Study Shows Value of Coastal Habitats in Removing Carbon

July 27, 2016

TAMPA, FL - By 2100, seagrasses, marshes and mangroves in Tampa Bay are expected to remove 74 million metric tons of carbon dioxide from the atmosphere -- the equivalent of taking 160,000 cars off the road every year.

This is among the results of a study conducted by Restore America's Estuaries in partnership with the Tampa Bay Estuary Program and other conservation groups. The research reinforces the importance of restoring coastal habitats in Tampa Bay and around the nation to buffer the effects of rising seas and a changing climate. The work was partially funded by that Tampa Bay Environmental Restoration Fund.

Tampa Bay is one of the few places in the U.S. to have three critical coastal habitats - mangroves, salt marsh, and seagrasses. These habitats are very effective at removing carbon dioxide from the atmosphere and storing it in the soil for decades or even centuries, so much so that scientists have given this service its own name - - "blue carbon."

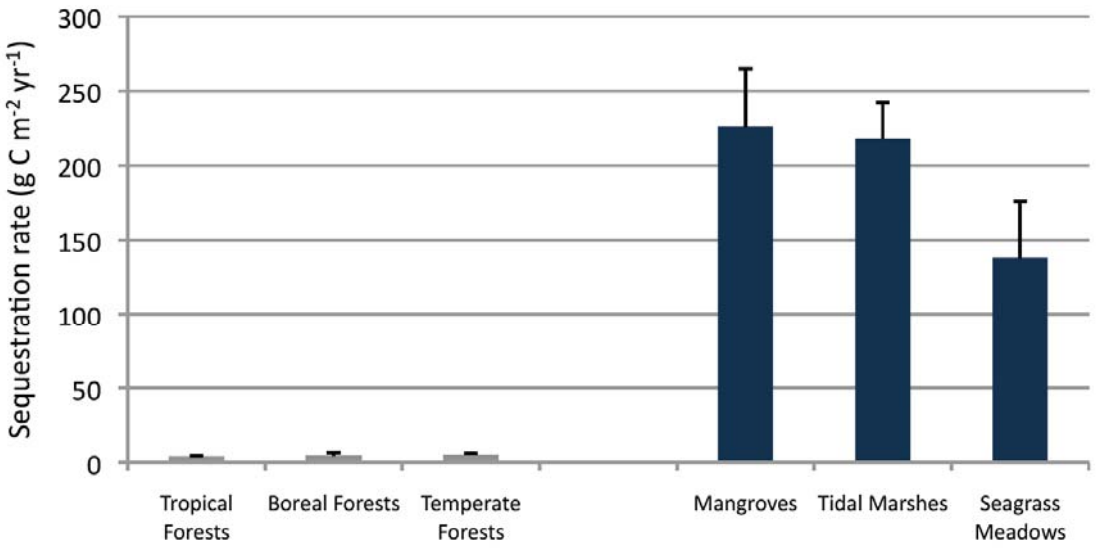

Figure 1. Annual mean carbon sequestration rates for blue carbon habitats per unit area compared to terrestrial forest habitats (error bars indicate standard error). The annual sequestration rate of a given ecosystem is the quantity of CO_2 removed from the atmosphere and/or ocean and trapped in natural habitats (Modified from McLeod et al. 2011).

The study highlights the substantial contribution that Tampa Bay coastal habitats provide for capturing and storing carbon, and provides new data to help local organizations and agencies understand what actions are needed most to help the bay mitigate the effects of sea-level rise.

As sea levels rise over the coming decades, the model predicts that much of the marsh and mangrove habitat in Tampa Bay will be vulnerable to drowning. Areas along the

shoreline that are drowned can provide new areas for underwater seagrasses to grow. Providing space for marsh and mangrove habitats to migrate inland, while maintaining adequate water quality to support seagrass habitats, will be critical to maintaining fisheries and quality of life in Tampa Bay.

"Over the past two decades, the Tampa Bay community has made great progress in improving the health of Tampa Bay's waters," said Holly Greening, Executive Director of the Tampa Bay Estuary Program. "We want to ensure that progress will not be lost as a result of sea-level rise. The data and model provided by this study will help us chart a course forward that protects the work our public and private sector partners have collectively accomplished over the past 45 years."

Thousands of acres of coastal habitat were lost due to development from the 1950s to early 1990s. Since that time, Tampa Bay managers have worked to restore the balance of critical estuary habitat types. As the remaining habitat is increasingly vulnerable to sea-level rise and continued development pressures, being able to predict changes in the landscape is extremely valuable to coastal managers.

Find a copy of the report at https://www.estuaries.org/bluecarbon-resources.

This report was a collaborative effort of Restore America's Estuaries, Environmental Science Associates, Tampa Bay Estuary Program, Tampa Bay Watch, Woods Hole Oceanographic Institute, and the Florida Fish and Wildlife Conservation Commission.

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