



Climate Change and Future Marine Ecosystem Services and Biodiversity



Our goals

FutureMARES is an EU-funded research project examining the relationships between climate change, marine biodiversity and ecosystem services.

We will develop strategies to work with and enhance nature to help coastal societies and businesses to survive and thrive. These strategies are called nature-based solutions (NBS).

Our main goals are:

- 1 | Understand the relationships between the ecology of marine habitats and the ecosystem services they provide.
- 2 | Predict future climate change impacts and determine which marine regions will be most affected.
- 3 | Research how human communities living with the sea are affected by the changes in marine ecosystems.
- 4 | Investigate how nature-based solutions can help us adapt to climate change, and calculate the economic costs and benefits of implementing them locally.

South-east Pacific and the Juan Fernández archipelago

The oceanic Islands and seamounts of the South East Pacific and the Juan Fernández archipelago remain relatively free from human damage. This offers a useful benchmark to understand how extreme climate events and natural variability affects biota. However, the region's low-oxygen zones will likely expand in a warmer climate, and this will affect the regions' biodiversity, ecosystem, and economy.

FutureMARES can compare activities in Chile to European locations in oceanography, geomorphology, land-borne inputs, ecosystem functioning, and socio-economic priorities.

FutureMARES in the south-east Pacific

- 2 NBS 2 - Effective Conservation
- 3 NBS 3 - Sustainable Harvesting
- ★ Planned field work





Restoring habitat-forming species that can act as 'climate rescuers'

Habitats such as seagrasses, mangroves, and shellfish reefs form natural coastal protection. This helps to protect against increased storminess, sea level rise and flood risks resulting from climate change.



Conservation strategies that consider how climate change will affect habitat suitability

Conservations strategies are at their most effective when they consider the impacts that climate change will have for flora & fauna habitats.



Sustainably harvesting seafood from fisheries and aquaculture

Ecosystem management and a multi-species approach can help adapt to shifts in species' productivity, distribution and interactions. For example, growing and catching seafood lower in the food web will be more sustainable in the long term.

Regional project partners in the south-east Pacific

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