

## FPA process for earth sciences special values assessment and planning

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This is a brief and very simple guide to planning for earth sciences. It is not meant to duplicate the contents of the *Forest Practices Code* or the special values evaluation sheets used when planning coupes, but is provided as a memory prompt to make sure that all aspects of planning related to earth sciences have been covered in plans. Greater detail is contained in the [Forest Practices Code](#), the earth sciences special values [evaluation sheet](#), and in planning tools developed by the FPA. A large amount of supporting scientific information has been published in journals and conference papers (see the [staff publications list](#) on the FPA website) and other information is available in unpublished internal reports.

### Why do forest practices plans need to take account of earth sciences special values?

1. To prevent unacceptable rates of erosion
2. To maintain water quality, both for ecological and social/economic reasons
3. To prevent damage to sites of special scientific interest

### Basic protocol

1. Check geology of proposed area on geological maps – published sheets or digital images.
2. Note the age (e.g. Permian) and rock type (e.g. siltstone) of each significant map unit occurring in the area being planned. Take special note if limestone or dolomite is mentioned – checks for karst will be required.
3. Your own observations in the coupe are important. If the geology on the ground does not fit the geology shown on geological maps you may need to seek advice.
4. Answer all questions on the [earth sciences evaluation sheet](#).
5. Be sure that you are using the most up-to-date version of the [Tasmanian Geoconservation Database](#).
6. Be aware that the Karst Atlas is becoming out of date – don't use the Karst Atlas in isolation – always check for limestone or dolomite on the geological maps, some of which may post-date the Karst Atlas.
7. All landslides in an operational area need to be reported to the FPA Earth Sciences Program. It is recognised that some landslides are active and others are inactive relict features, but nevertheless the FPA must be informed of their presence so that the knowledge base can be improved and consistent policies applied across the state. In general active landslides are always excluded from operational areas but partial harvest may be allowed on landslides considered to be relict features. However draft prescriptions must be checked with the FPA specialist
8. Concerning town water issues, it may be advisable to consult with an earth sciences specialist if the operation is within 2 km of a town water supply or if the operation is in a plantation and involves using residual chemicals in a town water catchment. Similarly, if the

operation is within a domestic water catchment special care will be needed to maintain water quality and continuity of supply and it may be advisable to consult with an earth sciences specialist.

9. Streamside reserves will need to be applied on Class 4 streams if erosion features are present. The FPA Earth Sciences Program does not need to be informed if the [Class 4 Guidelines](#) have been followed, except where specified in the guidelines. However, in cases of unusual or severe erosion, contact the FPA.
10. Correct estimation of soil erodibility is crucial to correct interpretation of many *Forest Practices Code* guidelines. Starting from the known geology and from your own observations (essential) of road cuttings, soil pits, stream banks etc try to match the soils on the coupe with described soils in the book *Forest Soils of Tasmania* or the soils shown in the [forest soil fact sheets](#) on the FPA website. When assessing soil erodibility it is especially important to identify correctly the A2 horizon (a pale silty or sandy horizon immediately underlying the organic topsoil) and mottled (periodically waterlogged) horizons.
11. If most of the soils have moderate to high erodibility, it is likely that high erodibility soils will also be present. These often occur in depressions (including drainage depressions and close to streams) where silts and sands have accumulated as a result of past erosion.
12. Be aware that aeolian (windblown) sands may occur in coastal areas and downwind of floodplains of major streams which have been source areas. High erodibility aeolian sands may cover very different geology, e.g. low erodibility soils formed in dolerite and are not confined to dry areas – some occur in the mid-Huon Valley.

#### **Guidelines and advisory documents outside the *Forest Practices Code***

A number of formally approved guideline documents have been written by staff of the Earth Sciences Program, and should be applied when planning coupes. These documents are published on the FPA website and include:

- [Class 4 stream guidelines](#)
- [Forest management on soils in basalt talus](#)
- [Guidelines for forestry operations on soils formed in dolerite slope deposits \(dolerite talus\)](#)
- [Forest sinkhole manual](#).

In addition, informal guidelines have been written so that specialist advice is consistent across coupes. These guidelines are available on request from earth sciences specialists and are applied in an *ad hoc* manner, if appropriate to the situation on the ground, and cover:

- classification of multiple stream channels on fans and floodplains
- spraying of herbicides in high-risk situations
- road batter construction in high erodibility soils
- classification and management of sinkholes in plantations
- definition of drainage depressions.

Document control log table

Document summary information

<b>Document name</b>	FPA process for earth sciences special values assessment and planning
<b>Version</b>	1.0
<b>Trim record</b>	2011/55496
<b>Owner</b>	Peter McIntosh
<b>Author(s)</b>	Peter McIntosh
<b>Release date</b>	August 2011
<b>Release Approved by</b>	CFPO
<b>Release status</b>	Public document

Version control

Version	Date	Author(s)	Summary of changes
1.0	August 2011	Peter McIntosh	Original document

Stages required for release outside FPA

Category of advice		B2
Stages	Required/not required	Completed (date)
Specialist	Required	August 2011
CFPO	Required	August 2011