OCEAN KNOWLEDGE IS KEY FOR CLIMATE ACTION

Excessive emissions of carbon dioxide have made the ocean warmer, reducing its ability to hold oxygen, and have caused it to become more acidic. Changing the state of the ocean in this manner alters the character, composition and distribution of marine species, its very ability to support life, the array of benefits we take for granted, and the way in which essential nutrients are recycled, with the potential for driving negative feedbacks into further climate change.

IUCN and partners have issued ground-breaking reports with leading scientists to explore, promote and act on key ocean climate science issues.

Acidification

IUCN chairs one of the longest running bodies to connect science to policy on ocean acidification - ***the Ocean Acidification international Reference User Group.*** Through this group, regions of the world are developing action plans to help get ahead of the curve of degradation.

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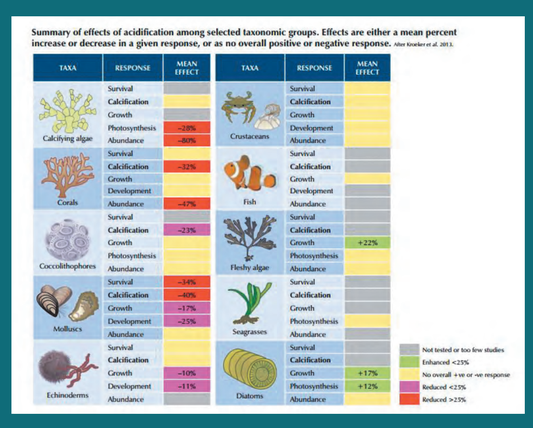
The ocean absorbs around 27% of the atmospheric CO_2 derived from burning fossil fuels and land use changes. The additional CO_2 released into the atmosphere dissolves in sea water, causing several chemical changes to occur. These are collectively known as ocean acidification – also as the 'other CO_2 problem.'

If CO_2 emissions continue unabated (i.e. Business as Usual), projections show that by 2060, seawater acidity could have become 120% greater compared to pre-industrial levels.



Therefore, there is an urgent need to:

- Better understand and quantify the changes resulting from ocean acidification now happening in the ocean;

- Understand the consequences of those changes on ecosystems and society;

- Better and rapidly communicate that information to those who need to know; and

- Ensure politicians, decision-makers and policymakers are equipped with the latest facts to help make the best and boldest decisions in light of these increasingly serious conditions.

Warming

One of the most downloaded reports in the recent history of IUCN that awoke worldwide concern on the impacts of atmospheric warming on ocean habitats, species and ecosystem structure and functions.

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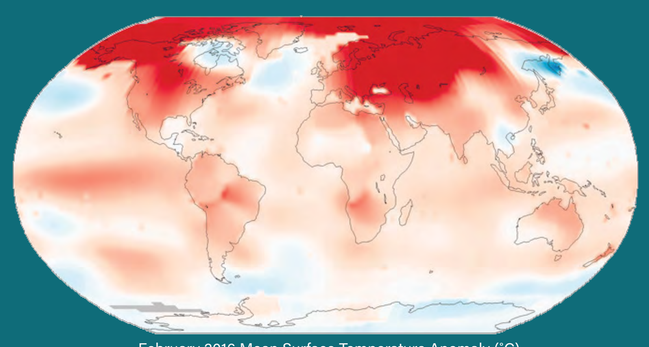
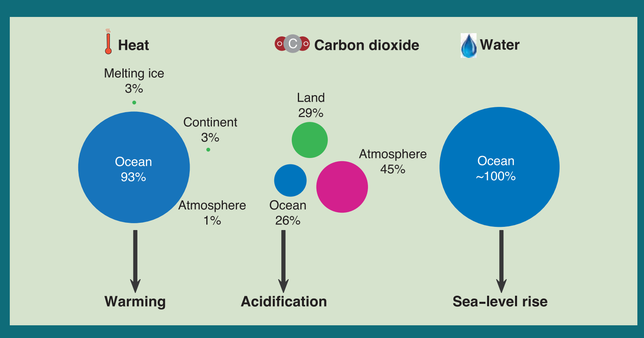
The ocean has absorbed over 90% of Earth's additional heat since the 1970s, and this has led to ocean warming and decreasing oxygen content. There has already been a mean global sea surface warming of about 0.70°C between 1900 and 2016, and this is likely to rise further in some ocean regions as greenhouse gases levels in the atmosphere continue to increase.

Warming water also has direct effects on the physiology of marine organisms and is resulting in a geographical shift of some species towards cooler waters. There are also sessile organisms, such as corals, which have no way to escape from warmer or more acidic waters; therefore, these ecosystems are at a high risk under climate change scenarios.





Deoxygenation

A new report documenting the scale and nature of ongoing oxygen loss from the ocean and projections for the future will be launched on Saturday, 7th December 2019.

Download here

There is no environmental variable of such ecological importance to marine ecosystems that has changed so drastically in such a short period of time as a result of human activities as dissolved oxygen. Hypoxia - a condition that deprives an organism of adequate oxygen supply at the tissue level - is one of the most acute symptoms of the reduction in dissolved oxygen.

This ground-breaking report documents the inescapable fact that human activities are now driving life-sustaining oxygen from our ocean-dominated planet. Science is incomplete and awareness of ocean deoxygenation is just happening, but what is already known is very concerning.

Multiplying effect

Acting together, ocean acidification, ocean warming and decreasing oxygen levels are multiplying the threat to marine life and the goods and services they provide compared to one stressor acting on its own. Interactions are likely to be complex and further research is needed for them to be fully understood.

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