

N330.6
AR67
3:3

AROUND

THE BEND

News of the
Coastal Bend's Bays and Estuaries

Vol. 3, No. 3 - Summer 1997



Government Publications
Texas State Documents

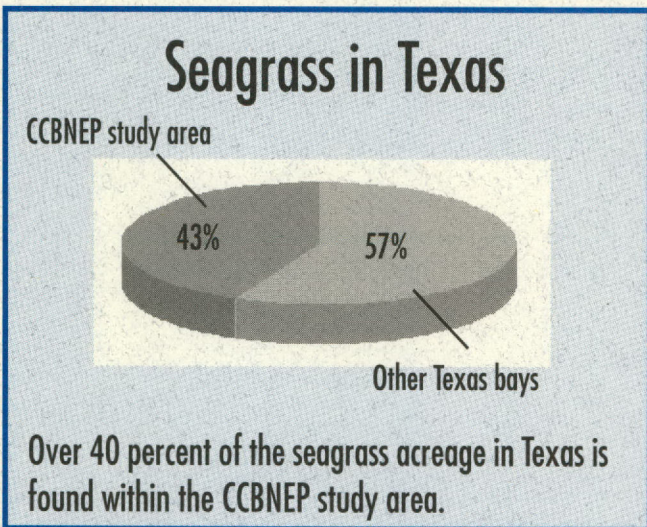
SEP 22 1997

Depository
Dallas Public Library

Seagrasses - A Forest Beneath the Waves

"Seagrass beds are the cornerstone of a healthy bay system",
Dr. Kenneth Dunton, University of Texas Marine Science Institute.

Seagrasses form some of the most biologically productive submerged habitats in the CCBNEP study area. They perform a vital function in the physical and biological relationships between plants and animals in our bays and estuaries. Fish, waterfowl, and other wildlife depend directly on healthy seagrass meadows for food. The tiny plants and animals living on and around seagrass communities provide a rich source of food for larger animals. As



nursery areas, seagrass meadows also provide protection from predators for juvenile fish, shrimp, crab, and other animals.

Seagrass Characteristics

Seagrasses are unique plants, adapted to live entirely beneath the water surface. Even so, they share many characteristics with their terrestrial cousins - grasses and flowers. For example, they are plants and utilize nutrients in the soil and sunlight for growth; they flower and reproduce sexually, and; they modify the physical, biological, and chemical environment of their surroundings.

Over the past two decades, awareness and understanding of the role seagrasses play in the estuarine ecosystem has increased dramatically. Seagrass communi-

ties perform the following important functions:

- * Serve as food source for game fish, migratory waterfowl, and sea turtles;
- * Provide a nursery area for fish, crabs, and shrimp;
- * Serve as a major contributor of organic material for nutrient recycling in estuarine waters;
- * Stabilize sediment and reduce erosion by establishing root systems; and
- * Improve water quality through sediment trapping and uptake of toxic substances.

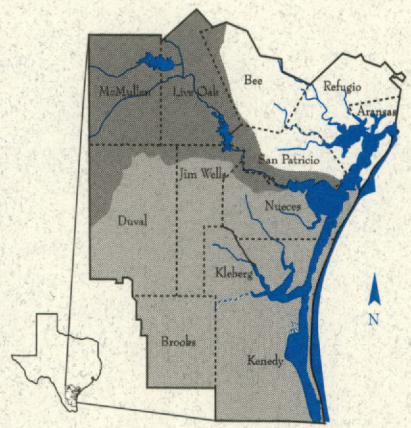
ON THE INSIDE

Seagrasses of the Coastal Bend
Page 2

Keep Seagrass Out of Your
Propwash Page 3

Red Tide - Unwelcome Visitor to
the Coastal Bend Page 4

Neighborhood News - Aransas Pass
'ASAP' Page 5



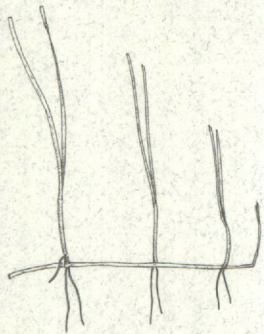
Corpus Christi Bay National Estuary Program Study Area

'Seagrasses' next page



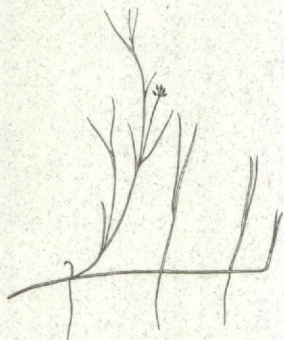
Seagrasses of the Coastal Bend

'Seagrasses' from page 1



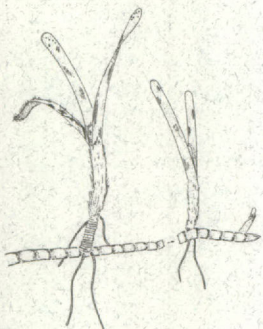
SHOALGRASS (*HALODULE WRIGHTII*)

- Dominant species in upper Laguna Madre
- Primary food source for redhead ducks
- An early colonizer species of impacted areas



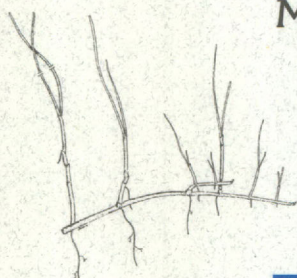
WIDGEON GRASS (*RUPPIA MARITIMA*)

- Found interspersed in shoalgrass beds
- Provides a major food source for migratory waterfowl
- Has a wide tolerance of salinities



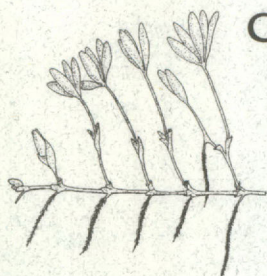
TURTLE GRASS (*THALASSIA TESTUDINUM*)

- Colonizes deeper waters of high salinities
- Grazed upon by the endangered green sea turtle
- Climax species indicative of low impact areas



MANATEE GRASS (*SYRINGODIUM FILIFORME*)

- Occurs in deep waters
- Grazed upon by sea turtles
- Climax species



CLOVER GRASS (*HALOPHILA ENGELMANNI*)

- Occurs in higher salinity waters
- Found interspersed in Shoalgrass and Manatee Grass beds
- Invader species

It is these functions that make seagrasses so valuable to the estuarine ecosystems of the Coastal Bend.

Seagrass Health

There are many factors that influence seagrass health. Warren Pulich with the Texas Parks and Wildlife Department (TPWD) Resource Protection Division, has just completed a study of seagrass beds in the CCBNEP study area. The CCBNEP study examines historical changes and the factors influencing these changes. The project combines photo-imagery and GIS analysis to map and analyze seagrasses during the last four decades. Photo sets used for the project were taken in 1958, 1975, and 1994. The report is now in press and will be available by late summer.

Overall, seagrass bed acreage in the Coastal Bend appears fairly stable since 1958, despite dynamic cycles and localized changes. However, some areas exhibit stress from both natural and human induced factors. Study results indicate that from 1958 to 1994:

'Seagrasses' next page

Around the Bend is produced quarterly by the Corpus Christi Bay National Estuary Program with funding from the U.S. Environmental Protection Agency and the Texas Natural Resource Conservation Commission. For more information about the Program, call 512/980-3420.

Contributors to this issue include Sandra Alvarado, Doug Baker, John Lowman, and Laura Radde. Illustration credit: Dinah Bowman. Photo credit: Ken Rice and 'Aransas Pass Progress'.

News items, photographs, and letters are welcome and may be submitted to the CCBNEP office, Natural Resources Center, Suite 3300, TAMU-CC, 6300 Ocean Drive, Corpus Christi, Texas 78412. The submission deadline for the next newsletter is August 10, 1997.

Printed on recycled paper.

This project has been funded in part by the United States Environmental Protection Agency (EPA) under assistance agreement #CE-996363-01 to the Texas Natural Resource Conservation Commission (TNRCC). The contents of this document do not necessarily represent the views of the EPA or the TNRCC. The mention of trade name or commercial products does not in any way constitute an endorsement or recommendation for use.



* Redfish Bay and Harbor Island areas show a net increase of 815 acres of seagrasses, however there has been a 26 percent loss in continuous coverage due mainly to propeller scaring and water quality degradation;

* Seagrass beds in Nueces and Corpus Christi Bays show an increase of approximately 1482 acres;

* Since 1990, seagrass losses due to brown tide exceed 2,300 acres in the upper Laguna Madre;

* Impacts from dredging activities were most extensive from 1958 to 1975, primarily related to the construction of the Gulf Intracoastal Waterway and the resulting placement of dredged material directly on seagrass beds.

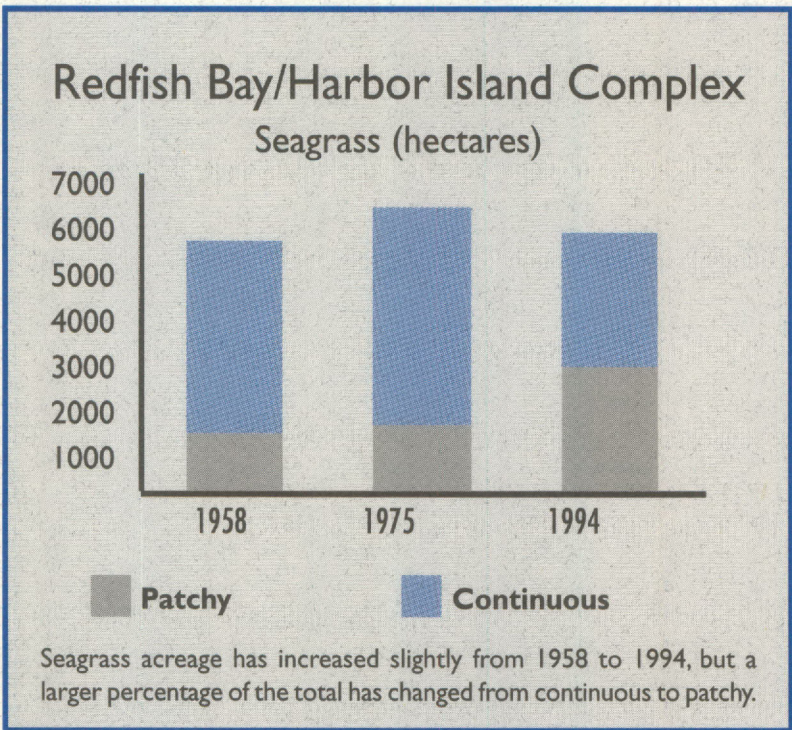
Seagrasses are usually found along the fringing protected margins of the coast where most human activity occurs and are therefore, vulnerable to human impacts. The CCBNEP study documents major environmental stressors, such as climatic events, freshwater inflow, channelization, light attenuation, and water quality, and their relationships to seagrass change in the study area.

Five native species of seagrasses can be found in the study area (see page 2). Natural and human-induced impacts may alter species composition as well as distribution. This presents resource managers with the difficult task of interpreting simple loss/gain data. Management plans for seagrasses must recognize and incorpo-

rate dynamic cycles inherent in these habitats.

Protection for Seagrasses

The CCBNEP is working with resource managers, scientists, and outdoor groups to protect and manage seagrass meadows. First, the **Coastal Bend Bays Plan** includes management actions to protect seagrass habitats. Second, the Program co-sponsored with TPWD and others, the Seagrass Symposium in Corpus Christi last year. The Symposium brought together seagrass experts to develop a state-wide Seagrass Management Plan to protect Texas seagrass habitat. These manage-



ment plans will not set seagrass policy or impose regulations, but will instead provide guidelines for future efforts to maintain and enhance the quality of this valuable resource.



Keep Seagrass Out of Your Propwash

The CCBNEP Seagrass study indicates seagrasses in Redfish Bay have been impacted by boat propellers. Improvements to engine and hull design make it possible for boaters to access increasingly shallow areas, causing damage to fragile seagrass beds.

Albert Green, Director of TPWD Resource Protection Division, suggests that fishermen can play a leading role in protecting seagrass beds. "Seagrasses in the Coastal Bend support some of the best sport fishing in the U.S. As fishing pressures increase, local guides and fishermen are in position to set the standard for boater behavior." The TPWD booklet "Boating and Seagrasses" provides an excellent set of guidelines to reduce the seagrass turned up by boat propellers.

Local Knowledge: Consult local experts and ask about water depth and seagrass beds enroute to your destination.

Tides: Time your trip to take advantage of deeper waters afforded during high tide.

Plan: Survey the approach to your fishing area and utilize channels when possible. Use tide and wind to drift through shallow water back into deeper water.

Take-off: Drift, pole, or use trolling motor to move out of shallow water.

Boat Clearance: Know the limits of your boat's design. Every boat-engine has a water depth requirement for safe operation. Consult manufacturer or service dealer.

If you would like a copy of "Boating and Seagrasses", call TPWD at 512/980-3244



Red Tide - Unwelcome Visitor to the Coastal Bend

Protecting Public Health Remains a CCBNEP Priority

Last Fall, Coastal Bend residents experienced a rare event. In September, a tiny organism called *Gymnodinium breve* - better known as red tide - invaded our bays and estuaries. Carried by winds and tides, these organisms washed in from the Gulf of Mexico, leaving beaches covered with millions of dead fish.

Red tide poses a health risk to humans as well. Consumption of contaminated shellfish can cause neurotoxic shellfish poisoning (NSP) with symptoms such as tingling skin, nausea, vomiting, and some loss of muscle control. Ocean spray blown by sea breezes near red tides can carry toxins and irritants ashore, which can cause respiratory, nose, throat and eye irritation. Severe cases of irritation may produce breathing difficulty and tingling or numbness of the mouth or extremities.

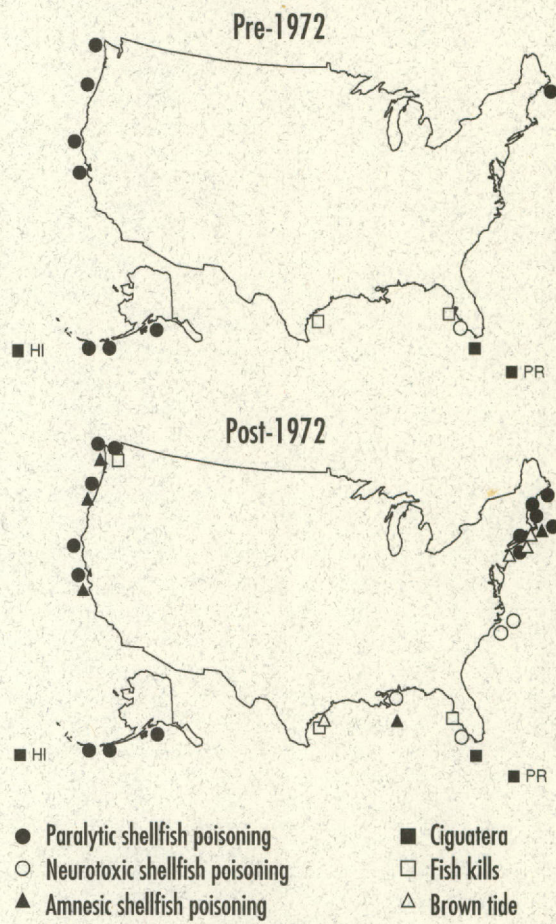
Texas Health Department officials responded quickly to the red tide invasion by conducting extensive water and shellfish tissue tests. As a result, all shellfish (oysters, clams, and mussels) beds in the Coastal Bend were closed by mid-September. But by the end of October, the toxic red tide had disappeared as mysteriously as it had come.

Even as the red tide faded from Coastal Bend bay waters, health risks remained. Filter feeders such as oysters absorb and hold the toxins in their meat. It may take months of detoxification before the oysters are once again fit for consumption. It was not until January 30th, 1997 that all approved shellfish beds in the Coastal Bend were reopened - three months after red tide vanished from our bays

Reducing the public health risk from red tide and consumption of contaminated shellfish is just one of the health issues addressed in the **Coastal Bend Bays Plan**. A task force is developing management actions that focus on reducing human health risks associated with consumption of contaminated seafood and contact recreation. Additionally, the task force is outlining a coordinated monitoring and data sharing strategy to improve communication among public health professionals.

The Public Health task force utilizes several CCBNEP reports to understand the health risks throughout the Coastal Bend. The recently published report, "Investigation of Selected Public Health Issues in the Corpus Christi Bay National Estuary Program Study Area" provides data on many aspects of public health. It contains risks associated with activities such as contact recreation, consumption of seafood, and injuries and accidents.

Although the public health risk posed by red tide occurs infrequently in the Coastal Bend, concerns remain. In other parts of the U.S., harmful algal blooms (HABs) such as the red tide are occurring with greater frequency and wider distribution. It is not clear what causes HABs, but many think they are linked to nutrient loading and watershed development.



Courtesy: DM Anderson, National Harmful Algal Bloom Office



Pictured above are just a few of the more than 12,000 bull red drum that died as a result of the red tide last fall.

Compared to other major estuaries, the Coastal Bend has some of the cleanest waters in the country. Events like red tide may serve to remind residents not to become complacent, especially when it comes to their health. Keeping our bays clean, also helps protect our health.

If you would like more information contact the CCBNEP program office at 512/980-3420.

'Add Sparkle to Aransas Pass' - Working A.S.A.P.

Chamber of Commerce cleanup committee erases graffiti, decreases crime while preserving the natural beauty of North Bay Area

An Aransas Pass Chamber of Commerce program is leading to a cleaner town, a reduction in crime, and a new image for the North Bay Area.

leys as city officials worked with citizens and BFI, Inc. to remove larger household refuse.

Add Sparkle to Aransas Pass (ASAP) was founded in Spring 1996 to help clean up the town — literally. ASAP volunteers painted 80 sites marked with graffiti and picked up trash along local streets and waterways.

The City reopened a brush site to chip limbs and other wood refuse into mulch which is given back to the citizens. Groups like the Aransas Pass Lion's Club, Highland Avenue Christian School and others were recognized for their ongoing efforts.

As a result of all the beautification efforts, new and existing businesses spruced up their exteriors. ASAP, along with the Chamber and the *Aransas Pass Progress* newspaper — recognized these efforts, and a 'new attitude' began to emerge. City crews removed brush and trash from al-

"Our bays, estuaries, natural resources and climate attract thousands of visitors every year, and we welcome them. We want everyone who visits or lives in Aransas Pass to feel good about being here", said Laurie Lowman, coordinator of ASAP.

If taxpayers had footed the bill for all the cleaning these volunteers completed, it would have cost over \$5,000. But donations from home builder Raymond Gallagher and others helped to make the endeavor possible.

No dollar amount can be affixed to the benefits, according to Aransas Pass Police Lieutenant Darrell Jones. "Since the formation of ASAP, all aspects of criminal mischief are down — including graffiti, scratched vehicles, broken windows and other vandalism", Jones said.



Laurie Lowman, left, awards the Aransas Pass Lion's Club for their cleanup efforts. Pictured are (l to r, back row) Lion Don Price, Clayton Roth, Jesse Martinez, (front row) Price's grandson, Lion Deborah Kullman, and Kay Wolf -- Aransas Pass Chamber of Commerce.



Add Sparkle to Aransas Pass Chairman Laurie Lowman and her daughter, Holly, 7, cover graffiti on an Aransas Pass building.

Officials from Ingleside, Port Aransas and Rockport have shown interest in ASAP activities, and ASAP members are happy to be part of any area improvement, Lowman said. Beautification and the preservation of natural assets remains the focus of the committee, but a reduction in crime — along with an increase in community pride — is an added bonus.

"We want to continue making the area better, and we will," she said. "We live in the most beautiful part of Texas — and maybe the United States. We want to keep it that way. It doesn't take a lot of fanfare or a huge environmental movement. It's just citizens helping each other to preserve the natural beauty that was here before we came".

For more information call Laurie Lowman at 512/785-0299



Calendar of Upcoming Events

| | |
|--------------|---|
| August 6 | Local Governments Advisory Committee Meeting |
| August 7 | Scientific and Technical Advisory Committee Meeting |
| August 11 | Citizens Advisory Committee Meeting |
| August 14 | Management Committee Meeting |
| September 3 | Local Governments Advisory Committee Meeting |
| September 4 | Scientific and Technical Advisory Committee Meeting |
| September 8 | Citizens Advisory Committee Meeting |
| September 25 | Joint Policy & Management Committee Meeting |

For More Information Call: 512/980-3420

Video and Slide Show Available

CCBNEP presentation materials are ready to be checked out for use. The unique economic and environmental resources of the Coastal Bend are highlighted in a 13-minute video, "A Question of Legacy". The slide show provides an introduction to the CCBNEP.

Call 512/980-3420 for more information.

Next Newsletter

- ATMOSPHERIC DEPOSITION PROJECT
- *COASTAL BEND BAYS PLAN* UPDATE
- DEMONSTRATION PROJECT - REFUGIO
- A LOOK AT WATER AND SEDIMENT QUALITY
- SPECIES / HABITAT RELATIONAL DATABASE



Printed on Recycled Paper

CCBNEP
Natural Resources Center, Suite 3300
TAMU-CC
6300 Ocean Drive
Corpus Christi, TX 78412

BULK RATE
U.S. POSTAGE
PAID
AUSTIN, TX
PERMIT # 1967