

6.2.14 LUNETTES - 14 LAND ELEMENT

Map unit Nu14

Landscape

Lunettes form on the eastern edge of most lakes (Wg16) and many swamps (Wg15). They are generally formed as low rises from wind blown material from the dry beds of water bodies and deposited on their leeward side during drier climatic periods. Due to restrictions of scale, lunettes may have been either exaggerated in size or else too small to be represented on the map. In some cases the lunettes have been mapped as a complex of lunettes, e.g. on the Edenhope Goroke road, north of the Wimmera Highway, or have been included in the Swamp and Lake Complex (Wg17).



Plate 29 Lunette on the eastern side of a permanent water body (Wg16)

Native Vegetation

Although many of the lunettes are not highly vegetated, Red gums can occur, particularly on the lower slopes leading to the waterbody or swamp.

Representative soil type for land element

Soil types on lunettes are likely to vary depending on the nature of the material blown from the bed of the water body. There is often a sandy topsoil over clay and there is often a calcium carbonate horizon. The depth of the clay is variable.

REPRESENTATIVE SOIL TYPE FOR THE LUNETTE -14 - Nu14 LAND ELEMENT

MAP UNIT: Nu14 - Lunette

Site Number: WW27

Position in Landscape: Lunette

Grid Ref: 543 600 E, 5918 900 N;

Aust. Soil Class.: DERMOSOL or CALCAROSOL

General Landscape Description:

There are a number of lunettes in the shire formed on the eastern side of lakes. The soils are variable depending of the type of material blown out of the lake bed.



Soil Profile Morphology:

Topsoil

A 0-40 cm (depths variable) *Fine sandy clay loam.* pH 8.2.

Subsoil

B 40-70 cm (depths variable) *Brown (7.5YR4/3) light clay (sandy)* a few faint red mottles, strong prismatic and angular structure, (peds 10-100 mm,) strong consistence when dry. pH 8.0.

C 70-150+ cm *Light clay (sandy),* soft calcium carbonate segregations are abundant. pH 8.8.



Soil Profile Characteristics:

Horizon	pH	Salinity	Sodicity	Dispersion	Internal Drainage	Hydrophobicity
Surface (A1 horizon)	moderately alkaline	low	-	nil ¹	moderately well drained	nil*
Subsoil (B21 horizon)	moderately alkaline	low	-	nil ²		
Deeper subsoil (at 1 metre)	strongly alkaline	low	-	nil ¹		

* estimate

1 slight dispersion after remoulding

2 strong dispersion after remoulding

Key Profile Features:

- Alkaline topsoil and subsoil
- High amount of wind blown carbonates
- Depths of horizons are very variable

Soil Restrictions and Management Prescriptions

Feature	Result	Management Prescription
Carbonate layer (lime)	Highly alkaline layer. Can restrict root growth of sensitive plant species. Potential for nutrient imbalance. May restrict water movement if layer is hard rock.	Grow alkaline tolerant species. Supply trace elements i.e. zinc. Considered sub-surface drainage (if appropriate).
Alkaline topsoil	Potential nutrient imbalance. Unsuitable for alkaline intolerant plants.	Grow alkaline tolerant species. Supply trace elements (zinc) in fertiliser.
Alkaline subsoil	Potential nutrient imbalance. Unsuitable for alkaline intolerant plants. May indicate subsoil sodicity.	Grow shallow rooted species. Grow alkaline tolerant plants.

Land Suitability Rating Table

LAND USE	SUITABILITY CLASS	MAJOR LIMITING COMPONENT
Wheat	2	Climate
Canola	2	Climate, soil
Chickpeas	3	Climate
Lentils	3	Climate
White clover seed	2	Climate, soil
Lucerne for seed production	2	Soil
Viticulture	2	Soil
Apples	3	Soil
Potatoes	3	Soil
Carrots	2	Soil
Onions	3	Soil
Sweet corn	2	Climate, soil
Radiata Pine	2	Climate, soil
Blue Gum	2	Climate, soil

Land Suitability Assessment and Primary Limitations

<i>Wheat</i>	<i>Climate</i>	2	Slightly high rainfall
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	1	No major limitation
<i>Canola</i>	<i>Climate</i>	2	Slightly high rainfall
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Slightly alkaline subsoil pH
<i>Chickpeas</i>	<i>Climate</i>	3	High rainfall
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Slightly impeded internal drainage
<i>Lentils</i>	<i>Climate</i>	3	High rainfall
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Slightly impeded internal drainage
<i>White clover seed</i>	<i>Climate</i>	2	Slightly high rainfall
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Slightly alkaline pH
<i>Lucerne for seed production</i>	<i>Climate</i>	1	No major limitation
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Slightly impeded internal drainage

<i>Viticulture</i>	<i>Climate</i>	1	No major limitation
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Slightly alkaline topsoil pH, slightly impeded internal drainage
<i>Apples</i>	<i>Climate</i>	2	Slightly high mean maximum January temperature
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	3	Alkaline topsoil pH
<i>Potatoes</i>	<i>Climate</i>	2	Slightly high mean maximum January temperature
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	3	Alkaline topsoil pH
<i>Carrots</i>	<i>Climate</i>	1	No major limitation
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Topsoil texture, depth of topsoil, slightly alkaline pH, slightly impeded internal drainage
<i>Onions</i>	<i>Climate</i>	1	No major limitation
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	3	Alkaline topsoil pH
<i>Sweet corn</i>	<i>Climate</i>	2	Slightly low mean monthly temperature (October - March)
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Slightly alkaline topsoil pH, slightly impeded internal drainage
<i>Radiata Pine</i>	<i>Climate</i>	2*	Moderate to low rainfall, slightly high mean maximum January temperature
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Slightly alkaline pH, depth to bedrock
<i>Blue Gum</i>	<i>Climate</i>	2*	Moderate to low rainfall, slightly high mean maximum January temperature
	<i>Landscape</i>	1	No major limitation
	<i>Soil</i>	2	Slightly alkaline pH, depth to bedrock

* Some areas may have lower rainfall