SOILS REFERENCE

Mapping unit		Major attributes of dominant soil	Australian Soil Classification
SOILS OF THE MARINE AND BEACH RIDGE PLAINS			
Beach ridges			
Cv	Colvin	Acid, bleached, brown or yellow sand to >1.50 m.	Semiaquic Podosol, Bleached-Orthic Tenosol
Mp	Moore Park	Acid or neutral, brown or yellow sand to >1.50 m.	Brown-Orthic Tenosol
Tt	Tantitha	Acid or neutral, red sand to >1.50 m.	Red-Orthic Tenosol
Plains, swamps, extratidal flats, swales			
Fd	Fairydale	0.15 to 0.40 m clay loamy to clayey surface over strongly acid, mottled, grey clay, over sandy buried layers below 0.65 to 1.00 m.	Redoxic Hydrosol
Fm	Fairymead	0.15 to 0.40 m clay loamy to clayey surface over strongly acid, mottled, grey clay to >1.50 m.	Redoxic Hydrosol
Mm	Maroom	0.25 to 0.60 m sandy to clay loamy surface over strongly acid or neutral, mottled, grey clay to >1.50 m.	Redoxic Hydrosol
SOILS OF ALLUVIAL PLAINS			
Recent alluvium of Kolan River and major creeks			
Levees, backplains, scroll plains and streambanks			
Bb	Barubbra	Brown or yellow sand to >1.50 m.	Brown-Orthic Tenosol, Stratic Rudosol
Bn	Burnett	Layered alluvial soil with 0.15 to 0.35 m loamy to clay loamy surface.	Stratic Rudosol, Chemic Tenosol
Fs	Flagstone	Brown or black, acid or neutral clay loam to light clay. Sandy to clay loamy D horizon, if present, occurs below 0.90 m.	Brown Dermosol, Black Dermosol
Gh	Gahan	Brown or black, acid or neutral clay loam to light clay. Sandy or loamy D horizon present by 0.90 m.	Brown Dermosol, Black Dermosol
Sm	Sugarmill	Black or grey, clay loam to light clay over strongly acid or neutral, buried, mottled, grey clay to >1.50 m. Soil developed from recent alluvium over buried marine sediments.	Redoxic Hydrosol, Black Dermosol, Grey Dermosol
Older alluvium of Kolan River and major creeks			
Plains, terrace plains and drainage lines			
Ab	Auburn	0.15 to 0.40 m bleached, loamy to clay loamy surface over acid to strongly alkaline, mottled, brown or grey, strongly sodic clay to >1.50 m.	Brown Sodosol, Grey Sodosol
Cg	Crossing	0.45 to 0.65 m bleached, sandy to loamy surface over acid or neutral, mottled, brown or grey, strongly sodic clay to >1.50 m.	Brown Sodosol, Grey Sodosol
Wl	Walla	Grey cracking clay to >1.50 m.	Grey Vertosol
Alluvial plains of local streams			
Plains, backplains, terrace flats and levees			
Lt	Littabella	Acid, brown or red, massive, fine sandy loam to clay loam to >1.50 m.	Brown Kandosol, Red Kandosol, Brown-Orthic Tenosol
Pp	Peep	0.20 to 0.45 m bleached, loamy to clay loamy surface over acid to alkaline, mottled, grey or brown, strongly sodic clay to >1.50 m.	Grey Sodosol, Brown Sodosol
Wh	Weithew	Grey or brown clay to >1.50 m.	Grey Dermosol, Grey Vertosol
SOILS OF PLAINS, RISES AND LOW HILLS ON SEDIMENTARY ROCKS			
Deeply weathered coarse grained sedimentary rocks			
Plains, hillcrests and upper and mid hillslopes of rises			
Ca	Calavos	0.15 to 0.25 m sandy surface grading to acid, mottled, brown or yellow, clay loam to light clay to >1.50 m.	Brown Dermosol, Yellow Dermosol
Ff	Farnsfield	0.05 to 0.40 m sandy surface grading to acid or neutral, red, massive, clay loam to light clay to >1.50 m.	Red Kandosol
Gb	Gooburrum	0.15 to 0.50 m sandy to loamy surface grading to acid, red, clay loam to light medium clay to >1.50.	Red Dermosol
Is	Isis	0.30 to 0.60 m bleached, sandy to loamy surface over acid, mottled, brown or yellow, weakly sodic clay to >1.50 m.	Brown Kurosol, Yellow Kurosol
Md	Meadowvale	0.25 to 0.65 m frequently bleached, sandy surface grading to strongly acid, mottled, yellow or brown, weakly sodic clay to >1.50 m. Massive or weakly structured upper subsoil. Moderately or strongly structured lower subsoil.	Yellow Dermosol, Brown Dermosol
Qr	Quart	0.25 to 0.65 m bleached, sandy surface grading to acid, mottled, yellow or brown, massive or weakly structured, sandy clay loam to sandy clay to >1.50 m.	Yellow Kandosol, Brown Kandosol
Rt	Rothchild	Acid, bleached, brown or yellow sand to >1.50 m.	Bleached-Orthic Tenosol, Brown-Orthic Tenosol, Yellow-Orthic Tenosol
Yd	Yandaran	0.60 to 1.20 m bleached, sandy to loamy surface over acid, mottled, yellow or brown, weakly sodic clay to >1.50 m.	Yellow Kurosol, Brown Kurosol
Plains, drainage depressions and lower hillslopes of rises			
Al	Alloway	0.50 to 0.80 m bleached, sandy surface grading to acid, mottled, grey, non-sodic to weakly sodic clay to >1.50 m.	Redoxic Hydrosol
Kn	Kinkuna	Acid, bleached, brown, black or grey sand to >1.50 m. Moderately thick ortstein or organic pan present by 0.75 m.	Semiaquic Podosol
Rb	Robur	0.50 to 1.00 m bleached, sandy surface over strongly acid or neutral, mottled, grey or rarely gleyed, strongly sodic clay to >1.50 m.	Redoxic Hydrosol
Th	Theodolite	Acid, bleached, brown sand to 0.35 to 0.65 m over buried layers of bleached sand and moderately structured clay (usually sandy).	Aquic Podosol, Redoxic Hydrosol
Wm	Wallum	Acid, bleached brown or yellow sand to 0.35 to 0.80 m over buried layers of bleached sand and massive sandy clay loam to sandy light clay.	Aquic Podosol, Semiaquic Podosol
Wf	Winfield	Acid or neutral, bleached, mottled, grey sand to >1.50 m.	Redoxic Hydrosol, Bleached-Orthic Tenosol
Deeply weathered fine grained sedimentary rocks			
Plains and hillcrests, upper and mid hillslopes of rises			
Cr	Cedars	Strongly acid, mottled, brown clay to 0.70 to 1.10 m over decomposing or hard rock.	Brown Dermosol
Gi	Gillen	0.40 to 0.60 m bleached, clay loamy surface over acid or neutral, mottled, massive, yellow or brown, weakly sodic clay to >1.50 m.	Yellow Kandosol, Brown Kandosol
Hs	Howes	Strongly acid or neutral, red, strongly structured clay to >1.50 m.	Red Ferrosol
Kp	Kepnock	0.30 to 0.55 m bleached, clay loamy surface grading to acid, mottled, brown or yellow, weakly sodic clay to >1.50 m.	Brown Dermosol, Yellow Dermosol
Ok	Oakwood	0.45 to 0.70 m clay loamy to light clay surface over acid or neutral, red, massive to weakly structured clay to >1.50 m.	Red Kandosol
Wt	Watalgan	0.15 to 0.40 m clay loamy to light clay surface over acid, red, non-sodic to weakly sodic, gravelly clay to >1.50 m.	Red Dermosol
Wr	Woolmer	0.15 to 0.35 m bleached, loamy surface grading to acid, mottled, yellow or brown, weakly sodic clay to >1.50 m.	Yellow Dermosol, Brown Dermosol
Plains, drainage depressions of plains and lower hillslopes of rises			
Av	Avondale	0.15 to 0.35 m bleached, loamy to clay loamy surface over acid, mottled, grey, strongly sodic clay to >1.50 m. Few to many small maghemite pebbles in A and B21 horizons.	Grey Kurosol, Grey Sodosol
Tp	Turpin	0.25 to 0.50 m bleached, sandy surface with small maghemite pebbles over acid, mottled, grey or brown strongly sodic clay to 1.50 m.	Grey Kurosol, Brown Kurosol, Grey Sodosol, Brown Sodosol
Hillcrests and hillslopes of rises and low hills			
Bg	Bungadoo	0.20 to 0.55 m bleached, clay loamy surface over strongly acid, mottled, brown or yellow clay to 0.75 to 0.90 m over hard silicified sedimentary rock. Many to abundant rock fragments on surface and throughout soil profile.	Brown Dermosol, Yellow Dermosol
Tk	Takoko	Acid, bleached loam to clay loam over hard silicified sedimentary rocks by 0.50 m. Many to abundant rock fragments on surface and throughout soil profile.	Bleached-Leptic Tenosol, Leptic Rudosol
Moderately weathered sedimentary rocks			
Hillcrests and mid to upper hillslopes of rises and low hills			
Bw	Brooweena	0.15 to 0.30 m bleached, loamy to clay loamy surface over acid, neutral or alkaline, mottled, grey or brown, strongly sodic clay over weathering and hard sedimentary rock at 0.30 to 0.75 m. Abundant rock fragments throughout soil profile.	Brown Kurosol, Grey Kurosol, Brown Sodosol, Grey Sodosol
Bc	Bucca	Acid, brown or black clay over weathering and hard sedimentary rock at 0.45 to 1.50 m. Few to abundant rock fragments on the surface and throughout soil profile.	Brown Dermosol, Black Dermosol
Plains, drainage depressions and lower hillslopes of rises			
Gv	Givelda	0.15 to 0.30 m bleached, clay loamy surface over acid or neutral, mottled, brown, strongly sodic clay. Layers of mottled, gravelly, grey clay and weathering rock occur below 0.45 to 1.30 m.	Brown Sodosol
Ko	Kolan	0.15 to 0.30 m bleached, loamy to clay loamy surface over strongly acid, mottled, grey, strongly sodic clay to >1.50 m.	Grey Kurosol, Brown Kurosol
Tr	Tirroan	0.25 to 0.50 m bleached, sandy surface over acid, mottled, grey, strongly sodic clay. Layers of mottled, gravelly, grey clay and weathering rock occur below 0.45 to 1.20 m.	Grey Kurosol, Brown Kurosol, Grey Sodosol, Brown Sodosol
SOILS OF RISES AND LOW HILLS ON ACID AND INTERMEDIATE VOLCANIC ROCKS			
Bl	Booyal	0.08 to 0.15 m loamy to clay loamy surface grading to acid or neutral, red or brown, non-sodic clay over weathered or hard rock at 0.50 to 0.70 m.	Red Dermosol, Brown Dermosol, Red Chromosol, Brown Chromosol
Do	Doongul	0.12 to 0.40 m bleached, clay loamy surface over strongly acid or neutral, mottled, grey, strongly sodic clay to 0.40 to 1.00 m over weathering or hard acid volcanic rock.	Grey Sodosol, Grey Kurosol
Gn	Gigoon	0.20 to 0.60 m bleached sandy surface over acid to alkaline, mottled, brown or grey, strongly sodic clay to 0.50 to 1.20 m over weathering or hard rock.	Brown Sodosol, Grey Sodosol, Brown Kurosol, Grey Kurosol
My	Moolyung	0.20 to 0.40 m bleached sand over hard volcanic rock. Few to abundant pebbles to cobbles on surface and throughout soil profile.	Bleached-Leptic Tenosol, Leptic Tenosol, Leptic Rudosol
Ow	Owanyilla	0.05 to 0.30 m loamy to clay loamy surface over neutral to alkaline, mottled, brown or grey, clay, strongly sodic. Rock fragments occur below 0.30 to 0.90 m.	Brown Sodosol, Grey Sodosol
Ta	Tiaro	Acid or neutral, gravelly, black or brown clay over weathering or hard andesite below 0.55 to 0.85 m.	Black Dermosol, Brown Dermosol
SOILS OF RISES AND LOW HILLS ON BASALT ROCKS			
Be	Berren	Acid or neutral, brown clay over weathering or hard basalt below 0.30 to 0.65 m. Abundant basalt fragments on surface and throughout profile.	Brown Ferrosol
Kb	Kowbi	Neutral, brown, clay over weathering or hard basalt below 0.55 to 0.60 m. Few basalt fragments throughout profile.	Brown Dermosol

LAND SYSTEMS OF MIRIAM VALE AND KOLAN SHIRES (MVK) (mapped at a scale of 1:250 000)

MVK, (Donnallan,T.E., Wetherall, T.R., Griffiths, S.C., Department of Natural Resources, Mines & Energy, Queensland, 2004). 'Land Systems' are defined as recurring patterns of geology, topography, soil and vegetation (Christian & Stewart, 1953).

Bw	Brooweena	Gently undulating rises to undulating rises on sedimentary rocks. Major soils are moderately deep to deep, brown and red sodic duplex soils; deep, brown and grey sodic duplex soils; and shallow to moderately deep, uniform coarse textured soils.	Brown, Red, Grey Sodosols Brown, Red, Grey Kurosols Bleached-Leptic Tenosols
Rd2	Rosedale 2	Gently undulating to undulating rises on sedimentary rocks. Major soils are moderately deep to deep, often stony, brown, grey, yellow and red gradational soils and sodic duplex soils.	Brown, Grey, Yellow, Red Dermosols, Sodosols and Kurosols
Wt2	Watalgan 2	Undulating hills to rolling hills on acid intrusive rocks. Major soils are very shallow to moderately deep, uniform, coarse textured soils; shallow to deep, red, yellow and brown, gradational soils; non-sodic duplex soils; brown and grey, gradational soils and sodic duplex soils.	Bleached Orthic, Orthic, Bleached Leptic Tenosols; Red, Yellow, Brown Kandosols, Dermosols and Sodosols; Brown, Grey, Dermosols and Sodosols.

MISCELLANEOUS MAP UNITS

M	Marine	Wetlands, mangroves, marine tidal flats and estuaries.
	Water	Major rivers, creeks, associated gullies and off stream water storage structures.
	Water	Minor creek centrelines

SOIL SURVEY NOTES

Ko 95 — UMA: UMAs are labelled with the code of the dominant soil. However, UMAs in this map may contain up to three other subdominant soils.

Soil boundaries are based on site observations and interpretations from digital data sets including: 1:100 000 scale surface geology; 1:100 000 scale Vegetation Communities and Regional Ecosystems mapping; Capricorn Wide Bay 2017 20 cm satellite imagery; 1m resolution LiDAR digital elevation data; airborne Gamma Radiometric data; interpretation of 1:25 000 scale aerial colour photography and existing Bundaberg (BAB) and Childers (CBW) soil mapping data.

The digital database lists the proportions of soils within each map unit. The digital database refers to the Soil and Land Information data base (SALI) held by Queensland Government.

Refer to the Queensland Government - QSpatial catalogue "WIN" report for attribute values and additional information.
http://qldspatial.information.qld.gov.au/catalogue/custom/search.page

SOIL PROFILES – VARIANTS AND PHASES

Variants and phases are used to identify soil profiles which are similar to an existing mapping unit but differ in one or more soil or land attribute. These are indicated by an additional mapping code attached to the end of a mapping unit (eg KoRv – Kolan, Red variant).

Ep	Eroded Phase	Areas affected by severe erosion.
Gv	Grey Variant	Upper B horizon colour is grey which is different to the modal soil profile class.
Lv	Lower Subsoil Grey Variant	Grey clay layer in the lower subsoil which is not present in the modal soil profile class.
Rp	Rocky Phase	Areas with more surface rock than normally associated with the modal soil profile class.
Rv	Red Variant	Colour of the B horizon is red which is different from the modal soil profile class.
Shv	Shallow Variant	Depth to underlying rock is less than described in the modal soil profile class.
Sp	Saline Phase	Areas affected by salinity.
Sv	Sandy Variant	Texture of the soil profile is sandier than the modal soil profile class.

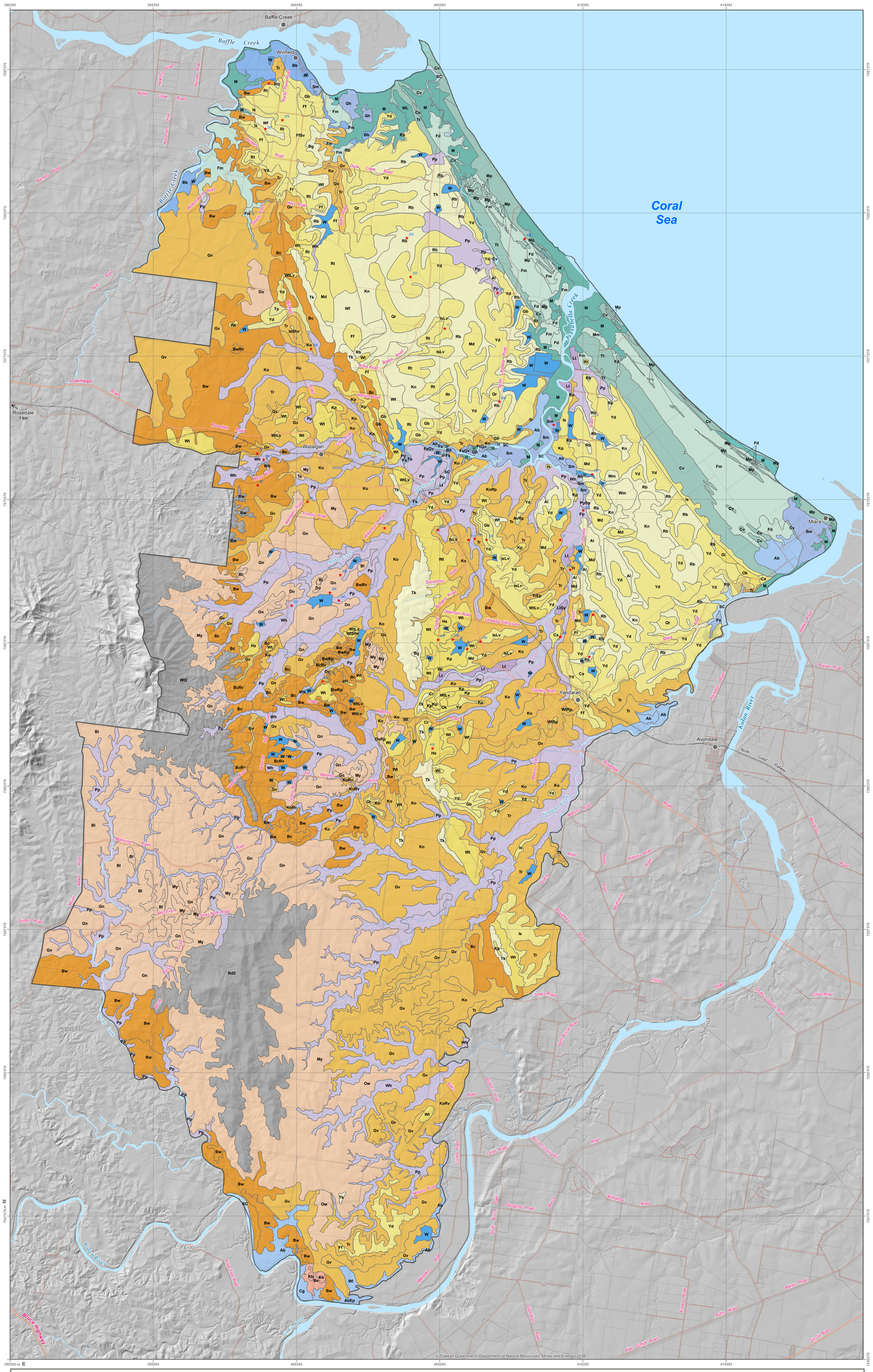
LEGEND

- Sites with full chemistry analysis (★ 123)
- Railway
- Road
- Cadastral Boundary
- WIN_UMA_20190926_outline
- Locality

N

0 5 10 20 30 40 50 km

Map scale 1:50 000 when printed at A0 size
Coordinate system: Map Grid of Australia (MGA) Zone 56
Geocentric Datum of Australia 1994 (GDA94)



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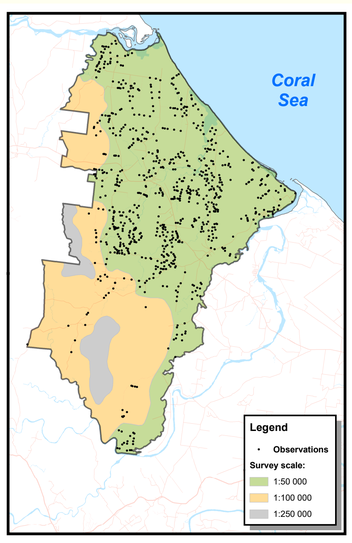
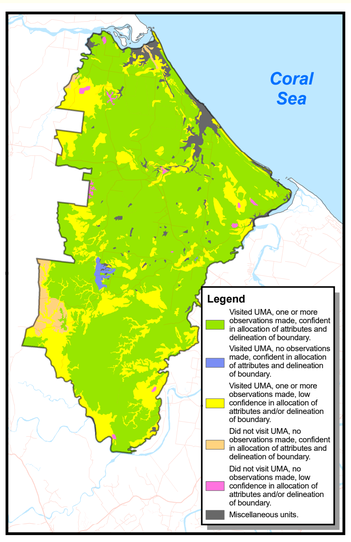
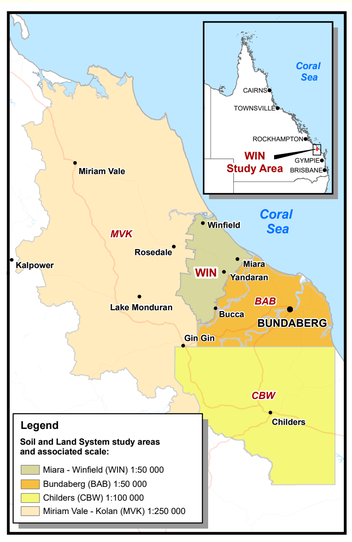
OBSERVATION INTENSITY & SURVEY SCALE



MAPPING CONFIDENCE



LOCALITY MAP



Soils of the Miara-Winfield Area

Wide Bay - Burnett

SPATIAL DATA SOURCES

Data supplied by the Department of Natural Resources, Mines and Energy: Property Boundaries (Digital Cadastre Database, March 2020); Adjoining Soil Survey boundaries, watercourses, baseline roads and tracks; Place Names (Queensland place names database gazetteer extract).

MAP PRODUCTION

H.Walter, Spatial Information, Bundaberg, Resource Assessment & Information, South Region, Department Natural Resources Mines & Energy. January 2020 Version 1
This map accompanies the publication:
Soils and Agricultural Suitability of the Miara-Winfield Area, (Brown, W, McClurg, J and Sugars, M 2020)