AMR American River Land System

Rocky coastal gullies, slopes, summit surfaces and cliffs. Inland, the system is bordered by plateau areas; elsewhere it is bordered by the sea, the American River tidal area, or the alluvial plains just south of the American River township. The system is named after the township of American River. The northern end of the township is situated on slopes in the south of this system.

Area: 20.0 km^2

Annual rainfall: 490 – 560 mm average

Geology: This system is underlain by early Cambrian age (Kanmantoo Group) Tapanappa Formation meta-sandstone. There are extensive outcrops and near surface expressions of this rock. Minor alluvial deposition areas occur in drainage depressions.

Topography: Mostly rolling to steep low hills. The system consists of slopes and gullies, which run down from a plateau area to the sea or an alluvial plain. Narrow sandy beaches usually exist where these slopes meet the sea. Slopes are typically 10% to 40%, with slopes of up to 100% in the steeper gullies, and over 100% on the northern cliff slopes; while some crest areas have slopes as low as 5%.

Elevation: From over 90 m on some northern upper slopes to sea-level

Relief: From over 30 m to 70 m

Main Soils:

K4a-**K2a**	Stony texture contrast soil
L1	Rocky soil
K4b-**J2**-**K2b**	Texture contrast soil

Main Features: Non-arable to semi-arable. Topsoils are mostly sandy loam. The main soils are stony sandy loams over clay; or rocky sandy loams over weathering rock or rock. Much of this system is covered with native vegetation, so nature conservation is a high priority here. Drooping sheoaks dominate over much of this system, with sugar gums being prominent in many well-watered areas. The sheoaks are particularly important, as they provide the prime food source for the rare glossy black red-tailed cockatoo.

The steepness of most of the slopes limits land use options. The rockiness and shallow nature of the soils limits plant available water; and the steepness of the slopes presents the risk of water erosion. The subsoil clays have relatively low permeability, which results in poor infiltration of rainfall and a greater risk of runoff and erosion. Saline seepage occurs, especially in upper reaches of gullies. Only a few soils have carbonate in the subsoil or lower subsoil.

Soil Landscape Unit summary: American River Land System (AMR)

SLU	% of area	Main features #
-S-	0.8	Non-arable mine spoil on a crest area (gypsum spoil above a shipping terminal). Main soils (all with a thin to thick covering of gypsum): gypsum overlying stony texture contrast soil **K4a**-**K2a** (*stony Brown Sodosol-Chromosol*). With 10-40% rocky soil – gypsum overlying shallow to very shallow loamy soil on rock or weathering rock **L1** (*rocky Tenosol*). **-S-** – crest with <10% saline seepage (slopes 5-12%, 3-4e, 2g, 2s) Summary: very limited land use potential.
WBB	2.4	Rocky coastal cliffs, 10-30m high. Mostly rock outcrop. **WBB** – cliffs with slopes mostly >100%. Summary: no land use potential.
ANB ANm	0.8 69.4	Non-arable gully and crest slopes. Main soils: rocky soil – shallow to very shallow loamy soil on rock or weathering rock **L1** (*rocky Tenosol*). With 10-40% stony texture contrast soil **K4a**-**K2a** (*stony Brown-Red Sodosol-Chromosol*). **ANB** – crest slopes with <10% saline seepage (slopes 10-15%, relief <30m, 4-3e, 1g, 2s) **ANm** – gully slopes with <10% saline seepage (slopes 10-40%, relief >30m, 5e, 4g, 2s) Summary: non-arable due to steepness of slopes, rockiness and associated shallow soils with low plant available water holding capacity.
CAM CAN	18.2 5.3	Arable to semi-arable slopes and crests. Main soils: stony texture contrast soil **K4a**-**K2a** (*stony Brown-Red Sodosol-Chromosol*). With 10-40% rocky soil – shallow to very shallow loamy soil on rock or weathering rock **L1** (*rocky Tenosol*). **CAM** – crest slopes with <10% saline seepage (slopes 5-12%, 3e, 1g, 2s) **CAN** – semi-arable slopes with gullies with <10% saline seepage (slopes 10-20%, 4e, 3g, 2s) Summary: careful land management is needed to avoid water erosion when soil is bare, especially on steeper slopes; stoniness and shallow soils also contribute to limit land use options.
CBh	1.8	Arable to semi-arable upper slopes. Main soils: stony texture contrast soil **K4a**-**K2a** (*stony Brown-Red Sodosol-Chromosol*). With 10-40% texture contrast soil – loamy topsoil, often with ironstone gravel, over sodic clay **K4b**-**K2b** and **J2** (*Brown Sodosol* and *Ferric Brown-Red Sodosol*). **CBh** – upper slopes with 10-50% saline seepage and eroded waterways. (slopes 8-12%, 3-4e, 4g, 3*s). Summary: careful land management is needed to avoid water erosion when soil is bare; saline seepage, waterlogging, and stoniness also need to be managed.
CCM	1.3	Arable lower alluvial/colluvial slopes. Main soils: stony texture contrast soil **K4a**-**K2a** (*stony Brown-Red Sodosol*). With 10-40% texture contrast soil – loamy topsoil over sodic clay **K4b**-**K2b** (*Brown Sodosol*) **CCM** – lower slopes with <10% saline seepage (slopes 5-8%, 3e, 2g, 2s) Summary: the main issues here are waterlogging, the risk of water erosion, and stoniness.

Classes in the 'Soil Landscape Unit summary' table (eg. 2-1e, 3w, 2y, etc) describe the predominant soil and land conditions, and their range, found in Soil Landscape Units. The number '1' reflects minimal limitation, while increasing numbers reflect increasing limitation. Letters correspond to the type of attribute:

a - wind erosion	e - water erosion	f - flooding	g - gullying
r - surface rockiness	s - salinity	w - waterlogging	y - exposure

Detailed soil profile descriptions:

Main Soils:

K4a-K2a Stony texture contrast soil (*stony Brown-Red Sodosol-Chromosol*). Shallow to moderate depth soil over weathering rock. Medium thickness, with some thick, light sandy loam to loam, often with a bleached sub-surface layer of light sandy loam to loam, with meta-sandstone and/or quartz fragments, and sometimes ironstone nodules/fragments or ferruginized meta-sandstone fragments; over olive-brown, yellow-brown, red-brown, or olive clay with mottles, which is often sodic, and includes weathering rock fragments; overlying weathering rock or rock. Occasionally there may be some fine carbonate in the lower subsoil, or at the top of the substrate layer. Found on slopes and crests.

L1 Rocky soil (*rocky Tenosol*). Shallow to very shallow soil, with light sandy loam to loam, often with a bleached sub-surface layer of sandy loam, and with meta-sandstone and often quartz fragments; overlying weathering rock or rock. Found on slopes and crests.

K4b-J2-K2b Texture contrast soil (*Brown Sodosol* and *Ferric Brown-Red Sodosol*). Moderate to deep soil over weathering rock. Medium thickness, with some thick, light sandy loam to loam, usually with a bleached sub-surface layer of sandy loam, and usually with some quartz fragments, ironstone gravel or ironstone nodules; over olive-brown, yellow-brown, red-brown, or olive sodic clay with mottles; overlying weathering rock. Sometimes there may be some fine carbonate in the lower subsoil. Found on upper slopes and crests.

Further information: DEWNR Soil and Land Program