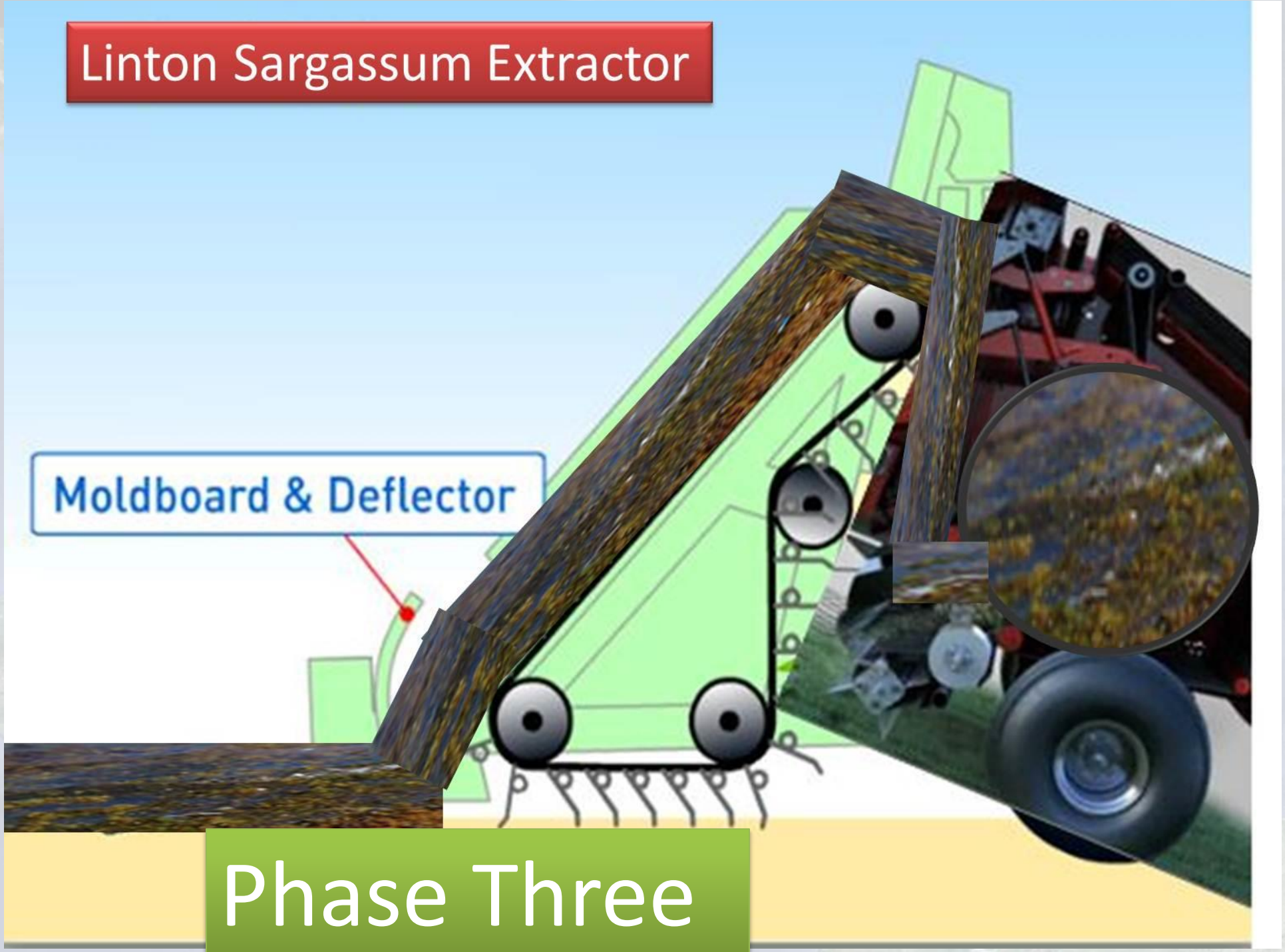
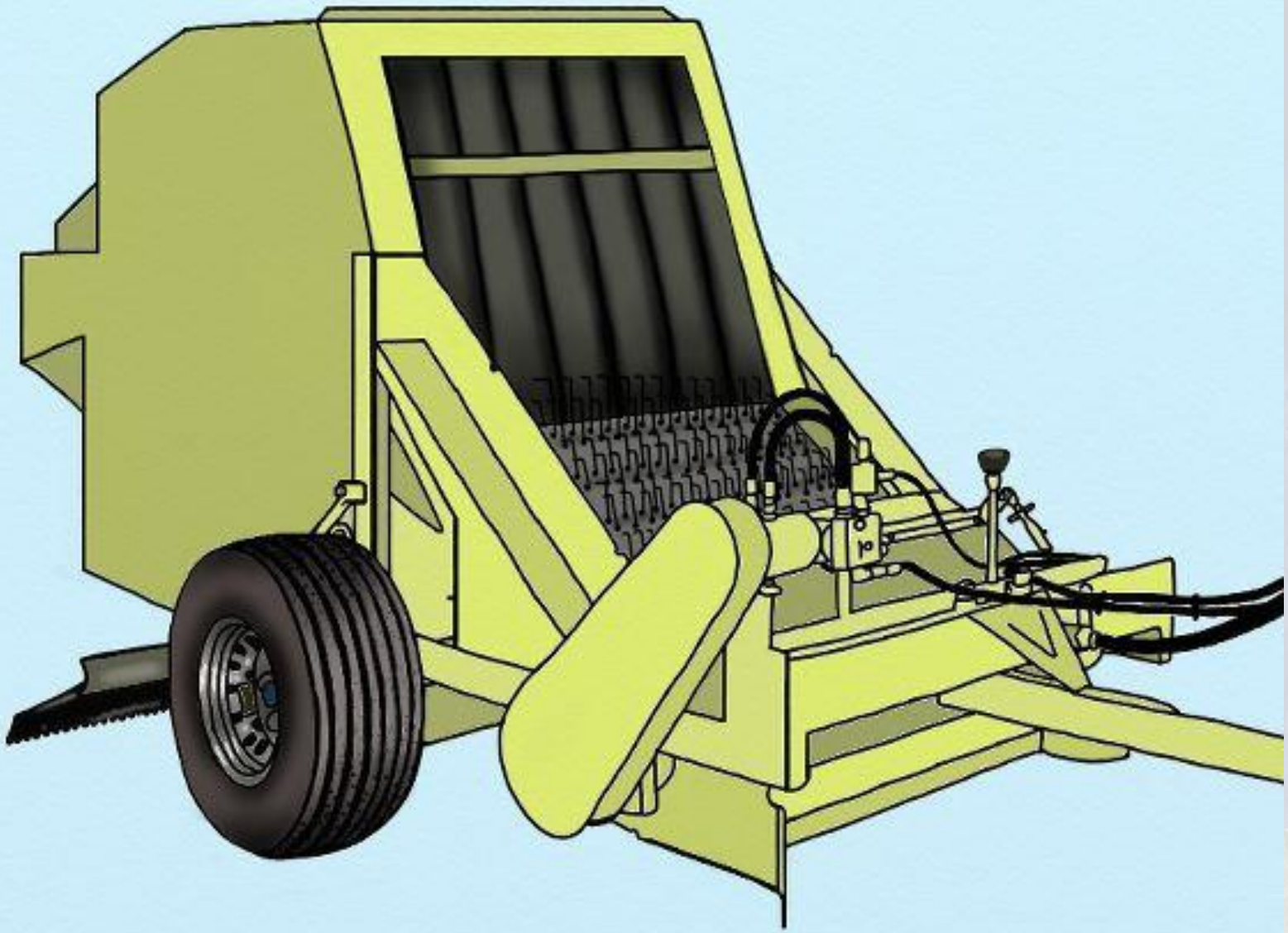
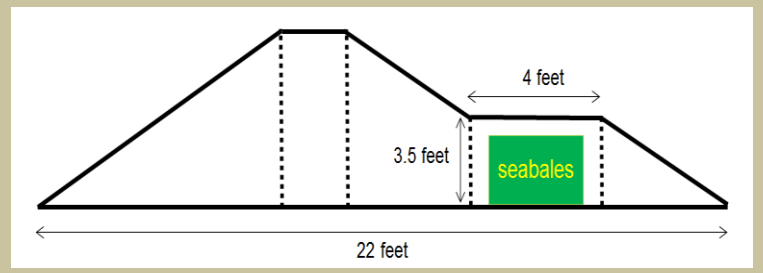
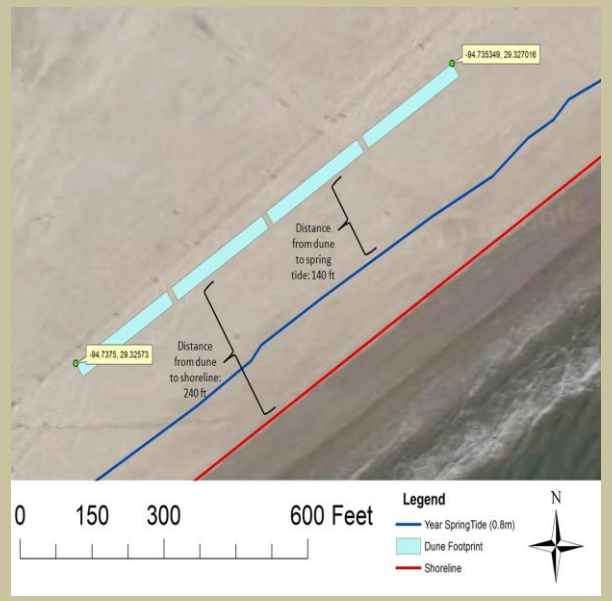
Evans Sand Sifter


Linton Sargassum Extractor
Moldboard & Deflector
Phase Three



ATTENTION: Scientific Study Underway





Top: Dune cross-section

Left: Dune footprint

This dune is part of a new pilot study conducted by researchers from Texas A&M University – Galveston Campus. Portions of this dune are reinforced with a seaweed core made of compacted Sargassum wrack material ("seabales"). We anticipate the compacted seaweed core to improve erosion resistance and spur vegetation growth on the dune. The goal is to retain Sargassum as a natural part of the beach-dune system while at the same time providing unrestricted access to the beach and water. This project is funded by a Texas General Land Office CEPRA grant with generous support from the Galveston Park Board of Trustees.

PLEASE STAY OFF THE DUNE!

For any questions or additional information, please contact:
Dr. Jens Figlus at (409)741-4317 or figlusj@tamug.edu

TEXAS A&M UNIVERSITY GALVESTON CAMPUS

Study Funded by:

TEXAS GENERAL LAND OFFICE

GALVESTON ISLAND Park Board of Trustees

CAUTION: BEWARE OF SNAKES

GALVESTON
SARGASSUM EARLY
ADVISORY SYSTEM

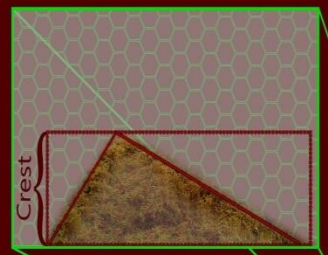
Dimensioning Sargassum Wracks

CITY OF GALVESTON 1839

Equipment:
Device(s) which measure both vertically and horizontally (keeping in mind error propogation due to human interaction).

Basic Beached Wrack Anatomy:
Length (L): Wrack length parallel to the waterline
Width (w): Wrack length perpindicular to the waterline
Crest (z): Maximum wrack "height" normal to the soil/sand

(Fig. 1) Aerial image showing three arbitrary lengths possible for seperate measurements.



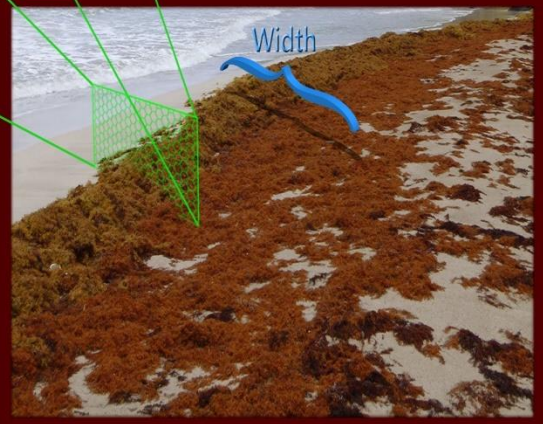
Possible Calculations

Wrack Volume (V_w):
$V_w = 1/2[Lwz]$

Wrack Weight (W_w):
$W_w = \rho V_w$

Constants:
Average Density (ρ): 89.98 kg/m^3 = 5.62 lb$_m$/ft^3
Gravity (g_0): 9.807 m/s^2 = 32.174 ft/s^2

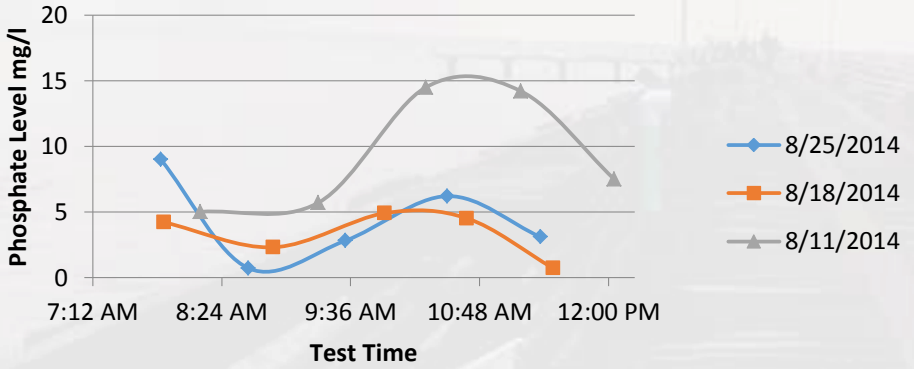
Conversions:
1 m = 3.28084 ft
1 m^3 = 35.3147 ft^3
1 kg = 2.20462 lb$_m$



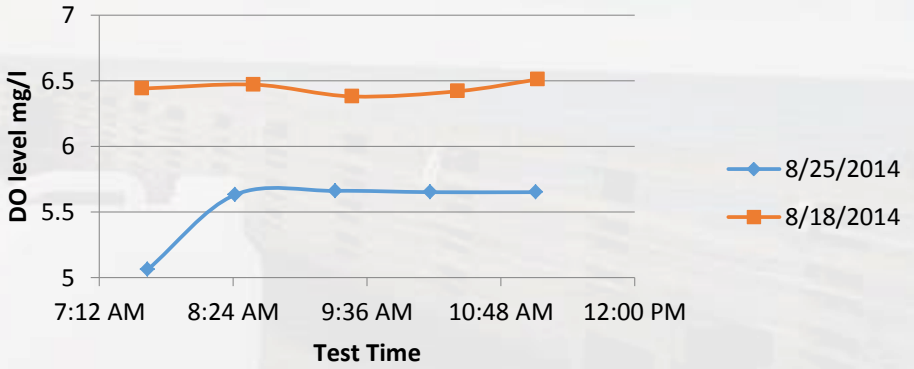
(Fig. 2) Illustration of the wrack's width and crest

Sargassum Early Advisory System (SEAS): Investigating the Hourly Growth Rate of Sargassum Natans and Fluitans While Suspended in the Neritic Coastal waters off of Galveston, Texas.

Data Collected three consecutive weeks; Iron, Nitrate and Ammonia not shown here.

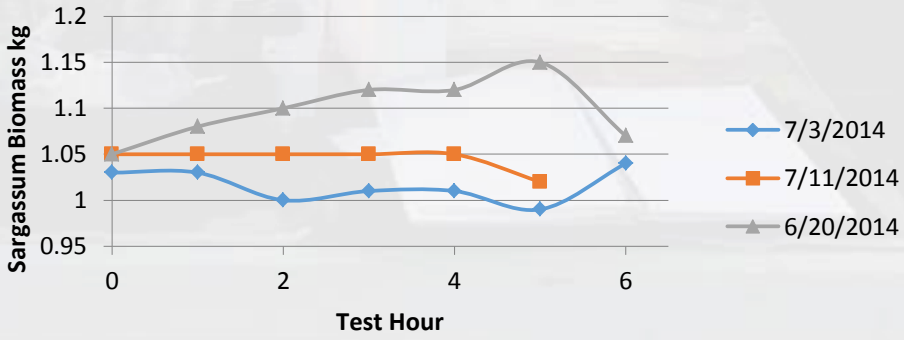


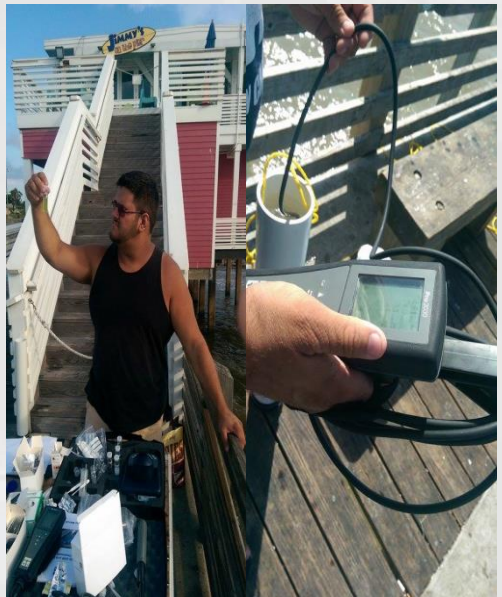
Dissolved Oxygen data collected via YSI has shown potential to affect Sargassum Growth significantly



Sargassum Suspension Growth Units Data

Growth pattern from past year influenced by the excessive amount of Sargassum landings summer of 2014



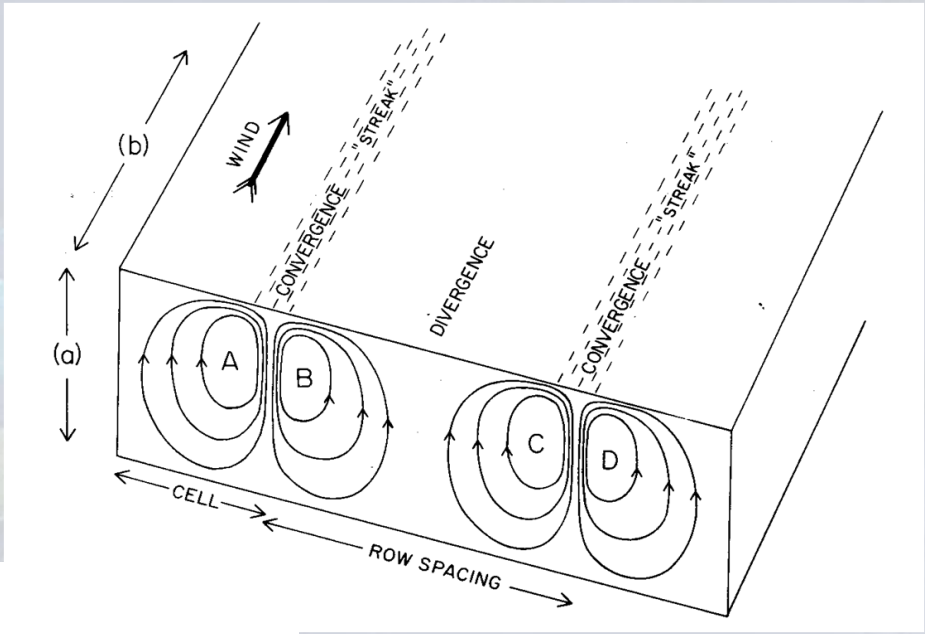


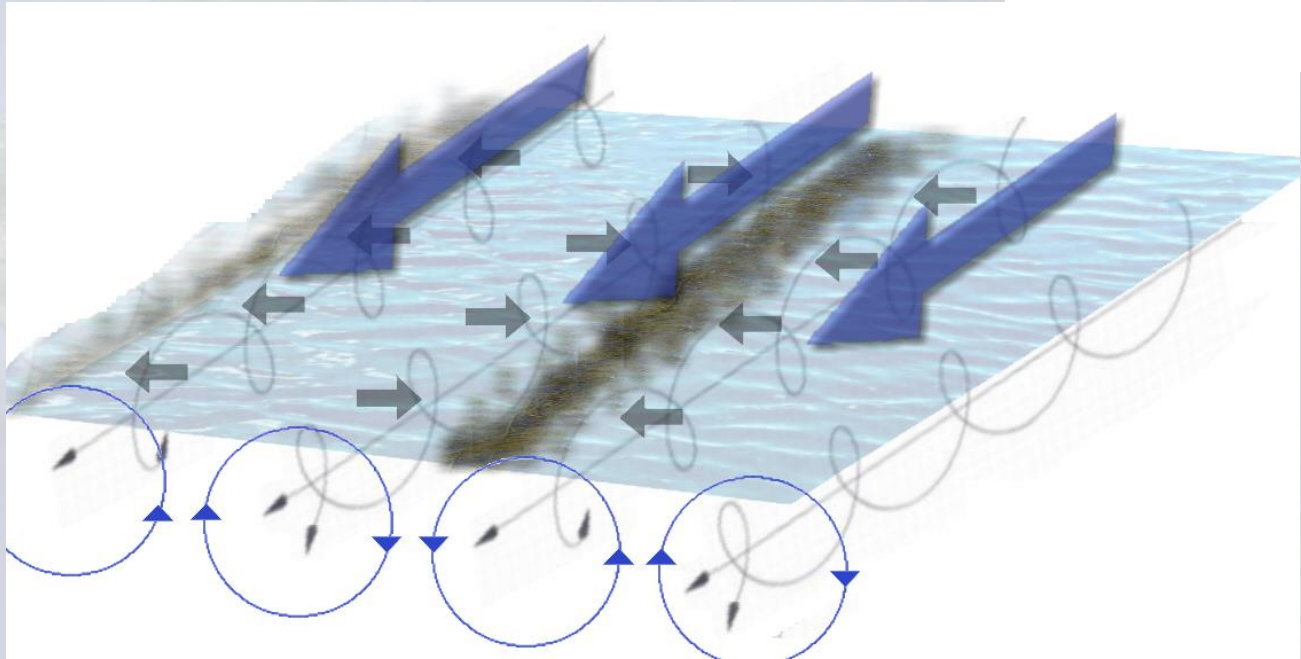

Sargassum as Fish Food

Langmuir Circulation

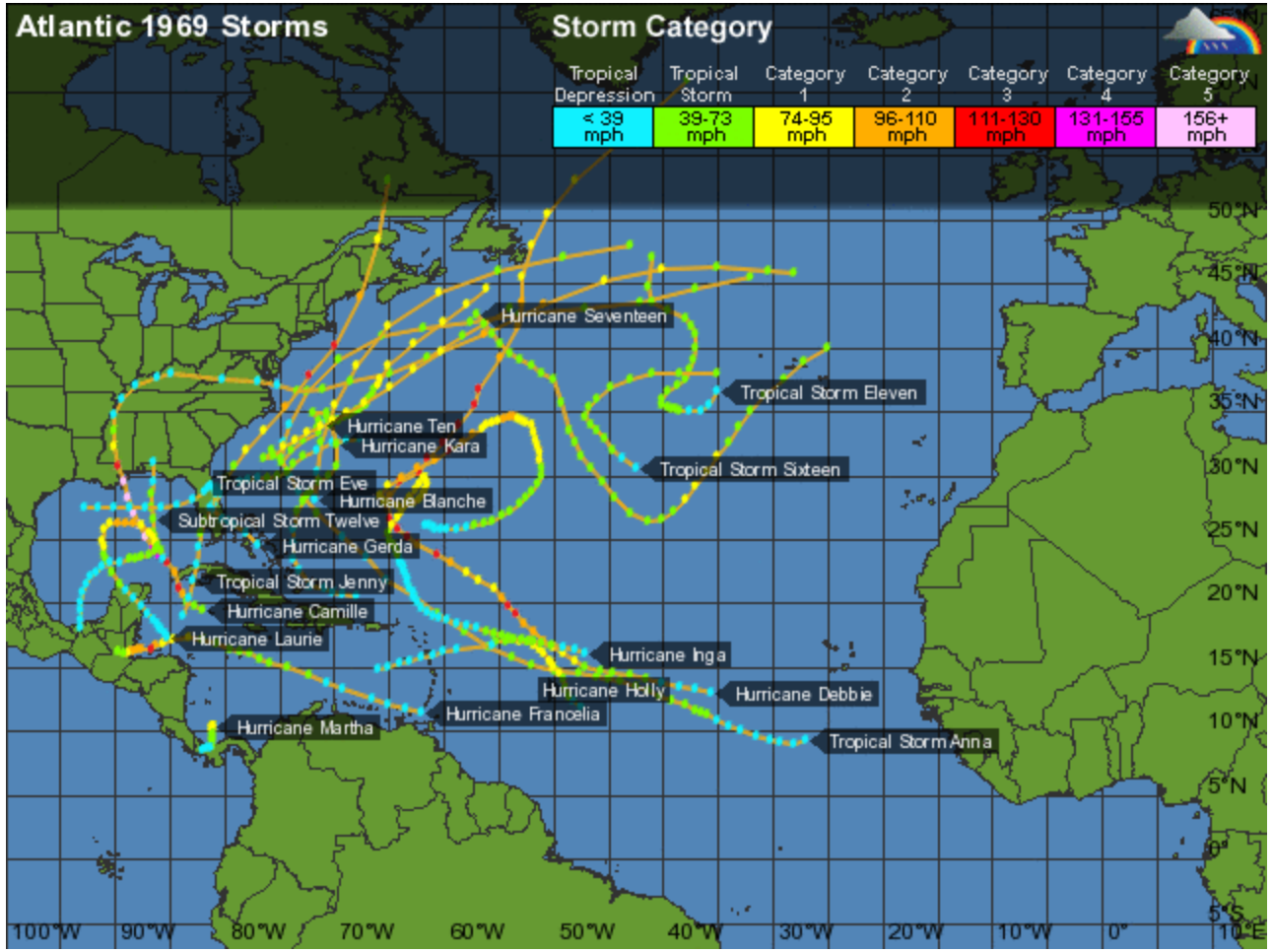
When the wind is able to blow between three and thirteen meters per second in an individual direction for an extended length of time then the water will respond by forming parallel zones (cells) of convergent and divergent disruption.

These cells can range from a few meters up to several kilometers.

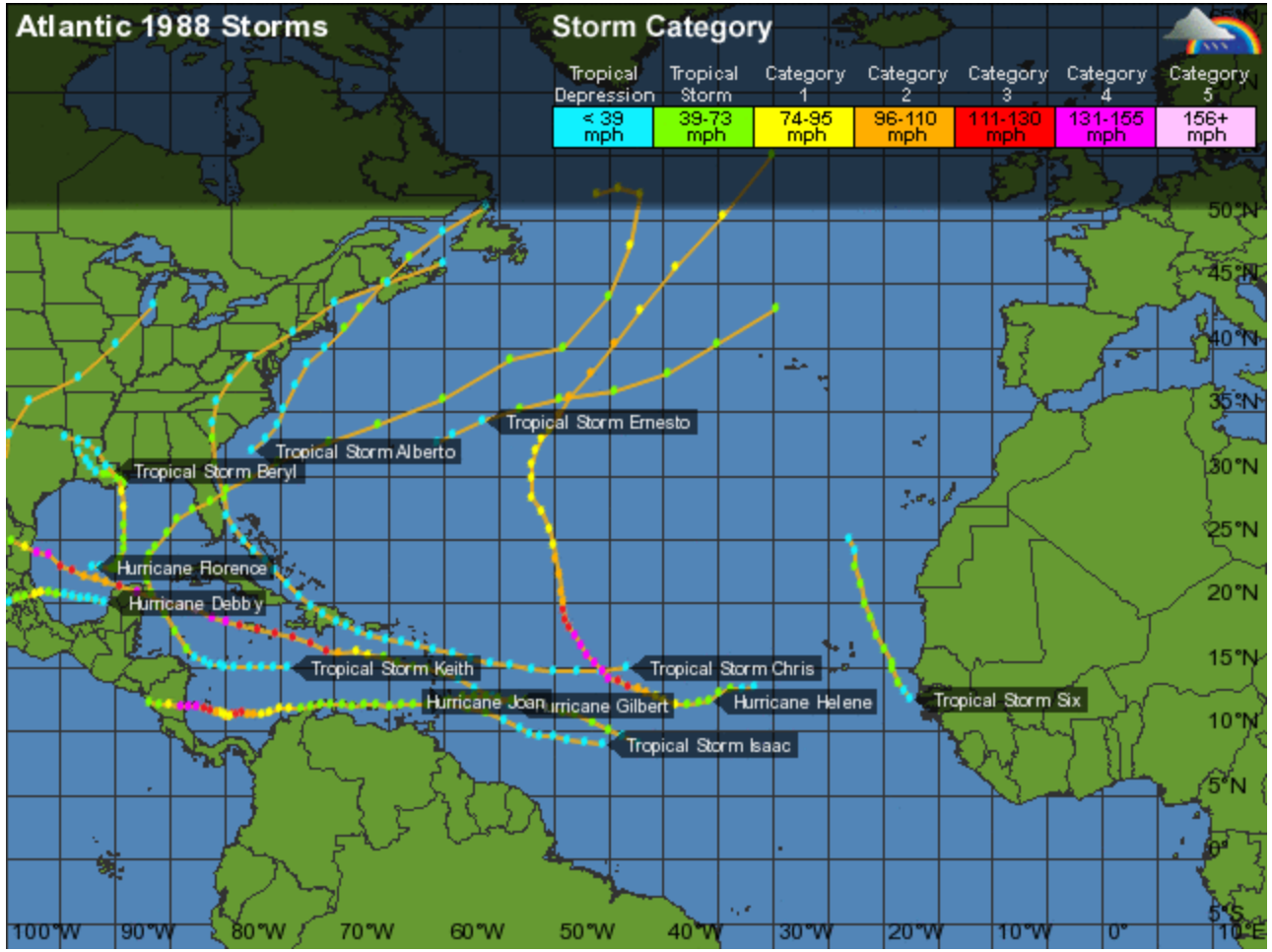




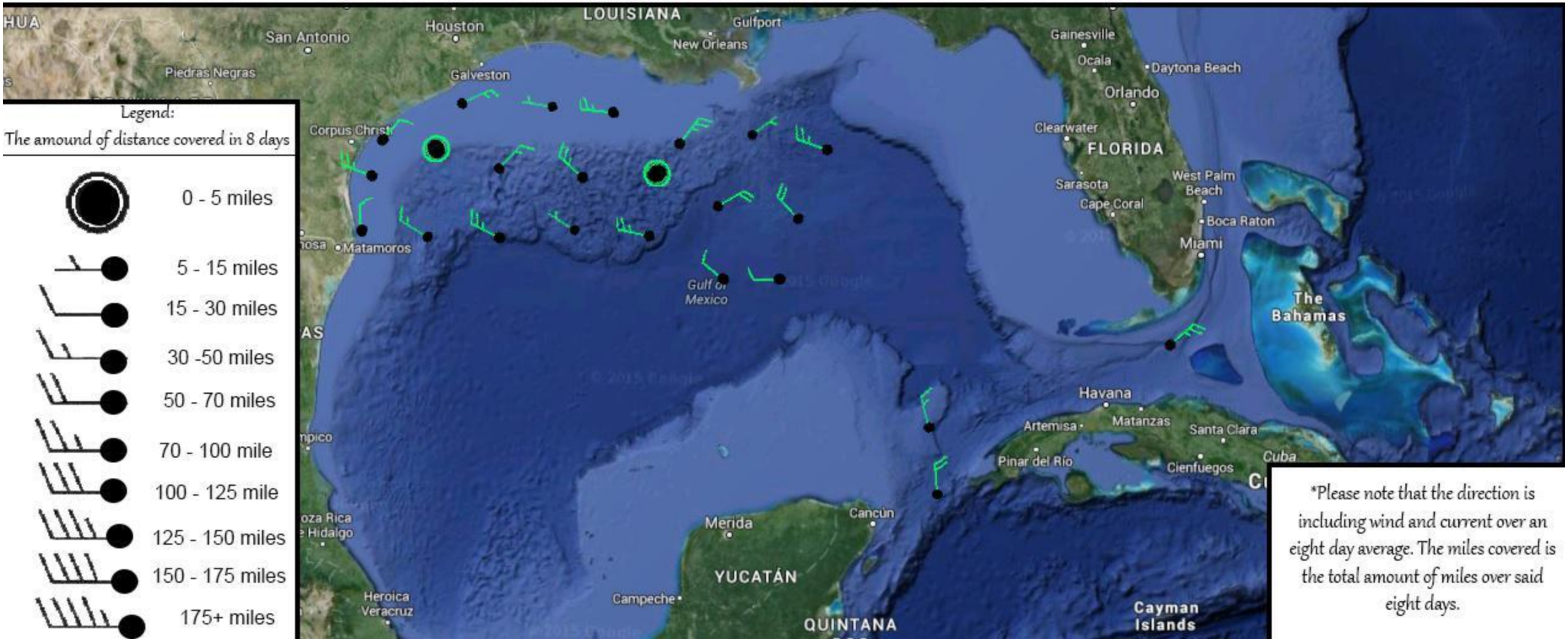
1970 One Sargassum Complaint



1989 20 Sargassum Complaints



Set and drift map for areas of forecasting



*Please note that the direction is including wind and current over an eight day average. The miles covered is the total amount of miles over said eight days.

Beach Erosion

Thank you for your attention

Robert Webster

Texas A&M at Galveston

E-mail Websterr@tamug.edu