UNIVERSITY OF GEORGIA
SERPPAS
IRIS IN FOCUS
Publication 24-02

Overview of Living Shoreline Permitting and Regulatory Review in North Carolina, Georgia, Florida, and Mississippi

September 2024

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Executive Summary

In the southeastern coastal United States, Department of Defense (DOD) installations and surrounding communities face significant challenges from coastal erosion, flooding, and sea-level rise. Waves driven by wind, boat traffic, and storms can destroy fragile landforms along the coastline, not to mention sea walls and other traditional or "gray" infrastructure. On many installations and in their surrounding communities, this erosion can put important infrastructure at risk of failure – from runways to access roads to utility lines – creating risks to military readiness, training activities, and other ongoing support operations. Sedimentation and suspended solids from coastal erosion also alters ecological systems and functions that might make environmental compliance obligations more difficult, for instance those related to endangered species and water quality management. Owing to these risks, DOD's Defense Climate Assessment Tool (DCAT), which is used across the entire DOD enterprise to develop screening-level analysis of climate vulnerability for any given installation, declares coastal erosion "a significant problem." That said, DOD recognizes coastal erosion as a problem that "may be reduced or eliminated through structural and nonstructural measures."[1]

[1] Pinson et al., U.S. Army Corps of Engineers, "DoD Installation Exposure to Climate Change at Home and Abroad," (2021), *at* https://media.defense.gov/2021/Apr/20/2002624613/-1/-1/1/DOD-INSTALLATION-EXPOSURE-TO-CLIMATE-CHANGE-AT-HOME-AND-ABROAD.PDF.

A nature-based solution to the issue of coastal erosion that is gaining ground in both the public and private sector is the construction of living shorelines. The term "living shorelines" encompasses a variety of techniques that can be used in place of a rigid bulkhead or other hard structure. As the name suggests, living shorelines typically involve the use of native material such as oyster reefs and/or saltmarsh cordgrass (*Spartina alterniflora*) to reduce wave and tidal energy. They can involve some degree of grading to achieve moderately sloped transition from intertidal areas to uplands and maintain or reestablish a natural connectivity at the land-water interface. With these design features, living shorelines not only reduce erosive forces but also enhance biodiversity and increase heterogeneity of habitat features. Thus, the array of benefits from living shoreline projects inure to both the landowner – from erosion control – and to surrounding communities – through ecosystem services benefits. Research also suggests that living shorelines are a smart financial investment as compared to a wooden bulkhead that would require the landowner to incur significantly more costs over the long term due to maintenance and replacement needs.[2]

Several notable examples of living shorelines that support the military mission at DOD installations in the southeast region have come up in this research. At Marine Corps Air Station Cherry Point in North Carolina, for example, installation staff have planned and obtained permits to construct a living shoreline along the Neuse River. It will be nearly two miles long, providing critical protection to an eroding shoreline while also improving water quality and increasing habitat. The project involves many partner organizations involved in design and funding the project, including North

[2] *See* Sicangco et al., Mississippi-Alabama Sea Grant Program, "Cost-Benefit Analysis of a Small-Scale Living Shoreline Project" (July 2021), *at* https://repository.library.noaa.gov/view/noaa/48521.

Carolina Coastal Federation (NGO leaders in design and construction of living shorelines in North Carolina), the National Fish and Wildlife Foundation, DOD's Readiness and Environmental Protection Integration (REPI) Program, and the Eastern North Carolina Sentinel Landscapes Partnership.

When developing a living shoreline project, one source of uncertainty for project planners is the regulatory landscape – the basic contours may be apparent, but without a more detailed understanding of the path forward in navigating various permitting and regulatory review requirements, delays are likely. This guidebook is intended to help minimize those delays by providing useful background information on relevant agencies, administrative processes, and the underlying laws in four key states in the SERPPAS area: North Carolina, Georgia, Florida, and Mississippi.

For each state, this guidebook describes:

- The state coastal zone management program;
- State permitting requirements related to water quality and wetlands protection;
- State public trust responsibilities for submerged lands;
- Federal permitting under Clean Water Act Section 404; and,
- Key design aspects of living shorelines that will affect the ability to obtain necessary permits and approvals.

This is not a comprehensive guide to the permitting and regulatory review process. For instance, a living shoreline project may necessitate a documented environmental analysis under certain state laws (e.g., North Carolina State Environmental Policy Act). The specific requirements of these laws are not described herein; nor are the mandates of the National Environmental Policy Act (NEPA) described. A reader should, nevertheless, find this document useful as a tool for planning how to approach the more complex permitting processes in each of the covered states.

Key Takeaways from Our Research

The research that went into developing this guidebook was extensive. It included interviews with project proponents, regulators, and other stakeholders, as well as documentary legal and policy research and participation in several workshops and conferences. Thus, in addition to providing a tool to help project proponents to better understand the processes for permitting and regulatory review, it also seemed worthwhile to reflect on the overall findings from that research and provide insights about opportunities for improvements to policy and practice.

Recommendations for Project Proponents

- Understand that, at the end of the day, regulatory agency staff are looking for ways to authorize your project.
- Early review of state and federal general permit provisions, and efforts to design projects around those conditions, will make permitting and regulatory review more straightforward. While general permits may be limited to small-scale projects, their overall precepts can provide valuable insights to designing larger-scale projects.
- Early engagement with key regulatory staff will enhance efficiency in permitting and regulatory review. Request pre-application informal conferences with:
  - State coastal zone management program consistency coordinator;
  - State regulatory/permitting staff;
  - US Army Corps of Engineers district office regulatory staff;
  - National Oceanic and Atmospheric Administration (NOAA) Fisheries staff; and
  - US Fish and Wildlife Service (FWS) Ecological Services.
- Recognize that coastal zone consistency determinations take into account many viewpoints and concerns – environmental, social, and economic. Federally approved coastal zone management programs cover a variety of issues including habitat conversion and tradeoffs, opinions of neighboring landowners and businesses, and climate change resilience. Be proactive about addressing those concerns in conversations with and documentation provided to coastal zone consistency coordinators.
- Budgeting adequate time for regulatory review and permitting is critical for ensuring that approvals align with funding authorizations and spending cycles. Recognize that larger or more complex projects will typically involve longer regulatory review and permitting timelines, with requests for additional

information from permit-seekers that may require additional research and/or outside experts.

Recommendations for Policymakers

- Permitting regimes originally designed to manage development may be need to be reformed as we move into an era of solving coastal climate challenges with natural infrastructure. Alternative permitting processes for nature-based solutions should be considered. Priority review for projects that are substantially nature-based should also be considered.
- Convene practitioner advisory groups to better understand their experiences with permitting. Use that information to inform and prioritize the development of agency-wide guidance or regulatory reform to address key issues such as sea level rise, habitat conversion/trading, or other topics that warrant consistent treatment across projects.
- Examine whether the linear foot limitations on general permits might be altered (increased) while still adhering to the statutory requirement that projects authorized under general permits only result in minimal impacts, both individually and cumulatively.
- Creative alignment of state and federal general permits can simplify permitting – see, e.g., USACE Wilmington District Regional General Permit 1536 and USACE Jacksonville District State Programmatic General Permit VI.
- Investing in training and dedicated regulatory staff can improve familiarity with living shoreline design and enable effective and efficient permit processing.
- Interagency coordination teams that are designed around specific geographies and project types (e.g., for living shorelines or, more broadly, ecological restoration in a particular area) can be an effective way to encourage rapid processing – see, e.g., San Francisco Bay Restoration Regulatory Integration Team[3] and Puget Sound Federal Leadership Task Force.[4]

[3] San Francisco Bay Restoration Authority, "San Francisco Bay Restoration Regulatory Integration Team (BRRIT)," *at* https://www.sfbayrestore.org/san-francisco-bay-restoration-regulatory-integration-team-brrit.
[4] US EPA, "Puget Sound Federal Leadership Task Force," *at* https://www.epa.gov/puget-sound/puget-sound-federal-leadership-task-force.

Introduction

The SERPPAS Coastal Resilience and Regional Adaptation Workgroup is committed to developing shared knowledge, resources, and tools to support our members as they plan for and implement projects that conserve and protect military installations and surrounding lands, waters, wildlife, and communities. In late 2023, we launched a sub-workgroup to explore best practices and needs related to permitting and regulatory review for nature-based solutions – projects that utilize natural infrastructure to address challenges posed by coastal storms, sea-level rise, and erosion. Living shorelines are one example of nature-based solutions that can sustain the military mission, address those climate-driven challenges, and enhance the local environment.

This document summarizes initial findings from our research regarding the regulatory and procedural requirements for living shorelines projects in North Carolina, Georgia, Florida, and Mississippi. Our goal is to provide a simple, easy-to-understand overview of the key steps in permitting and regulatory review for SERPPAS partner organizations. Each section identifies the key regulatory agencies involved in permitting and review, and briefly describes the permitting and review requirements under state and federal law.

Based on interviews and documentary review, we also identified key design aspects of living shorelines that will affect the ability to obtain necessary permits and approvals. Each state, for instance, has its own restrictions regarding the materials that can be used in a living shoreline project and where those materials may be placed. A comprehensive description of all restrictions is beyond the scope of this document, but notable elements are provided, along with links to resources where further information is available.

Overview: Key Permitting and Review Concepts

At a general level, the federal permitting and regulatory review required for living shorelines are consistent across all states in the US. State permitting and regulatory review, however, varies widely depending on individual state environmental laws that can be more restrictive than federal laws. This section summarizes those general concepts.

Clean Water Act and Rivers and Harbors Act

The United States Army Corps of Engineers (USACE) has primary responsibility for reviewing projects to ensure compliance with the Clean Water Act and Rivers and Harbors Act. The permitting process is effectively combined into a single Department of the Army (DA) permit. Under the Clean Water Act, project proponents can either seek an individual permit, or a determination that the project aligns with the provisions of a general permit. General permits are intended to be a tool that simplifies federal permitting for categories of activities that are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment.[5] One of the main advantages of the general permits is that USACE has undertaken a variety of environmental reviews for the permits on a programmatic basis, reducing or eliminating the project-specific reviews that would otherwise be necessary for individually permitted projects under the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), Magnuson-Stevens Fishery Conservation and Management Act (MSA), and more. Clean Water Act general permits come in several forms, including Nationwide Permits (NWPs), Regional General Permits (RGPs), and Programmatic General Permits (PGPs). One type of Programmatic General Permit is the State Programmatic General Permit where the state administers the permit on behalf of USACE. Examples of each will be discussed in the state-specific sections of this document that follow.

USACE has developed three nationwide general permits that could be applied to a particular living shoreline project. Nationwide Permit 54 is relatively new (adopted in 2017) and is designed specifically for living shorelines. Two older nationwide permits are also sometimes used to permit living shorelines – Nationwide Permit 13 ("Bank Stabilization") and Nationwide Permit 27 ("Aquatic Habitat Restoration, Establishment, and Enhancement Activities"). Project proponents can obtain a verification from the USACE local district office confirming that their project fits

[5] 33 USC § 1344(e)(1).

within the confines of one of these Nationwide Permits in order to satisfy their compliance obligations under the Clean Water Act.

To obtain a verification that a project meets the requirements of a Nationwide Permit, the project proponent should request a pre-application meeting with the district office's regulatory staff early in the design process; following that, the proponent must submit a Preconstruction Notification (PCN) to the district office for their review. The PCN must contain certain specified information about the project – its location, purpose and need, anticipated impacts on environmental and cultural resources, design features, diagrams, and more.[6] The district office staff have 30 days to determine whether the PCN is complete. If it is, the district office should either verify applicability of the Nationwide Permit or clarify that an individual permit is necessary within 45 days. The 45-day deadline, though, does not apply in the case where a project has potential to impact a species listed under the federal Endangered Species Act or a historic property protected by the National Historic Preservation Act. In those cases, consultation with other relevant agencies is required before the project can move forward.

Coastal Zone Management Act

Constructing a living shoreline also involves work in areas protected by the federal Coastal Zone Management Act, necessitating state-level regulatory review to ensure the project is consistent with state environmental laws and enforceable policies included in each state's federally approved coastal zone management program. The federal statute creates financial incentives for states to adopt laws and policies that protect natural resources, manage development, provide public access for recreation, and more.[7] All states in the SERPPAS region have adopted federally approved coastal zone management programs. One common element of state coastal zone management programs is state laws that require permits from state coastal resource management agencies for projects that might be undertaken in the coastal zone. Thus, living shoreline project proponents will have to obtain the relevant state-level permit in addition to ensuring compliance with the federal Department of the Army permitting requirements described above.

[6] US Army Corps of Engineers, "2021 Nationwide Permits – Index of 2021 Nationwide Permits, Conditions, District Engineer's Decision, Further Information, and Definitions," *available at* https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/20099.
[7] 16 USC § 1451 *et seq*.

To ensure compliance with the Coastal Zone Management Act, project proponents must submit to the state agency a "consistency determination" describing the project's effects on coastal uses and resources, based upon an evaluation of the relevant enforceable policies of the state's program, along with applications for any required state authorizations. The requirements for a federal entity's submission to the relevant state agency are based on the federal regulatory provisions in Subpart C and D of 15 CFR Part 930. States may also require submission of any federal permit applications or notifications that have been submitted to the Corps. Federal authorization cannot be issued until after state authorizations have been obtained, so concurrent federal/state reviews can expedite permitting. Once state authorizations are issued, the project proponent receives a "concurrence" or "conditional concurrence" from the state agency, indicating that all required state authorizations have been issued and ensures the project is compliant with all aspects of the state's coastal zone management program.

State Public Trust Responsibilities

States hold the submerged lands under navigable waters in "public trust," meaning that they have a responsibility to manage the use of those submerged lands in a way that ensures the public will have sustained use of the waters for boating, commerce, fishing and swimming, and environmental protection.[8] Living shorelines typically involve construction activities on submerged lands held in public trust and therefore often require a permit or grant from the state.

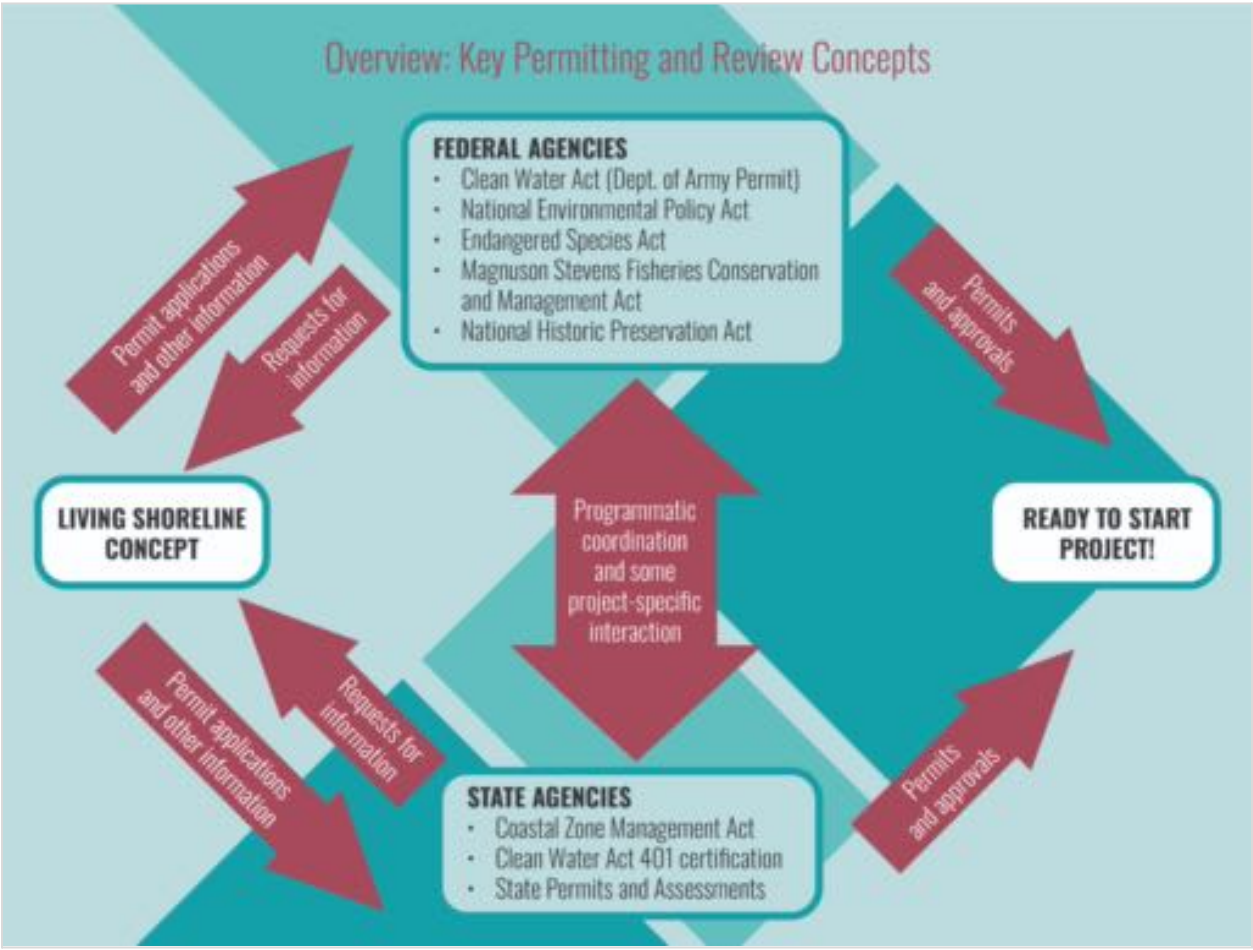
Other Federal Regulatory Requirements

A living shoreline may implicate a variety of other protected resources, including animals, plants, and associated habitat protected under the Endangered Species Act or Magnuson-Stevens Fishery Conservation and Management Act, as well as cultural resources protected under the National Historic Preservation Act. Consultations related to these statutes are generally undertaken either as part of or in conjunction with the NEPA analysis. NEPA is triggered by a federal agency proposing any action that may have a significant effect on the quality of the human environment.[9] NEPA-triggering actions include approving a permit; thus, for living shorelines projects, USACE review of a Clean Water Act permit triggers NEPA. If the living shoreline project is undertaken by a federal agency (e.g., a project on a military

[8] *See* David C. Slade, R. Kerry Kehoe, and Jane K. Stahl, Coastal States Organization "Putting the Public Trust Doctrine to Work, Second Edition," (June 1997), *available at* https://shoreline.noaa.gov/docs/8d5885.pdf.
[9] 42 USC § 4336(b).

installation), a separate NEPA analysis may be required. When multiple federal agencies are involved in a project, one is typically designated as the lead agency for NEPA compliance purposes, and that agency will also be responsible for compliance with Endangered Species Act (ESA), Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) , and National Historic Preservation Act (NHPA) requirements.

Supplementary state-specific context for the above permitting and review processes are provided in the sections of this document that follow.



State Overview: North Carolina

Case Study: Living Shoreline at MCAS Cherry Point

Marine Corps Air Station (MCAS) Cherry Point sits on the south bank of the Neuse River in North Carolina. Along more than two miles of river's edge, the installation has a mix of hardened structure (bulkhead) and more natural shoreline, all of which is being damaged by erosive forces. A large-scale living shoreline has been proposed as a climate-resilient approach to combating erosion and protecting the military mission. The proposed project would be nearly two miles in length and is designed to incorporate rock sills placed several feet from the eroding shoreline, with Spartina plantings on the landward side to promote sediment retention. Because of its size, the project was ineligible for permitting under general permitting authorities at the state and federal level, thus necessitating a longer permitting timeline to obtain a NC Coastal Area Management Act (CAMA) "Major Permit" and Department of the Army individual permit. Discussions with permitting authorities also led to changes from the initial design, which underscores the importance of project proponents engaging with regulatory agencies early in the design process and maintaining flexibility to adapt in ways that simplify permitting while remaining true to the project's core purpose and needs. The Cherry Point living shoreline has permits and initial designs complete, and will be constructed in phases to account for complex financing issues. Funds from the North Carolina Land and Water Conservation Fund and DOD Readiness and Environmental Protection Integration (REPI) Program have been committed.

MCAS Cherry Point Living Shoreline Project

Clockwise, from top left: Aerial view showing shoreline erosion at one stretch of the shoreline; shoreline view showing escarpment and fallen vegetation; initial plans for phased approach, showing overall project footprint. All photos from April 2021 Environmental Assessment and Finding of No Significant Impact.

Overview of Permitting/Review Process in North Carolina

North Carolina has three key laws that are components of the state's coastal zone management program and have implications for permitting living shoreline projects. First, the state's Coastal Area Management Act (CAMA) was enacted in 1974 as the primary means of achieving the goals set out in the federal Coastal Zone Management Act, including protecting and preserving natural resources, enabling managed economic development, promoting recreational opportunities, preserving historical and cultural aspects of the coastal area, and more.[10] Second, the state's Dredge and Fill

[10] NCGSA § 113A-102.

law requires state agency review and permitting for any project that involves, as the name suggests, excavation or filling in estuarine waters, tidelands, marshlands or state-owned lakes.[11] And third, the state holds title to submerged lands but may grant an easement or letter of permission to a riparian landowner to fill or occupy those lands upon a determination that doing so serves the public interest or is necessary to "reclaim lands theretofore lost to the land owner by natural causes."[12]At the same time they review a project for CAMA permitting, DCM staff review the project for other state statutory requirements, including permits required under the state Dredge and Fill Act and documentation sufficient to obtain an easement or letter of permission to fill state-owned submerged lands.

CAMA was designed with a permissive bent. It requires permit denial in certain listed cases, but otherwise mandates that permits shall be granted.[13]Causes for denial include inconsistency with local land use plans, the existence of practicable alternatives that would accomplish the overall project purposes with less adverse impact on public resources, or the possibility of major or irreversible damage to environmental values or natural systems.

Under CAMA, project proponents seek either a major permit or a general permit from the Department of Environmental Quality's Division of Coastal Management (DCM) for any project in an Area of Environmental Concern.[14] Areas of Environmental Concern include coastal

[11] NCGSA § 113-229.
[12] NCGSA §§ 146-6, 146-11, and 146-12.
[13] NCGSA § 113A-120.
[14] NCGSA § 113A-113.

wetlands and contiguous areas, estuarine waters, public trust waters, and various other fragile or historical areas.[15] General permits are designed for projects that have limited impact on areas of environmental concern, and applications are typically reviewed more quickly than major permit applications. Major permits are for projects that warrant more extensive analysis by agency staff because of their potential to adversely impact environmental resources.

DCM has developed two general permits to ease the CAMA permitting process for living shorelines – one covers riprap revetment for wetland protection,[16] the other covers riprap sills for wetland enhancement and shoreline stabilization.[17]

Projects that fit within the confines of a general permit are reviewed at the DCM field office. Those that require a major permit are run through the DCM headquarters level.

Federal government entities must develop and submit for review a consistency determination that explains why a proposed project is consistent with all elements of the NOAA- approved North Carolina coastal zone management program. The program consists of the above statutes, as well as their implementing regulations, other regulations passed by the Coastal Resources Commission, and local land use plans that have been certified by the Coastal Resources Commission.[18] The Coastal Resources Commission is a board comprising individuals appointed by the Governor, Commissioner of Insurance, and several members of the General Assembly to establish policy for DCM.

Project proponents submit their consistency determination to DCM. DCM does not provide a form or template for these submissions because, to date, they have typically come in the form and style of something like a NEPA environmental assessment so, along with the CAMA permit application, DCM staff have sufficient information to undertake their review of the consistency determination. The DCM review process involves outreach to various state and local agencies to ensure that the project plans align with the resource protection mandates and other programs that they manage. DCM staff collect this feedback and provide it to the federal entity, requesting any necessary clarifications or modifications prior to concurring with the submitted consistency determination.

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[15] NCGSA § 113A-113.
[16] 15A NCAC 07H, Section .2400.
[17] 15A NCAC 07H, Section .2700.
[18] NC Department of Environmental Quality, "Federal Consistency," *at* https://www.deq.nc.gov/about/divisions/coastal-management/coastal-management-permits/federal-consistency.

Once DCM concurs with the submitted consistency determination and issues a CAMA permit, the project proponent must obtain a Department of Army permit from the USACE Wilmington District office. While Nationwide Permits 13 ("Bank Stabilization"), 27 ("Aquatic Habitat Restoration, Establishment, and Enhancement Activities"), and 54 ("Living Shorelines") are valid in coastal North Carolina, the Wilmington District has also adopted two Regional General Permits (RGPs) that simplify the federal permitting process even more. RGP 1536 ("Marsh Sills") is designed to simplify the path to federal permitting for any project that has been approved under one of the state's CAMA general permits for living shorelines.[19] Because RGP 1536 mirrors the requirements of CAMA general permits, a project permitted under a CAMA general permit will be authorized by RGP 1536. The important distinction between federal permitting under NWP 54 and RGP 1536 is that NWP 54 mandates that project proponents submit a Preconstruction Notification (PCN) to the USACE district office for all projects, while RGP 1536 only requires a preconstruction notification under certain circumstances (e.g., properties subject to National Historic Preservation Act, Abandoned Shipwreck Act, or Native American Graves Protection and Repatriation Act may be affected; any ESA listed species or critical habitat may be affected).

Living shoreline projects in North Carolina that cannot be permitted under a CAMA general permit (thus necessitating a CAMA major permit) may still get expedited federal permitting, through RGP 291 ("CAMA (NC Coastal Area Management Act)").[20] North Carolina's DCM partners with USACE to administer this effort. DCM will forward a copy of the complete application, its Field Investigation Report, and its Bio-Report to the appropriate USACE field office, thereby initiating federal review of the project. This simplifies and expedites Federal review, although USACE staff must still ensure that federal permitting is consistent with all relevant federal laws (e.g., NEPA, Endangered Species Act, Magnuson-Stevens Act, etc.).

Treatment of Key Design Elements in North Carolina

- Overall length / size / placement
  - CAMA general permits and NWP 54 limit length to 500'

[19] US Army Corps of Engineers, Wilmington District, Department of the Army General Permit No. 201801536, *available at* https://saw-reg.usace.army.mil/PN/2019/SAW-2018-01536-RGP.pdf.
[20] US Army Corps of Engineers, Wilmington District, Department of the Army General Permit No. 198000291, *available at* https://saw-reg.usace.army.mil/RGPs2022/RGP_291.pdf.

- CAMA GP requires a slope <1.5'H:1'V
- CAMA GP allows maximum base width of 12'
- CAMA GP prohibits construction over SAV or oyster beds
- NWP 54 Regional Condition # 5 prohibits use of the NWP for activities that may result in the loss of more than 0.05 acres of stream bed
- Under a CAMA general permit, work can go out 30' from MHW line, or 5' past existing wetlands, whichever is greater

❖ Gaps, Overlaps, and Notches
- CAMA general permits require 5' gaps every 100'
- CAMA GP prohibits backfill
  - Cf. NWP 54, which allows backfill up to "the minimum necessary for the establishment and maintenance of the living shoreline"

❖ Materials Used
- NWP 54 Regional Condition #8 requires filter cloth under riprap, and requires riprap placed on stream beds to have finished elevation that does not exceed the elevation of the original stream bed

State Overview: Georgia

Case Study: Living Shoreline at Little Cumberland Island

While no DOD living shoreline projects have yet been proposed for permitting in Georgia, the state has seen growing interest in this solution to erosion that threatens vital salt marsh habitat. Looking beyond DOD facilities, one notable living shoreline example has been undertaken at Little Cumberland Island. Little Cumberland Island sits at the entrance of the St. Andrew Sound in southern Georgia, where the Satilla and Cumberland Rivers flow toward the Atlantic Ocean. The western side of Little Cumberland Island has extensive salt marsh, with tidally influenced creeks twisting throughout. The Little Cumberland Homes Association owns upland property along Shell Creek, which faced erosion threats because of an unserviceable bulkhead and eroded shoreline. They proposed a 200-foot living shoreline comprising a riprap toe, a double layer of bagged oyster in the low intertidal zone, a single layer of bagged oyster above that, grading at a 1:1 to 2.33:1 slope, and geotextile fabric and native vegetation cover the extent of the shoreline. The project was permitted at the state level with an individual permit and was able to move forward under USACE nationwide permit 13 ("Bank Stabilization"). A Revocable License to use state-owned submerged lands was required, as was a federal consistency concurrence pursuant to the Coastal Zone Management Act. The US Fish and Wildlife Service provided a bulk of the funding for the project. Construction was completed in September 2020, and additional vegetation was planted in June 2021.[21]

[21] GA Department of Natural Resources, Coastal Resources Division, "Georgia's Living Shorelines," *at* https://storymaps.arcgis.com/stories/daab8b3f51614ae186d52ecc7770605c.

Little Cumberland Island Living Shoreline Project

Clockwise, from top left: Pre-construction (February 2018); immediately post-construction (August 2021); post-construction (April 2022); post-construction (August 2022).

Overview of Permitting/Review Process in Georgia

The State of Georgia has enacted thirty-four laws that are intended to protect the state's natural resources and four are relevant for permitting a living shoreline project. The Coastal Marshlands Protection Act (CMPA) governs permits intended to protect and preserve salt marsh, intertidal areas, mud flats, and tidal water bottoms. The Shore Protection Act (SPA) governs permits intended to protect and conserve the "sand-sharing system" of dunes, beaches, shoals, and other coastal forms. The Revocable License Authority governs how intertidal and submerged lands owned by the state (i.e., "beds of tidewaters") are used. And the Erosion and Sedimentation Act preserves a buffer area around state waters. [22]

In practice, the permitting process for a living shoreline in coastal areas centers on obtaining:

[22] OCGA § 12-7-1 *et seq*.

- A Coastal Marshlands Protection Act (CMPA) permit from the Georgia Department of Natural Resources Coastal Resources Division (CRD);
- A Revocable License to utilize state-owned submerged lands through CRD;
- A state waters buffer variance from the Georgia Department of Natural Resources Environmental Protection Division (EPD); and,
- A Department of Army (DA) permit from the Savannah District of the US Army Corps of Engineers.

These permitting processes can be undertaken in parallel, although early consultation with the relevant agencies (i.e., meetings prior to application submission) may reveal reasons why it makes sense to stage submissions.

Georgia's Coastal Marshlands Protection Act (CMPA) allows a project to be permitted if the Coastal Marshlands Protection Committee (an appointed board) determines that the project is "in the public interest." CRD staff undertake detailed review of permit applications to support the Committee's decision making. The CMPA states that the Committee's public interest consideration should be based on three factors:

1. Whether or not unreasonably harmful obstruction to or alteration of the natural flow of navigational water within the affected area will arise as a result of the proposal;
2. Whether or not unreasonably harmful or increased erosion, shoaling of channels, or stagnant areas of water will be created; and
3. Whether or not the granting of a permit and the completion of the applicant's proposal will unreasonably interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine life, wildlife, or other resources, including but not limited to water and oxygen supply.[23]

Under Georgia law, a living shoreline project will also require issuance of a "Revocable License" to undertake work on state-owned submerged lands. The State of Georgia owns and manages in the public trust all submerged lands, that is, any land that is covered by water at high tide. The state's management is centered on a principle of ensuring any encroachment on those lands is "in the best interest of the state." Thus, a living shoreline project that involves work below the mean high-water mark must be issued a Revocable License for such work. General supervision and stewardship over submerged lands has been delegated by the Governor to CRD.[24] CRD staff do not undertake separate review processes and generally grant the Revocable License and approve the CMPA permit application simultaneously, once they have determined that

[23] OCGA § 12-5-286(g).
[24] OCGA § 50-16-61.

the plans and designs provide adequate protections for environmental resources and adopt best practices developed by the agency.

CRD provides an extensive checklist of items that must be submitted in order to aid permitting authorities' consideration under relevant laws.[25] The checklist includes items such as project drawings and site plans, documentation of property ownership and other interests, evidence of compliance with local zoning laws, and an alternatives analysis, all of which and more are explicitly required by statute.[26] CRD is also developing a guide to living shorelines, written for project proponents, regulators, and other interested parties that will explain site suitability criteria, standards for living shorelines that should be consistent across all projects, and best management practices that can be employed to enhance outcomes. Site suitability criteria will cover fetch, water velocity, site erosion, existing or adjacent bank stabilizations, and upland components. Standards will cover slope, materials, and native vegetation; best management practices will cover specific plant species and locations for planting, oyster bed recruitment techniques, and upland stormwater management.

Georgia's Erosion and Sedimentation Act establishes a minimum 25-foot buffer along the banks of all "state waters," including the rivers, streams, estuarine waters, and coastal

[25] GA Dept. of Natural Resources, Coastal Resources Division, "Instructions for Completing a Georgia Coastal Marshlands Protection Permit Application," *available at* https://coastalgadnr.org/sites/default/files/crd/MarshandShore/PermitsandApplications/2023/CMPAApplicationwithLaw%20-%202023.pdf.
[26] OCGA § 12-5-286(b).

marshes where living shoreline projects might be implemented.[27] Most land-disturbing activities are prohibited within the buffer zone without a permit provided by a "local issuing authority" (a county or municipal agency) or a variance approved by EPD.[28] Since placing fill in waters of the state is generally discouraged under the Coastal Marshlands Protection Act, a living shoreline project can involve grading the erosional bank to achieve slopes that ensure overall project purposes are met. Thus, the project may require a buffer zone variance or permit if sloped into the upland.

Georgia's Erosion and Sedimentation Act specifically encourages buffer variances where the land-disturbing activity would require a Clean Water Act 404 permit and such permit is conditioned on a mitigation plan. In practice, project proponents will be required to undertake all necessary erosion and sedimentation control best management practices as a condition of obtaining a CMPA permit from CRD and the DA permit from the USACE Savannah District Office, so obtaining the variance from EPD is relatively straightforward.

Shifting focus to federal law, project proponents in Georgia will need to obtain a DA permit from the USACE Savannah District office for a living shoreline project. To date, most – if not all – living shorelines in Georgia have been permitted under Nationwide Permit 13 ("Bank Stabilization") or 27 ("Aquatic Habitat Restoration, Establishment, and Enhancement Activities"), rather than 54 ("Living Shorelines"). One reason for this ties back to state-law restrictions on placing fill in state waters. Living shorelines are comprised of oyster cultch material and intertidal vegetation, therefore fill is required to construct an effective stabilization structure. Fill is authorized under a CMPA permit.[29] Another reason is that NWP 54 explicitly requires that the project be "made up mostly of native material," and some practitioners have found that a product called Flexamat, which is designed to recruit oysters but is made of concrete and other non-native material, is a useful shoreline stabilization tool.

The USACE Savannah District office has placed a number of regional conditions on CWA Nationwide Permits.[30] Those regional conditions have some implications for

[27] OCGA § 12-7-6(b)(15); GARR 391-3-7-.5 and .11.
[28] OCGA § 12-7-6(15).
[29] OCGA § 12-5-286(h).
[30] US Army Corps of Engineers Savannah District Regulatory Division, Public Notice – Savannah District 2021 Nationwide Permit Regional Conditions (RCs) (Feb. 4, 2022), *available at* https://www.sas.usace.army.mil/Portals/61/docs/Regulatory/Permitting/20220204-PN_Final_2021_NWP_RCs.pdf?ver=gGt9t_yrgByChETq4jwSbg%3d%3d.

living shoreline project design. One ensures that any project proponent planning a living shoreline in 100 linear feet or more of a tidal stream must submit a Pre-Construction Notification (PCN) to the Corps. In practice, all living shorelines in the Savannah District require PCNs due to potential interactions with protected species, such as manatee, and required historic resource investigations. A PCN contains much of the same information as required in an application for a Georgia CMPA permit – a description of the project purpose and need, sketches and maps, a description of anticipated impacts on aquatic and other resources, mitigation plans for any unavoidable adverse impacts, etc.[31] Another regional condition requires that riprap material used for bank stabilization must "consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete." Bagged oyster and Flexamat are allowed under some Nationwide Permits.

In some states, the relevant state agencies have concurred with USACE that the Clean Water Act Nationwide Permits and relevant regional conditions are consistent with the state's coastal zone management programs. However, for the most recent Nationwide Permit and Savannah District Regional Conditions update, Georgia DNR's Coastal Resources Division did not concur in tidally influenced areas. As a result, any living shoreline project proposed in tidally influenced areas of the 11 coastal counties must obtain a project-specific coastal zone management consistency certification concurrence from CRD *before* USACE can finalize a Nationwide Permit authorization.[32] In practice, the coastal zone management program consistency certification happens in phases. CRD staff will first review the project design for consistency with the Coastal Marshlands Protection Act and other aspects of the NOAA-approved coastal zone management program; later, CRD staff will review the USACE permitting application for consistency and concur with only those aspects of the USACE application that are consistent with state authorizations.

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[31] US Army Corps of Engineers, 2021 Nationwide Permits – Index of 2021 Nationwide Permits, Conditions, District Engineer's Decision, Further Information, and Definitions, *available at* https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/20099.

[32] *See* p.15 ("Federal Consistency Certification Statement") in the GA DNR CRD joint application package. https://coastalgadnr.org/sites/default/files/crd/MarshandShore/PermitsandApplications/2023/CMPAApplicationwithLaw%20-%202023.pdf; *see also* Doug Hymans, Director, GA DNR CRD, re: Federal Consistency Determination for Nationwide Permit Reissuance and Regional Conditions for Savannah District: Objection for Use in Tidal Areas of Coastal Zone, Dec. 29, 2020, in 2021 RC package, *available at* https://www.sas.usace.army.mil/Portals/61/docs/Regulatory/Permitting/20220204-PN_Final_2021_NWP_RCs.pdf?ver=gGt9t_yrgByChETq4jwSbg%3d%3d.

Treatment of Key Design Elements in Georgia

- Overall length / size, design, and location
  - Living shorelines are not encouraged where fetch is greater than one mile, water velocity is greater than ten meters per second, the site has a stable bank that is not eroding, or where septic tanks, trees, utilities, or structures are too close or located on the sloped bank
  - Slope at 2:1 (horizontal: vertical) is common; 1:1 acceptable for certain segments, e.g., to preserve trees or structures; up to 3:1 acceptable for projects targeting oyster recruitment
  - Generally speaking, any fill in coastal waters (including for a breakwater or sill) is discouraged under the CMPA, so living shorelines should be designed based on grading the eroding shoreline back to achieve project goals, stabilizing the newly graded shoreline with fill and native vegetation, and installing a toe of bagged oyster or Flexamat
  - Anchoring systems appropriate for bank stabilization components are expected (e.g., buried deadmen anchors and rebar j hooks for bagged oyster, duck bill anchors for Flexamat, augered steel anchors for gabion baskets)
- Materials Used
  - USACE/SAS regional condition requires “clean rock or masonry material” if riprap is part of the project design
  - Flexamat is allowed
  - Erosion control (e.g., coir mats or logs) are necessary to support establishment of native plants
  - Gabion baskets filled with oyster shell do not perform well in coastal Georgia, due to their inability to withstand high-energy environments and fish and wildlife entrapment. Projects considering gabion baskets should select alternative site-appropriate material.

State Overview: Florida

Case Study: Eglin Air Force Base

Eglin Air Force Base sits along the north and west shore of the Choctawhatchee Bay, an estuary located on Florida's panhandle. The base complex covers hundreds of thousands of acres, and fronts a significant length of Choctawhatchee Bay shoreline.[33] Erosion along that shoreline is a major concern for the military mission because of housing, recreational facilities, and other infrastructure that may be at risk, as well as legal obligations to protect archaeological sites that could be damaged. Moreover, as shoreline erodes and wildlife dependent on the habitat migrate with inland, mission-related training opportunities could be adversely impacted. To address these concerns, Eglin AFB has invested in several living shoreline projects. They include a 1,400 linear foot project at Post'l Point, two projects of 750 and 1,700 linear feet at Alaqua Bay, projects at Hammock Point and Bay Flats, as well as others.[34] Notably, several of these projects have been constructed in partnership with the Choctawhatchee Basin Association – a local nonprofit focused on water quality improvement – which underscores the multiple benefits of living shorelines, beyond erosion control and bank stabilization. Most of the living shorelines were constructed with limestone rock and bagged oyster shell forming a breakwater and native vegetation planting.

Overview of Permitting/Review Process in Florida

Florida's Coastal Zone Management Act consistency program is managed by the Florida Department of Environmental Protection, Office of Resilience and Coastal Protection (FL DEP). Florida's Coastal Management Program links local and state agencies implementing 24 state statutes and their supporting regulations. Among the

[33] US Air Force, Integrated Natural Resources Management Plan - Eglin Air Force Base, Florida *at* 18, 21-22 (2022), *available at* https://www.denix.osd.mil/inrmp/denix-files/sites/98/2024/02/Eglin_INRMP_Final_SBC.pdf.

[34] Spaits, Mike, "Eglin's living shoreline" (Aug. 29, 2018), *available at* https://www.eglin.af.mil/News/Article/1614780/eglins-living-shoreline/; NWF Daily News, "Oyster reef completed" (Jan. 12, 2018), *available at* https://www.nwfdailynews.com/story/news/2018/01/12/oyster-reef-complete-uses-shells-from-local-restaurants/16322848007/; Choctawhatchee Basin Alliance, "CBA and Eglin AFB Complete 750 ft Reef Breakwater in Alaqua Bayou" (Aug. 10, 2018), *available at* https://basinalliance.org/cba-and-eglin-afb-complete-750-ft-reef-breakwater-in-alaqua-bayou/; *see also* Florida Resilient Coastline Program, Living Shoreline Outreach storymap, *at* https://storymaps.arcgis.com/stories/819812e7df264de08d0f2df803faa374.

key aspects of the Florida Coastal Management Program with implications for living shorelines are: the Environmental Resource Permit program, state sovereign submerged lands statutes, and fish and wildlife conservation statutes.

A living shoreline project proponent must either submit a consistency determination for concurrence (if a federal entity) or a consistency certification (if any other entity) to FL DEP. FL DEP coordinates responses from the several agencies that are responsible for implementing elements of the Florida Coastal Management Program. Each of the agencies may object to a consistency determination by a federal agency, but they must point to the specific enforceable policy that is allegedly violated and identify alternatives that would ensure consistency.

FL DEP and several water management districts in the state work together to administer the state's Environmental Resource Permit (ERP) Program, pursuant to the Florida Water Resources Act of 1972.[35] The ERP Program regulates activities in surface waters and wetlands and requires permits for activities that may adversely impact the state's water resources. In general, a project proponent must show that the project will not be harmful to water resources and that it will not be inconsistent with the overall objectives of the local district. For projects in surface waters and wetlands, proponents must also provide reasonable assurance that the project will not violate applicable water quality standards and that it is not "contrary to the public interest."[36] The public interest determination is based on several factors listed in state law, including potential impacts on: public health, safety, or welfare or the property of others; conservation of fish and wildlife, including endangered or threatened species, or their habitats; navigation; erosion and shoaling; fishing, recreational values, and marine productivity; historical and archaeological resources; and "functions being performed by areas affected by the proposed activity."[37] The Florida legislature has defined by statute a list of activities that are presumptively in the public interest and do not require an ERP permit (e.g., restoring sea walls and certain environmental restoration activities),[38] but living shorelines are not covered by any exemption.

Within this state permitting framework, a project can move forward in one of three ways – it is verified to be exempt from permitting, it is permitted through a general permit, or it is permitted with an individual permit. Florida Sea Grant recently reviewed 192 living shoreline projects in Florida and found that 27 percent qualified

[35] FS § 373.013 et seq.
[36] FS § 373.414.
[37] *Id.*
[38] FS § 403.813.

for an exemption from permitting, 8 percent qualified for a general permit, and 56 percent required an individual permit.[39]

FL DEP has adopted by regulation an exemption for living shoreline projects that meet certain design criteria.[40] To be exempt from ERP permitting, the regulations delineate certain restrictions, including: a living shoreline must be 500 linear feet or less; breakwaters are only allowed if permanent wave attenuation is necessary to maintain shoreline vegetation and may be no more than 10 feet waterward of the Mean High Water Line (MHWL) or Ordinary High Water Line (OHWL);[41] breakwaters must not be placed over or within three feet of submerged aquatic vegetation (SAV); breakwaters must have 5' gaps every 75', and the project must be constructed with native plants and certain other materials (e.g., biodegradable natural fiber logs or mats, oyster shell cultch, oyster reef balls, riprap, clean concrete rubble, etc.). If a project can be designed to meet these criteria, the project proponent should submit a Request for Verification of Exemption to FL DEP using the online application form or

[39] Florida Sea Grant, "Florida Living Shoreline Permitting Workshop, Permitting Scenarios Exercise" (2023).
[40] FAC § 62-330.051(12)(e).
[41] MWHL is used for tidal waters and OWHL is used in nontidal waters in Florida. The MHWL is determined based on the average height of high waters over a 19-year period. The OHWL is also a 19-year standard, determined using the best evidence available including water marks, soil and vegetation indicators, and historical aerial photos. *See* Barry, Martin, and Sparks, "A Homeowner's Guide to the Living Shoreline Permitting Process Exemption Part 1: Florida Department of Environmental Protection," Document SG187, Florida Sea Grant College Program, UF/IFAS Extension, *at* 15-16 (2019).

by submitting a PDF version.[42] If approved, FL DEP will issue a letter to the applicant that verifies the exemption (and also authorizes the use of state-owned submerged lands, see below). FL DEP may request additional information from an applicant, but once an application is deemed complete, the agency aims to finalize a verification (if appropriate) within 30 days.

A living shoreline project designed to fit these criteria and determined to be exempt by FL DEP or the relevant water management district may also benefit from a simplified path to federal permitting through the USACE Jacksonville District's State Programmatic General Permit VI. More information on that permit process is provided below.

ERP general permits are available for certain classes of activities "that, if conducted consistent with the permit requirements, will cause minimal individual and cumulative adverse impacts to the water resources" of Florida.[43] Applicants submit a notice of intent to use an environmental resource general permit,[44] and FL DEP will make a determination as to whether sufficient information was provided in the notice and/or whether the general permit applies.[45] Two general permits might be relevant to a living shoreline project at a DOD facility:

1. Restoration, establishment, and enhancement of low profile oyster habitat – but must be <1/4 acre[46]
2. Limited environmental restoration or enhancement activities by government entities[47]

If a project does not qualify for an exemption or a general permit, the proponent must obtain an individual permit from FL DEP.

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[42] FL Dept. of Environmental Protection, Business Portal, *at* https://www.fldepportal.com/DepPortal/go/home, or FL Dept. of Environmental Protection, "Request for Verification of an Exemption," *available at* https://floridadep.gov/sites/default/files/62-330_050_0.pdf.
[43] FAC § 62-330.401(1).
[44] FL Dept. of Environmental Protection, "Forms of the Environmental Resource Permitting, State 404 Permitting, and Submerged Lands Programs," *at* https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/forms-environmental-resource.
[45] FAC § 62-330.402(4).
[46] FAC § 62-330.632.
[47] FAC § 62-330.631.

At the same time FL DEP is reviewing a project for compliance with ERP permitting requirements, it will review the project for compliance with state lands laws.[48] Living shoreline projects will generally require placement of materials on Florida's sovereign submerged lands – that is, any land waterward of the MHWL, out to the state's jurisdictional boundary. According to FL DEP, "Sovereign submerged land approvals consider issues such as riparian rights, impacts to submerged land resources, and preemption of other uses of the water by the public."[49] Regarding resource protection, FL DEP regulatory standards mandate that activities "shall be designed to minimize or eliminate adverse impacts on fish and wildlife habitat, and other natural or cultural resources."[50] This standard is interpreted by regulatory staff at times strictly, leading to requests for project design modifications that would shrink the footprint of the project to the point where its design is inconsistent with the project proponent's objectives. Living shoreline project proponents should note another important element of the FL DEP regulatory standards, which state that "shoreline stabilization should be accomplished by the establishment of appropriate native wetland vegetation" "to the maximum extent possible."[51]

At the end of FL DEP's review under state lands law and policy, sometimes referred to as "proprietary review," a permitted living shoreline project will get a Letter of Consent or easement from FL DEP. When an exemption or general permit verification or individual permit is issued, FL DEP will issue a Letter of Consent to use state lands. An easement would be necessary for a project that extends more than ten feet past the MHWL.[52]

A living shoreline project proponent in Florida may ensure compliance with the Department of Army Permit requirements in one of three ways: through the "State Programmatic General Permit VI," through a Nationwide Permit (meeting any relevant regional conditions), or by an individual permit.

The US Army Corps of Engineers Jacksonville District office has approved "State Programmatic General Permit VI,"(SPGP VI) which simplifies federal permitting for many projects that have been verified by FL DEP as being either exempt from the ERP program or covered by an ERP general permit. The USACE Jacksonville District office and FL DEP have devised a unique permitting process whereby a project proponent

[48] *See* FS Chapter 253, State Lands and FAC Chapter 18-21, Sovereignty Submerged Lands.
[49] FL Dept. of Environmental Protection, "Florida Coastal Management Program Guide," *at* 21 (Feb. 4, 2024), *available at* https://floridadep.gov/rcp/fcmp/documents/fcmp-program-guide.
[50] FAC § 18-21.004(2)(i).
[51] FAC § 18-21.004(2)(f).
[52] FAC 18-21.005(1)(c) and (e).

who believes that their project aligns with the requirements of an ERP exemption or general permit submits a request for verification (or notice of intent, for a general permit) plus additional documentation regarding federally protected species and habitats[53] to FL DEP alone. FL DEP will screen the project for compliance with both the ERP policies and the SPGP VI. The federal SPGP VI places more restrictions on living shoreline design than the ERP exemption or general permits, mainly to protect federally listed endangered or threatened species, their designated critical habitats, and essential fish habitats. Other critical differences are that SPGP VI does not allow living shorelines that extend waterward past adjacent shorelines,[54] and it incorporates restrictions on the size, shape, and composition of pre-fabricated structures that are not found in state law.[55] As a result, some projects that qualify for an exemption or general permit under state law cannot be permitted under the SPGP VI and must instead be permitted federally through a Nationwide Permit (incorporating regional conditions) or individual permit.

A project that does not qualify for coverage under SPGP VI might still be verified as compliant with a nationwide permit, provided that all relevant regional conditions are met. The US Army Corps of Engineers Jacksonville District office has adopted several regional conditions relevant to living shoreline projects; under Nationwide Permit 54 ("living shorelines"):

- For projects that affect aquatic resources, the project should result in a net gain in aquatic resource function, structure(s) shall be maintained as necessary in perpetuity in order to maintain the lift in function and value, and it must meet all applicable requirements of the Florida Fish and Wildlife Conservation Commission
- There are limits on the materials that may be used: the project must consist mostly of natural material; biodegradable materials (e.g., coir) may be used for breakwater stabilization; in some cases, plastic bags and mats may be used; concrete products may be allowed to provide "sufficient weight," but large-scale use of concrete as breakwater or oyster recruitment material is prohibited; metals (e.g., wire mesh) may be used to enclose stone gabions; oyster mats should only be used in special cases
- Sills may be constructed in a non-linear manner

[53] SPGP VI operates in conjunction with JAXBO (Jacksonville District Biological Opinion), which ensures all projects are designed, constructed, and maintained to protect endangered, threatened, and other species of concern, as well as their designated critical habitats.
[54] USACE Jacksonville District, Department of the Army Permit – State Programmatic General Permit VI (SPGP VI) State of Florida, III.21.c. (July 27, 2021).
[55] USACE Jacksonville District, Department of the Army Permit – State Programmatic General Permit VI (SPGP VI) State of Florida, IV.18 (July 27, 2021).

- Spacing or gaps between sill materials should be <8" to prevent entrapment of marine mammals or marine turtles
- Breakwaters must have 5' gaps every 75'
- The PCN must include a benthic survey

Treatment of Key Design Elements in Florida

- Overall length / size, location, and design
  - To fit w/in ERP exemption, SPGP VI, and NWPs: <500'
  - ERP exemption allows plantings and breakwaters up to 10' waterward of MHWL or OHWL
  - SPGP: requires 2:1 horizontal-to-vertical slope
  - Under ERP exemption, breakwaters are allowed if toe is <10' from MHWL or OHWL
  - Under ERP exemption, breakwater may not be within 3' of SAV
  - If a breakwater is used, ERP exemption, SPGP, and NWP 54 regional conditions require 5' gaps every 75' to promote aquatic organism and other movement
  - Under NWP 54 regional conditions, spacing or gaps between sill materials must be <8"
- Materials Used
  - Under ERP exemption, SPGP, and NWPs, native plants are required
  - Breakwater materials
    - Under ERP exemption, breakwater must be composed of natural oyster shell cultch or other stable, non-degradable material (oyster reef, reef balls, boulders, clean concrete rubble, riprap, rock sills, or triangular concrete forms)
    - Under SPGP, breakwater must "be constructed out of the following materials: oyster breakwaters, clean limestone boulders or stone (sometimes contained in metal baskets or cages to contain the material), small mangrove islands, biologs, coir, rock sills, and pre-fabricated structures made of concrete and rebar that are designed in a manner so that they do not trap sea turtles, smalltooth sawfish, or sturgeon"

State Overview: Mississippi

Case Study: Keesler Air Force Base – Biloxi Veterans Administration Medical Center – City of Biloxi Hiller Park

Keesler Air Force Base sits on the Mississippi Gulf Coast, bordered by a back bay that is an important economic, recreational, and cultural feature of the Biloxi community. Erosion along the bay's shoreline is proceeding at rates as much as one foot per year. A multi-sector partnership between the installation, a neighboring Veterans Affairs hospital, a city-owned park, and university and private-sector organizations has formed to pursue a large-scale living shoreline project led by Mississippi State University/ Mississippi- Alabama Sea Grant. When complete, the multi-phase project will be roughly two and a half miles in length. It will protect runways and flightlines for the Air Force while also re-establishing marsh vegetation, improving water quality, and creating new habitat for fish species that are important to local fisheries. The project design includes segmented riprap breakwaters near the shoreline, with native marsh vegetation plantings to promote sediment retention. One important consideration in this project is the question of whether re-establishing marsh vegetation, creating more diverse shoreline structure, and enhancing fish habitat might attract birds (e.g., pelicans) that will create strike hazards for aircraft. To address this concern, the project team plans to work in phases, starting at Biloxi's Hiller Park in 2025, then moving to the VA hospital property in 2026, and finally the installation shoreline by 2027. Monitoring throughout the phased construction and design process will allow for adaptive management and design improvements if necessary. The DOD REPI Program has contributed $5.24 million in funding, with an additional $1.24 million from NOAA, and more than $800,000 from Mississippi State University and other partner organizations. Permitting for this project is complicated by a number of factors, including the phased approach, multiple landowners requiring easements, and the size of the project making it ineligible for state permit exemptions and federal general permits.

Overview of Permitting/Review Process in Mississippi

Mississippi's NOAA-approved Coastal Management Program is designed to ensure all projects in three coastal counties (Hancock, Harrison, and Jackson) adhere to the principles set out by the state legislature in two key statutes – the Coastal Program law, and the Coastal Wetlands Protection Act, which are both administered by the Mississippi Division of Marine Resources (MDMR).

The Coastal Program statute, enacted in response to the federal Coastal Zone Management Act, declared six goals for the state's Coastal Management Program, including providing for "reasonable industrial expansion" while also conserving resources, preserving natural scenic qualities in the coastal area, and considering the national interest.[56] In that statute, the legislature also mandated that state agencies cooperate to establish a "one-stop permitting" program to "expedite the decision making of all governmental entities having separate regulatory jurisdiction or authority over activities in the coastal area."[57] By statute, the state's one-stop permitting program must utilize a single application for all required permits and approvals, consolidate any necessary public hearings, provide for the shortest practicable review period, and establish joint permitting procedures for state and federal agencies.[58]

Mississippi's Coastal Wetlands Protection Act, adopted several years before the Coastal Program law, declares state policy "to favor the preservation of the natural state of the coastal wetlands and their ecosystems and to prevent the despoliation and destruction of them, except where a specific alteration of specific coastal wetlands would serve a higher public interest in compliance with the public purposes of the public trust in which coastal wetlands are held."[59] More widely known as the Wetlands Act, this statute generally requires a state permit for any activity that will affect a

[56] Miss. Code Ann. § 57-15-6 (1).
[57] Miss. Code Ann. § 57-15-6 (4).
[58] Miss. Code Ann. § 57-15-6 (4)(a)-(d).
[59] Miss. Code Ann. § 49-27-3.

coastal wetland.[60] However, the statute includes permitting exemptions for certain activities. One important exemption for living shoreline project proponents states that permits are not required for "regulated activities which, in the judgment of the director or his delegate, after an on-site inspection, have no harmful impact on the environment and which make no substantial change in the wetlands."[61] The state agency's implementing regulations for this statutory exemption further clarify that it covers activities that are eligible for a general, regional, or national permit or other similar authorization from the US Army Corps of Engineers.[62] Project proponents who believe their project is eligible for this exemption must still notify MDMR with documentation as required for a wetlands permit; however, the submitted information will be reviewed according to the "no harmful impact"/ "no substantial change" standards of this section, rather than the broader public interest determination required for a permit.

If a project is not deemed eligible for a Certificate of Waiver from coastal wetlands permitting, MDMR will undertake a more thorough review. The core elements of the analysis are laid out in the agency's regulations, which begin by noting that "preference is to be given to preserving the coastal wetlands in their natural state, and the burden of demonstrating the higher public interest in altering coastal wetlands rests with the party proposing the alteration."[63] Other aspects of the analysis are intended to ensure that any permitted project will be compatible with the state's Coastal Wetlands Use Plan, meet the Requirements for Conducting Regulated Activities, is measured against "extent to which the proposed activity would directly and indirectly affect the biological integrity and productivity of coastal wetlands communities and ecosystems," and is "measured against "extent of any adverse impact that can be avoided through project modifications, safeguards, or other conditions."[64] Project proponents at DOD installations might also note that MDMR makes a "national interest" determination, which includes "the need for national defense and to establish and maintain facilities necessary to accomplish national defense."[65] This provision might suggest that living shorelines designed to limit erosion and promote climate resilience at a coastal DOD installation meet the "higher public interest" standard.

[60] Miss. Code Ann. § 49-27-9.
[61] Miss. Code Ann. § 49-27-7 (r).
[62] 22 Miss. Admin. Code Pt. 23, R.11, § 104.20.03.
[63] 22 Miss. Admin. Code Pt. 23, R. 06, § 102.
[64] 22 Miss. Admin. Code Pt. 23, R. 06, § 103.
[65] 22 Miss. Admin. Code Pt. 23, R. 06, § 103.11.01.

Since a living shoreline will require activities (including fill) on submerged or tidally influenced lands held in public trust, Mississippi's "public trust tidelands" law also applies. The Secretary of State administers this law, which declares that it is public policy of the state "to favor the preservation of the natural state of the public trust tidelands and their ecosystems and to prevent the despoliation and destruction of them, except where a specific alteration of specific public trust tidelands would serve a higher public interest in compliance with the public purposes of the public trust in which such tidelands are held."[66] (Note the similarities between this standard and the standard for protection of wetlands under the Wetlands Act.)

In accordance with the public trust tidelands policy, project proponents must apply to the Secretary of State for a lease for any activity on public trust tidelands or submerged lands.[67] A lease application must include basic information about the applicant and lands to be leased, evidence of title to the upland property or an assignment of riparian rights to the applicant by the title holder, a signed and sealed survey, and an application fee.[68] By statute, the Secretary of State may only grant a lease of 40 years' duration (with a single 25-year extension available), and the lessee must pay an annual rent.[69] Recently, the Secretary of State adopted a new policy that exempts residential living shoreline projects from tidelands leasing requirements. The new policy still requires leases for non-residential projects, but eliminates rental fees. Moreover, a living shoreline project constructed in partnership with DOD could possibly be exempt from the rental fee in accordance with a separate statutory provision that exempts "all public projects of any federal, state, or local governmental entity which serve a higher public purpose of promoting the conservation, reclamation, preservation of the tidelands and submerged lands."[70] Policymakers in the state are currently considering whether to expand the list of exemptions to include living shorelines.

As in other states, compliance with the federal Clean Water Act can be achieved by obtaining a Department of the Army (DA) permit from the US Army Corps of

[66] Miss. Code Ann. § 29-15-3.
[67] Certain activities permitted under a US Army Corps of Engineers general permit are exempt from the lease requirement, but not projects that covered by the general permit for shoreline stabilization. See Miss. Admin. Code Pt. 11, R. 2.4 C.1(1) (exempting projects covered by MSGP-02 ("Docks, Piers, Wharves, Boat Shelters") and MSGP-04 ("Mooring Pilings")).
[68] Forms available here: https://www.sos.ms.gov/public-lands/public-trust-tidelands-standard-lease-application-forms.
[69] Miss. Code Ann. § 29-1-107.
[70] Miss. Code Ann. § 29-15-13.

Engineers. Three possible routes exist: a project-specific individual DA permit, a verification that the project fits within the bounds of a Mississippi State General Permit developed by the USACE Mobile District, or a verification that the project fits within the bounds of a USACE Nationwide Permit. In practice, living shorelines will most likely either be covered by Mississippi General Permit #01 (MSGP-01 – "Shoreline Stabilization") or will require an individual permit. MSGP-01 is very similar to Nationwide Permit 54: both require a preconstruction notification to USACE; both require structures to have a significant biological component and comprise mostly native material; both prohibit fill in special aquatic sites, including areas where submerged aquatic vegetation is present; and both have similar limitations on project size (500' in length and 30' waterward from the mean high water line in tidal areas).[71]

Treatment of Key Design Elements in Mississippi

- Overall length/size/placement
  - To fit w/in Wetlands Law permit exemption, MSGP-01, and NWPs: overall length <500'
  - To fit w/in Wetlands Law permit exemption, MSGP-01, and NWPs: distance from MHWL <30'[72] (or <25 percent the distance across the water body, whichever is shorter)
  - No placement in areas with active SAV growth or other special aquatic sites (e.g., wetlands, sanctuaries and refuges, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes)
  - Must allow for normal hydrological regime to be maintained to wetland areas
  - Must allow for normal passage of aquatic organisms between waterbody and shoreline
  - No projects allowed in known sea turtle nesting areas
- Materials used
  - Filter fabric required
  - Only clean material free of waste, metal and organic trash, unsightly debris, petroleum products (such as asphalt), etc., may be used as backfill.

[71] MSGP-01 is available at https://www.sam.usace.army.mil/Portals/46/2023%20Mississippi%20General%20Permits.pdf.

[72] MSGP-01, by its express terms, allows placement up to 35' from MHWL, but in practice projects are to be kept within 30' to be compliant with the terms of NWP 54.

- Structures must have a significant biological component including use of native vegetation or plantings and/or native materials (i.e. mussel, clam, and oyster shell).
- Structures must be of minimal size to provide adequate protection required in higher energy environments, properly secured/anchored, and not create a navigational hazard.
- Structures shall be monitored for invasive or noxious species.
- All plantings and materials (coir logs, coir mats, root wads, etc.) utilized with the structure should be composed of native vegetation.

Acknowledgments and Thanks

This research was made possible by the helpful contributions of all members of the SERPPAS Coastal Resilience and Regional Adaptation Work Group's (CRRAWG's) sub-workgroup on Regulatory Best Practices for NBS, co-led by UGA's Michelle Covi (CRRAWG lead) and USACE's Andrew LoSchaivo (SERPPAS Steering Committee representative for USACE).

Several members of the sub-workgroup provided additional support, guidance, information, and feedback, as did other individuals whose experience with designing and permitting living shorelines led to invaluable insights provided in interviews and by email. Their names are listed below in gratitude for generously sharing their time and expertise, not as an indication that they have endorsed the contents of this document.

- Deb Abibou (former Coalition to Restore Coastal Louisiana)
- Kerri Allen (North Carolina Coastal Federation)
- Meghan Angelina (Georgia Department of Natural Resources Coastal Resources Division)
- Tom Ankersen (University of Florida Levin College of Law)
- Darrah Bach (Coalition to Restore Coastal Louisiana)
- Savanna Barry (University of Florida Institute of Food and Agricultural Sciences)
- Benjamin Carswell (University of Georgia Carl Vinson Institute of Government)
- Bill Carey (Brooks Pierce)
- Michelle Covi (University of Georgia Marine Extension and Georgia Sea Grant)
- Jessica Guilianelli (Marine Corps Air Station Cherry Point)
- Rachel Gwin (Choctawhatchee Basin Alliance)
- Wade Hinton (Office of the Mississippi Secretary of State)
- Jonathan Howell (North Carolina Department of Environmental Quality Division of Coastal Management)
- Danielle Irwin (Cummins Cederberg Coastal & Marine Engineering)
- Mariana Kendall (Florida Department of Environmental Protection)
- Jamie King (Zulu Marine and Aerial)
- James Long (Georgia Department of Natural Resources Coastal Resources Division)
- Jan Mackinnon (Georgia Department of Natural Resources Coastal Resources Division)
- Todd Miller (North Carolina Coastal Federation)

- Kelie Moore (Georgia Department of Natural Resources Coastal Resources Division)
- Tim Rach (Florida Department of Environmental Protection)
- Katherine Sheppard (US Army Corps of Engineers South Atlantic Division)
- Eric Sparks (Mississippi State University Coastal Research & Extension Center)
- Lexia Wheeler (North Carolina Coastal Federation)

Crucial support for the work came from three units within the University of Georgia: the Institute for Resilient Infrastructure Systems, the Marine Extension – Georgia Sea Grant, and the Carl Vinson Institute of Government.

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Marine Extension and Georgia Sea Grant
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Sea Grant

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Acknowledgement of support: This project was supported by the Army Corps of Engineers Awards W912HZ-20-2-0031 and W912HZ-24-2-0005.