



GALVESTON BAY FOUNDATION

PROTECT TODAY. PRESERVE TOMORROW.

Wetland Connections

Celebrating 5 Years!



galvypay.org



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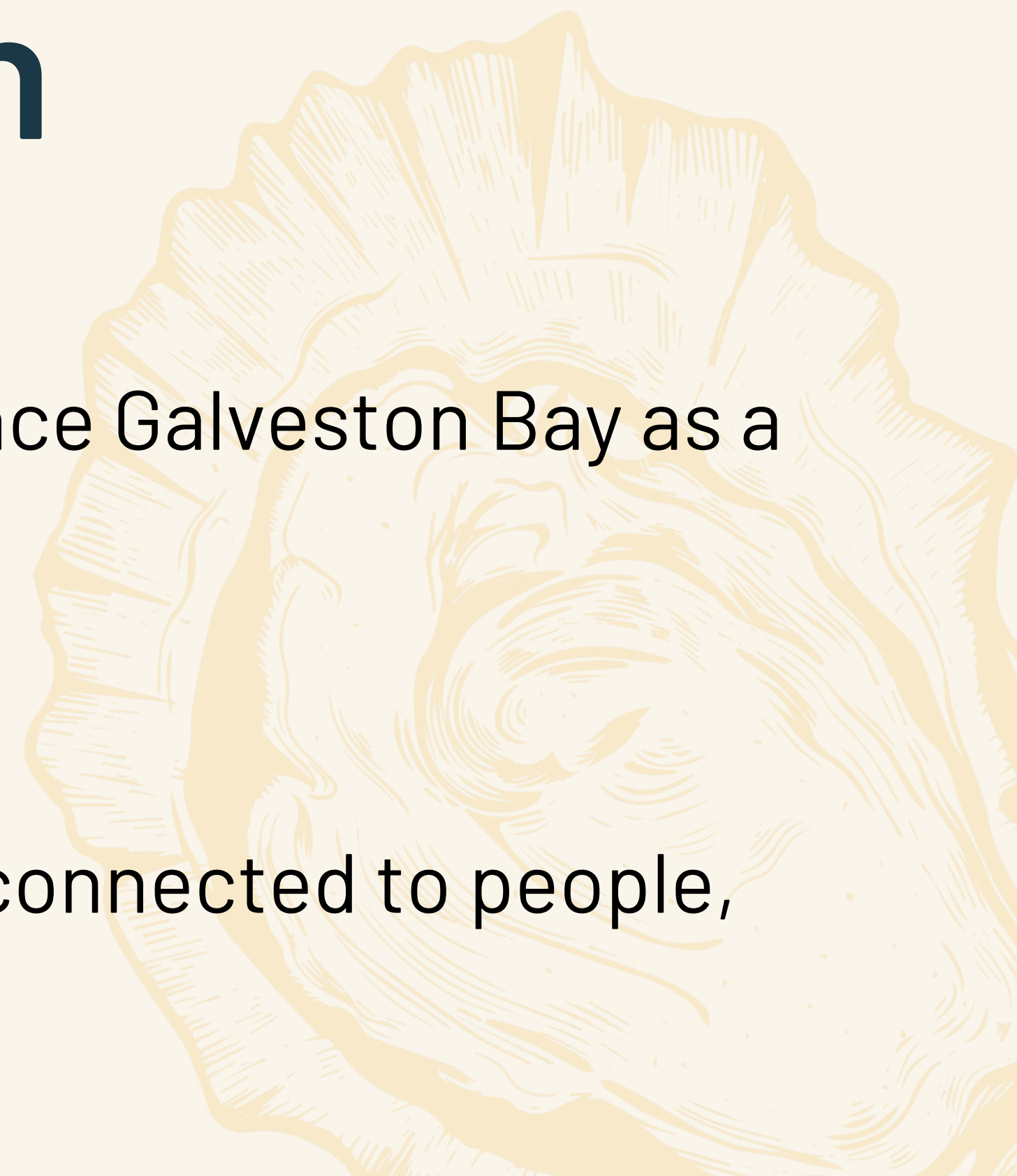
Our Mission & Vision

Mission

The mission of Galveston Bay Foundation is to preserve and enhance Galveston Bay as a healthy and productive place for generations to come.

Vision

We envision a future Galveston Bay that is brimming with vitality, connected to people, and contributing to the community in every possible way.





Program Areas



Education



Habitat Restoration



Land Conservation



Water Protection



Research



Advocacy

Today's Agenda

1. Hands-On Inquiry Activity:
Engineering Shorelines



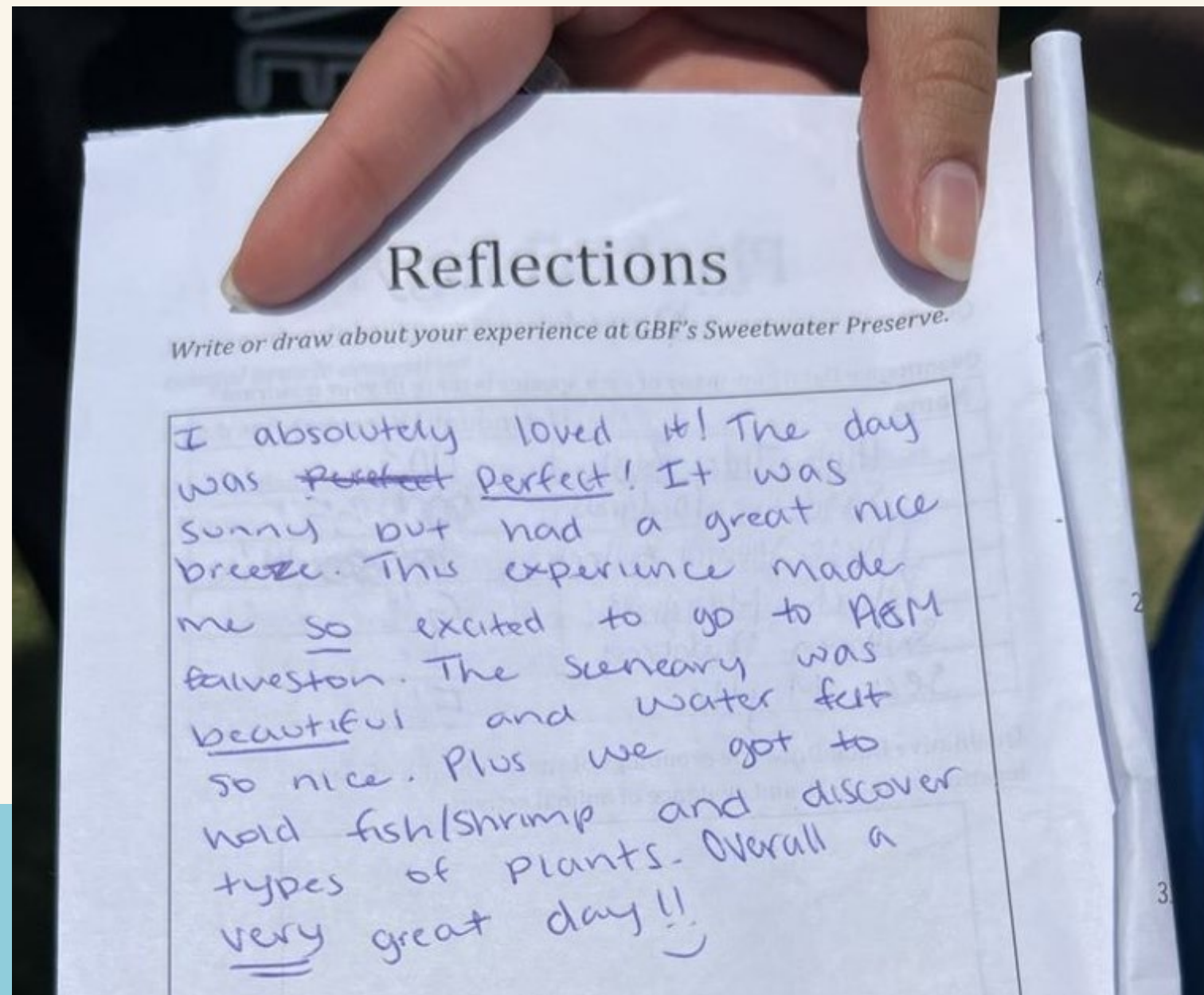
2. Wetland Connections
History



3. Teacher & Student Panel



4. Reflection



Wetland Connections History

Get Hip to Habitat: Established in 2006



A great way to teach students about wetlands and restore local habitat.

BUT....



2020: Shift in Needs & Priorities

Community/School Needs

- Two field trip requirement reduces accessibility to many schools – not equitable
- Caring for so much marsh grass was difficult and time consuming
- Teachers needed more support & GBF-led activities due to stress & burnout

Internal Needs

- Lack of student-safe restoration sites
- Increased material costs each year of programming
- Not enough learning and true engagement time with students

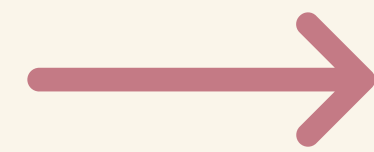
DRIVING QUESTION:

What are wetlands, why is it important for students to feel connected to them, and how can we encourage that connection?

Brainstorming Our New Program: Wetland Connections

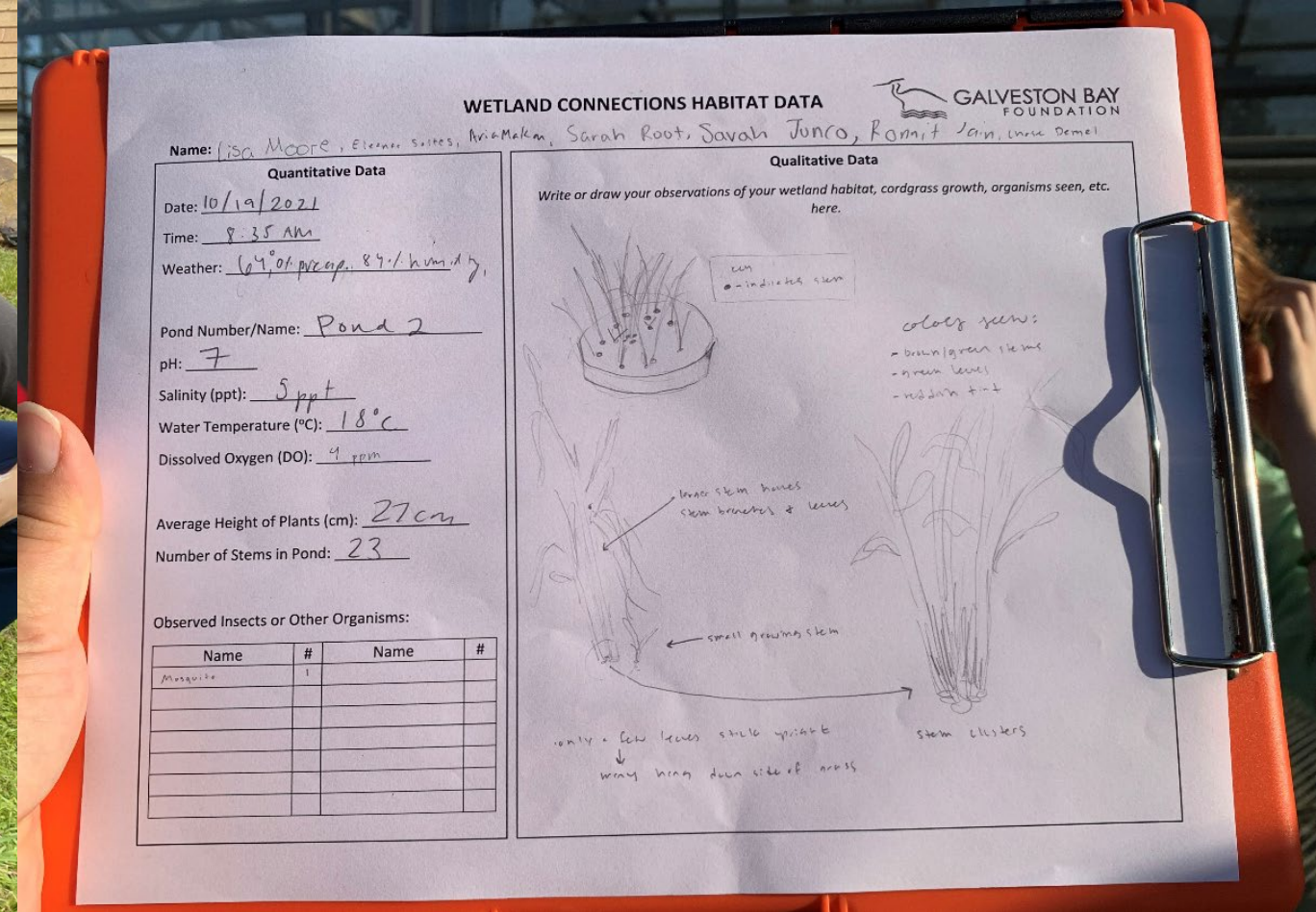
Goals

- Increased student interactions
- Increased connection to nature
- Increased understanding of the systems, interactions, relationships within a saltmarsh wetland
- More accessible/equitable to all schools



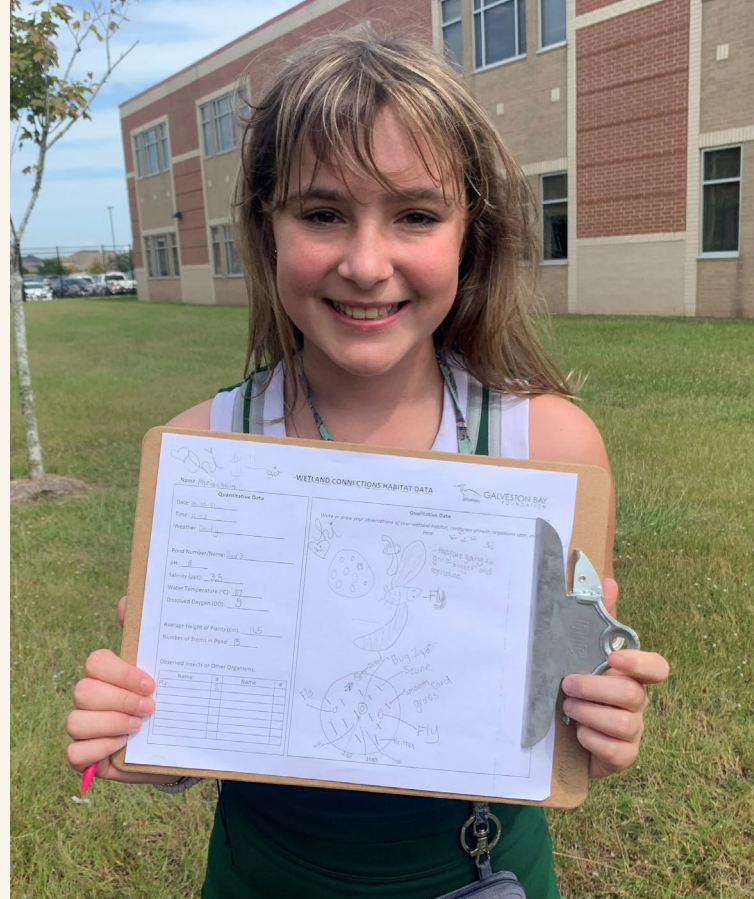
Implementation

- Decreased material costs to allow for more staff time for additional classroom workshops
- Added nature journaling/qualitative data collection
- Added workshops over animal adaptations and conservation initiatives
- Reduce field trips to 1 per year, increased program scholarships



Wetland Connections: Est. 2021

Goal: To deepen student knowledge and connection with the Galveston Bay wetland ecosystem while gaining skills used in environmental career fields.



Impact & Growth

7,450 students have participated since 2021

Increased student knowledge of wetlands via pre/post tests

Written student responses reflect a new outlook on wetlands

Sustained use of GBF's Sweetwater Preserve allows us to be very intentional with our field activities

Plans to incorporate GIS into field programs

Funded by Scotts Miracle Gro, Restore America's Estuaries, and Galveston Bay Estuary Program/TCEQ



Teacher & Student Panel

- Lisa Castenada, Texas City High School
- Hailey Louviere, Dr. Kirk Lewis Career and Technical High School
- Aiden Eastin, Student at Clear Lake High School
- James Ellis, Student at Clear Lake High School



REFLECT

How can you incorporate something you heard today into your program or organization?



**Engineering
Shorelines**



**Wetland Connections
History**



**Teacher &
Student Panel**



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Protect Today.
Preserve Tomorrow.

Guardian of
Galveston Bay
since 1987



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Education



Restoration



Water Protection



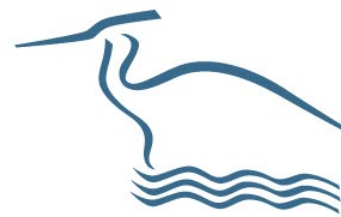
Conservation



Advocacy



Galveston Bay Animal Adaptations



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Galveston Bay

Bay is an ESTUARY – with BRACKISH water

ESTUARY (Estuarine)

A partially enclosed coastal body of brackish water with one or more rivers or streams flowing into it, and with a free connection to the ocean (Gulf of Mexico).

Marine species depend on estuary waters for reproduction





Habitats around the bay



Marsh Wetland

An area of low-lying land that is flooded in wet seasons or at high tide, and typically remains waterlogged at all times. Marsh vegetation around the bay is predominantly composed of smooth cordgrass.



Coastal Prairie

An area with open fields with a variety of plants and grasses, has pockets of water

Seagrass Beds

Seagrasses are continuously underwater and grow in shallow areas of the bay with clear water, allowing photosynthesis to occur.

Oyster Reef

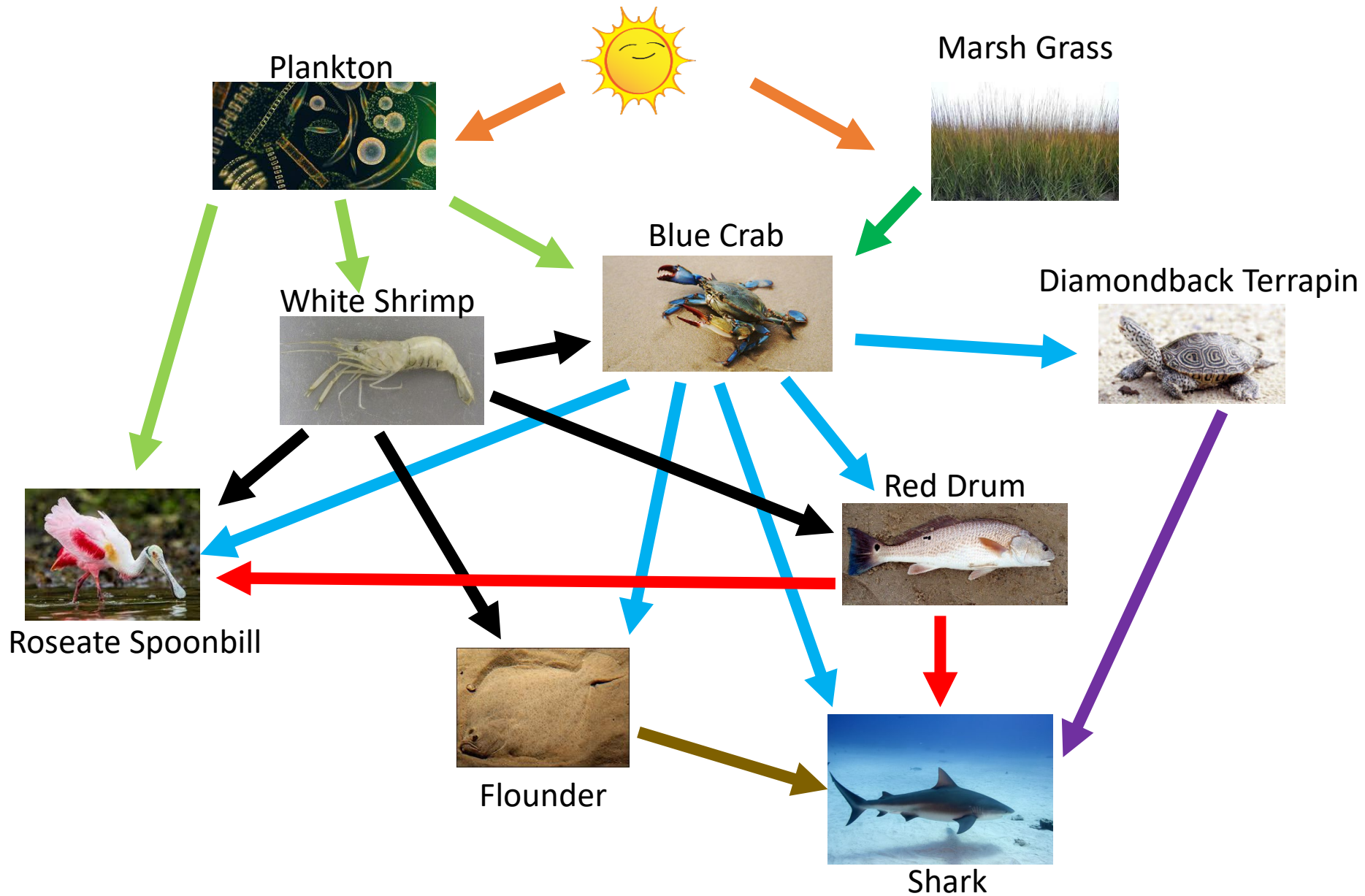
Reefs form in the open bay, along the edge of marshes, and near passes, and can be either subtidal or intertidal. An oyster reef is three-dimensional because oyster larvae settle on the top of old shells growing upwards through the water column above the established oysters.

What is an adaptation?

The adjustment of organisms to their environment in order to improve their chances at survival in that environment.

Type of Adaptation		Definition	Examples
Biological	Structural	A feature of an organism's body that helps it to survive/reproduce	Camouflage, webbed feet, hinged jaw, pointed teeth, blubber
	Physiological	A body process that helps an organism to survive/reproduce	Production of venom, excretion of salt, release of antifreeze hormones in cold environments
Behavioral		Responses made by an organism that help it to survive/reproduce	Migration, hibernation, puffer fish inflating, fish traveling in a school (can be instinctual or learned behaviors)

Food Web



Scenarios:

- The blue crab population increases dramatically due to new crabbing regulations. What will happen to the food web?
 - Terrapin, red drum, bull sharks, flounder, spoonbills may increase
 - Plankton, marsh, shrimp will decrease
- Marsh grass habitats decrease by 50% due to a new master planned community being built in Texas City. What will happen to the food web?
 - Blue crab populations will decrease
 - Other populations will decrease due to loss of habitat and blue crab prey
- Roseate spoonbill populations stop migrating to the bay due to sea level rise. What will happen to the food web?
 - Flounder, red drum, crab, shrimp, plankton populations will increase – possibly causing a collapse because of too many organisms
- Bull shark populations decrease due to new fishing regulations. What will happen to the food web?
 - Flounder, red drum, crab, terrapin populations will increase – possibly causing a collapse because of too many organisms