# RVL Rivoli Land System

**Area:** 87 km$^2$

**Landscape:** The Rivoli Land System is named after Rivoli Bay, near Beachport. It consists of a series of parallel, narrow, low unconsolidated coastal sand ridges and depressions or swales. The land system occurs in three disjunct areas; i.e. adjacent to Rivoli Bay, and to Guichen Bay near Robe.

**Annual rainfall:** 625 - 750 mm average

**Geology:** Semaphore Sand Member of the Holocene Saint Kilda Formation

**Main soils:**

| | | |
|---|---|---|
| **H1** (45%) | Carbonate sand | (Shelly-Supravescent Calcarosol-Rudosol) |
| **H2** (40%) | Calcareous siliceous sand | (sandy Calcarosol-Tenosol) |

**Minor soils:**

| | | |
|---|---|---|
| **N3** (9%) | Wet soil (non to moderately saline) Hydrosol) | (Sodosolic-Calcarosolic-Dermosolic |
| **N1** (3%) | Peaty soil | (Organosol) |

**Summary:** The main limitations for land use in this land system are due partly to its proximity to the coast and hence exposure to strong wind, usually salt laden. The coastal sands have high wind erosion risks where conventional broad acre land uses are practised. Fertility problems are inherent; particularly trace element deficiencies, such as cobalt and manganese. Drainage is poor, and waterlogging and flooding occurs in a significant number of soils, with associated land management difficulties. The land is currently used mostly for grazing.

**Soil Landscape Unit summary**: Rivoli Land System (RVL)

| SLU | % of area | Component | Main soils | Prop# | Notes |
|---|---|---|---|---|---|
| VpG | 0.9 | Swampy flat | N3A7 | V | Swampy, subcoastal plains.<br>**VpG** Swampy subcoastal plains with mostly wet, calcareous, dark clay over marl. 10-20% low dunes with deep shelly or calcareous siliceous sands.<br>**VpO** Swampy subcoastal plains as above. <10% low dunes.<br>Main soils:<br>***Swampy flats:*** Wet clay loam - **N3** and Calcareous clay loam on marl - **A7**.<br>***Dunes:*** Shell sand - **H1** and Deep brown sand - **H2**. |
| | | Low dune | H1H2 | L | |
| VpO | 1.3 | Swampy flat | N3A7 | D | |
| | | Low dune | H1H2 | M | |
| WEd | 4.7 | Dune | H1H2 | D | Coastal dunes and rocky coasts.<br>**WEd** Dunes, bare and active, with deep shelly calcareous sand or calcareous siliceous sand. <10% rocky coast with bare calcrete or shallow calcareous or siliceous sand. <10% beaches.<br>**WED** Dunes, mostly vegetated and stable, as above. <10% rocky coast and beaches as above.<br>**WEe** Active, bare, low coastal dunes and sand spreads, as above.<br>**WEE** Low dunes, mostly vegetated and stable, as above. |
| | | Rocky coast | RRB1B3 | M | |
| | | Beach | H1H2 | M | |
| WED | 1.7 | Dune | H1H2 | D | |
| | | Rocky coast | RRB1B3 | M | |
| | | Beach | H1H2 | M | |
| WEe | 1.3 | Dune | H1H2 | D | |
| WEE | 45.1 | Dune | H1H2 | D | |
| | | Swale | N3 | M | |
| WEH | 35.6 | Low dune | H1H2 | V | |
| | | Swampy swale | N3 | C | |

| | | | | | |
|---|---|---|---|---|---|
| WEj | 0.5 | Dune | H1H2 | V | <10% swales with wet deep sands or occasionally, peat.<br>**WEH** Stable vegetated low dunes as above on gentle slopes. 20-30% swampy swales with wet deep sands or occasionally, peat.<br>**WEj** Bare and active coastal dunes as above, with 20-30% flats with moderately saline wet organic sands, and deep calcareous siliceous sands.<br>**WEK** Low dunes, vegetation-fixed. 20-30% flats as for **WEj** above.<br>**WEW** Complex of vegetation-fixed, beaches and dunes, with soils as above.<br><br>Main soils:<br>***Samphire flats:*** Wet clay loam - **N3**, Wet saline clay loam - **N2c** and Deep brown sand - **H2**.<br>***Dunes:*** Shell sand - **H1** and Deep brown sand - **H2**.<br>***Rocky coasts:*** Rock or exposed calcrete – **RR**, Shallow highly calcareous sandy loam on calcrete – **B1** and Shallow sandy loam on calcrete - **B3**. |
| | | Flat | N2H2 | C | |
| WEK | 3.3 | Low dune | H1H2 | V | |
| | | Flat | N2H2 | C | |
| WEW | 2.0 | Dune | H1H2 | V | |
| | | Beach | H1H2 | C | |
| WKQ | 0.6 | Sandy flat | H1H2 | D | Sand flat with deep shelly calcareous sand or calcareous siliceous sand.<br><br>Main soils:<br>***Sandy flats:*** Shell sand - **H1** and Deep brown sand - **H2**. |
| WNT | 0.2 | Coastal Swamp | N2N3 | D | Coastal swamps with wet, mostly moderately saline, organic sands. <10% dunes as above.<br><br>Main soils:<br>***Swamps:*** Wet saline clay loam – **N2c** and Wet clay loam - **N3**.<br>***Dunes:*** Shell sand - **H1** and Deep brown sand - **H2**. |
| | | Dune | H1H2 | M | |
| WRR | 0.1 | Melaleuca flat | N2N3 | V | Subcoastal swampy flat as above. 10-20% dunes.<br><br>Main soils:<br>***Melaleuca flats:*** Wet saline clay loam – **N2c** and Wet clay loam - **N3**.<br>***Dunes:*** Shell sand - **H1** and Deep brown sand - **H2**. |
| | | Dune | H1H2 | L | |
| Xl- | 0.7 | Lake | WW | D | Water-filled lake. |
| Xtd | 2.0 | Swamp | N1 | V | Peat swamps; 20-30% sandy rises with deep, well to moderately drained, bleached siliceous sand.<br><br>Main soils:<br>***Swamps:*** Peaty soil – **N1** and Deep brown sand - **H2**.<br>***Rises:*** Wet highly leached sand - **I2**. |
| | | Rise | I2 | C | |
| Xud | 0.1 | Swamp | N3H2 | D | Swamps with wet deep sand soils. 10-30% peat. <10% sandy rises with deep calcareous siliceous sand.<br><br>Main soils:<br>***Swamps:*** Wet clay loam - **N3** and Deep brown sand - **H2**.<br>***Rises:*** Deep brown sand - **H2**. |
| | | Sandy rise | H2 | M | |

# 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:**

**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.

**B1** Shallow highly calcareous sandy loam on calcrete (Supravescent-Shelly Petrocalcic Calcarosol-Rudosol)
Shallow, carbonate dominant sandy to loamy soil on calcrete. Carbonate dominates the soil profile as a whole, however, the surface soil may not be carbonate dominant, but needs to contain at least 30% carbonate.

**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.

**H1** Shell sand (Shelly Rudosol)
Very thick shell sand with no profile development other than slight organic darkening at the surface.

**H2** Siliceous sand (Sandy Calcarosol-Tenosol)
Deep to moderate depth calcareous siliceous sand. Often with non-calcareous topsoil; can be non calcareous throughout. Sometimes the subsoil is a light sandy loam.

**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.

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

**N2c** Wet saline clay loam (Dermosolic, Salic Hydrosol)
Medium thickness dark grey to black clay loam to clay grading to a well structured dark grey clay with minor carbonates and a water table within 100 cm.

**N3** Seasonally waterlogged, non to marginally saline equivalents of soils listed above, viz.:

| | |
|---|---|
| **N3d** | Wet **B5** |
| **N3e** | Wet **B7** |

**RR** Bare rock.

**WW** Water.

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