

# MYP Myponga Land System

Valley flats at Myponga and between Myponga and Hindmarsh Valley

**Area:** 22.1 km<sup>2</sup>

**Annual rainfall:** 705 – 880 mm average

**Geology:** The land is underlain by fine to medium grained alluvial sediments derived mainly from adjacent basement rock hills, but also from sandier sediments derived from old glacial valley deposits. They have weak carbonate accumulations in places.

**Topography:** The two occurrences of the System are characterized by very gently sloping valley floors, grading to gently inclined slopes abutting the steeper land of adjacent Land Systems. Slopes are less than 8% and usually less than 2%. The main occurrence at Myponga drains to the west into the reservoir. The more easterly occurrence includes the headwaters of the Hindmarsh River which flows to the south east.

**Elevation:** 220 m to 280 m

**Relief:** The land has an even slope with a maximum difference in elevation from upper slope to creek flat of 30 m.

**Soils:** The soils are deep over alluvial sediments, or occasionally, highly weathered rock. Most have texture contrast profiles with sandy to sandy loam surfaces and coarsely structured mottled brown or grey clayey subsoils. There are limited gradational clay loams.

#### Main soils

**F1a** Sandy loam over brown clay

**F1b** Sandy loam over grey sandy clay

**G3** Thick sand over clay

#### Minor soils

**M2** Deep grey clay loam

**F2** Sandy loam over poorly structured brown clay

**Main features:** The Myponga Land System comprises two separate valley flats with very gentle to gentle slopes. The soils are predominantly sandy loam to sandy surface texture contrast types, with coarsely structured brown or grey mottled clayey subsoils. Imperfect drainage caused by perching of water on the clayey subsoil is a feature of the landscape. Although the soils are deep and moderately fertile, the risk of waterlogging restricts horticultural potential. However, the land is well suited to pasture and fodder crop irrigation, and most is used for dairying.



**Soil Landscape Unit summary:** 5 Soil Landscape Units (SLUs) mapped in the Myponga Land System:

SLU	% of area	Main features #
LAC	8.8	<p>Lower slopes formed on sandy clay to clay outwash sediments from adjacent basement rock hills. Slopes range from 3% to 8%. Watercourses are well defined. There is no rock outcrop and negligible surface stone. The main soils have loamy surfaces overlying thick, mottled clay subsoils forming in fine textured alluvium derived from the surrounding hillslopes.</p> <p>Main soil: <u>Sandy loam over brown clay</u> - <b>F1a</b> (D)</p> <p>This soil is moderately well to imperfectly drained - the clayey subsoil perches water causing some sub surface waterlogging. Natural fertility is moderately high. Potential productivity is high, and there is some scope for irrigated horticulture, although the potential for waterlogging (and erosion in cultivated crops) is high.</p>
LKB	20.1	<p>Lower slopes formed on sandy clays and clays derived from localized reworking of upslope glacial valley sediments. Slopes &lt;2%. Soils mainly sandy with clayey subsoils, but some heavier types.</p> <p>Main soils: <u>Thick sand over clay</u> - <b>G3</b> (V)  <u>Sandy loam over brown clay</u> - <b>F1a</b> (L)  <u>Deep grey clay loam</u> - <b>M2</b> (M)  <u>Sandy loam over poorly structured brown clay</u> - <b>F2</b> (M)</p> <p>These soils are deep but inherently infertile and imperfectly to poorly drained. They are also susceptible to acidification (having low buffering capacities), erosion (to both wind and water) if exposed, and may be water repellent. The land is currently used for grazing, with extensive irrigation of pastures and fodder crops. There is limited scope for horticultural development.</p>
LMA	0.3	<p>Edinburgh Swamp.</p> <p>Peaty swamps of glacial valley floors, formed on organically enriched variable alluvial deposits influenced by near surface ground waters. Slopes are less than 1%.</p> <p><b>LMA</b> Flats.</p> <p>The soils are variable and include peats, sands over clay or coffee rock, and grey clays.</p> <p>Main soils: <u>Peat</u> - <b>N1</b> (E)  <u>Wet highly leached sand</u> - <b>I2b</b> (C)  <u>Loam over brown clay</u> - <b>F1b</b> (L)  <u>Deep clay loam</u> - <b>M2</b> (L)  <u>Bleached loamy sand over sandy clay loam</u> - <b>M1</b> (L)</p> <p>These flats have variable soils with waterlogging the over-riding feature. Where drainage is possible, they can be productive, although the leached sands are infertile</p>
LQA	56.0	<p>Flat to gently sloping plains, slopes to 2%, formed on fine grained alluvium derived from erosion of basement rocks. The most common soils have sandy to loamy surfaces overlying mottled clayey subsoils. Less common types have gritty, coarse sandy surfaces overlying dark sandy clay subsoils.</p> <p>Main soils: <u>Sandy loam over brown clay</u> - <b>F1a</b> (E)  <u>Sandy loam over grey sandy clay</u> - <b>F1b</b> (E)</p> <p>These soils are deep, imperfectly drained (due to perching of water on clayey subsoil), and moderately fertile. Good quality groundwater provides irrigation opportunities, but mainly for fodder production and green feed. The potential for waterlogging, and frost risk in places, restricts horticultural potential.</p>
LiA	14.8	<p>Low lying flats with slopes &lt;1% formed on alluvial clays. Soils are deep with heavy clay subsoils.</p> <p>Main soils: <u>Sandy loam over brown clay</u> - <b>F1a</b> (E)  <u>Deep grey clay loam</u> - <b>M2</b> (E)</p> <p>This land is generally poorly drained due to its low lying position and slowly permeable clayey subsoils. Parts are inundated for extensive periods in most years. However, the soils are deep and fertile, although marginally saline in places.</p>

# PROPORTION codes assigned to soils within Soil Landscape Units (SLU):

- |  |                                       |
|--|---------------------------------------|
| (D) Dominant in extent (>90% of SLU)         | (C) Common in extent (20–30% of SLU)  |
| (V) Very extensive in extent (60–90% of SLU) | (L) Limited in extent (10–20% of SLU) |
| (E) Extensive in extent (30–60% of SLU)      | (M) Minor in extent (<10% of SLU)     |



**Detailed soil profile descriptions:**

- F1a** Sandy loam over brown clay (Bleached-Mottled, Hypocalcic, Brown Chromosol)  
15 - 55 cm firm to hard loamy sand to sandy clay loam with a strongly bleached A2 horizon, overlying a yellowish brown, grey and red mottled clay grading to fine grained alluvium, sometimes weakly calcareous below 100 cm.
- F1b** Sandy loam over grey sandy clay (Sodic, Eutrophic, Grey Chromosol)  
30 - 70 cm dark grey gritty coarse sandy loam with a bleached A2 horizon, overlying a dark grey sandy clay loam grading to a dark grey and yellow mottled sandy clay to clay.
- F2** Sandy loam over poorly structured brown clay (Eutrophic, Brown Sodosol)  
35 - 70 cm grey brown hard sandy loam with a bleached A2 horizon, overlying a yellow brown, brown and red massive sandy clay loam to sandy clay with coarse columnar structure.
- G3** Thick sand over clay (Bleached-Mottled, Eutrophic, Brown Chromosol)  
25 - 45 cm soft sand with a strongly bleached A2 horizon, abruptly overlying a yellowish brown and olive mottled medium to heavy clay (sandy clay in upper 20 cm in 20% of profiles), continuing below 150 cm.
- M2** Deep grey clay loam (Melanic, Calcic, Grey Dermosol)  
15 - 45 cm dark grey to black clay loam to light clay with granular structure (sometimes seasonally cracking), overlying a dark grey to black heavy clay with strong blocky structure. The clay is yellower and may be weakly calcareous with depth.

**Further information:** [DEWNR Soil and Land Program](#)

