



The Gulf Breeze

The official newspaper
of Padre Island National Seashore
Summer 2006



The park protects the longest section of undeveloped barrier island in the world, protecting rare coastal prairie; a complex, dynamic dune system; and the Laguna Madre, one of the few hypersaline lagoon environments left in the world.



Welcome to Padre Island National Seashore, one of the most special places of the 390 units administered by the National Park Service. We trust that you will have a wonderful time as you explore and experience this great park.

Padre Island National Seashore was established by an act of Congress on September 28, 1962 (Public Law 87-712) and our mission is to preserve, protect, and interpret the longest section of undeveloped barrier island remaining in the world for public recreation, benefit, education, and inspiration. Bordered on the east by the Gulf of Mexico and on the west by the Laguna Madre, the park's 130,434 acres encompass rare coastal prairie, a dynamic dune system, ephemeral marshes, and 68.5 miles of Gulf Coast white sandy beach.

This special place not only provides many wonderful recreational opportunities, it provides vital habitat for songbirds, shorebirds, deer, snakes, waterfowl, coyotes, fish, and sea turtles. The park is the most important nesting site for the Kemp's ridley sea turtle in the United States, and is designated as a globally important bird area for more than 350 species of birds. This is why over 650,000 visitors came to Padre Island National Seashore in 2005.

Yellowstone National Park has Old Faithful, Yosemite National Park has Half Dome, and Padre Island National Seashore has the endangered Kemp's ridley sea turtle. This species has come back from the brink of extinction to utilize Padre Island National Seashore as its primary nesting habitat in the United States. Last year was another record breaking year with 51 Kemp's ridleys nesting along the Texas shoreline.

National Seashores like Padre Island belong to all of us, and as such we have a shared stewardship role. Please help us protect and care for this special place. Above all be safe during your visit.

Superintendent, Colin W. Campbell



Novillo Campline

Preserving the Past: The Antiquities Act

The centennial of the Antiquities Act in 2006 provides an opportunity to reflect on the historic accomplishments of importance to all Americans and to consider the challenges for cultural and natural resource preservation in the 21st century.

The Antiquities Act is arguably the most important piece of conservation legislation in American history. It protects all historic and prehistoric sites on Federal lands and prohibits excavation or destruction of such antiquities. It also authorizes the President to declare areas of public lands as National Monuments and to reserve or accept private lands for that purpose.

The Antiquities Act has played an important role in the development of archeology in the United States and in expanding public appreciation of the past history of the nation. By protecting archeological resources in the public's interest, rather than for commercial use, the Antiquities Act is the basis for other important preservation laws, among them the Historic Sites of 1935, the National Historic Preservation Act of 1966, and the Archeological Resource Protection Act of 1979. These laws strengthen the ability of Americans to protect and appreciate archeological resources including sites, collections, and reports, as well as other kinds of historic places, structures, and landscapes.

The staff at Padre Island National Seashore embraces the Antiquities Act. As we look back through history from Native American artifacts to Spanish shipwrecks of the 16th century and the Novillo line camp of the cattle ranching era, we foster awareness of the significance of our cultural resources through education and continued protection.

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**IN CASE OF EMERGENCY
DIAL: 911**

**Park Rangers are available
during normal working
hours to provide assistance.**

Dial: 361-949-8173 ext. 0

Lost and Found

Items may be reported at the visitor center.



National Park Service
U.S. Department of the Interior

The Gulf Breeze

Volume 1, No. 2

The Gulf Breeze is published by the National Park Service for the orientation and information of visitors to Padre Island National Seashore.

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pais_visitor_center@nps.gov

The National Park Service cares for the special places saved by the American people so that all may experience our heritage.

Interpretive Programs

Beach Walk	11:00 AM
Deck Talk	1:00 PM
History Program	2:00 PM (Sunday)
Star Program	(Seasonal)
Junior Ranger	(Self-paced program)

For more information please contact the visitor center, or visit the park's website at: www.nps.gov/pais

Note: All activities begin at the Malaquite Visitor Center

The park is open 24 hours a day, 365 days a year. The visitor center is open daily from 8:30 a.m. to 4:30 p.m., during the winter. Summer hours are extended to 6:00 p.m. The visitor center is closed on Christmas day.

Location

The physical address is 20420 Park Road 22. From Interstate Highway 37 turn onto Highway 358. The highway name changes from 358 to South Padre Island Drive, then crosses over the Laguna Madre on the JFK Causeway and becomes Park Road 22. At the end of Park Road 22 is the National Seashore. Traveling it through the park takes one to the visitors center and a half-mile farther the road ends on the beach. The total driving distance from I-37 to the beach is 37 miles.

Special Programs

Educational and interpretive programs are held year-round.

Deck talks and beach walks are held every day. Deck talks last 30 minutes and are an in-depth discussion of objects including shells, sea beans, and man-made items that are found along the shoreline. Beach walks last 45 minutes and are guided walks along the beach in which a ranger talks about the natural/cultural history of the island. Discussions include anything seen along the shore including shells, birds, flotsam, and plants while touching upon environmental issues of importance to the park. Evening programs may be offered at the Malaquite Beach campground in summer and winter, normally lasting 45 minutes and may be on a variety of topics from wildlife to history to astronomical topics such as meteor showers, comets, and constellations. Bird-watching walks may be offered at the Malaquite Beach Visitor Center during spring migration. The National Seashore also offers environmental education programs for school groups of all ages. These professionally-presented programs teach children about such topics as habitat and migration while providing direct contact with nature. Contact the park environmental education specialist at 361-949-8068.

Available Facilities

The Visitor Center has an information desk, small museum, bookstore, concession stand, observation decks, restrooms, and showers (open 24 hours). The visitor center is fully wheelchair accessible with ramps to the main deck and an elevator to the main observation deck. Beach wheelchairs are available.

Camping

There is a 14-consecutive day limit for camping in primitive sites or 30 days in Malaquite Campground. Overnight camping is limited to a total of 56 calendar days per year.

Malaquite
Open All
Year

Semi-primitive, providing only toilets, rinse showers, picnic

tables, and 48 designated sites (6 sites are for tent camping only, 26 are for tent or RV camping, and 16 are for RV's only). An \$8 fee is required; \$4 with a Golden Age or Golden Access passport. There are no hook-ups.

There is a gray water dump station and potable water filling station prior to entering the campground. Running generators after 10 p.m. is not allowed. The area is patrolled by rangers. Camping is accommodated on a first-come, first-served basis. No reservations are accepted. The campground is rarely full; except during February, March, and April. Also, no camping permit is needed at the Malaquite Campground and payment is done by Honor System (Iron Ranger)

North Beach
Open All Year

Primitive and at no charge. A camping permit is required and is available from the Malaquite Beach Visitor Center. Open to RV and tent camping. No reservations are needed. There are no facilities or designated sites. Camping is permitted from the dunes to the water's edge (about a 100 ft. distance). Open to two-wheel drive vehicles, however, beach conditions may vary with weather and campers should always use caution to avoid becoming stuck in unexpectedly deep sand.

South Beach
Open All Year

Primitive and at no charge. A camping permit is required and is available from the information desk at the Malaquite Beach Visitor Center. Open to RV and tent camping. No reservations are needed; space is always available. Camping is on the beach within 100 feet of the water's edge. There are no designated sites. The camping area extends from the end of Park Road 22 south 60 miles to the boundary of the park at the Mansfield Channel. There are no roads; all driving is on the beach. The first five miles of south beach are open to two-wheel-drive vehicles. The lower 55 miles are open only to four-wheel-drive vehicles. The beginning of the four-wheel-drive area is marked. Please note that in Texas, beaches are considered highways and all vehicles on them must be street-legal and licensed. ATVs are not allowed to be driven in the park.



Malaquite Visitor Center



South Beach

Be aware that driving conditions on the beach may vary with the weather and sometimes areas of soft sand may be found in the two-wheel-drive area making driving difficult and becoming stuck possible. Some areas within the four-wheel-drive area usually have very deep sand. A bulletin on how to prepare for driving down island is available by contacting the visitors center. Contact the visitors center before driving down island to check on beach conditions. Driving off the beach and into the dunes, grasslands, and mudflats is prohibited.

Yarborough Pass
Open All Year

Primitive - there are no facilities. A camping permit is required and is available from the Malaquite Beach Visitor Center. Reservations are not needed. Located on the Laguna Madre 15.5 miles south of the visitors center. No fee is charged for use. Access to the area is possible only through the four-wheel drive area of South Beach. To find the campground (not a developed campground) drive to the 15-mile marker then backtrack approximately 100 yards and look for a notch in the dunes. Driving through the pass and follow the road approximately 1-2 miles to the campground. Be aware that the notch through the dunes is sometimes filled with exceptionally deep and soft sand in which even four-wheel-drive vehicles become stuck occasionally. Do not drive on the mudflats surrounding the campground. Fines for damaging the mudflats are heavy.



Western National Parks Association promotes preservation of the national park system and its resources by creating greater public appreciation through education, interpretation, and research.

Come and visit the WNPA bookstore at the Padre Island National Seashore Visitor Center. Besides the great selections of books, CDs, and other educational products, you can purchase your Adopt-a-Turtle package for \$10.00.

Watch for and Report Endangered Kemp's Ridley

Donna J. Shaver, Ph.D.
Chief, Division of Sea Turtle Science and Recovery

During your visit to Padre Island National Seashore, you may be able to help save the world's most endangered sea turtle species from extinction. The two-foot-long, olive green colored adult females come ashore to lay their eggs during daylight hours, between April and mid-July. Taking only about 45 minutes to nest, they crawl up the beach, bury their eggs in the sand, and return to the sea. National Park Service staff and volunteers work diligently to detect and protect the nesting turtles and their eggs. However, beach visitors are sometimes lucky enough to be the first people to spot and report these nesting turtles. Each of these nesting reports is critical to the success of our recovery program and provides one more step in securing the future of this magnificent species.

Long-term recovery efforts making a difference

In 1978, it was feared that the Kemp's ridley sea turtle would go extinct unless immediate steps were taken. Since then, the National Park Service has worked with a variety of partners in the United States and Mexico to re-establish a nesting colony of Kemp's ridley turtles at Padre Island National Seashore, as a safeguard against extinction.

Thanks to the hard work and dedication of many people, the Kemp's ridley population is increasing. A record 51 Kemp's ridley nests were found on the Texas coast in 2005, compared to only one nest every three or four years a decade earlier. Additionally, 55% of the Kemp's ridley nests documented in the U.S. have been found at Padre Island National Seashore, making it the most important nesting area in the U.S. for Kemp's ridley. Noting the importance of this area to nesting and the long-term recovery efforts that have taken place here, the State of Texas passed a Resolution in 2005 recognizing North Padre Island, including Padre Island National Seashore, as the Sea Turtle Capital of Texas. However, to ensure the future of nesting here, monitoring and protection efforts must continue.

Nest detection from April through mid-July

Each year, the National Park Service conducts a program to detect, study, and protect nesting Kemp's ridley turtles and their eggs on North Padre Island. This program is made possible due to funding from the federal government, Texas Parks and Wildlife Department, and a variety of partners and donors.

During the 2006 nesting season, 4-wheel All-Terrain Vehicles are being used to repeatedly patrol the Gulf of Mexico beachfront, each day between 6:30 am and 6:00 pm, from April 2 through mid-July. Over 140 volunteers are participating in the patrol program. Volunteers patrol from Malaquite Beach to the 20-mile marker or from Malaquite Beach to Bob Hall Pier. Staff members patrol from the 20-mile marker to the Mansfield Channel.

Our nest detection program is the largest one on the Texas coast. However, systematic nesting patrols are also being conducted on Bolivar Peninsula, Galveston Island, Matagorda Island, Mustang Island, South Padre Island, and Boca Chica Beach. These projects are administered by other groups that we closely collaborate with and provide training and technical assistance to.

Documentation and study of nesting turtles

We want to find the Kemp's ridleys that are nesting locally so that we can study and protect them. Unfortunately, many re-enter the water before biologists arrive. However, we examine those that we see to determine whether they are from the project to re-establish a nesting colony in south Texas and whether they had nested and been tagged previously.

New facility to care for more eggs

We hope to find the nests so that we can protect the eggs and hatch as many baby turtles as possible, to help ensure future nesting here. Unfortunately, if we do not find the eggs, far fewer hatchlings are born due to predation, high tides, and other factors.

Eggs from all nests found on North Padre Island and northward along the Texas coast are brought to the National Seashore's incubation facility for protected care and monitoring. Eggs found on South Padre Island and Boca Chica Beach are transferred to a protective screen enclosed area on the beach (corral) on South Padre Island.

We are thrilled that our new Sea Turtle Laboratory is now operational at Padre Island National Seashore. After four years of planning and construction, we now have a "state-of-the-

art" facility to hold incubating eggs. The old incubation facility was "filled to capacity" a few times during the last four years. Fortunately, the new facility will more than triple our capacity to incubate eggs and allow for a more controlled incubation environment. This new facility will aid us bringing life to thousands of baby turtles in the coming years, thereby helping perpetuate the species for future generations.

Watch for nesting Kemp's ridley alert flag

The public plays a significant role in the Kemp's ridley recovery project, reporting about half the Kemp's ridley nests found on the Texas coast each year. Kemp's ridleys often nest in groups called arribadas, so on days when one nest is found the chance of finding additional nests increases. To alert the public about nesting and enlist their help in locating nests, a "nesting Kemp's ridley alert" flag is flown on the Padre Island National Seashore Entrance Station and Malaquite Pavilion flagpoles each day that Kemp's ridley nests are found on the Texas coast. The rectangular flag has orange background and a black silhouette of a sea turtle.

What should you do if you see a nesting sea turtle?

You can greatly assist with the Kemp's ridley recovery program by watching for nesting while you are on the beach and immediately reporting it. Please report nesting on North Padre to a passing turtle patroller, law enforcement officer, or me at (361) 949-8173, ext. 226. For nesting observations on Mustang Island, call Tony Amos at (361) 749-6720.

If you find a nesting sea turtle, please: 1. immediately report the observation. If possible, remain at the site until a biologist arrives. 2. stay back from her while she is crawling up the beach to select a nest site, 3. protect her from passing traffic; 4. allow her to nest undisturbed; 5. photograph or video her after she has started to lay the eggs or when she is returning to the water; 6. mark where she nested; and, You are invited to a hatchling release. From June through August, after 45-53 days of incubation, the tiny hatchlings emerge from the eggs held in our incubation facility and are released on the beach at the northern end of the National Seashore. About half of the releases will be open to the public, but logistical and safety concerns prevent us from inviting the public to the other half. It is an experience of a lifetime to see these baby turtles take their first steps in life, scamper towards the water, and swim away from shore. No fee is charged to attend. For more information on these releases, visit our website at www.nps.gov/pais, call the National Seashore's Visitor Center at (361) 949-8068, or call our recorded Hatchling Hotline at (361) 949-7163.



Nesting Kemp's ridley

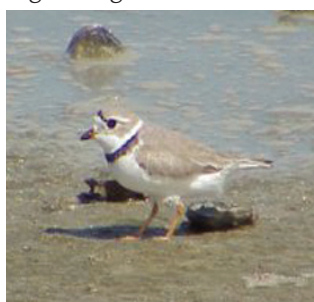
Endangered Piping Plovers

By Michelle Kolar, Park Biologist

Tens of thousands of shorebirds and songbirds, including the Piping Plover (*Charadrius melodus*) migrate to Padre Island National Seashore annually. The Piping Plover spends warm winters foraging on Padre Island National Seashore's beaches, wind-tidal flats, and bay shorelines.

As a member of the Plover family, Charadriidae, the Piping Plover resembles its more familiar counterparts, the Snowy Plover (*Charadrius alexandrinus*), Killdeer (*Charadrius vociferous*), the Wilson's Plover (*Charadrius wilsonia*) and Semi-palmated Plover (*Charadrius semipalmatus*), also found at Padre Island National Seashore. The Piping Plover is distinguished from its other family members by its light sand colored black and orange legs. During breeding season, they sport a black band around their necks, and a spot of orange on their bills. Many Piping Plovers migrating in from their breeding grounds early in the wintering season may still have these markings called "breeding plumage," which is soon lost when they molt to prepare for winter. Piping Plovers are about 7 inches in length, with a 19 inch wingspan.

The Piping Plover, like other members of the Plover family, is a sight forager. Instead of constantly probing the sand for prey like many other shorebird species, the Piping Plover is always watching for its next big meal, which may be flies or benthic invertebrates (worms and critters that live in the sand.) Using their eyes for food causes the plover to look "jerky" while it is feeding because it will run, spot something, stop, peck, and run again. To entice larger worms out of the sand, they will sometimes use a technique called "foot trembling," or vibrating one foot against the wet sand. Watch a Piping Plover from afar with binoculars and you are almost certain to see this tap dance in the sand.



Piping Plover

Piping Plovers sometimes migrate thousands of miles to spend their winter on Padre Island. Most breed in the Northern Great Plains of the U.S. and Canada, although some nest along the U.S. Atlantic Coast, and on the beaches of the Great Lakes. Piping Plovers have been found at the National Seashore 12 months of the year, but occur in the greatest numbers between July and April.

Piping Plovers were placed on the federal endangered species list in 1985 as endangered on its breeding grounds and threatened on its wintering grounds. Shorebird hunting for feathers in the early 1900's caused the first major declines of the species. By the late 1970's, Piping Plovers were extirpated from the breeding grounds on Great Lakes beaches in Illinois, Indiana, New York, Ohio, Pennsylvania, and Ontario. Now, habitat destruction, human disturbance, and predation are contributing to the species demise. Important habitat is constantly lost or degraded by increased development on Piping Plover's breeding and wintering grounds, such as Padre Island.

When an endangered species is placed on the federal list, habitat critical to their survival is designated by the U.S. Fish and Wildlife Service for protection. This habitat cannot be destroyed or degraded, and must be protected for use by that species. Instead of designating the entire National Seashore as critical habitat for the Piping Plover, the U.S. Fish and Wildlife Service entrusted Padre Island National Seashore with protecting this species within the park's boundaries. This allows the National Park Service to manage the park to protect Piping Plovers and educate the park visitors while still allowing both visitors and Piping Plovers to enjoy the park.

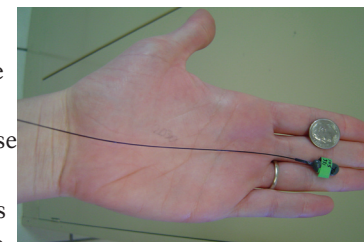
Then we realized, how are we going to protect Piping Plovers at Padre Island National Seashore if we don't know where they are and what they are doing while they are here? So we decided we had better find out!

To discover where they are and what they are doing, we must find them. We are currently doing surveys twice each week of 20 mile sections of the Gulf beach and washover channels looking for Piping Plovers. We have seen up to 240 Piping Plovers using one 20-mile stretch of beach! When we find a Piping Plover, we record the point with a GPS unit, and record what it is doing, and who it is with. We also look for bands on their legs. Many researchers studying Piping Plovers at their breeding grounds in Canada, the U.S. Great Lakes and Great

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Plains place different colored bands on their legs. When they migrate to Texas, we can see where they came from and how old they are by which combination of colored bands is on their legs. These bands are very tiny, only 2-3 millimeters in height, but are brightly colored. If you look closely with good binoculars, you may see a banded Piping Plover! About 8% of Piping Plovers we have seen since July 2005 have been banded.

So we saw Piping Plovers, then what? We still have to decide what they are doing and what parts of the park they are using. Are they moving around or staying in one place? To answer these questions, we are going to place tiny radio transmitters on the birds and track them. These radio transmitters, at 0.90 grams are smaller than, and weigh less than a dime! They will be glued to the feathers on the back of a Piping Plover, and will be shed when the bird molts several months later. The radio transmitter sends out a tiny radio signal that can be picked up with a receiver. On the receiver, the radio transmitter sounds like a loudly ticking clock that gets louder as you get closer to the bird. If we can relocate the Piping Plovers, we can see how far they move, what areas of the park they are using, and what they are doing. We will be trying to relocate birds at least four times per week once we capture them.



Radio Transmitter

But first we have to catch the Piping Plovers to attach the radio transmitter. How do you catch a Piping Plover? Since Piping Plovers spend most of their time scurrying around on the ground, the best way to capture one is to trap it on the ground with a noose carpet. A noose carpet is a small piece of flat plastic with tiny monofilament loops tied in "nooses" to catch the bird's legs as it runs across the carpet. These carpets cannot be bought, but with the help of patient employees and wonderful volunteers, we constructed the noose carpets that will be used to catch the birds. The noose carpets have many benefits. They are safer and more efficient than mist nets because they don't capture the bird's wings, which can be tricky to remove from the net. Once the bird is captured with a noose carpet, it is easily removed because the monofilament slides over itself very easily and the noose opens up as soon as the pressure of the bird trying to run is released. Once we capture the Piping Plover, we can see how old it is and also place a uniquely colored band on its leg. This band will allow us to identify the bird after its radio transmitter falls off, and see where the bird goes to breed in the summer.

With all this newly gained knowledge expected from the project, we will be able to better protect Piping Plovers while they are visiting Padre Island National Seashore so that future generations can enjoy seeing them as much as we do.

Furry Critters of Padre Island National Seashore

By Michelle Kolar, Park Biologist

Occasionally, Padre Island National Seashore has the fortunate opportunity of having research conducted in the park by outside sources, often university researchers. A study currently being performed as a graduate student thesis is a mammal inventory of the park. New Mexico State University is determining what mammal species are using the park, their abundance within the park, and what habitats they are using.



American Badger

Preliminary research was conducted to determine what species could be on the island, followed by field surveys. The graduate student and his assistant placed 10,420 traps out last summer to identify, sex, age, size, and density of each mammal per habitat. Some of the species affirmed by this research include the Texas Pocket Gopher (*Geomys personatus*), the Gulf Coast Kangaroo Rat (*Dipodomys compactus*), the Gray Fox (*Urocyon cinereoargenteus*), and the American Badger (*Taxidea taxus*).

The graduate student is now furthering his research by setting up predator enclosure fences to keep coyotes out and determine the effects coyotes may have on small mammal populations in the park. Four enclosures, 50 square meters each, were placed in several areas around the park, including one on a spoil island in the Laguna Madre.

Colonial Waterbirds

By Michelle Kolar, Park Biologist

Padre Island National Seashore is well known for its nesting Colonial Waterbirds on dredge material placement islands in the Laguna Madre. Dredge material placement islands were formed in the late 1940's when the Army Corps of Engineers dredged the Intracoastal Waterway. The dredged material, also known as spoil, containing mostly mud and sand, was placed to the side of the channel, thus forming islands. Over time, grasses, shrubs, and small trees grew on the islands and they evolved into the habitat that exists today.

“Colonial Waterbirds” is a name given to a large list of bird species that nest in large colonies and that obtain their food from the water. This group includes the terns, gulls, herons, egrets, and more. Great Blue Herons, Great Egrets, Reddish Egrets, and Tri-colored Herons are all common nesters in the trees, shrubs, cacti, and other vegetation on the dredge material placement islands. Caspian, Sandwich, and Royal Terns, as well as Laughing Gulls, nest on the ground in low lying vegetation or sand-shell substrates. A popular island to view during nesting season is Pelican Island, which harbors a nesting colony of up to 1,600 American White Pelicans.

Most of these bird species nest between February and August. Eggs and new young are vulnerable to predation by coyotes, raccoons, birds, predators, and disturbance by people during nesting. Colonial Waterbird populations as a whole have seen dramatic declines in the past 100 years, resulting from wetland loss, and contact with man-made products such as plastics and chemicals. Predation can also be a common cause of decline, possibly linked to increases in human populations along coastlines. Predator populations are possibly increased by feeding on garbage, and some non-natural predators, such as feral cats and hogs, may be introduced to nesting areas where they feed on nests and destroy habitat.

To protect these species, do not approach islands during nesting season, do not throw trash on the islands or in the Laguna Madre, and watch them from a distance, only taking pictures and memories of how beautiful and graceful these birds are.



A Colony of White Pelicans

Sargassum, What Is It?

As you stroll along the shore you may come across a brown to golden colored seaweed that washes up on the beach. The seaweed is known by a variety of names such as sea holly, Gulfweed and by its scientific name Sargassum. This is taken from the Portuguese word for grapes, so named for the small berry-like structures that grow on it and keep it afloat. Sargassum washes up on the beach sporadically and is often heavier from March to August.

The most common species found on our beaches are *Sargassum fluitans* and *Sargassum natans*. Sargassum normally lives in the lower intertidal and shallow subtidal zones in warm tropical regions. The origin of the Sargassum that has taken residence in the Gulf of Mexico is a mystery.

Researchers believe that the seaweed in the Gulf of Mexico may have originated in the Sargasso Sea, where there are several million tons of Sargassum floating at the surface. It is believed that storm waves break the Sargassum from larger mats or rocks and carry them away to eastern shores or into the Gulf Stream. The Sargassum found in the Gulf of Mexico is believed to survive as a free-floating species, and can grow and form large mats under the right conditions. These mats often find their way to the shores of Gulf beaches including Padre Island.

At sea, Sargassum mats create a unique community, providing protection, food, and a surface for attachment for more than 200 marine species including sea turtles, fish, sea slugs, shrimp, crabs, and worms. Some of these creatures have evolved body shapes and colors similar to the seaweed to hide from predators. The Sargassumfish's body has brown, orange and cream colored blotches and is covered in cirri, fleshy growths which resemble the branching Sargassum. The brown and orange sargassum nudibranch or sea slug has large leaf-like structures on its back. Sargassum shrimp and sargassum crabs are also mottled with brown and orange spots. Hatchling sea turtles have been observed in Sargassum mats, using them to forage for food and for protection. A variety of small marine animals associated with the mats of seaweed serve as food for larger commercial and recreational fish such as tuna, mackerel and swordfish. Sargassum mats also serve as breeding grounds and nurseries for a number of marine animals.

Prescribed Burning at Padre Island

By Michelle Kolar, Park Biologist

Fire has historically been a part of life for plants and animals in all ecosystems including forests, grasslands, and even wetlands. Previously viewed as destructive, fire is now being recognized by biologists and resource managers as an important and effective tool to keep ecosystems healthy and functioning. Although fires can be a threat to people and our buildings, fire is actually a necessary natural process that helps keep our grasslands healthy.

Wildland fires help maintain grassland ecosystems. Without fire grasses would be shaded out by trees and shrubs or be out competed by exotic plants. Frequent fires also reduce the amount of dead grass accumulated over several years that can cause fires to become very large and out of control. Frequent burning can allow undesired fires that can be damaging to ecosystems and buildings to be minimized. Fires that burn in these areas later will be smaller and lower in intensity.

Fires allow the release of important nutrients into the soil from dead grasses and fallen limbs and leaves. Grasses and other plants flourish after fires once these nutrients are free. These plants grow back immediately after a burn and cover the black area with fresh green life. Since the ground is not normally impacted by the fire's heat, underground plant structures, such as roots, are actually stimulated by the fire and release of nutrients. Grazing animals, such as white-tailed deer are drawn to the new growth. Migrating birds, such as Sandhill Cranes, are also attracted to burned areas as a source of food, unburned seeds, roots, and insects, for their long journey.

As fires naturally burn through an area not everything is impacted. Fires run along the grassland in a wavy pattern, leaving large patches of the grassland untouched or barely burned. This mosaic pattern allows a large variety of plants and animals to return to the burned area, increasing wildlife diversity, the number of plants and animals using an area. Very large, out of control fires in areas that wildland fire has been suppressed can burn hot enough to prevent the mosaic burning pattern from developing or actually cause the soil to become infertile. Frequent fires help preserve this mosaic burning pattern and cause future fires to be less impacting to fire tolerant plants and burrowing animals.

Many wildland fires at Padre Island National Seashore are naturally caused by late summer lightning storms, however fires can occur at any time of the year from many other sources. Fireworks, cigarettes, campfires, and sparks from automobiles can all cause fires. Recent droughts in our grasslands have increased the risk for fire. To lessen fire's future impacts on an area, naturally started fires are sometimes allowed to burn wide expanses where they do not threaten buildings. Intentional fires, called prescribed fires or controlled burns, are also started by fire professionals to burn a predetermined section of the grassland. These fires are closely monitored and managed to benefit the ecosystem. Weather and grassland conditions must be perfect before a prescribed fire is started. The intensity of the fire can be affected by grass moisture, winds, temperature, and humidity, factors that are all closely considered before and during a prescribed burn.

A large lightning strike fire burned over 10,000 acres of grassland at Padre Island National Seashore in mid-November, 2005. Just before driving onto South Beach, stop at the rest area pullout and look at how well the grassland is recovering.



Wildland Fire at Padre Island



Using Drip Torch to Burn off Excess Fuel



Aerial View of the November 2005 Fire

Danger: Birdlife at Risk

By Volunteers Mary and George Eggenberger

Have you ever wondered what part your National Parks play in the annual migration of birds throughout the western hemisphere? That question is vividly answered at Padre Island National Seashore every year during the months of February through May. Starting slowly in February, peaking during March and April, and thinning out in late May, the migrating bird species that spend their winters in South and Central America and Mexico begin their long and difficult journey to breeding grounds in North America.

Along Padre Island, thousands upon thousands of birds are seen flying north during this period of migration. A large number of these bird species stop off on Padre Island to rest, forage for food, and drink fresh water from the ponds along the interior of the island. While countless birds migrate through Padre Island, several species make the island their winter or year-round home. Included in the group are a few of the birds on both the National and Texas state list of threatened and endangered bird species. Bird species on these lists are at risk of becoming extinct, either from loss of habitat necessary for food, water, and nesting sites, predation, as well as for the impact of toxic chemicals.

Some of the bird species in these groups include the Brown Pelican which is endangered because of the widespread use of DDT, the Least Tern, the Piping Plover, and the Loggerhead shrike which is listed as a species of concern.

The National Park system plays an important role in the protection of habitat for all wildlife, including migrating bird species and those species that suffer because of hunting in the past and the loss of critical habitat. The Park Service provides crucial habitat so that migrating birds have sites to land where they can forage for food, drink fresh water, and rest during their long and difficult flight. In addition, the Park Service conducts ongoing studies by bird banding and other techniques which provide valuable information on the numbers of birds, their general health, migratory flight paths, and population information. These studies place special emphasis on endangered, threatened, and other bird species of concern.

As a visitor to Padre Island National Seashore, there are several important steps you can take to help protect the wildlife on the island:

- Don't drive or walk in the dunes where the resident birdlife tend to have their nests. When driving or walking on the beaches, be aware of what is around you. Some bird species nest in the sand and many nests with eggs are destroyed every year by people who are not attentive.
- Do not allow your dog to run loose on the beaches. Migrating shorebirds that have stopped to rest are especially vulnerable and may not make it to their final destination. Stress from wandering dogs can lead to nest abandonment and hatchling mortality.
- Keep cats inside. Being well fed does not diminish the cat's instinct to hunt and cats kill millions of birds every year.
- Educate your friends and family on these points. The birds, especially the endangered and threatened ones, need all of the help they can get.



Brown Pelican
Courtesy: D. Sokoll

What is a Sea Bean?

A sea bean, also called a "drift seed", is any seed or nut that is carried by the ocean currents. A coconut is a common sea bean. Sea beans can originate anywhere seeds fall into the ocean or where they can be carried to the ocean via rivers or streams. How far they travel depends entirely upon chance. If they find the right chain of connecting currents and spend long enough at sea, they can travel almost around the globe.

Most sea beans have hard or tough outer shells. In some the tough shells prevent the seeds from soaking up saltwater and thus they can remain viable for a long time. Some sea beans, if planted, will grow, but they have to germinate and grow under the right conditions in order to survive.

Many uses have been developed for sea beans and many stories have grown up around them. Because people often see symbols in them, superstitions have developed around sea beans and some people ascribe magical properties to them.

6 The Gulf Breeze

Following are some of the more common sea beans found on Padre Island and some of the more interesting uses, superstitions, and stories concerning them.

The hickory nut and black walnut grow in the eastern US, but wash into the Gulf of Mexico via rivers and streams and then are carried to the National Seashore on the currents. Walnuts are a common snack. The flowers are delightful puff balls of white stamens tipped with pink. They open at night and attract large moths and nectar-feeding bats with their heavy scent.



Hickory Nut

Country almonds, also known as Indian almonds and sea almonds among many other names, are one of the most common tropical seeds found. They come from a tree native to Malaya, but which is now found in many other countries. The nuts are edible and nutritious, but it would be unwise to consume any found washed ashore on Padre Island, because they have probably decayed as well as soaked up considerable sea salt. The juice of the young leaves is used to make an ointment for skin diseases. The bark can be used as a remedy for dysentery and bilious fevers. Country almonds have a shiny exterior which wears off in the sea.



Country Almond

The hamburger bean draws its name from its resemblance to a hamburger. In Mexico they are called ojos de venados [deer eyes]. In some Central American countries, hamburger beans are described as male and female depending upon whether they float when dropped into water. The male hamburger bean is then placed into one hip pocket and the female into the other to ward off certain ailments.



Hamburger Bean

The sea purse is from a perennial climbing shrub found worldwide. Like other seabean, it has many medicinal and culinary uses. It takes its name from its resemblance to a lady's handbag.



Mary's Bean

The Mary's bean, also known as the crucifix bean, is named for the Virgin Mary, because of the cross formed by hollows in the seed. The Mary's bean comes from a little known tropical vine of the morning glory family in a few locations in the rain forests of Mexico and Central America. In some countries women hold onto the seed during childbirth believing it wards off labor pains.

Nickernuts are members of the pea family and come from a shrub that grows on tropical beaches around the world. Two common species grow in the Caribbean region: gray nickernuts and yellow nickernuts, which actually vary in color from yellow to brown. Nickernuts are often strung with other nuts into necklaces and are sometimes ground to make medicines for ailments ranging from malaria to stomach disorders. Nickernuts become hot when rubbed on clothing and, as a game, children often touch unsuspecting playmates with the hot seeds.



Nicker Bean

The sea heart comes from a vine called the monkey ladder, and produces the world's longest bean pod reaching 3-6 feet (1-2 meters) in length. The sea heart grows in the wet, lowland forests of the New World tropics. Because of its hard, polishable shell, many decorative items, such as pendants or boxes, can be made from the sea heart. Legend says a sea heart inspired Columbus' voyage.



Sea Heart

The box fruit (*Barringtonia asiatica*) is a Southeast Asian species and one of the larger tropical drift seeds. The fruit is squarish with four pronounced angles. The fruit is somewhat pointed at the top, and tapers off to an attachment scar at its base and measures approximately 13 cm long and 10 cm wide. The outside of the fruit looks like it has been coated with varnish.



Box Fruit

In the tropics the seeds of the box fruit is ground up and used as a poison to kill fish. The fruits are also used as fishing floats.

Look at the beautiful flowers of the box fruit. The flowers are delightful puff balls of white stamens tipped with pink. They open at night and attract large moths and nectar-feeding bats with their heavy scent.



Flower of the Box Fruit
Courtesy Ria Tan

The Laguna Madre

By Ranger William Botts

Padre Island National Seashore's many miles of wilderness beach have long drawn visitors to the Texas coast. As is true of other barrier islands, Padre Island is separated from the mainland by a slender band of shallow water. This overlooked ribbon of unique marshland is called the Laguna Madre; Spanish for "Mother Lagoon". This is an especially appropriate name since Padre Island translates as "Father Island". Our mother lagoon and island father have combined to produce a remarkable family of unique plants and animals.

Just as any good mother would do, the Laguna Madre provides a home to nurture her many offspring. Food and shelter are abundant; however life there is not easy. What sets this wetland apart from all others, and makes life so challenging, is that the Laguna is one of only five "hypersaline" lagoon systems in the world. Hypersaline means that its waters are extremely salty. Salt levels six times higher than sea water have been recorded in parts of the Laguna Madre! The sea grasses and marine animals can cope with salt - but only to a certain point. Once salt levels reach two or three times that of the ocean, few species can survive.

Why is the Laguna so salty? It's caused primarily by the unique geography of Padre Island. At 113 miles long, it is the longest barrier island in the world. Much of the water in the bay arrives primarily during storms that force the sea water over the island or through shallow natural channels at each end of the island. Once behind the island, the water is mostly cut off from the Gulf of Mexico by the unbroken expanse of seashore. Therefore there is little movement of water in or out of remote areas of the bay. The small tidal changes in the Gulf average only one to two feet and are not significant enough to flush the Laguna waters on a regular basis.

The Laguna water is pushed around by the strong winds that frequent the area. The result is that the waters get pinned by the winds to one side of the bay for several days leaving puddles of shallow salty water exposed on the opposite shore. The intense Texas heat causes the water in those puddles to evaporate, leaving nothing behind but the salt. Eventually the winds shift, moving the water in another direction. The cycle is repeated many times annually. Each time the bay waters pass back over an area that has dried out the salt crystals are absorbed with the end result being a hypersaline bay. Since south Texas is naturally very dry, there are no major fresh water rivers flowing into the Laguna to help dilute the bay. Historically, only storms or major rainfall events significantly lower the salinity levels.

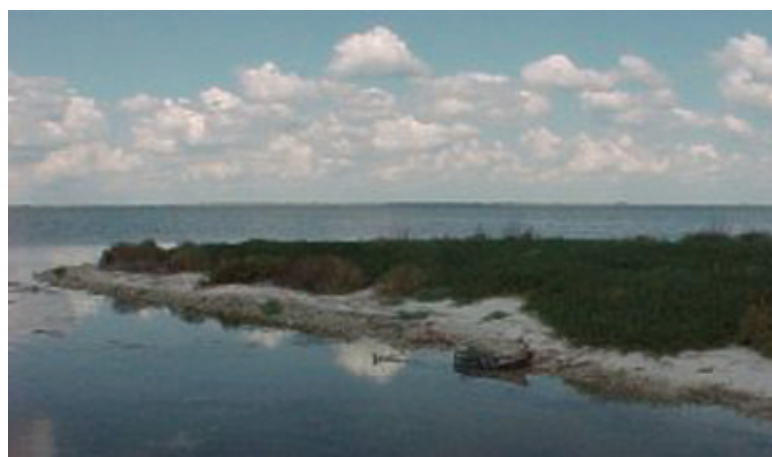
Some scientists believe modern channel building projects such as the construction of the Intracoastal Waterway and the Mansfield Channel may have inadvertently helped improve water circulation in parts of the bay. The deep channels for boats bring more sea water into the bay. The effect is to lower the salinity levels and improve living conditions for sea life.



Nesting Terns on one of the islands in the Laguna Madre

During the winter, the Mother Lagoon's family expands as another group of lagoon users arrive - birds! At times, literally tens of thousands of ducks and small shorebirds search for the plentiful foods found in and along the shores of the bay. Because the Laguna averages only about three feet in depth, it is ideal for sea grasses that thrive on the sunny bottom. Those same grasses are a nutritious, easy to reach food source for winter waterfowl. Along the edge of the bay are vast mud flats that are filled with small worms, crabs, and other animals that can be plucked out by long billed birds that probe for a meal with their highly sensitive beaks. Since many bird species are migratory, the Laguna makes a wonderful rest stop to pause and "refuel" their bodies for the next leg of their flight..

The Laguna Madre will always live in the shadow of Padre Island's beaches. However, if you have the time to take the short drive over to the Bird Island Basin area to explore our Mother Lagoon, you will not be disappointed. You can fish the rich waters, watch the beautiful birds, take a sail boarding lesson, enjoy the sunset, or even camp for a few nights. It's all waiting for you along the shores of the Laguna Madre.



View of the Laguna Madre from a spoil island

Building an Island History

By Ranger Phillip Slattery

Little information exists about the hard lives of the island's settlers who lived here prior to the Civil War. There are a few local anecdotes, occasional official documents, scattered newspaper stories, and a few books penned by local authors usually decades after the events they describe, but not much else. Among these sources one can find the names of at least some of the families that lived here, such as Lively, Curry, Chisum, and about a dozen more. The family on which we currently have the most information is the family of Amos and Mary Lively, who moved here in 1859 with their four children, grown daughter and new son-in-law to raise cattle. Almost all the knowledge we have of the Livelys is based on copies of letters Mary sent to her family in the north, about half of which were donated to the park by one of her descendents.

Letters and other informal documents usually collected by families can be rich sources of information for historians. Through the Mary Lively letters we can tell what life was like for the people on the island and also find an eyewitness account of landscape, wildlife, and other aspects of nature that were not documented through other means. The Lively letters are particularly important because they give us a picture of the island during the Civil War and the island's environment in the years before the ranching industry took hold and transformed the island into the near desert that the National Park Service bought and allowed to revert to its original, verdant state.

We do not know precisely what the island's terrain was like during the years the Livelys lived here. It was probably not much different from today, but there would have been species then that either no longer exist here today (such as whooping cranes and wolves) or whose numbers are now severely depleted (such as reddish egret). Mary states in one letter that there were no trees here and that people obtained the wood to build their houses by using driftwood or lumber that washed ashore. Apparently at least a few trees existed however, because she talks of Amos building a rail fence, though there wasn't enough wood to build a picket fence to protect Mary's garden from rabbits. Neighbors were scarce; only six families lived here. There was no post office here and mail had to be picked up in Corpus Christi. The only way to mail a letter was to send it via boat.

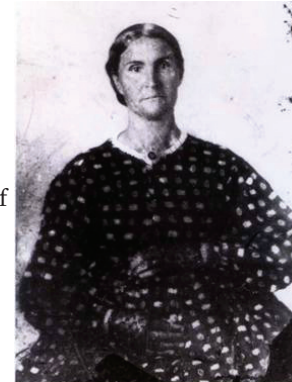
Life on the island must have been a constant struggle. Coyotes occasionally attacked the Livelys' hogs and rabbits ate everything in their garden except the onions. Given the poor, sandy soil here, raising vegetables had to be tough in its own right. Amos tried to raise cotton at one point, but worried about worms ruining his crop. The salt they harvested from the Laguna was coarse and could not be sold without being crushed first, which was expensive, at least for the Livelys. Amos probably tried whatever he could to support his family. During his efforts to earn a living, Mary struggled to keep a good home and to send her children to both school and church. Ironically, the Livelys had moved to the island just before the Civil War began that brought an end to their homestead.

We do not know exactly why the Livelys left, but they left in 1864 after the Union occupation of the island. In spite of Mary's northern roots, the Livelys were Confederates. One son served in the First Texas Cavalry and Amos, according to family tradition, sold horses to the Confederate army.

In late 1863, Union forces occupied both Padre Island and confiscated whatever cattle they found for the use of their troops. So far no documentation has been discovered to state unequivocally that Union forces destroyed the Lively ranch. All we know for certain is that in a letter dated July 3, 1864, Mary's mother wrote to a Mrs. Grover (her relationship to the Livelys is unknown) that Mary and her family had left the South and had moved to Illinois



and that, "Mr. Lively and his son-in-law were living very comfortable, before the war broke out but then they had all their means of living destroyed, so that they were one week without one mouthful of bread to eat."



Although it has not been confirmed, these undated photos are possibly Amos and Mary Lively. It is known that when Amos was 53, Mary was 40. (Photos courtesy of Matt Anderson, descendent of Mary Lively)

Health and Safety Tips when Visiting Padre Island National Seashore

Swimming: Use caution when swimming and never swim alone. Strong currents flowing parallel to the beach, tides flowing to and from the beach, and sudden drop-offs in the surf can be dangerous for swimmers and waders alike. If caught in a rip tide, do not panic. Swim parallel to the beach until you are free from the flow, then swim to shore. Do not attempt to swim to shore against the flow. You will not make it.

Hazardous materials: These periodically wash ashore and range from 55 gallon barrels containing unknown substances to used medical products. If you come upon hazardous materials, note the location and alert a park ranger.

Metal detectors: Possession or use of metal detectors is prohibited in the park. Items such as seashells and driftwood, washed in by the tide, may be collected as long as the items are not used for commercial purposes. All other collecting is prohibited. Collection of live sea creatures is prohibited.

Pets: Pets must be on a leash and under physical restraint at all times. Pets are not permitted at the Malaquite Beach Visitor Center area including the designated swim beach in front of the visitor center. Pet waste is becoming a growing problem. Please clean up after your animals.

Gray water and sewage: Gray water and sewage must be disposed of only at the dump station at the Malaquite Beach campground.

Beaches are Texas public highways. Only street legal and licensed vehicles may be driven in the park. All Terrain Vehicles (ATV's) are prohibited. Driving in dunes, grasslands, or mudflats is prohibited. Drive with caution and strictly observe posted speed limits. Pedestrians have the right-of-way at all times and do not always watch for approaching vehicles.

Portuguese Man-of-War: These dangerous critters are found at the park throughout the year. These attractive, blue jellyfish cause a painful sting, which is usually accompanied by redness and some swelling of the affected skin area. If stung, seek first aid. A very small percentage of those stung will experience an allergic reaction, which can cause difficulty breathing, numbness in the arms, legs or elsewhere, severe pain and/or disorientation or unconsciousness. Visitors experiencing these or other symptoms should notify a park ranger immediately and seek medical attention.

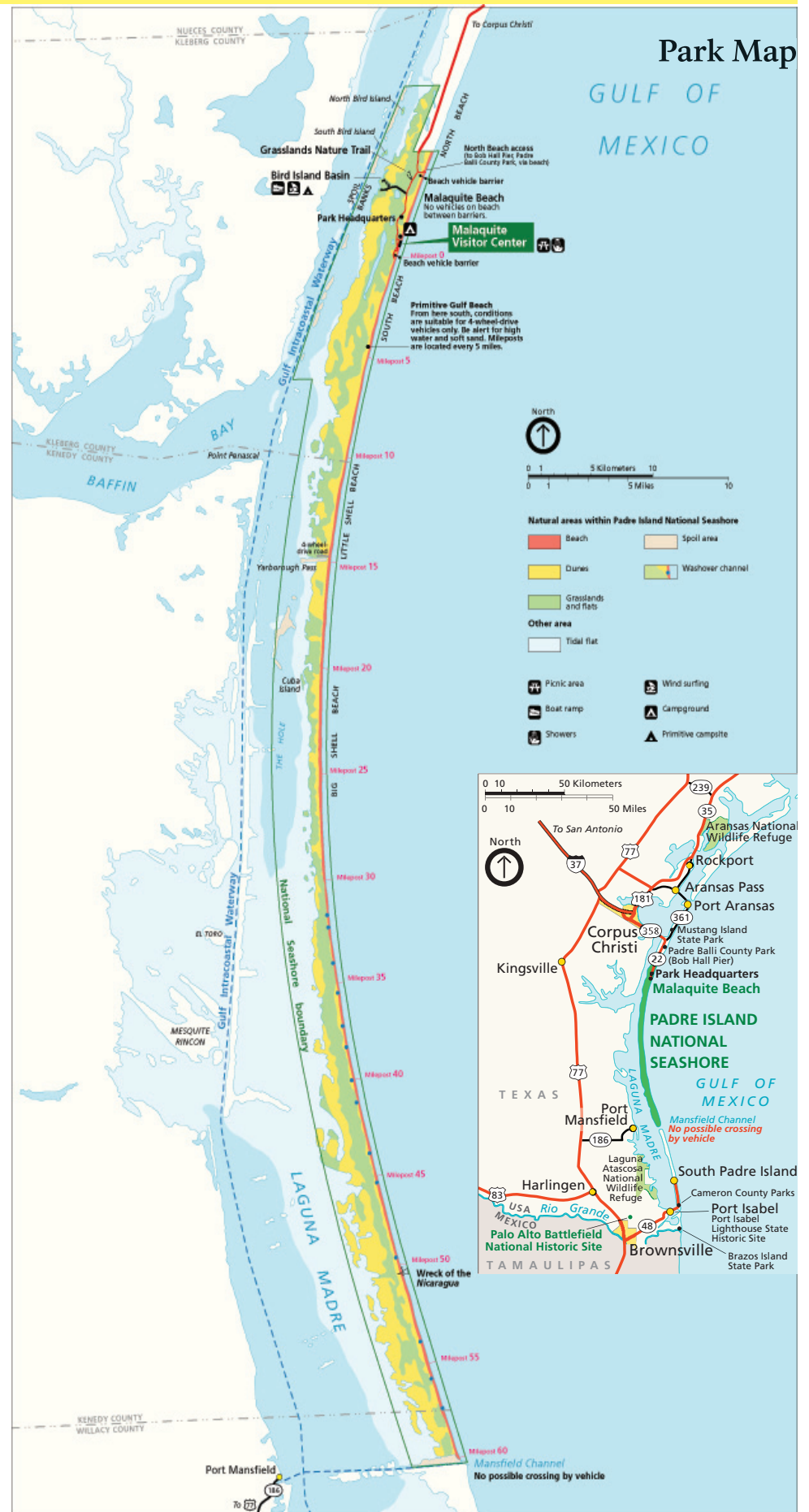
Sting Rays: These relatives of the shark can inflict a puncture wound in the lower leg that can be extremely painful. If you are in the water we recommend doing the "sting ray shuffle"; instead of walking, visitors should shuffle along, so instead of stepping on them you actually nudge them thereby causing them to swim away.

Rattlesnakes: Rattlesnakes live in the dunes, grasslands, and mudflats. Visitors should use extreme caution when walking in these areas.

Hunting: Hunting is not permitted in the park, except for the taking of waterfowl in the Laguna Madre in accordance with applicable state and federal regulations. The transportation of lawfully taken wildlife, including exotic species, through the park, is prohibited, except for waterfowl and fish.

Medical Emergency: If you have a medical emergency during your visit, contact a park ranger immediately or go to the First Aid station at the Malaquite Beach Visitor Center. If an employee is not immediately available you may summon assistance for any emergency by dialing 911.

The closest hospital is Bay Area Medical Center located at the corner of South Padre Island Drive and Rodd Field Road in Corpus Christi. This facility is 24 miles from the Visitor Center.



Road Information

New Road
A new road has been added to the Bird Island Basin boat ramp parking area to facilitate access to the boat ramp and the Laguna Madre. This new road especially benefits fishermen.