

MITIGATION

Blue Carbon in the Everglades

Carbon sequestered (absorbed by living organisms) and stored in oceans and in coastal ecosystems such as mangroves, seagrasses, and salt marshes is called Blue Carbon.

Mangroves are highly productive ecosystems that capture large amounts of carbon dioxide (CO₂) from the air during photosynthesis, convert it to organic carbon, and store it as biomass (stems, leaves, roots) for decades and in soils for millennia.

Nearly 89% of the organic carbon is stored underground in live and dead roots and in the organic peat soil of the Everglades.

The sequestration and storage of carbon in peat soils makes Everglades mangroves a significant sink of Blue Carbon which helps mitigate climate change impacts like extreme heat and sea level rise.

Everglades restoration increases freshwater flows into the coastal mangrove forests. This is an important climate mitigation and adaptation strategy. Inundation of wetlands ensures that peat soil continues to accrete and the stored carbon stays in place.

Nature-based solutions, including Everglades restoration, can contribute nearly 30% of the mitigation required by 2030 to limit global temperature increase to 2.7°F (1.5°C), as per the Paris Agreement.



BLUE CARBON STORAGE

1 CO₂ captured during photosynthesis.

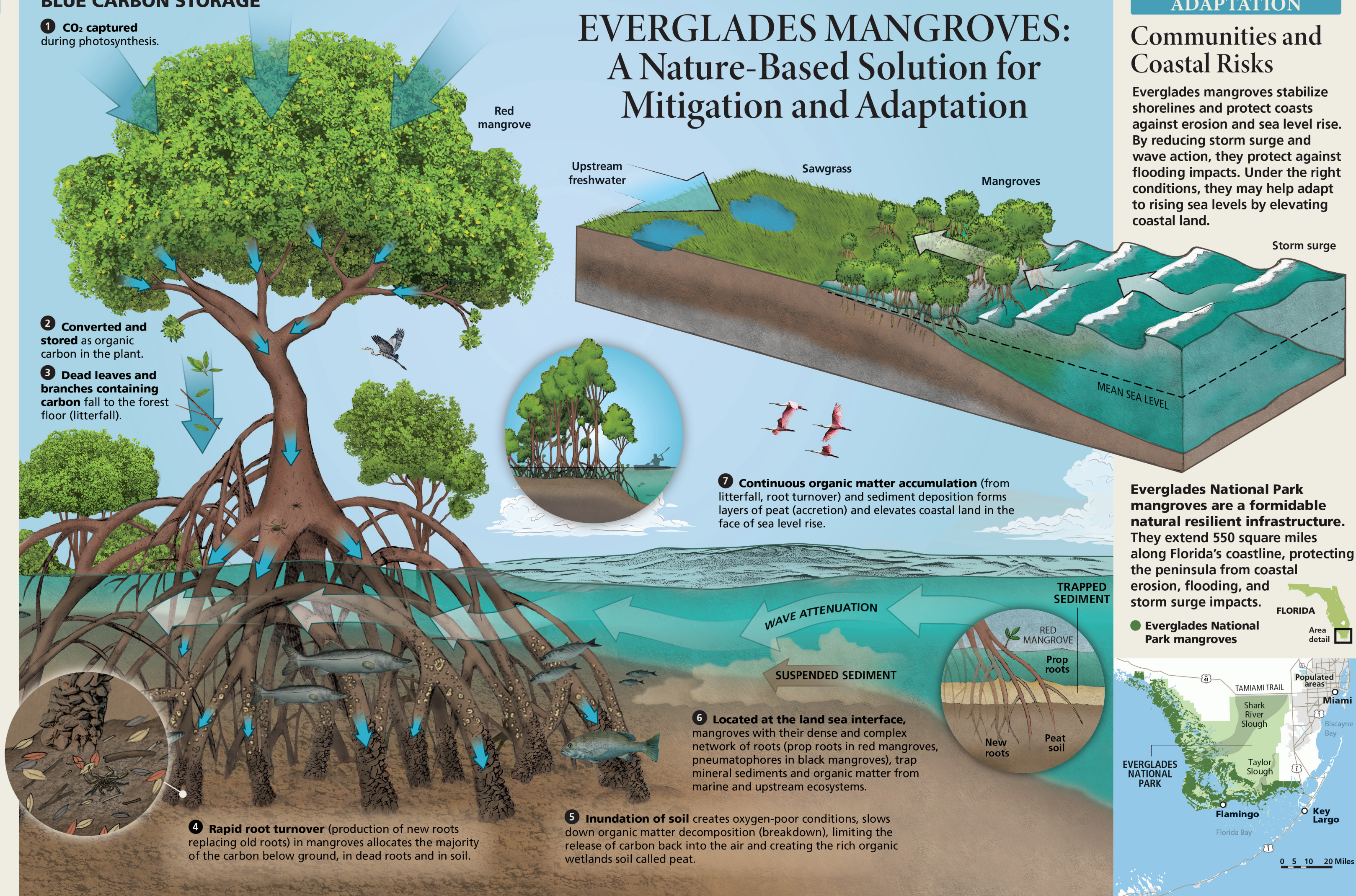
2 Converted and stored as organic carbon in the plant.

3 Dead leaves and branches containing carbon fall to the forest floor (litterfall).

4 Rapid root turnover (production of new roots replacing old roots) in mangroves allocates the majority of the carbon below ground, in dead roots and in soil.

5 Inundation of soil creates oxygen-poor conditions, slows down organic matter decomposition (breakdown), limiting the release of carbon back into the air and creating the rich organic wetlands soil called peat.

EVERGLADES MANGROVES: A Nature-Based Solution for Mitigation and Adaptation



ADAPTATION

Communities and Coastal Risks

Everglades mangroves stabilize shorelines and protect coasts against erosion and sea level rise. By reducing storm surge and wave action, they protect against flooding impacts. Under the right conditions, they may help adapt to rising sea levels by elevating coastal land.

Everglades National Park mangroves are a formidable natural resilient infrastructure. They extend 550 square miles along Florida's coastline, protecting the peninsula from coastal erosion, flooding, and storm surge impacts.

Everglades National Park mangroves