



# The Gulf Breeze

The official newspaper of  
Padre Island National Seashore  
Fall 2006



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

## Superintendent's Welcome Record Year for Endangered Kemp's Ridley Sea Turtle Nesting



WELCOME TO PADRE ISLAND National Seashore, one of the most special places of the 390 units of the National Park Service (NPS). We trust that you will have a wonderful time as you explore and experience this great park.

Congress established Padre Island National Seashore on September 28, 1962 to "save and preserve, for purpose of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped". In this statute, Congress included provisions allowing the mineral owners to retain ownership and be allowed to extract those minerals. Thus, the NPS is legally required to allow access to the minerals while concurrently fulfilling its resource protection requirements and minimizing impacts.

Issues related to the development and exploration of privately owned mineral rights underlying Padre Island National Seashore are of considerable concern to the public. As the land management agency charged with protecting the largest portion of undeveloped barrier island in the world, the NPS is equally concerned with the exploration and development of these rights and their associated impacts on the park's resources and visitor experience.

Working together with mineral owners and oil and gas operators, we carefully plan each and every drilling operation to minimize environmental impacts and inconvenience to our park visitors. You can learn more about natural gas exploration and extraction inside on the pages of The Gulf Breeze, or visiting the park's web page.

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

Sincerely,

Colin W. Campbell  
Superintendent

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

PADRE ISLAND NATIONAL SEASHORE HAS WORKED DILIGENTLY FOR NEARLY three decades to help save the world's most endangered sea turtle species from extinction. A record 64 Kemp's ridley nests were found at the National Seashore during 2006, exceeding the number found in the entire state during 2005. The success of our Kemp's Ridley Sea Turtle Recovery Program during 2006 is one more step that helps secure the future of this magnificent species at Padre Island National Seashore and throughout the world.

### 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 at the National Seashore, in Texas, and the world, the Kemp's ridley population is increasing.

### 2006 a record-ridley year

Each year, National Park Service staff and volunteers work tirelessly to detect, study, and protect the nesting turtles and their eggs on North Padre Island. They use All-Terrain-Vehicles to repeatedly patrol the Gulf of Mexico beachfront between 6:30 am and 6:00 pm each day from April through mid-July. During 2006, 124 volunteers participated in the patrol program and logged nearly half of the 11,380 hours spent patrolling a total of 115,017 miles on North Padre.

Kemp's ridley turtles take only about 45 minutes to nest, from the time that they crawl up the beach, bury their eggs in the sand, and return to the sea. We want to find the nesting turtles so that we can study and protect them and more easily find their nests. Tracks left in the sand by the nesting turtles blow away very quickly and nests occasionally go undetected at egg laying because the nesting turtles and their tracks are so difficult to find. 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 and protect the eggs, far fewer hatchlings are born and successfully enter the water due to predation, high tides, and other factors. Beach visitors also aid greatly by immediately reporting their observations of nesting turtles and hatchlings emerging from previously undetected nests and watching these sites until biologists arrive.



Kemp's ridley hatchlings

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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.

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### The Gulf Breeze

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### National Park Service

Editor, Juan Rodriguez  
Superintendent, Colin Campbell

### Mailing Address:

P.O. BOX 181300  
Corpus Christi, TX 78480-1300

### Park Headquarters:

361-949-8173

### Visitor Center:

361-949-8068

### Internet Address:

[www.nps.gov/pais](http://www.nps.gov/pais)

### E-mail address:

[pais\\_visitor\\_center@nps.gov](mailto: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](http://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 20301 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. Free 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.

### 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.



Malaquite Visitor Center

The lower  
55 miles are  
accessible  
to four-  
wheel-drive  
vehicles.

The beginning of the four-wheel-drive area is marked with the five mile marker sign. Please note that in Texas, beaches are considered highways and all vehicles on them must be street-legal and licensed. ATV's are not allowed to be driven in the park.

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.



South Beach



South Beach



Pond at Yarborough Pass

# Oil and Gas Exploration

By Darrell Echols, Chief of Resources Management and Science

ISSUES RELATED TO THE DEVELOPMENT AND EXPLORATION OF NONFEDERAL oil and gas rights underlying Padre Island National Seashore are of considerable concern to many of the park's visitors and the public. As the land management agency charged with protecting the largest portion of undeveloped barrier island in the world, the National Park Service (NPS) is equally concerned with the exploration and development of these rights within the park, and the associated impacts on the park's natural resources, cultural resources, and visitor experience.

Exploration, development, and production of oil and gas minerals have occurred on Padre Island since the early 1950's. Eighty-two operations have been conducted at Padre Island National Seashore to date, including 59 abandoned and plugged wells, nine seismic operations, five pipelines, 7 active gas wells, one water well, and one active drilling operation. The majority of these operations took place between 1951 and 1981 with at least 14 operations pre-dating the establishment of Padre Island National Seashore in 1962. The park is presently reviewing nine operations that will likely occur over the next 12-18 months.



Kindie Oil & Gas setting up rig

So why does oil and gas exploration and development occur within Padre Island National Seashore? It is quite simple actually. The mineral estate underlying the park is constitutionally protected since it is owned privately or by the State of Texas.

When Congress established Padre Island National Seashore on September 28, 1962, the park was set aside to "save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped" (16 U.S.C. §459d, *et seq.*). In this statute, Congress included provisions allowing the original owners of oil and gas rights to retain these rights within the National Seashore. As a result, the mineral estate underlying the park is either owned privately or by the State of Texas. The NPS is legally required to allow mineral access while applying resource protection requirements and ensuring adherence to federal and state regulations, policies, and guidelines.

The NPS promulgated specific regulations in 36 CFR Part 9, Subpart B, commonly referred to as the "9B Regulations" to provide a system wide regulatory framework governing the exercise of nonfederal oil and gas rights. The purposes of the regulations are to "insure that activities undertaken pursuant to [nonfederal oil and gas rights] are conducted in a manner consistent with the purposes for which the National Park System and each unit thereof were created, to prevent or minimize damage to the environment and other resource values, and to insure to the extent feasible that all units of the National Park System are left unimpaired for the enjoyment of future generations" (36 CFR § 9.30(a)). The regulations control conduct associated with non-federal mineral rights on, across, or through federal land so that these activities avoid or minimize harm to park resources and values

The 9B regulations require that each oil and gas operator develop a "Plan of Operations" and submit that plan to the NPS for approval prior to commencing activities in a park. A Plan of Operations is essentially a "blueprint" of an operator's planned activities. It outlines the specific location, activities, equipment, access routes, protection measures, reclamation, and other information that will be used to survey or extract an operator's oil and gas rights in a park. The NPS evaluates the submitted plan and must determine whether those operations will affect park visitors or resources and if so, how to eliminate, minimize, or mitigate those impacts. All park resources and values are considered when evaluating a Plan of Operation, including sea turtles, vegetation, shorebirds, visitor use, cultural sites, and natural soundscapes to name a few. The plan assessment is required by the 9B regulations, NPS policy, and the National Environmental Policy Act, and takes place prior to any approval being granted by the NPS. The development of such an assessment includes soliciting input from the public, and federal and state agencies on all aspects of the operation, an analysis of viable alternatives, and measures that the NPS would require to minimize any effects from the operation.

Impacts from an individual oil and gas operation may include long-term and short-term impacts. The short-term impacts are those that recover in a period from several days to three years and would include impacts from an activity such as burying a pipeline that will be re-vegetated and the impacts restored. Long-term impacts may last up to 20 years or longer and are typically associated with a producing well where facilities like an access road or pad will remain for the life of the well.

Fifty-two mitigation measures have been developed to minimize or eliminate impacts to park resources and visitors, and are required of all oil and gas operators working in the park. Some of these measures include:

- ◆ Limiting the maximum speed limit of oil and gas vehicles to 15 mph throughout park beaches while park visitors have a maximum speed limit of 25
- ◆ Limiting the maximum number of trucks that can be in the park each day
- ◆ Disallowing oil and gas equipment to be operated along the beach at night
- ◆ Requiring all oil and gas equipment to convoy as a group, which is escorted by an NPS trained turtle observer
- ◆ Placing a net or other type of cover over any container that can hold a liquid
- ◆ Establishing a 500-foot buffer around permanent freshwater ponds
- ◆ Disallowing heavy equipment use on holiday weekends such as Independence Day, Memorial Day, and Labor Day

One of the park's primary natural resources is the Kemp's ridley sea turtle and Padre Island National Seashore staff has extensive knowledge and experience pertaining to the protection of nesting Kemp's ridleys. The park routinely works with others in the NPS and numerous federal and state agencies to ensure that this valuable resource is protected. There may be times when eggs, nesting turtles, hatchlings, and stranded turtles could be directly vulnerable to all activities taking place along the beach including both oil and gas traffic and recreational traffic. Visitors are permitted to operate their vehicles along most of the Gulf beachfront at Padre Island National Seashore, with driving occurring from the water's edge to the dunes. In the areas where beach driving is permitted, sea turtles that nest and hatchlings that emerge from undetected nests cross at least one vehicular roadway and hence could be vulnerable to crushing from vehicles. No nesting sea turtles, hatchlings, or eggs have been documented as struck or killed by vehicles at the park. Currently, the NPS removes all sea turtle eggs that are located from the beach in Padre Island National Seashore and transfers them to the incubation facility at the park. To reduce the direct impacts that could occur from crushing or covering of nests or turtles, many mitigation measures have been created and are applied to all oil and gas operators. These measures include:

- ◆ Having all drivers of oil and gas equipment attend a sea turtle awareness training class held by the NPS
- ◆ Convoying all large trucks during the sea turtle nesting season
- ◆ Having an NPS patroller conduct a morning patrol before large vehicles can traverse the beach

In the event that a proposed operation cannot be sufficiently modified to prevent the impairment of park resources and values, the NPS may seek to extinguish the associated mineral right through acquisition, subject to the appropriation of funds from Congress. Where funds are available, this option does eliminate the possibility of oil and gas development. While the Federal Government could pursue a complete buyout of the mineral estate at Padre Island National Seashore, such a buyout would likely be cost prohibitive.

Padre Island National Seashore prides itself on its oil and gas management program. Park staff and managers constantly strive to utilize cutting edge technology, review and update established mitigation measures, evaluate past practices, apply current research findings, incorporate public comment, and coordinate with partners to ensure the preservation and protection park resources. These actions help provide an enjoyable visitor experience, protect park natural and cultural resources, but still allow congressionally mandated access to non-federal oil and gas minerals.

## Kemp's ridley continued from page 1

A record 102 Kemp's ridley nests were found on the Texas coast in 2006, compared to 50 found during 2005 and 42 during 2004. Sixty-four of the 102 were located at Padre Island National Seashore. Eggs from the National Seashore and northward on the Texas coast were brought to our incubation facility for protected care. From June through mid-August 2006, an estimated 7,478 hatchlings were successfully released from eggs found on the Texas coast, including 5,695 at the National Seashore. Eleven of the hatchling releases held at the National Seashore were open to the public. Over 2,000 people attended these releases, with some traveling over 500 miles just to be there.

Looking forward to the future

Overall, 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. Results from 2006 demonstrate that a nesting colony is becoming re-established at the National Seashore. However, to ensure continued success, monitoring and protection efforts must continue.

Plans are already underway for the 2007 patrol and nesting season. We will conduct a similar program next year and are looking forward to more exciting results. For more information on the Kemp's Ridley Recovery Program at Padre Island National Seashore visit our website at [www.nps.gov/pais/](http://www.nps.gov/pais/) or call the National Seashore's Visitor Center at (361) 949-8068.

# Reptiles of Padre Island

By Jonathan Anderson, Park Ranger

OF THE MANY ANIMALS ON PADRE ISLAND NATIONAL Seashore, reptiles are the least understood. Many different reptiles inhabit the island and use its resources. What makes an animal a reptile? Reptiles are classified by several key characteristics: all reptiles are poikilotherms, meaning that they cannot regulate their own body temperature and must rely on the sun; all reptiles are covered in scales; and all reptiles lay eggs. Most young reptiles emerge from their eggs looking like a smaller version of their parents. Even though they lay eggs, some species such as alligators and crocodiles care for their young until they are old enough to survive on their own, however, some species, such as turtles, lay their eggs and never return to the nest.



Western Diamondback

Reptiles inhabit every habitat found within Padre Island, including grasslands, dunes, freshwater wetlands, and the Gulf of Mexico. They are versatile creatures who can easily adapt to changing conditions and environments. About 90% of all reptiles are harmless to humans, but there are a few species that can be dangerous. Some snakes use venom to subdue their prey and aid in digestion. Their venom can also be used in self defense if the animal feels threatened.



Coachwhip

There are three general types of reptiles found at Padre Island National Seashore: snakes, lizards, and turtles. Of the numerous snakes found on the island, the most commonly encountered are the Western coachwhip (*Masticophis flagellum testaceus*), the Western massasauga (*Sistrurus catenatus tergeminus*), and the well-known Western diamondback rattlesnake (*Crotalus atrox*). The Western diamondback rattlesnake can grow to seven feet long and live for more than twenty years. They belong to a group of venomous snakes known as “pit vipers” which have a spade-shaped head, elliptical pupils, and a heat-sensing pit between its nostril and eye. Its venom is a hemotoxin that destroys tissues, organs, and prevents blood clotting. These snakes are found in the dunes and grasslands and feed on small mammals such as mice.



Mediterranean Gecko, an introduced species

Lizards are abundant at Padre Island National Seashore, and can be found in many different habitats. Mediterranean geckos (*Hemidactylus turcicus*) are common in this area, but as its name implies, the gecko is an introduced species that is normally found in southern Europe. These animals are nocturnal and hunt for insects and other invertebrates. They can most commonly be seen around man-made structures in the early morning or late afternoon. One of the most common lizards seen in the park is the keeled earless lizard (*Holbrookia propinqua*). It is a small, sand-colored lizard that can be seen scurrying throughout the dunes and basking itself on the hot sand.



Red-eared Slider

While Padre Island National Seashore is well known for its work with Kemp’s Ridley sea turtles, many other species of turtle can be found within the park. The Red-eared Slider (*Trachemys scripta elegans*) is a freshwater aquatic turtle that inhabits various ponds throughout the park. Their toes are webbed and adapted to swimming. These turtles can often be seen sunning themselves on pond shores. These turtles have a very bright red stripe running from their eye to the back of the head. The stripe is very vivid early in life and fades as the turtle matures. The turtle is most active during the daylight hours when it is sunning and feeding. The ornate box turtle (*Terrapene ornata*) can be found living in the grasslands. These turtles are often taken out of the wild to be sold as pets, leading to diminishing numbers. They have a hinged shell that can be closed up when they feel threatened. They often live in an area of grasslands smaller than half an acre.

Reptiles have long held a bad reputation for being slimy and gross but they are actually fascinating animals that hold a very important link in a healthy ecosystem. While some can be dangerous, most of these creatures are harmless and can be viewed like other wildlife.

# Keeping Wildlife Wild

By Valerie Flores, Park Ranger

ONE OF THE BEST PARTS OF VISITING A NATIONAL PARK IS THE OPPORTUNITY to view wildlife in its natural habitat. Watching a ground squirrel foraging or a graceful blue heron wading are memories to cherish for a lifetime. Yet as cute or hungry as these animals may seem, it is never appropriate to feed them. They are wild animals and deserve to stay that way. Feeding the wildlife not only endangers the life of the animal, but it can also cost the visitor; visitors can be fined if caught.

Interference by people can cause wild animals to lose their natural instincts and seriously harm the animal. Even though the idea of getting closer to an animal may seem fun, it can cause long-term damage. Animals become lazy and dependent on humans for food and lose their innate ability to forage or hunt. Animals will begin to approach people assuming they will be fed; this makes large animals even more dangerous.

Another problem, with feeding animals is that food manufactured for human consumption is not nutritionally adequate for wildlife. “People” food such as bread, seeds, and fries are junk food to wildlife. As animals become accustomed to digesting human food, they lose their ability to digest their normal food. Animals that consume food packaging could starve to death on a full stomach of their natural food because the packaging could block their digestive tract. Wildlife cannot differentiate from the food and the packaging it comes in. They will eat anything with an odor, including aluminum or plastic.

At Padre Island National Seashore visitors have made the mistake of feeding many of the animals at the park, and this inadvertently cost the wildlife its’ life. Laughing gulls are common sights within the park. Everyday, flocks of them can be seen flying through the park, along with numerous other species of birds. Although birds are easily tamed by hand, feeding them can soon become a nuisance. Once they become accustomed to human food they will empty trash cans and picnic baskets creating a mess on the beach. Gulls have also been known to steal food from children holding their lunch a little too far out. No one wants to go home with the memory of laughing gulls stealing their lunch right out of their hands.

Another common animal affected by humans is the coyote who roams the grasslands. No matter how much a coyote may look like a dog, it is not a tame pet! Never feed the coyotes, they can become aggressive when they are human-habituated and are no longer being fed. Coyotes see pets as prey and have been known to kill pets that are lost or left unattended. That is one of the reasons all pets must be restrained on a leash at all times. The closer in proximity your pets are to you, the safer they are from predators. Coyotes have also learned that ice chests hold food and will open or destroy them while visitors are sleeping. At the park, a number of coyotes have been destroyed because they have become aggressive after being habituated.



Coyote being fed

Another frequent sight is the ground squirrel scurrying in the dunes or near the Malaquite pavilion. As harmless as it may seem to throw them a chip or a piece of bread, it really is a detriment to the animal’s health. Squirrels forage for food but can become lazy and a nuisance if fed. As squirrels learn that an outstretched hand has food, they will become more willing to approach people. However, a squirrel can not tell the difference between a finger and a piece of bread and may bite the hand instead. Squirrels can carry diseases and the bite itself can be very painful.

There are a number of helpful and responsible actions that visitors can take to help keep wildlife wild.

- Do not feed the wildlife
- Do not try to pet the animals.
- Secure garbage in containers with tight fitting lids. Do not leave trash lying around picnic areas or campsites.
- Keep pets on a leash and close by your side.
- Cut six pack soda rings, which can suffocate animals.
- Always dispose of all trash. Sea turtles confuse plastics for jellyfish.
- Jars containing bits of food attract animals. Seal tightly and dispose of properly.
- Suffocation can occur when animals get their heads stuck in food containers. Please close or clean all food containers.

# Raptors, Rulers of the Sky

By Sara Schuster, Biological Technician

BIRDS OF PREY, SUCH AS HAWKS, EAGLES, FALCONS, VULTURES, AND OWLS are placed in a generic category called raptors. All raptors have sharp beaks for tearing flesh and sharp talons for catching prey. Raptors have special eyes which allow them to see slight movements from long distances. Raptors have three eyelids which give them extra protection while attacking and feeding on their prey. Typically, raptors have dark colored backs that help keep them incognito when viewed from above, and white under-parts and allow them to soar over their unsuspecting prey without being detected. Padre Island National Seashore is a prime raptor foraging spot. On one winter day, it is likely that you might see a white-tailed hawk, crested caracara, turkey vulture, osprey, American kestrel, merlin, northern harrier, and even a great horned owl. Peregrine falcons and burrowing owls are also common during the winter, and even rare northern aplomado falcons have been spotted in the park.

The white-tailed hawk is a bird unique only to open prairies along the Texas Gulf Coast and Mexico. They feed on small mammals, reptiles, frogs, large insects and even small birds. Adults have a distinctive white tail while in flight, a gray head and back, a white chest and leg, rusty-colored shoulders and long black wings. Several pairs of white-tailed hawks nest within the park, and are often seen soaring low to the ground in search of prey, its black banded white tail obvious; however, when the bird is perched, its white tail is covered by its folded wings. White-tailed hawks lay 1-4 white eggs in low trees or shrubs. After their first flight, the young may stay with the adults for up to 7 months. White-tailed hawks are listed as threatened by the state of Texas as a result of population declines due to habitat loss and pesticide use.



White-tailed hawk  
Courtesy: Carey Haralson

Very common along the Texas coast, ospreys migrate this area for the autumn and winter seasons, but a few can be spotted in this area year-round. They can be distinguished from other raptors by its dark upperparts, large size, clear white belly, and white head with a broad black mark through it. They depend on clean, shallow waters to capture their favorite large fishes. An osprey can be seen hovering high above the water before folding up its wings and diving up to 40 miles per hour. It has large uniquely curved claws that allow it to hold onto a fish while flying. After catching the fish, ospreys hold the fish with both feet, and fly to a high perch to tear the fish apart with its large hooked bill. Ospreys will use tall, flat, man-made structures up to 200 feet above ground as nesting platforms.



Osprey  
Courtesy: Dwight Sokoll

Owls are a unique type of raptor that is almost exclusively seen after dark. Most owls can hunt in complete darkness, finding prey using only their keen sense of hearing. Also aiding in prey capture, owls have fringed feather edges that allow them to fly silently to capture the prey such as small mice, amphibians, reptiles, and even birds. Owls are fairly common, but are often heard at night, rather than seen. Like all birds, owls have distinctive calls that have led to many strange word descriptions. For example, the great horned owl says “You awake? Me too!” and the barred owl can often be heard asking “Who cooks for you; who cooks for you-all?” Barn owls, Eastern screech-owls, the great horned owl, and the unique burrowing owl can all be found at in the park.



Great Horned Owl  
Courtesy: Dwight Sokoll

Chemicals such as DDT have harmed many of these top-predators. In the past, DDT accumulated in raptors and caused their eggshells to be very thin and fragile and were often crushed by the incubating parent. Populations of many raptor species declined dramatically until DDT use was banned in the United States. Toxic chemicals become concentrated within a raptor as it feeds on many contaminated animals. This concept, called bioaccumulation, is very common in fish eating birds, such as bald eagles and ospreys. Raptor populations also suffer from habitat loss from human development that cause prey population declines, and create obstacles, such as tall buildings, automobiles, and power lines, that raptors collide with.

# Railrod Vine, a Most Unique Wildflower

By William Botts, Park Ranger

HOW WOULD IT FEEL TO LIVE IN A WORLD WHERE DROUGHT, TOXIC SALTS, poor nutrition, and intense winds hurling blowing sands are considered normal? If you can visualize that world, you have an idea of the daily challenges Padre Island’s wildflowers are subjected to.

One of the finest examples of the park’s amazing wildflowers may be found along the beachfront. A casual stroll along the beach in the fall will introduce you to the deep purple flowers of the “Railroad Vine” (*Ipomoea pes-caprae*) morning glory. The long green vine can be seen snaking up and down the front dune line. It has green leaves that are shaped a bit like a cloven hoof. The leaf shape has given rise to another common name, “Goats Foot” morning glory. Regardless of which common name it is called, few visitors that pause to marvel at the beauty of this amazing plant can imagine the challenges it faces. It faces a daily onslaught of hazards including bombardment by howling winds carrying thick salt spray, burial under hot sands, pounding by persistent waves, and hungry insects and grazers looking for a meal. As if that isn’t challenging enough, during exceptionally dry years, as little as six inches of rain fall on Padre Island. Despite the relentless environmental assault, Railroad Vine doesn’t just survive, it thrives in those elements. In fact, it does so well on the beachfront, that it is found along the beaches of five continents and on most tropical islands.



Railroad Vine  
Courtesy: Dwight Sokoll

So, how has it managed to prosper in such a challenging habitat? It survives with a remarkable system of defenses. It can grow as much as ten inches per day in order to struggle out of the ever shifting sands that collect around it. It has thick, leathery leaves to protect it from blowing salt spray that paints the leaves. The succulent leaves and stem store moisture to help the plant during droughts. Those same leaves and stems store something else necessary for survival – a poisonous milky sap containing powerful alkaloids. The alkaloids prevent caterpillars, beetles, deer, and domestic animals from grazing on it. The morning glory also produces an extensive root system to help it reach the limited nutrients and water found in the porous sandy soils. That root system also serves to maintain a firm grip on the ever shifting sands during the floods and high winds that lash the coast during storms.



Railroad Vine  
Courtesy: Dwight Sokoll

Railroad Vine owes the remainder of its success to a remarkable flowering and seeding process. The purple flowers produce large nectaries that produce a tasty sugar. The nectaries attract lots of pollinators including bees, butterflies, moths, beetles, caterpillars, and ants. In the process of searching for the sugary reward, the insect visitors carry pollen from flower to flower, thereby insuring that fertilization is completed.

Fruit formation follows the flowering process. Each fruit produces four poisonous seeds to discourage animals from making a meal out of them. The seeds have another important trait also; they can float for up to six months! This is the real key to the broad range of the Railroad Vine. The same storms that surge into the dunes and destroy some plants provide a chance for life elsewhere by picking up seeds and transporting them out to sea. Once off shore, the seeds must be incredibly lucky. Some float far out into the ocean where they have no hope of survival. Others wind up getting carried into too cold of a habitat or perhaps get deposited on a rocky coastline with no sand. However, for a lucky few, getting deposited on a warm sandy beach is the equivalent of winning the lottery! Those powerful winds mentioned earlier that sand-blast the plant later in life now become an asset. The blowing sand is critical in order to cut away the waterproof seed coat so the seed can germinate and grow a new vine.

The amazing story of the Railroad Vine gives new meaning to the word “survival”. It is hard to believe that a beautiful wildflower may have developed a better strategy for existence in this storm prone coastal zone than we have. The Railroad Vine is more than a symbol of survival and adaptability though. It is a reminder of just how risky life remains for any species attempting to survive in such an unstable place. That may be the most important lesson the National Seashore provides at a time of continuing coastal development.

# Who Were the First Europeans on Padre Island?

By Philip Slattery

ANYONE FAMILIAR WITH PADRE ISLAND HAS PROBABLY HEARD OF THE survivors of the 1554 wrecks of three Spanish ships during a storm as being the first documented instance of Europeans on the island. However, it is very likely that there were Europeans on the island before then, but whose presence was not documented.

During the 1500s, documenting one's location accurately was extremely difficult even if one used the latest technology and methods. The few maps that existed of the Gulf of Mexico were primitive and almost all the present-day Texas coast was uncharted and unnamed. Navigational instruments (if available) were crude and inaccurate. In addition, few records have survived to tell us much about the early days of exploration on the Gulf coast. From what has survived, we can piece together the following simple timeline of explorers and castaways who may have been on the island prior to 1554.

In 1519, the Spanish explorer de Pineda mapped the coast of the Gulf of Mexico including that of south Texas. He may have put ashore here, but there is nothing to indicate that he did.

In 1528-1538, Alvar Nunez Cabeza de Vaca and three shipmates wandered through Texas having been part of the ill-fated Narvaez expedition that wrecked near present-day Galveston. Based on his account of his travels, it is hard to prove that he traveled through south Texas; much less came to Padre Island. It's a possibility, but a remote one.

In 1543, the remnants of the Hernando de Soto expedition from Florida into what is now the American south came down the Mississippi to the Gulf under the leadership of Luis Moscoso (de Soto having died of fever a few weeks before). There they built crude boats with sails made from animal skins and sailed down the coast to Vera Cruz. They are known to have put ashore at several points along the way, the descriptions of several of which are very similar to the terrain of Padre Island. Again, nothing explicitly states that they were without a doubt on Padre Island, but it is quite probable that they did land on the island at least once.

The first documented instance of Europeans arriving on the island was the result of the 1554 shipwrecks. They had been driven across the Gulf from Cuba at the mercy of a storm--not a hurricane per popular belief (they wrecked in April, which is not hurricane season). An estimated 300 people came ashore on the island; most are believed to have died attempting an arduous trek south to civilization but falling victim to hunger, thirst, and hostile natives along the way. Exactly how many of the crew and passengers made it back to civilization is unknown. At least two are known (a friar and one of the ships' masters are recorded in later records), but some evidence and speculation indicate as many as thirty may have survived.

Following the 1554 shipwrecks, the first expedition to deliberately journey to Padre Island was the salvage crew to retrieve the shipwrecks' treasure. They spent about two months on the island and recovered about half of the treasure lost. Interestingly, they apparently did not encounter hostile natives during their stay.



Spanish galleon routes map

Unfortunately, we will probably never know the full story of the exploration of the island, not only because of the lack of records from the early days, but also because of the lack of archeological evidence. Thousands of artifacts dating back to the European colonization, or earlier were collected by people and kept in private collections. For reasons such as this, Congress established the Antiquities Act to protect our national heritage, by preventing the removal of artifacts from federal lands.

Please help us preserve our national heritage. If you discover something, please leave the artifact where you found it, record and mark its location, and report it immediately to a park ranger. Your information will help us to learn more about our island's rich past to share with future generations.

# Why are the Shipwrecks of 1554 Important?

By Philip Slattery

IN APRIL, 1554, THREE SPANISH NAOS, A TYPE OF SHIP SIMILAR TO COLUMBUS'S Santa Maria, went aground on Padre Island following a storm that had blown them across the Gulf of Mexico from the coast of Cuba. At the time this was the greatest disaster to ever befall the Spanish fleet in the New World. Tons of treasure bound for Spain was lost in addition to the lives of approximately three hundred passengers and crew who died from hunger, thirst, and hostile natives as they attempted to walk back to the port of Vera Cruz.

But the story of the 1554 shipwreck does not end there nor does it end with the conclusion of the salvage operations that took place later that year. As with any important historical event, its effects resonate through the centuries and can still be felt today—if one looks for them.

The wrecks were the first documented occurrence of Europeans on the island, and one of the first occurrences of Europeans in what was to become Texas. The salvage operation was the first documented instance of Europeans intentionally coming to the island and staying for an extended period.



Columbus ship replica similar to 1554 shipwrecks

The three ships that wrecked (the Santa Maria de Yciar, the Espiritu Santo, and the San Esteban) are the oldest shipwrecks ever found in North America (excluding the Caribbean and Latin America).

When the remains of the ships were discovered in 1967, a private company began excavating them. This set off a long, legal battle over ownership of the remains as Texas had no laws governing antiquities at the time. In the long run, the state won its case and the remains were turned over to the National Park Service, who has transferred curation of the artifacts to the Corpus Christi Museum of Science and History, where they may now be viewed.

Historian and Marine Archeologist Dr. Donald Keith, President of the Ships of Discovery at the Corpus Christi Museum of Science and History, notes that:

The 1554 shipwrecks are important for a lot of reasons. The "mining" of them by Platoro caused the State of Texas to realize that shipwrecks and archaeological sites in general are important, and the property of the people and the state. They are cultural resources that have to be cared for. Some of the earliest experiments in the conservation of artifacts from the sea were done on the objects and hull remains that were recovered from the sites that Platoro and the State worked... The Platoro conflict did lead to the establishment of the Texas Antiquities Committee, which led to the Texas Historical Commission, which led to the discovery and excavation of La Belle [the ship of the French explorer La Salle, found on the Texas coast within the past few year] among other accomplishments.

This third and last effect on our present society is undoubtedly the most important, because it resulted in new Texas laws to protect archeological finds. These laws follow the federal Antiquities Act in spirit, which gives federal agencies custody of relics found within their jurisdictions so that they be properly protected and studied. Thus, instead of ending up in private collections where they become curiosities for a fortunate few, the knowledge derived from the artifacts goes to the public in the form of publications and exhibits in museums and on websites.

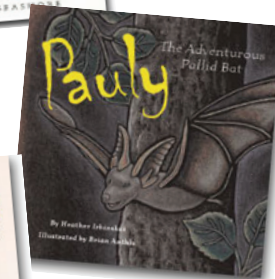
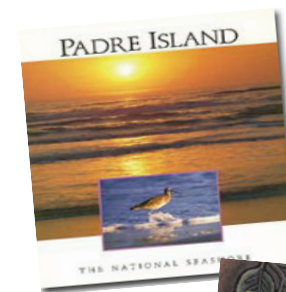
Bits and pieces of the 1554 wrecks and many other remnants of historical events still wash up on the island or emerge from the shifting sands. If you come across something, please remember to leave the artifact where you found it, try to mark the area, or document the mile marker and GPS location, and immediately report it to a park ranger. By following these procedures you will help us protect the rich history of the island and share our findings (and yours) with the world.



## WESTERN NATIONAL PARKS ASSOCIATION

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.



### Ocean Creatures

J W S P J S Y S T I  
M H A R E I J W G B  
Y I N T L L O M X S  
U P I F L B M Q B N  
U C U S Y G U A G A  
G O Q I F J R S C E  
B R O W I C U M Y B  
N A C B S H Q S F A  
N L X B H E W F K E  
O D E E W A E S F S

### Search Words

These ocean creatures can be found along the beach. Can you find them in the word search?

COQUINAS  
CRABS  
JELLYFISH  
SEA BEANS  
SEAWEED  
WHIP CORAL

### Scavenger Hunt

Can you find some unusual items as you explore the island? Trash bags are available from the Malaquite Visitor Center.

Can you find these things?

- Something round and hard like a seed
- Something with writing on it from another country
- Something with diamond-shaped turtle bites in it
- A small hole in the sand that an animal might live in
- Tracks in the sand- can you guess who made them?



### Did you know?

What do a whelk and an elephant have in common?

Whelks have a specialized feeding tube called a proboscis. The proboscis acts very much like an elephant's trunk in gathering food.

### Fascinating Fishy Facts



Smallest ocean fish: dwarf goby (less than a half an inch or 1.27 centimeters long)



Largest ocean fish: whale shark (over 50 feet or 15.24 meters long)

Fastest fish: sailfish (swims 68 miles or 109.4 kilometers per hour)

Slowest fish: sea horse (swims less than .001 miles or .0016 kilometers per hour)



Most poisonous fish: pufferfish (a small piece the size of a quarter has enough poison to incapacitate a person in 10 to 20 minutes)

### Book Review

By Aubrieta Hope, Photographer

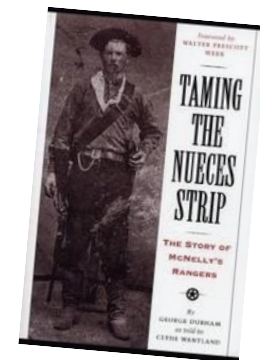
Taming the Nueces Strip: The Story of McNelly's Rangers by George Durham as told to Clyde Wantland. University of Texas Press, Austin, TX, 1962.

IMAGINE CORPUS CHRISTI IN 1875, A ROUGH, LAWLESS village, surrounded by wild, open country. Bandits and cattle rustlers controlled the region from the Rio Grande to the Nueces River, "the Nueces Strip." Posses of angry vigilantes raged across the area. Still, men headed for Texas. They drifted in from all directions, many wanted for crimes in other places.

Into this dangerous country rode the narrator of this real-life Western, George Durham. Lonestar-struck, with \$3.00 in his pocket, he longed for adventure. As he recalls, "I pulled out for Texas, nothing but a big hunk of a farm boy straddling a plow horse, with a few victuals and a pistol." Within days, he was recruited by Captain Lee McNelly, to serve as a Texas Ranger. A group of ruffians, led by a frail but gifted commander, they were charged with bringing law and order to the Nueces Strip.

George Durham's story spans two action-packed years, riding with the Texas Rangers, all across South Texas. I recognized the landscape they traversed. But the violent frontier culture he described was as foreign to me as the moon. As George Durham remembers, "The day before the Captain took the outfit into Corpus, the people had hung a bandit on a big pecan tree at the edge of the plaza."

Taming the Nueces Strip reads like an adventure novel. The action kept my attention, but it was George Durham's voice that lingered long after I read the final page. He recounts events in language vibrant and natural: "There was good beef aplenty and we got the best - some of the best beef stew I ever greased my chin with." The times were desperate: "Captain estimated that more than 2,000 ranchers and other citizens had been killed by raiders and more than 900,000 head of stock stolen." However, the actions of the Texas Rangers were not always heroic. In fact, it was unclear to me at times who was the villain, and who, the victim. Still, George Durham tells his story freely, relating his memories without exaggeration or apology. In doing so, he opens a window to a world long vanished.



# 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.

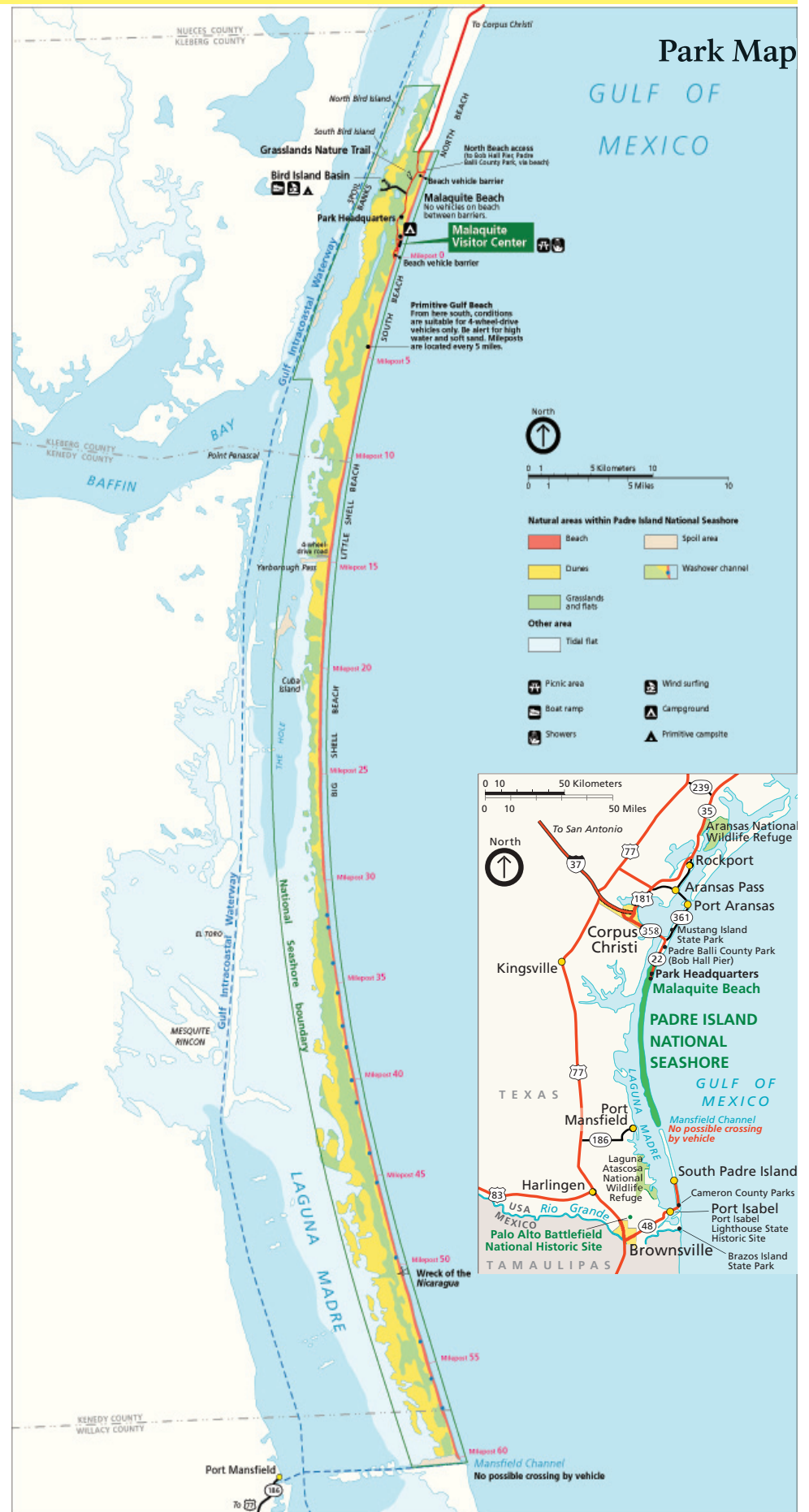
**Sting Rays:** These relatives of the shark can inflict a puncture wound in the lower leg that can be extremely painful. If you are in the water we recommend doing the "sting ray shuffle"; instead of walking, visitors should shuffle along, so instead of stepping on them you actually nudge them thereby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