



# The Strand Line

## Message from our President

One of the largest coastal conferences will be held in Galveston from October 22 to October 24 at the Galveston Island Convention Center located on the Seawall and the Texas Chapter is very pleased to participate in this great event. It is a joint effort by the ASBPA and GLO with the theme: "Caring for the Coast, Protecting, Enhancing, and Preserving". There are more than 100 speakers who will talk about various coastal issues, new technology, exhibits, learning about shoreline restoration projects, and networking with other organizations and associations to see their types of program to combat erosion. It's a must see event and we hope you will be able to attend and learn all the fascinating information that will be available.

After the conference finishes on October 24 at noon, the Texas Chapter plans a quarterly meeting at the Convention Center. There will be reports from the Technical, Communications, Membership, and Legislative Committees as well as a report from the GLO on CEPRA, CIAP,

and CMP funding programs for coastal erosion projects.

A topic the Texas Chapter plans to pursue at this meeting is refuse on the beach, which comes in two forms - seaweed and trash. Texas coastal communities spend millions of dollars every year cleaning the beaches and we need a unified effort to bring the costs down and to seek funding help from Austin.

Seaweed is washed onto our beaches in the spring and finishes mid summer. If seaweed is not harvested properly, our beaches could be damaged. There are new methods to remove the seaweed without massive loss of sand and minimal effect to the beach profile.

Trash is a major problem. Many of us are surprised in how the public leaves trash on the beach daily. We are delighted with the GLO's "Adopt a Beach" program twice a year that is very effective and moves tons of trash off the beach. It's the remaining 50 weekends that the coastal communities need to address in

an effective method to have the assistance of the public to keep the beaches clean and to dispose of trash in a receptacle. The Texas Chapter will work with the coastal communities to develop a program that engages the public to be more cognizant of litter and debris on the beach. The end result is when the public leaves the beach, they leave only their footprints.

Since the entire State of Texas uses the beaches, we need funding from Austin to educate the public on the eyesore and problems with trash. We also need the help of the Texas Department of Transportation to advertise more frequently near the coastal areas "Don't Mess with Texas".

Again Texas coastal communities need to band together through the Texas Chapter as one voice in addressing the erosion and refuse problems of our shorelines. Hope to see you at the ASBPA/GLO conference.

— Jerry Mohn, President of Texas Chapter ASBPA

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### BE HEARD, BE PUBLISHED!

The TXASBPA Newsletter staff challenge our readers to submit articles for publication.

#### GUIDELINES:

- 200 to 500 word articles (pictures welcomed)
- Word format
- Ensure permission to publish is granted.



The ASBPA-GLO  
Fall Coastal Conference  
Oct. 21-24, 2007  
Galveston, Texas

Preserving our coastal economy  
**asbpa**  
and ecology since 1926

Check the ASBPA website for registration and program details at: [www.asbpa.org](http://www.asbpa.org) and [http://www.asbpa.org/conferences/conf\\_fall\\_07.htm](http://www.asbpa.org/conferences/conf_fall_07.htm)

The upcoming ASBPA/GLO joint Fall Conference in Galveston, October 22 – 24, will be one of the largest ever assembled by the ASBPA. Galveston is a very historic city and the conference will be held at the new Galveston Island Convention Center on Seawall Boulevard. We expect 400 to 500 registered attendees. Featured speakers include the Assistant Secretary of the Army for Civil Works, J. Paul Woodley and GLO Commissioner Jerry Patterson. There will be a great field trip on Sunday, October 21 before the conference and a real Texas Barbecue is planned for one evening during the conference.

## SARGASSUM SEAWEED MANAGEMENT ISSUE

The Coastal Bend Bays Foundation sponsored a discussion on Beach Cleaning and Sargassum Seaweed Management October 8<sup>th</sup> at its monthly Coastal Issues Forum. The forum was free to the public and was attended by representatives from the City of Corpus Christi, the City of Port Aransas and Nueces County. Five experts from different fields related to Sargassum Seaweed and beach maintenance made presentations.

Tom Shirley of the Harte Research Institute for Gulf of Mexico Studies presented an ecological overview of Sargassum. He alluded to future work on monitoring Sargassum through remote sensing and a potential method for predicting periods of high seaweed accumulation rates on beaches. Rob Conti of the TGLO discussed current beach maintenance activities and some potential methods of clearing the beach. He summarized some of the current regulations for beach maintenance and during the question session indicated that the current regulations were being reviewed

to account for new methods for maintaining beaches and new scientific knowledge gained. Richard Watson presented his opinions on the issues with Sargassum, and the impacts on beach morphology as a direct result of the removal procedures.

Tony Amos of The University of Texas Marine Science Institute presented his research from the past 30 years on Sargassum accumulation rates on Texas beaches and impacts Sargassum has on intertidal wildlife. His research indicated that there is not an increasing trend of Sargassum accumulation on the beaches; only that over the period of his research there are extreme years. Joe Fox, Professor of Mariculture at Texas A&M Corpus Christi, rounded out the group speaking on a potential alternative use for Sargassum as a method to enhance the flavor of fish.

New devices are being developed and touted as the solution to removing Sargassum from the beach without remov-

ing the sand. Vendors of two of these devices had table top displays at the Forum. One important topic not presented at the Forum was how we analyze these new devices and obtain regulatory buy-in after the environmental impact of new methods has been ascertained.

Ultimately, cleaning beaches in Texas has always been a controversial topic fueled by tourism dollars and concern for continuing shoreline erosion and potential negative environmental impact associated with beach maintenance. Given that clean sandy beaches clear of trash, debris and seaweed are critical to the economies of many coastal cities in Texas, it seems obvious that beaches in areas with significant tourism will continue to be maintained. This Forum served to educate the public about the value of Sargassum, and the expense and risk of clearing the Sargassum from the beach.

- Rob Thomas

## NATURE PRESERVE SHORELINE PROTECTION: PIPER CHANNEL SEGMENT PORT ARANSAS, TEXAS

### INTRODUCTION

Piper Channel is a navigation channel used by pleasure craft that connects the Island Moorings Marina in Port Aransas, Texas to the Corpus Christi Ship Channel (CCSC) along Mustang Island. The Piper Channel entrance has had significant erosion and sedimentation problems since early 1990's. In 1995 geotextile tube jetties were constructed 800 feet apart with lengths of approximately 700 feet out from the shoreline toward the CCSC to prevent sedimentation of the entrance. However, these jetties

*(Continued on page 3)*



deteriorated over a short period of time and sedimentation continued to be problem. Several other attempts to minimize maintenance dredging were undertaken by the channel managers (Airport & Channel Corporation) during the past several decades including placing composite sheetpile wall along one side of the entrance channel. However, none of these efforts have been successful at reducing sedimentation of the Piper Channel entrance.

## ANALYSIS

A comprehensive study was undertaken by the Texas General Land Office in cooperation with the channel managers to develop an effective solution to minimize erosion and siltation of the entrance channel and adjacent shorelines. The detailed analysis showed that the major cause of erosion and sedimentation of the channel was vessel-induced pressure fields and associated currents. These current velocities can reach speeds of 4 m/sec (13 ft/sec) and higher, which cause significant movement of sediment along the shoreline and into the channel.

Numerical modeling of vessel-induced current velocities and their effect on channel sedimentation and adjacent shoreline erosion were conducted with an advanced computer model, Vessel Hydrodynamics Longwave Unsteady (VH-LU), Fenical et al. (2006). The VH-LU model simulates water level and velocity fluctuations surrounding moving vessels using a finite-volume approach to solving the nonlinear shallow water wave equations in the time domain, using detailed vessel hull shapes as input.

The modeling demonstrated that sediment was entering the channel through various mechanisms and sources during the passage of a deep draft vessel. Also, modeling showed effect of long period waves on stability of shoreline and adjacent bottom slopes.

## SOLUTION

Based on the modeling results a new solution to reduce sedimentation and minimize shoreline erosion was developed. This solution included two oblique (flared) jetties that have a distance of 53 meters (174 feet) between the tips and 206 meters (675 feet) of separation at their connection to the shoreline. The flared design utilizes the drawdown effect of the passing deep draft vessels to develop high velocities and increase the depth between the jetties. The flared design also reduces the amount of wave energy entering the channel that would erode the banks of the surrounding Port Aransas Nature Preserve.

## CONSTRUCTION

Preliminary and final design of the jetties was completed by the Texas General Land Office in August 2006. Construction of the project began in February of 2007 and was completed in October 2007. Due to the environmental conditions and unique flared design, the jetty was designed with multiple components. The jetty included a rock revetment component that tied into the existing bluff or revetment that protects the Port Aransas Nature Preserve. The revetments merged together to form a rock jetty that included an impermeable composite sheetpile core. The rock jetty extended waterward and connected to a steel sheetpile wall. The steel sheetpile wall was attached to a supporting wailer and battered piles for additional strength. The terminal end of the jetties was composed of a combi-wall component with 30" king piles.

- Matt Campbell

## REFERENCES

Fenical S., Kolomiets P., Kivva S. & Zheleznyak, M., 2006. Numerical Modeling of Passing Vessel Impacts on Berthed Vessels and Shoreline. Proc. ICCE 2006, San Diego, CA.



# TEXASASBPA

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Preserving and Enhancing the  
Texas Coast

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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](http://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.*

Corporate Sponsorship costs \$500 and provides for recognition on Chapter website and all publications & events.

## Java Applets for Coastal Engineering

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A fun and exciting way to pass the day is with Dalrymple's Coastal Engineering Page of Java programs. This page allows the user different graphical interfaces to check wave height and length, check depth of closure, and calculate beach fill.

<http://www.coastal.udel.edu/faculty/rad/>

## Upcoming and Current Events

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### October 2007

- Oct. 22-24, 2007: ASBPA's 2007 Fall Conference. San Luis Resort & Spa, Galveston, TX. Go to [www.asbpa.org](http://www.asbpa.org) for details.

### November 2007

- Thanksgiving

### December 2007

- Advanced SMS training course December 4-7, 2007 in Orem, Utah

## COASTAL LIST—AN EMAIL FORUM

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Coastal\_list is a moderated email list for coastal engineers. It was established on September 28, 1995 by Robert Dalrymple of the Center for Applied Coastal Research at the University of Delaware.

The purpose of the list is to provide the over 1700 enrolled coastal engineers/scientists a means to communicate with each other so that items of interest for the community will be disseminated broadly. These items might include job announcements, conference calls-for-papers, new findings and calls for action by the group.

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