VEGETATION FORMATIONS

Vegetation formations are based on vegetation structure, specifically canopy cover and growth form, and has provided the basis for vegetation description throughout NSW. The Hunter, Central and Lower North Coast region of NSW supports a range of vegetation formations, including closed forests, tall open forests, open forests, woodlands, heathland, grassland, sedgeland and wetland. Within each of these formations are a variety of subforms and alliances.

Closed Forest or Rainforest
Rainforest is characterised by a closed forest canopy with more than 70% foliage projection of the tallest stratum. Rainforest types include subtropical, littoral, warm subtropical, monsoon, dry, warm temperate, and cool temperate (Floyd, 1990). As briefly described by the Hunter Region Botanic Gardens (2006), the main types within the Hunter region include subtropical, warm temperate, cool temperate, and dry. Subtropical rainforest occurs in deep valleys, usually with a south to easterly aspect and at lower altitudes where richer soils occur. Warm temperate rainforest occurs at higher altitudes and occupies less favourable areas. Cool temperate rainforest typically occurs at high altitudes and is characterised by *Nothofagus moorei*. Dry rainforest occurs in sheltered situations in more adverse sites, such as rocky outcrops or areas with low rainfall, such as the upper Hunter (eg. Towarri) and on the slopes of the Coolah Tops. Floyd (1990) provides a detailed account of the rainforest sub-formations and alliances.

Tall Open Forest
Tall open forests occur in the higher rainfall areas on good soils, along the coast, on the lowlands of the Valley, in the Liverpool and Mount Royal Ranges, Watagans, parts of the Hunter range and Nullo Mountain areas. A number of sub-forms have been recognised within these areas, and detailed descriptions are provided by Keith (2004), Beadle (1981) and the Baur forest typing (Forestry Commission, 1989).

Open Forests and Woodlands
Open forests and woodlands occur throughout the study area and include Blackbutt, Bloodwood, Spotted Gums and Eucalypt types with varying understories of shrubs, grasses, and ferns. Many of these forests are described by Keith (2004), Beadle (1981), and the Baur forest typing (Forestry Commission, 1989).

Heathland
Heathland typically occurs near the coast on exposed coastal sands, dune systems and headlands, but also occurs further inland on exposed or seasonally wet and poorly drained areas and on skeletal soils (eg. Triassic sandstone and granite rock types). Heath vegetation comprises species of the Proteaceae, Fabaceae, Mimosaceae, Myrtaceae and Epacridaceae families. More detailed descriptions of heathland types are provided by Keith (2004), Beadle (1981) and Read (1994).

Sedgeland and Wetlands
Sedgeland and wetland types include riverine, estuarine and coastal habitats, such as the swamps and water logged areas of the Lower Hunter River and creeks draining into Lake Macquarie. Grasslands are widespread throughout the study area and also occur in frost hollows, such as the Barrington Tops plateau. Keith (2004), Beadle (1981) and Read (1994) provide additional detail on these wetland types as well as all the vegetation formations listed above.