



The Strand Line

Message from Our President

The October 29 meeting in Corpus Christi was a huge success with 75 people in attendance. The facilities at the Harte Research Institute on the Texas A&M University campus were ideal for the meeting and the buffet Mexican luncheon was excellent.

The main emphasis of the meeting was to prepare for the upcoming 82nd Legislative Session with an agenda for the Texas Chapter to pursue.

- Trace Finley, Deputy Commissioner of GLO's Policy and Public Affairs Department, provided an overview of the upcoming 82nd Legislative Session, and indicated the Land Commissioner, Jerry Patterson, has requested \$24 million for coastal projects and administration during the next biennium. However, with the State facing severe budget shortfalls, it is unlikely this amount will be obtained. The purpose of the plan will be to help existing "engineered beaches" comply with federal (FEMA) design, monitoring, and maintenance requirements for disaster recover funds after severe coastal storms.
- Marie Robb, Chair of the Legislative Committee, suggested that the petrochemical industry may be an ideal source of funding for coastal projects and that a transaction fee on real estate is a primary source of coastal funds in Florida and other states.
- John Lee of Galveston County stressed the need for all of the Texas coastal regions to unite as one voice to help support state and federal legislation for coastal funding and to advise of projects they would like the Texas Chapter to assist in Austin.

The Technical Committee had great presentations from:

- Sally Davenport from Coastal Technology Corporation on the next generation of state rules for erosion response planning in Texas that will be approved by the Texas General Land Office.
- Jody Henneke of the Shaw Engineering Group described the report by Bill Mavis, Secretary of the Navy, following the BP oil spill that could result in significant coastal projects over a multi-year period for the affected Gulf Coast communities.

The 82nd Legislative Session has already begun with a projected \$15 to \$28 billion deficit. **We do plan a luncheon meeting during the Session on March 16 in the Capital in the Legislative Conference Room located at E2.002, which is in the Extension of the Capitol, second floor (E2). We have the room from 11:00 AM to 1:00 PM and we plan a catered luncheon.** The main purpose of this meeting is strictly legislative and how we will direct our efforts in finding funding sources for shoreline

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TEXAS CHAPTER MEETING

Date: Wednesday, March 16, 2011
Time: 11:00 a.m.
Place: Legislative Conference Room
 Room No. E2.002
 2nd Floor (in Extension of Capitol)
 Austin, Texas

Sponsored by:
 Texas Shore and Beach Preservation Association Chapter is actively seeking sponsors for this meeting.

Message from Our President (Cont'd)

restoration projects. Although people say there will be very little opportunities for new funding sources, we need to explore and to become creative. We expect this meeting to be the largest one ever for the Texas Chapter and we are encouraging all our members to invite their legislators, legislative aides, lobbyists and any interested person to come to the luncheon and meeting.

GLO Commissioner Jerry Patterson will kick off the Austin meeting to address the Texas Chapter and he will bring us up to date on the prospects for funding during the legislative session. We also want to hear about the Texas Supreme Courts recent decision for West Galveston Island and how it will affect the Open Beaches Act and possibly the entire Texas coast. The decision still allows a natural eroding beach to claim a beach front property but in the event of a storm, the State cannot claim the property. Since the GLO was concerned about using Federal and State funds in placing sand on private property, the \$40 million sand nourishment and dune construction project on West Galveston Island was cancelled the day the project was to begin. The Supreme Court decision could have a devastating impact to the Open Beaches Act, and the Texas Chapter is really concerned. We filed an amicus brief with the Texas Supreme Court in support of the GLO's effort to request a re-hearing of the case.

Don't forget to attend the ASBPA's Summit Conference in Washington D.C. from March 1 to March 3. It's at the Reagan Center and the access is very easy and convenient. The ASBPA always sets one day as "Lobby Day" for members to meet their legislators to discuss coastal issues. Last year, our Texas ASBPA Chapter group visited six legislators in that day, including two House of Representative Members. The ASBPA and the Texas Chapter prepares a lobby card that can be used to discuss with the legislators and their aides coastal items of importance on a national basis. We hope you attend the Conference but if not, let us know where we can be of assistance while we are in Washington.

Hope to see you in Washington at the ASBPA Summit March 1 to March 3 and at the Texas Chapter meeting in Austin at the State Capital on March 16.

—Jerry Mohn, President
Texas Chapter of the ASBPA

Letter From the Editors

Howdy, coastal community. Welcome to the latest edition of The Strand Line, the Texas Shore and Beach Preservation Association newsletter. As always, I want to thank the newsletter committee and contributing authors. I greatly appreciate the work and effort everyone puts into publishing the newsletter.

As always, I want to encourage everyone to submit articles to the Newsletter committee members relating to your personal interests, professional projects, or general commentary regarding the coastal community. If you have ideas for an article, write them down and submit them for review. It is a group effort to make the Newsletter interesting and relevant. I look forward to reading your article submission.

Regards,
Cris Weber
Newsletter Committee Chairman

Texas Beaches Pictures

BREAK OUT YOUR DIGITAL CAMERAS!

This is the official invitation to submit your best photographs of Texas beaches. It's time to tap into your inner Picasso and find the picture that is worth a thousand words and share it with our friends that read The Strand Line.

We would like to start including pictures from our members in the Newsletter of places and faces on our Texas Beaches. You may send your pictures via email to any of the newsletter committee members. Our contact information may be found on the TSBPA website:

www.texasasbpa.org

We look forward to the individual perspectives that make our coastline beautiful and show our readers the diversity that makes our beaches special.

Regards,
Newsletter Committee members

Hurricane Severance Hits Texas Coast—Public Beaches Severely Impacted & Galveston Beach Project Cancelled

By Peter Ravella, ASBPA Board Member & Principle, PAR Consulting, LLC

On November 5, 2010, one of the greatest storms ever to hit the Texas coast made landfall in Galveston when the state Supreme Court issued its decision in Severance v. Patterson. In a 6-2 decision, the Court decided that the public's right to use and enjoy the dry beach, long thought to have existed "since time immemorial", does not in fact roll landward with sudden changes to the shoreline.

Instead, the Court decided that the state will now be required to re-establish and re-acquire "in the normal way" the public's right to use and enjoy the dry beach after each storm that moves the line of vegetation landward. Oddly, the Court ruled that the public beach easement does in fact "roll" landward automatically if it does so through "gradual and imperceptible changes to the coastal landscape" but not if it happens "suddenly and dramatically." Much will depend on what the Court meant by terms such as "gradual," "imperceptible," "sudden" and "dramatic." These distinctions may prove tricky for the local communities and the state's lawyers as they seek to apply the "Hurricane Severance" ruling to actual beaches and upland parcels. As the state and coastal communities seek to decipher why and how a beach has moved and at what speed, should they consider the impacts of subsidence, the historic damming of rivers, disruptions in long shore sediment transport by ship channels, or the presence of adjacent jetties or structures? Who knows?

Even more troubling is the prospect of state lawyers negotiating with individual beachfront property owners storm-by-storm, lot-by-lot to purchase or condemn a new public beach easement. Few will find it workable. The delays and transaction costs likely to result from "Hurricane Severance" may be a bureaucratic nightmare that will make future beach access and restoration projects rare. If it is not reversed, the Severance decision may well be a Cat 5 event for the beach-going public, future beach and dune restoration projects, and the state and local budgets.

But, the impact of the Severance decision is not all guesswork. It's clear that within days of landfall, "Hurricane Severance" had washed away five years of planning and the effort of hundreds of citizens, legislators, state and local officials who worked hard to restore Galveston's fast-eroding west end beaches. With no clear right of public access, Land Commissioner Jerry Patterson cancelled the \$40M West Galveston Island Beach Project on November 15th. Sadly, the dredge contractor was already on site, laying dredge pipe for what would have been the largest beach restoration project in state history.

"That project was our highest priority as an agency," said Jim Suydam, spokesman for the General Land Office. "We had programmed more than two years of state funds to put the project at the top of the list and the Land Commissioner had personally invested countless hours to make it happen. We are deeply disappointed," he said. In a November 14 press release announcing the cancellation, the GLO explained why the project could not go forward once the Severance decision came down:

The Court ruling called into question the definition of the public beach easement, a key provision of the Texas Open Beaches Act. The Court ruled there is no public beach easement on the West Galveston Island beach targeted by the Land Office for renourishment. Without that easement, the Constitutional prohibition against spending public money to improve private property made the project impossible.

"Our hands are tied now," Patterson said. "With this much money on the bubble, the delay caused by these legal questions makes it too costly to continue this project."

Immediately following the cancellation, frantic efforts ensued, lead by ASBPA Board Chairman Jerry Mohn, to work around the Supreme Court's stunning decision and save the beach project. The state offered to move forward with the project if beachfront property owners would grant the state permanent rolling easement for public access in the project area. That offer was rejected out of hand, said Suydam. Clearly frustrated by the Court's decision and loss of the project, Commissioner Patterson filed a personal Amicus Curiae brief urging the Supreme Court justices to reconsider their decision. Said Patterson to the Court:

My lawyers at the Office of the Attorney General have done a magnificent job of presenting the legal arguments about what is terribly wrong with the Severance decision. Their filings and the numerous amici filings on the State's motion for rehearing have made a strong case of my position in my official capacity as Texas Land Commissioner.

Now, I make my personal appeal to you as a native and resident of coastal Texas for many years, as a former State Senator representing Galveston in the Texas Legislature, and as a citizen who is very concerned about the Texas coast and its beaches.

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A Cold World

Think about locations of coral reefs around the world, and the last place you might list is Norway. But northern Norway is precisely where the largest known cold-water coral reef lies.

Cold-water corals are just that – coral species found in cold, deep water throughout the globe, on continental shelves, ocean banks and seamounts. Living at depths of more than 3,000 feet in temperatures of 39 to 55 degrees Fahrenheit, cold-water corals form small patches or thickets as well as larger reef structures.

At such depths, cold-water corals are missing one ingredient that is essential to their shallow-water relatives: sunlight. Corals of the familiar warm-water reefs depend on symbiotic algae, which use photosynthesis to provide nutrients for the corals. Cold-water corals fend for themselves through suspension feeding, catching tiny organisms and organic matter from the water. Many species that use this feeding technique have branching, treelike forms.

Because of their remote locations, cold-water corals historically have been a challenge to study. Thanks to modern advances, like manned submersibles and remotecontrolled underwater vehicles, scientists are gaining knowledge about cold-water corals and their relationships with other marine species. Cold-water coral aggregations provide habitat for myriad creatures, including many commercially important food fish. This also puts the corals in harm's way. Trawlers can damage coral communities when they drag their heavy fishing gear along the seafloor.

Scientists hope that by learning more about the role of cold-water corals in the marine ecosystem, they can make the case for protecting these fragile, fascinating habitats.



Cummins Receives National Recognition From Peers

Calhoun County's Coastal & Marine Resource Agent Rhonda Cummins recently received the prestigious Assembly of Sea Grant Extension Program Leaders' Superior Outreach Programming Award along with her fellow agents Terrie Looney and Julie Massey and Seafood Marketing Specialist Mike Haby. This award is the only extension/advisory service programming award made by the Assembly to recognize current successes in outreach programming. This award highlights exceptional leadership, teamwork, and accomplishments having significant impact on the Sea Grant Extension mission and their benefit to the public.

The Texas Sea Grant team won the award for their relief efforts after Hurricane Ike struck Galveston on September 13, 2008. They had no formally defined role in the post-storm response and lacked the financial resources, manpower and authority that governmental agencies had to implement large-scale relief efforts. "We couldn't just stand by and do nothing. The commercial fisherman has always been Sea Grant's traditional clientele and if we weren't going to help them, who would?" Cummins said. The team had the clarity of vision and purpose to see through the post-storm chaos and their own Ike-induced hardships to identify critical needs that were not being addressed by other responders. They did not fill these gaps to receive recognition but rather because of their commitment and passion to their jobs.

"I was, and still am, amazed at the amount of work these four people did in a short amount of time following the storm," said Logan Respass, Texas Sea Grant's Associate Director. "The number of lives they touched and the impacts they made are truly stunning, especially considering that there is no field manual for what they did. They relied on their creativity, perseverance and resourcefulness to successfully do jobs that others either could not or would not tackle. Because of their work, Texas Sea Grant is now seen as an integral player in the state's hurricane recovery efforts."



Is there a Future for Coastal Resource Management in Texas

By Linda R. Shead, Texas Coastal Partners

The *good news* for management of Texas coastal resources came with passage of the Coastal Coordination Act in 1991:

- Widespread recognition that Texas actually *has* a coast – a significant achievement given that only 18 of Texas’s 254 counties front on the sea coast, compared to California and Florida, with 50% and 75%, respectively;
- Participation in the federal coastal zone management program that has brought federal dollars (about \$2.2 million per year) to help with coastal protection and restoration; and
- State review authority over federal actions in the coastal zone resulting in closer scrutiny of federal projects and permits.

The *scary news* came with the Sunset Commission decision of 2010:

- Texas may be risking its federally-approved program and the benefits that have accrued from that program – which includes all those listed above, plus:
- Elevation of coastal issues within resources agencies and the public eye;
- Increased communication within and among state and federal agencies and with local governments; and
- A forum for agency leaders and the public to meet, discuss issues, and share knowledge and information.

The Texas Coastal Management Program grew out of a grassroots effort in the late 1980s to better coordinate the previously fragmented management regime for the Texas Coast. It was a product of three years of coast-wide community meetings and substantial federal-state coordination. The result was a “networked” program, rather than a new “super agency”, the two structural options open to states who want to participate in the federal coastal zone management program. The networked structure maintained the individual authorities of the various state agencies and put them all on par at the Coastal Coordination Council.

The Texas Coastal Management Program is not without challenges or critics. Based as it is on existing state law, its environmental protections are weak. Federal consistency review gives the program authority over federal actions, but the review process is difficult to implement. Recent changes in the operation of the Coastal Coordination Council have limited the number of public meetings, with even fewer of those meetings taking place on the coast. Recent changes in the web presence for the program have reduced its visibility, including no direct link to the Coastal Management Program except as a funding mechanism and no reference to the *Texas Coastal Management Program Final Environmental Impact Statement*.

Still, it’s the only coastal management program we have, and it has so far brought a total of \$26.12 million and hundreds of projects to the benefit of the coast. The projects support coastal acquisitions, public access projects, restoration projects, public education, and applied science. Plus, they have served as a catalyst for many of the conservation programs now occurring along the coast. And the General Land Office has managed the grant program with only about ten percent (\$200,000) per year from the federal grant funds – all the rest going to projects.

The Coastal Coordination Council was up for sunset review in 2010. The Sunset staff made recommendations that would have continued the Council for the standard 12-year period and directed it to make some improvements, such as developing a 5-year Texas Coastal Plan with annual updates to the Legislature and aiming grant funding to meeting Plan goals.

However, the Sunset Advisory Commission decided to revise those recommendations and abolish the Coastal Coordination Council, with transfer of its functions to the General Land Office (GLO), and with establishment of a Coastal Coordination Advisory Committee to the GLO.

Although the Commission’s decision requires consultation with the National Oceanic and Atmospheric Administration (NOAA) to maintain approval of the Texas Coastal Management Program, it definitely puts NOAA in a difficult position. How can the program be “networked,” if one agency not only manages the program but also has the ultimate decision-making authority (e.g., deciding which grants are funded)? On the other hand, how can it be a “super agency” if that one agency has no authority over the actions of the other agencies? (Surely the Legislature would not give it that kind of power...?) Furthermore, would the same high level of agency participation (elected and appointed agency heads) continue on an advisory committee to another agency? What would become of the even limited public involvement that exists now?

Regardless of the form of the proposed revision of the program structure, these changes are substantive enough that they will require a new Environmental Impact Statement for the program, a long and involved process that may present still more risks for the program, and for the future of the Texas coast.

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Future for Coastal Resource Management (Cont'd)

Meanwhile, if the Legislature does not act (or the Governor vetoes its action), the Coastal Coordination Council will be abolished as of September 1, 2011. If you value the Texas Coastal Management Program and would like to have input on the Sunset Commission's decision, contact your local representative to the Texas legislature and/or chair of the House/Senate Natural Resources Committee. Urge them to continue the Coastal Coordination Council for another 12 years. You might also want to ask them to bring back more public meetings of the Council and to follow the recommendations of the Sunset staff to develop and follow a coastal plan.

Hurricane Severance (Cont'd)

Please rehear the Severance case and change your ruling to one that provides a workable blueprint for protecting both the rights of the public and the rights of private property owners. Severance gave beachfront owners a potential boon.

The public is left to wonder what, if anything, is left for them.

Lawyers from the Pacific Legal Foundation, who represented plaintiff Carol Severance in the case, attacked the Commissioner's decision to cancel the project, posting on their website that, "The officials (at GLO) lashing out is just another case of a public agency trying to escape accountability by finding someone - other than itself - to blame. GLO could have asked property owners long ago to allow public access on any dry sandy land they might own in return for renourishment of that area. They still can do so today."

Never one to back down from a good policy fight, Patterson responded to the Pacific Legal Foundation lawyers in his amicus brief filed with the court:

Pacific Legal scoffs at my decision as Land Commissioner to cancel the renourishment project on West Galveston Island, suggesting that I was unreasonable in refusing to accept individually negotiated "static" easements along the entire six-mile stretch of beach where the project was to be built. If there were a static beach, that would be workable. However, that hasn't been the case for tens of thousands of years.

The idea that the GLO could've quickly secured 400 easements, requiring 400 surveys, and then repeated that process every time the restored dune/beach system needed maintenance is simply laughable. FEMA dollars require a commitment to maintain the beach. That is impossible to guarantee if future maintenance is contingent on obtaining static easements and surveys from future property owners.

While "Hurricane Severance" damage assessments will continue for years, it is immediately clear that the public's long-cherished rights to free and unrestricted access to the our state's sandy beaches has taken a direct hit.

As Justice Medina explained in his dissenting opinion in Severance, "Because the Court's vague distinction between gradual and sudden or slight and dramatic changes to the coastline jeopardizes the public's right to free and open beaches, recognized over the past 200 years, and threatens to embroil the state in beach-front litigation for the next 200 years, I respectfully dissent." Added Medina, "The Court's conclusion that beachfront easements are dynamic but do not roll defies not only existing law but logic as well.

So now what? The Texas Attorney General has filed a Motion for Rehearing on behalf of the state in hopes that the court will take a second look at the decision. That motion, widely supported by many organizations that do not often see eye-to-eye, is expected to be acted upon this spring. Joining the TSBPA, amicus briefs in support of a rehearing were filed by A.R. "Babe" Schwartz, Galveston Chamber of Commerce, Surf Rider Foundation, City of Galveston, Kendall County, Harris County, City of Houston, Brazoria County, and others.

Galveston Mayor Joe Jaworski spoke for many when he said, "The City of Galveston supports Commissioner Patterson's request for rehearing. The best outcome for all Texans is for this ruling to be reversed. Galveston is proud to be a steward of the peoples' beach but we can't do it without state support. The Texas Supreme Court can show that support now by reversing its decision so we can renourish our beaches for all to enjoy."

Local Coastal Erosion Response Plans: A New Requirement in Texas

Sally Davenport, Director, Coastal Management, Coastal Tech, Austin, Texas

The Texas Chapter of the American Shore & Beach Preservation Association would like to address the press release issued by the national leadership of the American Shore and Beach Preservation Association (ASBPA) on May 3, 2010 to oppose new offshore drilling. We are extremely disappointed that ASBPA issued the press release without any input from Gulf Coast states that rely heavily on oil and gas revenue from drilling operations. The issue of offshore drilling, its impacts, and expansion are significant and sensitive. As a result, we expected there to be sufficient time and discussion followed by a vote of the Board before establishing an official Association position and moving forward.

The 81st Texas legislative session in 2009 enacted HB 2073. In this bill, local coastal governments with existing beach access and dune protection plans were required to establish and implement a plan to reduce public expenditures for erosion and storm damages. The act states that the local Erosion Response Plan (ERP) should be prepared in consultation with the General Land Office (GLO). Draft plans are due to the GLO by July 1, 2010.

The General Land Office enacted rules (TAC, Title 31, Part 1, §15.17) which provide guidelines for developing the local Erosion Response Plans (ERP). Seven elements are recommended for inclusion in the ERP:

1. Setbacks
2. Prohibition on new construction seaward of setback line
3. Exemptions from construction seaward of setback line
4. Exempt properties construction requirements
5. Procedures for preserving/enhancing public access
6. Procedures for dune protection & enhancement
7. Criteria for voluntary acquisition of property seaward of building setback line

If a local government chooses to establish a setback line (#1 above) the reference point for the setback line may be any one of the following:

- The line of vegetation (LOV);
- Mean Low Tide;
- Mean High Tide; or
- The line depicted in a coastal boundary survey approved and filed as provided in Texas Natural Resources Code, §33.136.

The building set-back line may not be located further landward than the Dune Protection Line (DPL). The building setback line must protect as much of the critical dune area as practicable.

Another example of guidelines found in the rules is the Procedures for Dune Protection & Enhancement (6) which call for:

- Proposals for height, width & percent of vegetative cover of front row dunes to protect property
- Identification & listing of specific dune restoration locations for gaps & blowouts
- Proposals for dune revegetation projects
- Identification of enhanced dune protection measures for existing structures, protecting the landward side of fore-dune ridge.
- Identification of goals, implementation schedules, available funding to accomplish above

In developing their ERP, the local governments are required to use the information in the

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Local Coastal Erosion Response Plans (Cont'd)

Coastwide Erosion Response Plan completed by the GLO and the historical erosion rates contained in the latest update of that plan when developing the local plans (<http://www.glo.texas.gov/what-we-do/caring-for-the-coast/documents/coastal-erosion/response-plans/coastwide-erosion-response-plan.pdf>). When completed, the local ERPs are to be submitted to the GLO for review and certification as consistent with state law. If local ERP includes variance from the seven elements contained in the GLO rules, then the local government must demonstrate that variances will reduce public expenditures due to erosion/storm damage. After the GLO's approval, the plans will be posted in the Texas Register for public comment and then formally adopted by rule and incorporated in the local dune protection and beach access plans as an appendix.

To obtain a PDF slide show describing the rules in more detail, contact

Sally Davenport at: sdavenport@coastaltechcorp.com.

Galveston Bay 2011 Children's Art Calendar Winners Celebrated



Webster, TX - Proud students and families, art teachers, and principals gathered at an award ceremony to celebrate the winners of the 2011 Children's Art Calendar on January 27th at Stephen F. Austin Elementary in Baytown. In its past 19 years, Galveston Bay Foundation ("GBF") estimates that this project has reached over 10,000 fifth grade students.

Students who live around the Bay were asked, "What people, plants, or animals can you find in and around Galveston Bay?" or "Who uses Galveston Bay?" Through their knowledge and creativity, they drew pictures to illustrate their answer to one of those questions. The Galveston Bay Children's Art Calendar is made possible by sponsors, NRG Texas and NRG's retail electricity business, Reliant Energy. Reliant Energy's Director of Public Affairs, Gene Fisseler, said, "NRG Energy and Reliant Energy, like Galveston Bay Foundation, demonstrate our commitment to continuously improving the environment by actively helping protect and preserve ecosystems like Galveston Bay. We all depend on the Bay in one way or another, and the environmental art calendar raises the public's awareness and its understanding of this vital ecosystem."



The GBF, NRG and Reliant Energy would like to congratulate the following 2011 Galveston Bay Children's Art Calendar winners: Luis Algarate, Allison Antonini, Sergio Cantu, Victoria Chang, Leona Chen, Savannah Cushman, Ronaldo Lerma Garcia, Daniel Godinez, Geoffrey Hirsch, Elizabeth Koegel, Mia Munn, Sebastian Rodriguez, Hiya Sunjana Sawhney, Kristen Schank, Mary Sullivan, Alex Turman and Carissa Villarreal.

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Back Row L to R: Bob Stokes, President, Galveston Bay Foundation; Della Barbato, Manager of Education Programs, Galveston Bay Foundation; Gene Fisseler, Director of Public Affairs, Reliant Energy. **Middle Row L to R:** Marry Sullivan, Geoffrey Hirsch, Savannah Cushman, Kristen Schank, Hiya Sunjona Sawhney, Victoria Chang. **Bottom Row L to R:** Alex Turman, Carissa Villarreal, Leona Chen, Elizabeth Koegel, Sebastian Rodriguez

Dune-Beach Interactions of Nourished and Un-Nourished Beaches on South Padre Island

Diana C. Del Angel, Harte Research Institute for Gulf of Mexico Studies, Texas A&M University - Corpus Christi.

The shoreline of South Padre Island (SPI), Texas has experienced varying long-term shoreline retreat rates from 2.5-4 m/yr. Erosion is impacting the developed portion of the island as the proximity of buildings to the beach leaves these structures vulnerable to damage from storm surge. The narrow beaches also allow less space for public use. Every two years approximately 200,000 cubic meters of sand are used to nourish sections of SPI beaches as a way to alleviate erosion. Nourishment contributes to the sediment budget of the beach, which in turn may increase the rate of foredune accretion. The goal of this research is to assess the cumulative impact of beach nourishment on the beach-dune system. This will be accomplished by developing a sediment budget model for the beach and dune environments for the time period from 2000 to 2009.

SPI is a low-profile transgressive barrier, and like other barriers on the Texas coast, it is storm dominated. This area of South Texas is located in a semiarid-subtropical climatic region, where the rate of evaporation exceeds precipitation. This is of major importance because the regional climate controls soil moisture and vegetation cover and therefore dune stability. My study consists of the southern 30 km of SPI, where approximately the southernmost 10 km are developed. Predominant winds during the study period were from the southeast with an average speed of $5.3 \text{ m}\cdot\text{s}^{-1}$. The most frequent wave direction is also from the southeast, and significant wave heights are 1.49 m with mean-peak wave period of 6.8 seconds (Kraus et al. 1996). Gross littoral drift is estimated to be $270,000 \text{ m}^3/\text{yr}$, and the net drift is to the north at a rate of approximately $92,000 \text{ m}^3/\text{yr}$ (Heilman et al. 2006).

Major steps taken in calculating the sediment budget follow Rosati (2005) and include (1) creating a conceptual budget, (2) delineating the sediment budget cells, (3) estimation of volume changes, and (4) estimation of sediment fluxes. Sediment budget cells were created by dividing the study area into 30, 500-m wide sections. Each of these sections was further divided into a beach cell and a dune cell (see Figure 1). Dividing the study area in to 500-meter-alongshore sections achieves a detailed pattern of beach and dune accretion and erosion while cancelling noise. The beach seaward boundary is the Mean Higher High Water (MHHW) line and its landward boundary is the “potential” vegetation line (PVL). The dune seaward boundary is the PVL and the landward boundary is a manually digitized line (see Figure 1). The seaward boundary of the foredune complex, or the PVL, is mapped as a contour line 1.2 m above local mean sea level. Gibeaut and Caudle (2009) determined that 1.2 m above MSL is the lowest elevation that foredune vegetation may form a continuous cover. This elevation was derived from statistical analysis of long-term beach profile elevation data of natural dunes along the Texas coast. Tidal datum values used in this study were obtained from NOAA Tides and Currents Web-site (<http://tidesandcurrents.noaa.gov>) for station #8779750.

Volume calculations using Digital Elevation Modles (DEM) derived from topographic lidar data will be performed on all defined beach and dune cells and estimates of volume change between years 2000-2005, 2005-2009 and 2000-2009 will be made. The first step is to assess and remove any systematic elevation error by calculating the elevation difference of

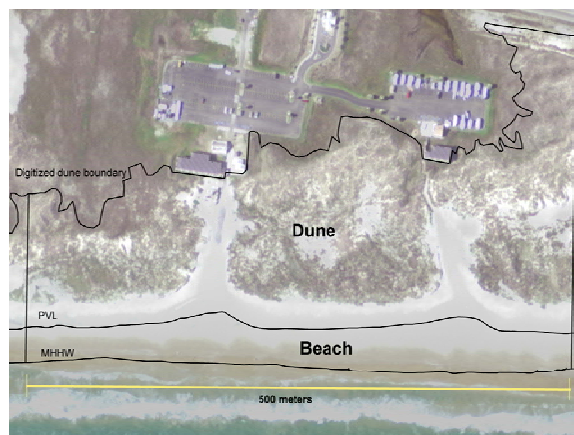


Figure 1. Beach and dune sediment budget cell boundaries

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Dune-Beach Interactions (Cont'd)

unambiguous, stable surfaces and then applying the mean difference to the entire Digital Elevation Model (DEM). After the correction is applied, a raster representing elevation differences (e.g. DEM₂₀₀₀-DEM₂₀₀₅) is calculated in ArcGIS. Lastly, volume change is extracted from this raster and normalized for each cell by dividing by the area of the cell, the resulting values are expressed in m³/m² (see Figure 2). To analyze results, individual cells were identified as either developed or non-developed and either nourished or not nourished. Beach and dune cells were considered as nourished if sand had been placed during the time period of 2000-2005.

The results show that most dune cells have a greater volume per unit area in 2005 as compared to the year 2000. Dunes along developed beaches on average gained more sand per unit area (0.32 m³/m²) than non-developed beaches (0.13 m³/m²). Dunes that occur in areas that were nourished during the time period of 2000-2005 have the greatest average of dune volume gain than all other groups (see Figure 3) with an average almost double (0.48 m³/m²) of non-nourished, developed beaches (0.25 m³/m²). Unlike dunes, most beach cells experienced a loss in volume (average = -0.19 m³/m²), with the exception of nourished beaches (0.22 m³/m²) and those adjacent to nourished beaches. Beach volume losses were observed on all non-developed beaches and averaged -0.33 m³/m², the highest value being -0.60 m³/m².

Although changes in beach and dune volumes might not be the same in sign (positive or negative) and magnitude, there is interaction between these subenvironments. The results show a clear difference between nourished and non-nourished areas, but there are many factors that affect foredune volume

change rates including beach and foredune width, height, topography, and vegetation cover. Overall beach and dune morphology is the result of various metrological and hydrodynamic processes that occur at a variety of spatial and temporal scales, and the effects of beach nourishment will be overlaid on all these natural variations. Lastly, beach management practices, such as beach scraping, dune restoration and sand fencing, have a major effect on the dune volume differences.

These initial results show that beach nourishment has had a positive effect on foredunes. Wider beaches created by the nourishment provide more protection to the dunes against

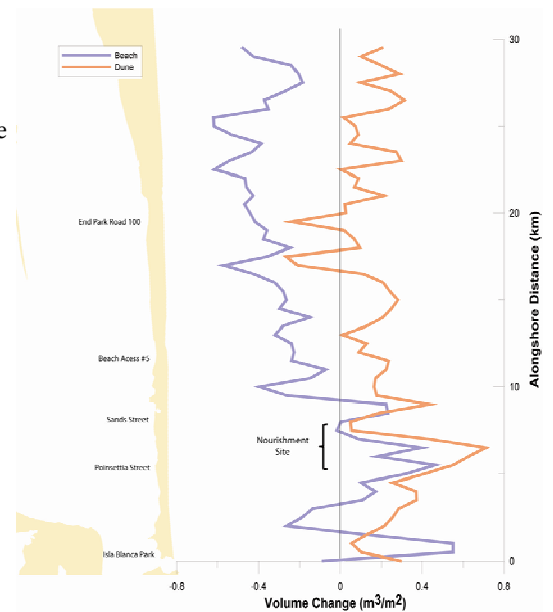
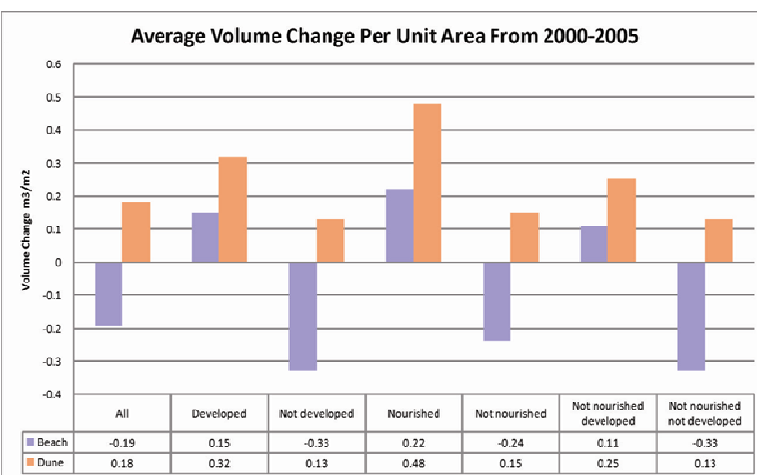


Figure 2. Longshore Variation in Beach and Dune Volume.



wave erosion and provide more dry sand for dune building. The next step in this study is to estimate the wind sediment transport rates for the study area using measured wind velocity data and to establish a relationship between foredune accretion and other beach and dune features such as beach width, height, topography and vegetation cover. Overall, this study will provide a better understanding of beach/dune systems and of the cumulative impact of beach nourishment on foredune growth along SPI.

Children's Art Calendar Winner's (Cont'd)

About Galveston Bay Foundation

The mission of the Galveston Bay Foundation is to preserve, protect, and enhance the natural resources of the Galveston Bay estuarine system and its tributaries for present users and for posterity. The Foundation was incorporated in 1987, and is a non-profit organization under Section 501 (c)(3) of the Internal Revenue Code. GBF is located at 17330 Highway 3 in Webster, Texas. For further information contact GBF at 281-332-3381 or visit the website at www.galvbay.org.



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Reliant Energy provides electricity and energy services to more than 1.5 million retail customers—including homes, small and large businesses, manufacturing facilities, government entities and institutions across Texas. As part of NRG Energy (NYSE: NRG), Reliant Energy is backed by one of the nation's largest power producers. NRG owns and operates nearly 26,000 megawatts of generation capacity, including more than 11,000 megawatts of capacity in Texas. For more information about Reliant Energy products and services, visit www.reliant.com.

TPWD Crabbing Closures

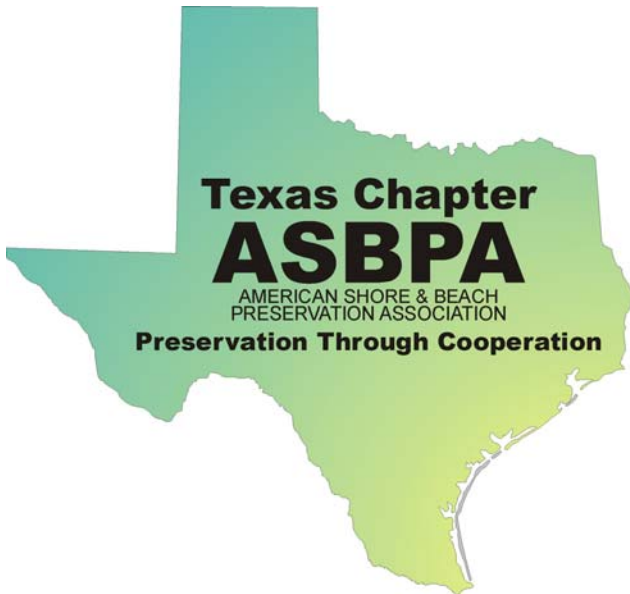
Coastal and Marine Resource News
Rhonda Cummins, Coastal & Marine Resource Agent
Texas Sea Grant Extension Program

TPWD crabbing closure will be February 18th-27th. VOLUNTEERS NEEDED! Drop off sites in all bay systems along the Texas coast.

Contact your local TPWD Coastal Fisheries Office for more information. For San Antonio Bay, contact Norman Boyd at 361-983-4425 and the Matagorda Bay contact is Leslie Hartman at 361-972-6253.

Upcoming Events, 2011

- National Conference on Beach Preservation Technology: February 9 — 11. Jacksonville, FL.
- **TSBPA: Wednesday, March 16, 2011. Austin, TX.**
- ASBPA 2011 Coastal Summit: March 1 — 3. Washington, D.C.
- Adopt-a-Beach Spring Clean Up: April 30. More information at: www.glo.state.tx.us/adopt-a-beach/
- Coastal Sediments 2011: May 2 — 6. Miami, FL.
- Solutions to Coastal Disasters: June 25 — 29. 2011. Anchorage, AK.
- Coastal Zone 2011: July 17 — 21. Chicago, IL.
- Conference on Coastal Engineering Practice: Aug. 21 — 24, 2011. San Diego, CA.
- Adopt-a-Beach Fall Clean Up: September 24. More information at: www.glo.state.tx.us/adopt-a-beach/



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The American Shore & Beach Preservation Association recognizes that the shores, beaches and other coastal resources of America provide important quality-of-life assets within the reach of the largest possible number of people in accordance with the ideals of a democratic nation. This Association is dedicated to preserving, protecting and enhancing the beaches, shores and other coastal resources of America.

The Texas Chapter of ASBPA is dedicated to fulfilling this mission in the State of Texas. We are a member based advocacy organization. For more information on becoming a member, becoming a corporate sponsor, or becoming more active with the organization, please contact Jerry Mohn at the address to the left.

Please remember to visit our website at www.texasasbpa.org for more frequent updates on coastal happenings and the Texas Chapter of ASBPA. If you have information to submit for the website or newsletter please contact Jerry Mohn.

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