

Interlaken soil – red gradational soil in dolerite under mid-altitude dry forest

Site description

Occurrence: Widespread on the Central Plateau and eastern mountains at altitudes between about 700 m and 1100 m

Parent Material: Jurassic dolerite and Quaternary dolerite talus

Landform: Undulating, rolling, hilly and steep land

Drainage Class: Well drained

Vegetation: Dry sclerophyll forest, often with dominant *Eucalyptus delegatensis* and *E. dalrympleana* over an understorey that includes *Acacia dealbata*, *Cyathodes parvifolia*, *Pultanea juniperina* and *Poa sp.*



Distinguishing Soil Properties

Profile Features:

- Gradational profiles
- Reddish subsoils with weak strength
- Loam or clay loam textures in upper soil layers, overlying clay loam or clayey subsoils
- Many stones and boulders
- Low erodibility

Chemical and physical features

- High levels of total P and medium levels of total C and N in surface layer
- High P throughout profile
- Well drained
- Moderate permeability

Similar soils

- Bluestone soil (Fact Sheet 13) and Skyline soil (Laffan et al. 1995) – red colours in subsoil layers; higher C levels (wetter sites)

Previous description

Interlaken soil has been previously described in Forest Soils of Tasmania (soil 11.5) and this fact sheet is largely based on this earlier description, except that the profile was redscribed.



Soil Degradation Potential

FACTOR	RATING OF DEGRADATION POTENTIAL
Erodibility:	Low
Compaction and puddling:	Moderate
Mixing:	Moderate
Nutrient depletion:	Low
Landslides:	Slight – Severe (severe on some steep slopes where slope deposits overlie sedimentary rocks)
Flooding:	Negligible

Site Productivity

Low to very low productivity due to low temperatures at higher altitudes, low moisture availability, and restricted rooting volume

Soil Management

Excessive disturbance of the soil surface will reduce productivity and should be avoided

Native Forest Logging and Regeneration

LOGGING AND CLEARING: These soils are resistant to physical degradation and are suitable for wet weather logging provided soils are not saturated. Selective harvest is the preferred method. However, due to the concentration of nutrients in the thin surface soil horizon and susceptibility to mixing, care should be taken during planning to reduce the area disturbed by snig tracks

PREPARATION FOR REGENERATION: Scarification or burning is required to prepare a seedbed. Dry conditions may affect the success of regeneration. Surface rock limits trafficability and preparation of ground for regeneration by scarification. Poor regeneration may occur as a result of exposure of the soil and young seedlings to frost, if clearfell methods are used.

SILVICULTURAL CONSIDERATIONS: Medium levels of nutrients and low moisture availability will limit growth rates and long-term productivity and will require relatively long rotations

Suitability for Plantations

Marginally suitable to Unsuitable for plantations due to low to very low productivity and trafficability constraints due to surface rock and steep slopes and, in some areas, landslide hazard

Profile*

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Location: Dogs Head Tier between Tunbridge and Lake Sorell. Site is 500 m north along access track from junction with Tunbridge Tier Road (C526)

Map reference (AGD): Sheet 5033 (Interlaken) 0520038, 5336774

Landform: Upper slopes of Dogs Head Tier

Vegetation: Dry eucalypt forest dominated by *E. delegatensis*, often with *E. dalrympleana* over an understorey including *Acacia dealbata*, *Cyathodes parvifolia*, *Pultanaea juniperina* and *Poa* spp

Parent material: Jurassic dolerite and derived Quaternary slope deposits

Drainage: Well drained

Slope: 4°

Aspect: North

Altitude: 890 m

Photographs: PDM 3-05-2 (site); 3-05-9 (profile)

Australian Soil Classification: **Haplic Eutrophic Red Ferrosol**

A1	0–15	Dark reddish brown (5YR2.5/2) clay loam; moderately moist; moderately developed 10–20 mm subangular blocky peds breaking to moderate 2–5 mm subangular blocky peds; very weak strength, 2–10% subangular dolerite cobbles 60–200 mm diameter and 50–90% dolerite boulders 600 mm–2 m diameter; abundant very fine and few medium roots; abrupt boundary.
B21	15–38	dusky red (2.5YR3/4) sandy clay loam; moderately moist; weakly developed 5–10 mm and 2–5 mm subangular blocky peds breaking to weak 1–2 mm granular peds; weak strength, common fine roots; abrupt boundary.
B22	38–76	dark reddish brown (5YR3/4) clay loam+; moist; moderately developed 20–50 mm angular blocky peds breaking to weak 2–5 mm subangular blocky peds; weak strength; 20–50% subangular dolerite stones 200–600 mm diameter; few medium roots; clear boundary.
B23	76–100+	dark brown (7.5YR3/4) light clay; moist; 10–20% prominent black (5YR2.5/1) weathered substrate mottles 5–15 mm diameter; weakly developed 5–10 mm subangular blocky peds breaking to 2–5 mm subangular blocky peds; <10% faint clay skins; firm strength; 20–50% subangular dolerite stones and boulders 200–600 mm and 600 mm–2 m diameter; few very fine roots.

Horizon	Depth (cm)	pH (H ₂ O)	Total C (%)	Total N (%)	C/N	Total P (mg/kg)	Colwell P (mg/kg)	P retn. (%)	SO ₄ -S (mg/kg)	Water Stable Aggreg. (%)
	0–30	6.4	2.80	0.13	22	502	8	54	11	n.d.
A1	0–10	6.2	7.02	0.27	26	771	18	56	4	80
B21	20–30	6.2	1.36	0.08	16	414	4	52	8	77
B22t	40–60	6.1	0.73	0.04	19	309	n.d.	42	8	71
B22t	60–80	6.3	0.87	0.05	19	328	n.d.	50	7	63

Horizon	Depth (cm)	Exch. Ca (cmol(+)/kg)	Exch. Mg (cmol(+)/kg)	Exch. K (cmol(+)/kg)	Exch. Na (cmol(+)/kg)	CEC (cmol(+)/kg)	BS (%)
	0–30	8.96	3.46	0.33	0.14	20.1	64
A1	0–10	16.2	5.06	1.30	0.07	36.4	62
B21	20–30	5.45	2.81	0.16	0.17	14.6	59
B22t	40–60	5.01	2.61	0.09	0.19	12.3	64
B22t	60–80	6.70	3.67	0.16	0.47	14.8	74

Analyses by Landcare Research New Zealand Ltd., 11 May 2005. Analytical methods were those of Blakemore et al. (1987), Laffan et al. (1996) and Rayment and Higginson (1992).

References

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Citation

- Laffan, M.D. and McIntosh, P.D. 2005. Interlaken soil. *Tasmanian forest soil fact sheet no. 32*. Forest Practices Board, Hobart and Forestry Tasmania, Hobart. 4 p.

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