fa FAIRY MEADOW Swamp

Landscape—alluvial plains, floodplains, valley flats and terraces below the Illawarra Escarpment. Relief <10 m. Slopes <5%. Almost completely cleared low open-forest and woodland.

Soils—moderately deep (50–100 cm) Alluvial Loams (Um5.2) and Siliceous Sands (Uc1.21, Uc5.11) on terraces. Prairie Soils (Gn4.31) and Yellow Podzolic Soils (Dy5.41) occur on the drainage plains.

Limitations—flood hazard, low wet bearing strength, highly permeable topsoils, high watertables.

LOCATION

Gently undulating broad alluvial plains. Discontinuous distribution of alluvium on the Coastal Plain extending from the footslopes of the escarpment to Lake Illawarra. Examples include lowlands and floodplains associated with Solomons Creek, Duck Creek and Macquarie Rivulet.

LANDSCAPE

Geology

Quaternary sediments—quartz sand, lithic fluvial sand, silt and clay.

Topography

Gently undulating broad alluvial plains. Relief <10 m. Slopes <5%. Floodplains and valley flats with minor terraces and scattered swamps.

Vegetation

Almost completely cleared except for some isolated stands of low open-forest and woodland. Common species of poorly drained areas include woollybutt (*Eucalyptus longifolia*), cabbage gum (*Eucalyptus amplifolia*), forest red gum (*Eucalyptus tereticornis*), swamp oak (*Casuarina glauca*), river oak (*Casuarina cunninghamiana*), rough-barked apple (*Angophora floribunda*), forest oak (*Allocasuarina torulosa*), two-veined hickory (*Acacia binervata*), decorative paperbark (*Melaleuca decora*), prickly-leaved paperbark (*Melaleuca styphelioides*) and northern boobialla (*Myoporum acuminatum*). Blackbutt (*Eucalyptus pilularis*) and thin-leaved stringybark (*Eucalyptus eugenioides*) grow in more freely drained areas.

Land Use

Much of this landscape has been developed for commercial, industrial and residential use. Playing fields are often designed as drainage reserves. The floodplain is used for recreation reserves and horse training tracks. Albion Park Aerodrome is located in this landscape.

Existing Erosion

Minor sheet erosion, gully erosion, minor rill erosion on batters and stream bank erosion occur throughout this soil landscape.

Included Soil Landscape

Many small areas of Disturbed Terrain **(xx)** and developed terrain have been included.

SOILS

Dominant Soil Materials

fa1—Massive brownish black sandy loam (topsoil)

Colour	brownish black (10YR 2/2)
Texture	sandy loam to silty loam
Structure	apedal massive (wet)
Fabric	sandy
pH	7.0–7.5
Stones	10% of 2–20 mm sub-angular to angular, dispersed
Roots	common

fa2—Massive brown sand (topsoil and subsoil)

Colour	brown (7.5YR 4/4) to dull brown (7.5YR 6/3)
Texture	sand to sandy loam
Structure	apedal massive (wet)
Fabric	sandy
pH	6.0–7.0
Stones	nil
Roots	rare

fa3—Yellowish brown light clay (subsoil)

Colour	brown (7.5YR 4/3) to dull yellowish brown (10YR 4/3)
Texture	light clay to sandy clay loam
Structure	moderately pedal, 5–20 mm polyhedral peds
Fabric	rough-faced, porous
pH	6.0
Stones	small to medium rounded gravels <50%
Roots	rare

fa4—Olive brown heavy clay (subsoil)

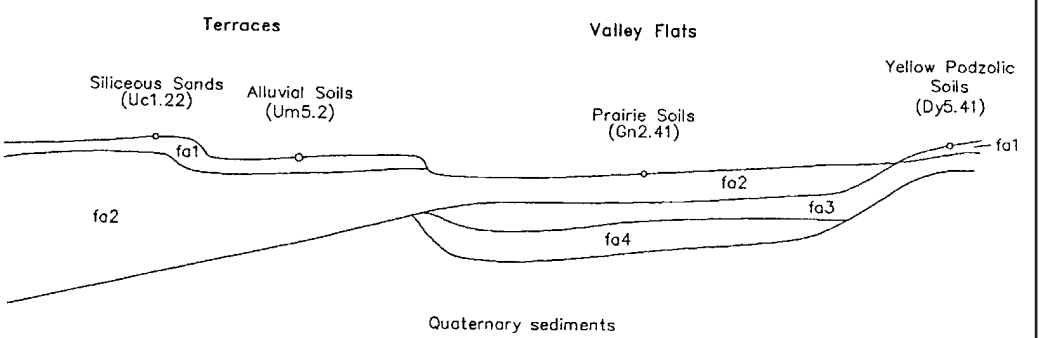
Colour	olive brown (2.5YR 4/3) to dull yellowish brown (10YR 4/3) with occasional orange red mottles (20%)
Texture	heavy clay to medium clay
Structure	weakly to moderately pedal, 2–20 mm crumb to polyhedral peds
Fabric	rough-faced, porous
pH	5.0–6.0
Stones	localised <50% fine to medium rounded gravels >20 mm
Roots	rare

Occurrence and Relationships

Terraces. Up to 20 cm of massive brownish black sandy loam **(fa1)** overlies >40 cm of massive brown sand **(fa2).** Boundary is clear [Siliceous Sands (Uc1.21, Uc5.11)] or gradual [Alluvial Loams (Um5.2)]. Total soil depth is <100 cm.

Drainage plains. Soils are highly variable. Soil materials in this landscape may include <40 cm **fa2** which overlies <50 cm of yellowish brown light clay **(fa3)** which overlies >80 cm of olive brown heavy clay **(fa4).** Boundaries are gradual [Prairie Soils (Gn4.31)]. Total soil depth is <150 cm.

Occasionally <20 cm of **fa1** overlies >80 cm of **fa3.** Boundary between soil materials is clear [Yellow Podzolic Soils (Dy5.41)]. Total soil depth is >120 cm.



■ *Schematic cross-section of Fairy Meadow soil landscape illustrating the occurrence and relationship of the dominant soil materials.*

LIMITATIONS TO DEVELOPMENT

Soil Limitations

fa1 High permeability
Low available water-holding capacity

fa2 Low available water-holding capacity
Low fertility

fa3 Low permeability
Stoniness
Low fertility

fa4 Low permeability
Saline
Low fertility
Stoniness

Fertility

Fertility of all soil materials is low, except for **fa1** which is moderate. Nutrient storage potentials and nutrient status are low. General fertility is moderate. High watertables limit soil volumes available for root penetration.

Erodibility

The erodibility of the soil materials is low. **fa1** and **fa2** are readily entrained by concentrated flows.

Erosion Hazard

The erosion hazard for non-concentrated flows is slight. Calculated approximate soil loss during the first 12 months of urban development ranges up to 5 t/ha for topsoil and 5 t/ha for exposed subsoil. Soil erosion hazard for concentrated flows is low to very high (localised).

Surface Movement Potential

These soils are generally stable.

Landscape Limitations

Flood hazard (localised)
Seasonal waterlogging
Permanently high watertables
Run-on

Urban Capability

Generally high to severe limitations for urban development in areas subject to waterlogging or flooding. Otherwise, moderate limitations for urban development.

Rural Capability

Generally low to moderate limitations for regular cultivation and grazing.