The increase in the global average ocean temperature due to greenhouse gas emissions threatens species with high socioeconomic weight such as *Cerastoderma edule, Ruditapes decussatus, Venerupis corrugata* and *Ruditapes philippinarum* (~7,900 tonnes with a value of ~74 million euros and ~7,100 shellfish gatherers in 2019, www.pescadegalicia.com) in the Rías Baixas, Galicia.

**OBJECTIVES**

- To analyze the possible impacts of bottom water temperature increase on *C. edule, R. decussatus, V. corrugata* and *R. philippinarum* under the RCP8.5 scenario in the Rías Baixas.
- To simulate bottom water temperature for July and August for the historical (1990-2018) and future (2080-2099) periods.
- To calculate the comfort index (% of time during which the bottom water temperature remains within the optimal range of the species) for each period.

**METHODS**

**RESULTS**

The increase in water temperature may modify the areas of thermal comfort for *C. edule, R. decussatus, V. corrugata* and *R. philippinarum*.

- During the historical period, the areas where comfort exceeds 60% are found in the inner zones of the four rias and, in areas shallower than 10m. This may be due to the upwelling events occurring in summer, which pump cold water helping to keep bottom water temperature between 12 and 14 °C (below the optimal lower limit of the species).
- In general, the comfort area extent may increase moving towards deeper and outer areas by the end of the century due to the projected increase in water temperature.
- Oceanic warming may negatively impact the productivity of the species analyzed in inner and shallower areas of the rias, as the comfort index is projected to decrease in these areas. The prolonged increase in exposure to heat stress may have a direct impact on their growth (longer time to reach commercial size) and reproductive success (lower larva number and size).

**CONCLUSIONS**

- The increase in water temperature may modify the areas of thermal comfort for *C. edule, R. decussatus, V. corrugata* and *R. philippinarum*.
- During the historical period, the areas where comfort exceeds 60% are found in the inner zones of the four rias and, in areas shallower than 10m. This may be due to the upwelling events occurring in summer, which pump cold water helping to keep bottom water temperature between 12 and 14 °C (below the optimal lower limit of the species).
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