

Climate & Sustainability

Capturing carbon through nature: the power of Nature-based Solutions



What are Nature-based Solutions?



Nature-based Solutions (NbS) are **actions** to **protect**, sustainably **manage** and **restore** natural and modified ecosystems in ways that address **societal challenges** effectively and adaptively, to provide both **human well-being** and **biodiversity benefits**. (IUCN, 2016)



NbS can provide different benefits, such as **carbon capture** and generation of **carbon credits** through actions involving the sustainable management of natural resources, such as **reforestation** and **afforestation**.

Types of carbon credits generated by marine NbS

MARINE RESTORATION & CONSERVATION

Mangroves sequester carbon in above-ground biomass and below-ground sediments which can accumulate for millennia.

Posidonia meadows habitats store up to 830 tonnes of carbon per hectare.



Mangroves are considered **the most productive carbon sink** that sustains and stores “**blue carbon**”: carbon captured and stored in vegetation and soils of coastal and marine ecosystems which makes them important for global climate change mitigation.



Posidonia oceanica is one of the most important endemic species of the Mediterranean Sea. In coastal seawaters, it forms **extensive meadows**. Posidonia beds provide a lot of ecosystem services as the **carbon storage**.

Types of carbon credits generated by marine NbS

MARINE RESTORATION & CONSERVATION

Salt marshes are an important habitat to mitigate climate change effects, purify water, protect against erosion and store carbon.

Wetlands are areas where **water covers the soil or is present either at or near the surface all year** or for varying periods of time during the year, including during the growing season.



A study (Earth's Future, 2024) realised on 10 salt marshes in the Venice lagoon shows that they have the same **carbon absorption capacity of 130,000 trees** per square kilometres.



Wetland plants such as reeds, sedges, and other aquatic vegetation grow quickly and **absorb large amounts of CO₂** from the atmosphere through photosynthesis. Carbon can remain trapped in wetland soils for centuries, making these ecosystems important **natural carbon sinks**.

Types of carbon credits generated by terrestrial NbS

REFORESTATION and AFFORESTATION

Afforestation is the creation of **new forests** on land that has not historically been forested.

Reforestation is the **restoration of forests** on areas that were previously deforested.



As of 2026, **329 afforestation and reforestation projects** have been registered (Climate Focus, 2026) with an average credit price of **\$18 per credit** (Abatable, 2026).

Together with reforestation & afforestation projects, **REDD+** is a nature-based mechanism that encourages to protect and sustainably manage forests, increase carbon storage, and improve the livelihoods of local communities.

Types of carbon credits generated by freshwater NbS

PEATLAND

Peatlands (bogs, fens, mires) are **wetlands** where organic matter accumulates faster than it decomposes, creating thick peat layers.



They help reduce carbon emissions globally and **store approximately double the amount of carbon that is stored in all the world's forests**, making them a vital tool in helping regulate the climate.

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