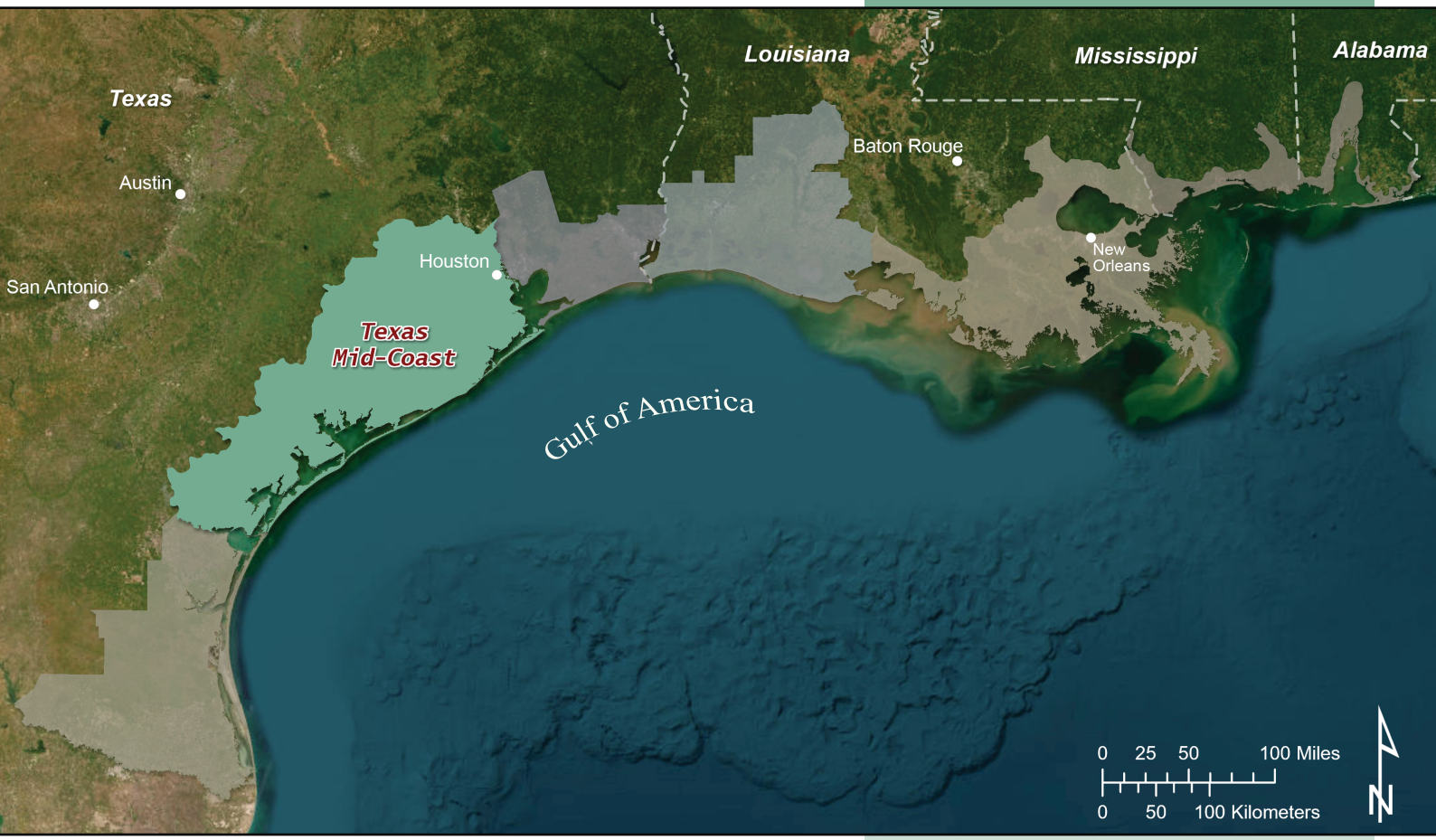
# Gulf Coast Joint Venture

## TEXAS MID-COAST INITIATIVE AREA




See www.gcjv.org for information about the Gulf Coast Joint Venture (GCJV) bird habitat conservation partnership.

This document summarizes priority bird conservation actions for the Texas Mid-Coast (TMC) Initiative Area.

Detailed descriptions and derivations are available at https://www.gcjv.org/GCJV_Resources.php.


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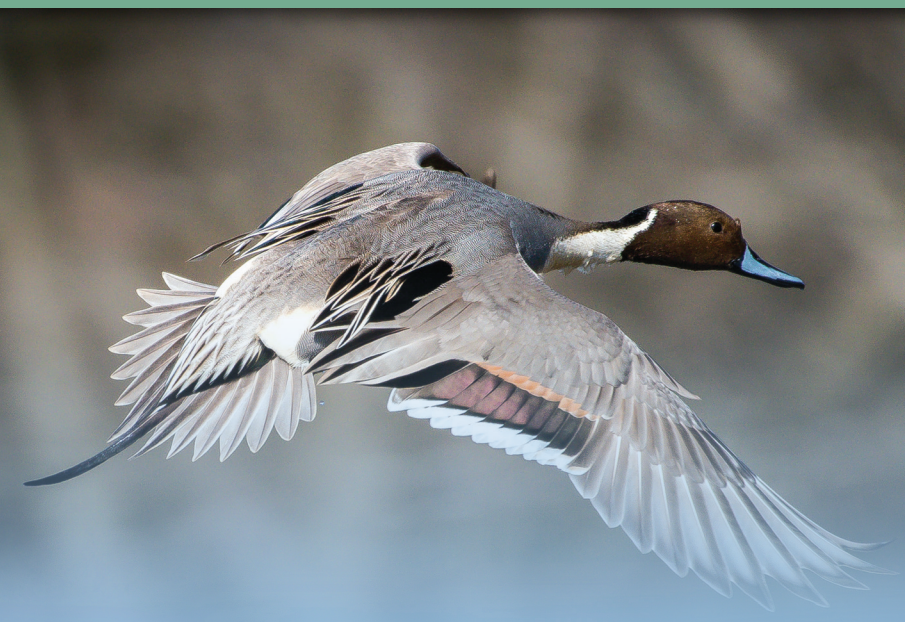

# WATERFOWL

## MIGRATING AND WINTERING WATERFOWL

**Species Addressed in GCJV Planning:** Mallard, Northern Pintail, Gadwall, American Wigeon, Green-winged Teal, Blue-winged Teal, Wood Duck, Northern Shoveler, Mottled Duck, Canvasback, Redhead, Ring-necked Duck, Greater & Lesser Scaup, Lesser Snow Goose, and Greater White-fronted Goose

**Population Objective:** 1,670,588 ducks

| | Green-winged Teal | American Widgeon | Canvas-back | Gadwall | Mallard | Northern Pintail | Northern Shoveler | Redhead | Ring-necked Duck | Scaup | Wood Duck | Blue-winged Teal | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TMC | 149,033 | 85,746 | 9,713 | 105,158 | 23,435 | 469,417 | 150,815 | 241,255 | 23,314 | 222,630 | 18,919 | 171,153 | 1,670,588 |
| GCJV | 872,407 | 292,350 | 99,473 | 909,944 | 353,636 | 1,234,195 | 558,322 | 469,561 | 301,867 | 1,412,432 | 325,958 | 1,369,053 | 8,199,196 |



## Habitat Objectives:

| | Acres |
|---|---|
| Non-tidal Freshwater Wetlands | |
| Aug-Oct | |
| Harvested rice, 1st crop | 6,386 |
| Moist-soil/idle rice | 21,896 |
| Total | 28,283 |
| Nov-Mar | |
| Harvested rice, 2nd crop | 35,774 |
| Unharvested rice, 2nd crop | 1,883 |
| Moist-soil/idle rice | 59,279 |
| Non-ratooned rice | 20,277 |
| Total | 117,212 |
| Coastal Marsh Ponds | |
| Fresh | 6,248 |
| Intermediate | 18,140 |
| Brackish | 10,531 |
| Saline | 114,262 |
| Total marsh | 149,181 |
| Seagrass meadows | 24,734 |

**Biological Foundation:** Bio-energetic models yield acreage of foraging habitats necessary to meet dietary demands of population objectives.

## Conservation Activities:

Reduce erosion of coastal marsh through shoreline and bank stabilization.

Minimize saltwater intrusion and enhance productivity of coastal marsh through hydrologic restoration.

Maintain or improve levees and water-control structures on managed marshes.

Provide water and vegetation management on harvested and idle croplands (i.e., rice) and coastal prairie wetlands.

Protect, enhance, and create freshwater wetlands within 10 km of seagrass beds.



## Non-breeding Waterfowl Research Priorities:

Determine the importance of distributed sanctuary in habitat conservation for wintering waterfowl and its implication for food limitation.

Determine the effects of coastal marsh restoration on sustainability of waterfowl habitats.

Describe likely effects of water resource allocation, changing cultivation practices, and urban growth pressures on rice agriculture and associated waterfowl habitats.

## BREEDING WATERFOWL



**Species Addressed in GCJV Planning:** Mottled Duck

**Population Objectives:** A spring population of 211,865 individuals as measured from the Western Gulf Coast Mottled Duck Breeding Population Survey, including 103,385 in Louisiana and 108,480 in Texas.

**Habitat Objective:** Not yet available

**Biological Foundation:** Factors limiting recruitment are primary constraints to population growth.

**Conservation Activities:**

Create and restore large blocks of nesting habitat in agricultural lands and coastal marsh.

Use hydrologic restoration to maintain low salinity (<6–8 ppt) and enhance the quality of brood-rearing habitats in coastal marsh.

Restore wetlands and ensure reliable water to provide brood-rearing habitat from mid-April through July in agricultural landscapes.

Remove predators in targeted locations.

**Breeding Waterfowl Research Priorities:**

Measure the effectiveness of habitat conservation actions to benefit Mottled Duck breeding productivity, including breeding propensity, nest success, and brood survival.

# LANDBIRDS

**Priority Species:** Northern Bobwhite, Loggerhead Shrike, LeConte's Sparrow, Seaside Sparrow, Cerulean Warbler, Golden-winged Warbler, and Swainson's Warbler

## NORTHERN BOBWHITE

**Population Objective:** 71,812 birds in the TMC

**Habitat Objective:** 1,100,159 acres for the TMC

**Desired Habitats:** Early successional habitat in blocks of ≥11,000 acres in a mix of native bunchgrasses, forbs, bare ground, and low woody cover.

**Biological Foundation:** Average spring home range size dictates acres needed to support population objective.

**Conservation Activities:**

Maintain 15-30% woody vegetation in grasslands.

Conduct periodic disturbance (e.g., fire, disking, prescribed grazing, mowing).



## LOGGERHEAD SHRIKE

| Habitat Objectives for Loggerhead Shrike, Northern Bobwhite, and LeConte's Sparrow | TMC Acres | GCJV Total Acres |
|---|---|---|
| Integrated Across Grassland Species Total | 228,268 | 2,232,637 |
| Integrated in >20,000 ac contiguous blocks[1] | 187,780 | 1,664,060 |
| Integrated in >11,000 ac contiguous blocks[2] | 40,488 | 568,577 |

[1] Open country with scattered bushes, trees, or other perches, including pastures, agricultural fields, grasslands, and low intensity developed areas.

[2] Grasslands and shrublands with an interspersed mix of native bunchgrasses, forbs, and low woody cover, including open pine (Pinus sp.) savannas.



**Population Objectives:** 81,159 birds during winter (i.e., residents and migrants) in TMC

**Habitat Objective:** 811,590 acres in TMC

**Biological Foundation:** Territory size(s) dictate(s) acreage needed to support population objectives.

**Conservation Activities:**

Preserve open grass-dominated areas with scattered trees or shrubs in fields (i.e., 3–10 shrubs or small trees per acre) in habitat blocks ≥20,000 acres.

## LECONTE'S SPARROW



**Population Objective:** 413,013 birds during winter in TMC

**Habitat Objective:** 413,013 acres in TMC

**Biological Foundation:** Winter density estimates dictate acreage needed to support population objective.

**Conservation Activities:** Manage ≥500 acre blocks of native grassland with burned and unburned areas; prescribed burns should occur on a 3-year rotation.

## SEASIDE SPARROW

**Population Objective:** 380,051 birds in the TMC

**Habitat Objective:** 191,658 acres in the TMC

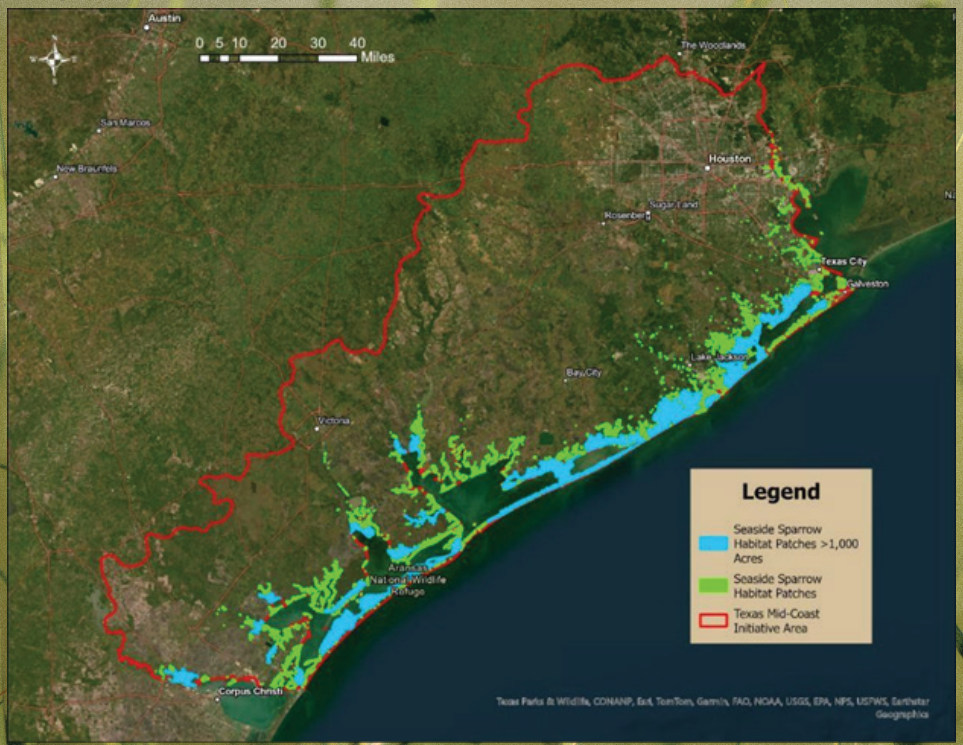
**Biological Foundation:** Breeding territory size dictates acreage needed to support population objective.

**Conservation Activities:**

Create, restore, and/or connect marsh habitat, yielding blocks ≥1,000 acres, containing areas of medium height smooth cordgrass, interspersed with ponds, tidal creeks, and bare ground areas (Figure 2).

Apply prescribed fire at 3- to 4-year intervals.

Figure 2. TMC Seaside Sparrow Habitat Patches






# LANDBIRDS

**CERULEAN WARBLER, GOLDEN-WINGED WARBLER, SWAINSON'S WARBLER**

**Population Objective:** 269.5M total landbirds using coastal forests GCJV-wide in spring; 513.7M total landbirds using coastal forests GCJV-wide in fall.

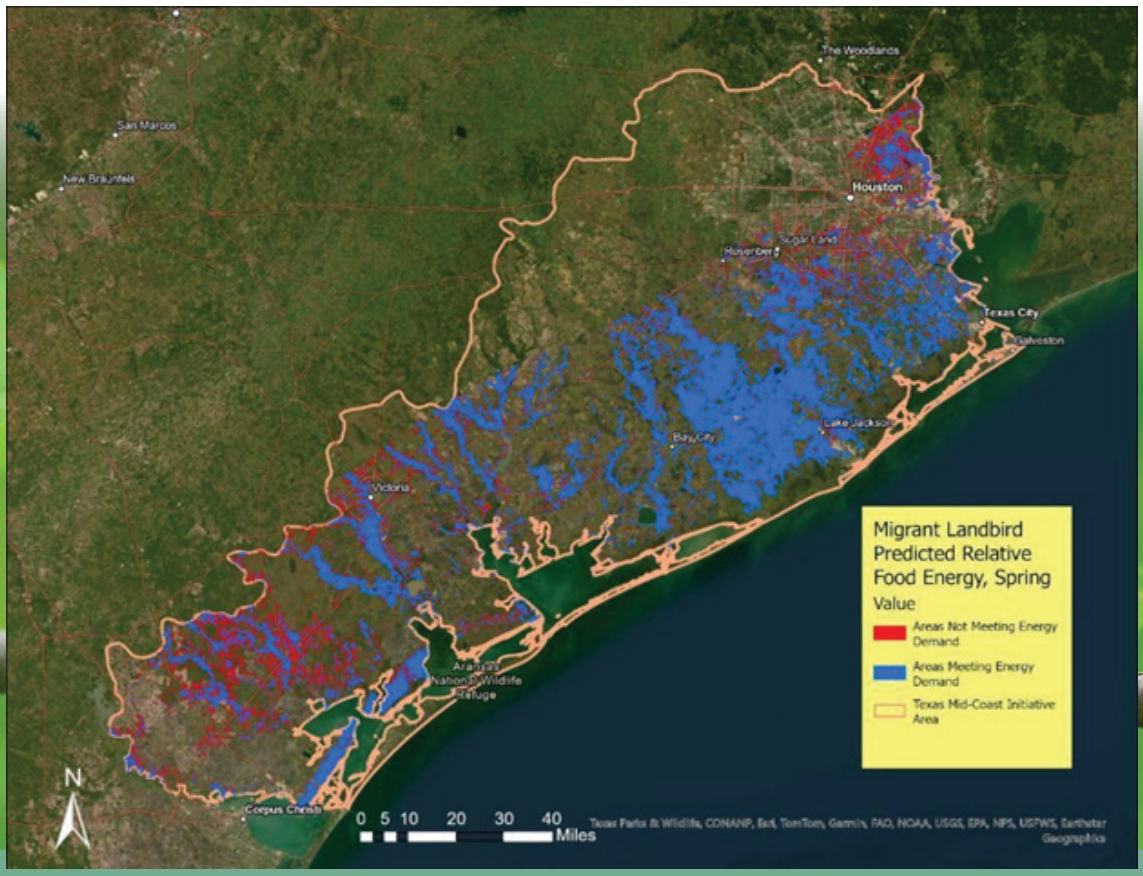
**Habitat Objective:** Positive food energy balance (i.e., supply meeting demand) during spring and fall migration.

**Biological Foundation:** Spatially explicit bio-energetic models yield foraging energetic demand of landbirds during migration relative to the foraging energy supply from available habitats.

**Conservation Activities:** Maintain forest conditions where food energy demands are high and food energy demands are currently adequate.

Improve food energy supply in forests where food energy demands exceed current supply, through plantings of trees, shrubs, and other plants that serve as high food energy hosts; removal of exotics and invasives with limited food value; and management of grazing to improve understory foraging values.

Figure 3. Migrant Landbird Predicted Food Energy Supply Relative to Demand, Texas Mid-Coast Initiative Area, Spring






## Landbird Research Priorities:

Estimate seasonal survival rates for Seaside Sparrow and determine the significance of winter survival and habitat needs in limiting GCJV populations.

Simulate Seaside Sparrow population response to predicted habitat changes, such as projected sea level changes

Test and refine assumptions of LeConte's Sparrow habitat-population model.

Determine primary limiting factors and desired habitat characteristics for Loggerhead Shrikes in the Gulf Coast Joint Venture region.

# SHOREBIRDS

**Priority Species:** Wilson's Plover, Snowy Plover, Long-billed Curlew, Hudsonian Godwit (Spring only), Western Sandpiper, Stilt Sandpiper, Buff-breasted Sandpiper, and Short-billed Dowitcher

## Population Objectives:

| | | Beach/Inlet | Coastal Marsh (Including Impounded), Flats and Reefs | Inland Saturated Soil, Shallow Open Water, & Flooded Grassland | Inland Dry Grassland | Population Objective TMC |
|---|---|---|---|---|---|---|
| Spring | Wilson's Plover | 274 | 402 | 145 | 0 | 821 |
| | Snowy Plover | 1,983 | 2,266 | 854 | 0 | 5,103 |
| | Long-billed Curlew | 12,472 | 19,589 | 16,069 | 8,035 | 56,165 |
| | Hudsonian Godwit | 17 | 426 | 38,707 | 2,765 | 41,915 |
| | Stilt Sandpiper | 4,958 | 25,192 | 150,176 | 0 | 180,326 |
| | Buff-breasted Sandpiper | 0 | 93 | 24,322 | 41,695 | 66,111 |
| | Western Sandpiper | 6,731 | 11,437 | 9,256 | 0 | 27,425 |
| | Short-billed Dowitcher | 1,120 | 1,969 | 717 | 0 | 3,805 |
| Fall | Wilson's Plover | 405 | 599 | 195 | 0 | 1,199 |
| | Snowy Plover | 2,655 | 3,025 | 1,008 | 0 | 6,688 |
| | Long-billed Curlew | 10,226 | 15,540 | 10,326 | 5,163 | 41,256 |
| | Hudsonian Godwit | N/A | N/A | N/A | N/A | N/A |
| | Stilt Sandpiper | 1,420 | 16,349 | 116,648 | 0 | 134,417 |
| | Buff-breasted Sandpiper | 2 | 136 | 27,817 | 47,686 | 75,641 |
| | Western Sandpiper | 7,112 | 12,182 | 10,407 | 0 | 29,701 |
| | Short-billed Dowitcher | 1,036 | 2,865 | 641 | 0 | 4,543 |

| Habitat Objectives | TMC Acres[1] | GCJV Total Acres[1] |
|---|---|---|
| Fall Beach/Inlet | 13,295 | 44,025 |
| Fall Marsh, Flats, & Reefs | 22,168 | 82,895 |
| Fall Inland Saturated Soil, Shallow Water, & Flooded Grassland | 43,905 | 146,619 |
| Spring Inland Saturated Soil, Shallow Open Water, & Flooded Grassland | 51,434 | 128,635 |

[1] Acreages represent need for available/open foraging habitat, which varies depending on habitat type.

**Biological Foundation:** Bio-energetic models yield acreage of foraging habitats necessary to meet the demand of population objective.

**Conservation Activities:** Provide inland habitat ranging from shallow, flooded fields to mudflats; restore and conserve marshes, tidal flats, oyster reefs, beaches and inlets.

## Shorebird Research Priorities:

Determine if Gulf Coast Snowy and Wilson's Plover breeding populations are more limited by adult survival or productivity; if productivity limits population growth, determine levels of reproductive success needed for population stability.

Improve estimates of carrying capacity/prey density of shorebird habitat in marsh ponds, tidal flats, delta splays, grasslands, beaches, agricultural fields, moist-soil units and other important foraging habitats; determine how prey base availability is affected by cultivation practices, management, chemical amendments and other human activities.

Assess effectiveness of marsh and beach creation through sediment deposition in providing habitat used by shorebirds with abundant prey.

Develop and quantitatively assess best management practices for breeding Wilson's and Snowy Plovers in the GCJV region, including predator removal or exclusion and disturbance management.



**Priority Species:** Reddish Egret, Little Blue Heron, Wood Stork, King Rail, Black Rail, Gull-billed Tern, and Black Skimmer. Population and habitat objectives for Wood Stork, Black Rail, Gull-billed Tern, and Black Skimmer are not yet available.

## REDDISH EGRET

**Population Objective:** 2,000 breeding pairs in TX portion of the GCJV

**Habitat Objective:** Not yet available

**Biological Foundation:** Estimation of breeding population impacts of specific management treatments applied to specific colonies. (Figure 4)

**Conservation Activities:**

Apply colony-specific management actions.

Create/improve alternate colony sites.

Improve foraging habitat within 10 km of existing colonies.

| Reddish Egret Colony Site | Recommended Action | | |
|---|---|---|---|
| | Predator Control | Disturbance Management | Habitat Action |
| North Deer Island | X | | |
| Dressing Point | X | | X |
| Sundown Island | | | X |
| Second Chain of Islands | X | X | X |
| Little Bay | X | X | |

Figure 4. TMC Reddish Egret nesting colonies.



## LITTLE BLUE HERON

**Population Objective:** 5,345 breeding pairs in TMC

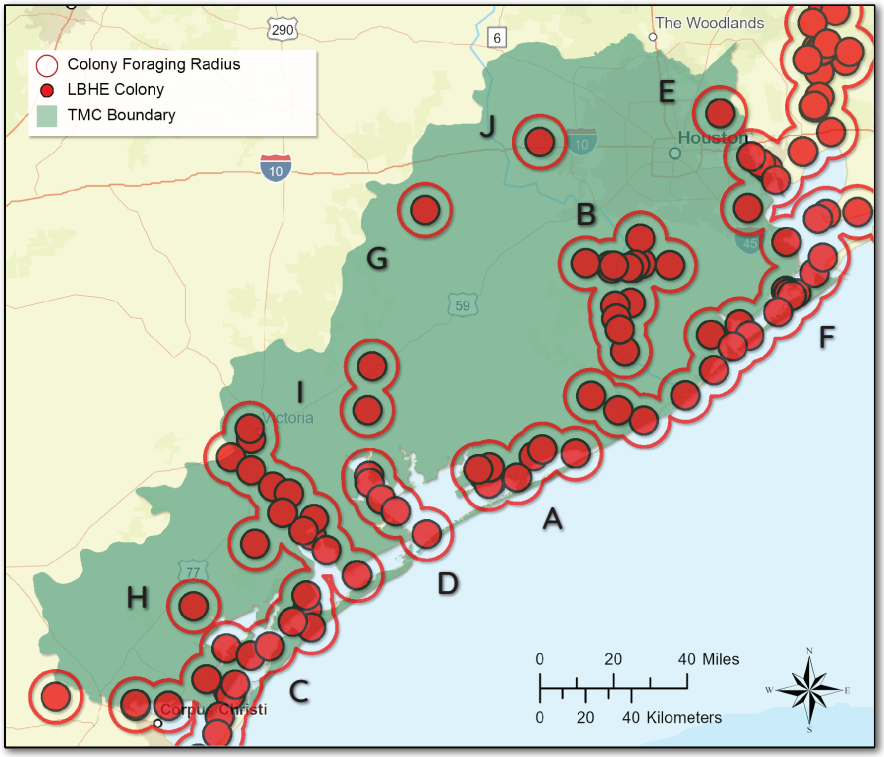
**Habitat Priorities:**

### Important Foraging Habitats by Colony Cluster

A. East Matagorda Bay: EEW, PEW, USOW
A. Brazos River Wetlands: PFW, USOW
B. Guadalupe to Baffin Bay Texas Mid-Coast Portion: PEW, EEW, PFW, USOW
A. Lavaca Bay Islands: EEW, PEW, USOW
B. Sheldon Lake: PFW, USOW, PSS
C. Sabine-Trinity-San Bernard Texas Mid-Coast Portion: EEW, PEW, USOW
D. Eagle Lake: RC, PFW, USOW
E. Fennessey Ranch: EEW, PEW
F. Lake Texana: USOW, PFW, RC
G. Morton Road Rookery: RC, PEW

EEW = Estuarine Emergent Wetland
PEW = Palustrine Emergent Wetland
PFW = Palustrine Forested Wetland
PSS = Palustrine Shrub/Scrub Wetland
RC = Rice/crawfish
USOW = Unconsolidated Shore/Open Water Ecotone

Figure 5. Important foraging habitats identified for each Initiative Area cluster.




**Biological Foundation:** Population is limited by availability of suitable foraging habitat proximal to suitable nesting habitat.

**Conservation Activities:**

Apply specific management actions to colonies, or clusters of colonies, and associated foraging habitat.



## KING RAIL

**Population Objective:** 15,536 individuals in TMC

**Habitat Objectives:** 17,378 acres of new intermediate marsh converted from brackish and/or saline marsh Figure 6 depicts areas of brackish marsh within 1 km of existing fresh and intermediate marsh. Another management option is to create intermediate marsh in open water areas within 1 km of existing fresh and intermediate marsh. Figure 7 shows the 119,542 acres of open water that meet this criteria.

Figure 6. Brackish marsh within 1 km of fresh/intermediate marsh.

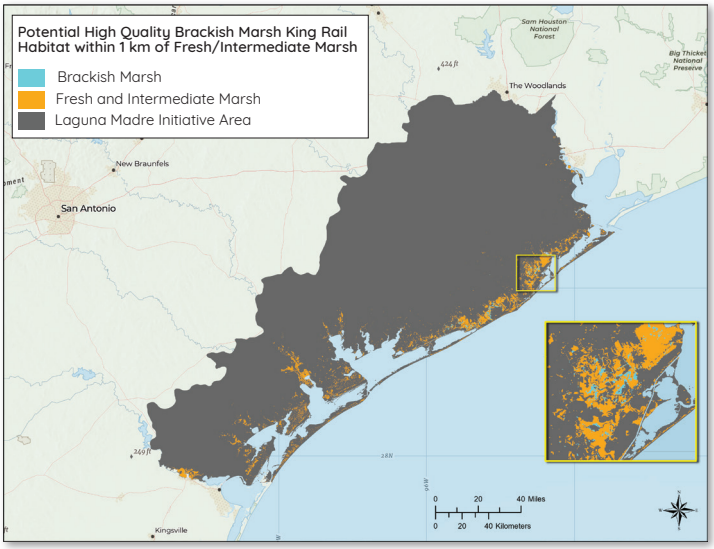
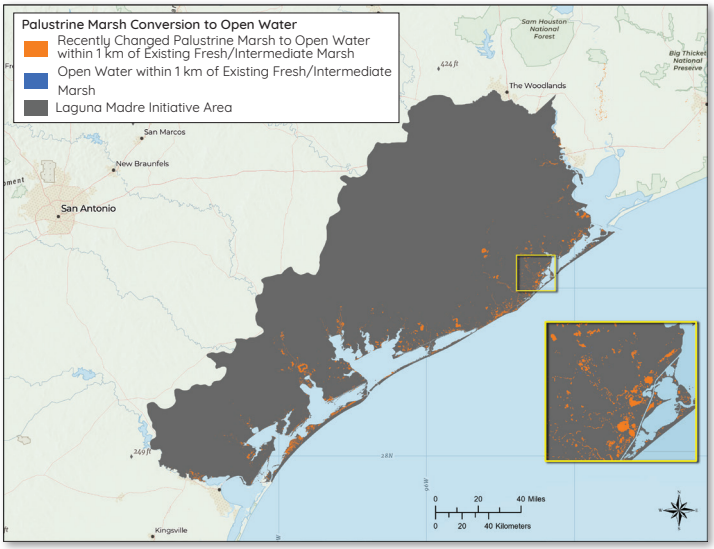



Figure 7. Open water within 1 km of fresh/intermediate marsh.




**Biological Foundation:** Population density estimates dictate acreage needed to support population objectives.

**Conservation Activities:**

Reduce salinities of high quality brackish marsh within 1 km of existing fresh to intermediate marshes.

Restore or create intermediate marsh in open water areas within 1 km of existing fresh to intermediate marshes.

Maintain complexes of ricelands and associated wetland features that support populations.

Figure 8. Predicted relative abundance of King Rail in Intermediate and Fresh Coastal Marsh.

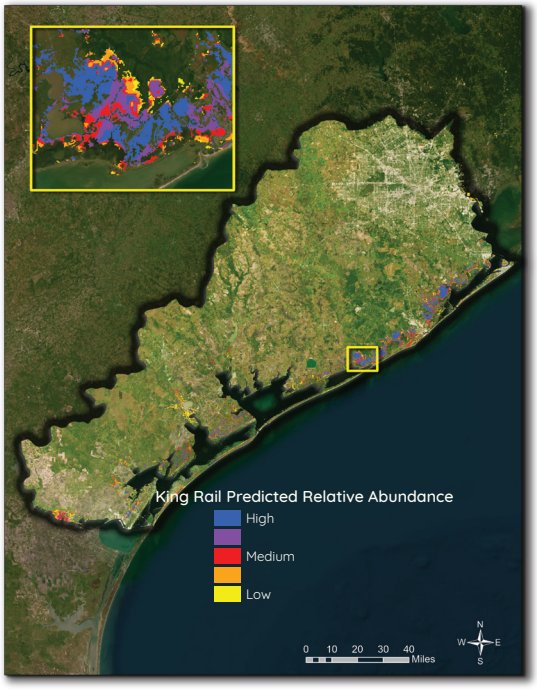
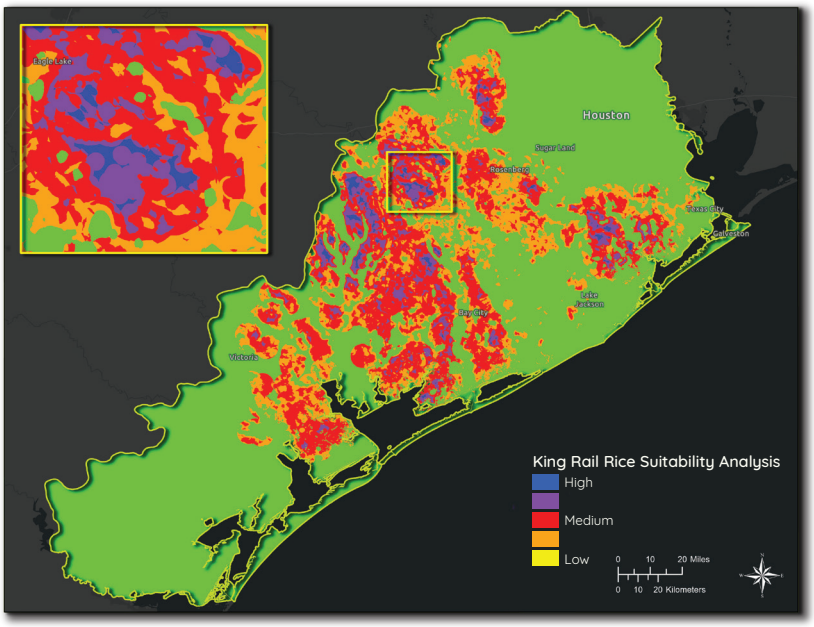



Figure 9. King Rail habitat suitability index in rice fields in TMC.



## Waterbird Research Priorities:

Validate population response of priority colonial nesting waterbirds (e.g., Black Skimmer, Gull-billed Tern, Reddish Egret and Little Blue Heron) to colony site management measures, including erosion control, dredged material placement, vegetation management, disturbance minimization and predator control.

Assess status and distribution of Little Blue Heron in the GCJV region, employing a standard repeatable methodology incorporating detection probabilities.

