The 1900km coastline of NSW contains some of Australia’s most stunning scenery and diverse ecosystems, from tall eucalypt forests, dunes, swamps, and saltmarshes, to tidal lakes, estuaries, beaches, and rocky reefs.

With more than 80% of the state’s population living on the strip between the Great Dividing Range and the Tasman Sea, more people will experience the environmental effects of climate change in these regions than elsewhere.

Air temperatures are forecast to rise by more than 3°C by 2090 under a high-emissions scenario. This will result in more frequent and longer heat waves and more extreme bushfires that will change the distribution and abundance of species and coastal ecosystems.

Fire-adapted eucalypt forests will encroach on rainforests and coastal wetlands and other moist vegetation communities. More frequent intense fires are also expected to reduce the number of tree hollows critical as nests for birds, possums, and gliders.

Climate change is already causing sea levels to rise, and this is forecast to continue to almost 1m by the end of the century. Higher sea levels will flood coastal wetlands and saltmarshes that live above the high-tide mark, forcing them to retreat inland or reduce their range.

Saltmarshes are found in the upper coastal intertidal zone where there is no strong wave action. They are dominated by stands of salt-tolerant plants that trap and bind sediments. Crabs, snails, bats, gastropods and even swamp wallabies are part of this complex ecosystem. Saltmarshes play a critical role as nurseries for fish and other marine animals. More than 70% of all fish in Australia’s southeast, as well as many other marine species, depend on salt marshes at some stage in their lifecycle.

They also provide habitats for many other animals, such as migrating birds, and they protect the coastlines from erosion. Sea-level rise caused by climate change is now the biggest threat to these ecosystems.

Since 1914, sea levels have risen about 11cm in NSW and are forecast to rise by another 82cm by the end of the century if carbon emissions remain high. In most estuaries in Queensland, NSW, Victoria and South Australia, mangroves have taken over more than 30% of saltmarsh, and in some cases completely replaced them.

While some intertidal ecosystems, such as mangroves, can “move” inland with the rising waters, saltmarshes do not have the same opportunities because suitable land is already occupied by coastal development or farmland.

COASTAL REGIONS

REGIONS AFFECTED: NORTH COAST, MID-NORTH COAST, CENTRAL COAST, SYDNEY, ILLAWARRA, SOUTH COAST

IMPACTS

HOT DRY & DEADLY: IMPACTS OF CLIMATE CHANGE ON NATURE IN NSW

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