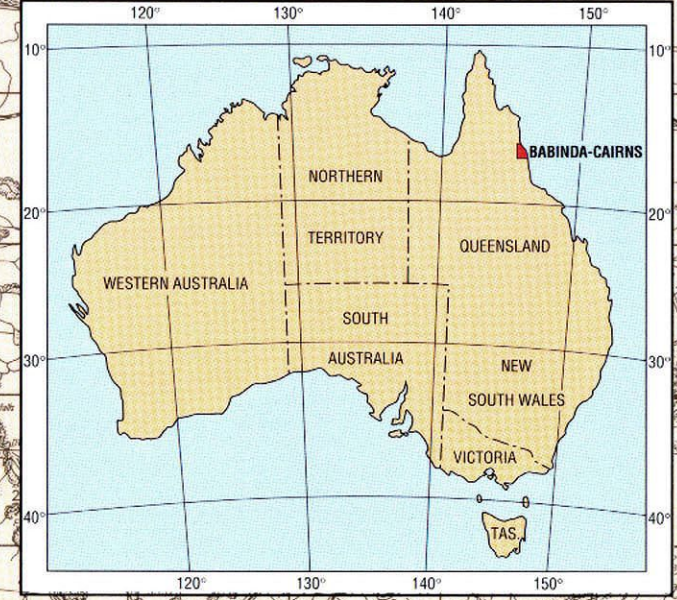


MAP LEGEND					
SOIL ASSOCIATION	NAC <sup>(1)</sup>	SSO <sup>(2)</sup>	PDF <sup>(3)</sup>	MAJOR CHARACTERISTICS OF DOMINANT SOIL	
SOILS FORMED ON BEACH RIDGES					
Hu	Null	Aeric, Podsol	Podsol	Ud2.21	Pale to black A1 horizon; weakly developed A2; brown or pale brown B horizon; coarse sand throughout.
Wo	WONGALING	Semiacric, Podsol	Podsol	Ud2.2	Grey A1 horizon; bleached A2; yellowish reddish brown and black B horizon; coarse sand throughout.
Gg	GODGARRA	Semiacric, Podsol	Podsol	Ud2.2	Dark A1 horizon; bleached A2 horizon; mottled yellow B horizon; coarse sand throughout.
Bs	BROGMAN	Red, Kandosol	Red Earth	Gr2.19	Brown sandy clay loam A1; weakly developed sandy loam A2; yellowish red or red sandy loam to sandy light clay massive B horizon.
Sp	SPANGS	Orthic, Tenosol	Earthy Sand	Ud2.21	Dark sand A1 horizon; weak to moderately developed A2 horizon; yellowish brown to yellow sandy loam massive B horizon.
Nd	NEDEEP	Aeric, Podsol	Peaty Podsol	Ud5.11	Black fibric A1; dark grey brown sand or sandy loam massive B horizon; water ponded for long periods.
MY	MISCELLANEOUS UNIT				Playa podsol on parabolic dunes
SOILS OF BASIC ROCK ORIGIN					
Pg	Red, Ferrumosol	Krasnozems		Gr2.11	Dark reddish brown clay loam A1; with strong cast structure; the dark red massive or weak cherty light clay B1; red medium clay strongly structured B2 horizon; very deep soils.
Eu	EUBENANGEE	Red, Ferrumosol	Krasnozems	Gr2.11	Dark red clay loam A1; may be some 2-3m diameter nodules gravel; thick dark red massive light clay B1; dark red medium clay moderately to strongly structured B2; gravel can occur at about 5m.
Gv	GARRADUNGA	Red, Ferrumosol	Krasnozems	Gr2.11	Dark reddish brown clay loam A1; reddish brown light to medium clay strongly structured B horizon; may have some light grey mottling from about 1m.
Bi	BINGIL	Red, Ferrumosol	Krasnozems	Ur3.31	Brown light clay A1 horizon; red strongly structured medium clay B2; moderately deep to deep soils; may have amphibolite gravel throughout.
Ki	KIMIRLEY	Red, Ferrumosol	Krasnozems	Ur3.31	Yellowish medium clay A1 horizon over red or dark red strongly structured medium clay B horizons; may be gravelly throughout.
SOILS OF METAMORPHIC ROCK ORIGIN					
Ga	GALMARA	Red, Dermosol	Podsol	Ud2.22	Reddish brown clay loam A1; weakly developed A2; red or yellowish red clay loam to light medium clay B horizon; weak to moderate structure; strongly weathered sapsotite from 50cm.
Bi	BICTON	Brown, Dermosol	Xanthozems	Gr2.71	Greyish brown sandy loam A1; mottled brownish yellow and red fine sandy clay loam to silty medium clay B horizon with moderate fine blocky structure; solum to 50-100cm deep.
Ms	MISSION	Red, Dermosol	Red Earth	Ur5.52	Reddish brown sandy clay loam A1; red sandy clay loam to silty light clay massive B horizon; often grades to pedal red medium clay with much transported metamorphic rock gravels.
Bs	BUCHAN	Brown, Dermosol	Yellow Earth	Ur5.52	Brown clay loam A1; brown or reddish yellow silty clay loam massive B horizon with moderate to high content of transported metamorphic rock gravels.
Cl	CLIFTON	Yellow, Kandosol	Yellow Podsol	Gr2.74	Grey brown sandy clay loam A1; bleached A2; mottled brownish yellow and light grey sandy light clay massive B horizon.
Ed	EDMONTON	Yellow, Dermosol	Yellow Podsol	Gr2.71	Dark greyish brown clay loam A1; mottled brownish yellow and reddish yellow strongly structured medium clay B horizon.
Mt	MOUNTAINOUS UNIT				Dominantly Galmara series with lesser Bicton and Bingil series
SOILS OF GRANITIC ORIGIN					
Ut	UTCHEE	Red, Kandosol	No suitable group	Gr2.14	Dark reddish brown to brown clay loam or light clay A1; red masses or weakly structured medium clay B horizon grades to strongly weathered sapsotite from 150-200cm.
Ty	TYSON	Red, Kandosol	Red Earth	Ur5.52	Dark reddish brown sandy clay loam A1 horizon; dark red massive sandy clay loam to sandy light or medium clay B horizon.
Th	THORPE	Brown, Kandosol	Yellow Earth	Gr2.21	Brown sandy loam A1; yellowish brown massive sandy clay loam B horizon; mottled pale brown and light grey at depth.
Km	KIRRAMA	Yellow, Kandosol	Yellow Earth	Gr2.11	Black loam to clay A1 horizon A horizon -30cm deep; yellowish massive sandy light clay B horizon.
Ma	MALBON	Brown, Kandosol	Yellow Earth	Gr2.11	Dark greyish brown sandy clay loam A1; mottled brownish yellow and light grey sandy light clay B horizon.
Lu	LUIGER	Orthic, Hydrosol	Grey Earth	Ud5.23	Dark grey sandy clay loam A1; light grey massive sandy loam to sandy clay loam B horizon.
Pr	PRIOR	Yellow, Kandosol	Yellow Podsol	Gr2.84	Dark grey sandy clay loam A1; pale A2 horizon massive mottled yellow grey sandy light clay B horizon; stratified D horizons.
Mt	MOUNTAINOUS UNIT				Dominantly Utchee series with Tyson series on small alluvial fans; included:
WELL DRAINED SOILS FORMED ON ALLUVIUM					
Ap	APPOON	Stratic, Rubicosol	Alluvial Soil	Ud1.21	Bleached coarse sands and gravels with large boulders common.
Lv	LIVERPOOL	Orthic, Tenosol	No provision	Ur5.52	Dark grey brown silty loam A1; yellowish brown silty loam to silty clay loam massive B horizon; grades to fine sandy sediments from about 60cm.
Cd	CANDE	Brown, Dermosol	Yellow Earth	Gr2.24	Dark brown fine sandy loam A1; brownish yellow fine sandy clay loam massive B horizon.
Tu	TULLY	Brown, Dermosol	No provision	Gr2.71	Dark greyish brown silty loam to silty clay loam A1 horizon; yellowish brown silty clay loam to light clay B horizon with fine blocky structure; may grade to sandy sediments from about 50cm.
In	INNISFAIL	Brown, Dermosol	No provision	Ur5.33p	Brown light to medium clay A1 horizon; brown silty clay B horizon with moderate fine blocky structure; solum shows decrease with depth.
Mo	MOSSMAN	Yellow, Dermosol	No provision	Gr2.79	Dark moist and dry clay loam to light medium clay A1 horizon; yellowish light to medium clay structured B horizon; may be mottled at depth and overlie stratified siltstone.
Vi	VIRGIL	Red, Kandosol	Red Earth	Gr2.11	Brown loam or sandy loam A1 horizon; yellowish red massive sandy clay loam B horizon.
Jr	JARRA	Brown, Dermosol	Yellow Podsol	Gr2.31	Dark greyish brown loam A1; mottled yellowish brown and yellowish red light medium clay structured B horizon.
Sl	SILKWOOD	Red, Kandosol	Red Earth	Gr2.11	Greyish brown sandy clay loam A1 horizon; yellowish red sandy light clay massive B horizon.
POORLY DRAINED SOILS FORMED ON ALLUVIUM					
Cc	COOM	Redoxic, Hydrosol	No provision	Ur5.49	Brownish grey light clay A1; mottled brownish yellow and light grey moderately structured medium clay B horizon.
Dd	DARADGEE	Redoxic, Hydrosol	No provision	Ur5.41	Yellowish brown light clay A1; mottled dark yellowish brown and medium brown light to medium clay structured B horizon.
Tm	TIMARA	Orthic, Hydrosol	Yellow Podsol	Ur5.33	Dark greyish brown light to medium clay A1 horizon; grey light to medium clay coarse blocky structured B horizon; may have 10% mottles.
Ra	RAMELH	Brown, Dermosol	Yellow Podsol	Ur5.34	Brown light grey A1; mottled brown and grey or red heavy clay strongly structured B horizon.
Bu	BULGUN	Brown, Kandosol	Yellow Podsol	Ur5.41	Dark grey brown clay loam to light clay A1; mottled grey and yellowish red light medium clay structured B horizon.
He	HEWITT	Orthic, Hydrosol	Humic Gley	Dy4.51	Black sapric loam A horizon; light grey medium to heavy clay massive B horizon.
In	INLET	Redoxic, Hydrosol	No provision	Ur5.41	Dark greyish brown light clay A1 horizon; mottled light grey and brownish yellow heavy clay weak to moderately structured B horizon.
Ho	HOLLOWAY	Orthic, Hydrosol	Yellow Podsol	Dy4.71	Dark greyish brown sandy clay loam A1; greyish brown sandy medium clay B horizon; may be mottled with light grey and brown.
SOILS OF THE SWAMPS AND TIDAL ZONE					
Ba	BABINDA	Fibric, Organosol	Acid Peat	O	Black sapric peat to 40-50 cm over fibric peat; may be weakly subsoilic layers at depth.
Sm	SUMALEA	Hemic, Organosol	Acid Peat	O	Black sapric peat to 20-40 cm over fibric peat which is usually weakly subsoilic; may be some recent deposition on the surface.
Nd	NIND	Fibric, Organosol	Acid Peat	O	Fibric peat 30-50 cm thick over mottled peaty sediments ranging from heavy clay to coarse sand.
Bu	BULGURU	Redoxic, Hydrosol	Humic Gley	O	Saline soils of the intertidal zone.
Mg	MANGROVES	Intertidal, Hydrosol	Solonchak	Ur5	
Ma	MADE LAND				
Sample sites					
● 1474					
(1) New Australian Classification (Isol 1993) (2) Great Soil Group (Stace et al. 1986) (3) Principal Profile Form (Hortico 1979)					
Multiple symbols occur on some map areas. The symbol placement is not arbitrary. It indicates the dominant or co-dominant soils occurring in particular parts of a unique map area.					

SOIL BOUNDARY ACCURACY	
Boundary accurate:	the soil change is abrupt and should be within meters of the delineated position.
Boundary approximate:	the soil change is diffuse and may occur over distances of 10-40 metres.
Boundary very approximate:	the soil change may be sharp, diffuse or very diffuse. Due to dense reinforced vegetation interpretation is difficult and the position of some boundaries is doubtful.



**SOILS OF BABINDA - CAIRNS AREA, NORTH QUEENSLAND**

Compiled by G.G. Murtha and M.G. Cannon, CSIRO, Division of soils, Townsville and C.D. Smith, Resources Management, Department of Primary Industries.

**CSIRO** Division of Soils

**DPI** DEPARTMENT OF PRIMARY INDUSTRIES

Metres 1000 500 0 2 3 4 Kilometres

**SCALE 1:50,000**

Transverse Mercator Projection

BASE MAP supplied by the Queensland Forest Service, Department of Primary Industries

Intensity Statement

This is a medium intensity soil survey. It is based on aerial photography interpretation and ground observations of the order of one observation to an area of 25-50 ha.

Computer Cartography by R.M. Schuster, CSIRO Division of Soils, Publication Section, Adelaide, 1996

To Accompany CSIRO Divisional Report No. 123