

Supplementary material

Table S1: Selection of best scenarios (defined by occupation period in days, and stock density, au/ha) of Lincoln University Mount Grand Station paddocks for each season and each stock type (sheep, deer, or cattle) to maximise grazing intensity and reduce soil loss (t/ha/year), according to outputs of the Donovan and Monaghan (2021 [14]) grazing and treading model.

Paddock	ST	Summer		Autumn		Winter		Spring	
		SD	OP	SD	OP	SD	OP	SD	OP
6	Sheep	18	30	18	20	27	20	18	30
	Deer	27	20	18	20	6	20	27	20
	Cattle	18	20	18	20	3	20	12	30
7	Sheep	12	50	27	20	27	30	12	50
	Deer	27	30	27	20	6	20	27	30
	Cattle	18	20	12	20	3	20	18	30
11	Sheep	18	30	18	20	27	20	18	30
	Deer	27	20	18	20	6	20	27	20
	Cattle	18	20	18	20	3	20	12	30
12	Sheep	27	20	27	15	18	20	27	20
	Deer	18	20	12	20	6	20	18	20
	Cattle	27	15	6	30	3	20	27	15
13	Sheep	18	30	18	20	27	20	18	30
	Deer	27	20	18	20	6	20	27	20
	Cattle	18	20	18	20	3	20	12	30
14	Sheep	18	30	18	20	27	20	18	30
	Deer	27	20	18	20	6	20	27	20
	Cattle	18	20	18	20	3	20	12	30
15	Sheep	12	50	27	20	27	30	12	50
	Deer	27	30	27	20	6	20	27	30
	Cattle	18	20	12	20	3	20	18	30
16	Sheep	12	50	27	20	27	30	12	50
	Deer	27	30	27	20	6	20	27	30
	Cattle	18	20	12	20	3	20	18	30
19	Sheep	27	20	27	15	18	20	27	20
	Deer	18	20	12	20	6	20	18	20
	Cattle	27	15	6	30	3	20	27	15
25	Sheep	18	30	18	20	27	20	18	30
	Deer	27	20	18	20	6	20	27	20
	Cattle	18	20	18	20	3	20	12	30
27	Sheep	18	30	18	20	27	20	18	30
	Deer	27	20	18	20	6	20	27	20
	Cattle	18	20	18	20	3	20	12	30
29	Sheep	12	30	12	30	27	30	18	30
	Deer	18	20	18	20	12	15	27	20
	Cattle	12	20	12	20	3	20	18	20
30	Sheep	12	30	12	30	27	30	18	30
	Deer	18	20	18	20	12	15	27	20
	Cattle	12	20	12	20	3	20	18	20
36	Sheep	27	15	18	15	18	15	27	15
	Deer	18	20	12	15	6	20	18	20
	Cattle	12	20	12	15	3	20	12	20

40	Sheep	12	50	27	20	27	30	12	50
	Deer	27	30	27	20	6	20	27	30
	Cattle	18	20	12	20	3	20	18	30
43	Sheep	27	20	27	15	18	20	27	20
	Deer	18	20	12	20	6	20	18	20
	Cattle	27	15	6	30	3	20	27	15
59	Sheep	27	15	18	15	18	15	27	15
	Deer	18	20	12	15	6	20	18	20
	Cattle	12	20	12	15	3	20	12	20
60	Sheep	27	15	18	15	18	15	27	15
	Deer	18	20	12	15	6	20	18	20
	Cattle	12	20	12	15	3	20	12	20