

ka

KIAMA

Erosional



**Landscape**—rolling low hills with broad crests, long convex slopes and steep coastal headlands on Blow Hole Latite. Relief 40–60 m. Slopes <20%. Extensive rock outcrop. Extensively cleared with stands of closed-forest.

**Soils**—deep (>150 cm) Krasnozems (Gn4.11) on crests and upper slopes and Prairie Soils (Gn4.51, Gn4.81) on lower slopes.

**Limitations**—run-on, water erosion hazard (localised), mass movement hazard (localised), sodicity, low permeability, low wet bearing strength, moderate shrink-swell (subsoil).

## LOCATION

Rolling low hills and steep coastal headlands on latite on the Coastal Plain. Examples include Kiama, Gerringong and Gerroa.

## LANDSCAPE

### Geology

Blow Hole Latite Member—mid grey latite, generally aphanitic.

### Topography

Rolling low hills. Relief 40–60 m. Slopes <20%. Crests are broad with long moderately inclined convex slopes and gently inclined concave footslopes. Extensively scattered rock outcrops on upper slopes. Drainage plains <100 m wide. Steep coastal headlands with narrow rock platforms and occasional blow holes.

### Vegetation

Extensively cleared with isolated stands of closed-forest. Common species include lillypilly (*Acmena smithii*), native quince (*Alectryon subcinereus*), brush bloodwood (*Baloghia lucida*), red-fruited olive plum (*Cassine australis*), brittlewood (*Claoxylon australe*), hairy clerodendrum (*Clerodendrum tomentosum*), murrogun (*Cryptocarya microneura*), giant stinging tree (*Dendrocnide excelsa*), black plum (*Diospyros australis*), sassafras (*Doryphora sassafras*), corkwood (*Duboisia myoporoides*), koda (*Ehretia acuminata*), bolwarra (*Eupomatia laurina*) (Gerroa only), moreton bay fig (*Ficus macrophylla*), deciduous fig (*Ficus superba*), cabbage tree palm (*Livistona australis*), northern boobialla (*Myoporum acuminatum*), large mock olive (*Notelaea longifolia*), snow-wood (*Parachidendron pruinosum*), pittosporum (*Pittosporum* spp.), black apple (*Planchonella australis*), plum pine (*Polocarpus elatus*), yellowwood (*Sarcomelicope simplicifolia*), flintwood (*Scolopia braunii*), wilkiea (*Wilkiea huegeliana*), whalebone tree (*Streblus brunonianus*),

bastard rosewood (*Synoum glandulosum*), buff hazelwood (*Symplocos thwaitesii*), scrub beefwood (*Stenocarpus salignus*), olivers sassafras (*Cinnamomum oliveri*), coast canthium (*Canthium coprosmoides*), bird lime tree (*Pisonia umbellifera*).

### Land Use

Cattle grazing on improved pastures, urban development including service and tourist centres of Kiama, Gerringong and Gerroa.

### Existing Erosion

Moderate sheet and gully erosion only where a poor vegetative cover exists.

### Included Soil Landscape

Small areas of Fountaindale (fo) soil landscape occur.

## SOILS

### Dominant Soil Materials

#### ka1—Friable brownish black sandy clay loam (topsoil)

<b>Colour</b>	brownish black (5YR 2/2)
<b>Texture</b>	sandy clay loam to light sandy clay loam
<b>Structure</b>	moderately pedal, <2 mm crumbs to polyhedral peds
<b>Fabric</b>	rough-faced, porous
<b>pH</b>	4.5–6.0
<b>Stones</b>	10–20% 2–20 mm sub-rounded, dispersed
<b>Roots</b>	common, ex-ped

#### ka2—Brown weakly pedal light clay (subsoil)

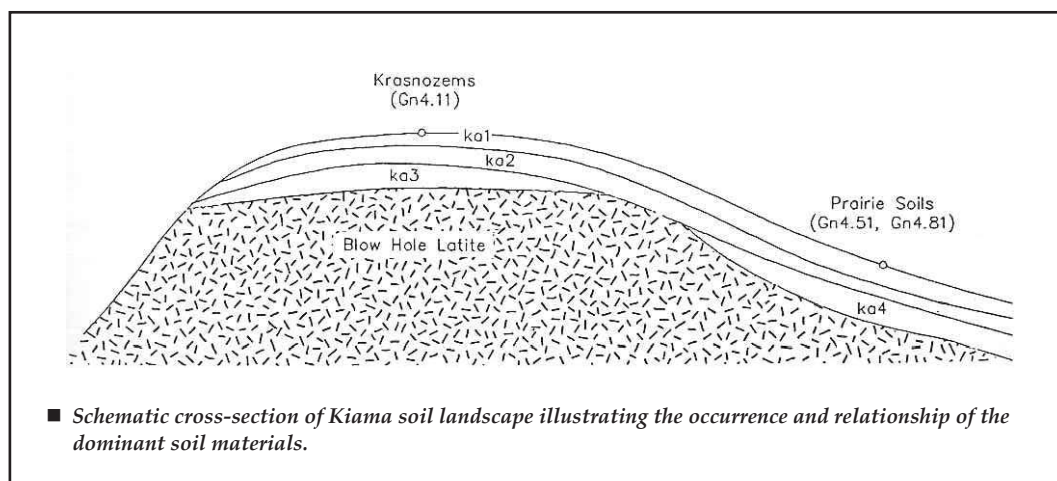
<b>Colour</b>	brown (10YR 4/4)
<b>Texture</b>	light clay to sandy clay
<b>Structure</b>	weakly pedal, 10–20 mm polyhedral peds
<b>Fabric</b>	rough-faced, porous
<b>pH</b>	4.5
<b>Stones</b>	nil
<b>Roots</b>	few, ex-ped

#### ka3—Dark red weakly pedal heavy clay (subsoil)

<b>Colour</b>	dark red (10R 3/6) to dark reddish brown (10R 3/3)
<b>Texture</b>	heavy clay
<b>Structure</b>	weakly to moderately pedal, 2–5 mm sub-angular blocky peds
<b>Fabric</b>	rough-faced, porous
<b>pH</b>	4.5–5.5
<b>Stones</b>	2–10%, 6–20 mm angular, dispersed
<b>Roots</b>	common, ex-ped

#### ka4—Bright yellowish brown moderately pedal light medium clay (subsoil)

<b>Colour</b>	bright yellowish brown (10YR 6/6) to dull yellow orange (10YR 6/4) with localised brown and grey (<50%) mottling
<b>Texture</b>	light medium clay to sandy clay
<b>Structure</b>	moderately pedal, 10–20 mm sub-angular blocky peds
<b>Fabric</b>	rough-faced, porous
<b>pH</b>	5.0–5.5
<b>Stones</b>	nil
<b>Roots</b>	nil



## Occurrence and Relationships

**Crests and upper slopes.** Up to 50 cm friable brownish black clay loam (**ka1**) overlies <20 cm brown weakly pedal light clay (**ka2**). Up to 150 cm dark red weakly pedal heavy clay (**ka3**) is overlain by <20 cm **ka2**. Boundaries are gradual [Krasnozems (Gn4.11)]. Total depth is 100–200 cm.

**Lower slopes and drainage plains.** Up to 50 cm **ka1** overlies <20 cm **ka2** which overlies <150 cm bright yellowish brown light medium clay (**ka4**). Boundaries are clear to gradual [Prairie Soils (Gn4.51, Gn4.81)]. Total depth is 100–200 cm.

## LIMITATIONS TO DEVELOPMENT

### Soil Limitations

- ka1** Stoniness
  - Sodicity
  - Low available water-holding capacity
  - High organic matter
- ka2** Low fertility
  - Sodicity
  - Strongly acid
- ka3** Stoniness
  - Low permeability
  - Sodicity
  - Strongly acid
  - Low available water-holding capacity
- ka4** Shrink-swell potential
  - Low permeability
  - Low wet bearing strength
  - Strongly acid

### Fertility

General fertility is moderate to low. The topsoil (**ka1**) is friable. The subsoils are deep, well structured, freely drained on crests and upper slopes. They are strongly acid with low to moderate CEC.

## Erodibility

The topsoil (**ka1**) has moderate erodibility. The subsoils (**ka2**, **ka3** and **ka4**) have high erodibility.

## Erosion Hazard

Erosion hazard for non-concentrated flows is extreme. The calculated soil loss for the first 12 months of urban development ranges up to 1 300 t/ha for topsoils and 900 t/ha for exposed subsoils. The erosion hazard for concentrated flows is moderate.

## Surface Movement Potential

These moderate to deep clay soils (**ka1**, **ka2**, **ka3**) are slightly reactive. The subsoil **ka4** is moderately reactive.

## Landscape Limitations

- Rock fall hazard (localised)
- Rock outcrop (localised)
- Steep slopes (localised)
- Run-on
- Water erosion hazard (localised)

## Urban Capability

Generally low limitations for urban development. Moderate limitations on steeper slopes.

## Rural Capability

Generally high to severe limitations for regular cultivation. Low to moderate limitations for grazing.