772422

James River

This land system has many similarities with the Lake Augusta land system to the south east, but falls into a higher rainfall zone probably due to the rainshadow effect imposed on the latter land system by the Little Split Rock ridge and Wild Dog Tier range.

It covers a relatively small area of undulating plains with low ridges and broad swampy flats, country rock is Jurassic dolerite which was scoured by an ice cap(s) centred to the immediate west during Pleistocene times. The general lack of lakes (in comparison to the Lakes land system to the west) is difficult to explain as both are likely to have been eroded by the same glacial event(s).

Organic soils predominate on lower slopes, while in the swampy plains they are over 0. 50 m deep and relatively stony. Drier slopes and ridges are overlain by strong brown to reddish brown gradational soils, with loamy textures. Relatively deep soils, together with the lack of lakes suggests that this land system was not intensively glaciated, and it is likely that ice banked up against the Little Split Rock ridge checking flow which would probably have concentrated in the Ouse River Valley. In addition the land system was probably centred on the eastern extent of the ice cap(s) where erosion was probably minimised by a thin cover of ice.

The vegetation of the swampy plains around the James River contains extensive grasslands dominated by Poa spp. and Carpha alpina. This grades into more typical bog vegetation consisting of Richea spp. and bolster plant communities on lower slopes. Woody species in the Proteaceae (e. g. Orites spp.) and Epacridaceae families (e. g. Richea acerosa, Lissanthe montana, Monotoca glauca) dominate further upslope although firing, within the last 150 years may have promoted the invasion of Olearia algida and Helichrysum hookeri in these components.

This land system lies within the Central Plateau Protected Area and is primarily utilised for recreation although grazing by sheep was an important activity in the past. The main vehicular access to Pillans and Julian Lakes is through this area. Organic soils are particularly prone to disturbance by vehicles during wet periods. Channels may form in these organic soils which can have a number of affects. Firstly they may act as drains and so reduce the water holding capacity of the swamps, while further erosion of the peat (in the channels) or underlying mineral soils may result in rill and gullying problems. Drainage of swamps can lead to a decrease in size of these habitats and an increase in the frequency and severity of peat burns. Peat destruction from burning can lead to serious degradation including increased runoff, streambank erosion and siltation. Drier ridges in the James River land system are moderately to highly sheet eroded due to wildfires which have resulted in the loss of organic top soils.

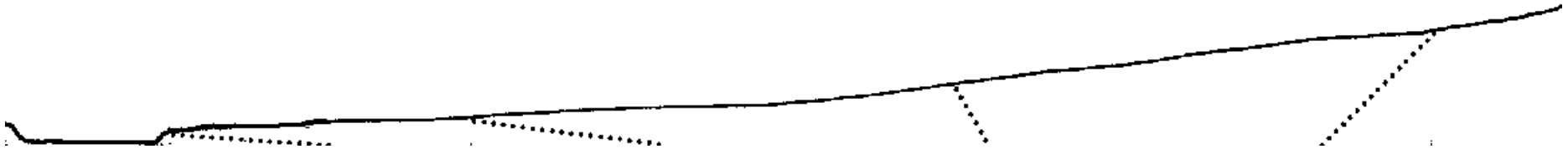
The result of a recent burn in heath country on upper slopes. Poa grassland appears to have established in the burnt area while *Helichrysum hookeri* and *Olearia algida* are noticeably absent. These latter species are common in 'grassland' to the east which has been repeatedly burnt.

LAND—SYSTEM

James River

772422

Area(ha):
2390



COMPONENT	1	2	3	4	5
PROPORTION(%)	10	20	30	30	10
RAINFALL (mm)		Approximate Annual Rainfall: 1500-2000			
GEOLOGY		Jurassic dolerite with glacial deposits			
TOPOGRAPHY			Undulating alpine plains		
Position	Swampy Plain	Swampy Lower Slopes	Lower Slopes	Mid Slopes	Upper Slopes
Typical Slope( )	0	0-1	1-3	1-3	1-2
NATIVE					
Structure	Sedgeland	Open Heath/Sedgeland	Open Heath/Sedgeland	Open Heath	Open Heath
Floristic Association (See Appendix 1 for common names)	Poa sp. Herpolirion novae-zelandiae Carpha alpina Uncinia sp.	Richea scoparia R. acerosa Astelia alpina Restio australis Empodisma minus Abrotanella forsterioides	Richea acerosa Grevillea australis Poa sp.	Orites acicularis Richea acerosa Orites revoluta Poa sp. Helichrysum ledifolium Lissantne montana Pentachondra	Orites revoluta Richea acerosa Helichrysum hookeri Lissanthe montana Monotoca empetrifolia
SOIL Surface(A)Textu	Peat (Stony in places)	Peat	Loam	Loam	Loam
B Horizon(subsoil) Colour (wet) Texture and		Dark yellowish brown (10 YR 4/6) clay loam. Organic.	Gravelly, brown/dark brown (10 YR 4/3) clay loam.	Gravelly, strong brown (7. 5 YR 4/6) clay loam. Gradational.	Gravelly, reddish brown (5 YR 4/4) clay loam.
Permeability			High	High	High
Typical depth(m)	>0. 05	0. 35	>0. 60	>0. 90	>0. 30
Depth(A)Horizon(			0. 25	0. 20	0. 10
LAND USE		Nature conservation, recreation			
HAZARDS	Moderate to high waterlogging and rill erosion			Moderate to high sheet	a