



INTERNATIONAL ALLIANCE TO
COMBAT OCEAN ACIDIFICATION

EUROPEAN GOVERNMENTS CAN ADDRESS OCEAN ACIDIFICATION

Climate-ocean change is happening now in European waters and having negative consequences

Climate-ocean change is occurring now in the NE Atlantic Ocean, Baltic Sea, Black Sea, and Mediterranean Sea. We are already seeing negative impacts of climate-ocean change on habitat and biodiversity, fisheries and aquaculture, economies, cultural practices, and livelihoods. Recent studies indicate climate-ocean change has negative consequences for species, such as Atlantic cod, and important habitats, such as cold-water corals. In the Mediterranean, effects are also already being observed, and further impacts are projected for species such as calcifying algae, temperate and deep-water corals, and sea urchins.

There are global and local drivers of climate-ocean change

The ocean absorbs approximately 25% of the carbon dioxide (CO₂) emissions released into the atmosphere and absorbs 90% of excess heat caused by the burning of fossil fuels. **The addition of CO₂ to the ocean is making seawater more acidified; we call this process “ocean acidification” or OA.** The chemical reactions that occur in the ocean because of OA include lowering of pH and decreasing the availability of carbonate, which many species like shellfish, finfish, and coral need to grow, and thrive. **OA combines with other climate-ocean impacts like ocean warming and reduced oxygen levels, increasing the total stress marine species and ecosystems are experiencing.**

In nearshore and coastal environments, **local sources of land-based pollution like nutrients (including nitrates) enter the ocean through wastewater, stormwater, and agriculture run-off additionally contributing to eutrophication**, which can accelerate OA in the water column and amplify negative conditions for marine organisms.

Actions to reduce these local land-based pollutions that contribute to eutrophication and OA can reduce impacts on species and improve ecosystem function. Additionally, local actions to improve resilience across marine ecosystems—through blue carbon, nature-based solutions, planning

or conservation measures—can have multiple beneficial outcomes, helping restore good environmental status of our ocean and local water bodies.

Governments can utilize regional information to design local strategies

In addition to urgently and drastically reducing carbon emissions, the number one cause of OA, governments can take action by utilizing regional information to design local strategies.

Specific actions governments can take include:

- Enhance and prioritize regional information needs and reporting.
- Tailor proactive and reactive management using blue carbon or MSP.
- Control excessive nutrients from wastewater and agriculture that cause eutrophication and can exacerbate coastal acidification.
- Reduce non-climate pressures, including nitrates, habitat destruction, over-fishing and pollution.
- Enhance coherent networks of conservation activities, like MPAs, that protect species and habitats at risk.

European governments can utilize existing conventions

Across Europe, existing conventions and shared directives can be used to accelerate regional collection of information and enhance OA mitigation, adaptation and resilience measures.

Regional conventions can gather localized information for specific purposes:

- Monitor and report on local trends.
- Prioritize research on impacts to keystone species.
- Evaluate ocean-based mitigation strategies.
- Tackle non-climate stressors that lead to eutrophication.
- Promote and evaluate adaptation and resilience efforts.

CONVENTIONS:



EU directives can be strengthened for OA response



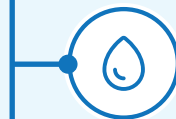
Marine Strategy Framework Directive

Take Up OA Monitoring and Reporting as Relevant to assessing Good Environment Status under Descriptor 1 (biodiversity); Descriptor 5 (eutrophication); Descriptor 7 (hydrographical conditions); and Descriptor 11 (energy pollution).



Marine Spatial Planning Directive

Apply Localized OA Information Across Marine-Use Decisions including options for Blue Carbon.



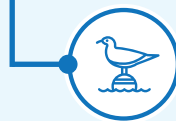
Water Framework Directive

Model, Report On, Reduce Pollutions that Exacerbate OA, Warming and Oxygen Loss (Eutrophication).



Nitrates Directive

Model, Report On, Reduce Nitrates that Exacerbate OA, Warming and Oxygen Loss (Eutrophication).



Habitats and Birds Directive

Apply Localized OA Information to Assess Conservation Measures and Nature Based Solutions that Support Marine Habitats.

Climate-ocean policy integration is needed & possible

As the science, research and observed impacts of climate-ocean change continue to grow, we must integrate OA information and knowledge across mainstream management and policy responses.

OAA worked in collaboration with:
www.oaalliance.org

