

Association 6

Soils Associated with Tertiary Sediments

Geology

Upper Miocene to Pliocene Tertiary sediments which involve small areas of some 10 sq km in the vicinity of Mangalore, in the north-west of the survey area. These areas form undulating sandy rises within the Quaternary alluvial plain which incorporates the outwash from the Siluro-Devonian sediments to the east.

Lithology

The units incorporate gravels, sand and minor clays with some laterised non-marine quartzose sand.

Profiles are generally neutral to acid, non-calcareous, moderately deep to deep, yellowish red to strong brown apedal, massive, very gravelly gradational earths.

Surfaces show a lag gravel pavement of varying extent with little to no humus build up. In some lower situations surface wash has led to a smooth, soft, usually wet-moist loam.

The A horizon (typically 10-15 cm thick), exhibits a dark yellowish brown to dark brown (sandy) clay loam, with a weak to moderate, rough-faced, crumb structure. These materials exhibit weakening consistence with depth and an increase in gravel content, often in the range of 10-50%.

The transition to the B horizon subsoil is usually diffuse and indistinct. The material shows a (moist) yellowish red apedal to weak subangular blocky, light clay. The subsoil, generally extending to a depth of 100 cm or more, has a very high gravel content with rounded water-washed stones often contributing to 80% of the soil mass. It is imperfectly drained with slow permeability. In some exposed cuttings, weak, faint, yellow mottling is evident. In some lower drainage situations the subsoil may lack the high gravel contents and take on a grey coloured, heavy clay texture.

By 80 cm the material becomes tight, hard and essentially impermeable and the clayey material may extend for some metres. Limited dam construction has proved successful in a number of areas.

Summary of Soil Features: Soils Associated with Tertiary Sediments

Classification		Texture		Structure		Permeability		Depth to Bedrock	Subsoil Slaking Tendency	Inclusions
PPF	USC	Surface	Subsoil	Surface	Subsoil	Surface	Subsoil			Gravel, Stone, Other
Gn 2.1 Gn 2.2	GC GL	Sandy and gravelly clay loam	Very gravelly light clay	Very weak crumb	Very weak subangular blocky to massive	Good to fair	Poor- very poor	>100 cm Gravel pans possible by 50+cm	Moderate to rapid	Very high gravel content throughout. Gravel extraction possible.