Carolina Wetlands Association


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WETLANDS AND CLIMATE CHANGE

Climate change refers to the long-term changes in the average weather patterns that have come to define Earth's local, regional and global climate.[1]

Climate change causes:

- **increased temperatures** and **storm activity,**
- **increased sea level rise,**
- **elevates storm surges**, and
- causes more **frequent flooding**

The *Carolinas have experienced several major hurricanes* in the coastal and mountain regions in the last 5 years. Along the coast, the Carolinas saw Hurricane Matthew (2016), Florence (2018) and Dorian (2019). In the mountains, Helene (2024) was a significant event. These hurricanes caused *widespread flooding* in dozens of coastal and mountain communities, resulting in *lost lives and billions of dollars in property damage*.

Absorbs wave action, reduces erosion and impacts from hurricanes and extreme weather.

Extreme flooding events occurred during hurricanes Matthew (2016) and Florence (2018) in North and South Carolina.[2] *Florence was a historic storm*, breaking 28 flood records across North and South Carolina.[3] Prior to Florence, some of the flooding records are over 75 years old, including the Northeast Cape Fear River near Chinquapin, NC (78 years) and the Little Pee Dee River at Galivants Ferry, SC (77 years).[1]

Carolina Wetlands play a critical role in mitigating the impacts of climate change, by

- **retaining** floodwater, stormwater and storm surges,
- **protecting** shorelines from erosion by buffering wave action and trapping sediments, and by
- **storing** *excess carbon in the atmosphere through photosynthesis**.[4]

In coastal areas, *marsh wetlands protect shorelines* from erosion by *buffering wave action and trapping sediments*. They reduce flooding by slowing and absorbing rainwater and *protect water quality* by filtering runoff.

Coastal marshes can also *migrate landward*. Trapped sediments allow the *marshes to rise in elevation*, which helps mitigate the effects of sea level rise.

Because of their ability to mitigate sea level rise, absorb rainwater, retain floodwater and store atmospheric carbon dioxide, *wetland protection and conservation is essential in the Carolinas*.

Carolina wetlands *can be protected and conserved* in several ways:

- By *not developing or impacting wetlands* (e.g., filling or ditching).
- By a*voiding the installation of bulk heads or retaining walls along marshes*, which impede marsh landward migration,
- By *avoiding wetlands if planning* a home, building, shed or farm field expansion, and
- By placing wetlands under protective *easement* (e.g., conservation easement).

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* Carbon dioxide in the atmosphere is absorbed by wetland plants during photosynthesis and is retained in the plants' biomass (roots, shoots, tree bark and leaves) and in the soil as soil organic matter.

References

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