

# AUSTRALIA'S GREAT SOUTHERN REEF

## STATUS OF GLOBAL KELP FORESTS

Kelp forests are found along 25% of the world's coastlines in cold, nutrient-rich water. These ecosystems have some of the highest rates of primary production anywhere on Earth. There is extensive diversity of kelp species.

**Figure 5** shows the distribution of major kelp forests. Kelp forests support high levels of biodiversity and provide valuable habitat, and environmental services for ecosystems and coastal communities.

Temperate kelp forests are declining at a global scale despite showing historically high levels of resilience to natural stresses over time. One study 'Global patterns of kelp forest change over the past half-century' (<https://www.pnas.org/content/113/48/13785>) found that 38% of kelp forests have declined in the past 50 years. In California, giant kelp forests have been replaced by urchin barrens and in Australia, kelp forests of the Great Southern Reef have also been lost. Overharvesting, pollution, sedimentation, invasive species, marine

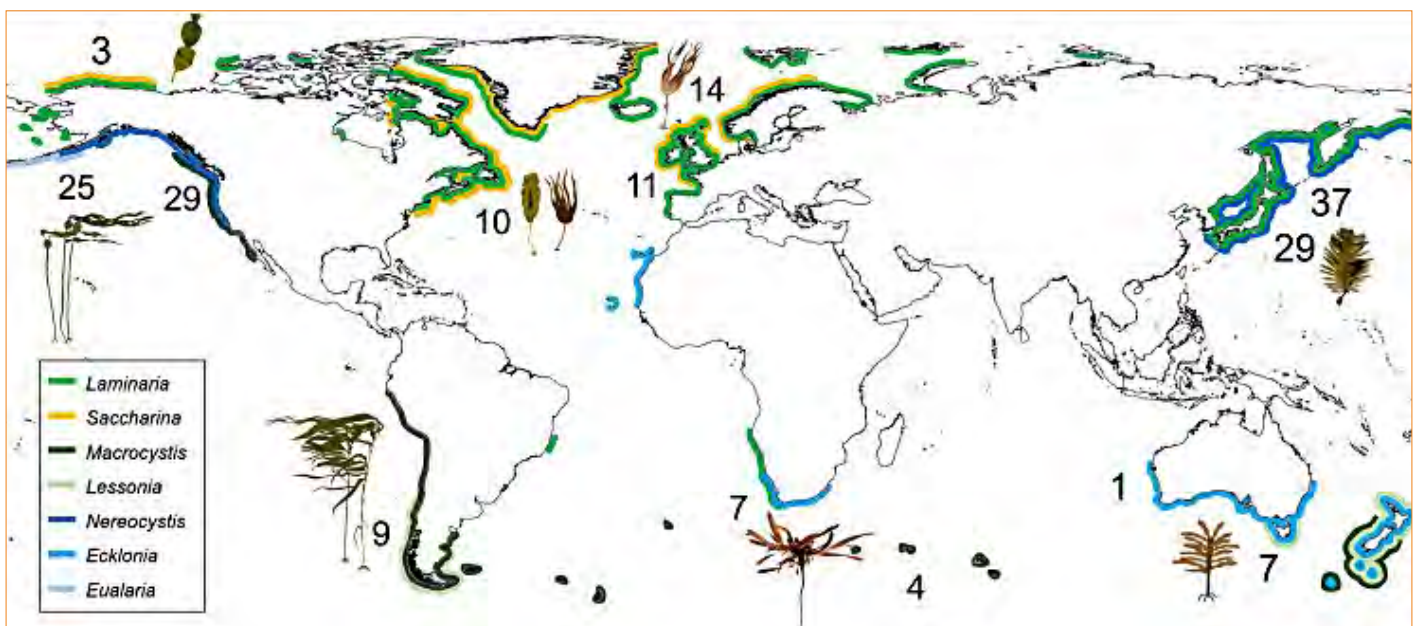
heatwaves and the tropicalisation of species due to climate change are among the stressors impacting on kelp forest ecosystems.

### Management Actions

Actions are being taken to halt or reverse this decline and restore kelp forest ecosystems. The removal of invasive species, the creation of marine protected areas, reforestation and 'future proofing' are among strategies being implemented or trialled globally. Region specific responses based on stressors at a local scale have been the principal approach. Operation Crayweed in NSW is an example of a local response. At a global scale, action on climate change is critical to the future of kelp forests.

The 'invisibility' of rocky reefs such as the Great Southern Reef in Australia has restricted research and management efforts. With increasing global attention, the economic, social, and ecological value of the reefs is being recognised.

**Figure 5: Global distribution of kelp species**



From: Status and Trends for the World's Kelp Forests. Rightslink licence 5131200204971. Thomas Wernberg, Kira Krumhansl, Karen Filbee-Dexter, Morten F. Pedersen, – <https://doi.org/10.1016/B978-0-12-805052-1.00003-6>

