceeds the landslide threshold slope angle (*Forest Practices Cod 2020*, Table 6) for more than 10% of the proposed harvest area |  |  |
| L3 contains hummocky ground or unusual seepages on hilly or steep land |  |  |
| *Notes:* | | |

**SOILS**

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| --- | --- | --- | --- |
| Determine soil erodibility classes from published information (e.g. the book *Forest Soils of Tasmania* (Grant et al. 1996) or the *Forest Soil Fact Sheets*) or from your own observations of the soils present. For the predominant soils, list the soil parent rock (geology), the soil type (if known), the soil erodibility (actual or estimated), and the maximum slope of the land on which each soil type is found. | | | |
| **Geology** | **Soil type (if known)** | **Erodibility Class** | **Max. slope (deg.)** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**The proposed operational area . . .**

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| --- | --- | --- |
|  | Yes | No |
| E1 contains high or very high erodibility soils |  |  |
| E2 is a clearfell operation and contains moderate-high erodibility soils on steep  slopes (>19°) over more than 10% of the proposed harvest area |  |  |
| E3 contains soils which do not fit published descriptions and are likely to have   moderate to high or higher erodibility |  |  |
| *Notes:* | | |

**IS A NOTIFICATION REQUIRED?**

If any of the above Earth Sciences triggers are ticked **Yes**, and advice has not been previously given for similar operations on this coupe and will be implemented, complete a notification and send to Earth Sciences and Cultural Heritage at the FPA with draft prescriptions for managing the issue(s) identified.

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| **Draft Prescriptions for Earth Sciences:** |

**CULTURAL HERITAGE - HISTORIC SITES**

If there are no historic sites recorded in the FPA *Historic Sites Register*, and a site has not been identified in the operational area, a notification for historic sites is not required.

|  |  |  |
| --- | --- | --- |
| **EXISTING (RECORDED) HISTORIC SITES** | Yes | No |
| * is there an existing historic site in the proposed operational area, or on immediately adjacent land, that is recorded in the *Historic Sites Register*? |  |  |
| * if the answer to the above question is **Yes**, have written management prescriptions consistent with the *Procedures for managing Historic Cultural Heritage when preparing Forest Practices Plans* (PHCH) been included in the FPP?   (*leave blank if question not applicable*) |  |  |
| If **Yes** is ticked for both the above questions a notification is not required.  If a listed site is present and you require advice submit a notification. | | |

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| **Is there an existing (recorded) historic site in the proposed operational area that:** | Yes | No |
| * is listed in the *Historic Sites Register* but cannot be found |  |  |
| * is listed in the *Historic Sites Register* but not at the location indicated (i.e., listed coordinates are incorrect) |  |  |
| If either of the above boxes are ticked Yes, a notification is required. The notification should include   * the site ID and name (refer to the *Historic Sites Register*) * a map showing the site location * accurate coordinates (GDA94) if listed coordinates are incorrect, *and* * a completed *Historical Site Recording Form* and site photographs if it is considered that the site record needs updating. | | |

*Notes:*

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| **“NEW” (UNRECORDED) HISTORIC SITES** | Yes | No |
| |  |  |  | | --- | --- | --- | | **Has a “new” historic site (not recorded on the *Historic Sites Register*** **been found in the proposed operational area?** |  |  |   If the above box is ticked **Yes**, a notification is required.   * Complete an *Historical Site Recording Form* (available on the FPA website) * Attach photographs for FPA records – forward these as separate jpg or tif files * Suggest draft prescriptions for protection or management consistent with the *Procedures for managing Historic Cultural Heritage when preparing Forest Practices Plans (PHCH),* | | |

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| *Notes:* |

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| **Draft Prescriptions for Historic Cultural Heritage:** |

## CULTURAL HERITAGE - ABORIGINAL SITES

*Notes*

Consult the *Aboriginal Heritage Register* (curated by Aboriginal Heritage Tasmania) to determine whether Aboriginal cultural heritage is recorded on the coupe of interest or nearby.

**EXISTING (RECORDED) ABORIGINAL SITES**

|  |  |  |
| --- | --- | --- |
| **Are there existing Aboriginal sites in the proposed operational area, or on immediately adjacent land, that:** | Yes | No |
| * have been located on the ground |  |  |
| * cannot be found |  |  |
| * have been located, but not at the listed coordinates |  |  |

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| If you have answered **Yes** for the first question a notification is not required if the prescriptions in the *Procedures for Managing Aboriginal Heritage when Preparing Forest Practices Plans* (*PACH*) can be applied. Consult the Cultural Heritage Manager at the FPA if unsure how to proceed.  If you have answered **Yes** for the second question, a notification is required, unless the site which cannot be found is an isolated artefact on a road or track, in which case footnote 2 in Table 1 of *PACH* applies.  If you have answered **Yes** for the third question the site location needs correction. Submit new GPS coordinates (preferably ±1 m) to the FPA so that the *Aboriginal Heritage Register* can be corrected. |

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| *Notes:* |

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| **“NEW” (UNRECORDED) ABORIGINAL SITES** | Yes | No |
| **Have you found a “new” (unrecorded) Aboriginal site in the proposed operational area?** |  |  |
| If the above box has been ticked **Yes**, a notification is required.All actual or suspected sites (refer to *PACH* for a comprehensive list) should be notified using the *Aboriginal Heritage Site Recording Form* available at <http://www.aboriginalheritage.tas.gov.au/resources>.  This form should be sent to the Cultural Heritage Manager at the FPA for checking. Attach high resolution photographs of sites and artefacts (with scale) as separate jpg or tif files.  The FPA will send the checked form to Aboriginal Heritage Tasmania who will assess whether the cultural heritage information submitted should be recorded on the *Aboriginal Heritage Register*. | | | |
| *Notes:* | | | | |

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| **POTENTIAL ABORIGINAL SITES** | Yes | No |
| **Check the ten “trigger” criteria and the visibility criteria in Table 2 of *PACH*. Is a site survey required?** |  |  |
| If the above box has been ticked **Yes** a notification is not normally required, but consult with the FPA Cultural Heritage Manager if unsure how to proceed.  Note the requirement for a survey in the FPP, specifying reserves or machinery exclusion zones as appropriate, and arrange for an FPA-endorsed Aboriginal Heritage FPO to conduct a systematic survey after ground disturbance has occurred.  Alternatively, if the “trigger” criteria are met but the disturbed area does not meet the area threshold (5 ha) or visibility criteria, arrange for an FPO to make an informal survey to check disturbed areas (see Table 2 in *PACH*).  Record survey areas (shape files preferred), dates of surveys and field checks on the coupe file.  If a “new” site is found during a survey follow the procedures for “new” sites above. | | |
| *Notes:* | | |

**ROADLINES**

Roadline surveys required by *PACH* do not require notification.

Ensure that prescriptions for a survey are included in the FPP.

Record dates of surveys on the coupe file. If an Aboriginal cultural heritage site is found during a roadline survey, proceed as for “new” sites above.

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| *Notes:* |

***Note****: as per page 15 of PACH, the following precautionary statement (or words to this effect) should be included in all FPPs:*

“If Aboriginal cultural heritage is located during the operation it will be reported to an FPO. Before work continues at the cultural heritage location the FPO will inspect the cultural heritage, inform the FPA, and monitor the operation to ensure that heritage values are not impacted.”

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| **Draft Prescriptions for Aboriginal Cultural Heritage:** |

**FPA Document Control Log Table**

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| --- | --- |
| **Document name** | **Earth Sciences and Cultural heritage Special values sheet** |
| **Version** | 2.5 |
| **CM record** | D21/22641 was D17/45658 |
| **Owner** | Earth Sciences and Cultural Heritage |
| **Author(s)** | Peter McIntosh and Adrian Slee |
| **Release date** | 6 February 2023 |
| **Release Approved by** | CFPO |
| **Release status** |  |

**Version Control**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Author(s)** | **Summary of changes** |
| Earlier versions not recorded | | |  |
| 2.2 | 14 Dec 2017 | PDM | New tick-box format |
| 2.3 | 28 May 2019 | PDM | Additional trigger for notification added: Clearance and conversion |
| 2.4 | 21 January 2021 | PDM and AJS | Updated to conform to Code 2020; references to redundant documents (e.g. Class 4 guidelines and Sinkhole Manual) deleted; minor improvements of wording; added precautionary statement for Aboriginal heritage; reformatted in line with FPORG recommendation. |
| 2.5 | 7 February 2023 | PDM | References to the ‘Conserve’ databases replaced by references to the *Historic Sites Register* or the *Aboriginal Heritage Register* as appropriate. ‘Clearing to Remain Cleared’ added to situations requiring a notification; links updated; minor changes to wording to improve clarity. |

**Stages required for release outside FPA**

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| --- | --- | --- |
| **Category of advice (A1, A2, B1, B2, B3 or C):**  ***(Refer to document release protocol in 2013/17049*** | | **A3?** |
| **Stages** | **Required/not required** | **Completed (date)** |
| Specialist | **Yes** | 21 January 2021 |
| Line Manager | **n/a** | - |
| Peer/FPO/stakeholder review (**FPA staff**) | **Yes** | 2 FPOs responded positively by 1 Feb; no negative responses |
| CFPO | **Yes** | 2 Feb 2021 |
| FPAC | **Not required** |  |
| Board | **Not required** |  |