

817451

ARTHUR RANGE

This land system includes a number of areas in the Arthur and Frankland Ranges. Ground checks have been restricted to the Arthurs with aerial photo examination and extrapolation to include the Franklands. The land system covers the upper slopes and crests of these mountains, which display excellent examples of glacial erosion. These include deep cirques, rock basins (glacial lakes), aretes, "u" shaped valleys, and glacial lineations in the area around Lake Mars. It is questionable whether all the moraines (often referred to as moraines A to K) on the north eastern side of the Arthur Range are actually moraines. A number of check sites on one of these ridges bottomed out on quartzitic bedrock rather than glacial debris. "U" shaped valleys are restricted to higher positions (often over 600 m). Following glacial regression the valleys channeled melt and outwash gravels onto the flats to the north east and south west of both ranges. Reworked material from these deposits formed the extensive beach and dunes around Lake Pedder. Thick glacial deposits occur below the organic soils in the vicinity of the Scotts Peak Dam (land system 898121). Sandy, gravelly material on the Arthur Plains (land system 898121) below shallow peats was probably derived from glacial erosion in the Arthur Range and subsequent deposition following glacial retreat.

Although the ranges do not reach the heights of some Tasmanian mountains, they are directly exposed to south westerly storms with no protective land barriers to the west. This is reflected in the development of vegetation stripes with bare soil (feldmark) in exposed positions. Most of the high steep country has very poor soil and vegetation development, with the extremes being cliff faces and "bald" peaks. Smooth, steeply dipping bedrock often restricts soil formation.

All soil profiles have organic (peat) surface horizons which usually overlie gravelly, sandy mineral soils. Vegetation distribution is most effected by drainage and exposure. The highest peaks usually have poorly developed gravelly

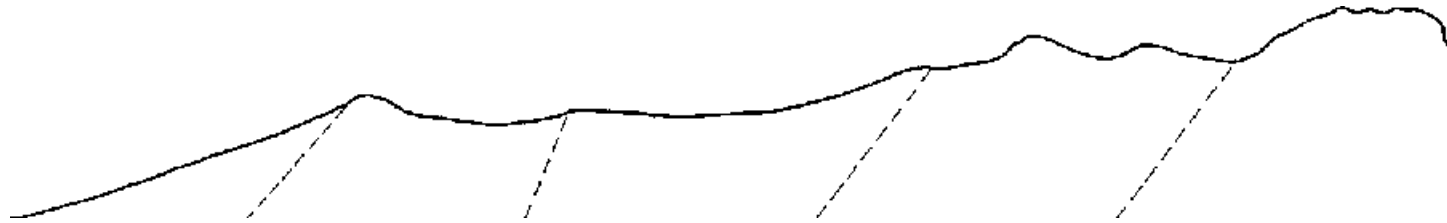
sands with a very sparse shrub cover of *Richea sprengelioides* and *Archeria serpyllifolia* while tussock grasses such as *Poa*, *Hierochloa* and *Danthonia* are common (Kirkpatrick 1980). Exposed sites at slightly lower elevations are covered by a carpet of cushion plants such as *Donatia novae-zelandiae*, *Dracophyllum minimum* and *Abrotanella forsterioides*. *Pterygopappus lawrencii* is less common but often reaches higher altitudes together with *Dracophyllum minimum* (Kirkpatrick 1980). Vegetation stripes composed of *Epacris serpyllifolia*, *Richea scoparia*, *Eucalyptus vernicosa* and stunted *Nothofagus cunninghamii* form in the lee of boulders which provide protection from westerly winds. Depressions around glacial lakes and some slopes provide sufficient protection for the formation of heath or scrub with *Richea scoparia*, *Nothofagus cunninghamii*, *Orites milliganii*, *Eucryphia milliganii*, and *Diselma archeri* common. *Athrotaxis selaginoides* is also found scattered across these slopes. *Astelia alpina*, *Ewartia meridithae* and *Milligania densiflora* typically occur in the understorey. *M. densiflora* also occurs on some cliff faces (Kirkpatrick 1980). Very poorly drained flats around lakes usually support low sedges such as *Carpha curvata*, *Empodisma minus* and *Restio complanatus* and various herbs. (*R. complanatus* inhabits higher positions than most other *Restios* found in the South West). Slopes and gullies often have thickets of *Nothofagus cunninghamii* and *Eucryphia lucida*. Although rare on the mountains of the South West the deciduous beech, *Nothofagus gunnii*, has been reported by Kirkpatrick (1980) from an area in the eastern Arthurs. In some lower gullies *Athrotaxis selaginoides* stags are widespread in areas now dominated by *Leptospermum* and *Melaleuca* spp. and *Eucalyptus nitida*. Due to access problems these positions were not examined during field work.

Nature conservation and recreation are present land uses. There is a high sheet erosion hazard if disturbance such as firing occurs. Track erosion is a problem in heath and scrub areas with evidence of root exposure where surface horizons have been removed. On the alpine herbfields and bolster moorlands frequent trampling has killed vegetation, baring the soil to erosive forces of wind, water, frost and further trampling.

LAND SYSTEM
ARTHUR RANGE

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Area (ha): 8756



ALTITUDINAL	900-1200	APPROXIMATE ANNUAL, RAINFALL (mm) 2000-2500			
SITE No. /ALTITUDE	86/800/E	87/880/-	(88/880/-) (89/920/SW)	90/960/-	tt> site description
TOPOGRAPHY	Rugged glaciated mountains				
Position	Steep slopes and	Poorly drained flats	Protected flats and	Exposed ridges and	Itodcy peaks
Typical Slope(\	30-70	0	0-20	0-10	50-80
Proportion (%)	25	15	25	20	15
GEOLOGY	Precambrian quartzite and sandstone with Pleistocene glacial				atures
NATIVE VEGETATION	Open to closed	Closed- heath/herbfield	Closed-heath to open-	Alpine herbf field/ Bolster near land	
Floristic Association (See Appendix 1 for common names)	Nothofagus cunninghamii. Eucryphia milliganii Eucalyptus vernica Agastachys odorata Melaleuca squamea Sprengelia incarnata Richea	Carpha curvata Empodisma minus Astelia alpina Isophysis tasmanica Restio complanatus Drosera sp Abrotanella forsterioides Donatia novae- zelandiae Microcachrys	Richea scoparia Nothofagus cunninghamii Orites milliganii Eucryphia milliganii. Athrotaxis selaginoides Eucalyptus vernica Diselma archeri Richea	Carpta curvata Astelia alpina Richaa curtisiae Orectolus pumilao Daidtia novae- zelandiae Abrotanella forstenoides Diselna arclieri HLcrrccachrvs tetragona	Mainly unvegetat sd
SOIL Surface(A or P horizon)Colour (moist) and	Gravelly dark reddish brown (5 YR 2. 5/2) fibrous peat	Very sandy dark reddish brown (5 YR 2. 5/2) fibrous peat over a brown/dark	Dark brown (7. 5 YR 3/2) or dark reddish brown (5 YR 3/3) sandy fibrous peat	Sandy dark reddish brown (5 YR 3/2) fibrous peat over a dark reddish trown (5	Lack of soil development
Subsoil (or B horizon) colour (moist) and	Very dark greyish brown (10 YR 3/2) gravelly sandy	Brown/dark brown (7. 5 YR 4/2 loamy sand	Gravelly dark grey (10 YR 4/1) or brown (7. 5 YR 4/2)	Gravelly dark greyish brown (10 YR 4/2) loamy sand	
Primary Profile	Organic	Organic	Uniform	Organic	
Depth surface horizon/i	0. 25	0. 50	0.10-0.15	0.40	
Typical total	0. 45	0. 80	0.40	>0.50	
Permeability	High	High	High	High	
LAND USE	tbtture conservation, recreation				
HAZARD	High sheet erosion hazard if burnt, Moderate to high				

Photo 55



Alpine herbfield/bolster moorland on the exposed ridges and crests component. These areas are very vulnerable to trampling damage. Rehabilitation can be restricted by severe weather conditions. Location—Western Arthur Range.

Photo 56



Lake Cygnus one of many glacial lakes in the Arthur Range

Photo 57



Feldmark development near Capella Crags in the Arthur Range