

Bird Colony Restoration in Louisiana and Their International Importance

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LA Brown Pelican Colonies in Decline

- 2002 – 30 Colonies
- 2010 – 22 Colonies
- 2023 – 9 Colonies
 - 3 Recently Restored
 - 3 Under Design



Queen Bess Island 2018



Queen Bess Island 2018



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Project Features

- Enhanced Existing Rock Perimeter with 250lb Rip Rap
- Installed 12 Breakwaters to Create Fledging and Loafing Habitat
- Pumped in 150,000 CY of MS River Sand to Elevations up to +4.0' NAVD88
- Topped Sand with 6" of Limestone in Cell 3 for Tern/Skimmer Nesting Habitat
- Planted 26,000+ Shrubs for Nesting Habitat

Queen Bess Island 2020



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June 2023



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How Did the Birds Respond?

	2018
Wading Birds	1,608
Terns/Skimmers	20
Laughing Gulls	2,285
Brown Pelicans	6,810
Total	10,723



How Did the Birds Respond?

	2018	Year 1 Expectations
Wading Birds	1,608	0
Terns/Skimmers	20	750
Laughing Gulls	2,285	500
Brown Pelicans	6,810	1,500
Total	10,723	2,750



How Did the Birds Respond?

	2018	Year 1 Expectations	2021
Wading Birds	1,608	0	188
Terns/Skimmers	20	750	6,396
Laughing Gulls	2,285	500	4,930
Brown Pelicans	6,810	1,500	3,425
Total	10,723	2,750	14,939



How Did the Birds Respond?

	2018	Year 1 Expectations	2021	Year 10 Expectations
Wading Birds	1,608	0	188	600
Terns/Skimmers	20	750	6,396	400
Laughing Gulls	2,285	500	4,930	2,000
Brown Pelicans	6,810	1,500	3,425	4,000
Total	10,723	2,750	14,939	7,000

2018



2023



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The Future is Bright on Queen Bess!

• Text



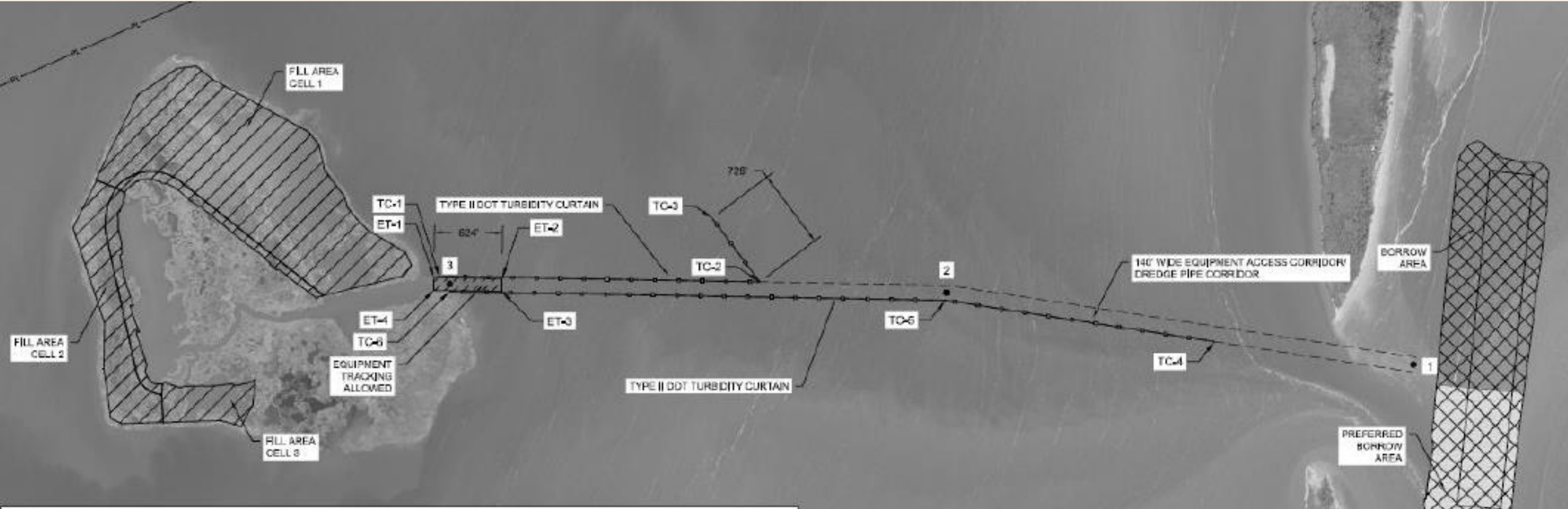
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Rabbit Island 2020



- 200 Acre Island Located in West Cove of Calcasieu Lake in Cameron Parish
- The only Brown Pelican colony in Southwest Louisiana
- Prior to restoration, the average elevation = 1.0' NAVD 88
- Mean High Tide of Calcasieu Lake 1.01' NAVD 88





Project Features

- 606,300 cy of sediment pumped onto Rabbit Island from the Calcasieu River
- Cell 1 was constructed to an elevation of 3.0' NAVD88
- Cell 2 was constructed to an elevation of 3.5' NAVD88
- Cell 3 was a Marsh Nourishment Cell
- Planted 65,561+ Shrubs and Herbaceous Vegetation Planted for Nesting Habitat

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2021 Looking North



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2021 Looking South



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How Did the Birds Respond?

	2018	Year 1 Expectations
Wading Birds	3,887	0
Terns/Skimmers	573	270
Laughing Gulls	9,643	70
Brown Pelicans	1,264	30
Total	15,367	370



How Did the Birds Respond?

	2018	Year 1 Expectations	2021
Wading Birds	3,887	0	2,869
Terns/Skimmers	573	270	3,214
Laughing Gulls	9,643	70	5,031
Brown Pelicans	1,264	30	521
Total	15,367	370	11,635



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How Did the Birds Respond?

	2018	Year 1 Expectations	2021	2022
Wading Birds	3,887	0	2,869	7,941
Terns/Skimmers	573	270	3,214	6,570
Laughing Gulls	9,643	70	5,031	13,887
Brown Pelicans	1,264	30	521	4,043
Total	15,367	370	11,635	32,441

How Did the Birds Respond?

	2018	Year 1 Expectations	2021	2022	Year 10 Expectations
Wading Birds	3,887	0	2,869	7,941	2,330
Terns/Skimmers	573	270	3,214	6,570	130
Laughing Gulls	9,643	70	5,031	13,887	3,000
Brown Pelicans	1,264	30	521	4,043	330
Total	15,367	370	11,635	32,441	5,790



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Rabbit Island has and Encouraging Future



North Breton Island Breton National Wildlife Refuge



June 2010



Oct 2020

Project Features

- Expanded island from **290** acres to **426** acres
- **5,974,000** cubic yards of material placed on the island, dredge source 3+ miles east of NBI
- **15,300** linear feet of sand fencing installed
- Plantings **64 acres** of dune plantings (Bitter Panicum-Sea Oats)- 80% Complete; **53 acres** of black mangrove; **165 acres** smooth cordgrass (back barrier marsh)



North Breton Island - February 2022



North Breton Island Dune Plantings Spring 2023



North Breton Island

June 2023



Terns nesting on southern end of NBI

NBI Bird Response

	2018
Wading Birds	0
Terns/Skimmers	18,304
Laughing Gulls	3,089
Brown Pelicans	6,488
Total	27,881



NBI Bird Response

	2018	2021
Wading Birds	0	1
Terns/Skimmers	18,304	145
Laughing Gulls	3,089	4,668
Brown Pelicans	6,488	4,301
Total	27,881	9,115



NBI Bird Response

	2018	2021	2022
Wading Birds	0	1	0
Terns/Skimmers	18,304	145	3,208
Laughing Gulls	3,089	4,668	1,047
Brown Pelicans	6,488	4,301	5,847
Total	27,881	9,115	10,102



** May 2023 Survey
 5,600 BRPE nests
 6,000+ Terns & Skimmers staged and engaging in courtship behavior
 *** Note we had 2 MODU nest on NBI in 2022

The regional, national, and international importance of Louisiana's coastal avifauna



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The regional, national, and international importance of Louisiana's coastal avifauna

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ABSTRACT—Coastal Louisiana—and its Mississippi River Delta, in particular—provides large and diverse habitats for many types of birds in North America and beyond. The Mississippi River and its distributaries have shaped Louisiana's unique coast, which includes extensive marsh and marsh islands, sandy barrier headlands and sandy islands, and isolated patches of maritime forest on natural levees, cheniers, and canal spoil banks. Louisiana thus supports large populations of many obligate marsh bird species as well as marine bird species that require islands for breeding sites. Here, we have collated available data and attempt to estimate the breeding population sizes of 17 bird species in coastal Louisiana. We then summarize the importance of the Louisiana coast for these bird species in the contexts of regional, national, and global bird populations. These preliminary estimates indicate that Louisiana's coast supports a high percentage of regional, national, and, in some cases, global populations of several coastal bird species. For example, we estimate that 73% of the United States population of Sandwich Tern (*Thalasseus sandvicensis*) breeds in Louisiana, and comparable estimates range from 24 to 55% for Mottled Duck (*Anas fulvigula*), Clapper Rail (*Rallus crepitans*), Tricolored Heron (*Egretta tricolor*), Wilson's Plover (*Charadrius wilsonia*), Royal Tern (*Thalasseus maximus*), Black Skimmer (*Rynchops niger*), and Seaside Sparrow (*Ammodramus maritimus*). Because most of these other bird species are distributed across state, regional, and national jurisdictions, management of birds and bird habitats in Louisiana has wide-reaching implications for the conservation of these shared natural resources. In this light, this paper is intended to be a resource for managers of avian resources in North America and beyond. Received 21 May 2018. Accepted 6 November 2018.

Key words: barrier islands, coastal bird conservation, Louisiana coastal birds, Mississippi River delta, population estimates

La importancia regional, nacional e internacional de la avifauna costera de Louisiana

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RESUMEN (Spanish)—La costa de Louisiana—y en particular el delta del río Mississippi—provee grandes y diversos hábitats para muchos diferentes tipos de aves en Norteamérica y más allá. El río Mississippi y sus distributarios han formado una costa única, que incluye extensas ciénagas, islas en ciénagas, barras arenosas de tierra firme, islas arenosas, parchos aislados de bosques marítimos en diques naturales, dunas ondulantes y bancos de material de dragado de canales. Con ello, Louisiana alberga grandes poblaciones de muchas especies obligadas de humedales, así como especies de aves marinas que requieren islas como sitios de reproducción. Aquí recopilamos los datos disponibles e intentamos estimar el tamaño de las poblaciones reproductivas de 17 especies de aves de la costa de Louisiana. A continuación, sintetizamos la importancia de la costa de Louisiana para estas especies de aves en el contexto de sus

Species	Estimated LA population	LA rank (among nGOM states)	LA % of nGOM	LA % of global population
Sandwich Tern	75,000	1	83%	70%
Brown Pelican	35,000	1	47%	23%
Forster's Tern	7,500	1	71%	15%
Royal Tern	50,000	1	51%	26%
Black Skimmer	10,000	1	44%	10%
Tricolored Heron	15,000	1	48%	17%

Introduction to Brown Pelicans

- Brown Pelicans take approximately 4 years to reach sexual maturity
- Brown Pelicans express a high degree of site fidelity to their natal colony
- Little was known how substantial habitat changes associated with large-scale restoration would alter the future use of those colonies

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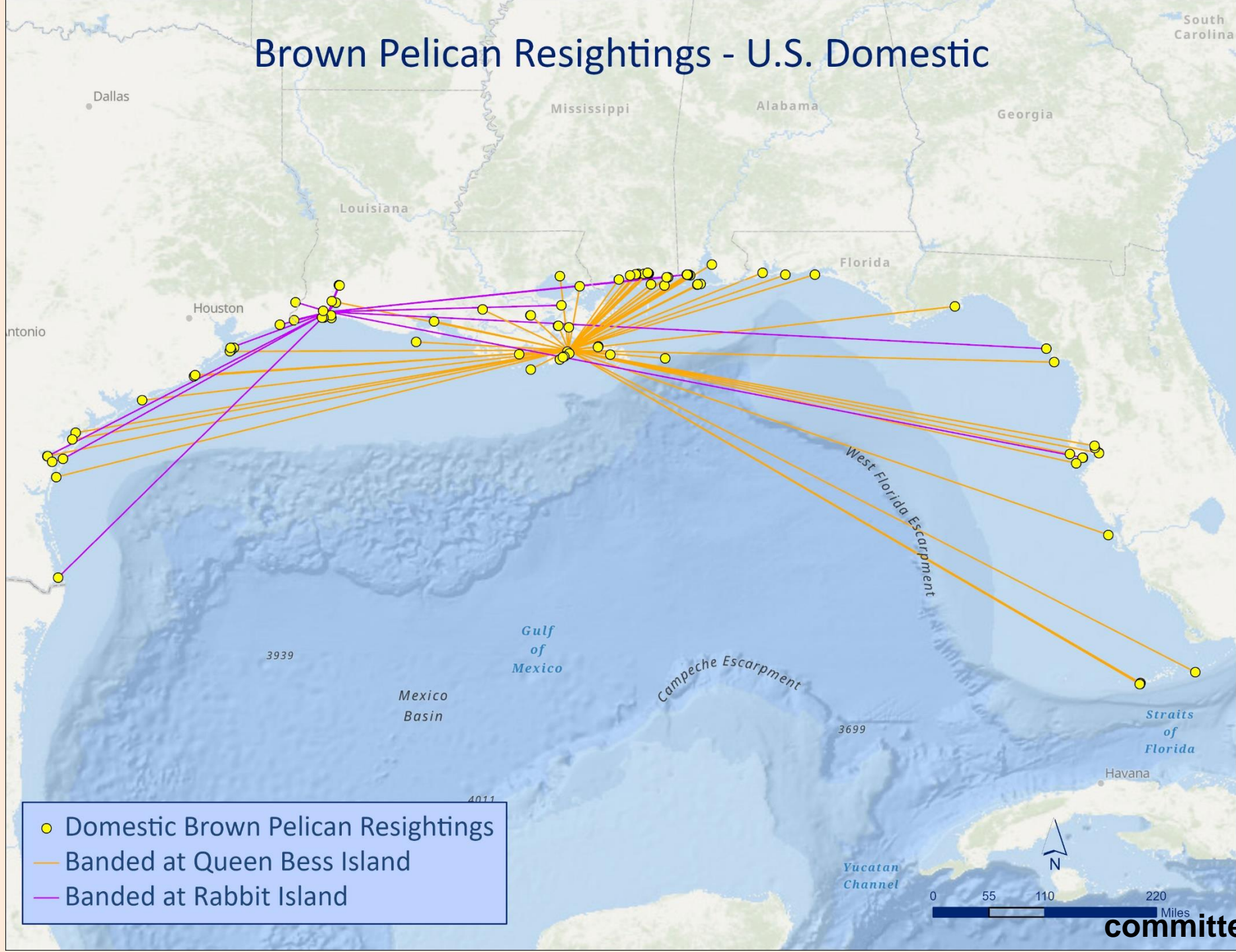
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Results



- A total of 1,150 Pelicans were banded at Queen Bess between 2019 and 2022 and 322 were banded at Rabbit in 2020 and 2021
- 242 Pelicans banded at Queen Bess and Rabbit out of 169 individual birds were resighted across the GOM and internationally
- 30% of adult Brown Pelicans have been resighted nesting on Queen Bess

Brown Pelican Resightings - U.S. Domestic



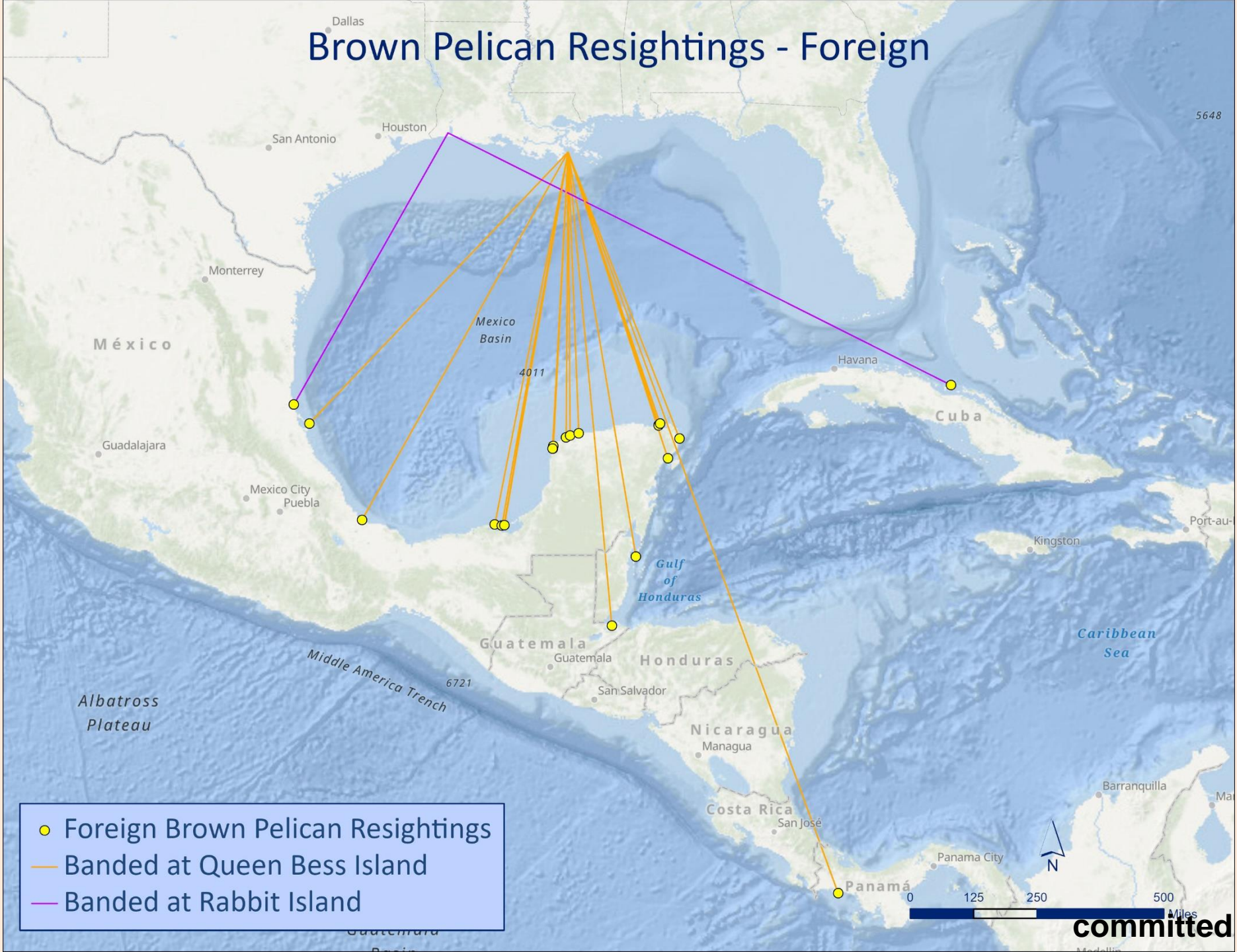
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International Importance of Bird Colony Restoration in Louisiana for Brown Pelicans



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Brown Pelican Resightings - Foreign

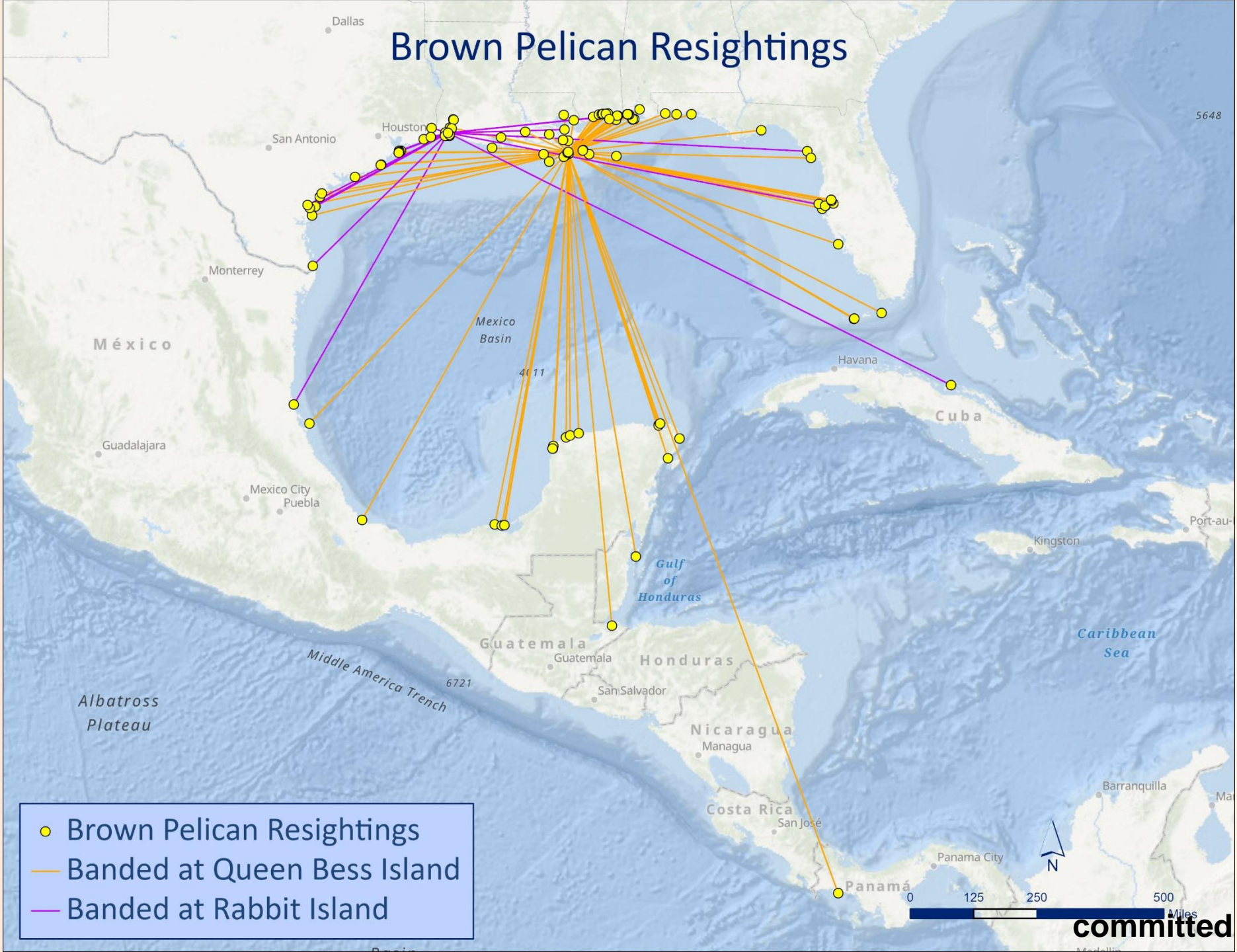


- Foreign Brown Pelican Resightings
- Banded at Queen Bess Island
- Banded at Rabbit Island



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Brown Pelican Resightings



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Journey of BT1



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Journey of AK8



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Journey of AX7



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Similar patterns over the past 3 years, from birds banded on NBI

Locations:

Mexico: Merida, Yucatan, Quintana Roo, Veracruz

Florida: Sanibel, Conch Key, Lee County, Shaefer,
Pensacola, Sanders Beach

Mississippi: Ocean Springs, Pascagoula, Pass Christian

Louisiana: Shell Beach, Leesville, Queen Bess, Morgan
City, Cocodrie, Holly Beach

Texas: Seadrift, Aransas, Baytown, Bolivar Peninsula



Questions?



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