

## Soil Quality and Mapping

Below is provided as a soil mapping template for farmers to apply to their properties.

Land Class (LC)	Key Features	Options
<b>1-2</b> Arable land suited to intensive and regular cultivation.	<ul style="list-style-type: none"> <li>• Arable</li> <li>• Higher fertility.</li> <li>• Minimal erosion risk.</li> <li>• Non-acid (pH above 5).</li> </ul>	<ul style="list-style-type: none"> <li>• For pasture and crop production when rainfall is adequate.</li> <li>• High input/high output systems work well.</li> </ul>
<b>3</b> Grazing land suited to cultivation for pasture improvement and/or occasional cropping.	<ul style="list-style-type: none"> <li>• Lower to middle slopes.</li> <li>• Semi-arable</li> <li>• Lower natural fertility.</li> <li>• Moderate acidity (pH 4.5-5).</li> <li>• Moderate erosion risk.</li> </ul>	<ul style="list-style-type: none"> <li>• Groundcover and pasture persistence is important.</li> <li>• Maintain pasture base through direct drill options.</li> <li>• Occasional cropping.</li> </ul>
<b>4</b> Land suited to grazing but not for cultivation.	<ul style="list-style-type: none"> <li>• Middle to upper slopes.</li> <li>• Non-arable</li> <li>• Low fertility, shallow soils.</li> <li>• Acidic (pH below 4.5)</li> <li>• Moderate to high erosion risk.</li> </ul>	<ul style="list-style-type: none"> <li>• Only suited to permanent pasture.</li> <li>• Manage to maintain pasture stability and groundcover.</li> <li>• Best suited to lower input management systems.</li> <li>• Generally not suited to introduced perennial grasses.</li> </ul>
<b>5</b> Land suited to lighter grazing only.	<ul style="list-style-type: none"> <li>• Steep upper slopes.</li> <li>• Non-arable</li> <li>• Low fertility, shallow soils.</li> <li>• Acidic (pH below 4.5).</li> <li>• Subject to erosion.</li> </ul>	<ul style="list-style-type: none"> <li>• Leave natural or revegetate</li> <li>• Lightly graze to maintain existing pasture / groundcover</li> <li>• Potential conservation areas</li> </ul>



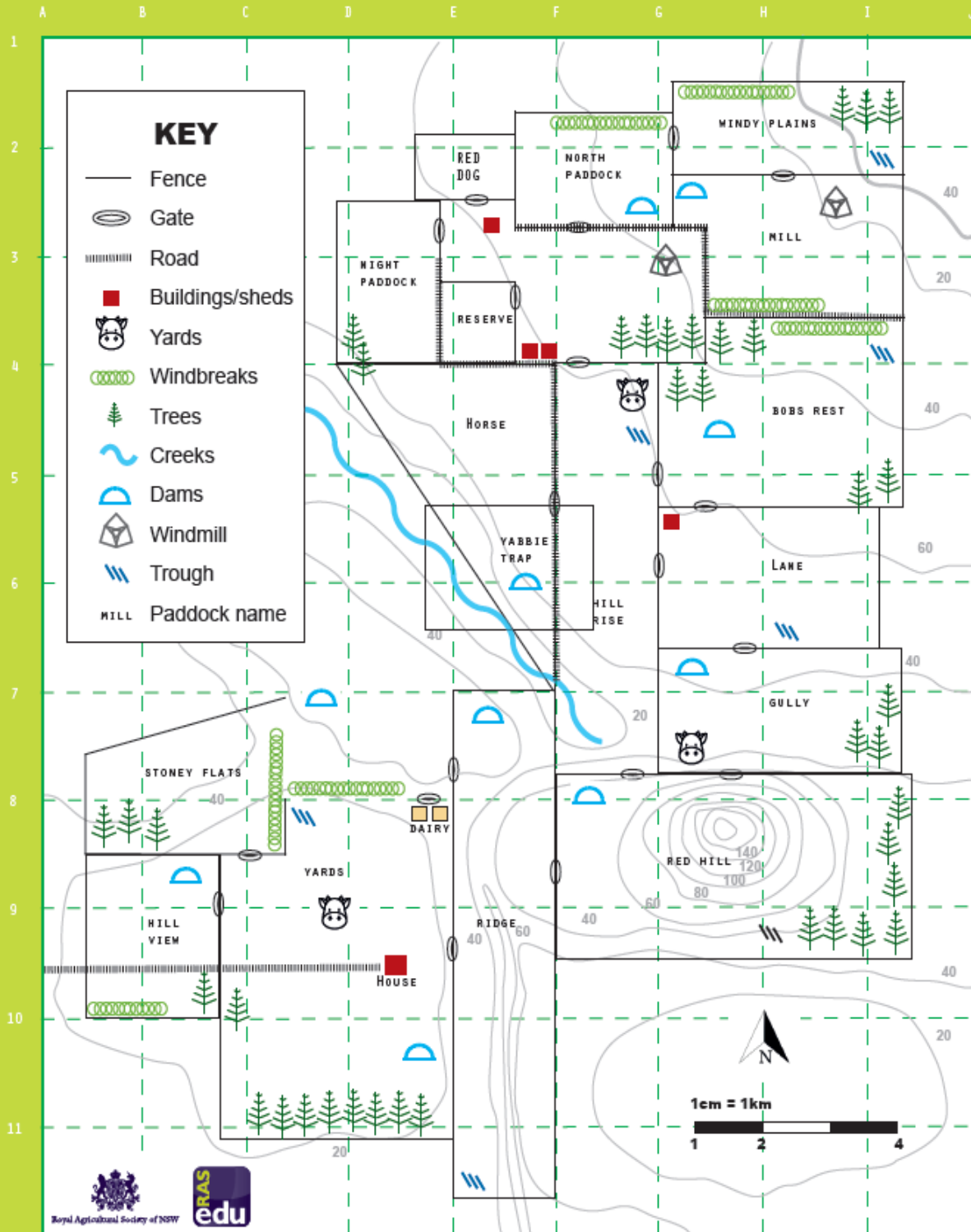
You are an agronomist working for a big supermarket chain. You have recently been approached by Luke the Farmer to assist him in mapping and preparing a soil management plan for his property in order for him to supply your corporate food retail company with a cash/cereal crop.

You have tested and surveyed the soil in each paddock of his property and gathered the following information:

Paddock Name	pH	Soil Type	Nitrate	Notes
Red Dog	6.5	Loam		
North Paddock	6.0	Loam		
Windy Plains	6.5	Loam		
Night Paddock	6.0	Loam		Evidence of rabbit warrens
Reserve	6.0	Loam		
Mill	4.5	Loam		
Bobs Rest	4.5	Loam		
Horse	6.5	Sandy loam		
Yabbie Trap	6.5	Sandy loam		Creek running through
Hill Rise	6.5	Sandy loam		
Lane	5.5	Loam		
Gully	4.5	Loam		
Red Hill	6.0	Clay	15	
Ridge	6.0	Clay	8	Good aerated texture without any recent tillage
Yards	6.0	Clay	14	Good biological activity
Hill View	6.5	Clay	15	Good biological activity
Stoney Flats	6.0	Sandy loam		Very rocky



# LUKE'S FARM



## Questions

1. What is the run off on this farm? Please explain.
2. On the map, label each paddock with its Land Class, using the information provided.
3. Luke wants to diversify and start growing vegetables on his property. Pick a vegetable that you believe he should grow and identify the paddock with the most ideal pH and soil type?
4. You know that legume crops are beneficial in returning nitrogen to the soil. If Luke chose to grow a legume, which paddocks would best benefit from this and why?
5. Name three legume crops.
6. What additional factors need to be considered when preparing these paddocks before sowing?
7. If Red Hill paddock has had the least cultivation previously, what recommendations would you make in order to use it, and what are the pros and cons of using this paddock?
8. What could be an explanation for the variation of PH across the property?
9. What other information should an agronomist seek and apply when looking at a property?

