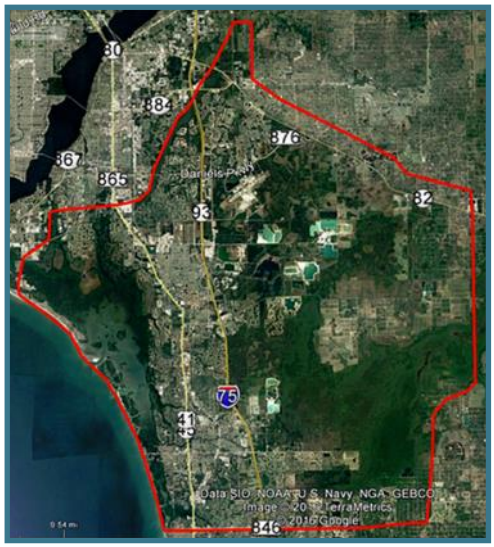
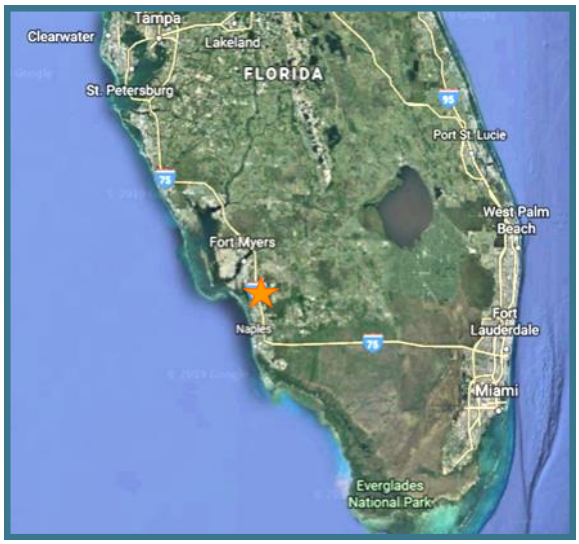
South Lee County Watershed Initiative Hydrological Modeling Project

HYDROLOGICAL RESTORATION





Summary

The South Lee County Watershed is comprised of the Estero River, Spring Creek, and Imperial River watersheds, which flow into the Estero Bay Aquatic Preserve. Much of the native wetland habitats have been lost to agriculture, development, the installation of drainage canals, surface mining, and major roadways. These activities have significantly altered the historic flow of water from the southern region of Lehigh Acres south to the Corkscrew Sanctuary and southwest to Estero Bay. The surrounding wetland ecosystems are highly susceptible to over-drainage, flooding, habitat changes, water quality degradation, and climate change stressors. The rivers and creeks in this area experience significant flooding during storm events and very low flows during the dry season.

To address these concerns partners in the area came together to form the South Lee County Watershed Initiative (SLCWI), which aims to restore more natural water flows, improve water quality and environmental conditions, and increase natural water storage and moderation of flooding events.

CHNEP provided funding for the development of a science-based, data-driven integrated surface/ground water hydrologic model that is capable of simulating both dry and wet season water levels and flows. It fills data gaps and bridges the various modeling efforts in the area to build a regional watershed-scaled picture. This tool will be used by resource management agencies to guide appropriate restoration and management of surface waters currently flowing from the South Lee County Watershed.

Location: Lee County, FL

Partners: South Florida Water Management District, Southwest Florida Regional Planning Council, City of Bonita Springs, Lee County, Village of Estero, Bonita Springs Utilities, Florida Department of Transportation, Conservancy of Southwest Florida, Audubon Society, Corkscrew Swamp Sanctuary, and the Estero Council of Community Leaders.

Status: Completed

CHNEP Cost: $214,209

Funding Source: Environmental Protection Agency, South Florida Water Management District

2019 CHNEP Plan Activity:

Hydrological Restoration 1.1: Conduct data collection, modeling, and analysis of historical, current, and projected hydrologic conditions to identify needs and guide hydrologic restoration.


Mike Kaplan

Anticipated Results and Benefits


Linda Wroble

Informed Decision Making:

This project resulted in a coherent model that simulates both wet and dry season water levels and flows for the Estero and Imperial River watersheds. Additionally, appropriate and cost-effective restoration projects were identified and recommended for the area.

Improved Water Quality:

Recommended restoration efforts conducted as a result of this project will improve the water quality of the individual rivers themselves, as well as the main waterways they flow into. Restoring natural flows will re-hydrate wetlands and allow them to provide their natural water-cleansing function to improve water quality downstream.


The Weather Channel

Increased Aquatic and Terrestrial Habitat:

Re-hydrating wetlands will clean water before it moves downstream. This provides better habitat for fish and wildlife in the downstream areas and estuary. It will also increase natural water storage on land and allow aquifer recharge. Water flow will be rerouted from areas where it is doing harm to provide greater flood protection.

https://www.chnep.org/south-lee-co-watershed-initiative

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Uniting Central and Southwest Florida to protect water and wildlife