



**ANNA MARIA ISLAND**

# **Turtle Watch and Shorebird Monitoring**

How We  
Make a  
Difference  
for  
SEA TURTLES  
&  
SHOREBIRDS

# SEA TURTLES

# Turtles found on AMI Beaches

## Land / Pond Turtles

- ▶ Feet with claws
- ▶ Can retract heads



## Sea Turtles

- ▶ Paddle-like flippers
- ▶ Cannot retract heads



# Loggerhead (*Caretta caretta*)

- ▶ Adult weight: 200 to 300 lbs
- ▶ Large head
- ▶ Eats mollusks and crabs
- ▶ 99% of nests on AMI



# Green Turtle (*Chelonia mydas*)

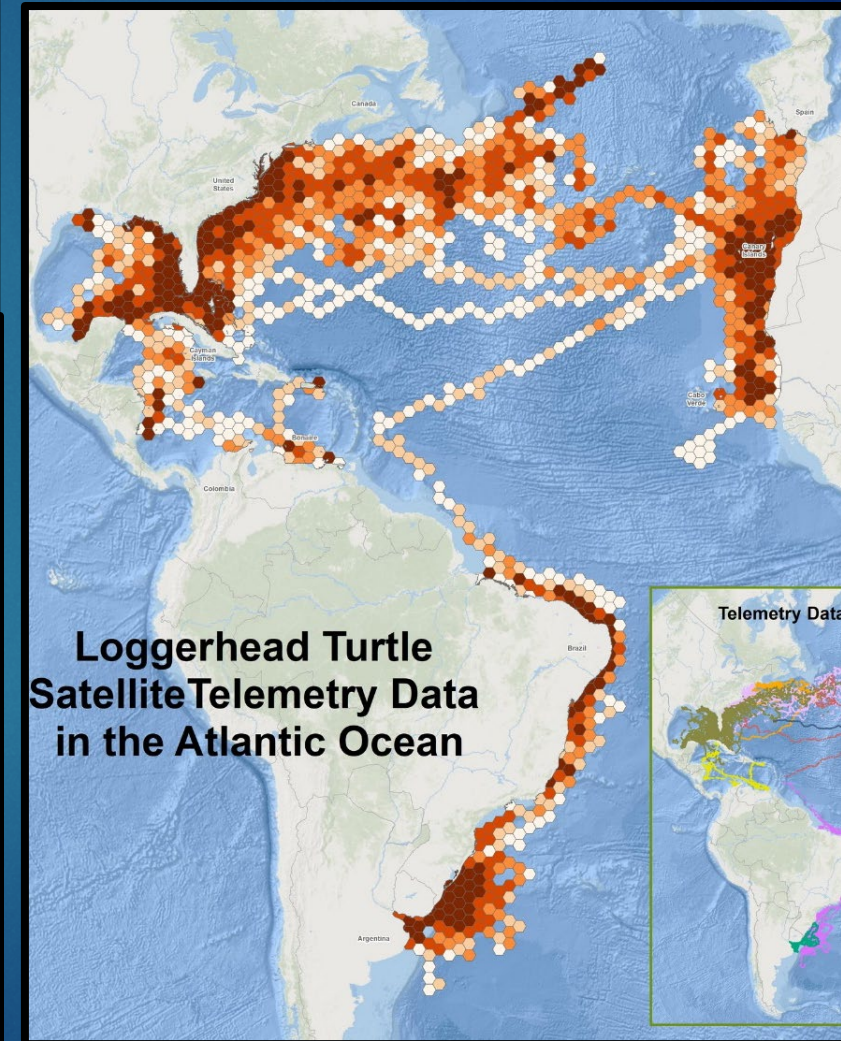
- ▶ Adult weight: 300 to 400 lbs
- ▶ Smaller head
- ▶ Eats seagrass
- ▶ Rare nester on AMI



# Why Should We Protect Sea Turtles?

Sea Turtles preserve our marine ecosystems

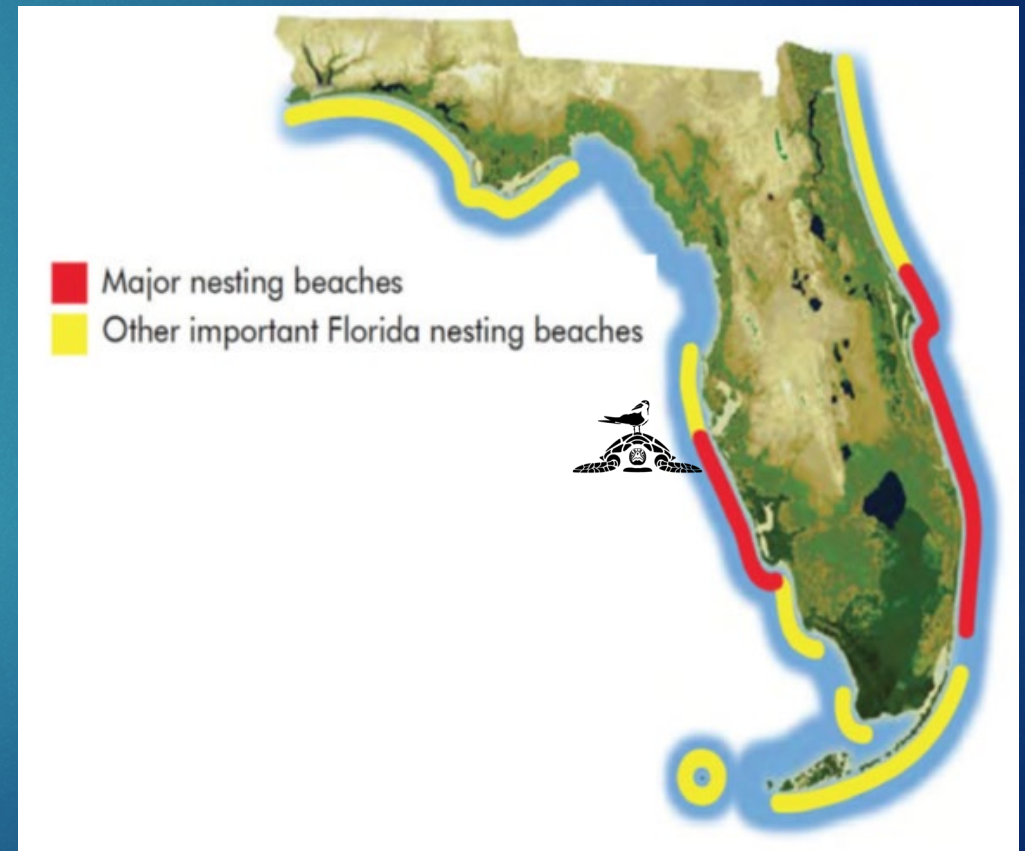
- ▶ Keep prey species under control
- ▶ Maintain sea grass beds with rotational grazing
- ▶ House an ecosystem on their shell (carapace)
- ▶ Transport nutrients across oceans



# How Important is Our Area?

## VERY IMPORTANT FOR LOGGERHEADS


- ▶ USA provides 42% of loggerhead nests in the World (largest nesting aggregation)
- ▶ 90% of loggerhead nests in USA are laid in FLORIDA






# Sea Turtle Nesting Season



## April 15 – October 31

April						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15			20		27
21	22					
28	29					

May						
S	M	T	W	T	F	S
		1	2	3	4	
5						11
12						18
19						25
26						

June						
S	M	T	W	T	F	S
						1
2						8
9						15
16						22
23						29
30						

July						
S	M	T	W	T	F	S
					5	6
						

August						
S	M	T	W	T	F	S
				2	3	
						
				30	31	

September						
S	M	T	W	T	F	S
1	2					7
8	9					14
15	16					21
22	23					28
29	30					

October						
S	M	T	W	T	F	S
						5
6	7					12
13	14					19
20	21					26
27	28					

Nesting:  
April – August

Hatching:  
July – October

# Sea Turtle Ordinances

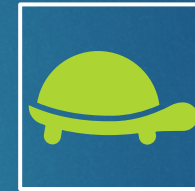
- ▶ Sea turtles are protected by State, Federal and Local laws
- ▶ Local ordinances:
  - ▶ Lights seen from the beach
  - ▶ Beach furniture left overnight
  - ▶ Holes dug in sand



# Nesting



Nesting  
occurs at  
night

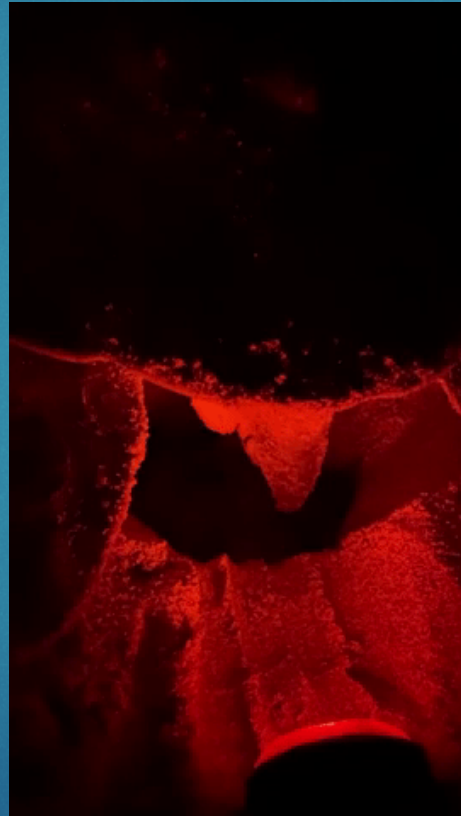


Female  
crawls out of  
the water  
and finds  
suitable nest  
site



Easily  
frighted by  
movement  
and lights

# Nesting



- ▶ Digs a 1.5 ft hole,
- ▶ Lay ~100 ping-pong ball-sized eggs,
- ▶ Covers the nest with sand, and
- ▶ Returns to the ocean



# TURTLE TRACKS

What do they tell us?

# What species made the crawl?



Loggerhead

vs.

Green

# What did she do?



Nest

vs



False Crawl

# Hatchlings: Incubation

- ▶ Eggs incubate for ~2 months
- ▶ Mother does not return – hatchlings emerge on their own



# Sand Temperature

The sex of the hatchling is determined by temperatures in the nest.

Warmer temperatures result in females  
“Hot Chicks”



Cooler temperatures result in males  
“Cool Dudes”



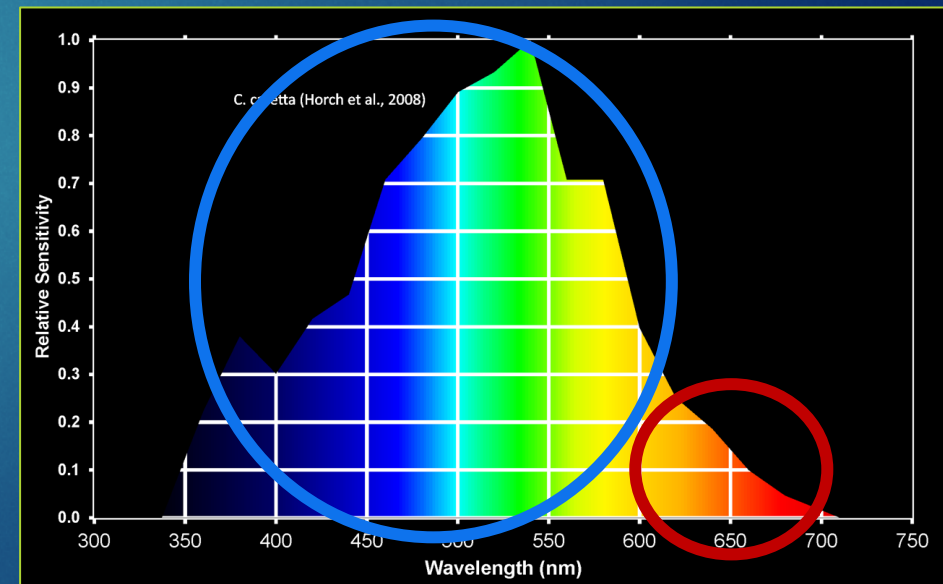
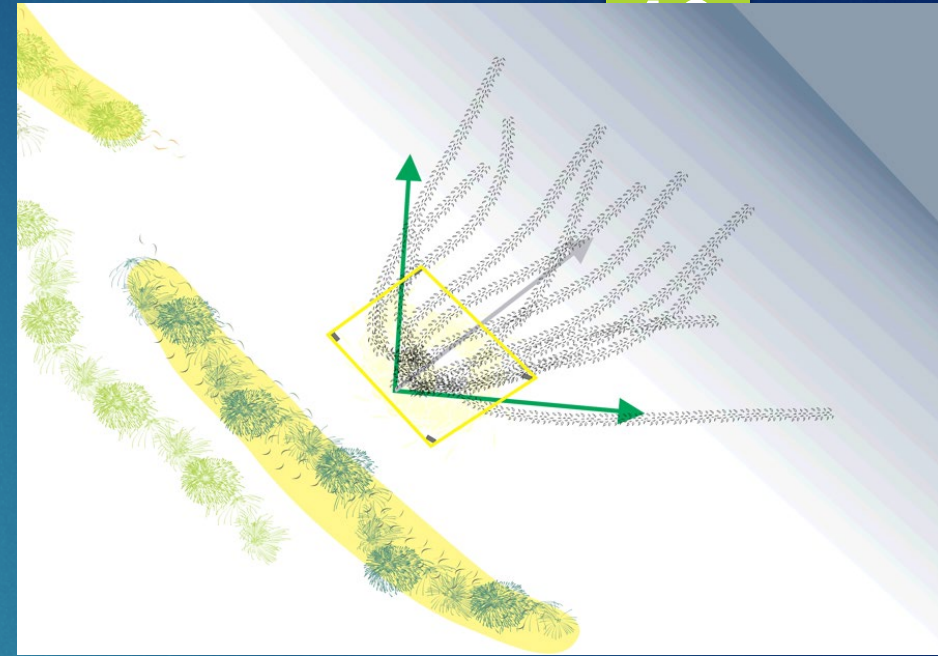
# Hatchlings: Emergence

- ▶ Hatch inside the nest a few days before emergence
- ▶ Emerge as a group at night
  - ▶ When sand temperature drops
- ▶ Crawl to the water by instinct



# What Turtles See At Night

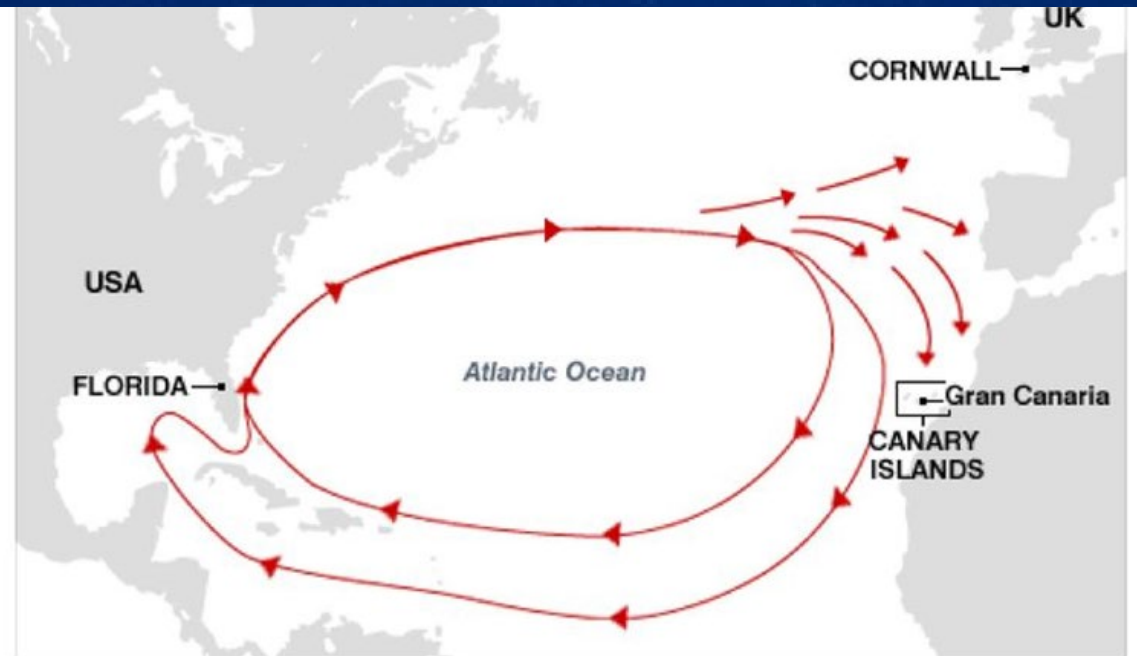
- ▶ Light is cue to find the water
  - ▶ Towards brightest horizon
  - ▶ Away from dark background
- ▶ The light sea turtles can see:
  - ▶ Mostly in the blue/green end of spectrum
  - ▶ CAN see red/amber light but not as much



Images courtesy of Christopher Hintz, Professor, Marine and Environmental Sciences, Savannah, State University

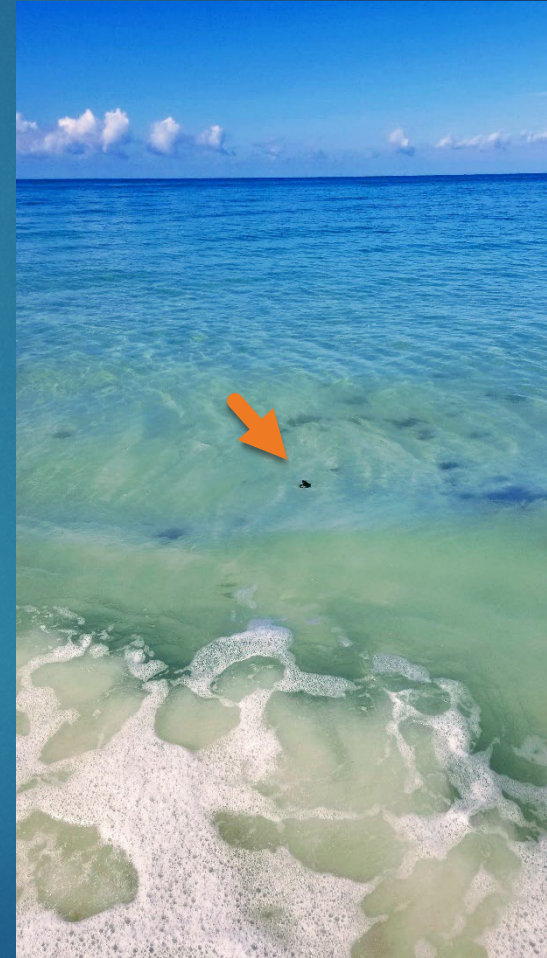
# Hatchlings at Sea

- ▶ Swim to sargassum line (3-6 day journey) to find food and shelter
- ▶ Travel with sargassum in Gulf
- ▶ Leave Gulf and spend 5-10 years crossing Atlantic
- ▶ Sub-adults return to Florida to nearshore waters close to where they were born

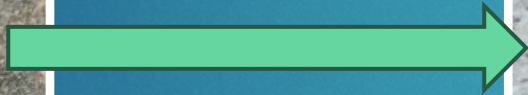


# Few Survive to Maturity

- ▶ 1 in 1000 hatchlings survive to maturity!



# Long Lived, Late Maturity



- ▶ Mature at 25-30 years
- ▶ Lay 5-7 nests/year
- ▶ Nest every 1 – 3 years
- ▶ Can live >100 years



AMI Turtle Watch Protects Sea Turtles & Their Nests on Anna Maria Island

# Anna Maria Island (AMI)

- ▶ Patrol at Sunrise
- ▶ ~10 miles (16 km) of beach
  - ▶ Vehicle
  - ▶ On foot



# AMITW Turtle Patrol



- ▶ Post new nests
- ▶ Document False Crawls
- ▶ Cross out the crawl
- ▶ Check every nest, every day

# AMITW Turtle Patrol

- ▶ Provide clearance for:
  - ▶ Beach cleaner
  - ▶ Beach Events
  - ▶ Construction projects



# Document Disturbances to Nests



# Look for Signs of Hatching!



# Rescue wayward hatchlings & Report Disorientations to Local Code Enforcement



Conduct  
Nest  
Inventories:  
How many  
eggs  
hatched?



# 2025 Sea Turtle Nesting Numbers

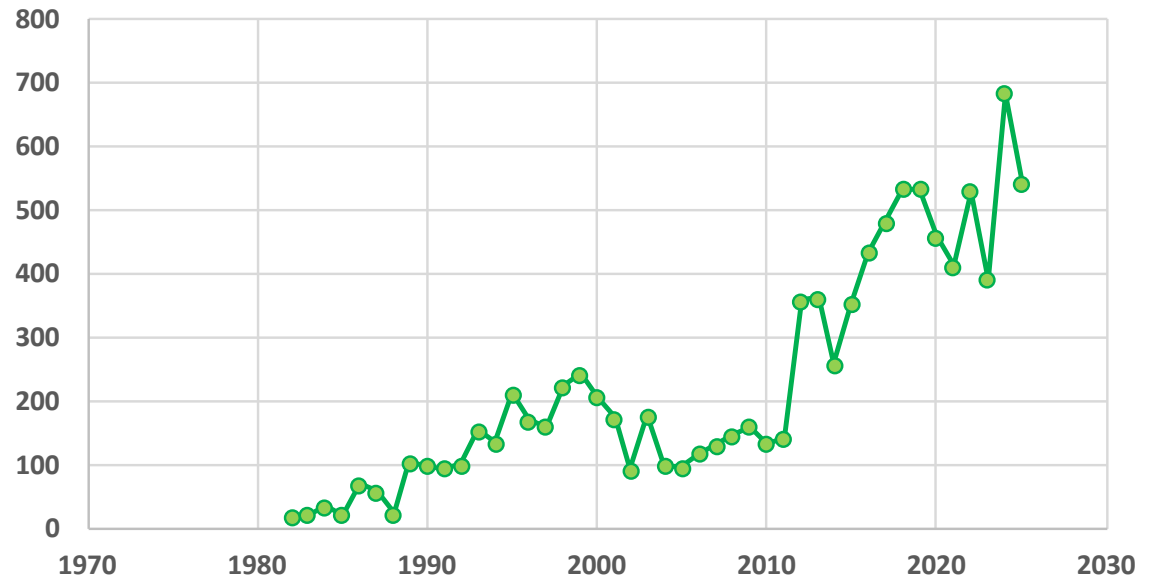
**Nests**

544

**False  
Crawls**

827

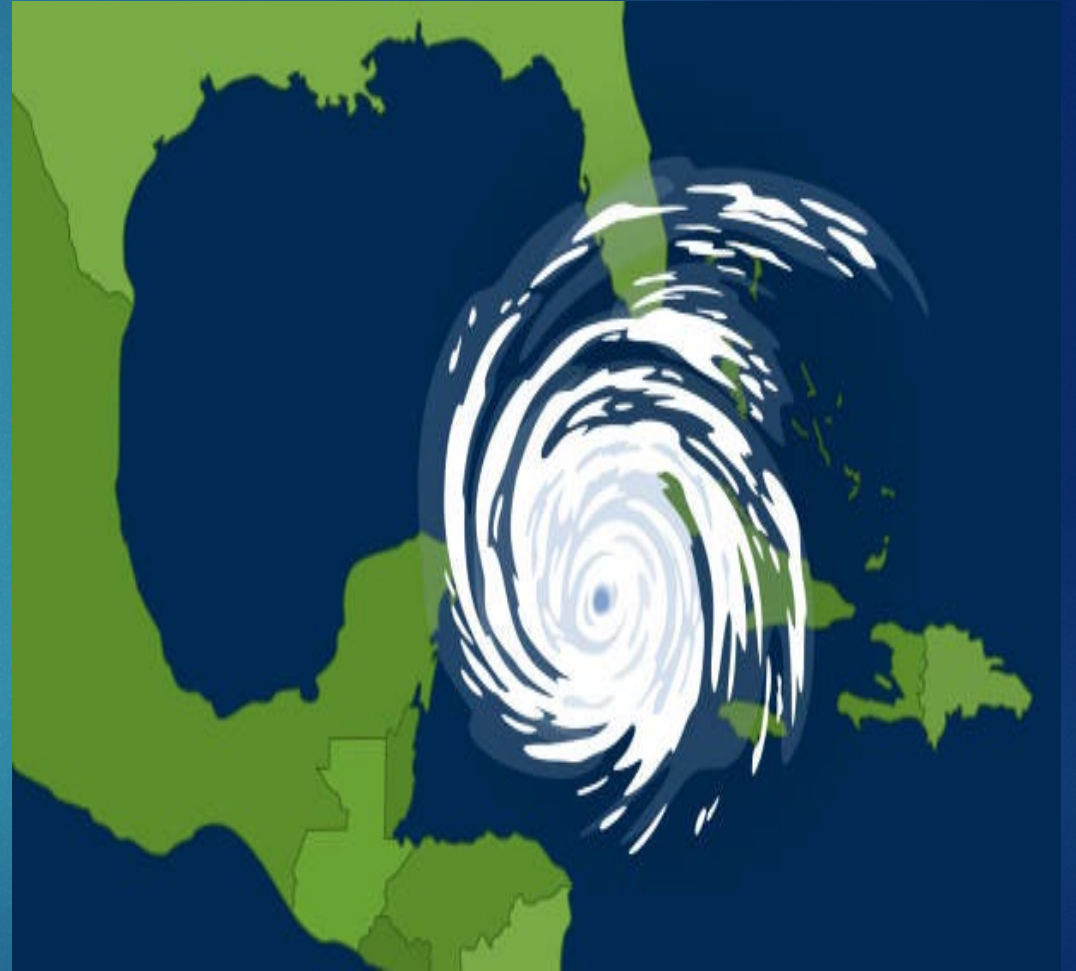
Loggerhead Nests on Anna Maria Island



**2<sup>nd</sup> Highest Nesting Year in 41 years!**

# 2024 AMI had record nest numbers (**685 nests**), but 3 Major Hurricanes

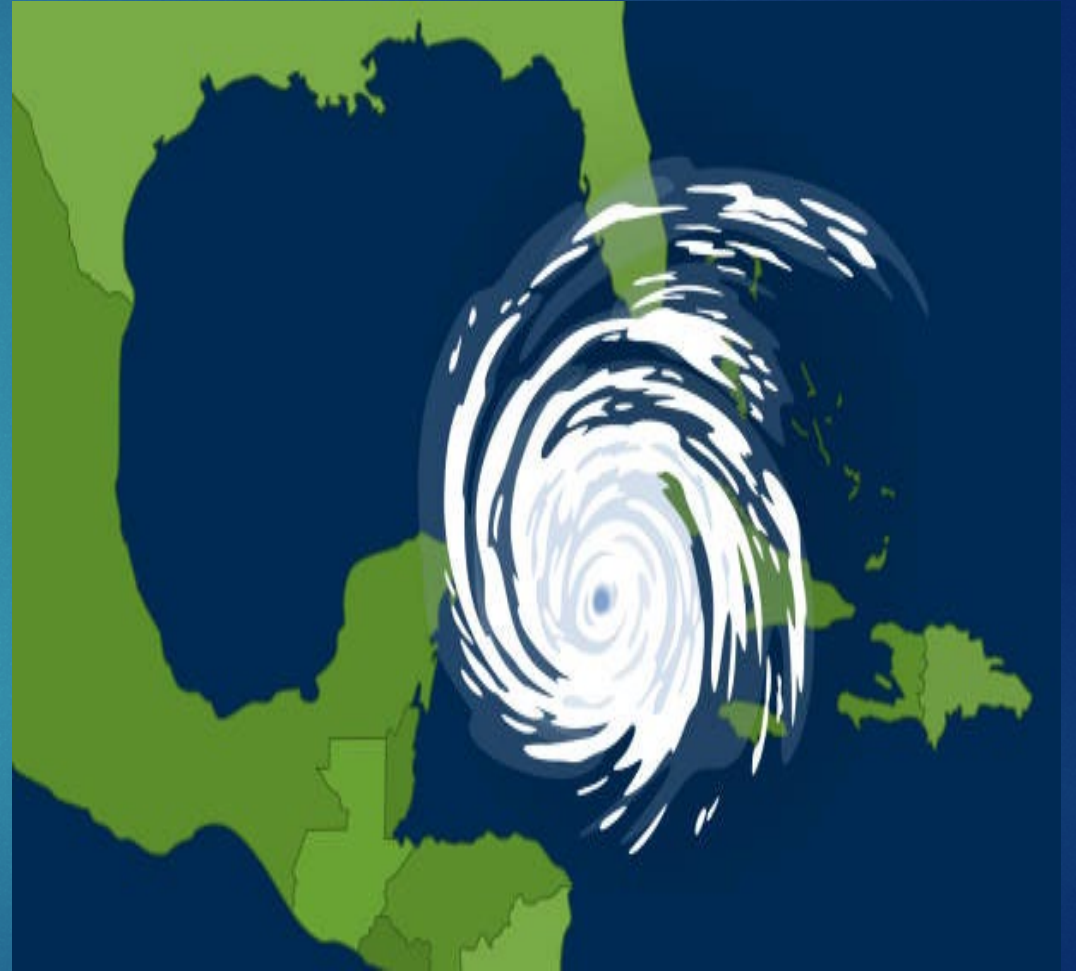
- ▶ Debby – August – lost 208 nests
  - ▶ Helene – September – lost 6 nests
  - ▶ Milton – October – lost 2 nests
- 
- ▶ **RESULT:**
    - ▶ 290 nests hatched
    - ▶ 20,633 Hatchlings Emerged



2025 had 544 nests  
and No Major  
Storms/Hurricanes

▶ **RESULT:**

- ▶ 424 nests hatched
- ▶ 30,899 Hatchlings Emerged



# Disorientations on AMI

	2025
Disorientation Events	181

However, of the 30,899 that hatchlings that emerged, between 3,951 to >9,000 hatchlings disoriented (may not have made it to the water

# 2024 Hurricane Impact

Loss of Dunes, Loss of Vegetation, Flat Beach



BEFORE HELENE & MILTON



AFTER HELENE & MILTON

# 2024 Hurricane Impact

Loss of Dunes, Loss of Vegetation, Flat Beach



BEFORE HELENE & MILTON



AFTER HELENE & MILTON

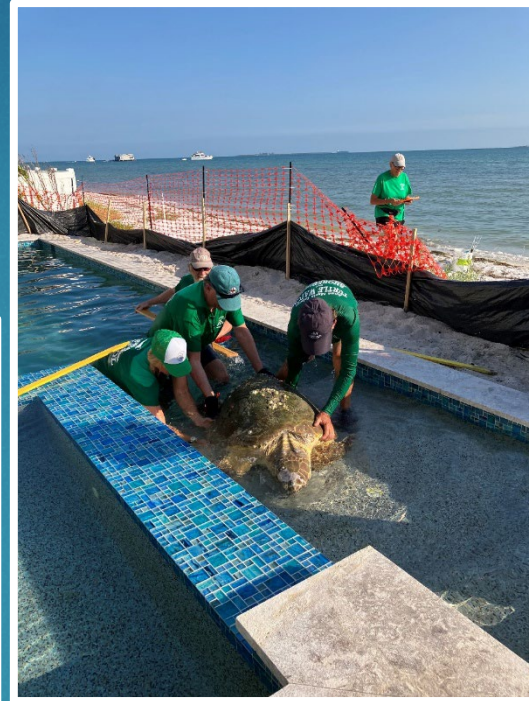
# 2025 Preventative Measures

- ▶ Manatee County placed **hay bales** where turtles had direct access to the road from County land

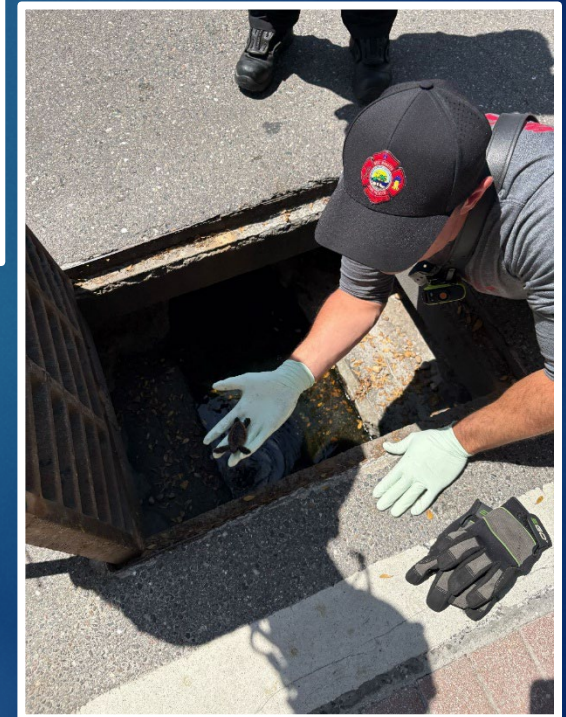


# 2025 Preventative Measures

- ▶ 24/7 AMITW Hotline
- ▶ Day-time & Night-time Hatchling Response Teams



- ▶ Responded to 34 calls
- ▶ 442 hatchlings rescued

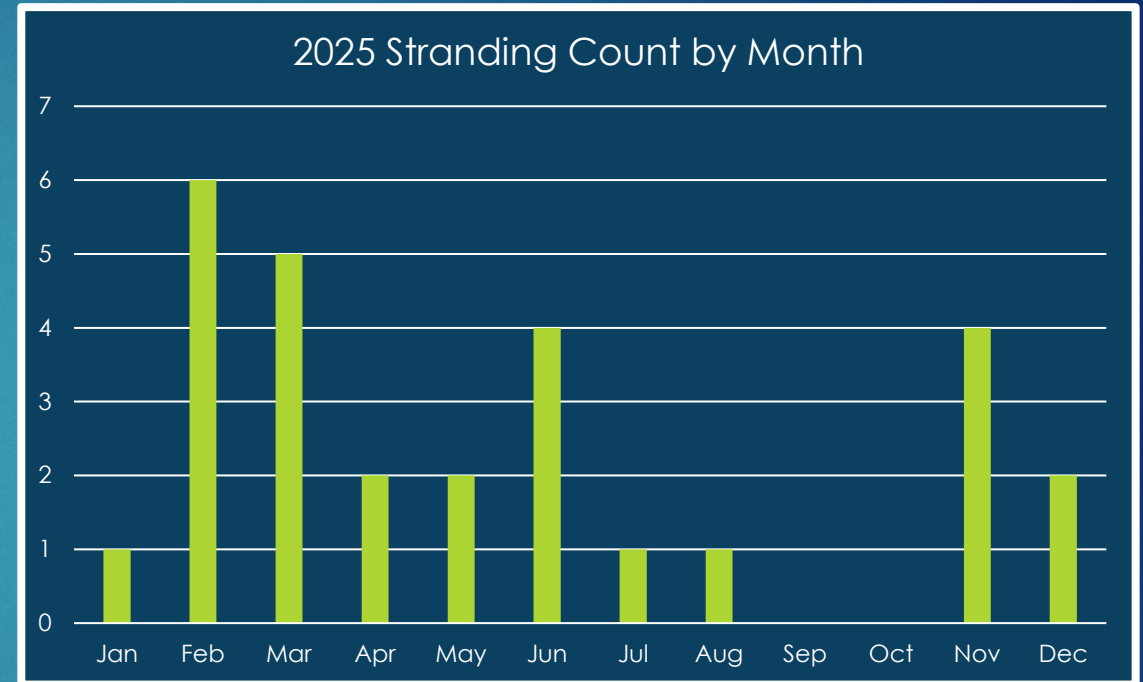
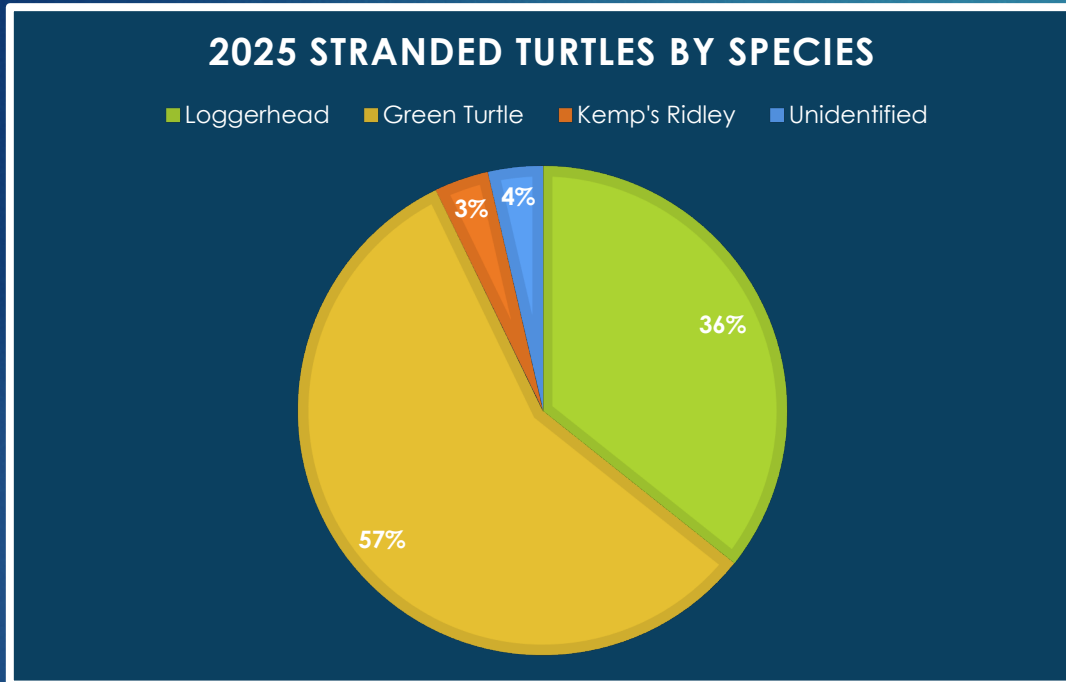


# Stranding Response: Sick and Dead Sea Turtles

- ▶ Respond to dead and live sea turtles on or near shore
- ▶ Collect data on dead sea turtles
- ▶ Transport sick and injured sea turtles to rehabilitation facilities



# 2025 Sea Turtle Strandings:



Responded to 28 stranded sea turtles on AMI in 2025

- ▶ Mostly green turtles
- ▶ Mostly in Feb/March

# SHOREBIRDS

# Who Nests on Anna Maria Island?



Black Skimmer



Snowy Plover

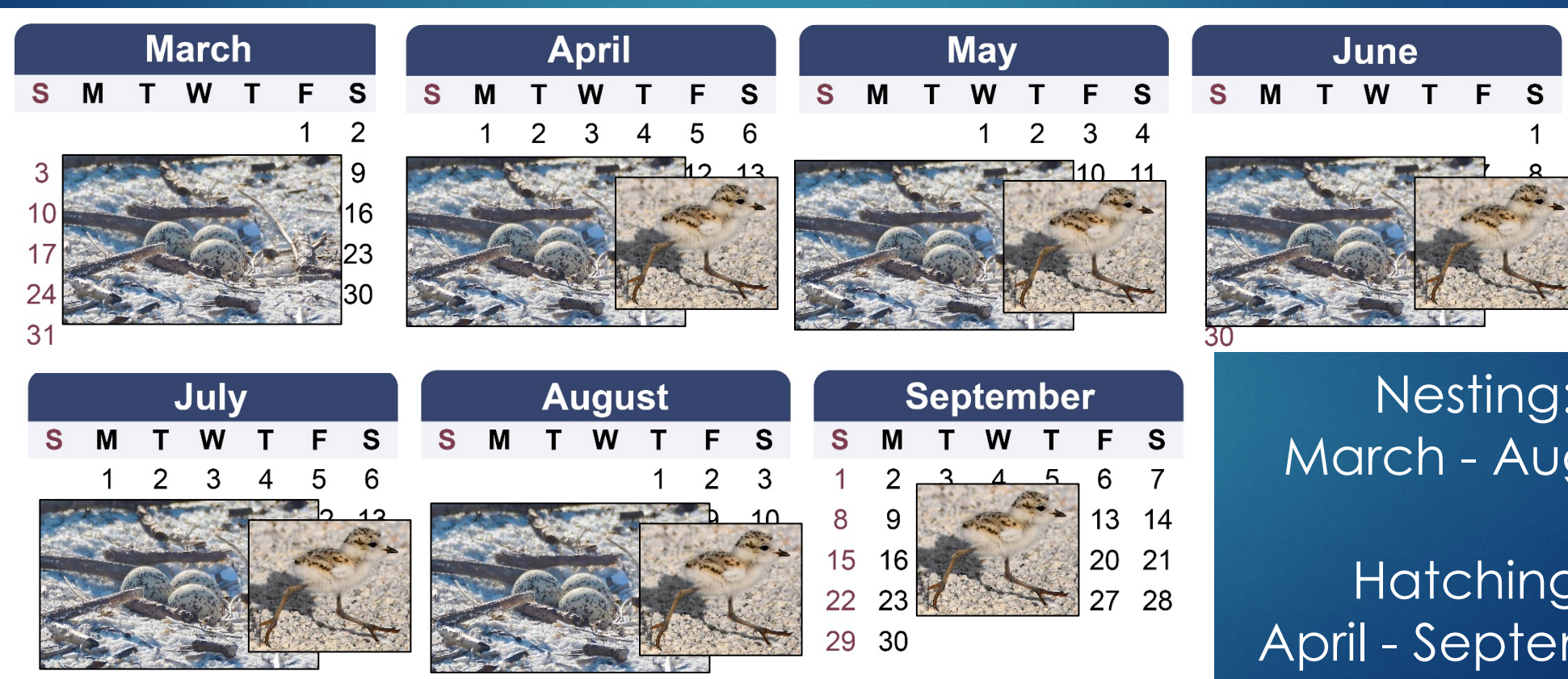


American Oystercatcher



Least Tern

# Shorebird Nesting Season February – September



Nesting:  
March - August

Hatching:  
April - September

# NESTING

- ▶ Lay their nests in the sand called a “scrape”
- ▶ Eggs and chicks are camouflaged



# NESTING

Need to shade their eggs  
and chicks from

▶ Heat



▶ Predators



# NESTING

- ▶ EXTREMELY sensitive to disturbance
  - ▶ When disturbed, they fly off their nests
  - ▶ Leave chicks and eggs vulnerable



# NESTING

- ▶ Chicks are mobile just hours after they hatch
- ▶ Birds hide in wrack when afraid



# Shorebird Monitoring

- ▶ Identify nesting birds and bird colonies
- ▶ Post nesting areas/buffers



# Shorebird Monitoring

- ▶ Check colony daily & collect data
- ▶ Provide chick huts (for shade)
- ▶ Stewardship on holidays and weekends



# 2025 – No Nesting Shorebirds

## Why?

- ▶ Habitat loss – no vegetation, very flat, open beach
- ▶ Preferable beach on other less-disturbed islands

## 2024 Least Tern Colony

- ▶ 29 nests
- ▶ 9 fledged chicks



# Traveling Shorebirds on AMI

- ▶ Fly LONG distances between their winter and summer homes
- ▶ Red knots travel 9,000 miles one-way!



# Traveling Shorebirds on AMI

Stop on beaches for:

▶ Food 

▶ Rest 

Need to save their  
energy for traveling



# Traveling Shorebirds on AMI

Educate the  
public not to  
disturb resting  
and feeding  
birds



# Monthly Island-wide Bird Surveys

- ▶ Counts of bird species
- ▶ Locations of birds
- ▶ Report banded birds



# Monthly Island-wide Bird Surveys

	2023	2024	2025
Species	53	63	52
Individuals	22,937	18,714	19,360



**OUTREACH**

# Beach Education!



# Updates to Local News Outlets

## Anna Maria The Islander Online



Page 26 THE ISLANDER | islander.org JULY 19, 2023

**Nesting notes**  
By Lisa Neff

**Tracking Suzi**

Suzi is doing warmups in the Gulf of Mexico. The Sea Turtle Conservancy's Tour de Turtles doesn't begin until Aug. 1 but tracking is ongoing for Anna Maria Island's entry in the "marathon" intended to educate the public about loggerhead turtles and help scientists learn about a sea turtle's movement in the water and nesting on land.

Since Suzi was tagged and released June 27 at Coquina Beach in Bradenton Beach, the turtle has spent time in the Gulf off the coast at Holmes Beach, Bradenton Beach and Longboat Key, as well as in the bay south of Perico Island.

People can follow Suzi's journey and sign up for sea turtle updates at [tourdeturtles.com](http://tourdeturtles.com).

**Excavation time**

Anna Maria Island Turtle Watch and Shorebird Monitoring volunteers are digging a change in the nesting season routine.

With sea turtle hatchlings emerging from the earliest laid nests on AMI, AMITW's duties now include excavating the hatched nests.

But they don't rush in.

The Islander checked in July 14 with AMITW executive director Kristen Mazzarella about the process.

*The Islander: How does turtle watch know a nest has hatched? Do you see tracks? Dip in the nest?*

KM: We check each nest every day for any sign of disturbance or hatch.

Just like we see adult tracks coming from the ocean when a turtle lays a nest, we find hatchling

Mazzarella

A map shows where Suzi, a loggerhead outfitted June 27 in Bradenton Beach with a tracking device, traveled through July 14. Suzi is AMI's entry in the annual Tour de Turtles, an educational-scientific marathon that begins Aug. 1. Islander Screenshot tracks coming from the posted nest area when a nest hatches.

Usually the hatchling tracks come from a depression in the sand where the hatchlings emerged.

*The Islander: You wait before you excavate the nest. Why?*

KM: To give all the hatchlings time to emerge naturally.

*The Islander: When you do excavate, what kind of information do you collect?*

KM: Excavations are a way to determine the nest's

**About AMITW**

AMITW is a nonprofit focused on collecting data on threatened or endangered sea turtles. The organization also collects data on shorebirds. The nesting data is required to meet beach renourishment contracts and AMITW is compensated by the county for its service.

success.

We determine how many hatchlings hatched inside the nest and how many emerged from the nest. This gives us an idea of how many hatchlings are potentially getting to the ocean.

*The Islander: All the bio-material goes back in the nest?*

KM: Yes, we replace everything back in the nest chamber when we are done and cover it up. This way we are leaving the natural material where it belongs.

When the eggs decompose, they nourish the sand and provide important nutrients that help plants, fungi and animals in the sand.

*The Islander: Have you found any live hatchlings in a nest this season?*

KM: Yes, occasionally we find live hatchlings inside the nests when we excavate.

*The Islander: What can cause a hatchling to be left in a nest?*

KM: Any number of things can cause hatchlings to remain in the nest. Some possibilities are that they were caught on something — for example, roots or egg shells — or stuck in a pocket in the nest or they may not be strong enough to leave the nest on their own.

*The Islander: Twenty years ago, turtle watch was using clipboards and pencils for its data collection at the nests. You use tablets now?*

KM: We use our smartphones or tablets to enter the data and enter a lot of the data directly online.

We also use clipboards and pencils for some of the data.

*For more information about AMITW, call the nonprofit at 941-301-3484, email [info@islandturtlewatch.com](mailto:info@islandturtlewatch.com) or go online to [islandturtlewatch.com](http://islandturtlewatch.com).*

As of July 15, AMITW had identified 399 nests, 399 false crawls, 25 hatched nests and about 1,604 hatchlings to the Gulf of Mexico.

VOL 23 No. 45 - Named Best Florida Newspaper In Its Class -

**Suzi swimming for a cause**

Loggerhead sea turtle Suzi was satellite tagged after nesting at Coquina Beach and is now competing in the Tour de Turtles race to raise awareness of light pollution. Story on Page 9.

LES LIE LAKE | SUN

**Fat Cat**  
CARPET, UPHOLSTERY & TILE CLEANING

**GOT STINK?**

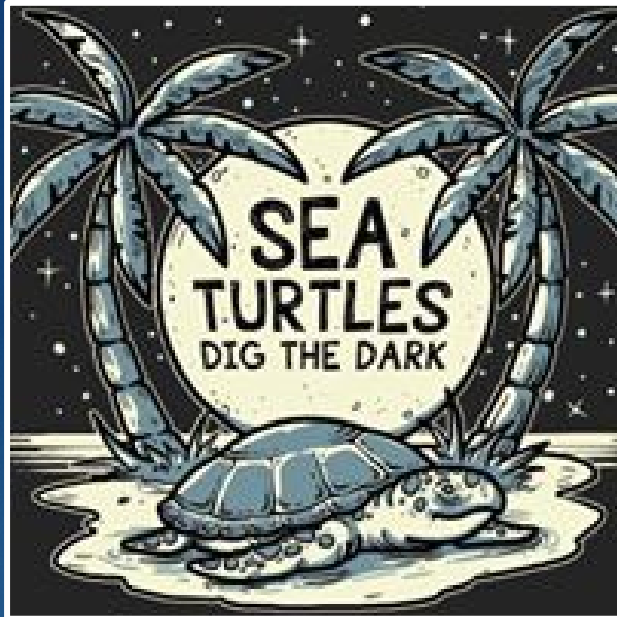
# Public Outreach



# Distribute Educational Materials







# Turtle-friendly Lighting Advocacy



**Keep Lights:  
Long (Wavelengths)  
Low  
Shielded**

### You Make a Difference

<p>Light only when needed</p>  <p>Turn beachfront lights <b>OFF</b></p>	<p>Keep inside light inside</p>  <p>Close curtains at dusk</p>	<p>Spread the word!</p>  <p>Sea Turtles Dig the Dark!</p>
<h4>OUTDOOR LIGHTS</h4>		
<p>All outdoor lights visible from the beach should be</p>  <p>Sea Turtle Friendly Certified by FWC</p>	<p>Use the minimum outdoor light needed</p>  <p>Don't use 4 if 2 will do</p>	<p>Light only Where needed</p>  <p>Outside lights should be shielded and directed down</p>



*"Before"*

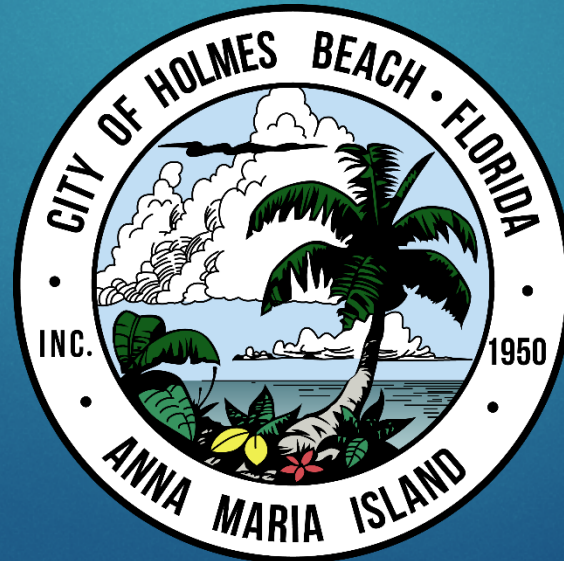


*"After"*

# Work with Local Municipalities



- Code Enforcement
- Local Events
- Outreach
- Beach Cleaning
- Beach nourishment projects





# CLEAN WATER



# Clean Water = Healthy Sea Turtles & Shorebirds



Clean water is essential for healthy seagrass beds

- ▶ Seagrass is the primary diet for green sea turtles

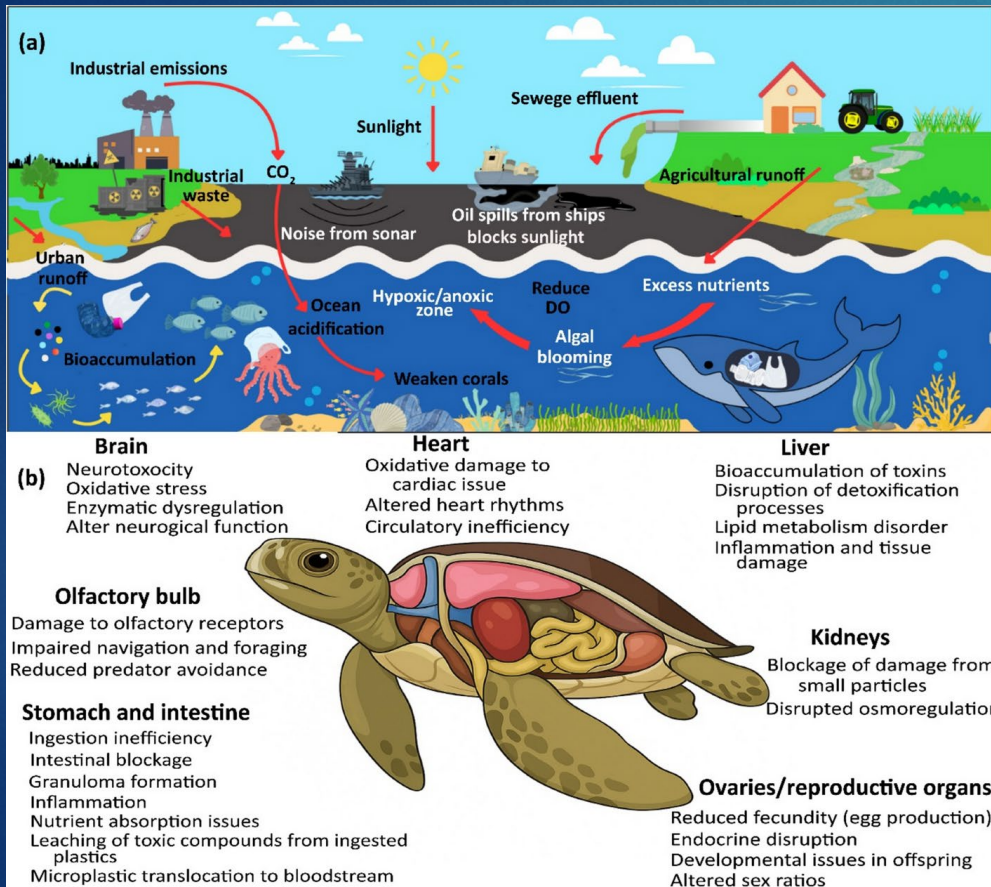
# Clean Water = Healthy Sea Turtles & Shorebirds



Clean water means healthy beach habitats

- ▶ Nesting sea turtles
- ▶ Foraging shorebirds

# Water Pollution = Sick Sea Turtles & Shorebirds

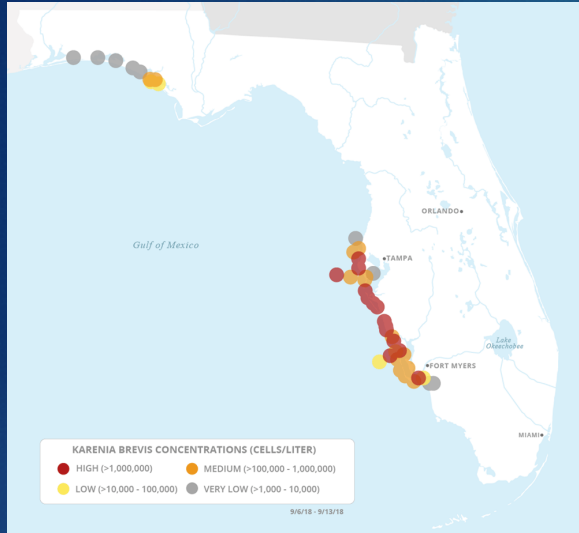


▶ Man-made chemical pollutants bioaccumulate in sea turtles & shorebirds

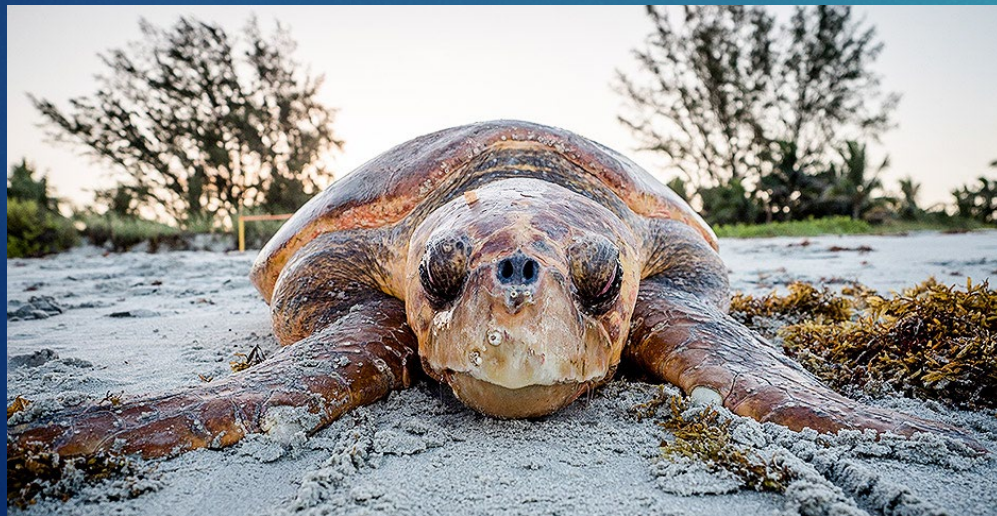
▶ Reduce survival, reproduction, brain function, and can be passed along to offspring

<https://doi.org/10.1007/s44218-025-00107-8>

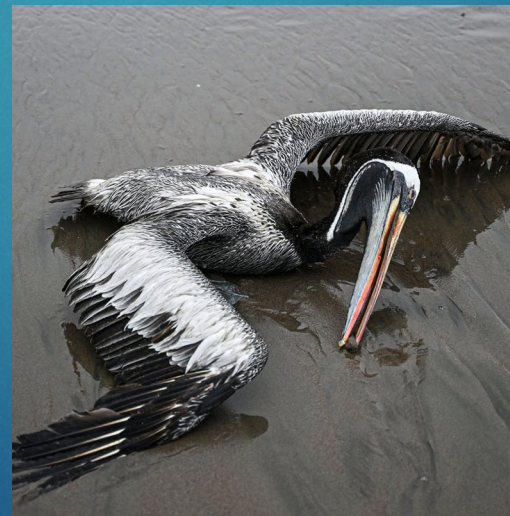
# Water Pollution = Sick Sea Turtles & Shorebirds



- ▶ Harmful Algal Blooms (e.g., red tide)
- ▶ Increased occurrence of disease & illness
  - ▶ Avian botulism
  - ▶ Fibropapillomatosis (FP) Tumors



<https://www.eenews.net/articles/a-toxic-dive-into-fla-s-red-tide/>



<https://www.vox.com/science/23709615/avian-influenza-h5n1-wild-birds>

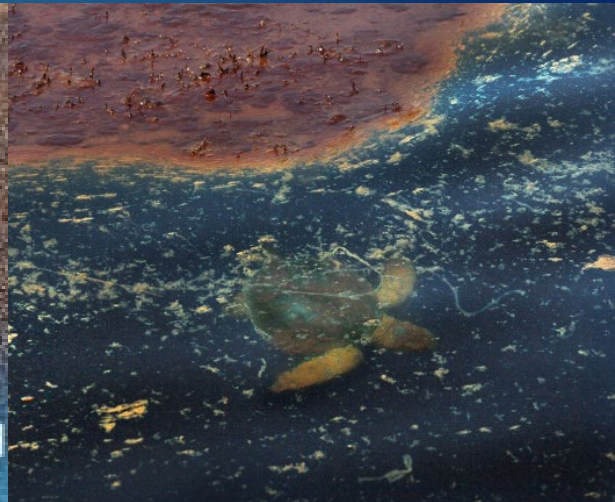


<https://h-mar.org/unseen-impacts-toxoplasmosis-and-fibropapillomatosis/>

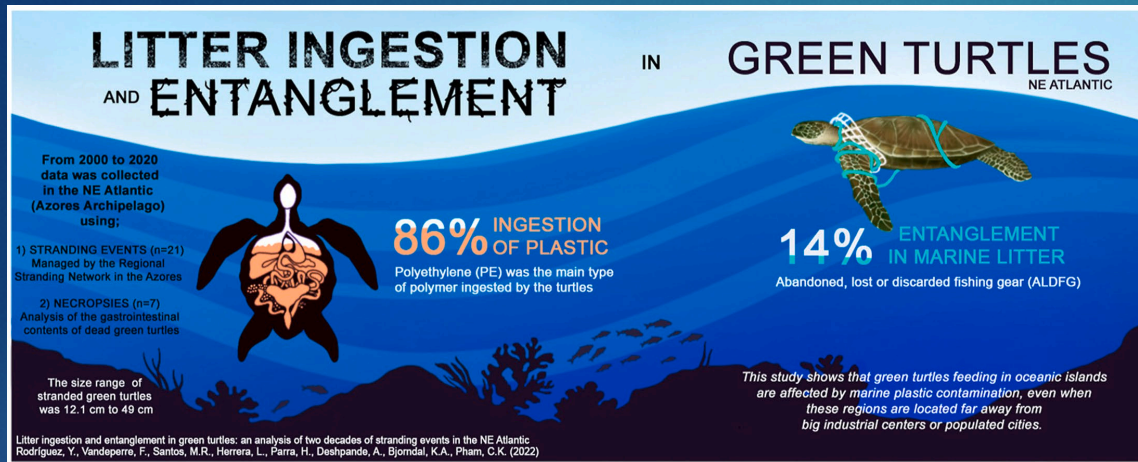
# Water Pollution = Sick Sea Turtles & Shorebirds

Degrades habitats important for

- ▶ Foraging shorebirds on migratory stopovers
- ▶ Nesting sea turtles
- ▶ Post-hatchling sea turtles



# Marine Debris = Sick/Injured Sea Turtles & Shorebirds



► Ingestion of or entanglement in plastics can lead to impaction, injury or death



► Marine debris can affect turtles & birds in the oceanic community – far from the shore/populated cities.

How Can

YOU

Make a  
Difference?



**RESPECT WILDLIFE**

# Obey Posted Closures/Signs

- ▶ Give wildlife the room they need
- ▶ Prevent you from disturbing wildlife



**DO NOT DISTURB  
SEA TURTLE  
NEST**



**VIOLATORS SUBJECT  
TO FINES AND  
IMPRISONMENT**

**FLORIDA LAW  
CHAPTER 379.2431(1)**

No person may take, possess, disturb, mutilate, destroy, cause to be destroyed, sell, offer for sale, transfer, molest, or harass any marine turtle or its nest or eggs at any time.

Upon conviction, a person may be imprisoned for a period of up to 60 days or fined up to \$500, or both, plus an additional penalty of \$100 for each sea turtle egg destroyed or taken.

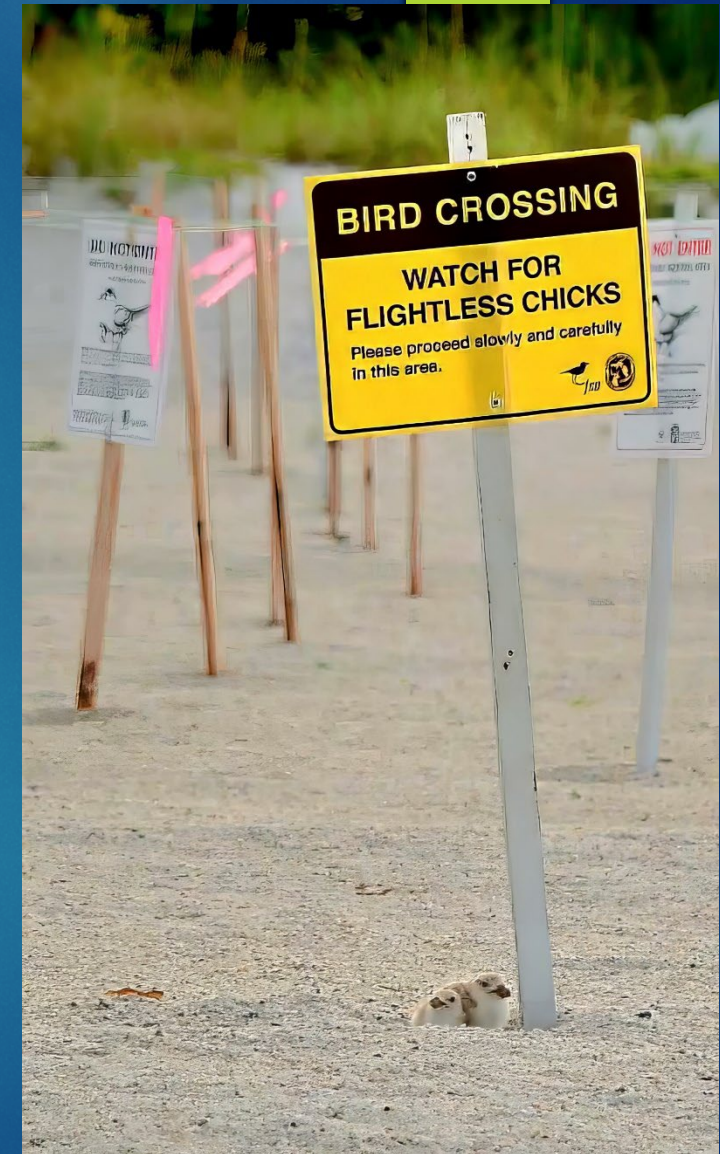
**U.S. ENDANGERED  
SPECIES ACT OF 1973**

No person may take, harass, harm, pursue, hunt, shoot, wound, kill, trap, or capture any marine turtle, turtle nest, and/or eggs, or attempt to engage in any such conduct.

Any person who knowingly violates any provision of this act may be assessed a civil penalty up to \$25,000 or a criminal penalty up to \$100,000 and up to one year imprisonment.

**SHOULD YOU WITNESS A VIOLATION, OBSERVE AN INJURED OR STRANDED TURTLE, OR MISORIENTED HATCHLINGS, PLEASE CONTACT FWC AT**

**1-888-404-FWCC OR \*FWC (MOBILE PHONE)**  
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION  
MARINE TURTLE PROTECTION PROGRAM



# Don't Feed Birds

- ▶ Birds eat fish, crustaceans, and insects.... Not bread, chips, or popcorn



# Practice Leave No Trace

- ▶ Fill in Holes
- ▶ Knock down sand castles
- ▶ Take everything with you when you leave
- ▶ Remove trash



# Keep Our Waters Clean

- ▶ Minimize use of fertilizers
- ▶ Prevent runoff – plant natives
- ▶ Use eco-friendly detergents
- ▶ Properly dispose of household chemicals and medicines



# Use turtle-friendly lighting

- ▶ NO lights on the beach at night
- ▶ Use Turtle-friendly bulbs
- ▶ Close blinds at night
- ▶ Block light with shields or vegetation



# Report Human Disturbance

- ▶ Call the Police or FWC
- ▶ Take Photos
- ▶ Get a good location
  - ▶ Drop a pin on GoogleMaps



# Stranded Turtle

- ▶ Call FWC or AMITW
- ▶ Do not put stranded animal back into the water
- ▶ Do not cut gear off of animal
- ▶ Take photos



# Nesting Turtle at Night

- ▶ Watch in the dark – no lights  
*(not even red lights)*
- ▶ Remain quiet and still behind the turtle – do not stand where she can see you
- ▶ No flash photography
- ▶ Stay off turtle tracks
- ▶ Keep path clear for turtle to return to ocean



- ▶ No need to call AMITW – we will see the crawl in the morning

# Nesting Turtle during the Day

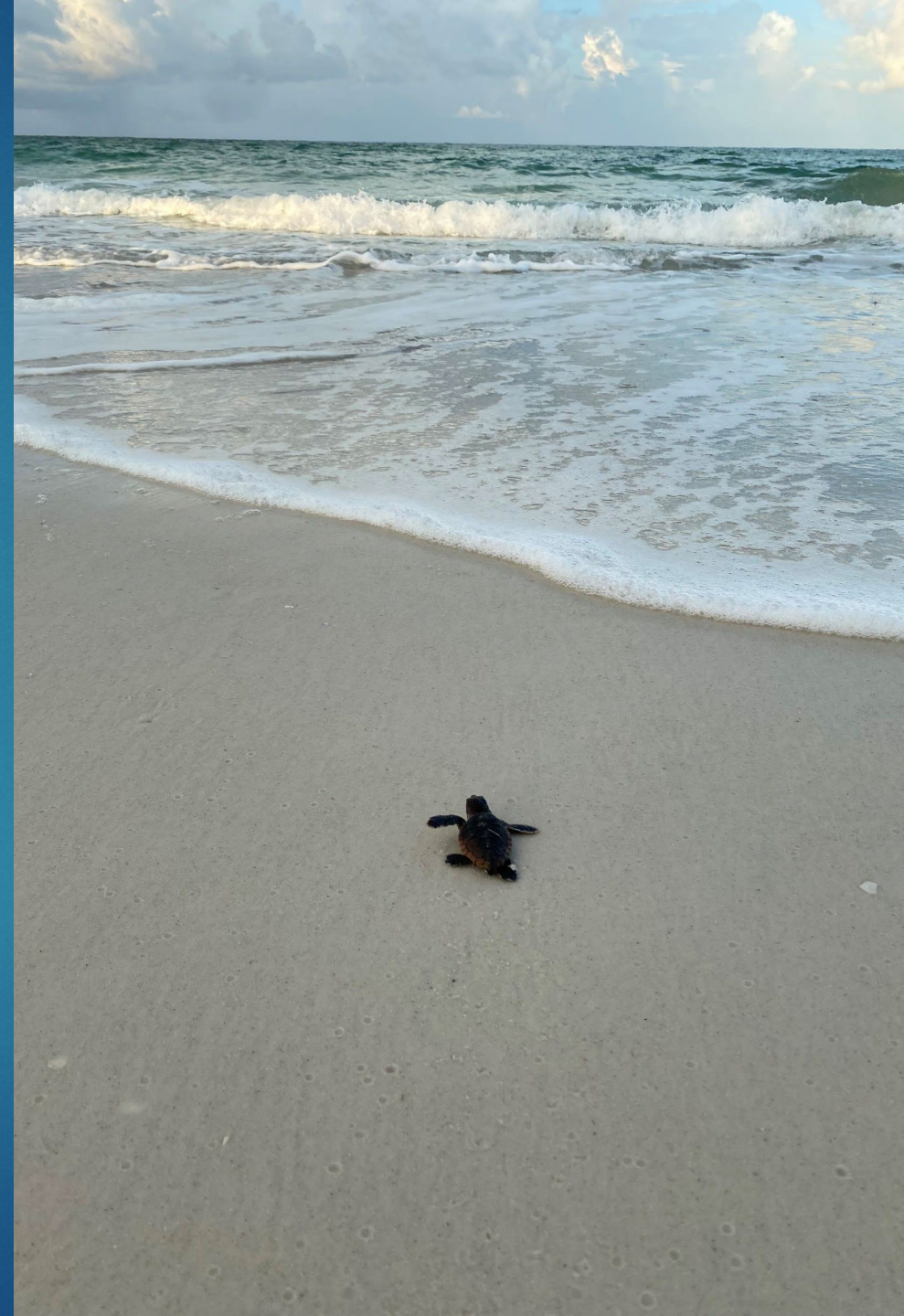
- ▶ **Call AMITW!**
- ▶ Remain quiet and still behind the turtle
- ▶ Watch from a distance
- ▶ Take PHOTOS!
- ▶ Stay off turtle tracks



Kemp's ridley – rarest of sea turtles

# Hatchlings

Let hatchlings crawling towards  
the water continue on their own



# Hatchlings

In distress, not on the beach, or headed away from the ocean

**Call AMITW for instructions**



# IMPORTANT PHONE NUMBERS

FWC:

800-404-3922

or \*FWC

AMITW:

941-301-8434

(24/7 hotline)



Learn MORE!

# Anna Maria Island Turtle Watch & Shorebird Monitoring

Coordinating conservation efforts since 1983 along the Manatee County shoreline.

CONTINUE READING

Visit our website to learn more:  
[www.islandturtlewatch.com](http://www.islandturtlewatch.com)

# Attend Weekly Turtle & Shorebird Talks



TURTLE TRACKS &  
shorebird facts

a FREE presentation by  
Anna Maria Island Turtle Watch

**MONDAYS, 10-11AM**  
**May - August**  
**Holmes Beach City Hall**  
**5801 Marina Drive**

[www.islandturtlewatch.com](http://www.islandturtlewatch.com) (941) 301-8434

THANK YOU!

