

San Antonio Bay

Ecosystem Health Report Card

2023



Current condition: **vulnerable**



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Photo by HRI

The San Antonio Bay – Guadalupe Estuary

The San Antonio Bay ecosystem includes San Antonio, Hynes, Guadalupe, and Espiritu Santo Bays. Port O'Connor, Seadrift, and Austwell are the main population centers in the region. San Antonio Bay, the Aransas National Wildlife Refuge, and the Guadalupe Delta Wildlife Management Area are home to Kemp's ridley and green sea turtles, American alligators, and the last wild flock of endangered whooping cranes. The bay provides critical winter habitat and productive feeding grounds for continued recovery of whooping crane populations.

The communities of San Antonio Bay, which used to be largely made up of family-owned commercial fisheries, are experiencing rapid changes as sportfishing and hunting become more popular.



About this Report Card

This Report Card uses local, state, and national datasets alongside stakeholder input to evaluate how current conditions compare to long-term trends. This is meant to give a high-level summary of the health of bay ecosystems to inform management decisions for the Texas coast.

A *healthy* score represents a well-balanced system that supports current uses. A *vulnerable* score indicates that negative influences from human and natural pressures are being observed. An *unhealthy* score means that measured values are outside the range of what is expected in a balanced, healthy system.

Unhealthy

Vulnerable

Healthy



Prioritize
immediate
actions

Prioritize
proactive
solutions

Prioritize
balanced
growth



This symbol indicates a priority call to action

Water

Balanced levels of **nutrients**, like nitrogen and phosphorus, support life in our bays. While nutrient levels are generally good in Espiritu Santo Bay, periods of increased algae growth in San Antonio Bay indicate too many nutrients may be flowing into the system from human sources.

The amount and timing of **freshwater inflow** to estuaries helps regulate salinity and nutrient supply. Although flows are generally within historical averages, fewer high flow events than in the past are leading to increasing in salinity in San Antonio Bay that can negatively affect sensitive species like oysters and crabs.

Plastic pollution in the marine environment is a growing problem. Programs like local shoreline clean-ups, Nurdle Patrol, and Texas Litter Database are helping to raise awareness and understand hot spots for plastic pollution.



1. Expand water quality monitoring to proactively detect and respond to potential impacts of population growth in the watershed.
2. Develop frameworks for focused freshwater inflows to maintain healthy salinities.
3. Promote policies to reduce plastic pollution.

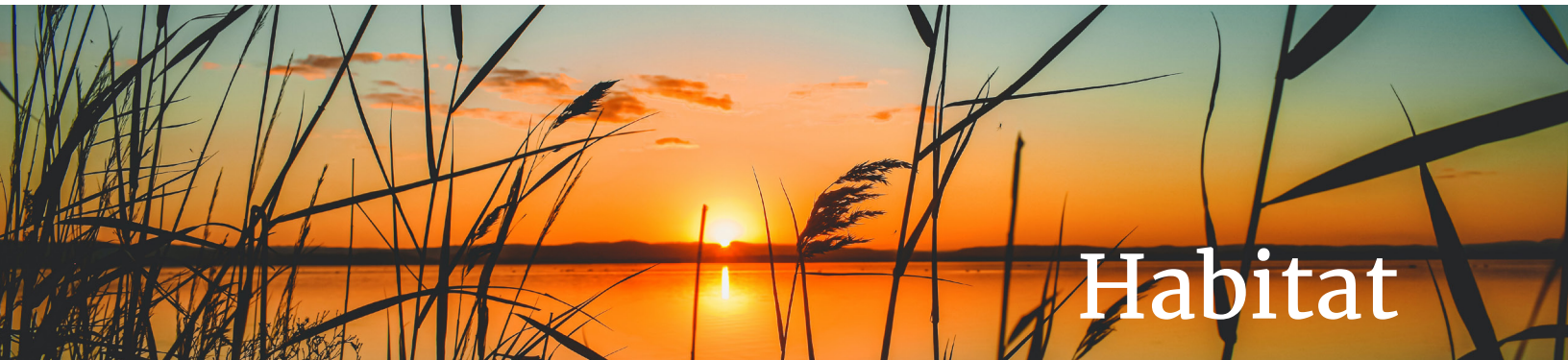
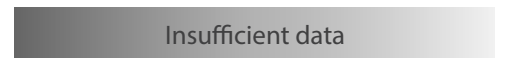
Nutrients



Freshwater inflow



Plastic pollution



Habitat

Coastal habitats provide feeding grounds and shelter for fish, birds, crabs, sea turtles, and shrimp. They protect the coast from damaging waves and erosion and store carbon.

The San Antonio Bay area has experienced net loss of **wetlands** since 2001, mostly due to sea level rise. Winter Storm Uri decimated black mangrove populations, exposing large areas to increased erosion.

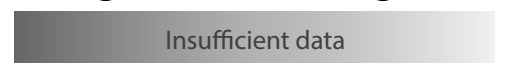


Increase monitoring to understand how coastal habitats are changing with climate change, sea level rise, and coastal development.

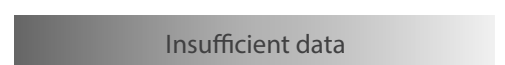
Wetland area



Seagrass coverage



Tidal flats area





Wildlife

Photo by Larry Ditto Nature Photography

Colonial waterbirds are iconic species that gather in dense colonies to nest on small islands throughout San Antonio Bay. While populations of some species are still in an acceptable range, Black Skimmer, Great Egret, Roseate Spoonbill, Tricolored Heron, and Great Blue Heron are showing up in fewer numbers than they have in the past. This is believed to be due to loss of nesting islands.

Assessed waterbird species: Black Skimmer, Great Egret, Reddish Egret, Roseate Spoonbill, Tricolored Heron, Great Blue Heron, Brown Pelican, Caspian Tern, Forster's Tern



Conserve and restore rookery islands and other coastal habitats to benefit colonial waterbirds.

Colonial waterbirds



Finfish



Blue Crab



Shrimp



Oysters



Assessed finfish species: Spotted Seatrout, Black Drum, Red Drum, Atlantic Croaker, Southern Flounder

Oysters in the San Antonio Bay region are less abundant than in the past, prompting questions about the longevity of the resource. **Black Drum**, **Redfish**, and **Spotted Seatrout** have recovered from historic lows to support a vibrant recreational fishing industry in the region. **Shrimp** and **Atlantic Croaker** are within acceptable ranges, but populations should be closely monitored to ensure sustainability. Populations of **Southern Flounder** and **Blue Crab** are in decline.



1. Assess fishing and environmental pressures to support sustainable management.
2. Conserve oyster reef structure and encourage responsible harvest practices to ensure resources for the future.

Community

Coastal communities affect and are affected by the environment and the natural resources that define ways of life. Healthy bays support healthy communities.

Coastal economies around San Antonio Bay provide local jobs, tax revenue, and ways of life. Commercial fisheries in San Antonio Bay were worth more than \$8.5 million in 2021. While the total weight of landings has dropped, the value of the industry has grown more quickly than in other bays on the Texas coast. Travel and recreation has grown steadily in Calhoun and Refugio Counties, earning nearly \$17 million in 2021.

Coastal economies



1. Promote growth in tourism and recreation in balance with the ecosystem.
2. Ensure equitable access to coastal resources to benefit local communities.

Community resilience is the ability to adapt to environmental changes and recover from disasters. Habitat loss, unsustainable use, and environmental disasters can cause damages to property and livelihoods, increase inequality, and reduce quality of life. Approximately 35% of the population in Calhoun and Refugio Counties have 3 or more risk factors that make people more vulnerable, compared to the US average of about 22%.

Risk factors include income to poverty ratio, single or no caregiver, crowding, communication barrier, unemployment, disability, no health insurance, age 65+, no vehicle access, no internet access.



1. Promote growth in oyster farming to create jobs and reduce pressure on natural reefs.
2. Increase understanding of the links between community vulnerability and ecosystem health.



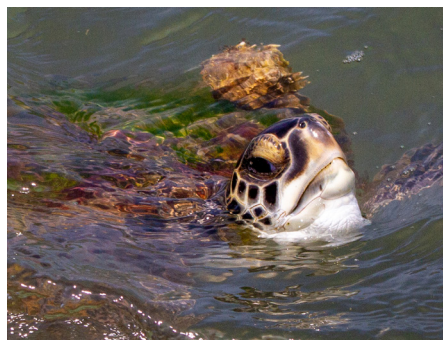
Community resilience



Conservation Success Stories

The [San Antonio Bay Partnership](#) helps coordinate volunteer-driven campaigns to remove abandoned fishing gear and other marine debris from remote shorelines while collecting important data about sources of marine debris. In 2022, **652 abandoned crab traps** and **4 tons of marine debris** were removed from San Antonio Bay.

The [Mid-Coast Sea Turtle Rescue Program](#) was created after major losses from Winter Storm Uri. In December 2022, the program engaged **67 volunteers** and **15 boats** in San Antonio Bay to successfully rescue **114 sea turtles** from dangerously cold waters.



Acknowledgments

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