

ki

KILLALEA

Swamp



Landscape—level to gently inclined wide alluvial plain with scattered swamps on Quaternary sediments. Relief <10 m. Slopes <3%. Extensively cleared with scattered trees.

Soils—moderate to deep (50–150 cm) Prairie Soils (Gn3.21) occur on drainage plains. Alluvial Soils (Uc1.21) occur on the alluvial plains. Humic Gleys (Uf6.61) occur in swamps and low lying areas.

Limitations—flood hazard, waterlogging, permanently high watertable, high organic content, low permeability, shrink-swell potential (topsoil and subsoil), strongly acid, sodicity.

Topography

Level to gently inclined wide alluvial plain. Relief <10 m. Slopes <3%. Occasional alluvial fans, very gently inclined drainage plains and scattered swamps. The low lying swamps are prone to periodic inundation.

Vegetation

Extensively cleared with scattered trees. The common species include decorative paperbark (*Melaleuca decora*), prickly-leaved paperbark (*Melaleuca styphelioides*), woollybutt (*Eucalyptus longifolia*), illawarra flame tree (*Brachychiton acerifolium*), weeping willow (*Salix babylonica*), tussock grass (*Poa* sp.) and kangaroo grass (*Themeda australis*).

Land Use

Grazing of dairy cattle and agistment on improved pasture when not inundated.

Existing Erosion

Sheet erosion if ungrassed because of flash flooding. High watertables.

Included Soil Landscape

Small areas of Disturbed Terrain (xx) occur.

LOCATION

Level to gently inclined wide alluvial plain and swamps on alluvium on the Coastal Plain. Examples include Shellharbour Swamp and Terragong Swamp and the floodplain between Killalea Lagoon and Rocklow Creek.

LANDSCAPE

Geology

Quaternary sediments—unconsolidated sediments, including alluvium, gravel, beach and dune sand.

SOILS

Dominant Soil Materials

ki1—Friable brown strongly pedal silty clay loam (topsoil)

Colour	brown (7.5YR 3/8)
Texture	silty clay loam
Structure	strongly pedal, 10–20 mm sub-angular blocky peds
Fabric	rough-faced and smooth-faced
pH	5.5
Stones	nil
Roots	common, ex-ped

ki2—Organic black massive sandy loam (topsoil)

Colour	black (10YR 2/1)
Texture	sandy loam
Structure	apedal massive
pH	4.0–5.0
Fabric	sandy
Stones	nil
Roots	abundant

ki3—Very dark strongly pedal brown medium clay (subsoil)

Colour	very dark brown (7.5YR 2/3)
Texture	medium clay
Structure	strongly pedal, 10–20 mm sub-angular blocky peds
Fabric	smooth-faced
pH	5.0
Stones	nil
Roots	few, ex-ped

ki4—Loose bleached light grey sand with iron staining (subsoil)

Colour	light grey (10YR 7/1)
Texture	sand
Structure	apedal single-grained
Fabric	sandy
pH	4.5
Stones	nil

Roots common

ki5—Mottled black massive clay (subsoil)

Colour	black (7.5YR 2/1) to dark brown (7.5YR 3/3) with dark brown orange mottles (50%)
Texture	silty clay to heavy clay
Structure	apedal massive
Fabric	sandy
pH	4.5
Stones	nil
Roots	nil

Occurrence and Relationships

Soils are very complex on alluvial plains. Common sequences of soil materials in this soil landscape may include the following.

Drainage plains. Up to 15 cm of friable brown strongly pedal silty clay loam (**ki1**) overlies >50 cm very dark brown strongly pedal medium clay (**ki3**). Boundary is gradual [Prairie Soils (Gn3.21)]. Total depth is >100 cm.

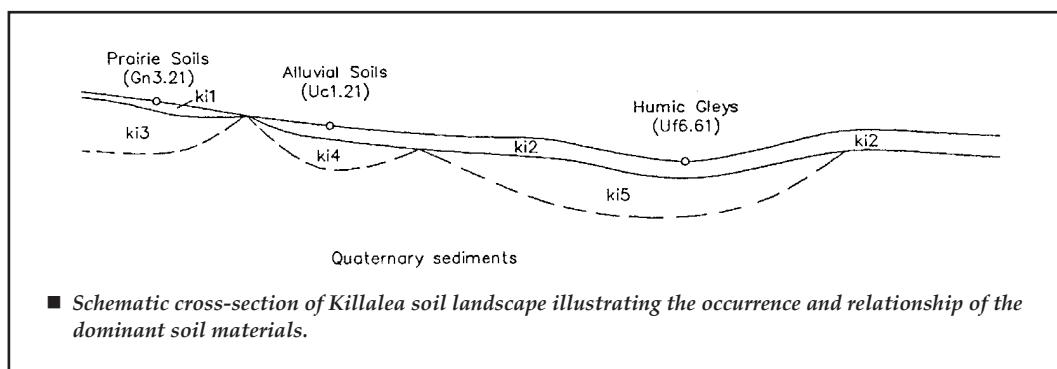
Alluvial plain. Up to 30 cm of organic black massive sandy loam (**ki2**) overlies <20 cm loose bleached light grey sand with iron staining (**ki4**). Boundary is clear [Alluvial Soils (Uc1.21)]. Total depth is >100 cm.

Low lying areas and swamps. Up to 70 cm **ki2** overlies >110 cm mottled black massive clay (**ki5**). Boundary is gradual to diffuse [Humic Gleys (Uf6.61)]. Total depth is >200 cm.

LIMITATIONS TO DEVELOPMENT

Soil Limitations

ki1 Low wet bearing strength
Very high organic content
Shrink-swell



- ki2** Low available water-holding capacity
Very high organic material
Low permeability
Low wet bearing strength
Shrink-swell
Strong sodicity
Strongly acid
- ki3** Low permeability
Low wet bearing strength
Low available water-holding capacity
Strong sodicity
Strongly acid
- ki4** Low available water-holding capacity
High permeability
Strongly acid
Strong sodicity
- ki5** Low permeability
Low wet bearing strength
Shrink-swell
Strongly acid
Strong sodicity

Fertility

General fertility is moderate to high. The soils of the drainage and alluvial plains are strongly acid with a moderate CEC. The soils on the drainage plain are well structured and well drained, but soils on the alluvial plain are seasonally waterlogged.

Erodibility

ki1 and **ki2** have very low erodibility ratings because of high organic content. The subsoils have moderate erodibility ratings.

Erosion Hazard

Erosion hazard for non-concentrated flows is slight. The calculated soil loss for the first 12 months of urban development ranges up to 5 t/ha for topsoils and 10 t/ha for exposed subsoils. The erosion hazard for concentrated flows is low.

Surface Movement Potential

Highly reactive organic soil materials (**ki1**, **ki2**) are not generally suitable for use as a foundation materials. **ki5** is slightly to moderately reactive.

Landscape Limitations

Flood hazard
Waterlogging
Permanently high watertable

Urban Capability

Generally high to severe limitations for urban development.

Rural Capability

Generally high to severe limitations for regular cultivation and grazing. Low to moderate limitations for regular cultivation and grazing on freely drained areas.