

S E A G R A N T C O L L E G E P R O G R A M

# TEXAS SHORES

A photograph of a beach with a path of wooden posts leading into the ocean under a cloudy sky. The posts are arranged in two parallel lines, creating a narrow path that recedes into the distance. The sky is filled with soft, white clouds, and the ocean is visible in the background. The overall tone is serene and contemplative.

*A Second  
Chance*





*Bahia Grande looking toward San Martin Lake*

### 3 RESURRECTING THE BIG BAY

What once was a productive tidal bay that produced fish, crabs and



shrimp is now a 10,000-acre dustbowl in South Texas. Frequent dust storms are

blamed for an increase in respiratory health problems of people living near State Highway 100 in



Port Isabel, Laguna Heights and Laguna Vista. There are those in the region who want to see the Bahia Grande re-flooded and returned to its original

state. Everyone contacted seems in favor of the plan ...



so why hasn't it already happened?

### 24 NOTES

Jeff Rank returns from Washington, D.C. to become new Matagorda County marine agent; NOAA and GLO fund projects to educate county and municipal officials on land usage in relation to water quality; College Station team places fourth in the National Ocean Science Bowl; work resumes on excavating the Denbigh in Galveston Bay.

FRONT AND BACK COVERS — JEAN O'DETTE

**T**EXAS SHORES is published quarterly by the Texas Sea Grant College Program in an effort to promote a better understanding of the Texas marine environment. Sea Grant is a partnership of university, government and industry focusing on marine research, education and outreach. Nationally, Sea Grant began in 1966 with the passage of the Sea Grant Program and College Act. Patterned after the Land Grant Act of the 1860s, the Sea Grant concept is a broad-based scientific effort to better the world for all those living in and out of the sea.

In 1968, Texas A&M University received the distinction of being named among the nation's first six institutional award recipients. Three years later the school was designated a Sea Grant College. The university has a rich heritage of oceanography research dating back to 1949 when the program began. In addition, there is an ongoing program to get marine information to the public.



Sea Grant is a matching funds program. The Texas Sea Grant College Program itself is made possible through an institutional award from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, as well as appropriations from the Texas Legislature and local governments.

**TEXAS SHORES STAFF** — Jim Hiney, *Editor*; Jean O'Dette, *Photographer/Assistant Editor*; Amy Broussard, *Design*; Eric Graham, *Webmaster*; Jesse Rodriguez, *Distribution*. **SEA GRANT ADMINISTRATION** — Dr. Robert Stickney, *Director*; Amy Broussard, *Associate Director*; Ralph Rayburn, *Associate Director*.

**Change of Address, Subscription Information or Other Questions:** Texas Shores, Sea Grant College Program, Texas A&M University, 2700 Earl Rudder Freeway South, Suite 1800, College Station, TX 77845. Or call (979) 862-3767. Please include old label when changing mailing address. TEXAS SHORES (ISSN 0747-0959), is published quarterly by the Sea Grant College Program, Texas A&M University, 2700 Earl Rudder Freeway South, Suite 1800, College Station, TX 77845. Subscriptions are free to Texas residents. The cost is \$7.50 per year for out-of-state or foreign addresses. Periodical postage is paid at Bryan, TX and additional locations. **Postmaster:** Send address changes to the Sea Grant College Program, 2700 Earl Rudder Freeway South, Suite 1800, College Station, TX 77845. <http://texas-sea-grant.tamu.edu>.

TEXAS SHORES

SUMMER 2002

VOL. 35 No. 2

# CONTENTS





# Resurrecting the big bay

BY JIM HINEY





It is just past 9:30 in the morning on another sun-filled, dry, sure-to-be-hotter-than-you-know-where scorcher of a day as summer comes to the Rio Grande Valley. All things being equal, the heat is not as bad as the dry. Little rain has fallen here in the past few years and residents are already comparing this drought to one that befell the state in the 1950s — one of the worst drought periods on record.

Even this early in the morning the wind is whipping up the silty clay floor of what is usually described as a moonscape on Earth that fills most of the 24-mile distance between Brownsville and Port Isabel on the north side of State Highway 48.

Dust is everywhere and gets into everything, blowing about as if fired from a huge sandblaster. It stings bare legs, assaults nostrils, forces eyes closed and deposits a layer of grit in the mouth.

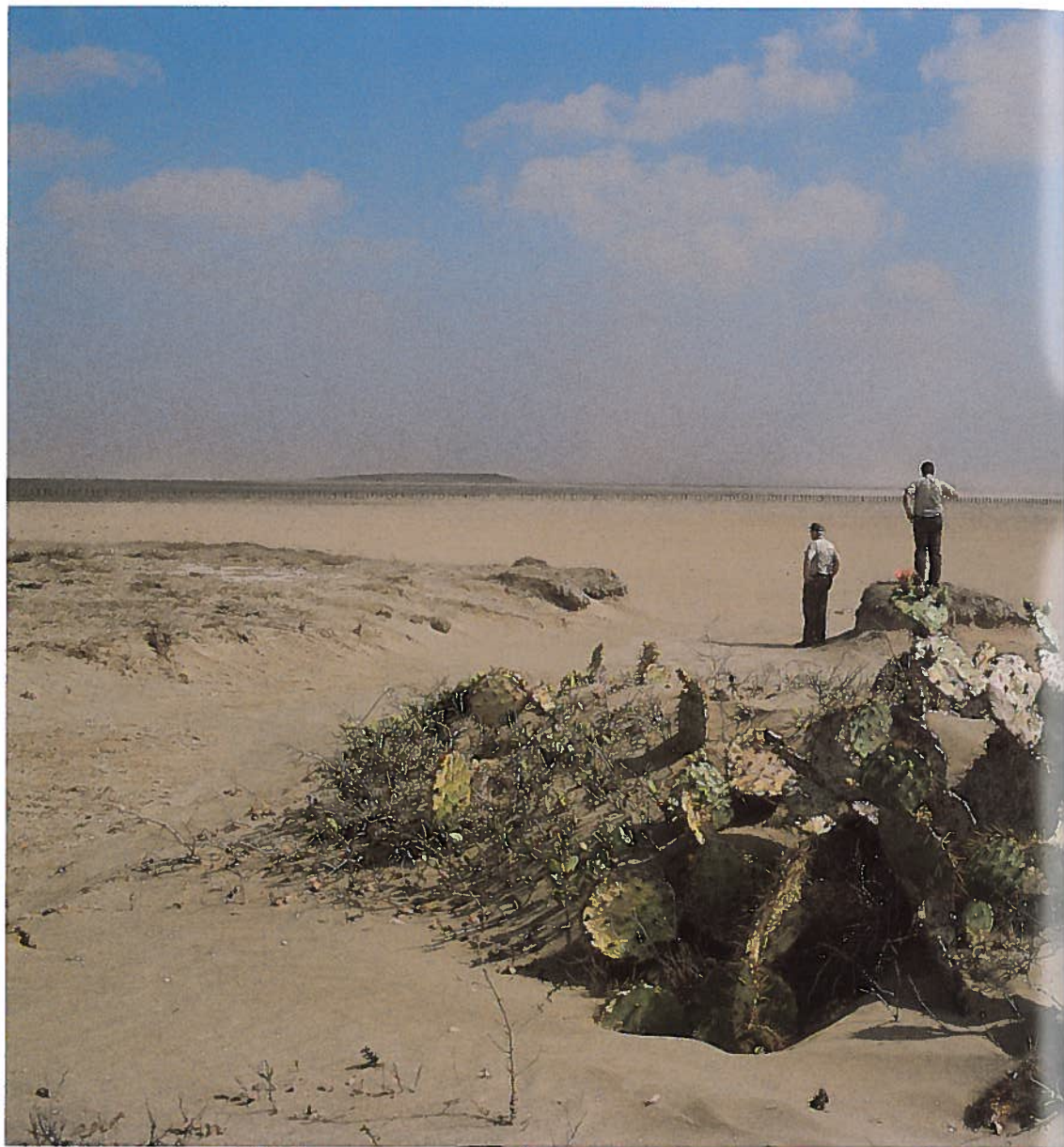
“This isn’t too bad,” says brown-clad U.S. Fish and Wildlife Service (USFWS) employee Steve Labuda Jr. almost nonchalantly, as if his frequent visits to this wasteland have numbed him to the physical discomfort of this place. “The wind will really kick up dust by this afternoon.”

This is the reality of the Bahia Grande, a 10,000 acre dustbowl that was once a very productive tidal bay. It produced fish, crabs and enough shrimp to make commercial shrimping operations in the bay worthwhile. Such reports are anecdotal but most probably true. Consider as evidence that a pass on the east side of the bay was named “Redfish Pass.”

Now the Bahia Grande’s major crop is dust and it gives up its harvest daily, much to the frustration of area residents. Frequent dust storms are blamed for an increase in respiratory health problems of people living near State Highway 100 in Port Isabel, Laguna Heights and Laguna Vista.



bleak,  
bare,  
barren,  
harsh,  
deserted,  
severe ...  
wild and  
forbidding



*The USFWS' David Blankinship (left) and Steve Labuda appear Lilliputian compared to the vast expanse background is all that remains of a railroad built by Gen. Zachary Taylor in 1846.*

Already the Point Isabel Independent School District, which includes Port Isabel Junior High School and Port Isabel High School, has spent more than its annual maintenance budget at those two schools repairing dust-related damage to equipment, facilities and landscaping.

Blinding clouds of dust along both Hwy. 48 and Hwy. 100 make driving treacherous at times.

"I drive down through Laguna Vista and those areas that are downwind from Bahia Grande and it brings me back to the time when I was a kid in Mineral Wells and seeing a dust storm like that," says Tony Reisinger, Cameron County Marine Agent. "The sky turns almost black."

Now an incongruous assortment of groups

want to see the Bahia Grande flooded again — returned to its original state. The federal government, state government, local government, environmentalists, shrimpers, sportsmen and academicians are teaming together to pull off what could be the largest wetlands restoration project in the world.

They advocate digging a series of channels to re-establish the water flow cut off to the Bahia Grande by construction of the Brownsville ship channel and Hwy. 48 in the 1930s and resurrect the Bahia Grande.

The project enjoys universal support. No one has voiced opposition to what is being characterized as a true "win-win" proposition, which begs the question of why such a hugely popular and needed project — supported by government, business, area



*of the Bahia Grande basin. The row of posts in the*

residents and local schools — isn't already a reality.

"(Bahia Grande) was not USFWS property until 1998," Labuda explains. "Before then it belonged to private landowners. It's only recently that the land has come into the public domain where we can talk about doing something about it."

First and foremost, flooding the Bahia Grande should greatly reduce the dust problem. But those backing the project believe returning water to the area will also resurrect the bay's abundant aquatic ecosystem.

Standing in the basin of the Bahia Grande, it is difficult to imagine it being anything more than it is now — bleak, bare, barren, harsh, deserted, severe, austere, Spartan, hostile, inhospitable, wild and forbidding.

Taking in a panoramic view of this incredibly dusty basin, it feels like there are not enough words for "stark" to describe it.

Despite its empty feel, the Bahia Grande is far from lifeless, as is evidenced by the thick brush and plentiful prickly pear cactus. Hiding within the brush is an incredible diversity of animals. Snakes are so plentiful that "you don't step through the brush where you can't see the ground," Labuda says.

As Labuda and USFWS senior wildlife biologist David Blankinship drive through the refuge this day, a caracara — or Mexican eagle — takes flight. It is one of many bird species that frequent the Bahia Grande.

Other inhabitants of the refuge include rabbits, armadillos, opossums, raccoons, deer, bobcats and ocelots, to name a few. From time to time visitors catch a glimpse of a nilgai, a species of antelope native to India that was brought to the Bahia Grande by the former ranching owners of the property who were looking for exotic hunting prey that could survive in the harsh south Texas brush land.

The people backing restoration of the Bahia Grande believe fervently that flooding the area will result in an aquatic ecosystem that will rival the diversity and productivity of the terrestrial habitat there.

"If you are in the shrimp business, you have to be concerned about the environment," says project supporter Larry Hodgson, who is a partner with his brother, Les, in a Brownsville-based seafood distribution company. "Our whole business is dependent on a healthy marine environment. We're not just worried about where the Bahia Grande is today. We're worried about where it will be far into the future. That's the reason we've been involved with the sea turtle project, which is an important part of the marine environment and it is one that has had interaction with other aspects of our industry in the past.

"Bahia Grande to us represents an area that at one time was a nursery ground for marine animals. Not just shrimp but fish and other species," he continues. "To us this restoration project represents an opportunity to enhance the marine environment and maybe make it even better than it was pre-1930s if we can do it properly. We can create this tremendous nursery ground. Does it directly benefit us in any real, tangible way? Maybe not, but if it is part of good overall stewardship of the marine environment, then it has some plus to us."





*Cattle skulls hang on a fence at the site of a ranch used by cattleman Wally Reed located inside what is now the USFWS' Bahia Grande refuge.*

# Wet to dry

The Bahia Grande, Spanish for “Big Bay,” is the name commonly associated with an area that is bigger than the actual bay itself. Now a part of the Laguna Atascosa Wildlife Refuge, the 22,000 acre Bahia Grande complex comprises the main basin and two other water bodies — Laguna Larga and the Little Laguna Madre — and the surrounding uplands.

These basins are surrounded by lomas, meaning “hills” in Spanish. Lomas are “clay dunes that are usually blown up over a long period of time on the northwest side of these tidal wetlands,” explains Labuda, the USFWS’ U.S. coordinator for the Rio Grande and Rio Bravo ecosystems. “When the wetlands dry up, the clay particles blow with the wind. The heavier grains are closer to the ground and the lighter grains blow up further into the air. The heavier clay blows along the ground until it hits an obstruction like a cactus or a limb or something like that and it lodges there. As more gets lodged, it builds up these big clay dunes.”

The Bahia Grande and Little Laguna Madre formed as tidal basins. The daily high tide in the Gulf of Mexico sent water inland to determine how much of the area flooded and to what depth. As the tide ebbed, some water remained behind. Laguna Larga received some saltwater but was primarily a freshwater basin.

Water also periodically entered the bay system from the man-made Rio Grande floodway and through natural drainage from the surrounding land.

The Bahia Grande presented such a harsh environment, even with water present, that it was known as a place to be avoided. That presented a bit of an obstacle to the U.S. Army stationed at Fort Texas, later to be renamed Fort Brown, in present day Brownsville. The easiest way to get supplies to the troops was by boat, and the nearest port was Port Isabel. But in between the port and the fort lay the Bahia Grande.



Gen. Zachary Taylor (who a few years later became the 12th President of the United States), commanded the detachment of soldiers sent to Fort Texas when Mexico threatened hostilities in the mid-1840s. He built a narrow-gauge railroad through the Bahia Grande in 1846 to move supplies and Fort Brown's payroll of gold. The original cypress pilings that supported the track still stretch across the basin.

There is ample evidence that the Bahia Grande remained mostly wet until the late 1930s. Clam shells and other remains of aquatic life still litter the surface of the basin. USFWS's David Blankinship found a railroad spike and other railroad debris that had been under water long enough for barnacles and oysters to grow on them.

The late Wally Reed, son of the Port Isabel lighthouse keeper, used to graze his cattle on grasslands around the Bahia Grande and had done so since the 1920s as far as anyone can determine. He told Blankinship that in the 1920s shrimpers used shallow draft sailboats in the bay to harvest their catch.

"Wally talked about people wading out and going floundering or catching crabs in the Bahia Grande," Blankinship remembers.

There is also the account of Bird Island, a large mound that rises high above the Bahia Grande basin. "In 1929 a bird survey was done and it indicated there were about 10,000 pairs of nesting gulls and terns on Bird Island," Blankinship says. "They don't nest on an island unless it is well isolated by water to keep predators away."

Human progress brought about the end of Bahia Grande as a bay. On the south end, the water flow was cut off by disposal of material dredged from the Brownsville Ship Channel, which began in 1933. There were also modifications made to natural drainage patterns as water was impounded for cattle.

Increasing agriculture meant that farmers pumped more water out of the Rio Grande for irrigation, which



*The remains of Reed's ranch today.*



*Wally Reed circa 1974.*

coupled with dam construction reduced the frequency of flooding and thus the amount of water draining from the river's floodway system into the Bahia Grande.

A 1933 Texas Department of Transportation (TxDOT) map shows that construction of Hwy. 48 had begun just to the west of the ship channel, further isolating the Bahia Grande from the Gulf of Mexico's tidal flows.

The area began drying up quickly. Blankinship has a letter dated 1939 that indicated the government needed to do some wetlands restoration work there, but none was attempted.

For many years the land that is now the Bahia Grande complex was divided between three large ranches owned by the Yturria, Garcia and Esperson families. Reed leased the Bahia Grande land from the Yturrias and Espersons, plus some land owned by the Port of

Brownsville to graze his cattle.

The remnants of Reed's ranching headquarters are still on the property, as is the rusting hulk of a 1920s or 1930s era ranch truck that most probably got stuck in the silt and remained there because no larger vehicle could be found to pull it out.

Shrimper-turned-fuel-supply-company-CEO Joe Gayman remembers hunting on the land as a high school student in the mid-1950s. The Bahia Grande was mostly dry at the time, as it is now, Gayman remembers, but it flooded to some extent following storms. Rain from tropical storms and hurricanes, like Hurricane Beulah in 1967, would fill the basin and leave it flooded for quite some time.

The Bahia Grande filled with water frequently enough to draw large numbers of waterfowl. When visitors arrive at the refuge today they enter through a gate built on a loma called Red Head Ridge, so named because it was a place where duck hunters used to wait for red head ducks flying back and forth between the Bahia Grande and neighboring San Martin Lake.

During Gayman's hunting excursions, his friend Wally Reed planted an idea in his head. "Wally loved nature," says Gayman. "He knew what the Bahia





*Wally Reed (lower left) watches as Walter Pitt digs a channel connecting the Brownsville Ship Channel with the Bahia Grande in April 1983.*

Grande had been like. He wanted water back in there to keep the dust down and to have more grass for his cattle. Just looking at the area I thought it could be flooded.”

It was an idea that stayed with Gayman for nearly 30 years.

In the meantime, he began a long career in shrimping in the early 1960s as a header — the crewman aboard a shrimp boat who is responsible for removing the heads from the catch. He worked his way up through the hierarchy of the crew, eventually becoming a boat captain before starting a fleet of his own.

While president of the Brownsville-Port Isabel Shrimp Producers Association, Gayman began to actively plan a way to return water to the Bahia Grande. He felt the simplest way to flood the area was by digging a channel from the Brownsville Ship Channel straight to the Bahia Grande.

The National Marine Fisheries Service awarded the shrimp producers association a \$120,000 grant to study the feasibility of such a channel. The study found that the trench would fail because the Bahia Grande was above sea level, making it impossible for water to flow there from the ship channel.

Gayman could not accept the study’s findings.

“When high tides or a ship would come it would wash water over the bank of the ship channel and the water flowed toward Bahia Grande,” says Gayman “Water only flowed one direction, and that was into the Bahia Grande.”

Armed with permission from two of the three families and \$3,000 from the shrimp producers association, Gayman hired Walter Plitt to dig the 10-foot wide channel in April 1983. Plitt, who owned a local crane service, probably spent more than \$3,000 digging the trench, but “he was a concerned

citizen and he wanted the area flooded as well,” Gayman recalls.

Either Plitt was a miracle worker or the feasibility study was wrong. When the last of the dirt was removed, and with Wally Reed watching, water began flowing into the Bahia Grande. “The joke amongst the shrimpers was that the water was flowing uphill,” Gayman laughs.

The situation was not as humorous for the landowners. They saw the possibility of keeping their mineral rights disappearing beneath the deepening cascade of water. Under Texas law tidal lands are generally state property managed by the General Land Office (GLO). The landowners were also concerned that if the Bahia Grande remained flooded, people could launch shallow draft boats and gain easy access to the interior of the ranches.

The families threatened legal action unless the channel was closed, and Gayman conceded. Exactly how long the channel was open is unclear. Guesses range from 10 days to several months, even among those who were there at the time. But Gayman had made his point: The Bahia Grande could be restored as a tidal bay. If nothing else, the success of the 1983 channel only served to strengthen Gayman’s resolve to one day see the Bahia Grande returned to its former grandeur.

“I think a bay full of water would look a whole lot prettier than that dust blowing out there,” says Gayman. “Being a shrimper and a sports fisherman, I believe those areas are vital to grow fish, shrimp and crabs. That area used to be loaded with ducks, geese and all kinds of waterfowl. Now there is nothing there.

“I’ve never given up on flooding it.”



# Dust Bowl

As visitors turn the corner of a new subdivision near Port Isabel Junior High School in the community of Laguna Heights, the dust blowing through their opened pickup truck windows becomes unbearable. The grit of sand between their teeth and their clouding contact lenses add to the frustration of the hot climate. Even with the air conditioning broken in the truck, they decide to roll up the windows.

Over the hood of the truck, they can see that there is no grass in the yards of these houses, only lawns of sand swept by the wind into dunes at the base of the structures and along fences.

Even the under parts of new aluminum siding cannot escape the cling of this dry mass.

They are greeted at the junior high school by Raul Villarreal, the Point Isabel Independent School District's director of maintenance operations, who beckons to them through the billowing clouds that bring dust from the Bahia Grande and other dried-up wetlands into what was once a lush schoolyard.

"You see all of this?" Villarreal asks, sweeping his hand in front of him towards a vast area of dirt. "This was once all green. We had our track here and fields for playing sports."

He says that if the dust problem continues, restoration to the damaged school may not be completed even in his lifetime.

"If we can stop the dust now, it will take at least ten years to rebuild the school grounds. If we ignore the problem, it could take a century to repair the damage done – or longer."

Students used to spend their outdoor recreation time playing basketball and volleyball. Now they just stand around in the dust and return to their classrooms windblown and dirty, says a frustrated Villarreal.

He tried to trap some of the sand by building a makeshift wall with scrap boards and wood. Over time, the sand has



*Raul Villarreal Jr. stands next to a makeshift sand fence built to keep blowing silt from burying the grounds around Port Isabel's junior high and high schools.*



*Sand piles up against another makeshift sand fence next to the varsity football field.*

pushed up against the barricade, creating deep dunes at the edge of what was once a fertile playground. The sand has even crept into the football field and coats the bleachers between games.

Going home sounds like a good idea to the visitors. With sand imbedded in their hair, teeth and ears, they head back to the refuge of the truck after snapping a few pictures. The humidity is bad in this area, but with the sand swirling around in all directions, even a hot truck is a welcome oasis.

As they prepare to head back into the dust clouds along Hwy. 100, Villarreal thanks them for coming out to see the school and tells them how much it means to him that they're interested in the dust problems.

"The sand is not just destroying our school but also affecting the students' health." He says. "I think we owe it to them to get this problem cleaned up."

Blowing dust is not a new problem around the Bahia Grande and cannot be blamed solely on the dry bay bed. Don Hockaday, who grew up on South Padre Island and is acting director of The University of Texas-Pan American's Coastal Studies Lab there, says dust assaulting area residents also comes from nearby dry dredge disposal areas and from Mexico.

The dredge disposal areas are relatively new in the lifespan



*‘any rain  
would be  
welcome  
to dampen  
the soil’*

of the area and have aggravated the dust problem, but dust originating from the Bahia Grande and Mexico has been changing the landscape for centuries.

“Look to northwest of these basins and see these lomas that have formed,” he says. “These dunes didn’t just form since the 1930s. It takes a long time to form one.”

For seafood distributor Larry Hodgson, the blowing dust brings back memories from his childhood.

“When we used to go to the beach as kids — pre-air conditioning in cars — we used to have the windows down,” he recalls. “I can remember every time we went to the beach someone would holler, ‘Roll up the windows,’ because we got to the space where the sand was blowing across the road, so we baked in the car for a few minutes as we went through the dust storm going to the beach. Going back to when we were very small there are vivid memories of what was happening there.

“It was a big void between here and the beach,” he continues. “Basically, that’s what it is today. It’s neat when you get out on it now because there are things out there to be interested in, but not anywhere near what there will be. Most people flying by in a car today have no concept of what’s out there.”

The difference these days is the drought. Unrelenting sunshine has thoroughly parched the loosely-packed sediment around the Bahia Grande and dredge disposal areas along the Brownsville Ship Channel. Prevailing southeast winds send the dust aloft to spread over Port Isabel, Laguna Vista and Laguna Heights. The dust mixes with salty dew in the air and settles on power lines, causing electrical arcs that spark blackouts.

Any rain would be welcome to dampen the soil and keep it Earthbound, but precipitation has been a rare commodity over the past few years.

Without doubt, says Tony Reisinger, it is the worst drought he has seen in Cameron County during his 20 years as county marine agent.

Don Hockaday recalls a time about two years ago when he was on a boat in the Laguna Madre at a point between Laguna Heights and Laguna Vista. “It was in August, which is usually not a bad dust period. I could look in either direction and see dust rising for hundreds of feet.”

Sand damage that Villarreal characterizes as “devastating” to Point Isabel Independent

School District property — particularly that done to the junior high and high school campuses — is among the more apparent hazards of the blowing dust.

He is more than happy to bend any sympathetic ear with a laundry list of repairs the district has incurred and how much money it will take just to get equipment back in working order.

“We used to have a junior high and high school with greenery around them — grass, a football field and a practice field. Now it looks like a plan hard sand surface,” he says. “Our facilities are suffering.”

Villarreal and district staff have taken their facilities’ plight to the school board, the Brownsville Navigation District Board of Commissioners to state Sen. Eddie Lucio Jr. (D-Brownsville) during a Port Isabel town hall meeting. Asked to give a few examples, Villarreal launches into a well-practiced recitation of the current damages:

- Year-old rooftop ventilators and condensers at the high school should have a lifespan of 10 years, but they must be replaced now at a cost of \$40,000.
- The four-year-old rooftop air conditioning units at the junior high should also have a 10-year life expectancy but they, too, must be replaced at a cost of \$11,000.
- The \$350,000 chiller coils at the junior high school must be replaced, although it is only three years into its 15- to 20-year lifespan.
- There is inestimable damage to buses, tractors, vans and lawnmowers — all of which are going through more oil and air filters than would normally be expected.

“I’m supposed to be spending \$2,000 a year for air filters at the junior high school,” Villarreal complains. “I’m spending \$6,000 in filters, putting filters on every two weeks. I’ve got a football field sitting out there that I have spent more than \$10,000 on putting on fertilizer and other things just to maintain the field so it won’t dry out.

“We’re on the losing end,” he continues. “I estimate the accelerated depreciation on everything we’ve done is about \$350,000. We spend a pretty penny fighting this war against sandstorms.”

Villarreal’s figures do not include the toll on manpower.

“It takes five or six people from 8 a.m. to



*accelerated  
depreciation  
is about  
\$350,000*

*Raul Villarreal Jr. holds a photo showing how green the grounds used to be around Port Isabel Junior High School.*

noon just to clear the sand from the premises,” he says. “Sometimes you can’t even find the parking lot. From the highway it is about 500 yards to the stadium of the school. You can’t see it from the highway. We’re in a sandstorm alley that sweeps right through the back of Port Isabel and the sand blows into the backyard of the junior high and the high school.”

Villarreal was principal of the junior high school from 1989 to 1992. He talks of a large body of water behind the school that caught a lot of sand, allowing the greenery around the school to thrive. But the water is gone now, a victim of the drought.

“I can’t spend money on other good things I need to do for the school because I’m too busy fighting the war against sandstorms.”

The school district’s dust problems are

largely the result of dust blowing from the Little Laguna Madre and Laguna Madre. But a dredge disposal site at the tip of an area called Long Island, just south of Port Isabel, also contributes to the dust problems along Hwys. 48 and 100. The proposed reflooding of the Bahia Grande should decrease the amount of dust coming from the Laguna Larga and Little Laguna Madre, but it will not address the dust coming from Long Island. For that problem, the Cameron County Parks Department has another solution.

Sand fences installed at Port Mansfield have been successfully trapping sand and allowing vegetation to grow and stabilize the soil there. Javier Mendez, Cameron County parks director, believes the fences can be successful on Long Island as well.





*Grass has been replaced by sand around Port Isabel's junior high and high schools.*

With the blessing of the Cameron County Judge and commissioners court "because of the impact the dust has on the citizens of the Laguna Madre," the Parks Department is acting as a conduit through which \$100,000 from the General Land Office will flow to help cut a channel to the Bahia Grande and pay for installation of sand fences on Long Island. Officials will combine the \$100,000 with \$10,000 each from Port Isabel's Economic Development Council and Central Power and Light to help fund the projects.

About \$50,000 of the money will fund construction of about three rows of fabric-covered sand fences. The fences will be about three feet high and 300 feet long, with about 150 feet between them. The fences will be constructed perpendicular to the prevailing wind and are designed to trap blowing dust and foster plant growth, which eventually will stabilize the soil enough that the fences can be removed.

Mendez says he is optimistic the sand fences will work well on Long Island. He visited the area of Port Mansfield where sand fences were erected and found that a good bit of vegetation had already taken root without any special soil preparation.

For the Long Island project, Mendez wants to hire a consultant who can recommend the plants and soil preparations, like fertilizer, that will, as Mendez puts it, "jumpstart" revegetation of the area.

"We want to build the sand fences and then try to stabilize the area with vegetation so we can then move the sand fences somewhere else," he says.

Construction of the fences will be done through the Parks Department, either by department workers or a contracted construction company. The Parks Department will be responsible for maintaining the fences, says Mendez.

The remaining \$70,000 or so of the GLO grant will be used to help fund digging of the main channel from the Brownsville Ship Channel to the Bahia Grande. It could be the first of five channels designed to not only flood the area, but ensure adequate water circulation needed to keep the restored aquatic ecosystem healthy.

Cameron County's willingness to get involved in restoring the Bahia Grande is typical of the responses that project supporters have received from any group or person they approach for assistance. To date there has been no opposition to the project, which is uncommon given its size and considerable government involvement. If there is opposition, it has been very, very quiet.

So what you have here is a huge project being driven primarily by the federal government but roundly supported by everyone and that has the potential to choke off, if you will, an annoying dust problem while at the same time restoring an aquatic ecosystem that could at a minimum produce shrimp, fish and crabs; provide valuable habitat to waterfowl and shorebirds, some of them endangered; and provide recreational activities like hunting, birding or other ecotourism activities.

It sounds too good to be true.

"It's not too good to be true," says Marine Agent Reisinger. "It just sounds good."



## Bahia Grande Restoration Project

*The yellow lines on this map indicate the locations of proposed channels.*

# Won in the trenches

With one narrow trench, Joe Gayman proved that water would indeed run into the Bahia Grande if given a chance. Current plans call for five chances in the form of channels connecting various parts of the Bahia Grande either to water sources or each other to create a circulation pattern.

The main channel will be located very close to where Gayman had his channel dug in 1983. At 2,000 feet long it is the shortest, most direct route between the Brownsville Ship Channel and the refuge's land. A smaller, longer channel — on the order of 7,300 feet — is supposed to connect the Bahia Grande with San Martin Lake. San Martin Lake, located just southwest of the Bahia Grande, already receives water from the ship channel and from runoff from the surrounding area.

Three other small channels are proposed — one each from the Bahia Grande to Laguna Larga and Little Laguna Madre, and one between the two smaller basins.

This time around, Gayman will not have to worry about anxious landowners plugging up the project. Between the USFWS and the Natural Resources Conservation Service (NRCS), the federal government owns or controls all of the land that was in question in 1983. One thing has not changed — the original landowners still have mineral rights to the land.

They can drill for oil and gas — the primary commodity sought in the area,



as long as they adhere to existing state and federal drilling regulations.

Obtaining the land was an exercise in cooperation between the USFWS and the NRCS with help from the Texas chapter of the Conservation Fund, a non-governmental environmental organization.

It was Conservation Fund staffers who approached the NRCS about getting involved in the Bahia Grande project under the auspices of the NRCS Wetlands Reserve Program, explains Doug Sharer, the NRCS program liaison who is based in the agency's state office in Temple.

The Wetlands Reserve Program is a voluntary program that offers landowners the opportunity to protect, restore and enhance wetlands on their property. The NRCS provides technical and financial support for the restoration efforts.

The NRCS sought to obtain 30 year easements from the Yturria and Garcia families on about 17,000 acres of land. Conservation Fund staffers coordinated getting the landowners signatures on the easement agreements. "Without (the Conservation Fund's) efforts the easements wouldn't have happened, or it would have taken a lot longer to get done," Sharer believes.

The easements "pretty much gave the rights to the surface to us to restore as a wetland," explains Sharer. "In return, we paid them the appraised agricultural value for the land. They had to give up agricultural rights. They could no longer graze livestock or do any other type of production activities out there. Management of the land was basically turned over to the NRCS."

NRCS spent about \$3 million to buy the easements. Doing so lowered the remaining value of the land, allowing USFWS to buy the two properties plus the Esperson's land for about \$4 million.

"It was a significant amount of money but we thought, for the value that the project would provide, it was well worth it," says Sharer.

After the easements expire, control of the surface acreage reverts to the



*Steve Labuda (foreground) and David Blankinship discuss what the Bahia Grande should look like once the basin is under water again.*

landowner, which is now the USFWS.

Blankinship was involved in the land acquisition for the Bahia Grande. It was one more step in a quest that began for him in the early 1970s. At that time, Blankinship was a research biologist on the Texas coast for the Audubon Society. During his travels he learned of the Bahia Grande and, like Gayman, he believed the bay could be restored.

"I started making various contacts and trying to figure out how to get water back into the basin," he recalls. "I made contacts with people from USFWS and with the landowners."

Blankinship went to work for the USFWS in 1989 and he continued to look for ways to buy the property needed to reflood the bay system.

"I was involved in the negotiations to buy the land, I did contaminant surveys and whatever else I could to make this project go forward," he says. "You just have to have somebody who keeps pushing it."

Once the USFWS obtained all of the land it needed, the question became how to best flood the basins and ensure enough circulation to keep the ecosystem healthy. Those involved most intimately in the project had some idea of where to dig

channels, but many of them admit that they were just not sure where the water would go once it flowed into the basins.

Enter Ocean Trust, an independent non-profit ocean conservation foundation. Brownsville seafood distributor Les Hodgson is a member of the organization's board of directors. He approached Ocean Trust President Thor Lassen about getting involved in the Bahia Grande project at a time when the Ocean Trust was looking for regional projects to work on.

Hodgson did not need to do much of a selling job.

"Bahia Grande has such an interesting history," says Lassen, who has experienced the refuge first hand. "It was once a thriving estuary, but today all that remains is a barren, dried-up basin. In the middle of the Bahia Grande you get the feeling that you are on a Mel Gibson movie set from *The Road Warrior*. Here was something that we could help restore by taking a proactive restoration approach that would bring the entire community together.

"A project like this attracts a lot of people and establishes relationships in a



*Standing in the Bahia Grande basin, Steve Labuda lends a sense of proportion to the size of the restoration project.*

positive manner. I think ultimately it helps to resolve differences that may have historically existed between groups. It's hard not to be interested in this project."

Through a partnership with the National Fisheries Institute and the National Oceanic and Atmospheric Administration's Community-Based Restoration Program, Ocean Trust set aside \$70,000 to fund a hydrological study of the Bahia Grande system.

Dr. Billy Edge, W.H. Bauer Professor of Dredging Engineering at Texas A&M University, and his graduate student, Diane Van Valkenberg, agreed to conduct the study that began in September 2001.

"We were asked to look at alternatives for taking water from the Brownsville Ship Channel and flooding the Bahia Grande," says Edge. "The alternatives they indicated were various channel sizes and configurations coming directly from the ship channel into the Bahia Grande and also various channel sizes coming from San Martin Lake into the Bahia.

"In order to provide some better mixing in the Bahia Grande, and considering that the wind is a major factor, they asked us to look at the effect

of adding channels that could connect the Bahia Grande with Laguna Larga and Little Laguna Madre."

Edge and Van Valkenberg used data provided to them by the USFWS and contract surveyors to develop a hydrological model that incorporates tidal flows from the Gulf of Mexico, part of the Laguna Madre, the Brownsville Ship Channel and San Martin Lake and predicts how water will flow through the Bahia Grande system.

Preliminary results predict that "the connection between San Martin Lake and the Bahia Grande is so long that it is very difficult to get significant water flowing through the proposed channel to do much filling of the Bahia Grande and providing any reasonable amount of flushing," says Edge.

Essentially, once the water flows into the Bahia Grande from San Martin Lake it would seldom exchange with other waters outside of the basin. The Bahia Grande would basically become a lake with one connection to San Martin Lake.

"In contrast to that, the connection with the Brownsville Ship Channel is much shorter and will allow significantly more water to flow into the Bahia Grande and out again with each tide,

and the tides would primarily drive the flushing of the Bahia Grande with water from the ship channel," Edge says.

Far from being bad news, the preliminary results conclude only that the restoration project will not work if it is limited to one channel between the basin and San Martin Lake. Project supporters have long maintained that digging the main channel from the Brownsville Ship Channel is essential to restoring the bay.

The main channel will also have to be substantially larger than the 10-foot-wide trench that Gayman had dug in 1983. Edge says his model mandates the channel be 200 feet wide and 9 feet deep. The channel between the basin and San Martin Lake needs to be 50 feet wide and 4 feet deep.

The channels, it seems, are every bit as ambitious as the restoration project itself. Far from making USFWS' Labuda cringe, the channels' dimensions are, "about the same size I figured they would be," he says. "The project is still doable. "We're going to meet with (the Texas Department of Transportation) and the Port of Brownsville at some point to discuss this with them."

At the request of Labuda, Les Hodgson and others, Edge will tweak his model in the next few months to more accurately include the influence that wind will have on water circulation, "Which down here can be significant," says Labuda. "I think the wind will move a lot more water back and forth than is reflected in the model right now."

At 200 feet wide, the main channel should have sufficient water flow to minimize the amount of silt that collects, and thus the amount of maintenance dredging needed. There is actually very little silt in the Brownsville Ship Channel, says Edge, so the major source of silt deposits will be wind blown dust.

Just how much a flooded Bahia Grande will help the dust problem remains a mystery, even to Edge. He believes water will flow over about 70





*Cypress posts, the only remnants of a railroad between Port Isabel and Brownsville, fade into the distance during one of the almost daily sandstorms in the Bahia Grande.*

percent of the basin, but his model cannot predict what will happen around the periphery.

“Some areas in upper reaches of the basin will not be wet at all and some will go wet and dry every day,” Edge explains. “In those areas the surface tension of the wet soil should be high enough to hold it in place.

“But if dust was all they were concerned about, then they could go and put in pipes under the road and let a trickle of water come in,” Edge continues. “The Bahia Grande may fill in four or five months if the water doesn’t evaporate first. You have all of that wind and heat, so the evaporation will be significant. The issue they should be more concerned about is that they don’t want to end up with a hypersaline pool. If you let the water flow in once and it never exchanges again, then the salinity will continue to increase as evaporation takes place. Every time you get a new flush of water in, it will sit there and become hypersaline. So what they need to be con-

cerned about is how much water will flush in and out in order to keep the basin in a state where you have some shrimp larvae grow or have a nursery area for fish.”

Even a hypersaline pool would be welcome if it helped abate the dust problem, but restoration supporters really want to see the Bahia Grande’s aquatic ecosystem come back to life. Who can blame them for wanting their cake and eating it, too?

“This project is more than just putting water in that desert area,” Les Hodgson stresses. “We want to put it in and maintain good water quality so that the fish, shrimp, crabs and other marine life and birds will prosper out there. We see the ability to do more than just pull a plug and put water on it. We think that by doing a little bit more and working with a number of different groups we can do a whole lot more.”

Given that approach, Edge does not hesitate to answer the big question: Will this project work?



*The Brownsville Ship Channel stretches 17 miles from the Port of Brownsville's turning basin to the Gulf of Mexico. Construction of the ship channel caused the Bahia Grande to go dry in the 1930s. Now the ship channel is key to the big bay's restoration.*

“If they come through San Martin Lake and not directly off the ship channel, I don’t think it will work,” he says frankly. “But if they come directly off the Brownsville Ship Channel, I think they can make it work. If they keep a relatively large cross section in the channel, I think it will work.”

Getting water back into the basin is just the first step, albeit a big one. Left to its own devices, the Bahia Grande may eventually return to its pre-ship channel condition as tidal waters bring plants and animals back to the basin. But project supporters want to help give nature a boost by replanting species of plants that were probably indigenous to the area — primarily black mangroves and shoal grass.

“The limiting factor will be water,” says Reisinger. “We will need to use plants that need very little water. Once we find out what works well at the Bahia Grande, I think we’ll see more effort to address these other barren areas that are associated with the Brownsville

Ship Channel and dredge disposal areas. Maybe in the future, whenever a dredging project is conducted, there should be some type of remediation for these disposal areas as far as planting native species to get something established so the dust problem does not continue. You have maintenance dredging going on all of the time. I see this as the beginning of a sequence of events that will lead to dust control in the long run.”

Les Hodgson says he has gotten permission from the USFWS and funding from Ocean Trust to establish a black mangrove nursery at the Bahia Grande site. He is also experimenting with growing and transplanting seagrasses.

Due to the sheer size of the basin, the Hodgsons are interested in tapping into Reisinger’s human resources to find volunteer planters. Through his position as county marine agent, Reisinger frequently works with high school science groups and AmeriCorps — the national network of





Endangered ocelots are one of the many species of animals that travel through the dense brush on lomas surrounding the Bahia Grande.

volunteers established in 1993 to promote public service through non-profit organizations.

Beside helping to replant the Bahia Grande, Larry Hodgson believes high school science groups, particularly those for biology students, could be invaluable in documenting the changes to the bay system over time “so when we are finished we know what happened and we can show other people how to do this.”

Assuming the restoration project is successful, the USFWS has many hopes and plans for the Bahia Grande. It will be managed as part of the Laguna Atascosa National Wildlife Refuge which combines with the Lower Rio Grande and Santa Ana

National Wildlife Refuges to form the South Texas Refuges Complex.

Bringing water back to the Bahia Grande should make the refuge a birder’s dream. Flooding the area will create shoreline habitat that should attract shorebirds like the endangered piping and snowy plovers. Gulls and terns could once again use Bird Island as a rookery.

Red Head Ridge might once again be a prime vantage point for watching ducks — or in some cases shooting them — as they fly across the bay system. The water will bring a new source of food for small upland animals, and the small upland animals will attract larger avian and mammalian predators.

If 1983 is any indication, the birding opportunities could be mind boggling.

“My God, when it flooded in 1983, it was amazing the number of water birds that came in and fed on what was coming in from the Brownsville Ship Channel,” gasps Reisinger.

Those are just the bird possibilities.

The Bahia Grande is expected to resume

its function as a nursery ground for shrimp, fish and crabs that should be so productive that the USFWS plans to allow wade and motorless boat fishing in addition to hunting on the refuge.

In general, nature tourism and its associated economic impact should increase substantially.

“There is a unique area in the Bahia Grande,” Reisinger asserts. “You don’t see lomas like that anywhere else in Texas. They are clay dunes that have vegetation that completely covers them. You can’t hike in them because they are so dense. It will be a great habitat for endangered species like bobcats, jaguarundi and ocelots.”

Larry Hodgson concedes that usually he gets worried when the government throws up fences and puts up signs limiting access to its property. Not so with the Bahia Grande.

“The great thing about this area is that the government’s concept is that



Ibis



Crested caracara

it needs to be used and maybe in a multitude of ways,” says Hodgson. “With 22,000 acres out there and 10,000

of that under water, there should be something for everybody. This is a win-win project. We’ve tried to think of someone who might be opposed to it, and we can’t do it.”

There is little doubt that the Bahia Grande will produce shrimp. Whether it will be enough to significantly add to the local commercial landings is a debatable issue. But given the competition that already exists between South Texas shrimpers, any recruitment from the Bahia Grande will help.

“I think we’ll see a general increase in overall shrimp production,” believes Reisinger. “I don’t know whether it will be reflected big enough to notice it in landings

because landings fluctuate so much from year to year. But I think there will be a general increase in production of fish, crabs and shrimp. If you add 6,000 acres of wetlands, you can't help but see some positive change occur."

Ocean Trust's Thor Lassen agrees with Reisinger and he emphasizes that the restoration job will not be complete once water is flowing into the basin.

"Everyone is focused on opening up the water," he says. "We're focusing on what happens after you cut the channel. That's why we're focusing on plants

showing them the 'after' picture once the channels are dug," says Reisinger. "I can't wait to see the 'after' picture. This is a monumental task. It is something that has never been done before in the United States."



*Snowy egret resting on black mangrove trees*

and community education. We all are assuming that flooding the Bahia Grande will increase the productivity of the system and have a lot of benefits. We want to be able to document that and track it so that we have a case history and information that we can use to convince other communities along the Gulf coast to do something similar in estuaries where the water access has dried up because of a weir that has been put in."

As much promise as the Bahia Grande holds for naturalists and sportsmen, it holds an equal amount of promise as a huge classroom whose students could take lessons learned there and ensure that what happened to the big bay does not happen again.

"This project affords us the educational opportunity of taking student groups and others out now and showing them the 'before' picture and then



*Nilgai bull.*



*Cameron County Marine Agent Tony Reisinger kneels over an angel wing clam shell — a reminder of the Bahia Grande's tidal past.*



# If it's so popular ...

Restoring the Bahia Grande has the backing of the federal, state and local governments, private citizens, marine businesses, navigation districts and environmental organizations, making it perhaps the most popular environmental project never started.

"There are bureaucratic hoops that even a win-win project has to be forced through," laughs Blankinship.

In all fairness, the project was not possible until about March 2000, when the USFWS bought the Esperson's tract of land, completing acquisition of the land that comprises the bulk of the Bahia Grande system.

In hindsight, getting the land may prove to be the least of the hoops the project must jump through. The proposed 200-foot-wide main channel must pass under Hwy. 48, meaning that TxDOT must install a bridge where none stands today. That in and of itself would not ordinarily pose much of a problem as long as TxDOT found an organization or agency willing to help fund the structure.

But TxDOT dearly wants to widen Hwy. 48 to four lanes for the entire length of the road, from Brownsville to Port Isabel. Understandably, the agency wants to build the new bridge at the same time it widens the roadway.

However, there is evidence that the endangered ocelot crosses Hwy. 48 as it travels between the Brownsville Ship Channel and upland areas looking for water and prey.

"We know from research that the leading cause of mortality among the



*Joe Gayman looks over a map of the Bahia Grande. Gayman has been one of the driving forces behind the bay's restoration project.*

ocelot population is car interactions, particularly along the roads around the Laguna Atascosa National Wildlife Refuge," Says Labuda. "We had one cat that we radio tracked that traveled from the Rio Grande up through the Bahia Grande area, crossing Hwy. 48, and eventually he was killed on a road just southwest of Harlingen. These cats move around a lot, especially the young ones and the males."

The small cats love to travel beneath dense foliage and tend to cross roads at points where plant cover is plentiful. So, before TxDOT can widen Hwy. 48, it must first identify possible ocelot crossings, install so-called cat tunnels

beneath the road at those crossings and erect fences that force the cats to use the tunnels.

Before TxDOT can erect the fences, it must first get permission to build them from the landowners so as not to cut off access to the property. The property owners along Hwy. 48 are the USFWS, Port of Brownsville, the Yturria family and the Garcia family. Labuda believes TxDOT should have no problem gaining permission from any of the landowners because USFWS and the Port of Brownsville are eager to help, and the government already has a working relationship with the Yturrias and the Garcias.

Mark Iglesias, Environmental Coordinator in TxDOT's Pharr District office, is a bit more skeptical. TxDOT is in the process of trying to get permission to install similar fences from landowners along Farm to Market Road 106 near the Laguna

Atascosa National Wildlife Refuge. Some property owners have balked at allowing the fences to go up citing concerns about exactly where the fences will be and who will maintain them, he says.

An even more immediate issue is the Port of Brownsville's stand that it will not allow the main channel to be cut across its land until it receives assurance that doing so will be taken into account when it eventually deepens part of its ship channel and builds a container cargo facility.

Dredging a deeper channel and building a new port facility will destroy precious wetland habitat. The federal

government requires that when a development project destroys wetlands, the loss must be mitigated by creating wetlands elsewhere.

Mitigation is a somewhat complicated matter. The U.S. Army Corps of Engineers (COE), which is responsible for granting so-called “mitigation credits,” does not necessarily require that the lost wetlands be replaced on an acre-per-acre basis. Wetlands are graded on the basis of their quality and productivity.

Destroying a certain amount of a high grade wetland may require construction of twice as many acres of a lesser quality wetland.

The rub is that the COE does not grant “future” mitigation credits. An entity like the Port of Brownsville must provide the COE with enough information for the COE to determine the size and quality of the wetland that will be destroyed so that it can establish the amount of wetlands the entity must create.

At present, the COE must conduct a study of its own to determine whether deepening the Brownsville Ship Channel is of national importance and the extent to which wetlands will be destroyed, says Donna Eymard, assistant to Port of Brownsville director Raul Besteiro.

“Fast-tracked, that study would take 18 months, says Eymard. “On a normal track we’re looking at 24 months to 42 months. We would be happy if after three years the study would be completed and the Corps would determine that deepening the channel would be in the national interest.”

That designation is important because it means the difference between the federal government or the Port of Brownsville footing the bill for most of the project. If the COE finds that the project is of national importance, the federal government will pay for between 85 percent and 95 percent of the construction costs plus all of the maintenance dredging.

Without that finding, the Port would be left to pay for a project that will cost hundreds of millions of dollars.

“The Port is 100 percent willing to

let a channel be dug across our land to the Bahia Grande,” says Eymard. “We don’t want to see anybody’s property, livelihood or health damaged by the dust. But we, as stewards of the land that we own and the development of businesses and the development of jobs, have to do the best of our ability to capitalize and make the port what it should be as an income producing, job producing part of our community. In



*The Bahia Grande’s parched look of desolation will change drastically once water flow is restored, but the human presence will be limited to recreational visitors.*

order to do that, we’ve got some plans to deepen our channel and make a new port area. To do that we have got to get credit for mitigation of those wetlands.

“The Port’s position is that, yes, we want to do everything we can to help but we have to get our mitigation first. We’ve given things up in the past without getting anything in return. We don’t think that we are being good stewards of our development by doing that in this situation.”

Eymard is referring to a permit the Port of Brownsville was granted in 1982 to deepen parts of the ship channel to between 45 feet and 58 feet. In exchange for deepening the channel, the port agreed to create a 4,800 acre ecological preserve on port property.

The port then granted the USFWS a 40-year lease on the property.

In the end, the port did not complete the channel dredging project by the permit’s expiration date, but port officials had already signed the preserve lease with the USFWS. So the port essentially lost all mitigation credit it could have earned for creating the preserve.

Congressman Solomon Ortiz, D-Corpus Christi, is trying to help Port officials solve their dilemma. He has been asked to amend a pending piece of legislation to include language guaranteeing the Port future mitigation credits. A spokesman for Ortiz said the Congressman has not yet authored such an amendment because he is still investigating all available options.

“We are not even asking the Corps of Engineers to tell us how much credit they are going to give us,” says Eymard. “We just want them to say that they are going to give us credit.”

There is the possibility that the COE may determine that the amount of land the Port provides for the main channel into the Bahia Grande may not be sufficient to mitigate the damage done by the dredging and port construction projects. In that case, “We’ll have to cross that bridge when we come to it,” Eymard realizes. “Obviously, we want them to say that we can swap this for that and it is an even deal. But realistically, that is not what they are going to do. Just to get this project off dead center, we would even take agreement to be given some sort of credit as a start.”

Meanwhile, Port officials believe they are being blamed for the lack of action on the Bahia Grande project simply because they are standing fast in their demand for future mitigation credits.

“We have bent over backwards to accommodate the other groups but we are the ones that get a black eye over the delay,” says Eymard. “It’s like we’re the bad guy and yet we’ve done everything we can do to get the project corrected. Until the Corps of Engineers gives in and says ‘Okay, we’re going to bend a little, too,’ this project won’t get



done. But they're not willing to do that."

A spokesman for the Corps of Engineers' Galveston District, which has jurisdiction over the Port of Brownsville's construction project, did not return repeated calls for comment.

There is no reason for anyone to believe that the Port of Brownsville is delaying the restoration project, says Labuda. "I just finished the first draft of the environmental assessment of the project last week. Until that is reviewed and approved, we can't go anywhere with it. We are not waiting on anybody."

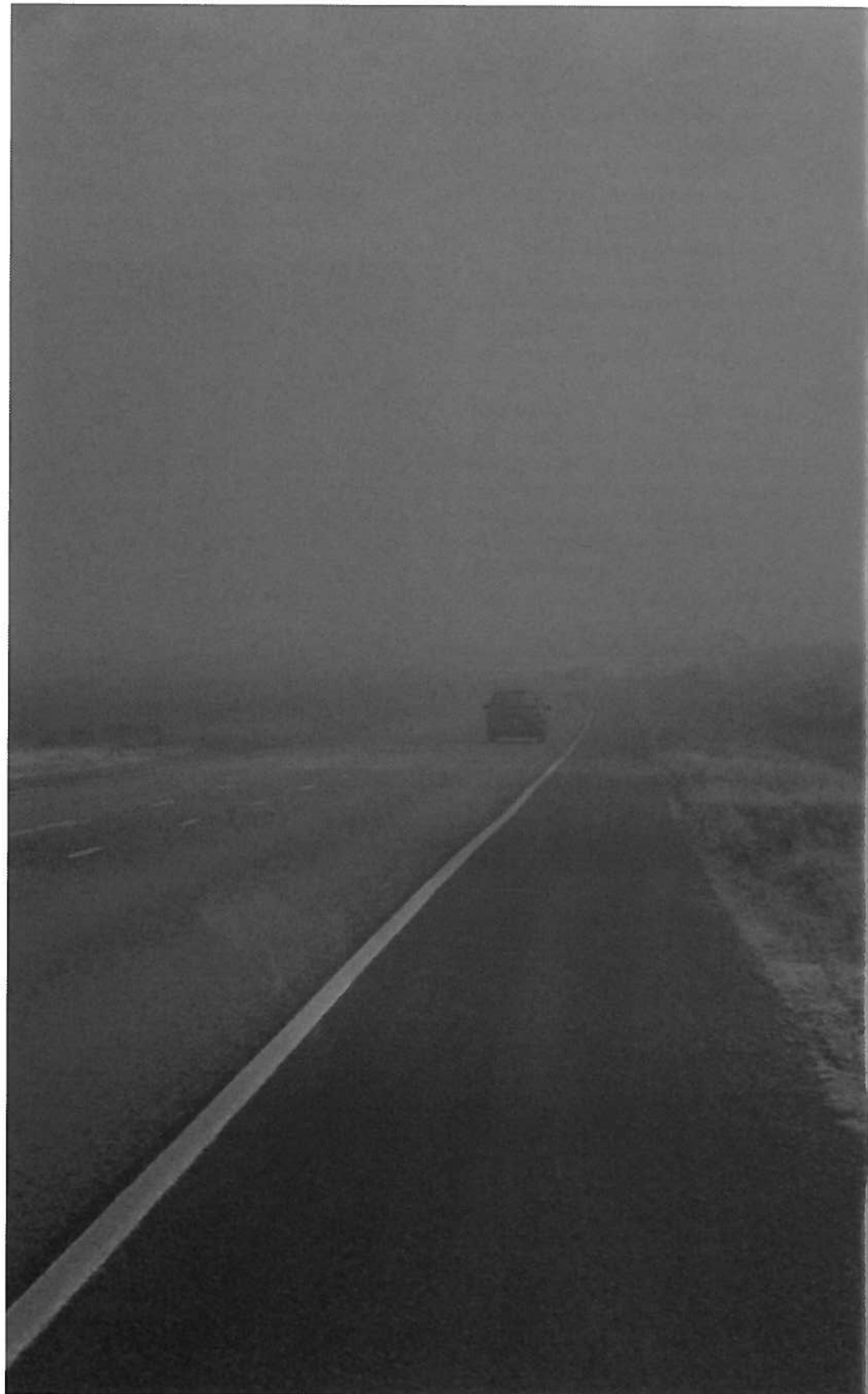
Joe Gayman finds himself in a difficult situation these days. He has sought to flood the Bahia Grande for almost 50 years and champions the cause at every turn. Yet he is frustrated by the Port's stand on mitigation credits — a decision made by the Port commission's Board of Chairpersons.

"I'm opposed to waiting three or four more years until the Corps finishes its study because of the blowing dust," Gayman says. "I think the port has a lot of other things that the USFWS wants, so I think we can still get approval for our deepwater port."

He believes the Port has plenty of other real estate that can be used for mitigation credit when the time comes to construct a deepwater port. In particular, there is a 7,000 acre tract north of Hwy. 48 that is of no real use to the Port and yet sits adjacent to the USFWS' Bahia Grande property.

Eymard respectfully disagrees with her Port chairman.

"We have a lot of property but the only areas the Corps looks at for mitigation purposes are wetland areas," she says. "When you look at an overlay of the property that we own, the biggest wetland area we have is that property leading to the Bahia Grande. We have no guarantee that the Corps will consider our other property for mitigation credits."



# Seize the drought

Despite the remaining hurdles, both Labuda and Blankinship believe that work on the restoration project could begin within a year, even if it is just on the channel between the Bahia Grande and San Martin Lake.

Labuda takes the delays in stride offering that, "Things take time in bureaucratic circles to move forward and we are moving forward as quickly as we can on this. I'm optimistic that we will have water flowing in by March of next year."

Les and Larry Hodgson want to see work begin sooner than that.

The accursed drought at the heart of the area's dust problems also offers the perfect opportunity to open the Bahia Grande to water. The most cost effective method of opening a channel is using heavy equipment like bulldozers and cranes. Sun baked silt in the Bahia Grande Basin will most likely support the weight of the equipment, the Hodgsons contend, and is much less expensive to operate than the small dredges that will be needed if the area receives heavy rainfall.

September is traditionally the wettest month in the Rio Grande Valley, but the area is overdue for a hurricane. One good hurricane and the Bahia Grande might stay flooded for four or five years, further delaying the restoration project, says Les Hodgson.

As much as the Bahia Grande project means in terms of dust abatement and wetland restoration, it means just as much as an educational experience. Until now, a large wetland restoration project might comprise 50 acres of land. Bahia Grande supporters hope to see 10,000 acres under water on a constant basis.

The Bahia Grande presents a unique situation because "you have a big bay

that was cut off from its water supply by a construction project and now we have the opportunity to restore it relatively simply," says Blankinship. "You dig some ditches and let the water back in. You always learn when you try something like this."

Techniques used to restore the basin could well be applicable in someplace like the Bahamas, where dams were built to turn wetlands into salt evaporation sites. "Now they realize that the biological productivity of those areas is more valuable than salt that comes from them," Blankinship observes.

If the Bahia Grande project is successful, Gayman said he knows of water-starved former wetland on the south side of state highway 4 near Boca Chica beach that could be his next project. Reisinger believes resource managers can build on what they learn from the Bahia Grande project and return water to the Laguna Atascosa, which went dry due to a combination of humans changing the area's drainage patterns and drought.

While not as big as the Bahia Grande, returning water to the Laguna Atascosa would restore about 6,000 acres of wetlands, Reisinger says.

The Hodgsons see lessons learned from the Bahia Grande spreading beyond the state's borders.

"This is a pilot project and at the end we want it written up so that other groups will not have to go through the headaches we have," says Les Hodgson. "I've read everything I can get my hands on about replanting and restoration — and it's not much. In all of the books they tell you that there hasn't been much done. We're hoping that if we can tackle this thing and do a good job, that it is the example for other projects, not only in Texas but for the

rest of the world. There are too many coastal areas that get some tidal action, maybe not a lot, that can become productive areas if just a few small things are done to them."

Of course, successfully restoring the Bahia Grande will generate a lot of personal satisfaction for the people who have worked so hard to see it happen. Smiling at the prospect of water flowing back into the big bay, Labuda says this could be the highlight of his career.

"I started refuge expansion up at the Attwater's Prairie Chicken National Wildlife Refuge (located between Sealy and Columbus) and I started refuge expansion at the Laguna Atascosa National Wildlife Refuge (located north of Port Isabel on the Laguna Madre) while I was there, but this project is such a win-win situation — I've never seen a project that would benefit more varied people," beams Labuda. "We've got shrimpers who know that there will be more crustaceans produced in this bay, we have the sports fishermen who know it is going to be a nursery area for game fish, we've got housewives who are tired of dust in their homes and on their laundry, we've got industries that are tired of replacing air conditioners every two or three years and dealing with electrically caused fires from shorts caused by salty, blowing dust, we've got respiratory problems at local schools with staff and students. Anybody who hears about this project and understands it are absolutely 100 percent in favor of it. It is so nice to be able to work on a service project that will benefit so many people." ■

*(EDITOR'S NOTE — Jean O'Dette contributed to this story.)*



## Rank joins ranks of Marine Advisory Service

BAY CITY, TX — A Texan returning from a prestigious east coast think-tank has been named the new Matagorda County marine agent. Jeff Rank, a graduate of Texas A&M University at Galveston with a master's degree in oceanography, began work for the Texas Marine Advisory Service (MAS) on June 15, and comes to the program from the H. John Heinz III Center for Science, Economics and the Environment in Washington, D.C.



just more comfortable here than in the wild world of Washington, D.C.”

In Matagorda, Rank will be involved in several ongoing ventures. He will assist with student programs including the 4-H Sea Master's Program and the Marine Advisory Services, floating classroom aboard the marine education vessel, the

While at the Heinz Center, Rank conducted background research in marine science and policy on contemporary environmental issues. These issues include coastal and fisheries management, fisheries indicators and the impacts of Hurricane Mitch.

In addition to his knowledge of marine science, Rank is also qualified as a mediator under Texas law. He has had hands-on work experience in facilitating communication among stakeholders on marine issues and is trained in environmental alternative dispute resolution.

A native of Corpus Christi, Rank says he is glad to be back in his home state. “I wanted to be closer to my family, and I'm

*Karma.* “The youth programs are outstanding; I want to build on those and increase awareness in the adult community also so that everyone gets involved,” he says.

His initial plan is to continue establishment of the Matagorda Birding and Nature Center and assist in coordinating conferences and meetings where alternative dispute resolution planning is needed.

“I think Jeff's background complements the rest of our staff,” says Ralph Rayburn, Texas Sea Grant associate director and MAS leader. “I have been impressed since my first meeting with him, and I know he has the potential to fall into the legacy of past Matagorda County marine agents such as Willie Younger and Logan Respass.”

—Jean O'Dette

## Grants awarded for land use education

HOUSTON—With a state population of more than 20 million in 2000, and a population increase of 22.8 percent since 1990, Texas could be home to an estimated 10 million more people in just 20 years. John Jacob, environmental quality and coastal community development specialist for the Texas Marine Advisory Service (MAS) in Houston, says that with growth of this size, it is crucial that land development is well-planned in order to preserve natural resources and water quality.

The National Oceanic and Atmospheric Administration (NOAA) recently awarded MAS a start-up grant to educate county and municipal officials on the Texas coast on land usage in relation to water quality. The grant, funded through the national Nonpoint Education for Municipal Officials (NEMO) project administered by the University of Connecticut Sea Grant office, will also

provide links to developing geographic information systems and other technologies.

For example, Jacob says the \$75,000 grant will allow the program to hire an expert in Texas planning issues. A companion grant for \$118,000 from the Texas General Land Office (TGLO) will be used to create maps and software that will enable planning officials to visualize the impacts of specific development projects. Results from both grants will be used to develop a comprehensive outreach and training program that links land use to water quality and technology to town hall.

“Now is the time to think ahead,” says Jacob. “This grant will give us the tools to make a difference 20 years in the future. As the population increases, the need to protect natural areas increases, too.”

—Jean O'Dette

## **College Station team places fourth in NOSB**

The team from A&M Consolidated High School in College Station won fourth place honors out of 22 teams from around the country at the National Ocean Science Bowl (NOSB) final competition in Providence, R.I. in May.

"The team did very well against some stiff competition," said Dr. Ed Shaar, NOSB regional coordinator and operations manager for Texas A&M's College of Geosciences Department of Oceanography, who accompanied the team to the national contest. "This was the same team, except for one member, that placed seventh the same week in the National Science Bowl in Washington, D.C."

NOSB is sponsored by the Consortium for Oceanographic Research and Education (CORE), which represents 66 oceanographic institutions, universities and aquaria and is supported by government agencies, foundations and corporations. CORE partners include NASA, NOAA,

the National Science Foundation and the Navy.

The A&M Consolidated team took top honors in the regional competition held in February at Texas A&M, earning the right to advance to the national event. The fourth place national prize will be a three-day trip to the Great Lakes Field Station in Muskegon, Mich., a cruise on the research vessel *Laurentian* and a visit to the Great Lakes Environmental Research Laboratory in August. The team will also be able to perform field sampling along the shore of the lake.

A team from Lexington, Mass., High School took first place nationally and won a trip to Hawaii. Wando, S.C., High School took second and received a trip to the Florida Keys. Third place was captured by Cranston, R.I., High School with a prize trip to Catalina Island, off the coast of California.

—Judith White, *University Relations*

---

## **Work resumes on Denbigh excavation**

GALVESTON - In an attempt to learn more about one of the most successful blockade runners of the Civil War, researchers from Texas A&M University's Institute of Nautical Archaeology (INA) have renewed their excavation of the "Denbigh" in Galveston Bay.

The Denbigh, a 182-foot-long converted merchant vessel, is the only Civil War blockade runner to be excavated in the Gulf of Mexico and one of just a few that has been investigated anywhere, says INA researcher and project director Barto Arnold.

INA nautical archaeologists are planning to recover engine, boiler, and propulsion mechanisms, which they believe might shed some light on the vessel's unusual success rate.

Before it was destroyed by the Union navy, the Denbigh completed 26 missions at a time when most runners averaged four, Arnold says. It completed trips from Havana, Cuba, to Mobile, Ala., and Galveston before running aground near Bolivar Point in 1865 while trying to enter Galveston Bay. It was the last blockade runner to clear Mobile

before Admiral Farragut captured the bay entrance in August 1864 and the next to last blockade runner to attempt to enter a Confederate port, he adds.

A grant from the Ed Rachal Foundation has allowed the INA to continue its work with the Denbigh, and this season, in addition to examining more of the engine room area, the INA plans to continue exploration of the stern area where the crew quarters were located, Arnold notes.

The INA also has set up a Denbigh exhibit at the Jack K. Williams Library at Texas A&M University-Galveston. The display features the connecting rod recovered in 2000, a media presentation on the history of the ship and the current archaeological project and posters on different topics related to blockade-running. The display will run concurrently with the field season and will be in place through the end of July. It is free to the public.

For additional information on the Denbigh project, visit <http://nautarch.tamu.edu/projects/denbigh/>.

—*University Relations*

N  
O  
T  
I  
C  
E  
S



SUMMER  
2002

