HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: HB 1581 Mangrove Replanting and Restoration
SPONSOR(S): Mooney and others
TIED BILLS: **IDEN./SIM. BILLS:** CS/SB 32

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR or BUDGET/POLICY CHIEF
1) Agriculture, Conservation & Resiliency Subcommittee	17 Y, 0 N	Mamontoff	Moore
2) Agriculture & Natural Resources Appropriations Subcommittee		Byrd	Pigott
3) Infrastructure Strategies Committee			

SUMMARY ANALYSIS

Mangrove forests are distinct saltwater woodlands that thrive in tidal estuaries and low-energy shorelines throughout the tropics and subtropics. They grow in coastal intertidal environments and are able to tolerate a wide range of water salinities, from nearly fresh to very high salt content in coastal waters.

Mangroves protect shorelines from damaging storm and hurricane winds, waves, and floods by functioning as wind breaks and reducing wave action. They also play a significant ecological role as habitats for an array of species. It is estimated that 80 percent of the global fish catch is in some way dependent on mangrove forests at some point in their life cycle. Additionally, the highest quality seagrass beds are associated with mangrove-fringed shorelines. The Department of Environmental Protection (DEP) administers and enforces the regulation of mangroves in the state.

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

The bill directs DEP to conduct a statewide feasibility study to determine the value of mangroves and other nature-based solutions for coastal flood risk reduction to reduce insurance premiums and improve local governments' community ratings in the National Flood Insurance Program Community Rating System.

The bill directs DEP to submit a report to the Governor, the President of the Senate, and the Speaker of the House of Representatives by July 1, 2025.

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

The bill provides an effective date of July 1, 2024.

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. EFFECT OF PROPOSED CHANGES:

Background

Mangroves

Mangrove forests are distinct saltwater woodlands that thrive in tidal estuaries and low-energy shorelines throughout the tropics and subtropics.[1] 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. In Florida, mangroves are typically found south of Cedar Key on the Gulf Coast and south of Cape Canaveral on the Atlantic Coast. Florida's mangrove forests primarily consist of four trees: red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemose*), and buttonwood (*Conocarpus erectus*).[2]

Mangroves play a significant ecological role as habitats for an array of species, some of which are endangered and threatened species, and species of special concern.[3] Mangroves serve as nursery grounds for a variety of marine and estuarine vertebrates and invertebrates. It is estimated that 80 percent of the global fish catch is in some way dependent on mangrove forests at some point in their life cycle.[4] Almost all fish and shellfish caught by commercial and recreational anglers spend some part of their life cycles in or near mangroves.[5] Additionally, the highest quality seagrass beds are associated with mangrove-fringed shorelines.[6] 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.[7]

Mangroves protect shorelines from damaging storm and hurricane winds, waves, and floods by functioning as wind breaks and reducing wave action.[8] Mangroves' tangled root systems help prevent erosion by stabilizing sediments and fine substrates and reducing turbidity.[9] Through a combination of these functions, mangroves contribute significantly to the economy of coastal counties of the state.

Mangrove Loss

Mangroves can be damaged and destroyed by natural events; however, development within estuarine habitats has had the most severe negative impacts on mangrove forests.[10] The pressure to destroy remaining mangrove habitat is increasing due to the continued urban development along Florida's coastline.[11] Scientists have evaluated mangrove loss through aerial photos dating back to the 1940s

---

[1] Fish and Wildlife Conservation Commission (FWC), *Mangrove Forests*, https://myfwc.com/research/habitat/coastal-wetlands/mangroves/ (last visited Jan. 22, 2024).
[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] Florida Museum, *Importance of Mangroves*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/importance-mangroves/ (last visited Jan. 22, 2024).
[4] United States Fish and Wildlife Service (FWS), *Mangroves on the Move: Wetland Habitats Responding to Changes in Climate*, available at https://storymaps.arcgis.com/stories/ee2242de7aba4c27a62d21e6ec480f83 (last visited Feb. 24, 2024).
[5] National Oceanic and Atmospheric Administration (NOAA), *Mangroves and seagrass provide habitat for important commercial and recreational species, help stabilize the seafloor, and filter pollutants*, https://floridakeys.noaa.gov/plants/msbenefits.html (last visited Jan. 22, 2024).
[6] *Id*.
[7] Florida Museum, *Importance of Mangroves*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/importance-mangroves/ (last visited Jan. 22, 2024).
[8] *Id*.
[9] *Id*.
[10] *Id*.
[11] Florida Museum, *Conservation*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/conservation/ (last visited Jan. 24, 2024).

and 1950s and satellite imagery and aerial photography from the 1980s.[12] Since the 1900s, it is estimated that vital estuary habitats such as Tampa Bay and Charlotte Harbor have lost 50 to 60 percent of their mangrove forests.[13]

However, in other areas, mangroves are expanding into new territory. Continued evaluation of aerial images between 1984 and 2011 have shown that the Florida Atlantic Coast gained more than 3,000 acres of mangroves.[14] Increases occurred north of Palm Beach County, and the acreage between Cape Canaveral and St. Augustine appears to have doubled.[15]

Mangrove Protection Rule

Passed in 1996, the Mangrove Trimming and Preservation Act (Act) was enacted to regulate the alteration of mangroves in the state.[16] The Act authorizes the Department of Environmental Protection (DEP) to administer and enforce the regulation of mangroves.[17] Under the Act, mangroves cannot be removed, trimmed, or disturbed without a permit from DEP. The act also bans the use of herbicides and other chemicals that could be used to defoliate mangroves.[18]

Under the Act, a permit is generally required to alter or trim mangroves.[19] However, a permit to trim mangroves is not required if homeowners who are located in a riparian mangrove fringe (RMF) follow DEP's trimming guidelines.[20] Homeowners may trim mangroves if the mangrove height exceeds six feet but is not taller than 10 feet.[21] If mangroves are over 24 feet tall, DEP authorization is required. Homeowners may also trim mangroves that were previously legally trimmed so long as they maintain the previous height and configuration.[22] If a property's shoreline is greater than 150 feet in length, only 65 percent of the mangrove trees may be trimmed.[23]

The Act also authorizes DEP to delegate the authority to regulate mangrove trimming and alteration to a local government upon request.[24] DEP has currently delegated this authority to the following local governments:

- Miami-Dade County
- Broward County
- Hillsborough County
- Pinellas County
- Town of Jupiter Island
- City of Sanibel

---

[12] FWC, *Mangrove Forests*, https://myfwc.com/research/habitat/coastal-wetlands/information/mangroves/ (last visited Jan. 22, 2024).

[13] Florida Museum, *Tell Me About: Threats to Mangroves in Florida*, https://www.floridamuseum.ufl.edu/earth-systems/blog/tell-me-about-threats-to-mangroves-in-florida (last visited Jan. 24, 2024).

[14] DEP, *Florida's Mangroves*, https://floridadep.gov/rcp/rcp/content/floridas-mangroves (last visited Jan. 24, 2024).

[15] Research is ongoing to determine the impacts, both positive and negative, of this transition. *Id*.

[16] Section 403.9324, F.S.; Florida Museum, *Conservation*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/conservation/ (last visited Jan. 24, 2024).

[17] Section 403.9324(1), F.S.

[18] *Id*.

[19] Section 403.9328(1), F.S.

[20] RMFs are areas where mangroves extend less than 50 feet deep. RMFs do not include mangroves on uninhabited land that has been set aside for conservation or preservation, or mangroves on lands that have been set aside as mitigation. DEP, *Mangrove Frequently Asked Questions*, https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/mangrove-frequently-asked (last visited Jan. 22, 2024); DEP, *Trimming Mangroves*, https://floridadep.gov/sites/default/files/mangrove-trimming-2-08-16.pdf (last visited Jan. 24, 2024); Sections 403.9324(7) and 403.9325(7), F.S.

[21] Mangroves cannot be trimmed to be below six feet, and mangroves over ten feet will require a professional mangrove trimmer. There are no limitations on the amount or degree of trimming to be performed by a professional trimmer, other than the requirement of mitigation if the trimming results in the destruction of more than five percent of mangroves in the area. DEP, *Trimming Mangroves*, https://floridadep.gov/sites/default/files/mangrove-trimming-2-08-16.pdf (last visited Jan. 24, 2024); Section 403.9326(1)(a), F.S.

[22] *Id*.

[23] Section 403.9326(1), F.S.

[24] Section 403.9324(2) - (3), F.S.

- Sarasota County[25]

DEP may review, biannually, the performance of local programs and may revoke their delegated authority if it is determined that the program has failed to be properly administered and enforced.[26]

Living Shorelines

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 (SLR).[27] When protecting coastlines, a living shoreline approach represents an alternative to traditional hard armoring approaches such as seawalls and bulkheads.[28] When constructed correctly, a living shoreline provides erosion control and maintains coastal processes such as reducing wave energy and storm impacts, improving water quality, and providing critical fish and wildlife habitat.[29]

Resilient Florida Program

Established within DEP in 2021, the Resilient Florida Program (Program) enhances efforts to protect Florida's inland waterways, coastlines, and shores, which serve as invaluable natural defenses against SLR.[30] The Program includes a selection of grants that are available to counties, municipalities, water management districts (WMDs), flood control districts, and regional resilience entities.[31] To effectively address the impacts of flooding and SLR that the state faces, eligible applicants may receive funding assistance to analyze and plan for vulnerabilities as well as implement projects for adaptation and mitigation. The Program creates grant funding opportunities through the Resilient Florida Grant Program and the Statewide Flooding and Sea Level Rise Resilience Plan.[32]

Under the Resilient Florida Grant Program, subject to appropriation, DEP may provide grants to a county or municipality to fund:

- Costs of community resilience planning and necessary data collection for such planning, including comprehensive plan amendments and necessary corresponding analyses that address Peril of Flood requirements;
- Vulnerability assessments that identify or address risks of inland or coastal flooding and SLR;
- The development of projects, plans, and policies that allow communities to prepare for threats from flooding and SLR;
- Preconstruction activities for projects to be submitted for inclusion in the Statewide Flooding and Sea Level Rise Resilience Plan that are located in a municipality that has a population of 10,000 or fewer or a county that has a population of 50,000 or fewer; and
- Feasibility studies and permitting costs for nature-based solutions that reduce the impact of flooding and SLR.[33]

In addition, DEP may provide grants to WMDs to support local government adaptation planning, which may be conducted by the WMD or by a third party on behalf of the WMD. These grants must be used for the express purpose of supporting the Florida Flood Hub for Applied Research and Innovation (Flood Hub) and DEP through data creation and collection, modeling, and the implementation of statewide standards. Priority must be given to filling critical data gaps identified by the Flood Hub.[34]

National Flood Insurance Program Community Rating System

---

[25] DEP, *Mangrove Trimming – Delegated Local Governments*, https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/mangrove-trimming-delegated-local (last visited Jan. 24, 2024).
[26] Section 403.9324(5), F.S.
[27] 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 Jan. 22, 2024).
[28] *Id*.
[29] *Id*.
[30] DEP, *Resilient Florida Program*, https://floridadep.gov/ResilientFlorida (last visited Jan. 21, 2024).
[31] DEP, *Resilient Florida Grants*, https://floridadep.gov/Resilient-Florida-Program/Grants (last visited Jan. 20, 2024).
[32] Sections 380.093(3) and 380.093(5), F.S.
[33] Section 380.093(3), F.S.
[34] *Id.*

The National Flood Insurance Program (NFIP) was created by the passage of the National Flood Insurance Act of 1968.[35] The NFIP is administered by the Federal Emergency Management Agency (FEMA). The program enables homeowners, business owners, and renters in participating communities to purchase federally backed flood insurance. This insurance offers an alternative option for disaster assistance to meet the escalating costs of repairing flood damage to buildings and their contents.[36] Participation in the NFIP is voluntary.[37] To join, a community must:

- Complete an application;
- Adopt a resolution of intent to participate and cooperate with FEMA; and
- Adopt and submit a floodplain management ordinance that meets or exceeds the minimum NFIP criteria.[38]

The Community Rating System (CRS) within the NFIP is a voluntary incentive program that rewards communities for implementing floodplain management practices that exceed the minimum requirements of the NFIP.[39] Property owners within communities that participate in the CRS program receive discounts on flood insurance premiums.[40] Premium discounts range from five to 45 percent based on a community's CRS credit points.[41] Communities earn credit points by implementing FEMA-approved activities or programs, such as:

- Flood damage reduction programs that reduce the flood risk to existing development;
- Public outreach programs advising people about flood hazards, flood insurance, and ways to reduce flood damage;
- Mapping and regulations limiting floodplain development or providing increased protection to new and existing development; or warning and response programs that provide early flood warnings to the public and incorporate substantial damage assessments into flood response operations.[42]

Areas of Critical State Concern

In 1972, the Florida Environmental Land and Water Management Act was enacted, creating the Areas of Critical State Concern (ACSC) Program. The program 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.[43] The ACSC designation denotes areas that contain natural resources of regional or statewide importance, areas that are or will be significantly affected by major public facilities, or areas of major development potential.[44]

Areas currently designated as ACSCs include the Big Cypress Area,[45] the Green Swamp Area,[46] the Florida Keys Area,[47] the Brevard Barrier Island Area,[48] and the Apalachicola Bay Area.[49]

Effect of the Bill

[35] 42 U.S.C. 4001 et seq.
[36] Benefits.gov, National Flood Insurance Program (NFIP), https://www.benefits.gov/benefit/435 (last visited Jan. 22, 2024).
[37] FEMA, Participation in the NFIP, https://www.fema.gov/glossary/participation-nfip (last visited Jan. 22, 2024).
[38] *Id*.
[39] FEMA, Community Rating System, https://www.fema.gov/floodplain-management/community-rating-system (last visited Jan. 22, 2024).
[40] *Id*.
[41] *Id*.
[42] FEMA, *Community Rating System: A Local Official's Guide to Saving Lives, Preventing Property Damage, and Reducing the Cost of Flood Insurance*, 3-6 (2023), available at https://www.fema.gov/sites/default/files/documents/fema_crs-brochure_032023.pdf.
[43] Florida Commerce, *Areas of Critical State Concern Program*, https://www.floridajobs.org/community-planning-and-development/programs/community-planning-table-of-contents/areas-of-critical-state-concern (last visited Jan. 25, 2024).
[44] The Green Swamp, *History*, https://www4.swfwmd.state.fl.us/greenswamp/history (last visited Jan. 25, 2024).
[45] Section 380.055, F.S.
[46] Section 380.0551, F.S.
[47] Section 380.0552, F.S.
[48] Section 380.0553, F.S.
[49] Section 380.0555, F.S.

The bill requires DEP to adopt rules for mangrove replanting and restoration. The bill requires these rules to:

- Address significant erosion in areas of critical state concern;
- Protect barrier[50] and spoil islands;[51]
- Assist in Everglades restoration and Biscayne Bay revitalization efforts, including the development of living shoreline design options for the Biscayne Bay Aquatic Preserve[52] which are ecologically acceptable;
- Promote public awareness of the value of mangroves statewide and support mangrove education campaigns conducted by local governmental entities;
- Identify vulnerable public and private properties along the coastline and encourage partnerships with local governmental entities to create local mangrove protection and restoration zone programs for implementing rules developed by DEP;
- Protect and maintain access to and navigation of the marked channel and the right-of-way of the Florida Intracoastal Waterway;[53]
- Create permitting incentives and approve of and encourage the use of new strategies for living shorelines and nature-based features; and
- Encourage partnerships with local governmental entities to create projects for coastal protection through the Resilient Florida Grant Program.[54]

The bill directs DEP to, in consultation with the Division of Insurance Agent and Agency Services, to conduct a statewide feasibility study to determine the value of mangroves and other nature-based solutions for coastal flood risk reduction within coastal communities to reduce insurance premiums and improve local governments' community ratings in the NFIP CRS.

The bill directs DEP to submit a report to the Governor, the President of the Senate, and the Speaker of the House of Representatives by July 1, 2025.

[50] Barrier islands are build-ups of sand that form along the coast of larger land-bodies.
[51] A spoil island is an artificial island, often created as a byproduct of channel dredging.
[52] Section 258.397, F.S.
[53] Section 327.02, F.S.
[54] Section 380.093(3)(b)1.c., F.S.

B. SECTION DIRECTORY:

Section 1. Amends s. 403.9324, F.S., to require DEP to adopt rules relating to mangrove replanting and restoration.

Section 2. Provides an effective date of July 1, 2024.

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 and conducting a statewide feasibility study to determine the value of mangroves for coastal flood risk reduction. However, these costs can be absorbed within existing resources.

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.