

A Fisherman's Guide to Marine Carbon Dioxide Removal

What's changing in the ocean—and how to stay involved

Marine carbon dioxide removal (mCDR) technologies propose to **use the ocean's living and nonliving processes to remove carbon from the atmosphere** and store it for long periods of time.

How does mCDR work?

"Abiotic" (non-living) mCDR methods use the ocean's natural sponge-like ability to absorb and lock up carbon in a safe, stable form. The capacity of the ocean "sponge" can be enhanced by adding alkaline materials. Or, carbon can be stripped from seawater and stored elsewhere, allowing the "sponge" to take up more.

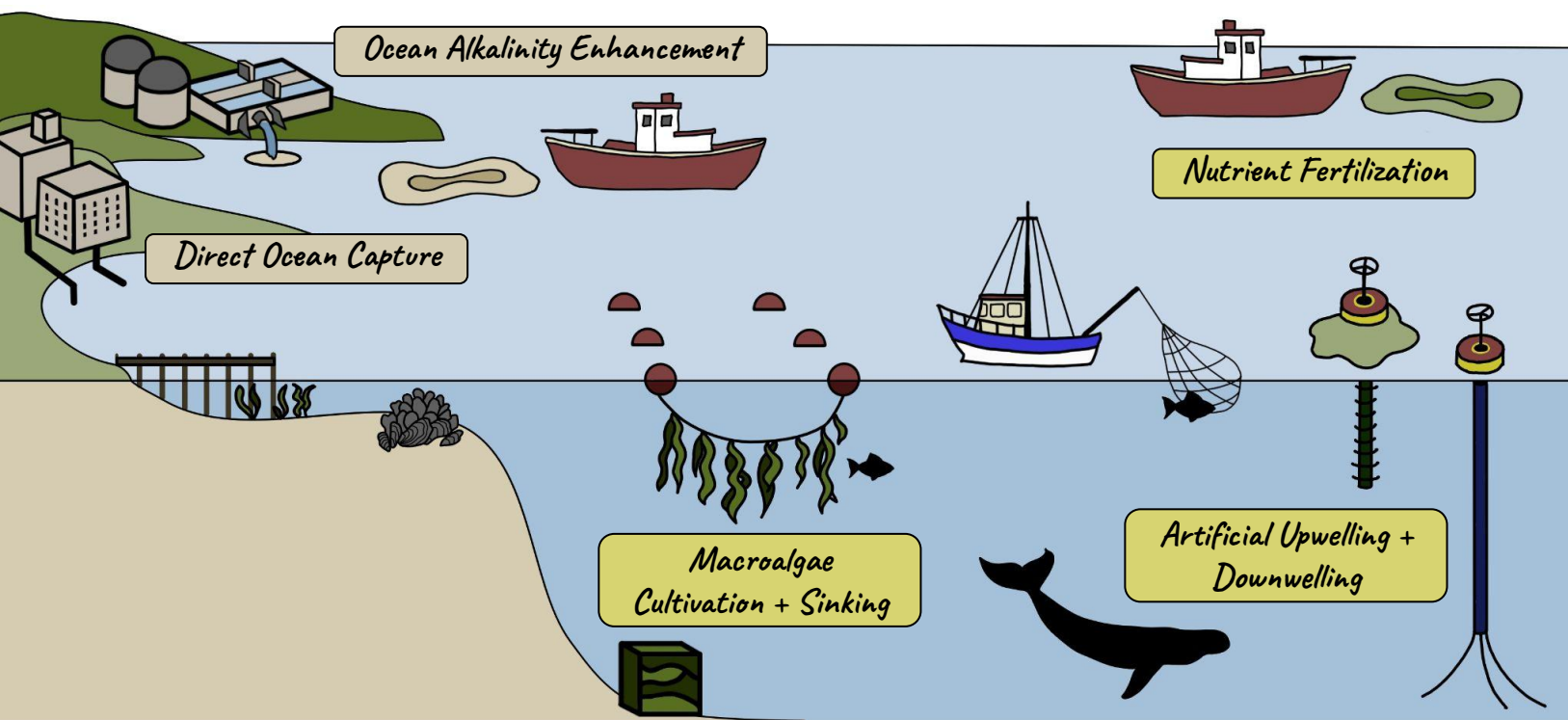
"Biotic" (living) mCDR approaches rely on ocean biology to capture carbon via photosynthesis, a process by which plants absorb carbon to create food. The biomass that is produced by seaweed or plankton must be naturally or intentionally sunk to the deep ocean to avoid interaction with the atmosphere and ensure the carbon is stored effectively.

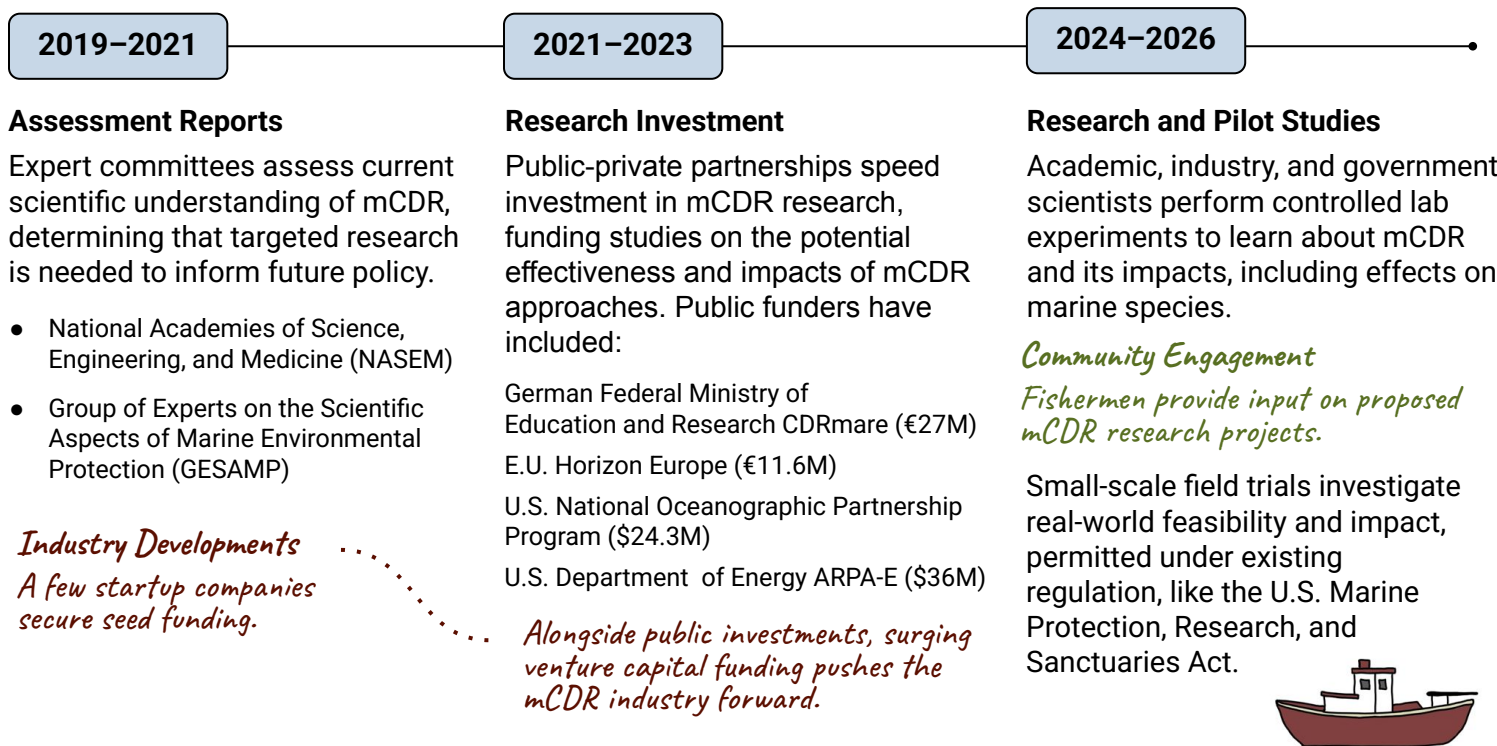
Public and private actors around the world are committed to net-zero carbon emission targets to limit global warming. While reducing emissions is the highest priority for achieving these goals, removing past emissions from the atmosphere is also necessary to limit the impact on the ocean and protect our environment.

Marine carbon dioxide removal (mCDR) technologies are being studied to determine if they are safe and effective. **As research and financing for mCDR increases, it is important for those who rely on the ocean for their livelihoods and way of life to be informed and involved.**

The environmental impacts of mCDR are not yet well understood. While fisheries could benefit from improved ocean conditions in the long term, responsible research is needed to determine how mCDR could affect species, alter habitats, and interact with fishing activities in shared ocean spaces.

Use this guide as a starting point to learn how the field of mCDR has developed to date, and how fishermen can learn more and weigh in on its future.





What Comes Next?

A hypothetical future where mCDR grows to a scale useful for contributing to climate goals and environmental protection, contingent on community support

