



ECOAZUL-MED CLIMATE SERVICE TOOL: SUPPORTING AQUACULTURE, FISHERIES AND COASTAL TOURISM IN THE SPANISH MEDITERRANEAN COASTS

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OBJECTIVE

Generate a climate service tool with information that allows anticipating the effects of climate change on aquaculture, fishing and tourism, different emission assuming scenarios for the next 40 years on the Spanish Mediterranean coast

CONTEXT

The Mediterranean region, particularly the Spanish eastern coast, is a climate change hotspot facing enhanced warming and extreme weather events. This threatens its blue economy, with such fishing, sectors key aquaculture, and tourism at risk of significant socioeconomic losses.



Changes in water temperature, salinity, and ocean currents could alter marine ecosystems, shift fish stock distributions, displace migratory species, and increase fishing costs.



Frequent heavy precipitation damage cages and cause escapes, while water warming might increase pathogens and alter growth rates.



COASTAL TOURISM

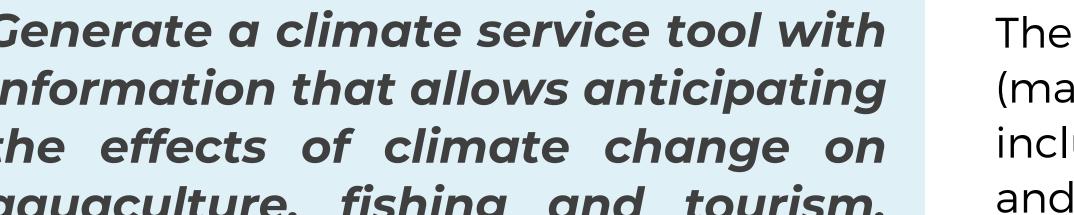
Rising temperatures and more frequent heat waves could reduce thermal comfort and decrease the number of tourists.



METHODOLOGY

with integrated approach multidisciplinary perspective is used, combining quantitative and qualitative research:

- 1. Quantitative: processing Involves climate variables derived from regional air-sea coupled simulations from the Med-CORDEX initiative for the controll (1976-2005) and future (2025-2064)RCP4.5 and periods, assuming the RCP8.5 scenarios.
- 2. Qualitative: Involves external agents from the fishing, aquaculture, and tourism sectors to gather relevant information and ensure the tool meets their needs.



THE TOOL

tool offers oceanic (sea-surface temperature, salinity, currents) and atmospheric (maximum 2-m air temperature, relative humidity, cumulative precipitation) climate data, including temperature extremes and heavy precipitation, for various climate change scenarios and periods. The user must select from the provided options.

USER CHOICES

Climate information ? Sea surface temperature

Sea surface temperature Sea surface salinity Marine currents Relative air humidity Maximum air temperature Cumulative daily precipitation Heavy precipitation Days with summer conditions Atmospheric heat waves

Marine heat waves

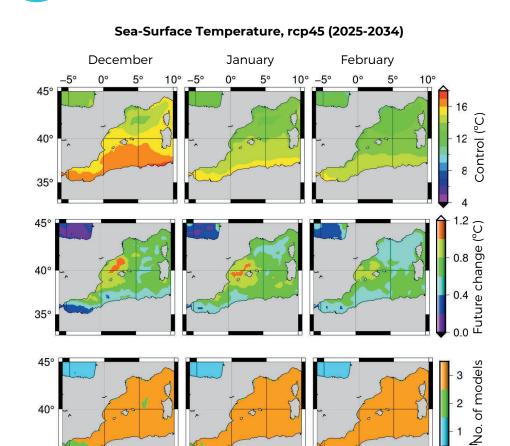
Scenario ? RCP45

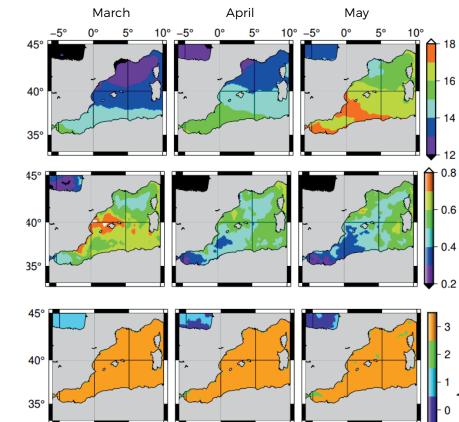
RCP45 RCP85

Time Frequency ?? Time Period ?

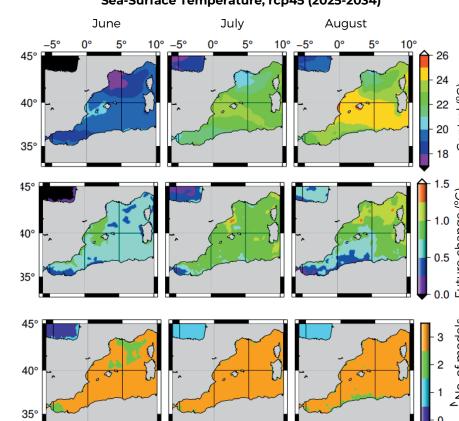
2025-2034 Seasonal 2025-2034 Seasonal Monthly 2035-2044 2045-2054 2055-2064

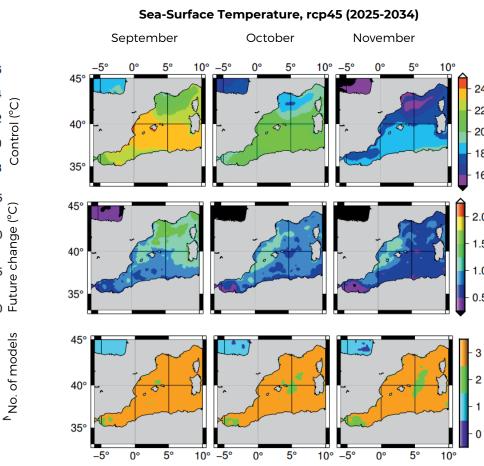
RESULTS EXAMPLES





Sea-Surface Temperature, rcp45 (2025-2034



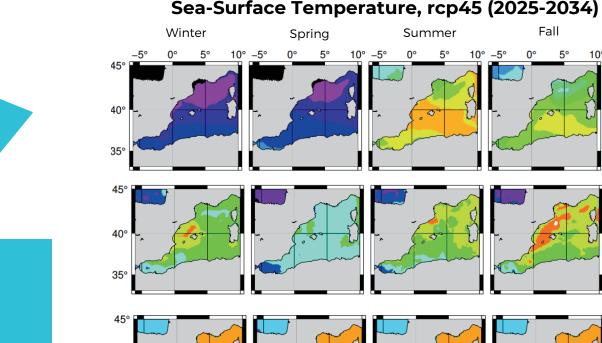


ACCESS THE TOOL!

ECOAZUL-MED TOO

Selected information Climate information: Sea-surface temperature Scenario: RCP45 **Time Period:** 2025-2034 Time Frequency: Monthly



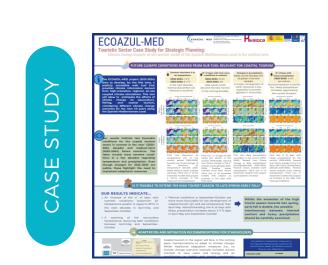


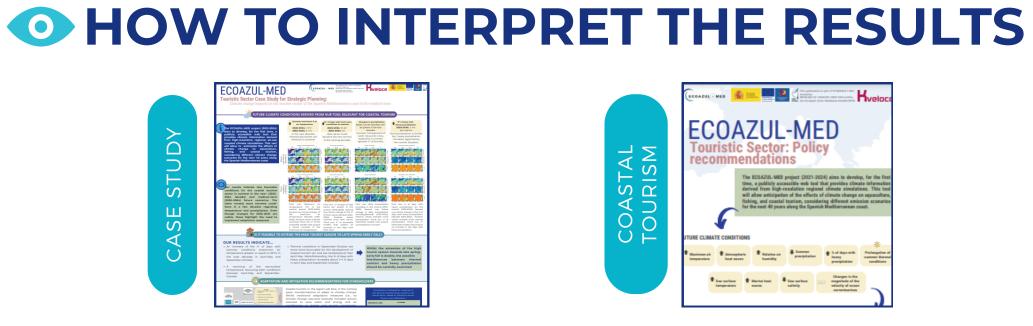
Selected information Climate information: Sea-surface temperature Scenario: RCP45 Time Period: 2025-2034 Time Frequency: Seasonal



SEE VIDEOTUTORIAL SEE USER MANUAL

TECHNICAL SUPPORT FOR USERS







User Manual



CASE OF STUDY



Summer maximum 2-m air temperature

Subtle changes in precipitation

N° of days with heat wave conditions

N° of days with heavy precipitation

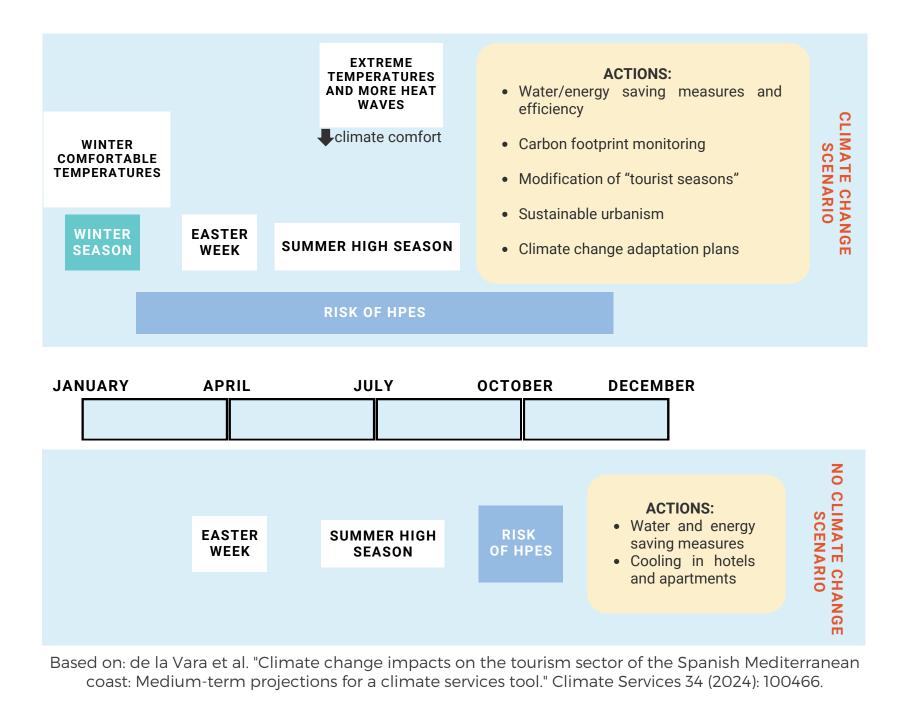
Less favorable conditions for the coastal tourism sector in summer Changes for 2025–2034 are subtle, but highlight the need to implement adaptation measures

IS IT FEASIBLE TO EXTEND THE HIGH TOURIST **SEASON TO LATE SPRING-EARLY FALL?**

It may be doable, but the possible interferences between thermal comfort and heavy precipitation should be carefully examined.

We propose a tourist calendar change in the Spanish **Mediterranean coast:**

- Extension of the high summer season towards April-May, September-October
- Maintenance of the Easter holidays
- Establishment of a winter tourist season because of anticyclonic conditions



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