

Nature is a Climate Solution

Climate change is a dynamic issue. As carbon accumulates in the atmosphere and the planet warms, we face more extreme storms, rising sea levels, drought, and intense heat. As a result of these combined threats, coastal bird populations have declined by more than 70 percent, and two-thirds of North America's bird species face extinction if we fail to keep warming below 1.5°C.

To respond to that dynamic issue, we need dynamic solutions – and we have them. Natural climate solutions include coral and oyster reefs, coastal wetlands and mangroves, dunes, and barrier islands. Natural infrastructure like living shorelines, or blends of gray and green infrastructure create living systems that can respond to the ever-changing climate impacts that Florida has faced and will continue to face.

Natural climate solutions are a way of engineering with nature by preserving, restoring, or emulating natural systems and landscapes. They offer co-benefits that cannot be matched by traditional infrastructure. While providing natural flood and erosion control, they also improve air and water quality, enhance habitats for birds, fish, and other wildlife, increase recreational opportunities and land values, recharge groundwater, and sequester carbon pollution.

In Florida, while our coastal communities are most at risk, we know that every place - from the Panhandle to the Keys, from our inland counties to our coastal cities - is already facing climate impacts. Investing in natural climate solutions can build resilience for all of the ecosystems and communities across our state.



Reddish Egret

Photo: Tara Tanaka/Audubon Photography Awards

Examples of Natural Solutions

- Coral and Oyster Reefs
- Mangroves
- Coastal Wetlands
- Dunes
- Barrier Islands
- Living Shorelines
- Upland Systems (e.g., Pine Flatwoods)

Benefits of Natural Solutions

Protection from Storms and Hurricanes and Inland Flood Reduction

Coastal wetlands and mangroves act as a buffer against incoming storms and hurricanes. Additionally, these natural shorelines reduce flooding by absorbing storm surge and stormwater. Research shows that 2.7 miles of wetlands reduce storm surge by a foot and that one acre of wetlands holds up to 1.5 million gallons of floodwater.

Carbon Sequestration

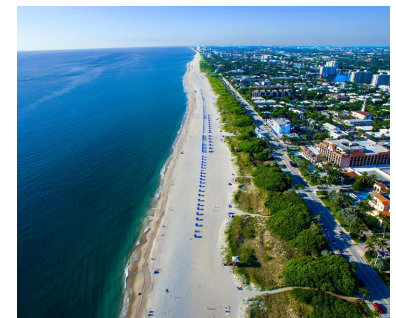
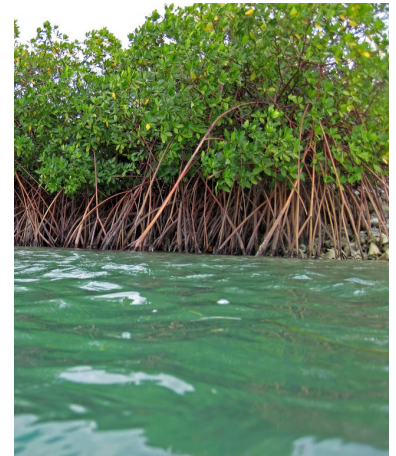
Coastal wetlands can store more carbon than any other coastal ecosystem. A 2018 study shows that mangrove wetlands are responsible for storing more than 6.4 billion tons of carbon globally¹.

Cost Efficiency

Natural infrastructure has been shown to provide significant, long-term, and cost-competitive benefits for challenges such as flood reduction. For example, it can attract more private investment and potentially lower operating costs. Research has illustrated that the average construction costs between natural and gray infrastructure are similar, but that there are lower replacement costs with living shorelines, a form of natural infrastructure.

Ecosystem Services

Coastal wetlands have the ability to absorb and filter out excess nutrients and other chemicals before flows reach the open water. Scientists have repeatedly confirmed the role wetlands play in cleansing and storing stormwaters, recharging our aquifers, and providing plentiful clean water for our families, our beaches, fisheries, wildlife, and Florida's tourism economy. In addition to coastal wetlands, inland and upland systems play a huge role in ecosystem services. This role includes reducing flood risk, improving air quality, and providing a refuge for species during major storms and sea-level rise.



Florida Scrub Jay
Photo: Madelyn Watson/
Audubon Photography Awards

**Want to learn how you can advocate for natural climate solutions?
Contact Flconservation@audubon.org**

¹ [A global map of mangrove forest soil carbon at 30 m spatial resolution](#)