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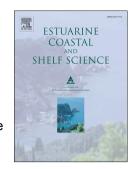
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ACCEPTED MANUSCRIPT

Impacts of green tides on estuarine fish assemblages

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Abstract

- All around the world, an increasing proportion of estuarine systems are facing massive proliferations of green macroalgae, called green tides, in response to nutrient enrichment. The consequences of this perturbation for ichthyofauna that use estuarine systems as essential fish habitats remain understudied. To estimate these consequences, we combined outputs of both macroalgae proliferation and fish community surveys conducted for the European Water Framework Directive in thirteen estuaries in northwestern France, a region where green tides are of great concern. The approach revealed the influence of green tides on estuarine fish communities. The response of each community to the green tides differed according to their functional guild composition. Benthic and marine juvenile guilds were negatively impacted, while demersal and pelagic fish guilds appeared to be more resilient. Green tides, which significantly affect the suitability of fish habitat, change the composition of the fish community and may hinder the future recruitment of marine fish species that rely on estuaries during the juvenile stage.
- 26 Keywords: fish community; estuarine ecology; green tides; macroalgae; nursery

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