

## GREAT SOUTHERN REEF: A KELP FOREST ECOSYSTEM

### SPATIAL PATTERNS AND DIMENSIONS



Until recently temperate rocky reef ecosystems in Australia lacked a comprehensive identity. This has stifled public and political attention and a failure to recognise the ecological, economic, and socio / cultural value of the reefs in the wider community.

The **Great Southern Reef** name has been adapted by the scientific community to redress this identity issue and in doing so improve knowledge, understanding, interest in and appreciation of the reefs, and increase research funding for scientific knowledge and conservation purposes.

**Figure 1: The Great Southern Reef extends along the southern coastline of Australia.**

Source: <https://www.science.org.au/curious/earth-environment/whos-heard-great-southern-reef>

The **Great Southern Reef** (GSR) is an ecologically connected system of **temperate rocky reefs** on the southern coast of Australia. Figure 1. The common feature connecting multiple rocky reefs into one large ecosystem is kelp growing in kelp beds (shorter species) or kelp forests (taller canopy forming kelps).

Spatially the Great Southern Reef:

- is a temperate marine ecosystem in Australia's 'coastal zone'
- extends for 8,000 km around the Australian coastline from northern New South Wales (28.58° S) to Kalbarri in Western Australia (27.78° S)
- covers 71 000 km<sup>2</sup> (area) of the nearshore continental shelf
- extends to depths of 30 metres below sea level but may reach 60 metres asl.
- is sub-tidal (below sea level)

Like the Great Barrier Reef, the GSR comprises hundreds of individual reefs with significant ecological, social, and economic value.

*"Even though it's not a physical rock connecting them, they are still sharing that ecological connectivity."*

Sahira Bel, ecologist

Source: <https://particle.scitech.org.au/earth/kelp-forests-of-western-australia/>



**Australia's kelp-dominated rocky reefs are largely managed independently by the states of NSW, Victoria, Tasmania, South Australia, and Western Australia because they are found in the 'coastal zone' which extends up to 5.5 km from shore.**

**Sections of the GSR such as Giant Kelp forests communities are protected under Commonwealth legislation.**