# Soils of the Mareeba - Dimbulah Irrigation Area (MDIA)
# Sheet 2 of 2

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Information shown on this map is current to June 1997.

The information shown on this map has been supplied by the Department of Natural Resources, Resource Management Group.

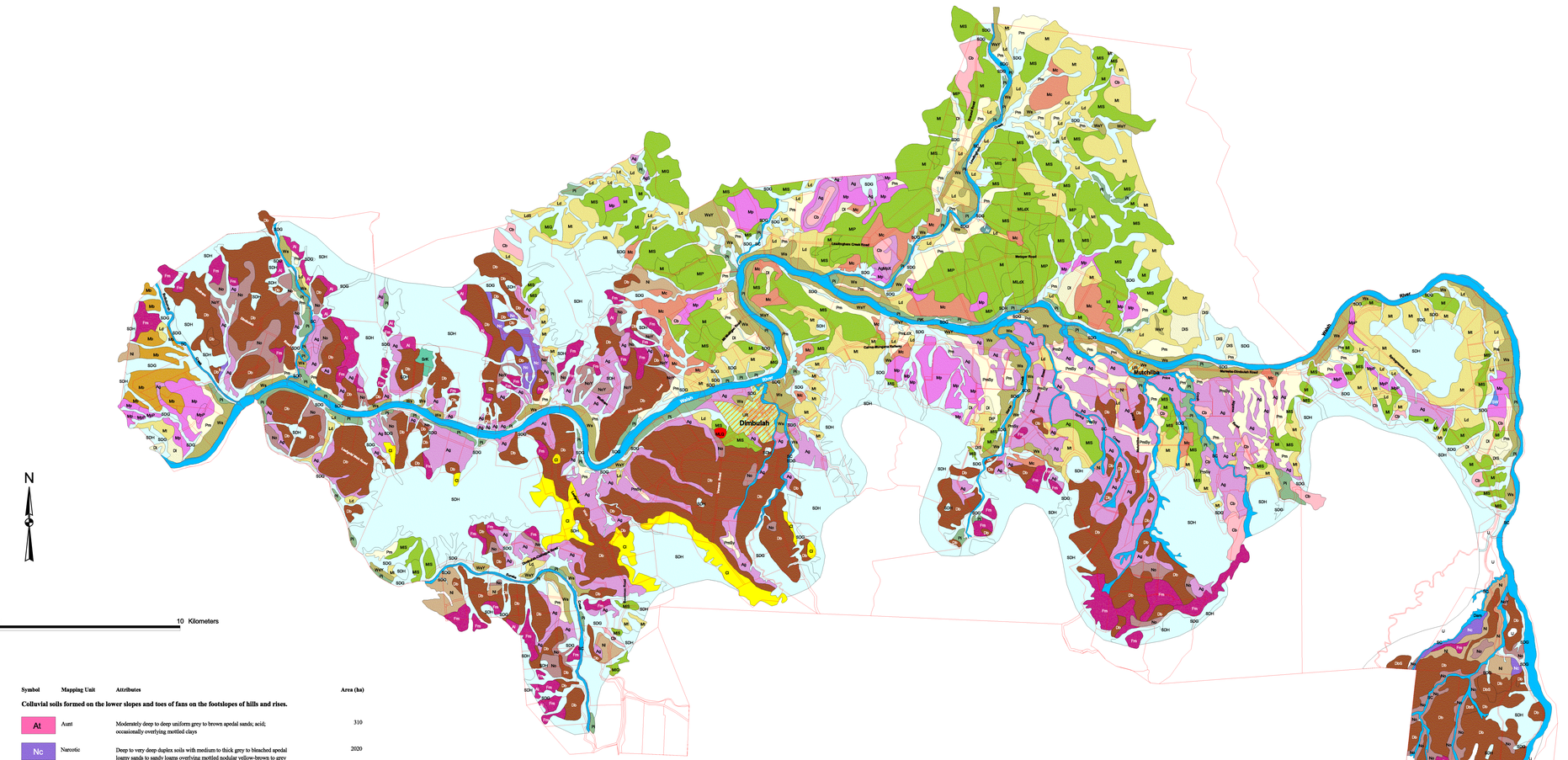
The soils information has been compiled from a reinterpretation of the original soils survey and soils mapping by C. Van Wijk et al (unpubl.) using air photo interpretation and limited ground survey observations. Linework depicts unique mapping areas (UMA's), or areas of uniform soil and landform type. UMA's may contain more than one soil type in association. UMA's are coded and coloured by dominant soil type forming at least 60% of the soils found within the UMA.

The information presented is consistent with a 1:25000 scale soils survey. This department does not accept any liability for mis-use of this information when applied to mapping at scales greater than 1:25000



## LEGEND

| | |
|---|---|
| BS | Balancing storages |
| DC | Drainage channels |
| | Cadastral boundaries |
| Dam | Farm storage dams |
| MLQ | Made land: quarrying |
| SC | Stream channels |
| SDG | Steep/dissected land: major gullying and minor intermittent streams |
| SDH | Steep/dissected land: hillslopes, crests and gorges |
| SW | Permanent swamp |
| U | Unidentified/unclassified land |
| UR | Urban/built-up areas |




1:50000

5 0 5 10 Kilometers

## REFERENCE

| Symbol | Mapping Unit | Attributes | Area (ha) |
|---|---|---|---|
| **SOILS OF BASALTIC ROCK ORIGIN** | | | |
| **Soils formed on undulating plains and rises.** | | | |
| To | Tolga | Very deep uniform to occasionally gradational red pedal light-medium clays; neutral to slightly acid; nodular and rocky in places. | 3285 |
| ToR | Tolga Rocky phase | As for Tolga above but with >20% basalt rock (>60mm) throughout the profile and surface. | 1640 |
| Wk | Walkamin | Moderately deep to deep uniform to gradational mottled nodular yellow-brown pedal light-medium clays; neutral to acid; rocky in places. | 2530 |
| WkR | Walkamin Rocky phase | As for Walkamin above but with >20% basalt rock (>60mm) throughout the profile and surface. | 910 |
| WkS | Walkamin Shallow phase | As for Walkamin above but with basalt or tuffaceous parent material or unrelated heavy impermeable clays limiting soil depth to <1.0m. | 130 |
| WkSy | Walkamin Sandy phase | As for Walkamin above but with a grey to yellow-grey sandy loam to sandy clay loam A horizons to 35 to 50cm. | 280 |
| **Soils formed on lower elevated plains and depressions.** | | | |
| Ry | Ray | Moderately deep to deep uniform to gradational mottled nodular and gravelly grey to yellow-grey or yellow-brown yellow-brown pedal light-medium clays; neutral; rocky in places. | 360 |
| RyR | Ray Rocky phase | As for Ray above but with >20% basalt rock (>60mm) throughout the profile and the surface. | 305 |
| Mg | Morgan | Moderately deep to deep seasonally cracking uniform dark to grey and brown pedal clays; neutral to alkaline; rocky, mottled and nodular in places | 220 |
| **SOILS OF GRANITIC AND ACID IGNEOUS ORIGIN** | | | |
| **Residual and colluvial soils formed on the crests and upper slopes of hills rises and fans.** | | | |
| Al | Atlanta | Deep to very deep uniform soils with fine gravelly apedal grey to yellow-brown coarse loamy sands to sandy loams; neutral; becoming browner with depth. | 175 |
| AlS | Atlanta Shallow phase | As for Atlanta above but with parent material limiting soil depth to <1.0m to 1.30m. | 40 |
| Cl | Colledge | Very deep duplex soils with thick to very thick fine gravelly grey to brown coarse sandy loams overlying fine gravelly red apedal coarse sandy clay loams to sandy clays; neutral to slightly acid. | 370 |
| Db | Dimbulah | Deep to very deep duplex and occasionally gradational soils with medium to thick fine gravelly grey to brown sandy loams to sandy clay loams overlying fine gravelly red apedal sandy clay loams to sandy clays; neutral to slightly acid. | 4890 |
| DbS | Dimbulah Shallow phase | As for Dimbulah above but with parent material limiting soil depth to < 1.0 to 1.30m | 53 |
| Fm | Fumar | Deep uniform to gradational soils with red apedal sandy loams to fine sandy clay loams; slightly acid to neutral. | 905 |
| FmS | Fumar Shallow phase | As for fumar above but with decomposing parent material or unrelated rock material limiting soil depth to <1.0m. | 7 |
| Mb | Morganbury | Deep to very deep gradational soils with red to brown sandy loams to sandy clay loams grading to fine gravelly red apedal sandy clay loams to sandy light-medium clays; neutral to slightly acid. | 3320 |
| MbB | Morganbury Brown variant | Brown Earth variant to Morganbury soils with predominantly browner subsoil colour. | 45 |
| Nl | Nullinga | Deep duplex to gradational soils with medium to thick grey-brown sands to sandy loams overlying mottled gravelly nodular yellow-grey to yellow-brown apodal or pedal sandy clay loams to sandy light-medium clays; acid to neutral. | 1280 |
| NlS | Nullinga Shallow phase | Moderately deep soils with thin to medium gravelly grey-brown sandy loams grading to gravelly yellow-grey to yellow-brown sandy loams to sandy clay loams to 1.0m overlying weathered granitic rock; occasionally mottled, nodular in places, granite rock outcrop common where occuring at or near hill crests. | 305 |
| Sr | Sorenson | Deep to very deep gradational to occasional duplex soils with medium to thick grey to yellow-brown coarse loamy sands to sandy loams grading to fine gravelly yellow-brown to brown apodal coarse sandy clay loams to sandy light clays; neutral. | 750 |
| SrK | Sorenson Coarse Sandy phase | As for Sorenson above but with abundant coarse sands and fine quartz gravels throughout | 155 |

| Symbol | Mapping Unit | Attributes | Area (ha) |
|---|---|---|---|
| **Colluvial soils formed on the lower slopes and toes of fans on the footslopes of hills and rises.** | | | |
| At | Aunt | Moderately deep to deep uniform grey to brown apodal sands; acid; occasionally overlying mottled clays | 310 |
| Nc | Narcotic | Deep to very deep duplex soils with medium to thick grey to bleached apodal loamy sands to sandy loams overlying mottled nodular yellow-brown to grey apodal sandy clay loam to sandy light-medium clays; acid; occasionally gravelly; abundant ferromanganiferous nodules forming a rudimentary hardpan found at varying depths. | 2020 |
| No | Nicotine | Deep to very deep uniform to gradational bleached to pale yellow-brown apodal sands to light sandy clay loams; neutral to slightly acid; occasionally mottled, fine gravelly and nodular. | 1680 |
| NoY | Nicotine Yellow variant | Deep to very deep uniform to gradational mottled light yellow-brown to yellow-brown apodal sands to light sandy clay loams; slightly acid to neutral; occasionally fine gravelly and nodular. | 520 |
| Uc | Uncle | Moderately deep to deep duplex to gradational soils with medium to thick fine gravelly grey to occasional yellow-brown sandy loams to sandy clay loams overlying yellow-brown apodal fine gravelly sandy clay loams to sandy clays; acid; overlying decomposing granitic rock. | 290 |
| UcS | Uncle Shallow phase | As for Uncle above but with decomposing granitic parent material limiting soil depth to 0.45 to 0.9m. | 135 |
| **Colluvial and older alluvial soils on level to gently undulating plains and outwash fans** | | | |
| Ag | Algoma | Deep to very deep uniform soils with fine gravelly grey to yellow-brown apodal coarse loamy sands to sandy loams and light sandy clay loams; neutral to acid; occasionally nodular. | 3365 |
| AgMpX | Algoma-Murphy Complex | Dominantly Algoma soils with minor areas of Murphy soils forming a complex landscape pattern | 125 |
| AgP | Algoma Pan phase | As for Algoma above but with a massive cemented siliceous hardpan or conglomeritic layer fron 0.60 to 1.40m. | 495 |
| AgS | Algoma Shallow phase | As for Algoma above but with bedrock or heavy impermeable clays limiting soil depth to <1.0m. | 45 |
| **SOILS OF METAMORPHIC AND OTHER META-SEDIMENTARY ROCK ORIGIN** | | | |
| **Residual and colluvial soils formed on the crests and upper to midslopes of fans and hills and rises** | | | |
| Cb | Cobra | Deep to very deep gradational soils with red-brown sandy clay loams to clay loam sandy grading to red apedal or pedal sandy clay loams to sandy light clays; neutral; occasionally nodular. | 1145 |
| CbG | Cobra Gravelly phase | As for Cobra above but with >20% coarse gravels throughout. | 240 |
| CbS | Cobra Shallow phase | As for Cobra above but with weathered parent material limiting soil depth to 0.80 to 1.30m; occasionally gravelly and nodular throughout. | 70 |
| Ml | Mulligan | Deep duplex to occasional gradational soils with medium to thick pale sandy loams overlying mottled yellow to yellow-brown pedal sandy light to medium clays; neutral to slightly acid; occasionally gravelly and nodular. | 4480 |
| MlG | Mulligan Gravelly phase | As for Mulligan above but with >20% gravels throughout. | 601 |
| MlLdX | Mulligan-Leadingham Complex | Dominantly Mulligan soils with minor areas of Leadingham Soils forming a complex landscape pattern. | 160 |
| MlP | Mulligan Pan phase | As for Mulligan above but with abundant (>50%) ferromanganiferous nodules forming a rudimentary hardpan layer or with an indurated hardpan layer from 0.80 to 1.30m. | 790 |
| MlS | Mulligan Shallow phase | As for Mulligan above but with weathered parent material limiting soil depth to 0.80 to 1.30m; occasionally gravelly and nodular throughout. | 3300 |
| Mt | Masterton | Shallow to moderately deep uniform to gradational gravelly grey-brown to yellow-brown apodal sandy loams to clay loams, and occasionally nodular pedal clays, overlying weathered parent material; neutral to slightly alkaline. | 7180 |

| Symbol | Mapping Unit | Attributes | Area (ha) |
|---|---|---|---|
| **Colluvial soils formed on the mid to lower slopes and toes of fans on the footslopes of hills and rises** | | | |
| Dl | Donlen | Deep duplex soils with medium to thick pale sandy loams overlying mottled nodular yellow-brown pedal light to medium clays; alkaline; sodic and occasionally gravelly. | 800 |
| DlP | Donlen Pan phase | As for Donlen above but with abundant (>50%) ferromanganiferous nodules forming a rudimentary hardpan or with an indurated hardpan layer from 0.80 to 1.30+m. | 25 |
| DlS | Donlen Shallow phase | As for Donlen above but with weathered parent material limiting soil depth to 0.80 to 1.30m; occasionally gravelly and nodular throughout. | 855 |
| Mc | McLeod | Shallow to moderately deep uniform to gradational apodal loamy sands to sandy clay loams overlying strongly cemented hardpan from 0.35 to 0.70m; neutral to alkaline; weathered parent material or mottled sodic grey heavy clays below hardpan. | 890 |
| Mp | Murphy | Deep duplex and occasional gradational soils with medium to thick bleached sandy loams to sandy clay loams overlying mottled grey to yellow-grey pedal light to medium clays; neutral to slightly acid; nodular and gravelly in places. | 5200 |
| Mp-ArSy | Murphy - Arriga Sandy variant Intergrade | | 85 |
| MpG | Murphy Gravelly phase | As for Murphy above but with >20% coarse gravels throughout. | 60 |
| MpP | Murphy Pan phase | As for Murphy above but with abundant (>50%) ferromanganiferous nodules forming a rudimentary hardpan or with an indurated hardpan layer from 0.80 to 1.30m. | 1330 |
| MpS | Murphy Shallow phase | As for Murphy above but with weathered parent material limiting soil depth to 0.80 to 1.30m; occasionally gravelly and nodular throughout | 15 |
| **Colluvial and older alluvial soils formed on outwash fans, relict alluvial floodplains and backplains** | | | |
| Ar | Arriga | Deep to very deep uniform to gradational mottled grey-brown to olive-grey pedal light to heavy clays; alkaline to occasionally neutral; sodic, nodular and occasionally gravelly in places. | 1370 |
| ArSy | Arriga Sandy variant | Deep to very deep gradational to duplex soils with thin to medium sandy clay loams to sandy light clays grading to mottled grey to yellow-brown pedal sandy light to medium clays; neutral; occasionally increasing to alkaline with depth, occasionally nodular and fine gravelly. | 690 |
| FpX | Floodplain Complex | Highly complex landscape patterns with areas of deep to very deep coarse sands and intervening areas of alluvial deposits of clays and loams with variable layers of differing texture classes. | 1910 |
| Ld | Leadingham | Deep duplex to occasional gradational soils with thin to medium pale sandy and silty loams to sandy clay loams grading to mottled nodular grey, brown or yellow pedal light to medium clays; alkaline, sodic; gravelly in places. | 2070 |
| LdP | Leadingham Pan phase | As for Leadingham above but with abundant (>50%) ferromanganiferous nodules forming a rudimentary hardpan or with an indurated hardpan layer from 0.65 to 1.30+m. | 450 |
| LdPmX | Leadingham-Penman Complex | Dominantly Leadingham soils with minor areas of Penman soils forming a complex landscape pattern. | 255 |
| LdS | Leadingham Shallow phase | As for Leadingham above but with weathered parent material limiting soil depth to 0.80 to 1.30m; occasionally nodular. | 30 |

| Symbol | Mapping Unit | Attributes | Area (ha) |
|---|---|---|---|
| Pl | Poplar | Very deep uniform to occasionally gradational mottled yellow-grey pedal nodular clay loams to light-medium clays grading to mottled grey pedal nodular light to medium-heavy clays; variable slightly acid to strongly alkaline; sodic; calcareous fragments at depth. | 1410 |
| Pm | Penman | Deep gradational to uniform soils with bleached silty clay loams to silty light clays grading to mottled grey to yellow-brown pedal light to medium clays; slightly acid to neutral, occasionally alkaline; sodic; nodular and fine gravelly in places. | 4250 |
| PmAgX | Penman-Algoma Complex | Dominantly Penman soils with minor areas of Algoma soils forming a complex landscape pattern. | 30 |
| PmAgPX | Penman-Algoma Pan phase Complex | Dominantly Penman soils with minor areas of Algoma Pan phase soils forming a complex landscape pattern. | 65 |
| PmD | Penman Dark phase | As for Penman above but with dark to brown A horizon colours; hard pan may be present | 170 |
| PmLdX | Penman-Leadingham Complex | Dominantly Penman soils with minor areas of Leadingham soils forming a complex landscape pattern. | 35 |
| PmP | Penman Pan phase | As for Penman above but with abundant (>50%) ferromanganiferous nodules forming a rudimentary hardpan or with an indurated hardpan layer from 0.65 to 1.30+m. | 65 |
| PmSy | Penman Sandy phase | As for Penman above but with a high medium to coarse sand content throughout. | 440 |
| **SOILS OF RECENT ALLUVIAL ORIGIN** | | | |
| **Soils formed on stream channel levees and terraces** | | | |
| Ee | Emerald | Deep to very deep gradational to duplex soils with dark to red-brown sandy clay loams grading to red apodal and pedal clay loams to sandy clays; neutral; occasionally gravelly and nodular. | 610 |
| EeK | Emerald Coarse Sandy phase | As for Emerald above but with abundant coarse sands and fine quartz gravels throughout; browner subsoil colour. | 40 |
| Pi | Price | Deep uniform brown to yellow to grey apodal sandy loams to clay loams; neutral to slightly acid; occasionally overlying coarse sandy D horizons; some variability in the textures often occurs throughout the profile and within this soil type. | 1530 |
| PiK | Price Coarse Sandy phase | As for Price above but with abundant coarse sands and fine quartz gravels throughout. | 8 |
| PiPmX | Price-Penman Complex | Dominantly Price soils with minor areas of Penman soils forming a complex landscape pattern | 35 |
| Ws | Walsh | Deep to very deep gradational to occasionally duplex soils with brown to yellow-brown sandy loams to sandy clay loams grading to red to brown pedal and apedal fine gravelly clay loams to clays overlying sandy D horizons; acid to neutral. | 2515 |
| WsK | Walsh Coarse Sandy phase | As for Walsh above but with abundant coarse sands and fine quartz gravels throughout. | 105 |
| WsY | Walsh Yellow phase | As for Walsh above but with predominantly yellow to yellow-brown subsoil colour; may have lighter textures also. | 260 |