# KRG Krongart Land System

**Area:** 322.0 km$^2$

**Landscape:** Plains with mainly dark coloured, medium to fine textured soils. Small swamps are common

**Annual rainfall:** 680 – 750 mm average

**Geology:** Lagoonal calcareous mudstones and clays of the Pleistocene Padthaway Formation.

**Main soils:**
**G3** (20%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol)
**N3** (15%) Wet soil (non to moderately saline) (Sodosolic-Calcarosolic-Dermosolic Hydrosol)
**M4** (9%) Deep hard gradational sandy loam (Hard Brown--Dark Kandosol- Dermosol)
**F2** (8%) Loam over poorly structured brown or dark clay (Brown-Dark Sodosol-Chromosol)
**E3** (8%) Brown or grey cracking clay (Brown-Grey Vertosol)

**Minor soils:**
**C5** (7%) Gradational dark clay loam (Calcic-Hypercalcic Brown-Grey-Black Dermosol-Calcarosol)
**E1** (6%) Black cracking clay (Black Vertosol)
**G4** (6%) Sand over poorly structured clay (sandy Brown-Red Sodosol-Chromosol)
**G5** (4%) Sand over acidic clay (sandy Brown Kurosol)
**I2** (4%) Wet highly leached sand (Aquic or Semi-Aquic Podosol)

**Summary:** The main limitations of the soils are poor drainage/waterlogging associated with the low relief and poor external drainage of the landscape as well as the poorly drained nature of the soils themselves.

**Soil Landscape Unit summary:** Krongart Land System (KRG)

| SLU | % of area | Component | Main soils | Prop# | Notes |
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| M-A | 0.4 | Plain | B3B7 | D | Plain with very shallow sand, often over thin, poorly structured dark brown clay on calcreted calcarenite. >50% exposed calcrete. <10% swamps with peat and organic loam soils.<br><br>Main soils:<br>***Plains:*** Shallow sandy loam on calcrete - **B3** and Sand over friable brown clay on calcrete - **B7**.<br>***Swamps:*** Peaty soil – **N1** and Wet clay loam - **N3**. |
| | | Swamp | N1N3 | M | |
| MXL | 0.3 | Undulating plain | B5 | V | Gently undulating plain with dark grey clay loam over calcreted calcarenite. 10-30% bare calcrete. 10-20% swampy depressions with organic clay loam often over clay, or peat soils.<br><br>Main soils:<br>***Plains:*** Shallow dark clay loam on limestone - **B5**.<br>***Swamps:*** Wet clay loam - **N3**, Peaty soil – **N1** and Deep hard gradational sandy loam - **M4**. |
| | | Swamp | N3N1 M4 | L | |
| NDC | 1.1 | Plain | G3 | V | Plains with deep sand over brown clay soils with 20-30% low stony rises with shallow clay loam soils, often over grey or red clay; on calcrete. 10-30% of the area of the rises is bare calcrete. |
| | | Stony rise | B6B4 B3 | C | |

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| | | | | | Main soils:<br>***Plains:*** Thick sand over clay - **G3**.<br>***Stony rises:*** Shallow sandy loam over red-brown clay on calcrete - **B6**, Shallow red loam on limestone - **B4** and Shallow sandy loam on calcrete - **B3**. |
| NJA | 0.1 | Plain | M4 | D | **NJA** Plain with deep clay loam or clay, grading to dark, poorly structured clay.<br>**NJS** As above plain with 20-30% sandy rises with deep sand over brown clay soils; 10-20% swamps with dark cracking clay soils.<br><br>Main soils:<br>***Plains:*** Deep hard gradational sandy loam - **M4** and Black cracking clay - **E1**.<br>***Sandy rises:*** Thick sand over clay - **G3**.<br>***Swamps:*** Wet clay loam - **N3**. |
| NJS | 3.9 | Plain | M4E1 | E | |
| | | Sandy rise | G3 | C | |
| | | Swamp | N3 | L | |
| NjK | 0.0 | Plain | G3 | V | Plains with deep acid sand over brown clay; 20-30% sandy rises with moderately drained deep acid sands with coffee rock or clay subsoils; <10% swamps with dark clay.<br><br>Main soils:<br>***Plains:*** Thick sand over clay - **G3**.<br>***Sandy rises:*** Wet highly leached sand - **I2**, Bleached siliceous sand - **H3** and Thick sand over clay - **G3**.<br>***Swamps:*** Wet clay loam - **N3** and Deep hard gradational sandy loam - **M4**. |
| | | Sandy rise | I2H3 G3 | C | |
| | | Swamp | N3M4 | M | |
| NLH | 0.1 | Rise | B5B6 | D | **NLH** Rises with shallow black clay loam to clay; or shallow red loam over red clay; on calcrete.<br>**NLM** Plains with sand over brown clay, often over calcrete. 1-20% stony rises with shallow sandy loam, often over thin red clay; or thin dark clay on calcrete.<br><br>Main soils:<br>***Stony rises:*** Shallow dark clay loam on limestone - **B5**, Shallow sandy loam over red-brown clay on calcrete - **B6** and Shallow sandy loam on calcrete - **B3**.<br>***Plains:*** Thick sand over clay - **G3** and Sand over friable brown clay on calcrete - **B7**. |
| NLM | 2.2 | Plain | G3B7 | V | |
| | | Stony rise | B6B5 B3 | L | |
| NlM | 0.1 | Plain | B5E1 | V | Plains with black clay soils, mostly shallow over calcrete; 20-30% stony rises with often calcareous black clay on calcrete.<br><br>Main soils:<br>***Plains:*** Shallow dark clay loam on limestone - **B5** and Black cracking clay - **E1**.<br>***Stony rises:*** Shallow calcareous loam on calcrete - **B2** and Shallow dark clay loam on limestone - **B5**. |
| | | Stony rise | B2B5 | C | |
| NmA | 4.6 | Plain | G3I2 | D | Plains with deep sand, mostly over brown clay, 10-30% acid sand over acid clay.<br><br>Main soils: Thick sand over clay - **G3**; Wet highly leached sand - **I2**. |
| NMF | 0.2 | Plain | F2 | V | Plains with deep loam over poorly structured brown clay soils. **NMF** 10-20% swamps with clay loam to clay over dark brown or grey clay, soils.<br>**NMJ** As for **NMF** but also with <10% stony rises with shallow dark clay to clay loam over calcrete soils.<br>**NMK** As for **NMF** also with <10% sandy rises with sand over brown clay soils.<br><br>Main soils:<br>***Plains:*** Sandy loam over poorly structured brown or dark clay - **F2**. |
| | | Swamp | N3F2 M4 | L | |
| NMJ | 2.9 | Plain | F2 | V | |
| | | Swamp | N3F2 M4 | L | |
| | | Stony rise | B5B2 | M | |
| NMK | 0.6 | Plain | F2 | V | |
| | | Swamp | N3F2 M4 | L | |

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| | | | | | ***Stony rises:*** Shallow dark clay loam on limestone - **B5** and Shallow calcareous loam on calcrete - **B2**.<br>***Swamps:*** Wet clay loam - **N3**, Sandy loam over poorly structured brown or dark clay - **F2** & Deep hard gradational sandy loam - **M4**. |
| NnF | 0.8 | Plain | F2C5 | E | **NnF** Plains with dark clay loam over dark clay on calcrete or soft and rubbly carbonate; co-dominant with swamps with dark cracking clay soils.<br>**NnV** Plains as above but co-dominant with stony rises with shallow dark clay loam, often with red clay subsoils, over calcrete. 20-30% sandy rises with deep acid sand, mostly over brown clay soils. 20-30% swamps as above.<br><br>Main soils:<br>***Plains:*** Sandy loam over poorly structured brown or dark clay - **F2**, Shallow dark clay loam on limestone - **B5** and Gradational dark clay loam – **C5**.<br>***Stony rises:*** Shallow dark clay loam on limestone - **B5**, Shallow sandy loam over red-brown clay on calcrete - **B6** and Shallow red loam on limestone - **B4**.<br>***Sandy rises:*** Thick sand over clay - **G3**; Wet highly leached sand - **I2**.<br>***Swamps:*** Wet clay loam - **N3**, Brown or grey cracking clay – **E3** and Deep hard gradational sandy loam - **M4**. |
| | | Swamp | N3E3 | E | |
| NnV | 1.3 | Plain | B5C5 | E | |
| | | Stony rise | B5B6 B4 | E | |
| | | Sandy rise | G3I2 | C | |
| | | Swamp | N3E3 M4 | C | |
| NOA | 0.5 | Plain | C5 | D | **NOA** Plains with mostly deep dark cracking clay soils on rubbly carbonate or marl. 10-30% low rises with shallow clay loam, often over well structured red–brown clay over calcreted calcarenite.<br>**NOU** Plain and low rises as above; 20-30% swamps with dark cracking clay soils; 20-30% lunettes with shallow and deep calcareous loam soils.<br><br>Main soils:<br>***Plains:*** Gradational dark clay loam – **C5**.<br>***Swamps:*** Wet clay loam - **N3**.<br>***Lunettes:*** Shallow calcareous loam on calcrete - **B2** and Calcareous clay loam on marl - **A7**. |
| NOU | 5.1 | Plain | C5 | E | |
| | | Swamp | N3 | C | |
| | | Lunette | B2A7 | C | |
| NpA | 0.1 | Plain | E1E3 | D | **NpA** Plains with deep, black or dark grey cracking clay soils often with marly subsoils.<br>**NpF** As above plains; 10-20% swamps with wet soils as above.<br>**NpG** Depression with soils as above, <10% swamps.<br>**NpH** Slopes and plains with cracking clay soils as above.<br><br>Main soils:<br>***Plains:*** Black cracking clay - **E1** and Brown or grey cracking clay – **E3**.<br>***Swamps:*** Wet clay loam - **N3**, Wet saline clay loam – **N2c,** Black cracking clay - **E1** and Brown or grey cracking clay – **E3**. |
| NpF | 1.5 | Plain | E1E3 | V | |
| | | Swamp | N3E1 E3 | L | |
| NpG | 1.6 | Depression | E1E3 | D | |
| | | Swamp | N3E1 E3 | M | |
| NpH | 0.7 | Slopes/plain | E1E3 | D | |
| NQF | 3.1 | Plain | C5 | V | Plains with deep dark clay loam grading to dark grey clay soils, often with rubbly carbonates or marl subsoils.<br><br>Main soils:<br>***Plains:*** Gradational dark clay loam – **C5**.<br>***Swamps:*** Wet clay loam - **N3**. |
| | | Swamp | N3 | E | |
| NrA | 0.5 | Plain | E3 | D | **NrA** Plains with grey cracking clay soils; 10-30% each of clay loam over dark brown clay and deep acid sand over brown clay soils. <10% swamps with black and grey cracking clay soils.<br>**NrF** Plains with cracking clay soils as above; 10-20% swamps.<br><br>Main soils:<br>***Plains:*** Black cracking clay - **E1**; Brown or grey cracking clay – **E3**.<br>***Swamps:*** Wet clay loam - **N3**, Black cracking clay - **E1** and Brown or grey cracking clay – **E3**. |
| | | Swamp | N3E1 E3 | M | |
| NrF | 1.7 | Plain | E1E3 | V | |
| | | Swamp | N3 | L | |

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| NSA | 1.4 | Plain | G3G5 | V | **NSA** Plains with deep acid sand over, often strongly acid brown clay soils; 10-30% deep clay loam grading to brown clay soils. 10-20% swamps with often wet, non-peaty clay loams, peat or water filled.<br>**NSB** Stony plains with deep acid sand over clay as above, co-dominant with shallow dark clay loam to clay, occasionally over poorly structured clay, on calcrete.<br>**NSE** Undulating plains as for **NSA**.<br>**NSF** Plains as for **NSA**; 20-30%swamps with non-peaty, dark grey clay loam to clay soils.<br>**NSG** Drainage depression with wet dark clay loams and black or grey cracking clay soils.<br>**NSP** Plain as for **NSA** with 20-30% sandy rises with deep moderately well to poorly drained, bleached siliceous sand over brown clay or coffee rock.<br>**NSS** Plain as for **NSA** above; 20-30% swamps with wet, dark, clay loamy to cracking clay soils; 20-30% sandy rises as for **NSP**.<br><br>Main soils:<br>***Plains:*** Thick sand over clay - **G3** and Sand over acidic clay - **G5**.<br>***Sandy rises:*** Thick sand over clay - **G3**; Wet highly leached sand - **I2**.<br>***Swamps and drainage depressions:*** Wet clay loam - **N3**, Black cracking clay - **E1** and Deep hard gradational sandy loam - **M4**. |
| | | Swamp | N3N1 WW | L | |
| NSB | 0.1 | Stony plain | G3B5 | D | |
| NSE | 1.4 | Undulating plain | G3G5 | D | |
| NSF | 3.0 | Plain | G3 | V | |
| | | Swamp | N3 | C | |
| NSG | 6.5 | Drainage depr | N3E1 M4 | D | |
| NSP | 4.8 | Plain | G3 | V | |
| | | Sandy rise | G3I2 | C | |
| NSS | 0.4 | Plain | G3 | V | |
| | | Swamp | N3 | C | |
| | | Sandy rise | G3I2 | C | |
| NTF | 1.1 | Plain | G3F2 | V | **NTF** Plains with sand to loam over brown to dark brown clay. 20-30% swamps with often wet, clay loam over dark brown clay soils.<br>**NTP** Plains as above soils, often with poorly structured clay subsoils; 20-30% sandy rises with deep sands, mostly over brown clay, but also coffee rock. <10% swamps with sand over poorly structured clay and cracking clay soils.<br><br>Main soils:<br>***Plains:*** Thick sand over clay - **G3**, Sandy loam over poorly structured brown or dark clay - **F2**, Brown or grey cracking clay – **E3** and Sand over yellow and brown clay - **G4**.<br>***Swamps:*** Wet clay loam - **N3**, Sand over yellow and brown clay - **G4**, Brown or grey cracking clay – **E3** and Sandy loam over poorly structured brown or dark clay - **F2**.<br>***Sandy rises:*** Thick sand over clay - **G3**; Wet highly leached sand - **I2**. |
| | | Swamp | F2N3 | C | |
| NTP | 2.4 | Plain | G3G4 | V | |
| | | Rise | G3I2 | C | |
| | | Swamp | G4N3 E3 | M | |
| NuA | 1.5 | Plain | F2N3 | D | **NuA** Plains with wet non-cracking clay soils; 10-30% sand over brown clay on low rises.<br>**NuF** Plains with clay loam over dark brown or grey clay soils, often poorly structured, 10-30% on calcareous rubble or marl substrate. 20-30% swamps with mostly wet, non-cracking clay soils.<br>**NuK** Plains as for **NuF**, 20-30% swamps, <10% sandy rises with deep sands, mostly over brown clay or coffee rock.<br>**NuL** Plains as for **NuF** above, <10% stony rises with shallow sandy loam over red clay on calcreted calcarenite, or deep sand over brown clay, soils.<br>**NuP** Plains as for **NuF** above. 20-30% sandy rises with deep well-drained, water repellent acid sands.<br>**NuV** Plains as for **NuF** above. 20-30% swamps with wet non cracking, dark clay soils. 10-20% rises with deep calcareous clay loam over rubbly clay or shallow on calcrete soils.<br><br>Main soils:<br>***Plains:*** Deep hard gradational sandy loam - **M4**, Deep friable gradational clay loam - **M2**, Sandy loam over poorly structured brown or dark clay - **F2** and Wet clay loam - **N3**.<br>***Swamps:*** Wet clay loam - **N3**. |
| NuF | 3.2 | Plain | M4 M2F2 | V | |
| | | Swamp | N3 | C | |
| NuK | 1.8 | Plain | M4 M2F2 | V | |
| | | Swamp | N3 | C | |
| | | Rise | G3I2 | M | |
| NuL | 0.4 | Plain | M4 M2F2 | V | |
| | | Swamp | N3 | C | |
| | | Rise | B6G3 | M | |
| NuP | 0.6 | Plain | M4 M2F2 | V | |
| | | Sandy rise | H3I1 | C | |
| NuV | 0.5 | Plain | M4 M2F2 | E | |
| | | Swamp | N3 | C | |
| | | Rise | A7B2 | L | |

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| | | | | | ***Sandy rises:*** Thick sand over clay - **G3**; Wet highly leached sand - **I2**.<br>***Stony rises:*** Calcareous clay loam on marl - **A7** and Shallow calcareous loam on calcrete - **B2** or Shallow sandy loam over red-brown clay on calcrete - **B6** and Thick sand over clay - **G3**. |
| NvA | 1.3 | Plain | G4 | D | **NvA** Plains with thin sand, or occasionally loam, over poorly structured brown clay.<br>**NvD** Plains as above, <10% sandy rises with deep acid bleached sand on acid clay or coffee rock.<br>**NvF** Plains as for **NvA**, 10-20% swamps with often wet, dark grey clay loam over clay soils.<br>**NvK** Plains as for **NvA**, 10-20%swamps with dark clay loam to clay over dark clay soils, <10% sandy rises with deep sand over brown clay or coffee rock, soils.<br>**NvO** Plains with loam over mostly, poorly structured, dark brown clay soils. 20-30% rises also with shallow loam over red clay or deep bleached sand.<br>**NvP** Plains with thick and thin sand over poorly structured brown clay soils. 20-30% sandy rises with deep sands, over brown clay and/or coffee rock. <10% swamps with dark clay loam to clay over dark brown or grey clay.<br>**NvQ** Stony plains with both deep sand over clay and sand over poorly structured brown clay on calcrete. 20-30% sandy rises with deep sand over brown clay and/or coffee rock. <10% dark clay loam or clay swamps.<br>**NvS** Plains as for **NvO**; 10-20% sandy rises with deep sand over brown clay and/or coffee rock; 10-20% dark clay loam or clay swamps.<br><br>Main soils:<br>***Plains:*** Sand over yellow and brown clay - **G4**, Thick sand over clay - **G3**, Sand over acidic clay - **G5**, and Sandy loam over poorly structured brown or dark clay - **F2**.<br>***Sandy rises:*** Thick sand over clay - **G3**, Sand over acidic clay - **G5** and Wet highly leached sand - **I2**.<br>***Swamps:*** Wet clay loam - **N3**, Deep hard gradational sandy loam - **M4** and Brown or grey cracking clay – **E3**. |
| NvD | 0.5 | Plain | G4 | D | |
| | | Sandy rise | G5I2 | M | |
| NvF | 5.4 | Plain | G3G5 | V | |
| | | Swamp | N3M2 M4 | L | |
| NvK | 5.1 | Plain | M4E3 | V | |
| | | Swamp | N3M4 E3 | L | |
| | | Rise | G3I2 | M | |
| NvO | | Plain | F2 | V | |
| | | Rise | F2F1 | C | |
| NvP | 3.2 | Plain | G3G4 | V | |
| | | Sandy rise | G3I2 | C | |
| | | Swamp | N3M4 E3 | M | |
| NvQ | 1.1 | Stony plain | G3 | V | |
| | | Sandy rise | G3I2 | C | |
| | | Swamp | N3M4 E3 | M | |
| NvS | 1.0 | Plain | F2 | V | |
| | | Sandy rise | G3I2 | L | |
| | | Swamp | N3M4 E3 | L | |
| NwF | 4.1 | Plain | C5E3 | V | Plains with deep dark grey clay loam or clay over dark grey clay on marl. 20-30% swamps with dark, often cracking clay soils, 10-30% water filled.<br><br>Main soils:<br>***Plains:*** Gradational dark clay loam – **C5** and Brown or grey cracking clay – **E3**.<br>***Swamps:*** Wet clay loam - **N3**, Brown or grey cracking clay – **E3** and Deep hard gradational sandy loam - **M4**. |
| | | Swamp | N3E3 M4 | C | |
| NYF | 1.7 | Plain | B5C5 | E | Plains with mostly shallow, dark cracking clay over calcreted marl; co-dominant with swamps, which have wet, dark non-cracking clays.<br><br>Main soils:<br>***Plains:*** Shallow dark clay loam on limestone - **B5** and Gradational dark clay loam – **C5**.<br>***Swamps:*** Wet clay loam - **N3** and Deep friable gradational clay loam - **M2**. |
| | | Swamp | N3M2 | E | |
| NzF | 0.9 | Plain | G4F2 | V | **NzF** Plains with thin or thick loam over poorly structured dark brown clay. 10-20% swamps with, often wet, dark clay loam to clay over dark clay.<br>**NzP** Plains as above, but with 20-30% sandy rises with deep sand, mostly over brown clay, soils. <10% swamps as above. |
| | | Swamp | N3M4 E3 | L | |
| NzP | 2.7 | Plain | G4F2 | V | |
| | | Sandy rise | G3 | C | |

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| | | Swamp | N3M4 E3 | M | **NzS** Plains with mostly thin, acid sand over poorly structured brown clay. 20-30% sandy rises with deep acid sands, over acid brown clay and/or coffee rock. 20-30% swamps with wet loam over poorly structured dark clay soils.<br><br>Main soils:<br>***Plains:*** Sand over yellow and brown clay - **G4** and Sandy loam over poorly structured brown or dark clay - **F2**.<br>***Sandy rises:*** Thick sand over clay - **G3,** Sand over acidic clay - **G5** and Wet highly leached sand - **I2**.<br>***Swamps:*** Wet clay loam - **N3**, Deep hard gradational sandy loam - **M4** and Brown or grey cracking clay – **E3**. |
| NzS | 0.1 | Plain | G4 | V | |
| | | Sandy rise | G5I2 | C | |
| | | Swamp | N3 | C | |
| OND | 0.1 | Low dune | H3I2 | D | Low dunes with deep acid well-drained bleached sand, often with coffee rock on lower slopes or swales, where wetter conditions prevail.<br><br>Main soils: Bleached siliceous sand - **H3** and Wet highly leached sand - **I2**. |
| PFj | 0.03 | Rise | I1H3 G3 | V | Rises and sand plains with deep, well-drained, moderately water repellent, bleached siliceous sands, often with clay or coffee rock subsoil, especially on less well-drained situations such as occur on the lower slopes of rises. 10-20% sand plains, 10-20% swamps with mostly wet, dark clay loam over dark clay soils.<br><br>Main soils:<br>***Rises:*** Highly leached sand - **I1**, Bleached siliceous sand - **H3** and Thick sand over clay - **G3**.<br>***Plains:*** Wet highly leached sand - **I2**, Wet clay loam - **N3** and Thick sand over clay - **G3**.<br>***Swamps:*** Wet clay loam - **N3**. |
| | | Plain | I2N3 G3 | L | |
| | | Swamp | N3 | L | |
| PLa | 0.6 | Plain | I2G3 | V | Sand plains with poorly drained deep sand over coffee rock and/or brown clay. 10-20% well to moderately drained deep sand often on coffee rock and/or brown clay. <10% swamps with peat or sandy loam over dark clay soils or water filled.<br><br>Main soils:<br>***Plains:*** Wet highly leached sand - **I2** and Thick sand over clay - **G3**.<br>***Dunes:*** Highly leached sand - **I1** and Wet highly leached sand - **I2**.<br>***Swamps:*** Peaty soil – **N1** and Wet clay loam - **N3**. |
| | | Dune | I1I2 | L | |
| | | Swamp | N1N3 WW | M | |
| PPB | 0.1 | Rise | I1I2 | D | Low sand rises with deep siliceous, water repellent, highly leached, siliceous sand, often less well-drained over coffee rock or brown clay, especially on lower slopes.<br><br>Main soils: Highly leached sand - **I1**; Wet highly leached sand - **I2**. |
| PQp | 0.2 | Plain | G3I2 | V | Sand plain with mostly acid, deep moderately well drained sand over acid brown clay. 10-20% poorly defined swamps and flats with dark brown clay and loam over mottled clay soils. Some ironstone gravel in sub-surface horizons.<br><br>Main soils:<br>***Plains:*** Thick sand over clay - **G3** and Wet highly leached sand - **I2**.<br>***Swamps:*** Wet clay loam - **N3** and Deep friable gradational clay loam - **M2**. |
| | | Swamp | N3M2 | L | |
| Xe- | 0.1 | Lunette | B7F2 | D | Lunette with clay loam over poorly structured dark brown clay soils, commonly over calcrete.<br><br>Main soils: Sand over friable brown clay on calcrete - **B7** and Sandy loam over poorly structured brown or dark clay - **F2**. |

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| Xl- | 0.05 | Lake | WW | D | Water filled. |
| XRC | 1.3 | Swamp | N3 | D | **XRC** Swamps with dark grey clay soils, often cracking.<br>**XRe** As above with 20-30% lunettes or hummocks with clayey calcareous soils on marl and sand over dark clay soils.<br>**XRf** Swamps, with dark, mostly wet, cracking clay soils. 10-20% stony rises with shallow dark grey clay loam, often on dark clay, over calcrete, sometimes calcareous throughout.<br><br>Main soils:<br>***Swamps:*** Wet clay loam - **N3** and Brown or grey cracking clay – **E3**.<br>***Lunettes:*** Calcareous clay loam on marl - **A7** and Thick sand over clay - **G3**.<br>***Stony rises:*** Shallow dark clay loam on limestone - **B5** and Shallow calcareous loam on calcrete - **B2**. |
| XRe | 1.2 | Swamp | N3E3 | V | |
| | | Lunette | A7G3 | C | |
| XRf | 1.1 | Swamp | N3 | V | |
| | | Stony rise | B5B2 | L | |
| XtC | 0.1 | Swamp | N1 | D | **XtC** Swamps with neutral to alkaline peat soils and some deep dark grey clay soils.<br><br>Main soils: Peaty soil – **N1**. |
| XuC | 2.2 | Swamp | N3 | D | **XuC** Swamps with mostly non-peaty wet soils, but peats occur in up to 30% of areas.<br>**Xud** Non-peaty swamps with 20-30% sandy rises with deep sand over brown clay soils.<br>**Xue** Swamps as for **XuC**, 30% water filled; 20-30% lunettes with shallow dark clay on calcrete, loam over dark grey clay on calcrete or shallow loam on calcrete, soils.<br>**Xuf** Swamps as for **XuC** above, with stony rises and/or very shallow over calcrete.<br><br>Main soils:<br>***Swamps:*** Wet clay loam - **N3** and Peaty soil – **N1**.<br>***Stony rises:*** Shallow calcareous loam on calcrete - **B2**, Gradational calcareous clay - **A6**, Shallow sandy loam on calcrete - **B3** and Shallow dark clay loam on limestone - **B5**.<br>***Sandy rises:*** Thick sand over clay - **G3**; Wet highly leached sand - **I2**. |
| Xud | 1.0 | Swamp | N3 | V | |
| | | Sandy rise | G3I2 | L | |
| Xue | 1.8 | Swamp | N3 | V | |
| | | Rise | A6B2 | L | |
| Xuf | 0.1 | Swamp | N3 | V | |
| | | Stony rise | B2B3 B5 | C | |
| XxC | 0.2 | Swamp | N1N3 WW | D | **XxC** Swamp with acid peat, or non-peaty loam over dark clay soils or water filled.<br><br>Main soils:<br>***Swamps:*** Peaty soil – **N1** and Wet clay loam - **N3**. |

# PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

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

**Detailed soil profile descriptions:**

**A6** Gradational calcareous clay loam (Pedal Hypercalcic-Lithocalcic Calcarosol on clayey subsoil)
Calcareous loams to clay loams grading into brown-red clay. Often rubbly.

**A7** Calcareous clay loam on marl (Marly Calcarosol)
Dark calcareous clay with a marly subsoil (often saline in Upper SE). Often with shells and a peaty surface.

**B2** Shallow calcareous sandy loam on calcrete (Petrocalcic Calcarosol)
Up to 40 cm calcareous loamy sand to sandy loam with variable calcrete rubble overlying calcreted calcarenite - rises.

**B3** Shallow sandy loam on calcrete (Petrocalcic Rudosol)
Medium thickness non calcareous sandy loam, often having a slight clay increase with depth, over calcreted calcarenite shallower than 50 cm - rises.

**B4** Red sandy loam over calcrete (Petrocalcic, Red Dermosol)
Medium thickness red sandy loam grading to friable red clay loam over calcreted calcarenite within 50 cm - rises.

**B5** Shallow dark clay loam on limestone (Petrocalcic, Black Dermosol)
Black clay loam to light clay over calcreted limestone at shallow depth, grading to highly calcareous clay - flats.

**B6** Shallow sandy loam over red-brown clay on calcrete (Petrocalcic, Red Kandosol)
Medium thickness sandy loam with slight ironstone gravel overlying a weakly structured reddish brown sandy clay on calcarenite within 50 cm - rises.

**B7** Shallow sand over sandy clay on calcrete (Petrocalcic, Brown Chromosol)
Medium thickness sand overlying brown friable sandy clay to clay on limestone or calcreted sandy clay within 50 cm - flats.

**C5** Gradational dark clay loam (Calcic-Hypercalcic Brown-Grey-Black Dermosol-Calcarosol)
Dark clay loam over abundant 'soft lime'. >10% carbonate is the cut off between this and M2 soils.

**E1** Black cracking clay (Black Vertosol)

**E3** Brown or grey cracking clay (Brown-Grey Vertosol)

**F1** Loam over brown or dark clay (Brown-Dark Chromosol-Sodosol)
Topsoil >30 cm over a poorly structured subsoil, or else, subsoil structure is good. Loamy to clay loamy texture contrast soil with brown clayey subsoil. Loamy, reasonable depth A, and OK structured clay subsoil.

**F2** Sandy loam over poorly structured brown or dark clay (Brown-Dark Sodosol-Chromosol)
Topsoil <30 cm over a poorly structured subsoil. Loamy, often sandy loam, to clay loamy texture contrast soil with a sodic/dispersive/poorly structured brown clayey subsoil. Often sandy loam, usually with a bleached horizon, and thin topsoil over a poorly structured B.

**G3** Thick sand over clay (Hypercalcic, Brown Sodosol/ Chromosol)
Thick bleached sand with an organically darkened surface abruptly overlying a massive to coarsely structured brown to reddish yellow sandy clay to clay, calcareous with depth - rises.

**G4** Sand over poorly structured clay (Sandy Brown-Red Sodosol-Chromosol)
Topsoil <30 cm over a poorly structured subsoil. Thin sandy texture contrast soil with a sodic /dispersive /poorly structured brown or red clayey subsoil. Can have some ironstone.

**G5** Sand over acidic clay (Sandy Brown Kurosol)
Sandy texture contrast soil with a friable brown strongly acidic clayey to clay loamy subsoil. Very acidic soil; incipient Bh horizons; moderate depth topsoils. Some with ironstone.

**H3** Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)
Grey sand over very thick bleached sand grading to yellow sand continuing below 100 cm.

**I1** Highly leached sand (Fragic, Pipey, Aeric Podosol)
Grey sand with a very thick bleached A2 layer, over dark brown and yellow massive soft to semi-hard clayey sand (coffee rock), grading to softer yellow and brown sand to sandy clay loam from about 80 cm.

**I2** Wet highly leached sand (Fragic, Humic, Aquic Podosol)
Grey sand with a thick bleached A2 horizon, overlying a thin to thick layer of coffee rock, grading to pale brown sand sharply overlying a grey, brown and yellow mottled sandy clay loam to light clay.

**M2** Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)
Deep well structured red clay loamy soil.

**M4** Deep hard gradational sandy loam (Hard Brown-Dark Kandosol- Dermosol)
Deep dark brown loamy to clay loamy soil grading to clay at depth. Hardsetting surface often with prismatic structures in the subsoil.

**N1** Peat (Organosol)
Peaty soil.

**N3** Seasonally waterlogged, non to marginally saline equivalents of soils listed above, viz.:
**N3c** Wet **G3**
**N3d** Wet **B5**
**N3e** Wet **B7**

**WW** Water

**Further information:** DEWNR Soil and Land Program