

## A New Take on Sargassum

*Sargassum*, a specific specie of seaweed, found on SPI have berrylike gas-filled bladders which help keep the fronds afloat to promote photosynthesis. The thick masses of *Sargassum* provide an environment for a distinctive and specialized group of marine animals and plants, many of which are not found elsewhere.

If you have visited our City in the past, you know that the beaches were typically raked or groomed on a regular basis in an effort to remove any natural debris such as seaweed. (Beach raking is the mechanized removal of seaweed and other natural materials from the beach.) Seaweed on the beach is often viewed as aesthetically unappealing. While superficially appearing to be a nuisance, if we let nature take its course, *Sargassum*, plays a number of critical roles in the beach and dune system:

- Beaches return to natural cycles.
- Abates beach erosion by trapping and keeping sand in place.
- Allows dunes to revegetate and strengthen by adding nutrients to the system used by dune vegetation.

With this knowledge, the City will strive to rake the beaches only when there is a significant amount of seaweed on the beach. Any seaweed that is removed will be placed strategically at the toe of the dunes and possibly be relocated at a later time to assist with dune restoration. The City will make every effort to remove any and all non-natural material from the seaweed deposits.

## How You Can Help

Starting in 2008, the City of SPI, South Texas Surfrider Foundation, and University of Texas Brownsville (UTB) began a Dune Vegetation Harvest event following Hurricane Dolly. At the first event, debris was cleared and volunteers harvested natural dune vegetation to be taken to the UTB greenhouse to be propagated for what would become the first dune planting that year. In 2009 and early 2010 we were able to plant a few thousand plants before the program grew. In late 2010 the City developed a more aggressive dune planting schedule with the goal of 8,000 to 10,000 plants per event. Since the first event of the year in December 2010 approximately 48,000 native plants were used to vegetate 85,000 square feet of critical dune habitat. The City will continue to develop a plant schedule. Please check our website for dates and information.

## Innovative Solution

South Padre Island is currently working with the Texas General Land Office as well as professional coastal engineering firms in researching long-term solutions to the beach erosion problem.

A large offshore sand source has been identified 20 miles offshore. This sand source will be used if the City ever needs to rebuild the beach after a major storm. Permitting necessary to complete this project is completed.

The City of South Padre Island has adopted new beach and dune maintenance programs aimed at finding a balance between a natural and maintained beach.



## Beach Maintenance Procedures

South Padre Island is committed to preserving and restoring the local beaches to maintain our quality of life and sustain the local tourism-based economy. Through the years it has received many accolades as being one of the most desirable coastal communities in the nation.

The City has recently received the honor of being designated the "the most accessible beach in Texas" by Texas General Land Office Commissioner Jerry Patterson.

The American Shore and Beach Preservation Association (ASBPA) named South Padre Island one of America's Best Restored Beaches of 2009 for the second time since 2005.

The City works extremely hard to protect and maintain our beach to ensure that our citizens and visitors can continue to have memorable and enjoyable experiences.

### *Preserving & Maintaining our Beach*

Grooming of the beach is basically an accommodation for uninformed beachgoers. This is perhaps understandable when an unusual amount of seaweed washes up from a storm, or if there is a large fish kill that could become a public health hazard, but a beach needs to be allowed to undergo its natural life cycle. The beach ecosystem, whether it is birds, small crustaceans, or microscopic organisms, depend on the nutrient-rich environment created by decomposed seaweed. It isn't trash. It is part of the circle of life.

In the past, the beach was raked as a means of keeping it smooth and comparatively soft to walk on and free of debris. Beach raking, which is the mechanized removal of seaweed and other natural materials from the beach, reduces the integrity of the sand root mat just below the surface that is important in slowing beach erosion.

By removing seaweed, beach erosion is stimulated. Raking has the effect of aerating the sand, causing it to dry out more quickly. The fine, dry sands are then prone to erosion, even under moderate breeze conditions. It only takes 12 mph winds to pick up and move a grain of sand. The Island typically experiences winds in excess of 12mph on a daily basis. If left unraked, the normally damp beach would provide some natural cohesion, making the beach more resistant to erosion.

Beaches and dunes are integral parts of a dynamic environment controlled by waves, tides, currents, and wind. Throughout the year, seaweed is deposited on the beach, with heavier deposits typically in the early spring. The layers of seaweed deposited provide additional surface area to trap sand on the beach face rather than allowing it to wash back to the sea.

The seaweed serves as a matrix or matting interspersed with the sand to help the beach resist erosion.

Beach raking removes driftwood, seaweed, and other debris used by organisms for shelter, especially seabirds, and may disrupt nutrient cycles and remove prey organisms from areas where wildlife forages on the beach. Other methods of beach cleaning, including but are not limited to smoothing with a blade, hand raking, burying debris under the surface of the beach all are likely to result in similar detrimental effects. Beach raking to close to the dune can destroy new seedlings establishing at the leading edge of the dune.

For these reasons, the Shoreline Task Force (SLTF) and City Council have supported that the City of South Padre Island develop guidelines for the removal of seaweed deposits and trash on the City beaches.

### *Raking Guidelines*

- **Raking should take place only when there is a significant amount of natural matter to rake.**
- **In order to promote growth of a continuous dune, no raking should be conducted west of the line of vegetation (LOV).**
- **The accumulation of seaweed at the toe of the dune does not need to be raked and should be left in place to encourage the eastward migration of the LOV and protect growing dunes.**
- **Large quantities of seaweed should be raked and placed strategically in gap locations to help build dunes.**

- **Litter should be hand-picked along the beach particularly from the seaweed line to the fore dune and disposed of properly.**

### *FREQUENTLY ASKED QUESTIONS*

#### **Q. Who can make the decision of when to rake the beach?**

- Mayor
- City Manager
- Coastal Resources Manager

#### **Q. What is a significant amount of seaweed?**

- If the accumulation of seaweed impedes the public's access to the water it should be removed

#### **Q. What factors are considered by the Coastal Resources Manager when deciding to rake?**

- Is there a significant amount of seaweed?
- Is there a public health hazard?
- Weather (Current and forecasted)
- Tide (Predicted height and time)

#### **Q. Does the City still clean the beach?**

The City recognizes that the beach is our most important asset and we take great pride in keeping our beaches clean. The City always removes all non-natural debris from the beach. The City's Public Works Department's first priority in the morning is to empty all trash barrels and remove all non-natural debris from the beach. For the rest of the day there are three dedicated positions for beach maintenance.