FLORIDA HOUSE OF REPRESENTATIVES
BILL ANALYSIS

This bill analysis was prepared by nonpartisan committee staff and does not constitute an official statement of legislative intent.

BILL #: CS/HB 371	**COMPANION BILL:** CS/SB 50 (Garcia)
TITLE: Nature-based Methods for Improving Coastal Resilience	**LINKED BILLS:** None
SPONSOR(S): Mooney	**RELATED BILLS:** None

Committee References

Natural Resources & Disasters
16 Y, 0 N, As CS
➤
Agriculture & Natural Resources
Budget
➤
State Affairs

SUMMARY

Effect of the Bill:

By July 1, 2027, the bill requires the Department of Environmental Protection (DEP) to develop and publish on its website guidelines for nature-based methods for improving coastal resilience. The bill also requires DEP to encourage local governments to develop or participate in certain restoration programs.

The bill requires the Florida Flood Hub for Applied Research and Innovation (Flood Hub) to develop design guidelines related to green infrastructure, model the effects of conceptual green infrastructure designs, identify areas of significant erosion, and identify strategies and methods to minimize impacts to mangroves or other shoreline vegetation.

By July 1, 2026, the bill requires the Flood Hub to submit a report to the Governor and Legislature on the guidelines and conceptual designs it has developed.

Fiscal or Economic Impact:

The bill may have an insignificant negative fiscal impact on DEP associated with developing guidelines for nature-based methods for improving coastal resilience.

JUMP TO SUMMARY ANALYSIS RELEVANT INFORMATION BILL HISTORY

ANALYSIS

EFFECT OF THE BILL:

Coastal Resilience Guidelines

By July 1, 2027, the bill requires the Department of Environmental Protection (DEP) to develop and publish on its website guidelines for nature-based methods for improving coastal resilience. The bill requires these guidelines to identify all of the following:

- Threats to mangroves and other native shoreline vegetation.
- Strategies that may be used for new developments to avoid or mitigate their impacts on mangroves.
- Ways mangroves, other native shoreline vegetation, and living shorelines may protect barrier[1] and spoil islands.[2]
- Areas or regions of the state in which the use of mangroves, other native shoreline vegetation, and living shorelines, or other nature-based infrastructure, could alleviate coastal erosion. (Section 2)

Additionally, the bill requires DEP to encourage local governmental entities to develop or participate in:

- Mangrove planting and hydrological restoration programs; and
- Restoration of oyster reefs, salt marshes, and coral reefs. (Section 2)

[1] Barrier islands are build-ups of sand that form along the coast of larger land-bodies.
[2] A spoil island is an artificial island, often created as a byproduct of channel dredging.

Florida Flood Hub

The bill requires the Florida Flood Hub for Applied Research and Innovation (Flood Hub) to:

- Develop design guidelines and standards for optimal combinations of green and gray infrastructure to address sea level rise and the impact of storm surges.
- Model the effects, including flood risk reduction and socio-economic benefits, of conceptual designs of green infrastructure and hybrid green-gray infrastructure, and integration of green natural systems into gray infrastructure systems, on the state's coastal resilience.
- Identify areas of significant erosion.
- Identify strategies and methods to minimize impacts to mangroves or other shoreline vegetation. (Section 1)

By July 1, 2026, the bill requires the Flood Hub to submit a report summarizing the design guidelines and standards and the modeled effects of conceptual designs to the Governor and Legislature. (Section 1)

Effective Date

The effective date of this bill is July 1, 2025. (Section 3)

FISCAL OR ECONOMIC IMPACT:

STATE GOVERNMENT:

The bill may have an indeterminate fiscal impact on DEP associated with developing and publishing guidelines on its website related to nature-based methods for improving coastal resilience.

RELEVANT INFORMATION

SUBJECT OVERVIEW:

Mangroves

Mangrove forests are distinct saltwater woodlands that thrive in tidal estuaries and low-energy shorelines throughout the tropics and subtropics.[3] 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.[4] 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*).[5]

The Impact of Mangroves

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.[6] 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.[7] 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.[8]

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[3] Fish and Wildlife Conservation Commission (FWC), *Mangrove Forests*, https://myfwc.com/research/habitat/coastal-wetlands/mangroves/ (last visited Mar. 4, 2025).
[4] *Id*.
[5] *Id*. Buttonwood trees are not "true" mangrove species because they lack 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.
[6] Florida Museum, *Importance of Mangroves*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/importance-mangroves/ (last visited Mar. 4, 2025).
[7] 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 Mar. 4, 2025).
[8] Florida Museum, *Importance of Mangroves*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/importance-mangroves/ (last visited Mar. 4, 2025).

Mangroves protect shorelines from damaging storm and hurricane winds, waves, and floods by functioning as wind breaks and reducing wave action.[9] Mangroves' tangled root systems help prevent erosion by stabilizing sediments and fine substrates and reducing turbidity.[10] This stabilization also absorbs excess nutrients from entering into coastal waters, benefitting seagrasses which can die off due to excess nutrient loads in the water.[11] Through a combination of these functions, mangroves contribute significantly to the economy of coastal counties of the state.

Mangrove Loss

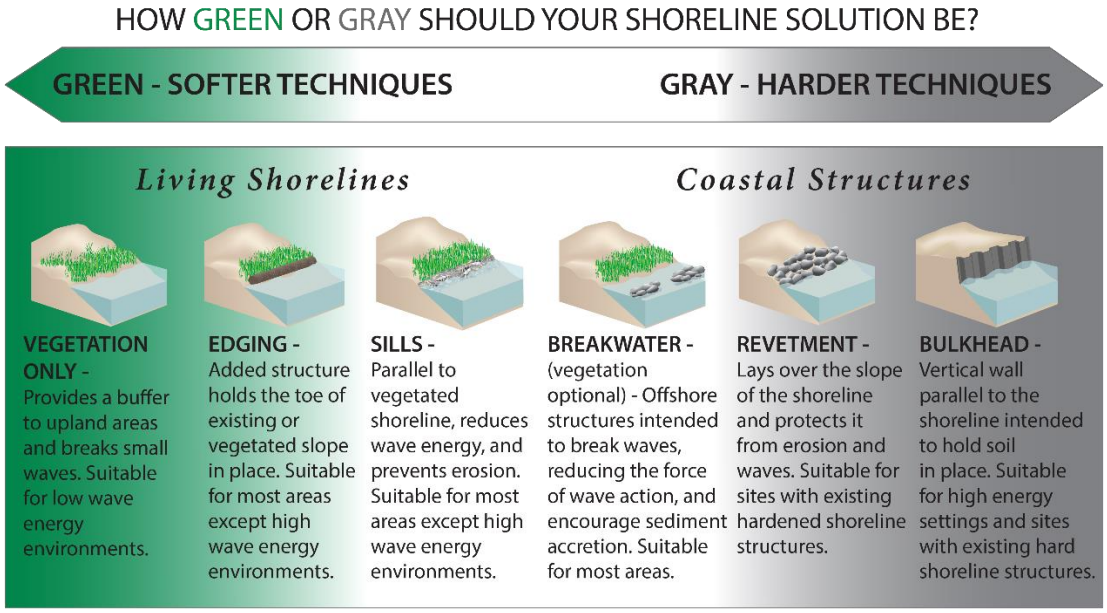
Mangroves can be damaged and destroyed by natural events; however, development within estuarine habitats has had the most severe negative impacts on mangrove forests.[12] The pressure to destroy remaining mangrove habitat is increasing due to the continued urban development along Florida's coastline.[13] 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] 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.[15]

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.[16] Increases occurred north of Palm Beach County, and the acreage between Cape Canaveral and St. Augustine appears to have doubled.[17]

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).[18] When protecting coastlines, a living shoreline approach represents an alternative to traditional hard armoring approaches such as seawalls and bulkheads.[19] 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.[20] Additionally, nature-based approaches to coastal protection can be incorporated or combined with traditional infrastructure to create effective protections. Pictured below[21] are examples of green and gray projects which can be incorporated into coastal infrastructure:

[9] *Id*.
[10] *Id*.
[11] FWC, *Mangrove Forests*, https://myfwc.com/research/habitat/coastal-wetlands/mangroves/ (last visited Mar. 4, 2025).
[12] Florida Museum, *Impacts on Mangroves*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/impacts/ (last visited Mar. 4, 2025).
[13] Florida Museum, *Conservation*, https://www.floridamuseum.ufl.edu/southflorida/habitats/mangroves/conservation/ (last visited Jan. 24, 2024).
[14] DEP, *Florida's Mangroves*, https://floridadep.gov/rcp/rcp/content/floridas-mangroves (last visited Mar. 4, 2025).
[15] 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 Mar. 4, 2025).
[16] DEP, *Florida's Mangroves*, https://floridadep.gov/rcp/rcp/content/floridas-mangroves (last visited Mar. 4, 2025).
[17] Research is ongoing to determine the impacts, both positive and negative, of this transition. *Id*.
[18] National Oceanic and Atmospheric Administration (NOAA), *Living Shorelines*, https://www.habitatblueprint.noaa.gov/living-shorelines/ (last visited Mar. 4, 2025).
[19] NOAA, *Living Shorelines Provide Nature-Based Approach to Coastal Protection*, https://www.fisheries.noaa.gov/story-map/living-shorelines-provide-nature-based-approach-coastal-protection (last visited Mar. 4, 2025).
[20] *Id*.
[21] National Oceanic and Atmospheric Administration (NOAA), *Living Shorelines*, https://www.habitatblueprint.noaa.gov/living-shorelines/ (last visited Mar. 4, 2025).



Flood Hub

The Flood Hub within the University of South Florida College of Marine Science works to bridge the gap between scientists, policymakers, practitioners, and the public to help communities mitigate and adapt to flooding risks.[22] The Flood Hub is required to organize existing data needs, establish community-based programs to improve flood monitoring, and develop opportunities to partner with other flood and SLR research and innovation leaders.[23] The Flood Hub must also submit an annual comprehensive report to the Governor and the Legislature that outlines its clearly defined goals, efforts, and progress on reaching such goals.[24]

Coastal Erosion

Florida's 825 miles of sandy coastline are one of the state's most valuable natural resources.[25] Wide beaches provide foraging and nesting habitat for shorebirds, and sea turtles use the beaches during summer months to come ashore to nest.[26] In all, there are more than 30 plants and animals considered rare within the state that inhabit beaches and the adjacent habitats.[27]

Beaches provide a barrier against storms. The beach and dune system act as a buffer between storm waves and coastal development or infrastructure. During storms, waves reach the beach and dunes before they get to upland property. A beach and dune system absorbs the wave energy, thereby greatly reducing damage to upland structures.[28] Beach erosion is caused by coastal storms, imprudent constructions, sea level rise, and coastal inlets that interrupt sand movement.

RECENT LEGISLATION:

YEAR	BILL #	HOUSE SPONSOR(S)	SENATE SPONSOR	OTHER INFORMATION
2024	HB 1581	Mooney	Garcia	The bill passed the House, but died in the Senate.

[22] Section 380.0933, F.S.; USF College of Marine Science, *Florida Flood Hub for Applied Research and Innovation*, https://www.usf.edu/marine-science/research/florida-flood-hub-for-applied-research-and-innovation/ (last visited Mar. 3, 2025).
[23] Section 380.0933(2), F.S.
[24] Section 380.0933(5), F.S.
[25] DEP, *Beaches*, https://floridadep.gov/rcp/beaches (last visited Mar. 11, 2025).
[26] *Id.*
[27] *Id.*
[28] *Id.*

BILL HISTORY

COMMITTEE REFERENCE	ACTION	DATE	STAFF DIRECTOR/ POLICY CHIEF	ANALYSIS PREPARED BY
Natural Resources & Disasters Subcommittee	16 Y, 0 N, As CS	3/11/2025	Moore	Gawin
THE CHANGES ADOPTED BY THE COMMITTEE:	• Required the Flood Hub to identify areas of significant erosion and strategies and methods to minimize impacts to mangroves and other native shoreline vegetation. • Required the Flood Hub to submit a report summarizing the design guidelines and standards that it develops. • Required DEP to create and publish guidelines on its website related to nature-based methods for improving coastal resilience instead of requiring DEP to engage in rulemaking. • Required DEP to encourage local governments to create and participate in certain restoration programs and activities. • Removed the requirement that DEP conduct a statewide feasibility study on the NFIP program.			
Agriculture & Natural Resources Budget Subcommittee				
State Affairs Committee				

THIS BILL ANALYSIS HAS BEEN UPDATED TO INCORPORATE ALL OF THE CHANGES DESCRIBED ABOVE.
