

7.28 *Sidonia* land system (Sa)

Situated north-east of Kyneton, this area of low rises occurs on the Devonian granodiorite of the Cobaw pluton. Rounded, rock-free crests and gentle slopes provide a considerable contrast with the predominant steep lands within the pluton.

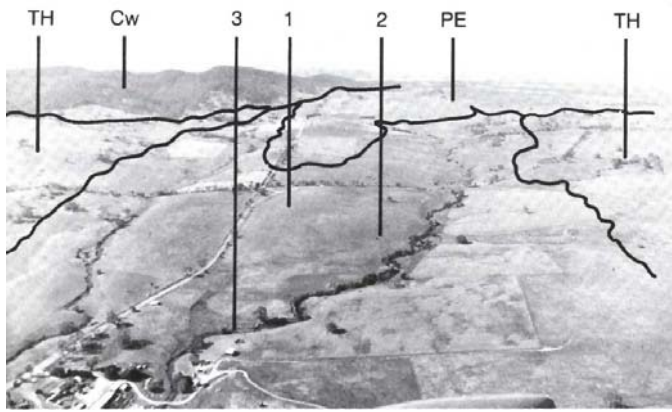
Yellowish -grey mottled duplex soils with highly weathered subsoils and coarse sandy upper horizons occur throughout, overlain in some drainage depressions by young sandy wash. Pasture improvement is difficult on these soils, which are droughty and readily leached, and native pastures predominate. Small areas are cropped.

The native vegetation, mostly cleared, consists of *E. viminalis* and *E. rubida* and less commonly *E. melliodora* and *E. radiata*. *E. camaldulensis* and *E. ovata* are restricted to the drainage depressions.

The sandy topsoils are susceptible to sheet erosion by water and wind, but actual erosion is generally not serious. Gully erosion occurs in many of the major drainage depressions.



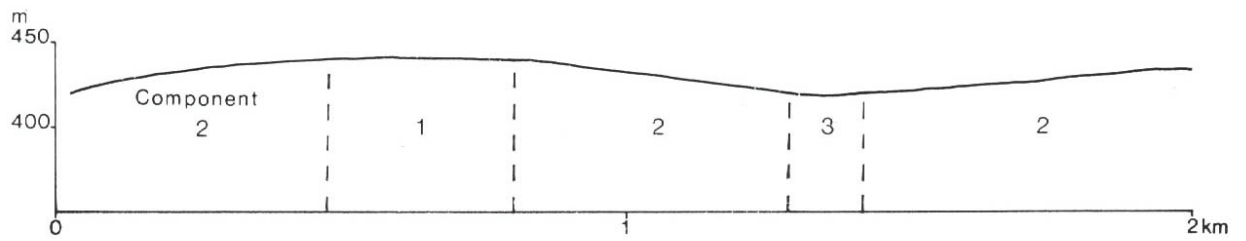
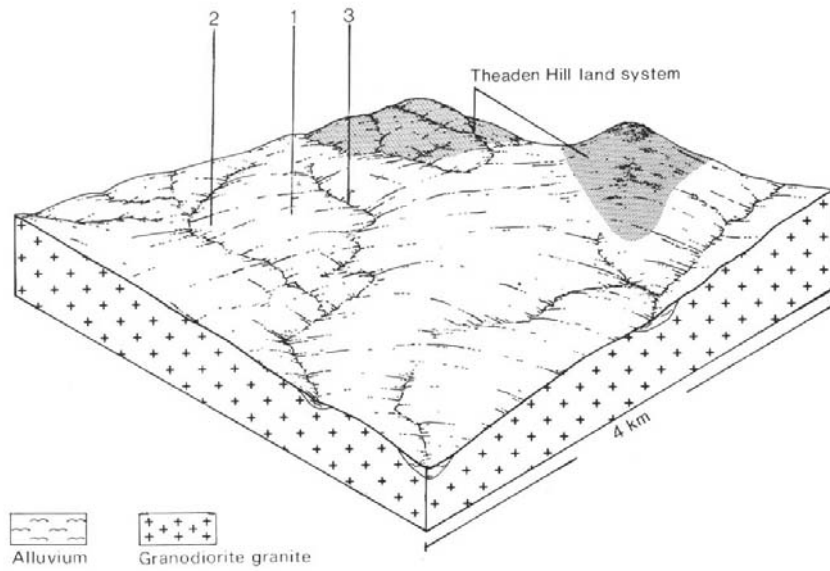
Grazing by sheep and cattle is the predominant land use.



The undulating rises and components of the Sidonia land system are shown in the foreground.



The deep sandy topsoils have severe physical and chemical limitations.



SIDONIA LAND SYSTEM (Sa) Area 78 km² 1.9% of catchment

| | | | |
|---|---|--|---|
| CLIMATE Rainfall, mean (mm) Temperature, mean (°C) Seasonal growth limitations | Annual, 650-800; lowest January (30-35), highest June (70-80) Annual, 13; lowest July (6.5), highest January (20) Temperature less than 10°C (av.): late April-early September Rainfall less than potential evapotranspiration: October-March | | |
| GEOLOGY Age, rock type | Devonian, granodiorite, minor granite | | |
| PHYSIOGRAPHY Landform pattern Elevation range (m) Relative relief(m) Drainage pattern Channel spacing | Undulating rises 380-520 20 Dendritic/trellised Sparse | | |
| LAND COMPONENT Number Percentage of land system | 1 15 | 2 75 | 3 10 |
| PHYSIOGRAPHY Landform element Slope; modal, range Site drainage | Crest 5,4-7 Well drained | Slope 4,1-10 Well drained | Drainage depression 1,1-3 Moderately well drained |
| SOIL Parent material Description Classification Surface texture Depth to hardpan or bedrock (m) Nutrient status Available water capacity Permeability Exposed rock/stone Sampled site number | Granodiorite, minor granite Mottled yellowish grey duplex soils with bleached A2 horizons; occasional sandy soils Dy3.41; minor Uc4.11 Loamy coarse sand, coarse sandy loam 0.4-0.9 Very low to low Low Rapid surface, slow subsoil 0-2 1062 | Granodiorite, minor granite Mottled yellow and yellowish grey duplex soils with bleached A2 horizons Dy3.41 Loamy coarse sand, coarse sandy loam 0.9-2.0 Very low to low Low surface, moderate subsoil Rapid surface, slow subsoil 0 1085 | Alluvium Sandy soils, mottled yellowish grey duplex soils Uc2.34, Dy3.41 Loamy sand >2.0 Very low; moderate for duplex subsoils Low; moderate for duplex subsoils Rapid; slow for duplex subsoils 0 1083 |
| NATIVE VEGETATION Structure Characteristic species (+ indicates predominant species) | Open forest II <i>E. rubida</i> +, <i>E. viminalis</i> , <i>E. radiata</i> , <i>E. melliodora</i> | Open forest II <i>E. rubida</i> +, <i>E. viminalis</i> , <i>E. radiata</i> 4 <i>E. melliodora</i> | Open forest II <i>E. camaldulensis</i> + <i>E. ovata</i> <i>E. viminalis</i> <i>E. viminalis</i> <i>E. melliodora</i> |
| PRESENT LAND USE | Grazing on introduced pastures; minor cropping | Grazing on introduced pastures; minor cropping | Grazing on introduced pastures |
| OBSERVED SOIL DETERIORATION | Sheet erosion, usually minor; minor wind erosion | Sheet erosion, usually minor; minor wind erosion | Gully erosion common; minor salting |

SUSCEPTIBILITY OF LAND TO PROCESSES OF SOIL DETERIORATION – Sidonia

| Compt. | Process | Susceptibility | Critical land factors | Off-site effects | Comments |
|--------|---------------------------------|-----------------|--|---|--|
| 1&2 | sheet and rill erosion | low to moderate | <ul style="list-style-type: none"> gentle slopes slow subsoil permeability | <ul style="list-style-type: none"> sedimentation increased run-on | high topsoil permeability reduces overland water flow and reduces the erosion hazard |
| | wind erosion | low | <ul style="list-style-type: none"> weakly structured sandy topsoil droughty topsoil | <ul style="list-style-type: none"> - | - |
| | leaching of nutrients (topsoil) | high | <ul style="list-style-type: none"> high topsoil permeability low cation exchange content low percentage base saturation | <ul style="list-style-type: none"> - | - |
| 3 | gully erosion | moderate | <ul style="list-style-type: none"> deep accumulations of alluvium subsoils that slake/disperse | <ul style="list-style-type: none"> sedimentation | - |
| | compaction | low | <ul style="list-style-type: none"> sandy or loamy texture occasionally moist low organic matter content | <ul style="list-style-type: none"> - | - |
| | leaching of nutrients | moderate | <ul style="list-style-type: none"> high soil permeability low cation exchange capacity low percentage base saturation | <ul style="list-style-type: none"> - | added nutrients are readily leached |



Gully erosion, although not severe, is common