HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: HB 1129 Mangrove Replanting and Restoration
SPONSOR(S): Avila
TIED BILLS: **IDEN./SIM. BILLS:** SB 1416

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR or BUDGET/POLICY CHIEF
1) Environment, Agriculture & Flooding Subcommittee	15 Y, 0 N	Gawin	Moore
2) State Affairs Committee			

SUMMARY ANALYSIS

Mangrove forests are a distinct saltwater woodland that thrive in tidal estuaries and low-energy shorelines throughout the tropics and sub-tropics. Florida's mangroves are typically found south of Cedar Key on the Gulf Coast and south of Cape Canaveral on the Atlantic Coast. They grow in coastal intertidal environments and are able to tolerate a wide range of saline waters, from nearly fresh to very high salt content in coastal waters. Mangroves have a significant ecological role as habitats for endangered and threatened species, and species of special concern. Mangroves also serve as storm buffers by functioning as wind breaks and through prop roots reducing wave action and improve water quality and clarity by filtering upland runoff and trapping waterborne sediments and debris. Through a combination of these functions, mangroves contribute significantly to the economy of the coastal counties of South Florida and the State.

The bill requires the Department of Environmental Protection to adopt rules for mangrove replanting and restoration. The bill requires the rules to address significant erosion in areas of critical concern, to protect barrier and spoil islands, and to assist Everglades restoration and Biscayne Bay revitalization efforts.

The bill may have an indeterminate negative fiscal impact on the state.

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. EFFECT OF PROPOSED CHANGES:

Background

Mangroves

Mangrove forests are a distinct saltwater woodland that thrive in tidal estuaries and low-energy shorelines throughout the tropics and sub-tropics.[1] Florida's mangroves are typically found south of Cedar Key on the Gulf Coast and south of Cape Canaveral on the Atlantic Coast. They grow in coastal intertidal environments and are able to tolerate a wide range of saline waters, from nearly fresh to very high salt content in coastal waters. Florida's mangrove forests primarily consist of four trees: red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and buttonwood (*Conocarpus erectus*).[2]

Mangroves are important in recycling nutrients and the nutrient mass balance of the estuarine ecosystem.[3] They are one of the highest primary and associated secondary biologically productive ecosystems in the world. Mangroves provide one of the basic food chain resources for arboreal life and nearshore marine life through their leaves, wood, roots, and detrital materials.[4] This primary production forms a significant part of the base of the arboreal, estuarine, and marine food web.[5]

Mangroves have a significant ecological role as habitats for endangered and threatened species, and species of special concern.[6] For several of these species, the habitat is critical and vital to their continued survival. Additionally, mangroves have a significant ecological role as physical habitats and nursery grounds for a wide variety of marine and estuarine vertebrates and invertebrates. Many of these species have significant sport fishery and commercial fishery value.[7] Many estuarine fishes spend their early life in mangroves and then move as adults to complete life cycles in seagrass habitats.[8] The highest quality seagrass beds are associated with mangrove-fringed shorelines.[9] Animals associated with the mangrove and seagrass communities include herbivores, such as green turtles, manatees, sea urchins, blue crabs, fiddler crabs, and a variety of fishes.[10]

Additionally, mangroves serve as storm buffers by functioning as wind breaks and through prop roots reducing wave action.[11] Mangrove roots stabilize shorelines and fine substrates, reducing turbidity, and enhancing water clarity. Mangroves improve water quality and clarity by filtering upland runoff and trapping waterborne sediments and debris.[12] Unaltered mangroves contribute to the overall natural setting and visual aesthetics of Florida's estuarine waterbodies. Through a combination of the above functions, mangroves contribute significantly to the economy of the coastal counties of South Florida and the State.

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[1] Fish and Wildlife Conservation Commission (FWC), *Mangrove Forests*, https://myfwc.com/research/habitat/coastal-wetlands/information/mangroves/ (last visited Jan. 14, 2022).

[2] *Id*. Buttonwood trees are not "true" mangrove species because it lacks the distinctive reproduction and root characteristics of red, black, and white mangroves. However, they are frequently found growing in uplands with mangroves and are part of the ecosystem.

[3] United States Fish and Wildlife Service (FWS), *Multi-Species Recovery Plan for South Florida- Mangroves*, p. 3-519, available at https://www.fws.gov/verobeach/msrppdfs/mangroves.pdf (last visited Jan. 15, 2022).

[4] *Id*.

[5] *Id*.

[6] Florida Museum, *Importance of Mangroves*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/importance-mangroves/ (last visited Jan. 15, 2022).

[7] United States Fish and Wildlife Service (FWS), *Multi-Species Recovery Plan for South Florida- Mangroves*, p. 3-519, available at https://www.fws.gov/verobeach/msrppdfs/mangroves.pdf (last visited Jan. 15, 2022).

[8] *Id*.

[9] *Id*.

[10] Florida Museum, *Importance of Mangroves*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/importance-mangroves/ (last visited Jan. 15, 2022).

[11] FWS, *Multi-Species Recovery Plan for South Florida- Mangroves*, p. 3-520, available at https://www.fws.gov/verobeach/msrppdfs/mangroves.pdf (last visited Jan. 15, 2022).

[12] *Id*.

Mangrove Loss in Florida

Mangroves can be damaged and destroyed due to natural events; however, development within estuarine habitats has had severe impacts on mangrove forests.[13] Scientists have evaluated mangrove loss through aerial photos dating back to the 1940s and 1950s and satellite imagery and aerial photography from the 1980s.[14] The images have shown losses in mangrove acreage.[15] Loss of functional mangrove habitat has been severe in Florida's three largest estuaries since the 1900s.[16] Tampa Bay has lost nearly 50 percent of mangrove forests, and Charlotte Harbor estuary has lost nearly 60 percent.[17] On Florida's East coast, while overall loss of mangrove acreage has not been severe, the construction of mosquito ditches and impoundments has resulted in nearly 85 percent of the mangroves in the Indian River Lagoon being inaccessible and therefore unusable as nursery habitat for local fisheries.[18] Approximately 469,000 acres of mangroves remain in Central and South Florida.[19]

Living Coastlines

The Department of Environmental Protection (DEP) implements the Florida Resilient Coastlines Program, which helps prepare coastal communities and habitats for the effects of climate change, especially sea level rise, by offering technical assistance and funding to communities dealing with coastal flooding, erosion, and ecosystem changes.[20] Living shorelines are a nature-based approach to coastal protection, using natural elements such as ecosystems, vegetation, stone, or organic materials to increase coastal resilience and adapt to sea level rise.[21] DEP provides exemptions from environmental resource permitting for small-scale shoreline stabilization projects, including living shorelines projects.[22] The Florida Resilient Coastlines Program, in collaboration with the National Oceanic and Atmospheric Administration, the Fish and Wildlife Conservation Commission, and various other partners recently broke ground on a large scale project to restore the mangroves between the City of Goodland and the City of Marco Island.[23]

Effect of the Bill

The bill requires the Department of Environmental Protection (DEP) to adopt rules for mangrove replanting and restoration. The bill requires such rules to address significant erosion in areas of critical concern,[24] to protect barrier[25] and spoil[26] islands, and to assist Everglades restoration and Biscayne Bay revitalization efforts.

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[13] *Id*.
[14] FWC, *Mangrove Forests*, https://myfwc.com/research/habitat/coastal-wetlands/information/mangroves/ (last visited Jan. 14, 2022).
[15] *Id*.
[16] *Id*.
[17] *Id*.
[18] *Id*.
[19] DEP, *Florida's Mangroves*, https://floridadep.gov/rcp/rcp/content/floridas-mangroves (last visited Jan. 15, 2022).
[20] DEP, *Florida Resilient Coastlines Program*, available at https://floridadep.gov/rcp/florida-resilient-coastlines-program (last visited Feb. 3, 2022).
[21] Bilkovic et. al., *Living Shorelines: The Science and Management of Nature-Based Coastal Protection*, Taylor & Francis Group, 11-25 (2017); Florida Living Shorelines, *Home*, available at http://floridalivingshorelines.com/ (last visited Feb. 3, 2022).
[22] Rule 62-330.051(12)(e), F.A.C.
[23] Rookery Bay National Estuarine Research Reserve, *Historic Mangrove Restoration Project Breaks Ground at Rookery Bay Research Reserve*, https://rookerybay.org/rookery-bay-news/historic-mangrove-restoration-project-breaks-ground-at-rookery-bay-research-reserve/ (last visited Feb. 4, 2022); Naples Daily News, *One of the Largest Mangrove Restoration Projects in Florida Breaks Ground Near Marco Island*, https://www.naplesnews.com/story/news/environment/2021/09/24/mangrove-restoration-site-breaks-ground-near-marco-island-florida-collier/5785902001/ (last visited Feb. 4, 2022).
[24] The Areas of Critical State Concern Program, which was created by the Florida Environmental Land and Water Management Act of 1972, is intended to protect resources and public facilities of major statewide significance, within designated geographic areas, from uncontrolled development that would cause substantial deterioration of such resources. Fla. Dep't of Economic Opportunity, Areas of Critical State Concern Program, https://floridajobs.org/community-planning-and-development/programs/community-planning-tableof-contents/areas-of-critical-state-concern (last visited Jan. 15, 2022).
[25] Barrier islands are build-ups of sand that form along the coast of larger land-bodies.
[26] A spoil island is an artificial island, often created as a byproduct of channel dredging.

B. SECTION DIRECTORY:

Section 1. Amends s. 403.9324, F.S., to require DEP to adopt rules related to replanting and restoring mangroves.

Section 2. Provides an effective date of July 1, 2022.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

None.

2. Expenditures:

The bill may have an indeterminate negative fiscal impact on DEP related to the costs associated with the rulemaking requirements of the bill.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

None.

2. Expenditures:

None.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

None.

D. FISCAL COMMENTS:

None.

III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision:

Not applicable. This bill does not appear to require counties or municipalities to spend funds or take action requiring the expenditure of funds; reduce the authority that counties or municipalities have to raise revenues in the aggregate; or reduce the percentage of state tax shared with counties or municipalities.

2. Other:

None.

B. RULE-MAKING AUTHORITY:

The bill requires DEP to adopt rules related to mangrove replanting and restoration.

C. DRAFTING ISSUES OR OTHER COMMENTS:

None.

IV. AMENDMENTS/COMMITTEE SUBSTITUTE CHANGES

None.