

Planning for the Future of the Texas Coast



South Texas County Judges and Commissioners Association
Annual Conference
June 18, 2026
San Antonio, TX

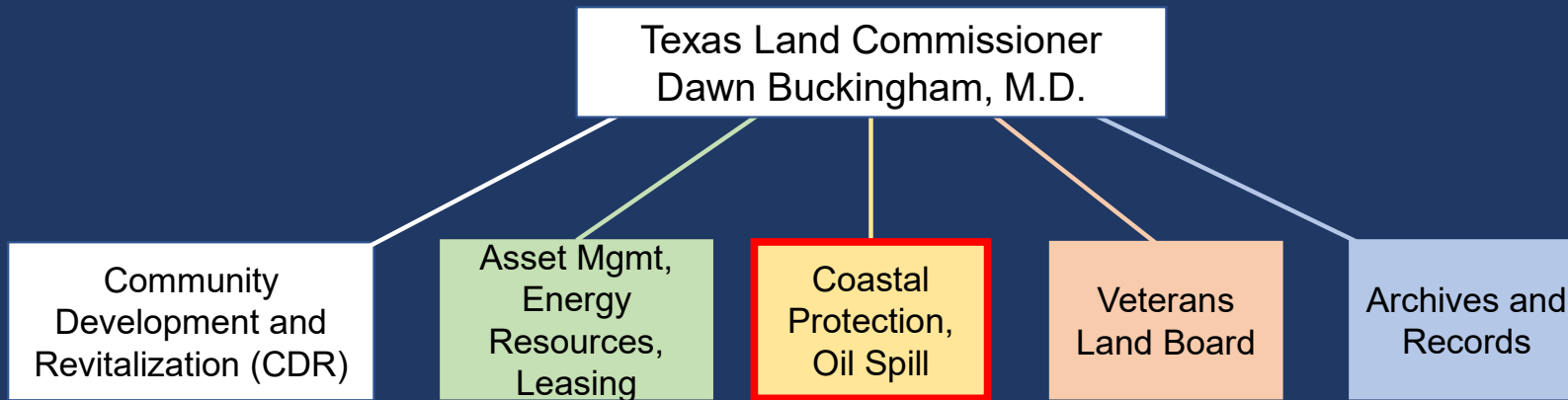
Joshua Oyer,
GLO Coastal Planning Manager

Texas General Land Office • Commissioner Dawn Buckingham, M.D.

Texas General Land Office

Agency Mission

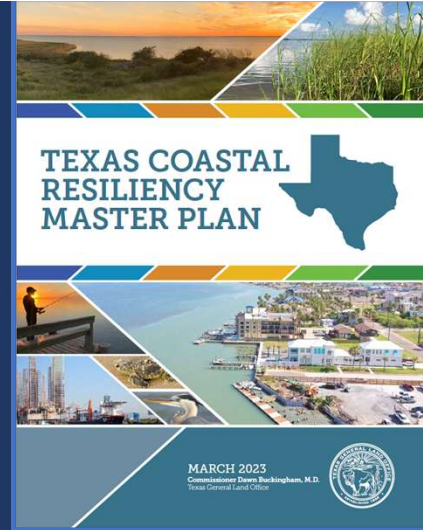
The Texas General Land Office primarily serves the schoolchildren, veterans, and the environment of Texas. The agency does so by preserving our history, maximizing state revenue through innovative administration, and through the prudent stewardship of state lands and natural resources.



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Commissioner Dawn Buckingham, M.D.



Texas Coastal Resiliency Master Plan



Region 1
Brazoria, Chambers, Galveston, Harris, Jefferson, and Orange Counties

Region 2
Calhoun, Jackson, Matagorda, and Victoria Counties

Region 3
Aransas, Kleberg, Nueces, Refugio, and San Patricio Counties

Region 4
Cameron, Kenedy, and Willacy Counties

Land Change



Degraded or Lost Habitat



Gulf Shoreline Change



Bay Shoreline Change

Flooding



Storm Surge



Inland Flooding



Tidal Flooding

Degraded Water Resources



Degraded Water Quality

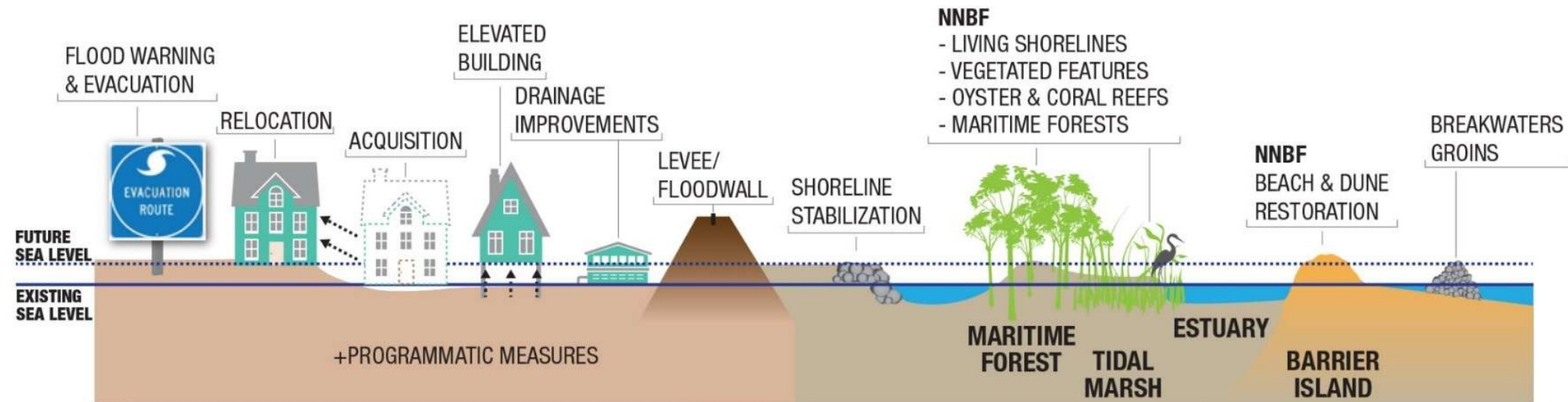


Degraded Water Quantity

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Multiple Lines of Defense



source: USACE



Concurrent State and Federal Efforts on the Texas Coast



LEGEND



Led by GLO



Led by USACE

Complementary Planning

Coastal Texas Project

- Galveston Bay Storm Surge Barrier System
- South Padre Island Beach Project
- Coastwide Ecosystem Restoration (8 projects)

Regional Flood Planning

- GLO River Basin Flood Studies
- TWDB Regional Flood Planning Groups
- TDEM State Hazard Mitigation Plan

Restoration Planning

- NRDA
- RESTORE
- NFWF

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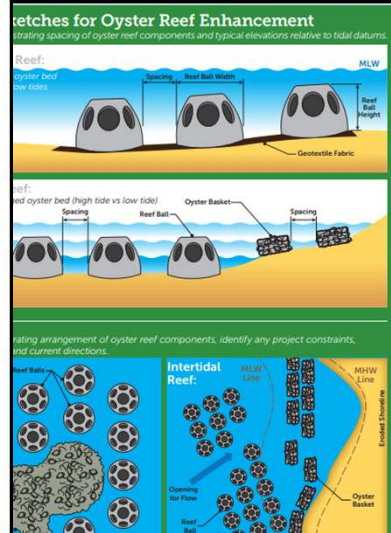
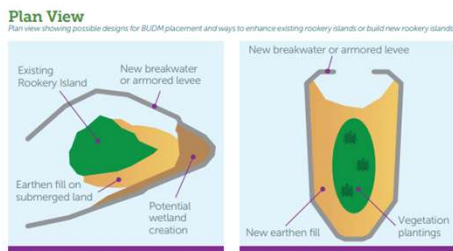


GLO partnered projects

- Coastal Texas Project: non-federal sponsor
- CEPRA
- CMP
- GOMESA
- CDBG-DR, CDBG-MIT



GLO Coastal Planning Page



Green and gray techniques to stabilize and protect shorelines

Technique	Cost	Adaptability to RSL*	Wave Energy Dissipation	Benefits and Drawbacks
Reef	low	mod	low	<ul style="list-style-type: none"> Benefits: stabilizes and captures sediment, assists in additional plant colonization, improves habitat for marine and benthic species, aesthetics Drawbacks: low permanence unless coupled with structures, susceptible to RSL
Reef Ball	mod	low	low	<ul style="list-style-type: none"> Benefits: anchors sediment, assists in plant colonization, small footprint, unobtrusive, aesthetics Drawbacks: requires periodic adjustment for maximum effect, may become a safety or debris concern once deteriorated
Oyster Basket	mod	low	mod	<ul style="list-style-type: none"> Benefits: provides natural estuarine habitat, recreation opportunities, and water filtration Drawbacks: may be limited in the amount of vertical relief attained
Marsh	low	mod	mod	<ul style="list-style-type: none"> Benefits: can create additional protected space for habitats, such as marsh grass, and estuarine species, berms can act sacrificially and add sediment to the nearshore system Drawbacks: low permanence unless coupled with structures, susceptible to RSL, may become a safety or debris concern once deteriorated
Levee	low	high	high	<ul style="list-style-type: none"> Benefits: provides recreational opportunities, able to adapt to wave climate and recover from losses Drawbacks: causes disruption to beach microbiome, turtle nesting, and beach recreation during construction; cyclical sand losses are expected
Breakerwater	mod	high	mod	<ul style="list-style-type: none"> Benefits: provides transitional estuarine habitat area, adaptive to RSL, reduces need for structure height and hardening when compared to a traditional levee Drawbacks: requires larger footprint than a traditional levee to construct, requires maintenance
Armorment	mod	mod	mod	<ul style="list-style-type: none"> Benefits: provides interstitial estuarine habitat Drawbacks: requires periodic adjustment for maximum effect, may become a safety or debris concern once deteriorated
Living Shoreline	high	high	mod	<ul style="list-style-type: none"> Benefits: allows leeward sediment accretion, creates sheltered estuarine areas, can be coupled with natural features to create a living shoreline Drawbacks: down-drift & up-drift erosion, may become a safety or debris concern once deteriorated
Shoreline Armoring	mod	high	mod	<ul style="list-style-type: none"> Benefits: anchors shoreline location, prevents upland erosion Drawbacks: down-drift erosion, disallows shoreline migration, vulnerable to flanking and scouring, difficult to permit
Structural Armoring	mod	mod	mod	<ul style="list-style-type: none"> Benefits: anchors shoreline location, prevents upland erosion, small footprint Drawbacks: profile deflation, vulnerable to flanking, erosion, and overwash, disrupts aesthetics; cuts off upland habitat from water
Beach Nourishment	high	high	low	<ul style="list-style-type: none"> Benefits: up-drift accumulation Drawbacks: down-drift erosion, vulnerable to flanking
Levee with Beach	mod	high	low	<ul style="list-style-type: none"> Benefits: anchors shoreline location, flood and storm surge control Drawbacks: down-drift erosion, vulnerable to flanking and scouring, difficult to permit



- All Plan Documents
- Modeling Data Viewer
- Resiliency Design Guides
- Links to Coastal Texas Project

www.glo.texas.gov/crmp

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Regional Resilience Planning workshops

Lower Laguna Madre

July 29 from 12:30-2:00



Matagorda Bay and
San Antonio Bay

August 11 from 1:00-2:30



Galveston Bay

August 17 from 1:00-2:30



Sabine Lake

August 18 from 1:00-2:30



Aransas Bay

August 20 from 1:00-2:30



Corpus Christi Bay and
Baffin Bay

August 31 from 1:00-3:00



Thank you!

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