Most of the forests in NSW occur in the wetter, more fertile regions between the coast and the western slopes of the Great Dividing Range. The structure and species composition of these ecosystems is highly varied, ranging from dense Gondwanan rainforests and coastal swamp forests in the northeast, to wet tall forests of the South Coast and open dry forests west of the Divide. Trees are the dominant feature of both forests and woodlands, but in forests they generally grow taller and closer together, providing canopy cover from 30% in open forests to 100% in rainforests. These ecosystems are home to an extraordinary array of birds and animals, including iconic species like the koala, powerful owl, greater glider, and spotted quoll.

Increasing temperatures, declining rainfall and rising sea levels will affect different forest types in different ways. On the North Coast, vital koala habitat will likely be inundated by rising sea levels, profoundly altering the species mix in these ecosystems. On the South Coast, the extent of cool temperate rainforests at the top of escarpments will contract as rainfall and fog declines and bushfire in eucalypt forests at the rainforests’ edges become more intense and frequent.

KOALA

Koalas were so abundant last century they were the basis of a vigorous fur trade that in 1924 saw two million pelts exported from the eastern states of Australia to Europe. Today there are fewer than 36,000 koalas left in NSW, and all but a few populations are declining. Between 1990 and 2010, their numbers in NSW plunged 33%. The koala population in the Pilliga forest in the state’s northwest, an area once considered a stronghold for the species, crashed 75% in the 10 years to 2013 because of drought and longer, more frequent heat waves. On current trends, the species is on track to become extinct in many parts of NSW.

Climate change has now joined habitat loss, dog attack, vehicle strike, disease, drought, and inbreeding as a key threat to the survival of the species. Under a hotter and drier climate, koala populations will contract even further eastwards and southwards to regions where populations are already declining. Increasing atmospheric CO2 levels will reduce the nutritional quality of eucalypt leaves, causing malnutrition and starvation. Koalas will also be affected by rising sea levels, which will inundate swamp forests, one of the species preferred habitats in coastal areas.

IMPACTS

- +3.1°C and +3.7°C
- 44% to +26% by 2090
- More abundant
- More frequent & intense
- Redistribution & declines

Sea level rise of up to 1.8m by 2100 threatens low-lying rainforests and woodland forests. More frequent, hotter fires will favour eucalypt, eucalypt forest and heath over rainforest, firewood, and reduce tree hollows for nesting.