

## The Blue Carbon

Jagadesh M and Munmun Dash\*  
Tamil Nadu Agricultural University, Coimbatore

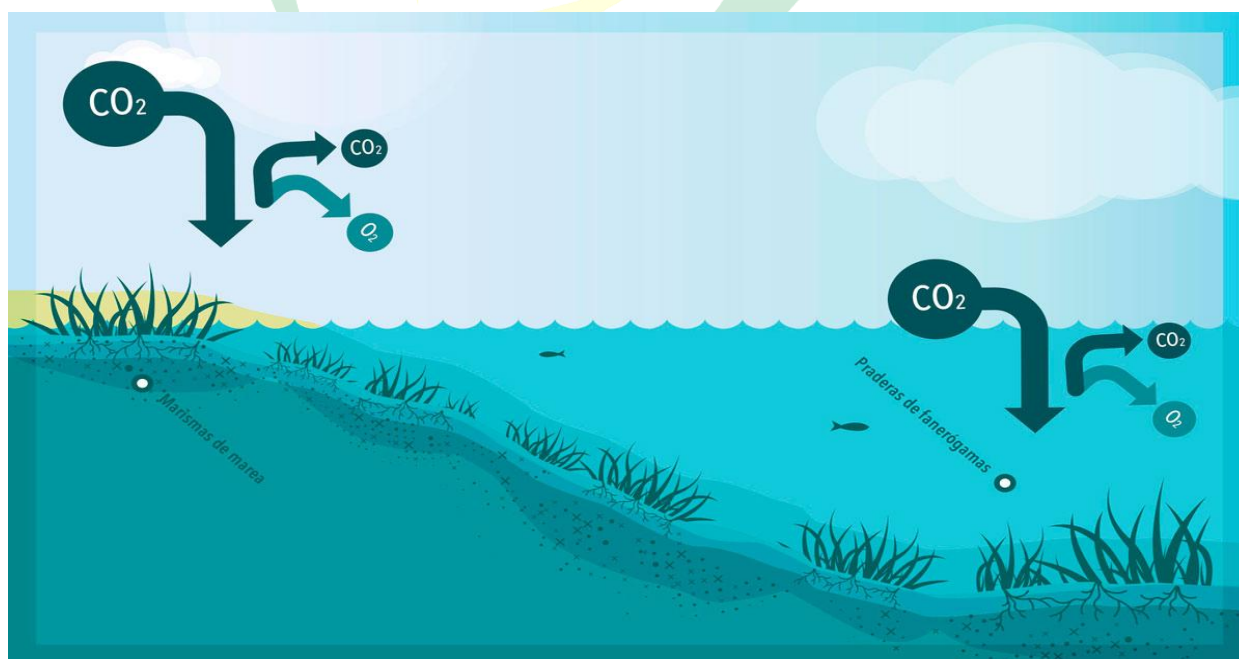
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### Introduction

The phrase "blue carbon" refers to carbon collected by the world's oceans and coastal ecosystems. You've probably heard that human activities produce (or release) carbon dioxide, which contains atmospheric carbon. You may have also heard that these gases negatively impact the world's climate. What you may not know is that our oceans and coasts provide a natural solution to reduce the influence of greenhouse gases on our climate by sequestering (or absorbing) this carbon.

### Blue carbon – The carbon sinks

Our coast's seagrasses, mangroves, and salt marshes "capture and retain" carbon, and thereby serve as a carbon sink. Although their extent is smaller than the forests, these coastal systems absorb carbon at a far quicker pace and can do so for millions of years. The majority of the carbon absorbed by these ecosystems is buried beneath the earth, where humans cannot see it, but it is still present. Thus carbon in coastal soil can be thousands of years old.



### **The global extent of blue carbon (NC)**

They are observed in mangroves, which occur in tropical and subtropical regions which span about 81,849 km<sup>2</sup> in 118 countries worldwide. Total mangrove extent dropped at a rate of 1-3 per cent year<sup>-1</sup> due to land-use change.



### **Blue carbon and climate change**

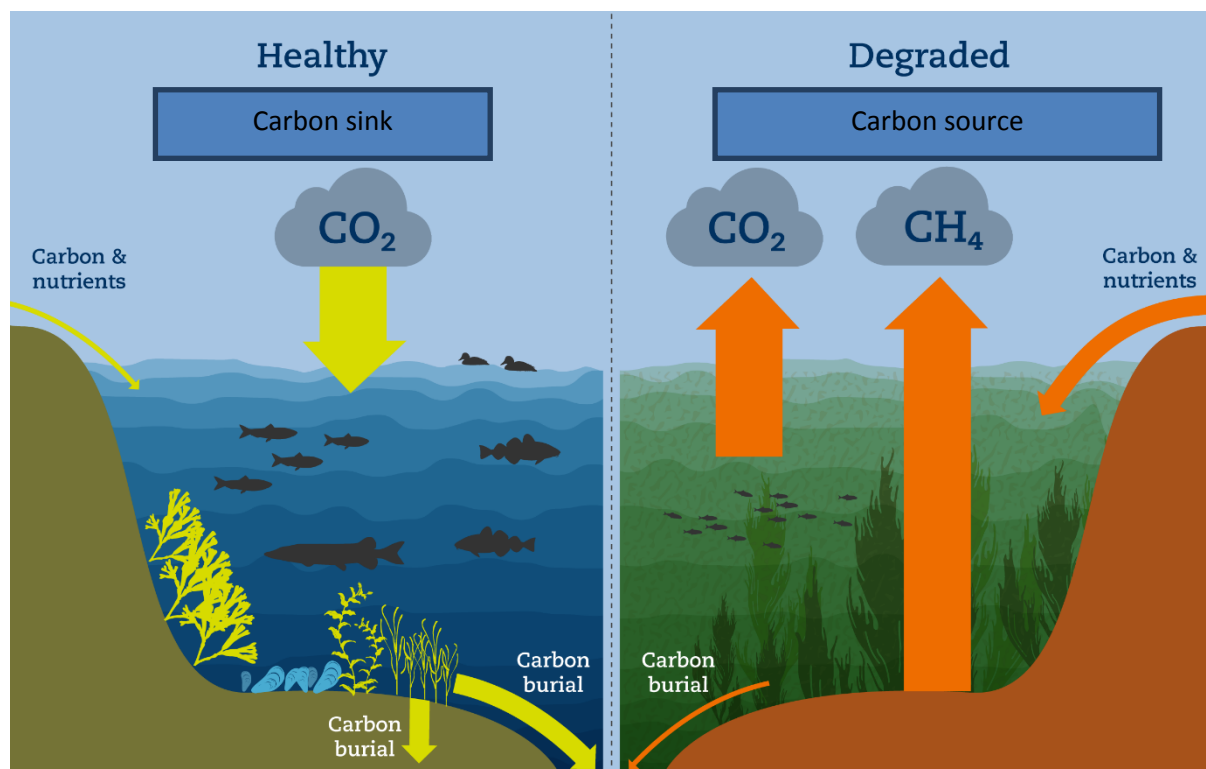
Globally, increasing population and coastal development have harmed vegetated coastal ecosystems owing to the effects of fisheries, aquaculture, pollution, and sedimentation (Gullström et al., 2021). Between 2000 and 2016, over 62 per cent of mangroves globally were lost (Goldberg et al., 2020), salt marsh ecosystems were devastated to the tune of 90 per cent, and seagrass carbon levels are depleting in various parts of the world (Waycott et al., 2009). When these blue carbon reserves deteriorate, they may transition from sinks to sources of CO<sub>2</sub> and methane (CH<sub>4</sub>) in the atmosphere, and thereby acts as a source of climate change.

### **The way forward**

To improve blue carbon sequestration, three major management techniques are used: preservation, restoration, and creation. Direct or indirect ways to maintain or improving biogeochemical processes such as sedimentation and water supply are examples of preservation. Restoration refers to a variety of interventions aimed to improve biophysical and geochemical processes, and hence sequestration capability, in BC ecosystems. Managed realignment is a specific option for constructing or repairing tidal marshes as part of a plan to accomplish long-term coastal flood defence while also providing other services, such as carbon benefits (Luisetti et al., 2011).

## Conclusion

Thus the healthy coastal system act as a sink to the atmospheric CO<sub>2</sub>. But upon degradation, they act as a source.



## References

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