



Landscape—level to gently undulating alluvial floodplain draining both the Wianamatta Group shales and Hawkesbury Sandstone. Local relief <5 m, slopes <5%. Partially cleared tall open-forest with disturbed grass understorey.

Soils—deep (>200 cm) Alluvial Loams (Um6.23, Um1.43) and various buried alluvial and marine soils.

Limitations—flooding, high soil erosion hazard, seasonal waterlogging.

LOCATION

This is the floodplain of Lane Cove River and its tributaries, which includes parts of North Ryde, West Killara, West Chatswood and Lane Cove West.

LANDSCAPE

Geology

Soil parent material is Holocene alluvium consisting of fine and coarse-grained quartz sands, silts and clays.

Topography

Level to gently undulating alluvial floodplain. Slope gradients do not generally exceed 3%. Elevation <5 m.

Vegetation

Dominant tree species are Sydney blue gum *Eucalyptus saligna* and blackbutt *E. pilularis*. These form a tall wet sclerophyll forest or woodland. The grass understorey may have developed in response to previous disturbance.

Existing Erosion

This is a depositional landscape. Stream bank erosion may occur on outer banks of meander bends during periods of high flow.

Land use

The major land use is recreation in the Lane Cove State Recreation Area and reserved land. The unit has undergone a high level of disturbance by landfill and shaping in the past.

Associated Soil Landscapes

Much of the floodplain has been filled (Disturbed Terrain soil landscape (**xx**)) to create recreation and picnic areas. The lower reaches of the Lane Cove River are tidal and are closely associated with the Mangrove Creek (**mc**) soil landscape.

SOILS

Dominant Soil Materials

1c1—Loose brown loamy sand. This is commonly brown loamy sand to fine sandy loam with loose, apedal single-grained structure and porous sandy fabric. It generally occurs as topsoil (A horizon).

The colour is usually dark brown (10YR 3/3) and dark red or orange mottles commonly occur at depth. The pH ranges from moderately acid (pH 5.5) to neutral (pH 7.0). Roots are common, but charcoal fragments are rare and stones are absent.

1c2—Earthy, dark brown silty clay loam. This material consists of fine sandy loam to silty clay loam with apedal massive structure and porous earthy fabric. It usually occurs as subsoil (B horizon).

Bands of alternating lighter and heavier textures occur throughout this material. Colour ranges from dark brown (10YR 3/4) to very dark brown (7.5YR 2/3). The pH is commonly neutral (pH 7.0). Roots are common whilst stones and charcoal fragments are occasionally present.

Associated Soil Materials

Recent deposits. Clean, yellow-brown loose coarse quartz sand. This material occurs occasionally as a surface material on levee banks.

Midden materials. Deposits of charcoal and shell remains. This material occasionally occurs buried in the alluvium on the floodplain.

Occurrence and Relationships

Much of this landscape has been used for landfill and soil materials from Disturbed Terrain (**xx**) soil landscape are often present.

There is little pedological organisation within the unit and the soil materials can occur anywhere within the profile. Occurrences are dependent on the depositional history and flow characteristics of the Lane Cove River.

Up to 30 cm of loose brown sandy loam (**1c1**) forms the surface layer though it can be present in various layers within the subsoil. The earthy, dark brown silty clay loam (**1c2**) occurs as deep subsoil. These two soil materials may occur alternately in thin 10–40 cm bands. Boundaries are often diffuse or gradual. Total soil depth often exceeds 200 cm (Alluvial Loams (Um6.23, Um1.43)).

Occasionally on the levee banks deposits of clean quartz sand overlie **1c1** and **1c2**.

Isolated areas of charcoal and shell remains (midden materials) may occur buried within **lc1** and **lc2**.

LIMITATIONS TO DEVELOPMENT

Urban Capability

Generally not capable of urban development.

Rural Capability

Not relevant.

Landscape Limitations

Flood hazard

Erosion hazard

Seasonal waterlogging

Soil Limitations

lc1 Low fertility
 Salinity (localised)
 Very strongly acid

lc2 Salinity (localised)
 Very strongly acid

Fertility

The general fertility is low to moderate. **lc1** has low fertility. Although it has a moderate available water capacity, and moderate organic matter content, it has a low CEC and low nutrient status. **lc2** has low to moderate fertility with low to moderate nutrient status, low CEC, and moderate nitrogen and low phosphorus levels. It is also slightly saline. Soils also have a high potential for aluminium toxicity.

Erodibility

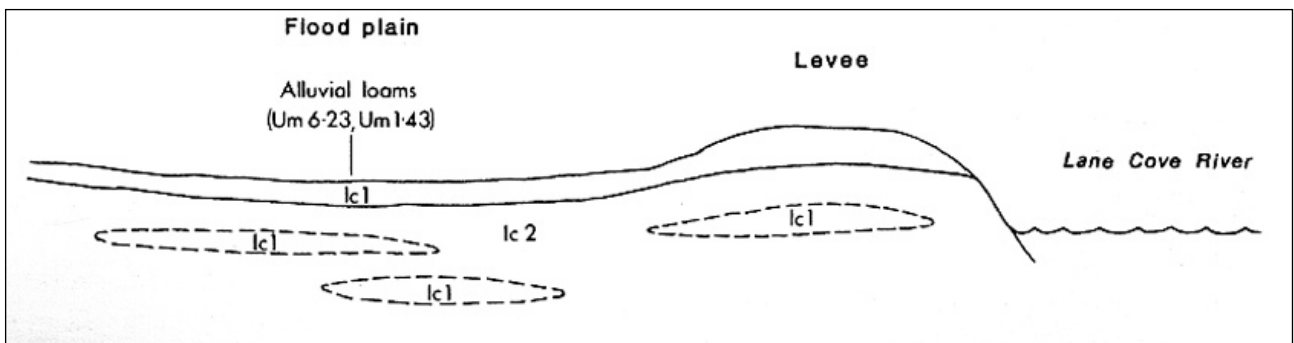
The erodibility of **lc1** and **lc2** is moderate. These materials are generally high in organic matter and consist dominantly of highly permeable coarse sands with some fine sand, silt and clay.

Erosion Hazard

The erosion hazard for non-concentrated flows ranges from low to moderate. Calculated soil loss for the first twelve months of development ranges up to 18 t/ha for topsoil and 21 t/ha of exposed subsoil. The soil erosion hazard for concentrated flows is very high.

Surface Movement Potential

Stable to slightly reactive.



Schematic cross-section of Lane Cove soil landscape illustrating the occurrence and relationship of the dominant soil materials.