A publication of the Coastal Coordination Council pursuant to National Oceanic and Atmospheric Administration Award No. NA11NOS4190107.

FINAL REPORT

Project Name: Training Program for Certifying Nesting Sea Turtle Monitors

GLO Contract No.: 12-145-000-4835

Principal Investigator: Andre M. Landry, Jr., Professor, Texas A&M University at Galveston

Report Date: April 16, 2013

Introduction

Information contained within this document and that of the enclosed jump-drive responds to a request made to the contract's Principal Investigator by Sean Hilbe, Grants Specialist in the Grants Programs & Support Division of Texas General Land Office's Coastal Resources Program Area. This request included the need for documentation in three areas that would complete GLO Contract #12-145-000-4835. The documentation requested includes the following items:

1) Screenshot of the website

2) Copies of workshop materials

3) A brief summary on the effectiveness of the training program.

Each of these pieces of documentation is summarized below and, in the case of workshop materials, contained on the enclosed jump-drive.

Screenshot of the Website

Unfortunately, a screenshot of the website is no longer possible, given the fact that the website was taken down on March 1, 2013. The Principal Investigator would have been happy to provide this screenshot had the request been made earlier. Nonetheless, it should be noted that website construction began in October 2011 and was completed on February 29, 2012. GoDaddy.com was used to obtain and develop a domain address for the training program web site. The domain name for the web site was www.seaturtlemtp.com. By March 1, 2012, users of the completed web site were able to communicate with and register for the training program via email at the address: seaturtlemtp@gmail.com.

Copies of Workshop Materials

Each 2-day long sea turtle monitor training workshop involved 16 hours of in-class lectures and on-beach, practical training on the following monitoring topics: sea turtle and piping plover species identification; nesting patrol techniques & patroller safety; signs of nesting activity; nesting response & reporting requirements; prevention of negative impact to nesters, nests & eggs/hatchlings; marking a nest; signage requirements of on-going monitoring; stranded sea turtle & marine mammal response & reporting requirements; and daily monitoring log requirements**.** Workshop materials included nine power point presentations given in a classroom

setting and hands-on training on beaches subject to sea turtle nesting activity. The nine power point presentations are contained on the enclosed jump-drive and include the following topics:

Part I: Program Mission and Workshop Goals
Part II: Introduction to Sea Turtles
Part III: Piping Plover
Part IV: Monitor Challenge
Part V: Monitor Response Protocol
Part VI: Signage Requirements
Part VII: Sea Turtle & Marine Mammal Stranding Response
Part VIII: Monitor Safety and Supplies
Part IX: ATV Operation & Safety

Other supporting materials contained on the enclosed jump-drive include the following:

STMTP Waiver: Attendees signed this waiver form and, in doing so, held the sponsor, TAMUG and other entities harmless from injury and death while participating in the monitor training workshops.

Sea Turtle Monitor Training Workshop Homework: This exercise was designed for workshop attendees to use information presented during training lectures and a YouTube video on sea turtle nesting to complete questions pertinent to signs of nesting activity and how to respond when these signs are detected.

On-Beach Monitoring Exercise East (w/West Counterpart): This exercise was designed to provide both hands-on training and an evaluation of each attendee's knowledge and ability to detect signs of sea turtle nesting activity on western Gulf of Mexico beaches.

Certificate of Completion: Each workshop attendee was presented a certificate verifying his/her attendance at the 2-day training sessions and successful completion of all workshop activities. These certificates were often required as part of various beach-side communities' permit applications when cleaning their beaches.

STMTP Evaluation Form: This form was completed by each workshop attendee as a means of evaluating and improving workshop offerings over the contract period.

Effectiveness of the Training Program

Evaluation forms (see the Word document entitled STMTP Evaluation Form on the enclosed jump-drive) completed by workshop attendees gave the classroom and on-beach training sessions raving reviews (copies of these forms will be provided upon request). In addition, several other criteria were used in evaluating workshop effectiveness. The first of these was the fact that, with the exception of one scheduled workshop, all classes were filled to their max and, over time, demand for workshop entry exceeded that of the facilities where sessions were staged. This resulted in applicants being put on a waiting list for subsequent workshops. Another indication of workshop effectiveness was the impact of word-of-mouth from workshop

attendees on promoting a demand for workshop participation long after contracted offerings were completed. Enthusiasm of attendees for more information and longer on-beach training exercises was high and often resulted in attendees asking questions and wanting more survey time after formal workshop hours were long over. Another important sign of the workshop's effectiveness was the request by resource agency personnel who attended workshops for more information and advice from the Principal Investigator on proper conduct of sea turtle nesting patrols/surveys. This was certainly the case for personnel from the US Fish and Wildlife Service, Texas Parks and Wildlife Department, City of Galveston, Galveston County, and Louisiana Department of Wildlife and Fisheries.

- **Sea turtle nesting is an ever-increasing activity on Gulf beaches subject to multiple human uses**

- **Ac ng the de pe**
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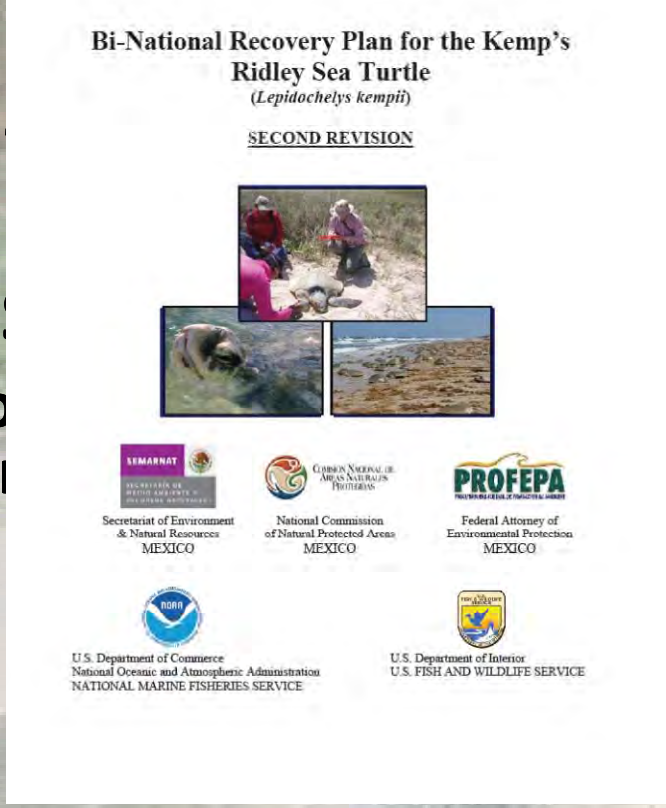
- **Answer: Protected Species Legislation**
  - **U.S. Endangered Species Act of 1973**
  - **World Conservation Union (IUCN)**
  - **Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES, Appendix I)**

- **Purpose of the E**
  - **protect and reco** **nd the ecosystems upo**



- **ESA Recovery Strategy:**
  - **<u>Recovery plans</u> delineate reasonable actions required to recover and/or protect a listed species based on the best available science**
  - **published by U.S. Fish and Wildlife Service and National Marine Fisheries Service**
    - **sometimes prepared with the assistance of recovery teams, contractors, state agencies, and others**

- **Nesting beach priorities:**
  - **protect nesting females**
  - **maintain or increase hatchling production**
  - **reinforce habitat protection efforts**

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- **Recovery plans require review and possible permitting of activities potentially impacting nesting sea turtles on US beaches**

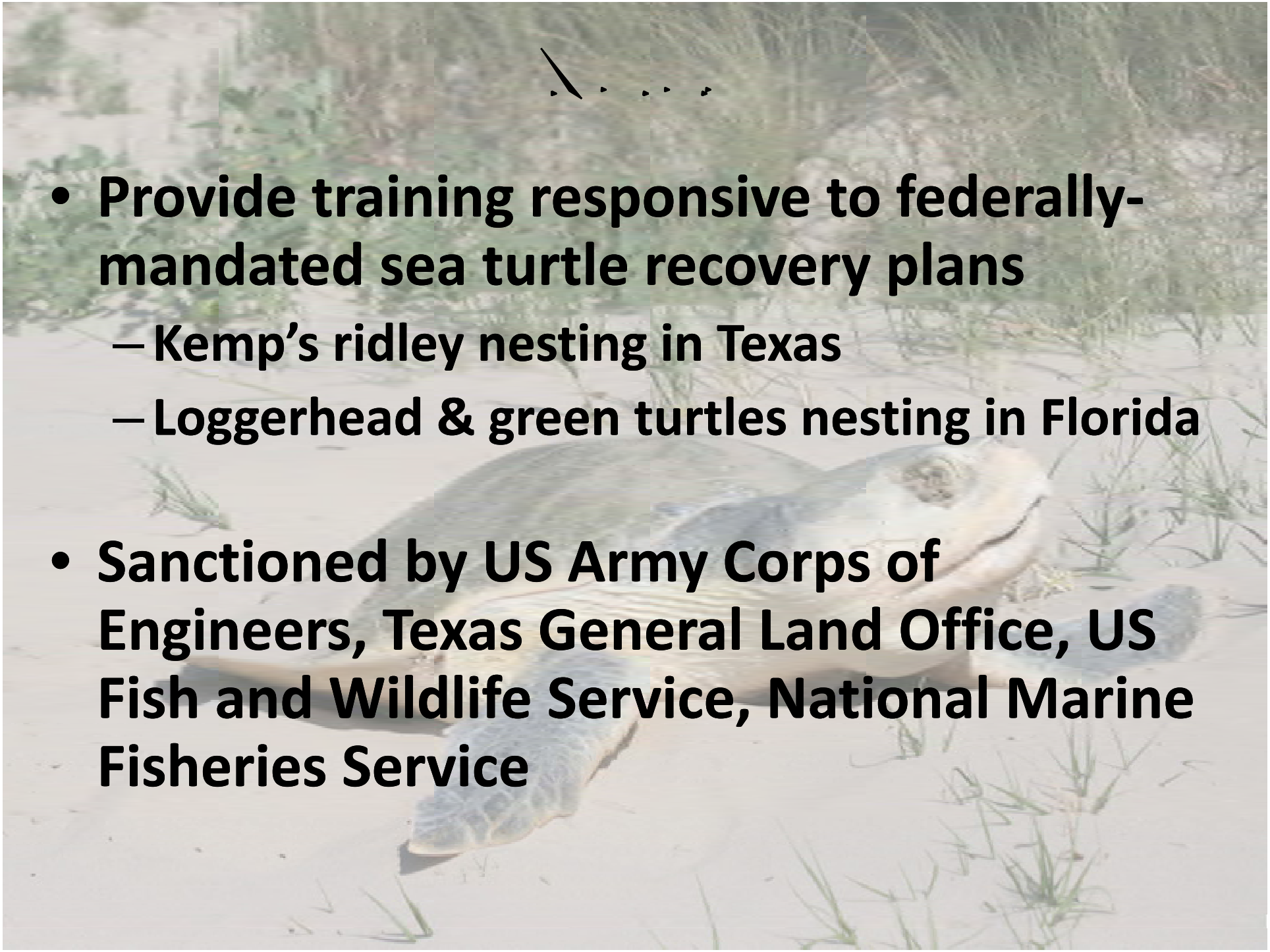
- **Permit applications are reviewed by:**
  - **US Army Corps of Engineers**
  - **US Fish and Wildlife Service**
  - **National Marine Fisheries Service**
  - **Texas General Land Office**
  - **Texas Parks and Wildlife Department**

US Army Corps of Engineers®

- **Permits typically require certified monitors**
  - **protect a nesting female, her nest and nesting habitat**
  - **ensure safe, concurrent conduct of permitted activity**

- **Promote sea turtle conservation & recovery**
  - **certification of monitors trained to protect nesting activity on Gulf of Mexico beaches**
    - **addresses federal permit requirements**
    - **provides educational outreach**

- **Funded by the Texas General Land Office's Coastal Coordination Advisory Committee**
  - **pursuant to NOAA award No. NA11N0S4190107**
  - **go to** http://tinyurl.com/6oe58g9



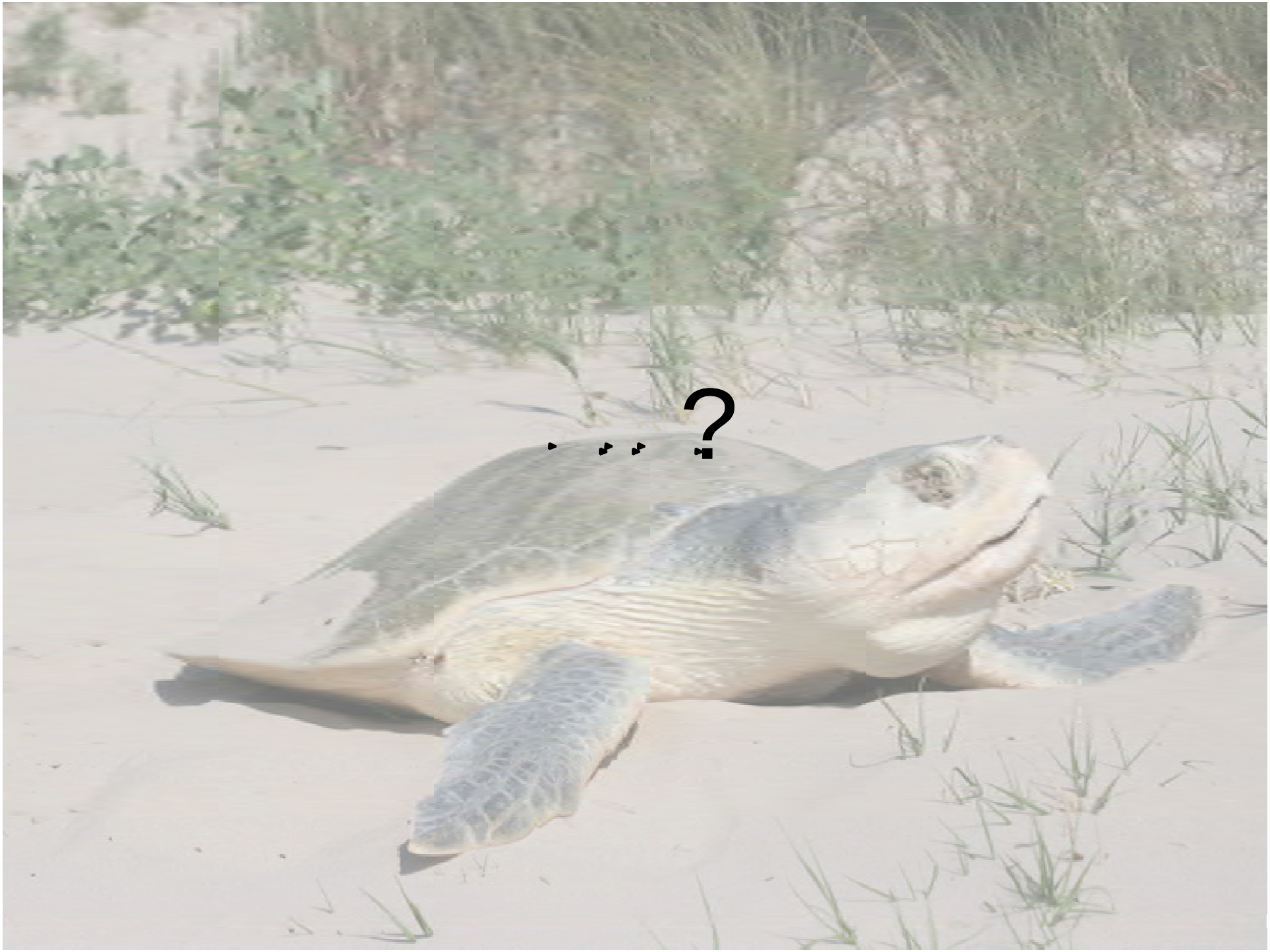
- **Provide training responsive to federally-mandated sea turtle recovery plans**
  - **Kemp's ridley nesting in Texas**
  - **Loggerhead & green turtles nesting in Florida**
- **Sanctioned by US Army Corps of Engineers, Texas General Land Office, US Fish and Wildlife Service, National Marine Fisheries Service**

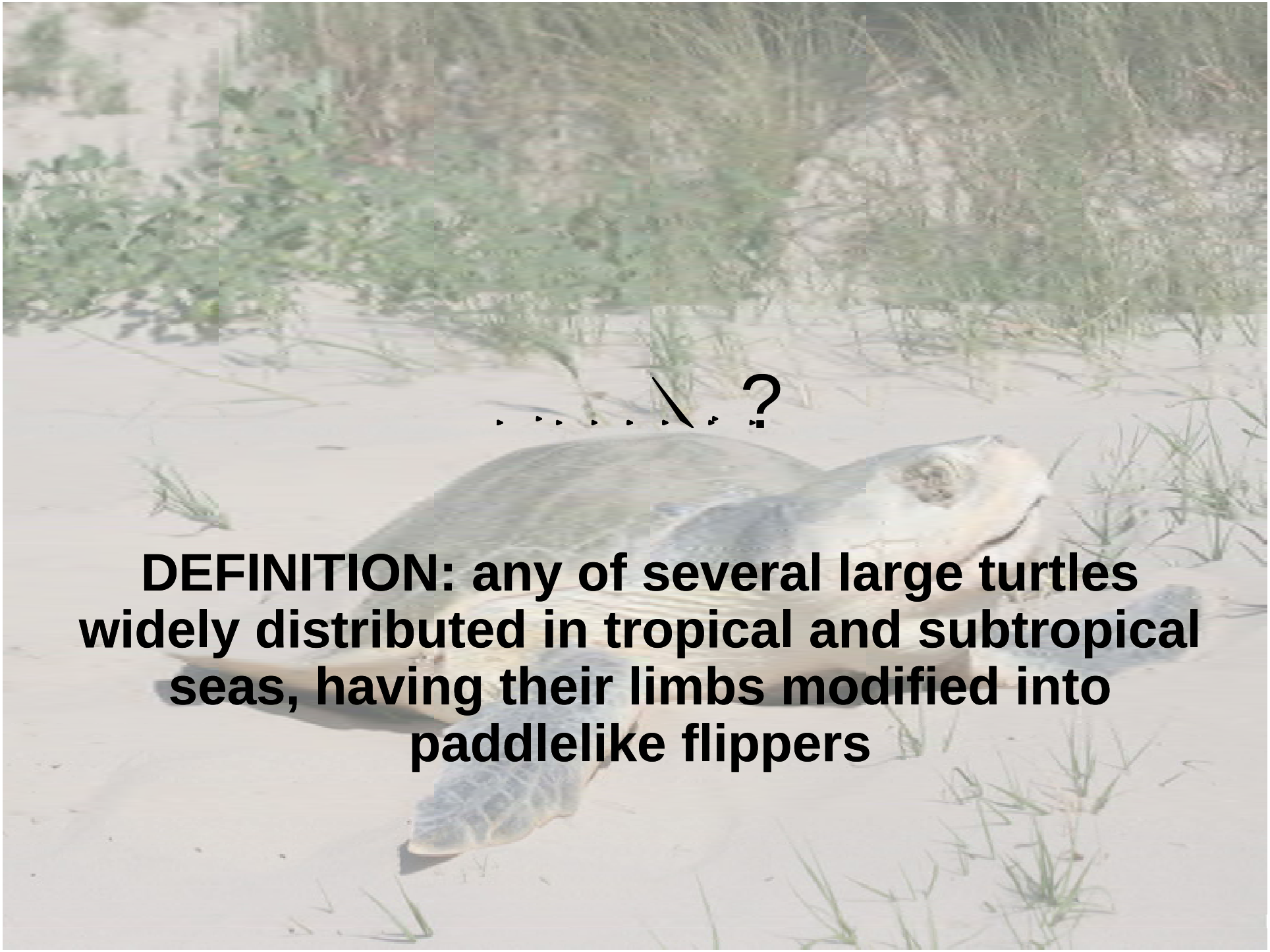
- **Monitor training workshops target:**
  - **anyone seeking a sea turtle nesting monitor position required for a state or federally permitted activity**
  - **a regulatory agency employee wanting in-depth information to protect sea turtle nesting activity**
  - **an employee of a beach-related industry that requires hands-on training to identify and report nesting activity**
  - **potential volunteers for sea turtle nesting patrol positions or applicants to a sea turtle research program**
  - **anyone interested in learning more about sea turtle nesting behavior and the role Gulf beaches play in this activity**

- **2-day workshops that involve 16 hours of in-class lectures and on-beach, practical training:**
  - **sea turtle species identification**
  - **nesting patrol techniques & patroller safety**
  - **signs of nesting activity**
  - **nesting response & reporting requirements**
  - **prevention of negative impact to nesters, nests & eggs/hatchlings**
  - **marking a nest**
  - **signage requirements of on-going monitoring**
  - **stranded sea turtle & marine mammal response & reporting requirements**
  - **daily monitoring log requirements.**

- **Day 1 Morning:**
  - Program Mission & Workshop Goals
  - Introduction to Sea Turtles
  - The Piping Plover
  - The Monitoring Challenge
- **Day 1 Afternoon:**
  - Monitor Response Protocol
  - Signage Requirements
  - Sea Turtle & Marine Mammal Stranding Response
  - Monitor Safety and Supplies

- **Day 2 Morning:**
  - **Review of Day 1 Materials**
  - **ATV Operation & Safety**
- **Day 2 Afternoon:**
  - **Hands-on ATV Training**
  - **On-beach Monitoring**
  - **Workshop Evaluation**





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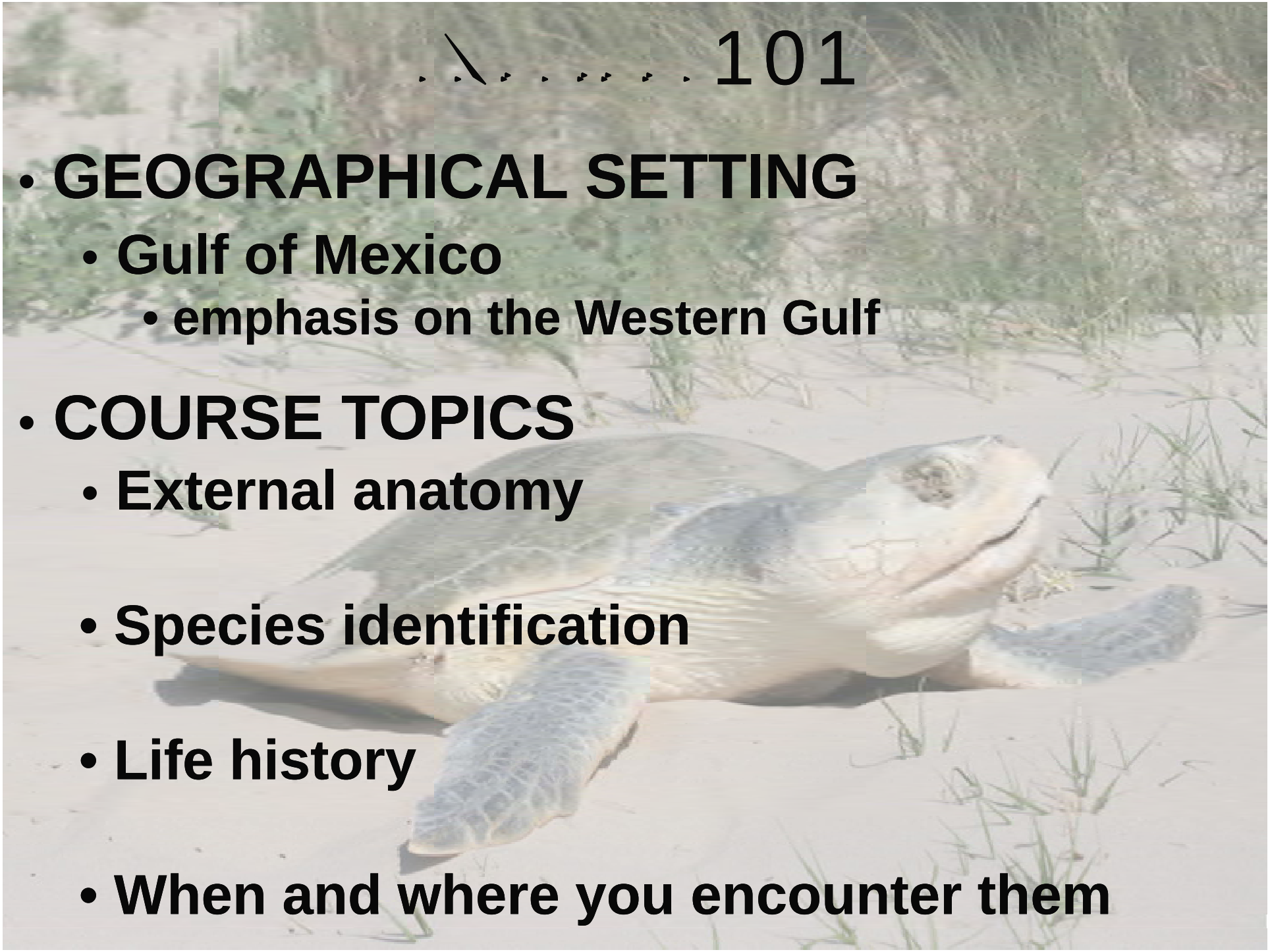
DEFINITION: any of several large turtles widely distributed in tropical and subtropical seas, having their limbs modified into paddlelike flippers



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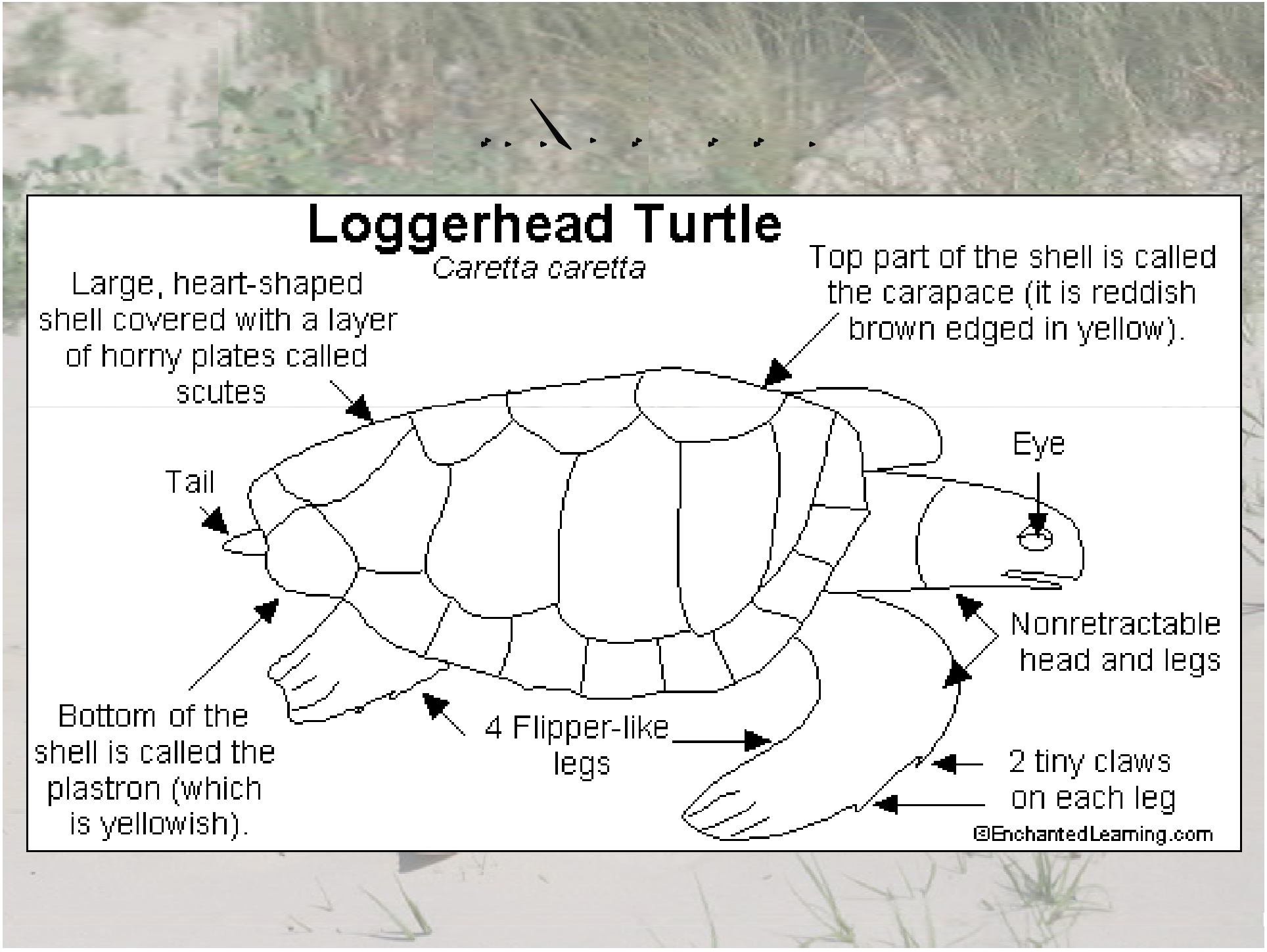
- **GEOGRAPHICAL SETTING**
  - **Gulf of Mexico**
    - **emphasis on the Western Gulf**
- **COURSE TOPICS**
  - **External anatomy**
  - **Species identification**
  - **Life history**
  - **When and where you encounter them**


Loggerhead Turtle
Caretta caretta
Large, heart-shaped shell covered with a layer of horny plates called scutes
Top part of the shell is called the carapace (it is reddish brown edged in yellow).
Tail
Eye
Nonretractable head and legs
Bottom of the shell is called the plastron (which is yellowish).
4 Flipper-like legs
2 tiny claws on each leg
©EnchantedLearning.com

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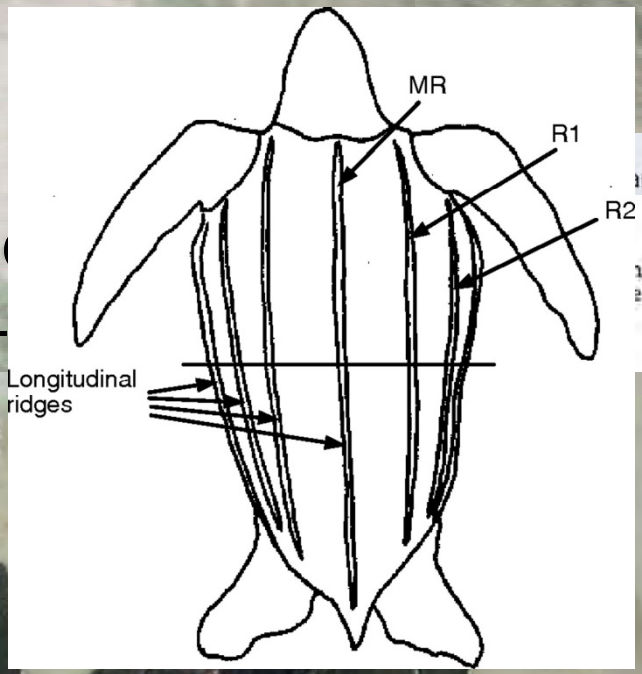
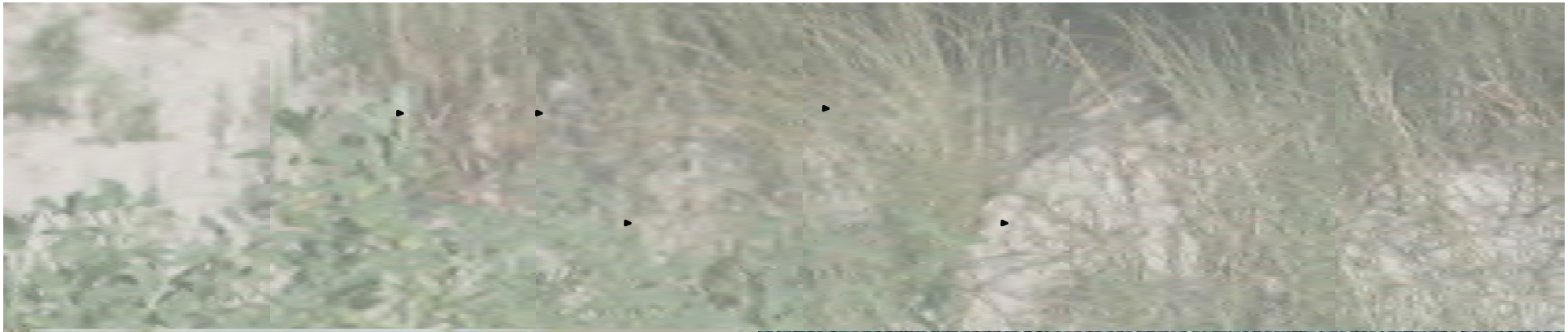
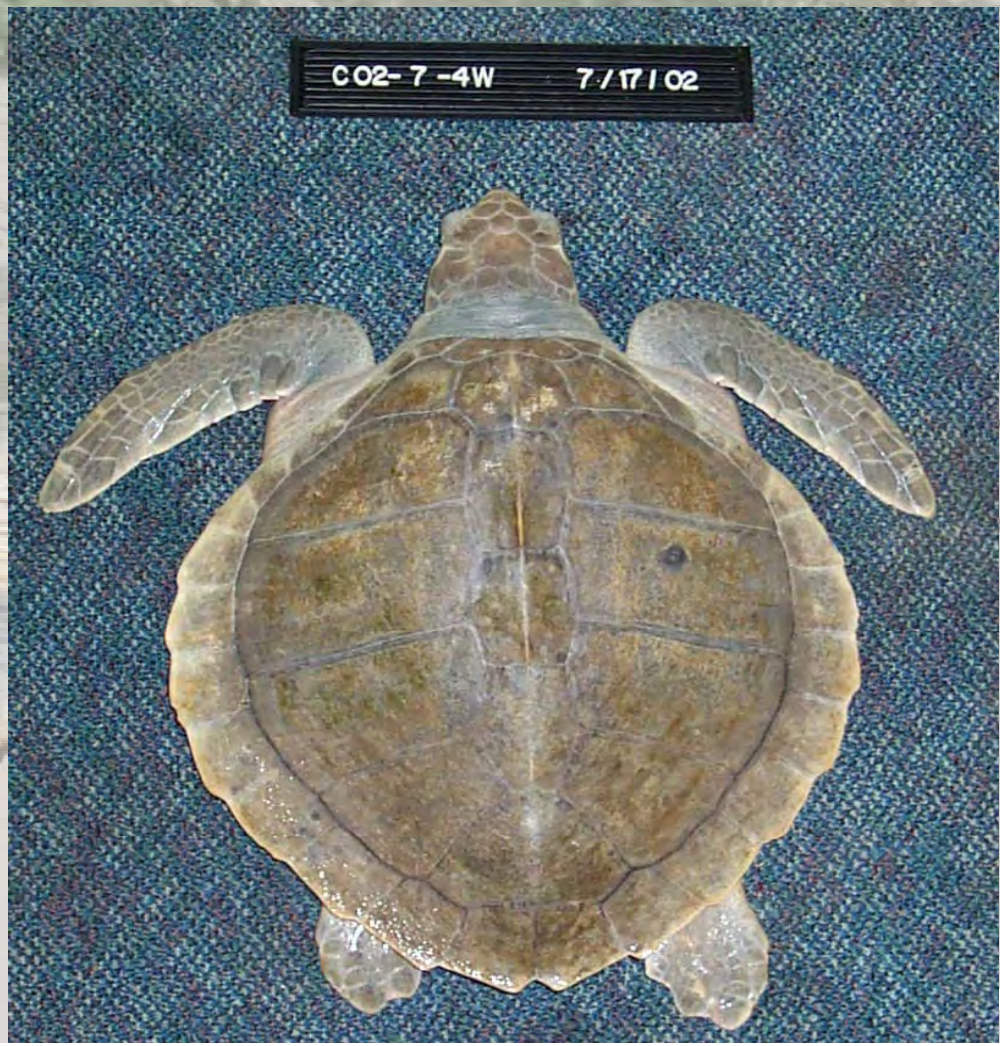


Loggerhead
Sea Turtle

- **Sea Turtles**

- **Freshwater Turtles**

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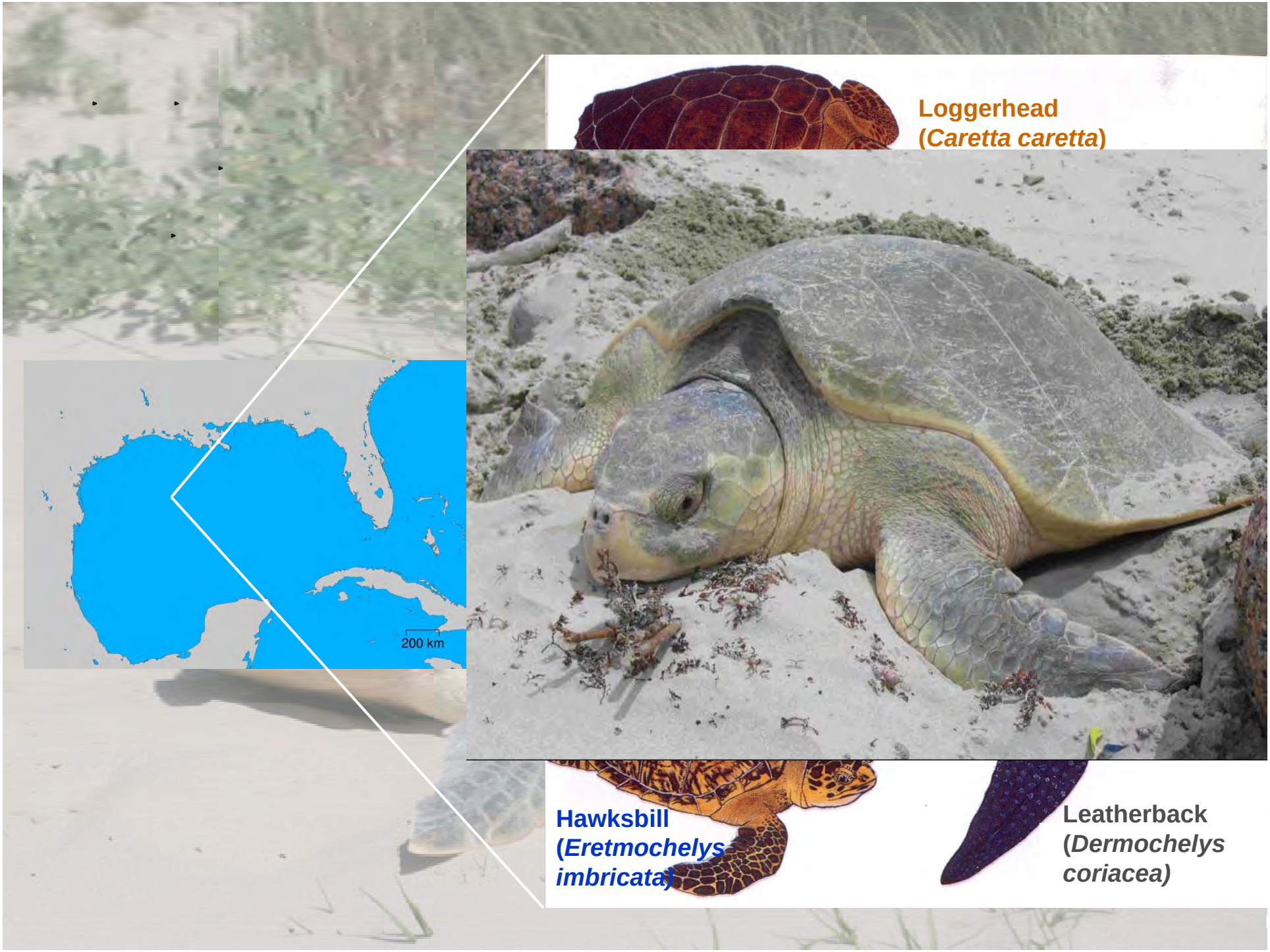

Loggerhead
(*Caretta caretta*)
200 km
Hawksbill
(*Eretmochelys imbricata*)
Leatherback
(*Dermochelys coriacea*)

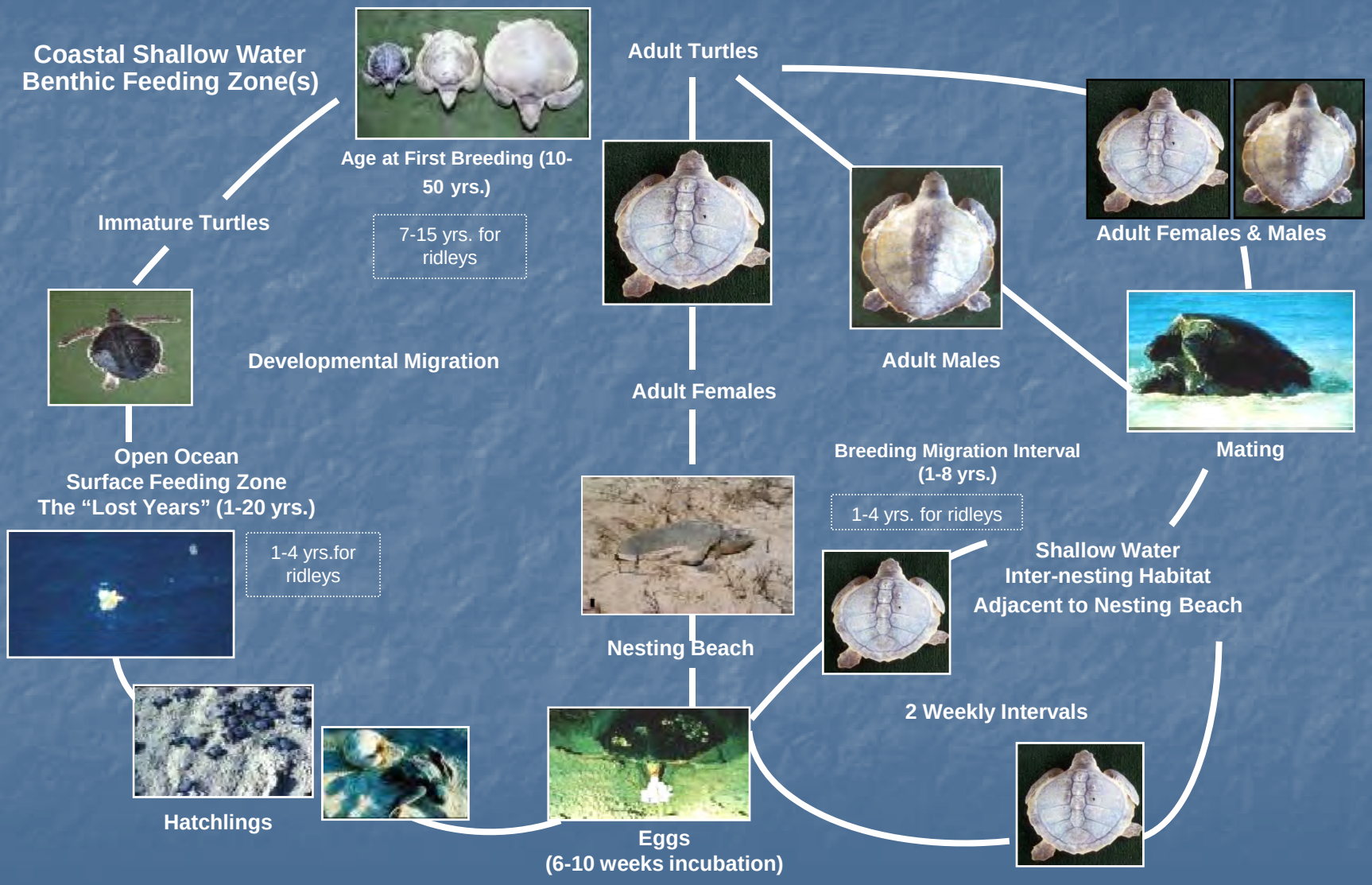
ENDANGERED SPECIES ACT (ESA)

- **All sea turtle species are protected by the ESA**
  - **Endangered: danger of extinction throughout most of its range**
  - **Threatened: likely to become endangered in foreseeable future**
- **Loggerhead** — **Threatened**
- **Green** — **Endangered/Threatened**
- **Kemp's ridley** — **Endangered**
- **Hawksbill** — **Endangered**
- **Leatherback** — **Endangered**

- **Gulf waters are home to five sea turtle species**
- **These species depend on Gulf habitats for:**
  - **feeding**
  - **breeding**
  - **nesting**
  - **hatching**

occurs on beaches & may require monitoring

Sea Turtle Life History



- **Species using western Gulf waters can be categorized as:**
  - **Transients: spatially or temporally restricted**
    - **Leatherback**
    - **Hawksbill**
  - **Residents: ≥1 life stages are always present**
    - **Green sea turtle**
    - **Loggerhead**
    - **Kemp's ridley**

monitoring candidates?

LEATHERBACK
(*Dermochelys coriacea*)

Oceanic Wanderers

Tropical Nesters

Offshore Gulf

(feeding on jellyfish near the mouth of the Mississippi River)

Occurrence on Texas Beaches

Strandings: 1 in 2007, 2 in 2011 & 2012

1 nest in 2008

(first documented nesting since 1939)

HAWKSBILL

(*Eretmochelys imbricata*)

Limited “Tropically”

Reef Inhabitants

Sponge Feeders

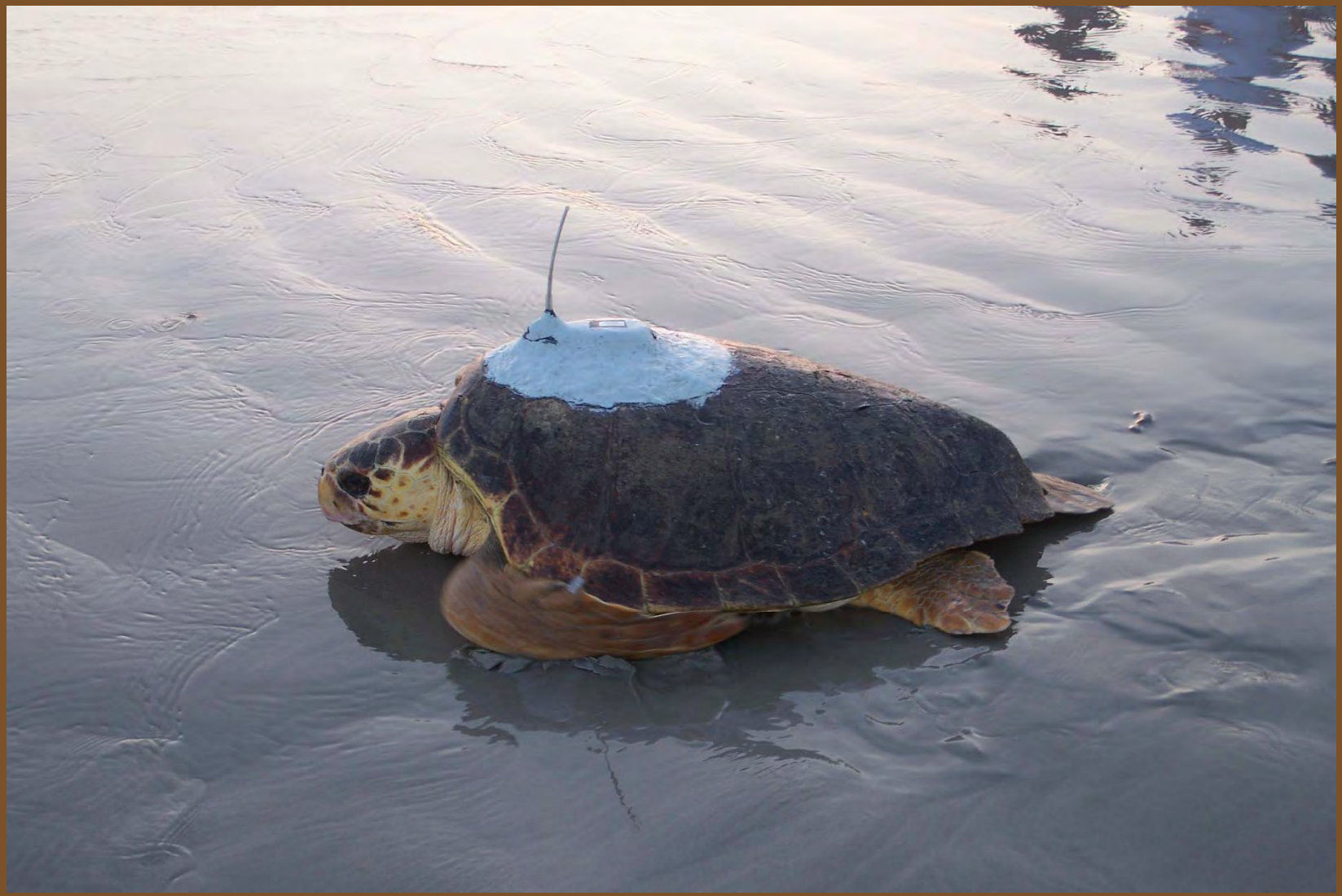
Insular Nesters

Florida Keys & Southwest Gulf

No documented nesting in Texas over last 5 years

LOGGERHEAD SEA TURTLE

(*Caretta caretta*)



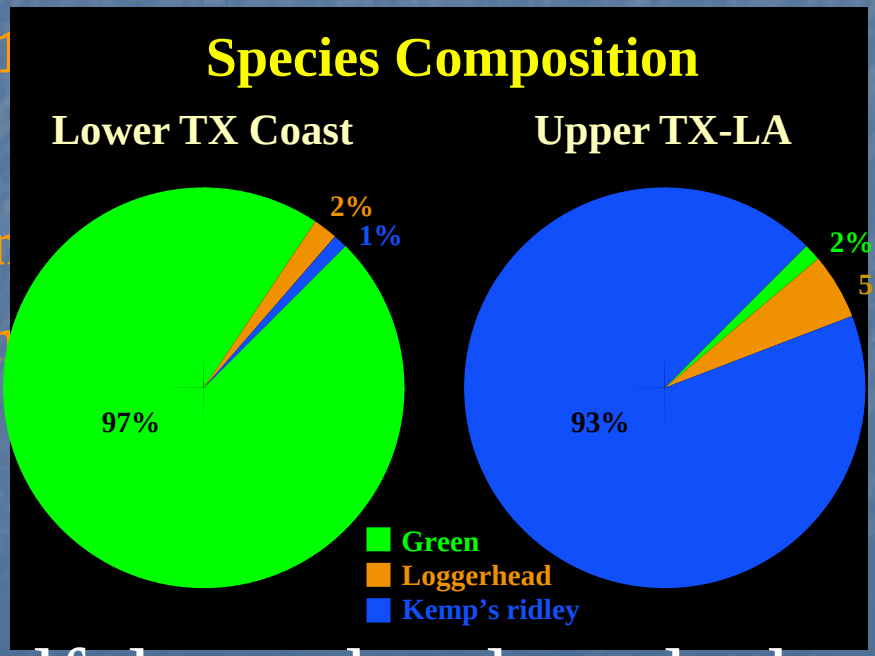
Loggerheads of the Western Gulf

The Gulf's Most Abundant Sea Turtle???

Population Contribution

STFERI's Netting Surveys of Nearshore Gulf Waters

- **US Regional Estimates**



- Where are Western Gulf loggerheads and what are they doing?

Western Gulf

g other sea turtle

Gregg Gitsch

- plat

LOGGERHEADS OF THE WESTERN GULF

- "A loggerhead under every oil platform"!?
  - ~4,000 platforms in Gulf of Mexico

John Embesi

- L anks
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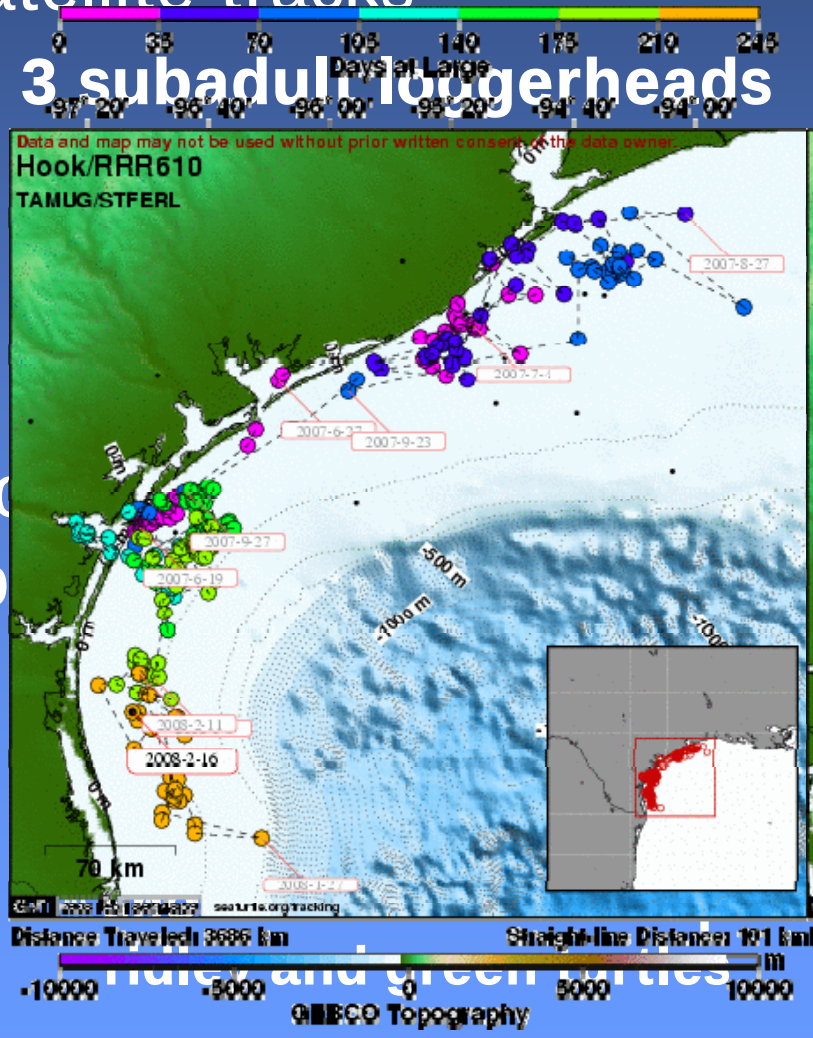
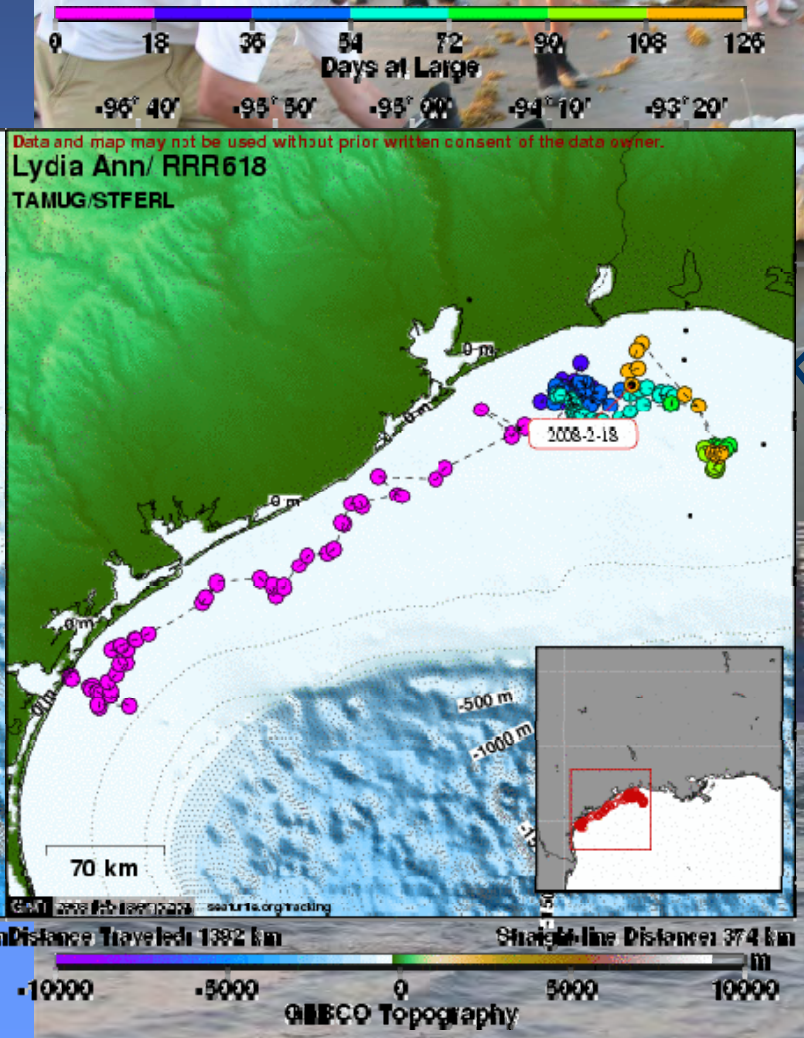
Loggerhead Movements

- Satellite tracks
  - **3 subadult loggerheads**
- Mo
  - co
  - ridley and green turtles

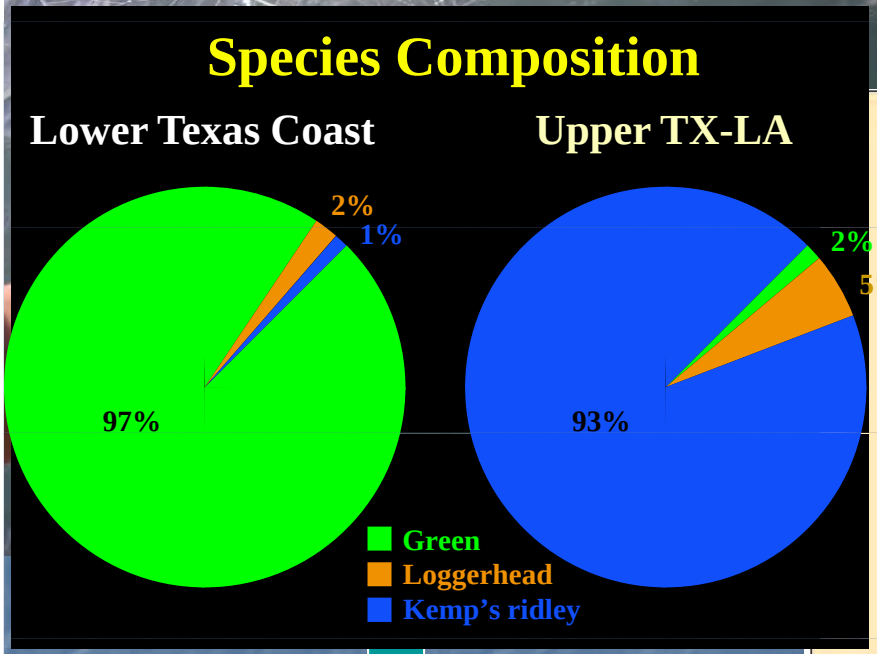


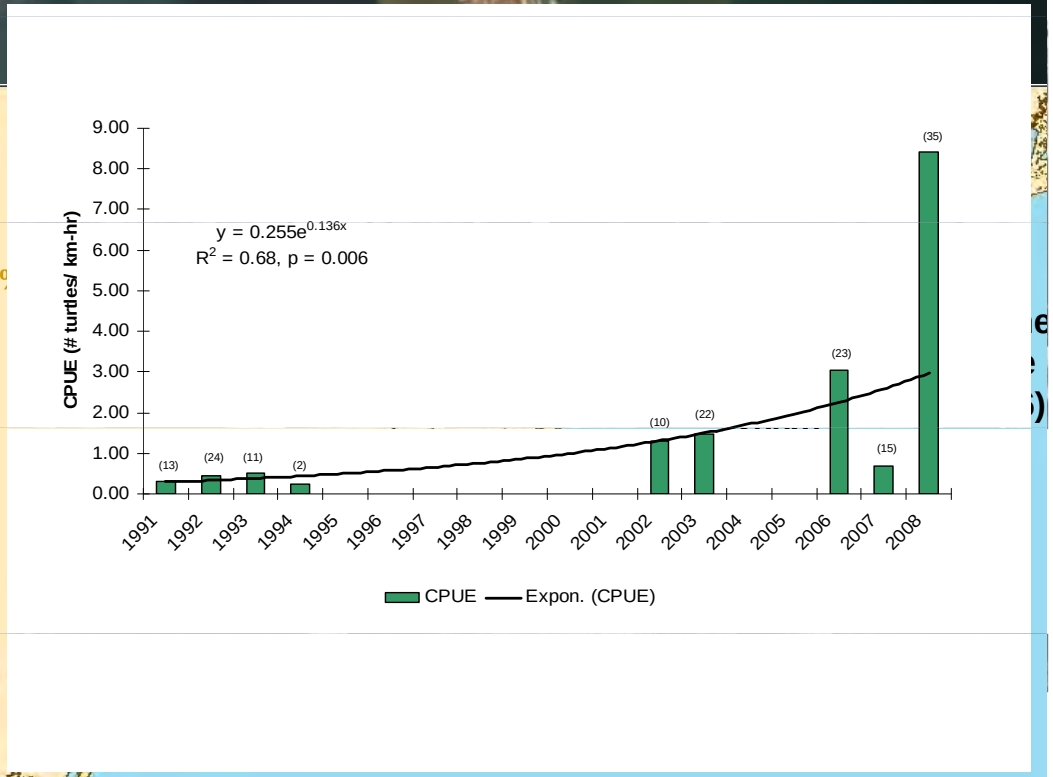


GREEN SEA TURTLE

(*Chelonia mydas)*

Green Turtles of the Western Gulf





Recent Findings

- Population Trends
  - Increasing abundan
    - Port Aransas
  - Juveniles and suba
    - few adults

Green Turtles of the Western Gulf

- Nursery/Foraging Grounds
  - Middle and Lower Texas coast
    - Jettied Passes - Macroalgae
- Popu
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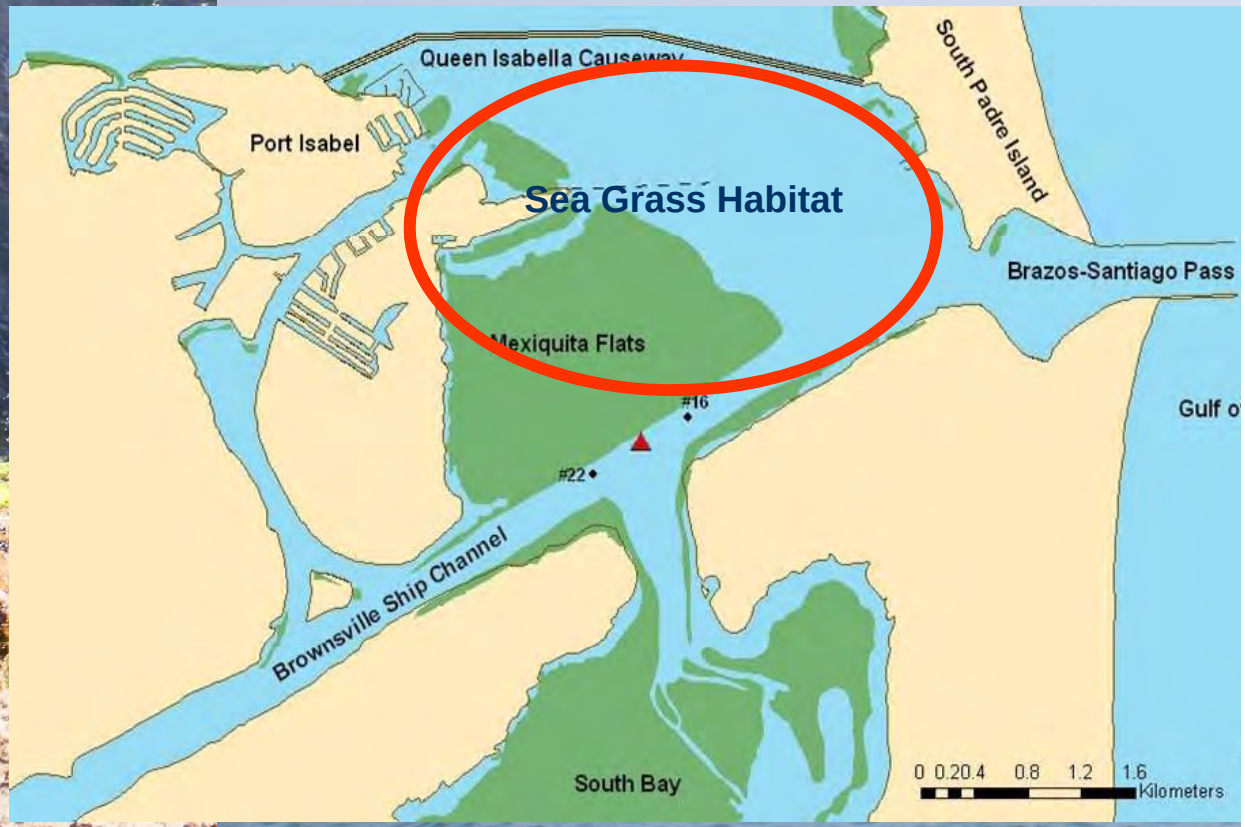
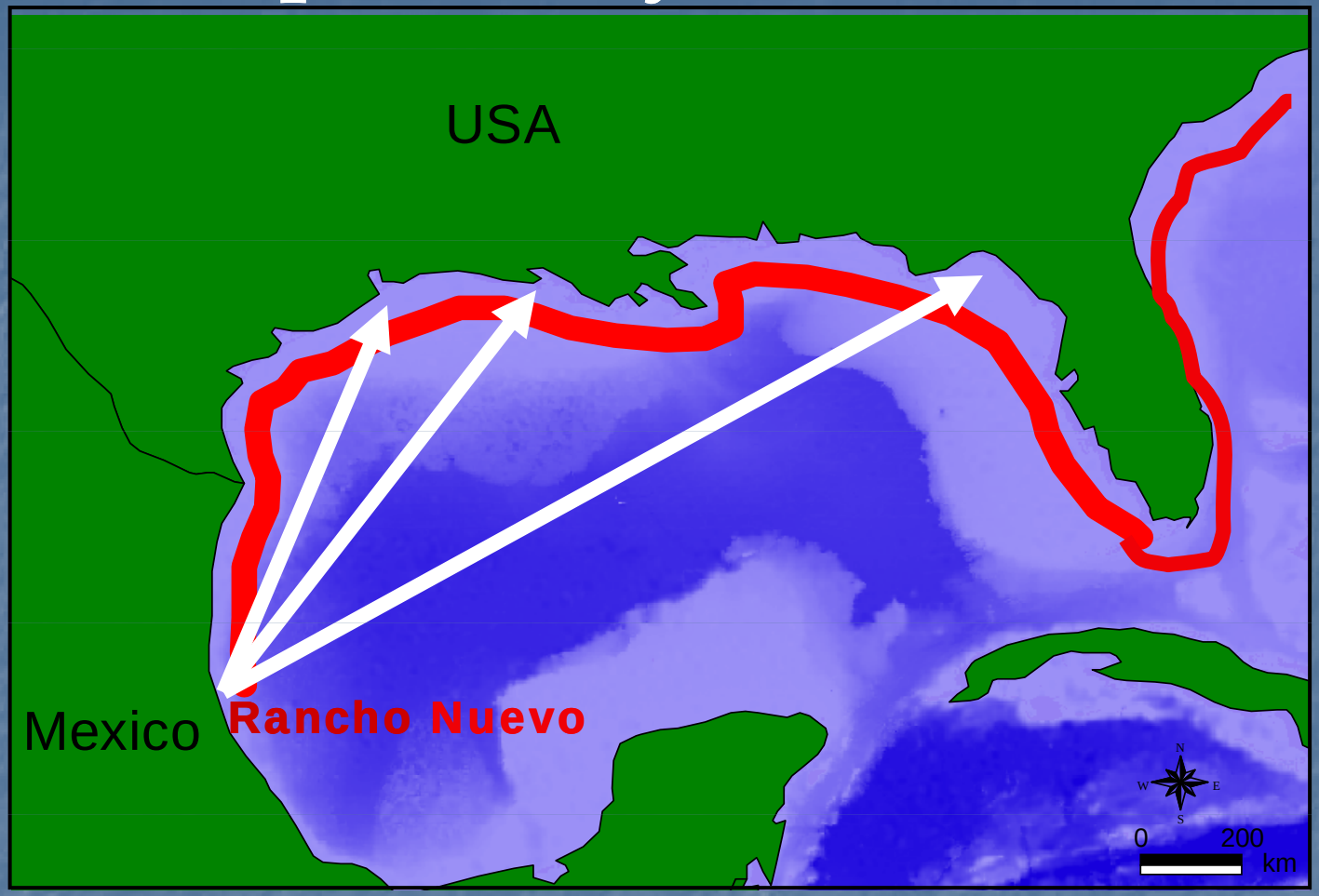


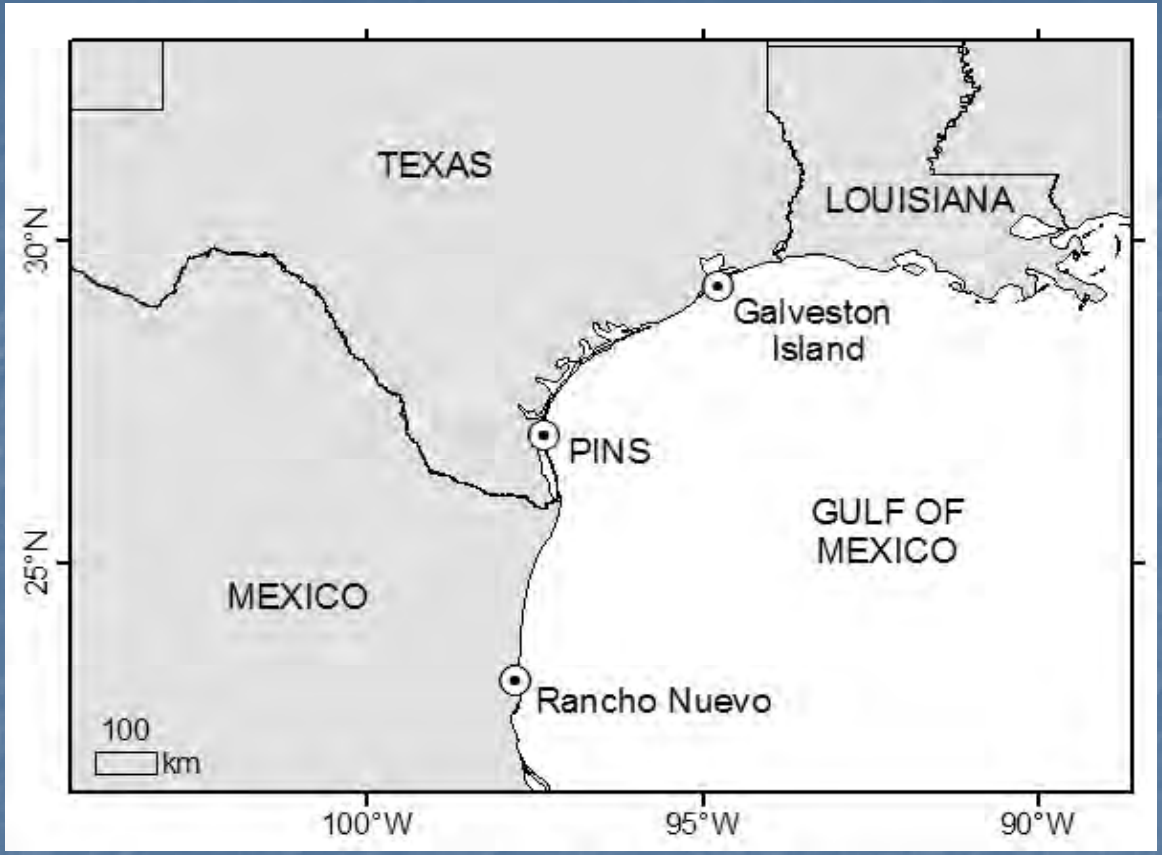
KEMP'S RIDLEY

(*Lepidochelys kempii*)

Kemp's Ridley Distribution



EXCITING KEMP'S RIDLEY TRENDS



- **Population Recovery Is Underway!**
  - **Nesting stock: Rancho Nuevo, Mexico (Dr. Pat Burchfield)**
  - **Nesting stock: PINS (Dr. Donna Shaver)**
  - **Northern Coast (TAMUG & NOAA)**

KEMP'S RIDLEY NESTING

- Daytime nester
- Nests from high tide line to dunes
- Prefers to nest on windy days (> 15 mph)
- Arribadas

What Are Adult Ridleys Doing?

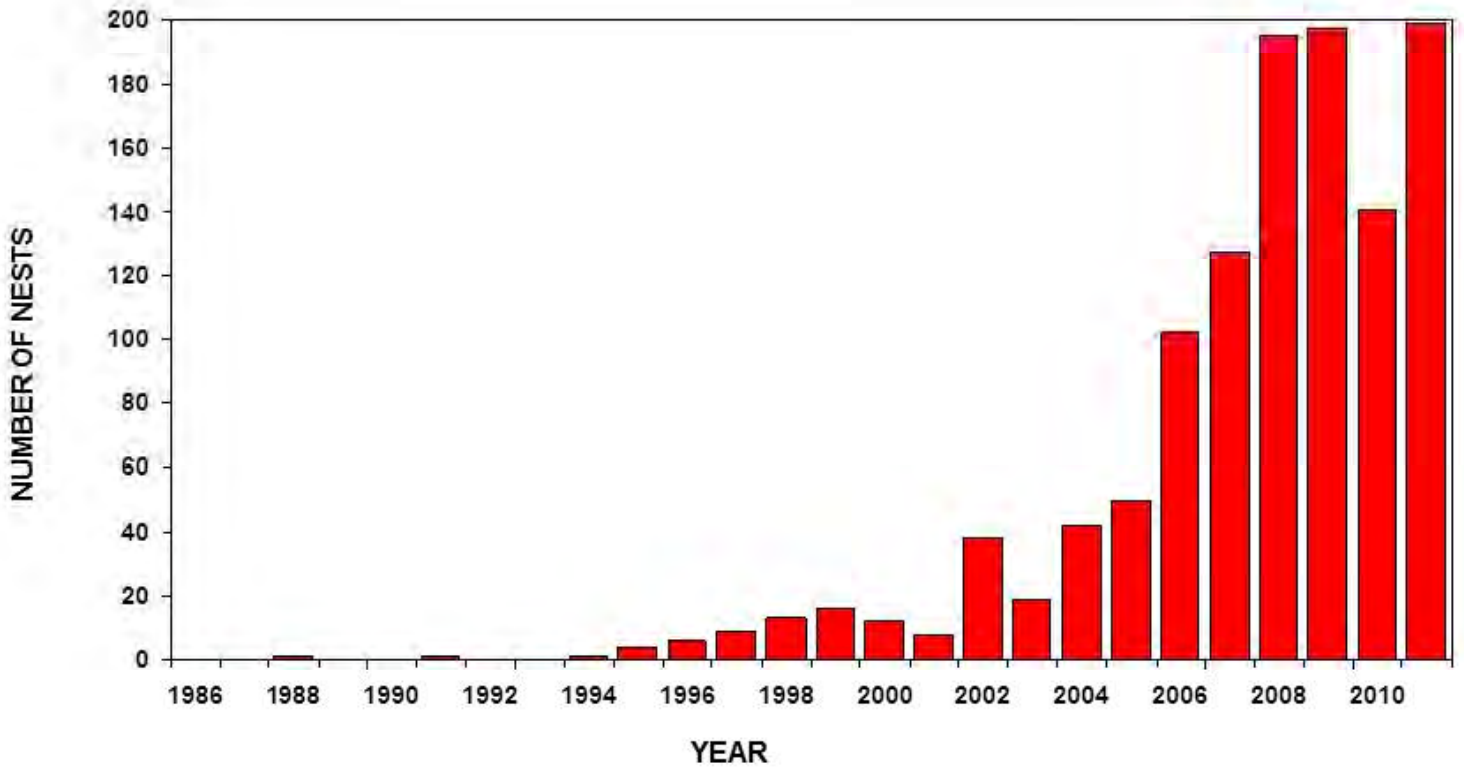
- Recovery trends ➡ more adults (at least females)
- Record ridley nesting on Texas coast
  - Unprecedented nesting on upper Texas coast
- Nesting patrols & satellite tracking
  - Defining the importance of northern Gulf coast to nesters

Sea Turtle Nests Laid on Texas Beaches, 2007-2011[1]

Year	Kemp's Ridley	Loggerhead	Green	Leatherback	Hawksbill
2007	128	6	3	0	0
2008	195	3	5	1	0
2009	197	0	1	0	0
2010	141	9*	5	0	0
2011	199*	0	6*	0	0
Total	860	18	20	1	0

[1]Presented with permission from Dr. Donna Shaver, Texas Coordinator, Sea Turtle Stranding & Salvage Network, Padre Island National Seashore.
* denotes record nesting total for the species in Texas.

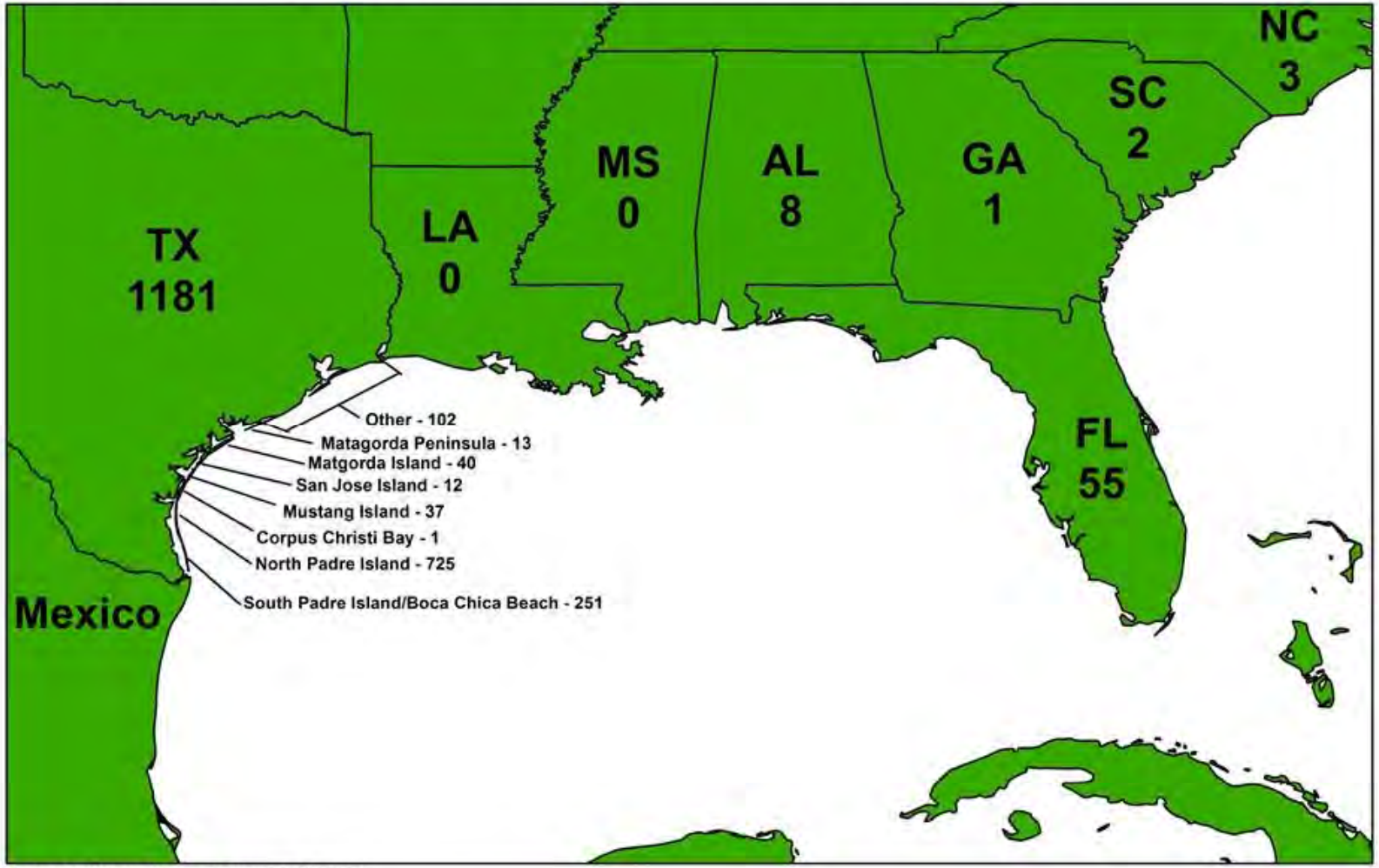
Number of confirmed Kemp's ridley nests found on the Texas Coast from 1986-2011



Padre Island National Seashore
Texas

National Park Service
U.S. Department of the Interior

Kemp's Ridley Nests Found in the USA, 1989 - 2011



Produced by Division of Sea Turtle Science and Recovery

Kemp's Ridley Sea Turtle Nests Laid Along the Upper Texas Coast, 2002-2011

Year	Bolivar Peninsula	Galveston Island	Brazoria Co. N. of Surfside	Surfside Beach	Quintana Beach	Bryan Beach	Brazoria Co. N. of Sargent	Sargent Beach	Matagorda Peninsula	UTC Totals
2002		2				1			1	4
2003		1								1
2004	2	2		1						5
2005		7							1	8
2006		9		1						10
2007	1	7		2		1			4	15
2008	6	6	1	2	1					16
2009	1	3	3		2	2	1	1	3	16
2010	3	8	3	1		1			2	18
2011		15	1	3		1			2	22
Total	13	60	8	10	3	6	1	1	13	115

“ ”

- **Sea turtles most likely to nest on Gulf beaches are:**
  - **Kemp’s ridley (daytime and west Gulf nester)**
  - **Loggerhead (nighttime and east Gulf nester)**
  - **Green turtle (nighttime and east Gulf nester)**

- **Sea turtle behavior and nesting preference must be taken into account when developing effective monitoring strategies**

- The Piping plover (*Charadrius melodus*) is a federally-protected shorebird occurring on Gulf beaches
  - Threatened along Gulf and Atlantic Coasts
  - Endangered elsewhere

- Overwinters on Texas coast
  - 35% of plover population winter in Texas
  - found on upper coast July 15-May 15
    - within sea turtle nesting season
  - requires monitoring

- **Piping plover description**
  - Small, stocky ~7 inches long
  - Sand-colored upper body
  - White undersides
  - Orange legs
  - Similar in appearance to other plovers

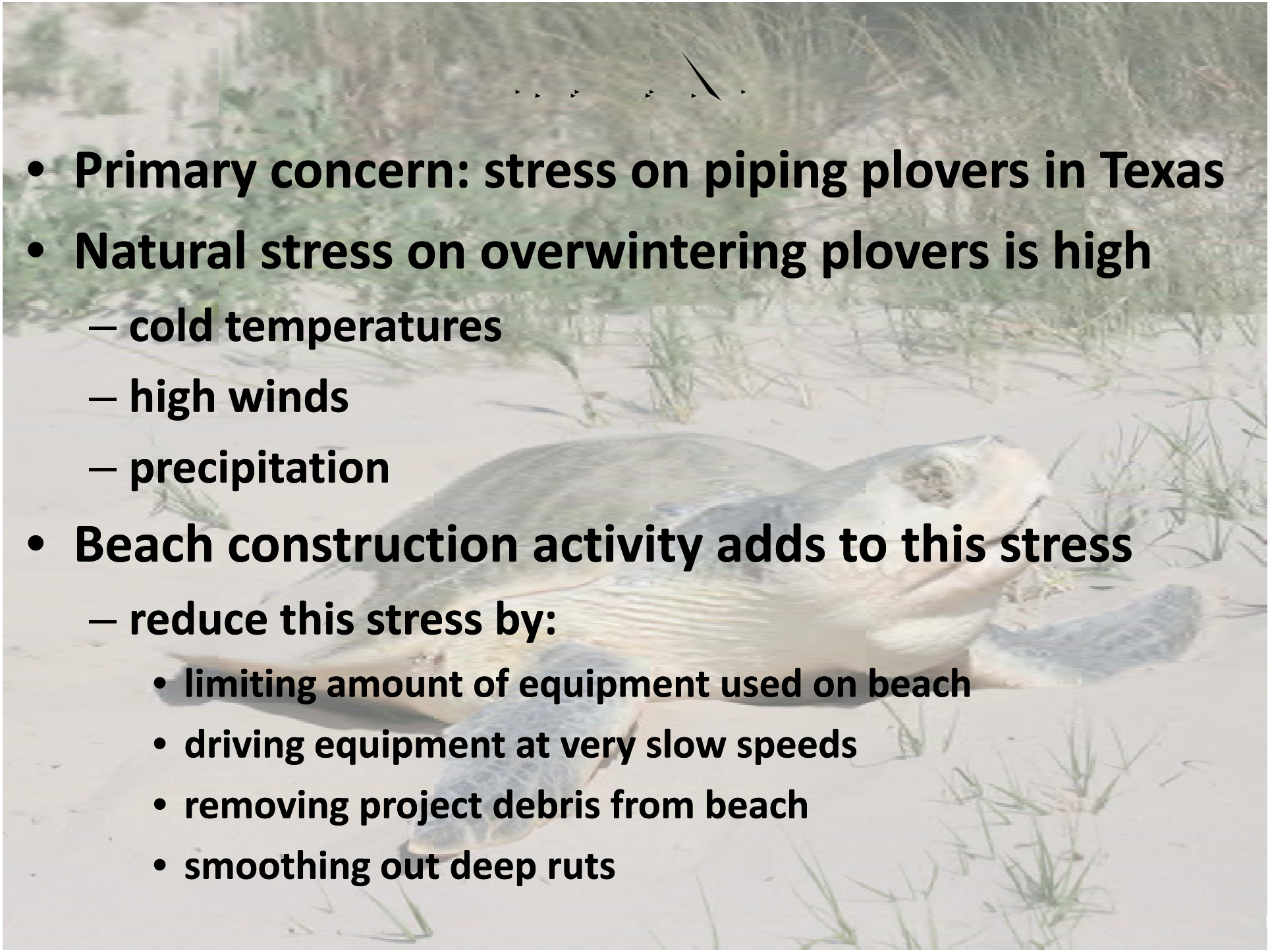
- **Piping plover behavior in Texas**
  - Roosts on beaches
    - huddles down in sand (tire ruts)
    - hides behind clumps of seaweed & driftwood
    - **difficult to see and distinguish to species!!**

Piping Plover

Semipalmated Plover

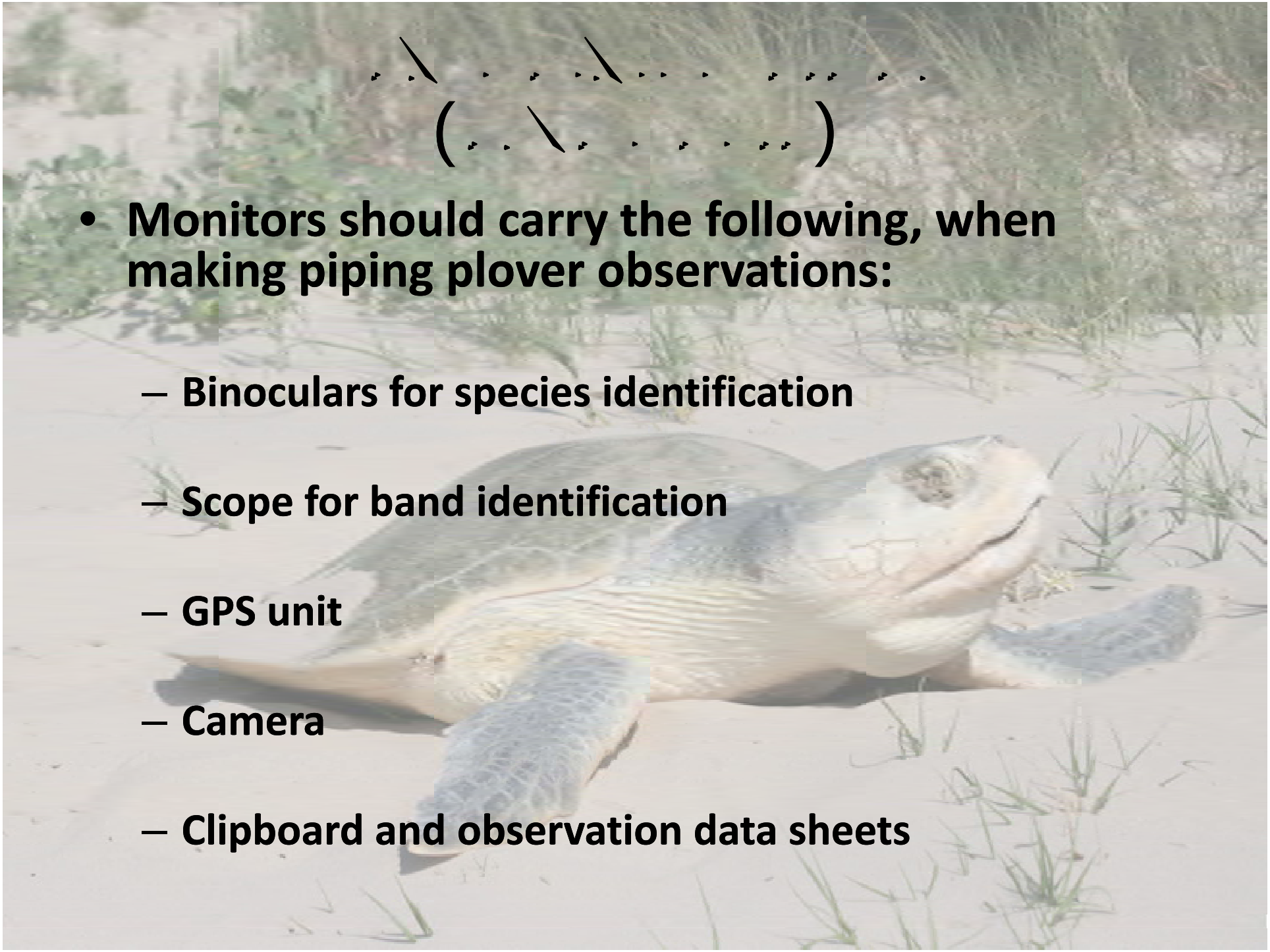
Snowy Plover

Wilson's Plover



- Primary concern: stress on piping plovers in Texas
- Natural stress on overwintering plovers is high
  - cold temperatures
  - high winds
  - precipitation
- Beach construction activity adds to this stress
  - reduce this stress by:
    - limiting amount of equipment used on beach
    - driving equipment at very slow speeds
    - removing project debris from beach
    - smoothing out deep ruts

- **US Fish & Wildlife Service (USFWS) issues monitoring mandates for piping plovers**
  - **monitor for plovers concurrent to that for sea turtles**
    - **attention given to roosting habitats in which plovers seek shelter and relief from strong winds**
      - **in tire ruts and behind drift wood**
- **Plovers seen in a beach project site**
  - **contact USFWS only if plover is dead or injured**
  - **project activity must stay outside a 200 ft. buffer when plovers are observed**
  - **identify banded plovers and report info to USACE**



- **Monitors should carry the following, when making piping plover observations:**
  - **Binoculars for species identification**
  - **Scope for band identification**
  - **GPS unit**
  - **Camera**
  - **Clipboard and observation data sheets**

- 


- **Principal challenge: implement recovery plan mandates for nesting beaches**
  - **protect a nesting female, her nest and nesting habitat**

    And, where possible,
  - **ensure safe, concurrent conduct of permitted activity, with no apparent impact to nesting**

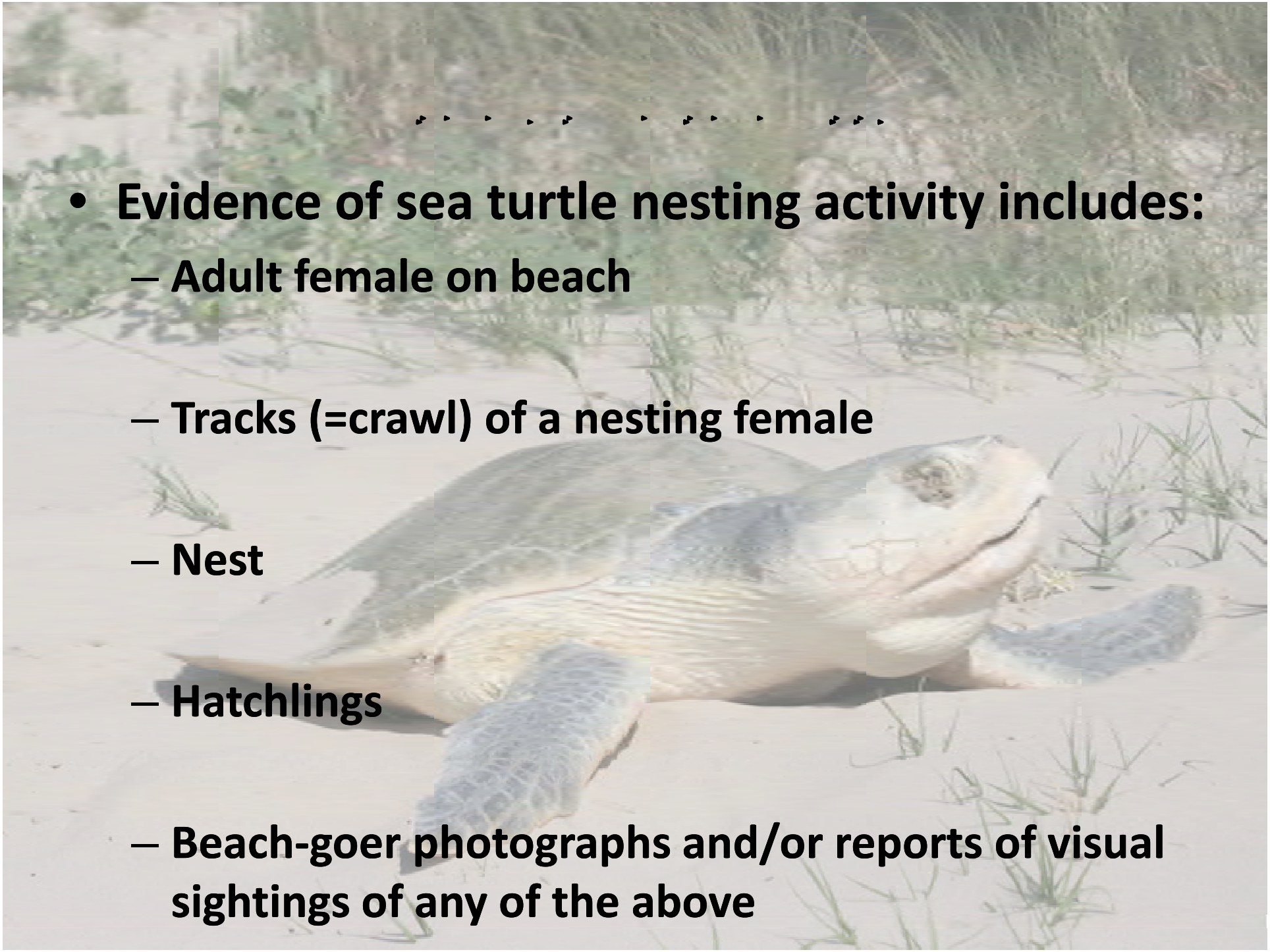
- **Meeting this challenge adds to the rigor required of a monitoring program and its monitors**

- **Monitor must be aware of:**
  - **His/her surroundings**
    - **Weather**
    - **Landscape/terrain**
    - **Permitted activity plus other beach activities**
    - **Safety**
  - **Permitted monitoring requirements**
    - **Project-specific requirements set by USACE, USFWS, etc.**
  - **Essential contacts/collaborators**
    - **Nesting hotline**
    - **Project contractor/foreman**
    - **Permitting agency?**
  - **Strategic monitoring protocol**

- **Monitoring protocol will be dictated by project- and/or location-specific requirements set by permitting agency**
  - **Frequency and duration of monitoring**
    - **Daily: continuous vs intermittent?**
    - **Daytime vs nighttime vs round-the-clock?**
    - **Duration: distance vs time?**
    - **Species concerns: daytime vs nighttime nesters?**
  - **Monitoring method**
    - **Foot vs ATV vs Truck**

- **Foot-facilitated monitoring**
  - best for monitoring shorter distances
    - beach home demolition site
  - provides intensive coverage of small activity sites
- **ATV-facilitated monitoring**
  - best for monitoring long distances
    - nesting survey of Bolivar Peninsula
  - spatial coverage is emphasized over repeated coverage
- **Truck-facilitated monitoring**
  - not a preferred method
    - visual field is compromised
    - not beach-visitor friendly
    - compromises outreach potential

- **Priority Monitoring Tasks:**
  - **Document signs of sea turtle nesting activity**
  - **Safeguard oneself**
  - **Safeguard nester and/or nest**
  - **Contact nesting hotline**
  - **Implement instructions from hotline responder**



- **Evidence of sea turtle nesting activity includes:**
  - **Adult female on beach**
  - **Tracks (=crawl) of a nesting female**
  - **Nest**
  - **Hatchlings**
  - **Beach-goer photographs and/or reports of visual sightings of any of the above**

SIGNS OF NESTING ACTIVITY

Tracks (=crawl)

Nester & Nest

Hatchlings

- **Monitors have an <u>overriding observational priority</u>:**
  - **Look for TRACKS, TRACKS, TRACKS at all times**
    - **Tracks may lead to a nester and/or nest**
  - **Looking only for a nesting female is often problematic**
    - **Nester may have nested and departed beach before a monitor can observe her**
      - **Kemp's ridley: difficult to observe**
        - » **Daytime nester who nests from before sunrise to dusk**
          - **Limited light during dawn and dusk make observations difficult**
          - **Pre-dawn nesting may occur before observations commence**
        - » **Smallest sea turtle species whose color blends with beach**
          - **"camouflage" renders observations of female on nest difficult**

- **Golden Rule of Monitoring**
  - **first rely on track observations with which to document nesting activity**

"LETS REVIEW"

WHAT IS A TRACK?

WHAT DOES IT LOOK LIKE?

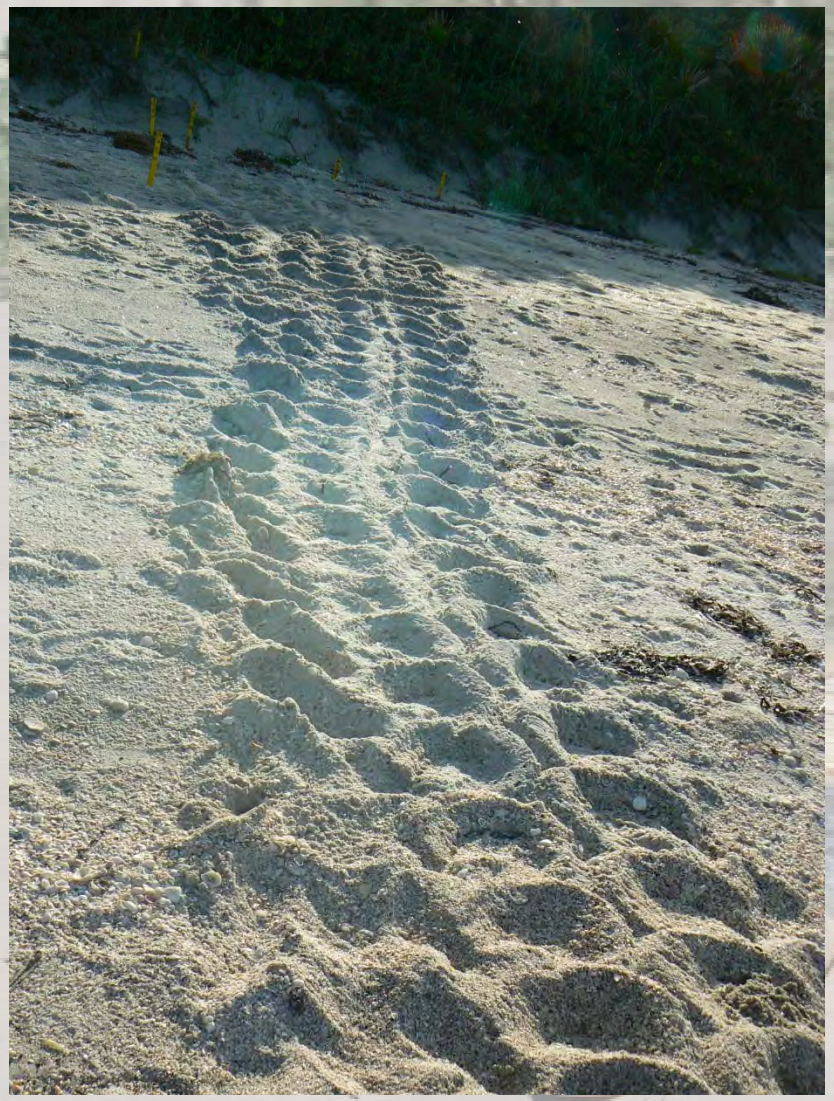
ARE THERE DIFFERENT TYPES?

WHERE DOES ONE LOOK FOR TRACKS?

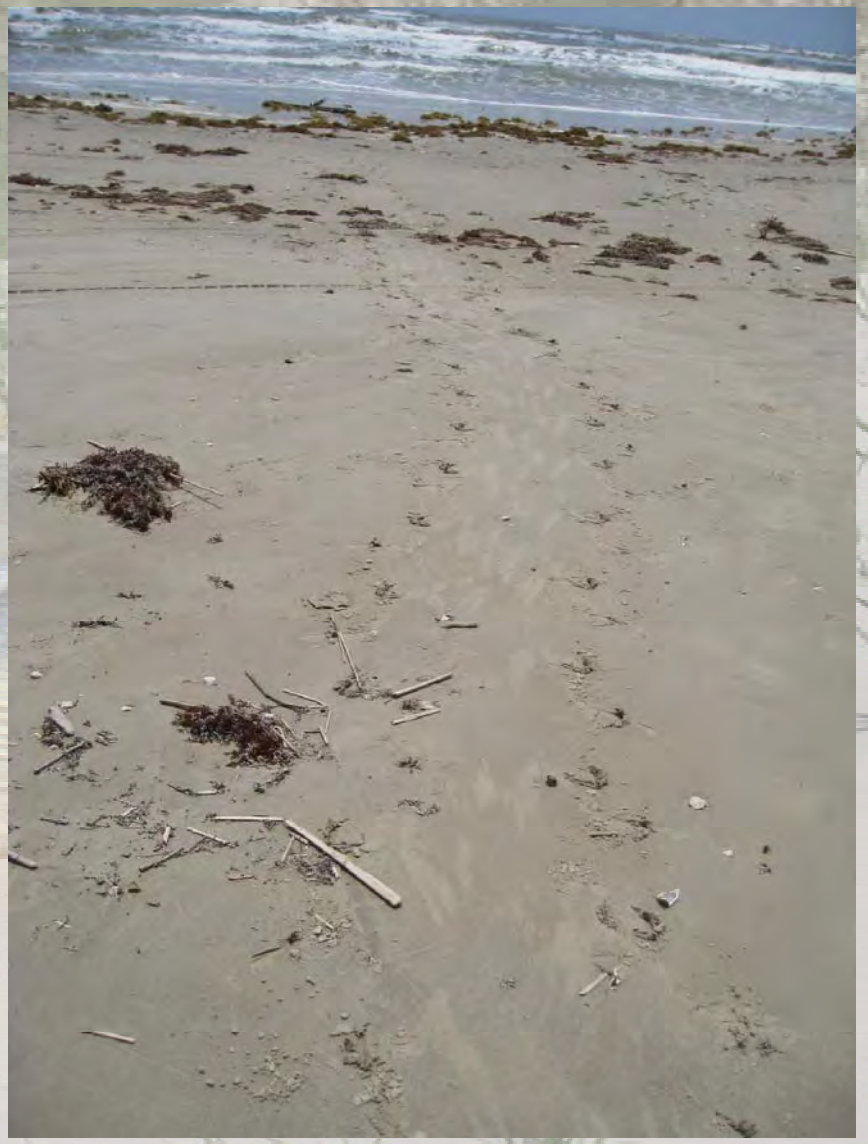
. . . . . ?

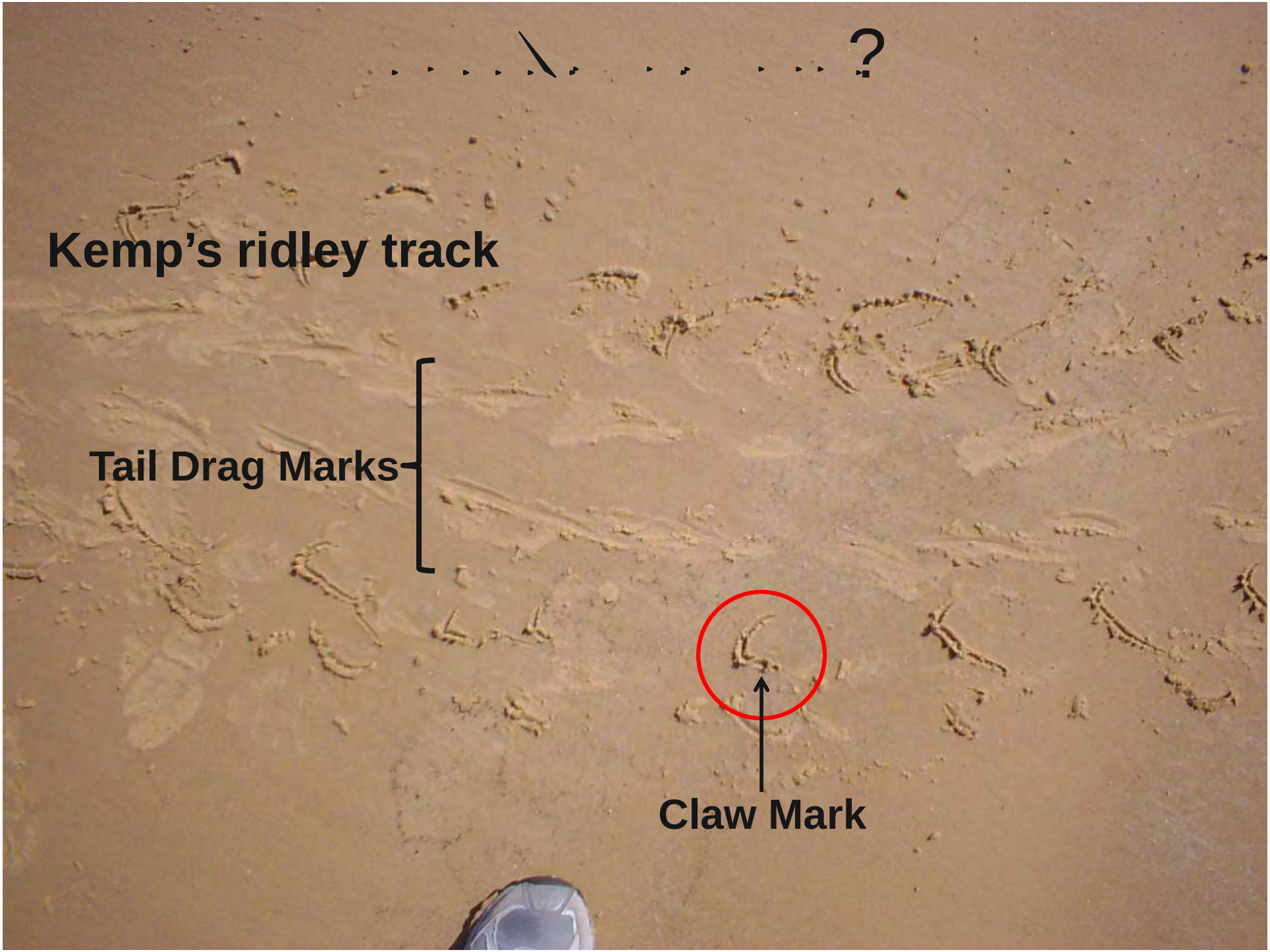
ANSWER

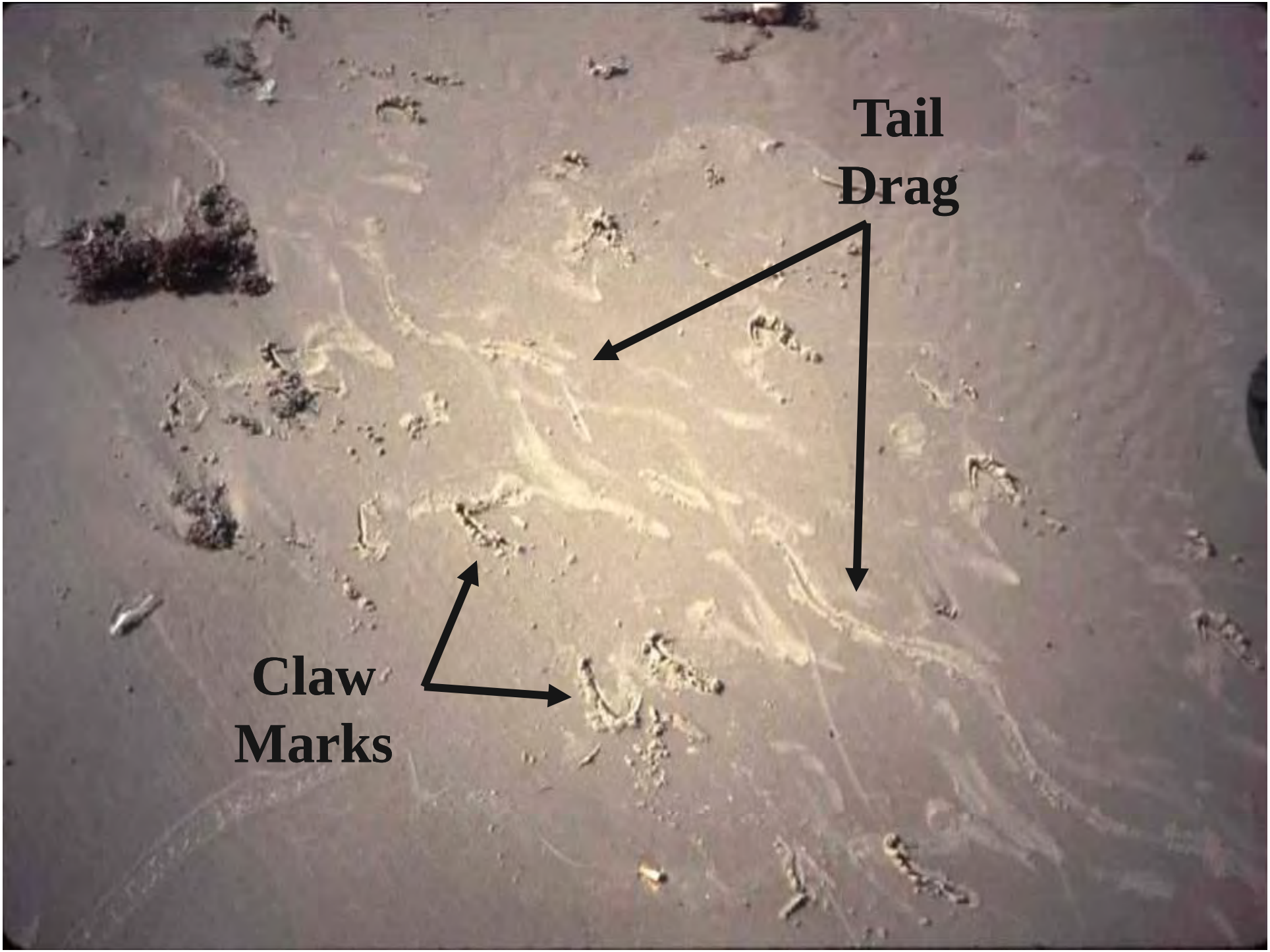
- **Trail left in sand as nester crawls on beach**
  - **Produced by flippers and tail**
    - **Consist of:**
      - **Crawl marks**
      - **Tail drag marks**



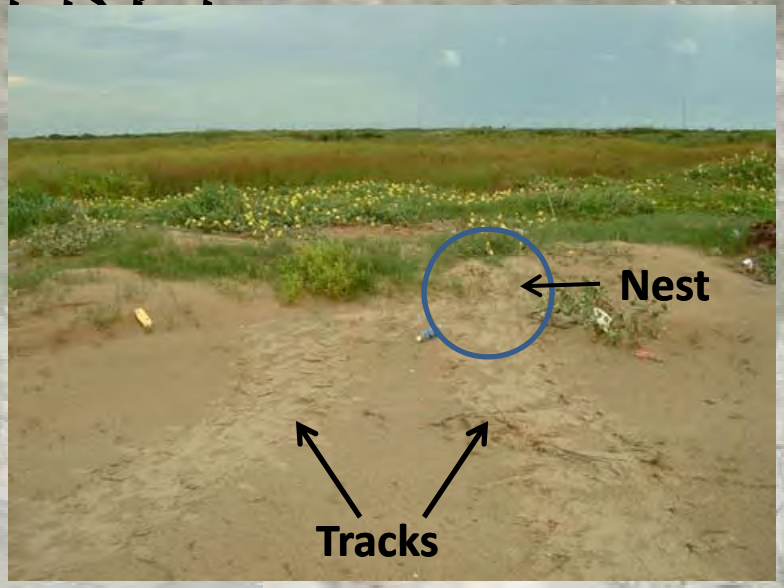
- **2-3 ft wide tracks with distinctive claw marks**
- **Alternating flipper marks**
- **Tail drag marks**
- **Difficult to see, at times**

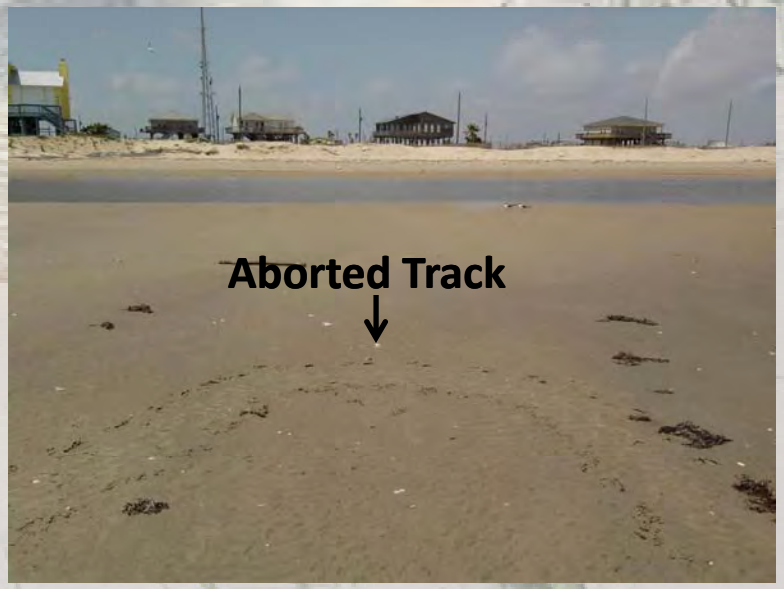



Kemp’s ridley track
Tail Drag Marks
Claw Mark


Tail
Drag
Claw
Marks

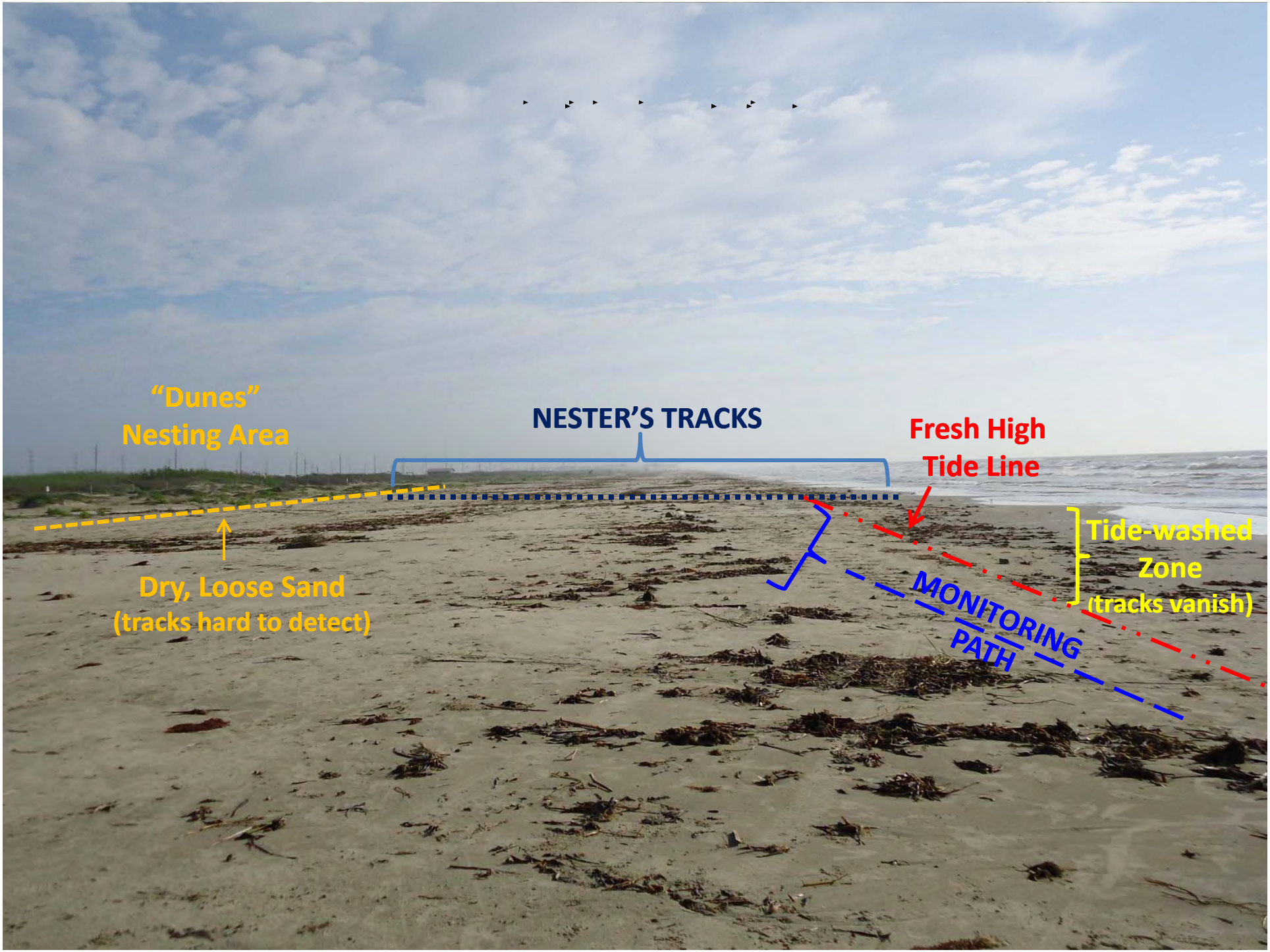
- **Two types of tracks are found on nesting beaches**
  - **“nesting” track**
    - **female dug a nest and laid eggs in it**
  - **“false crawl” (=aborted track)**
    - **female did not dig nest or lay eggs**
      - **she feels threatened**
      - **she can’t find suitable nesting substrate**

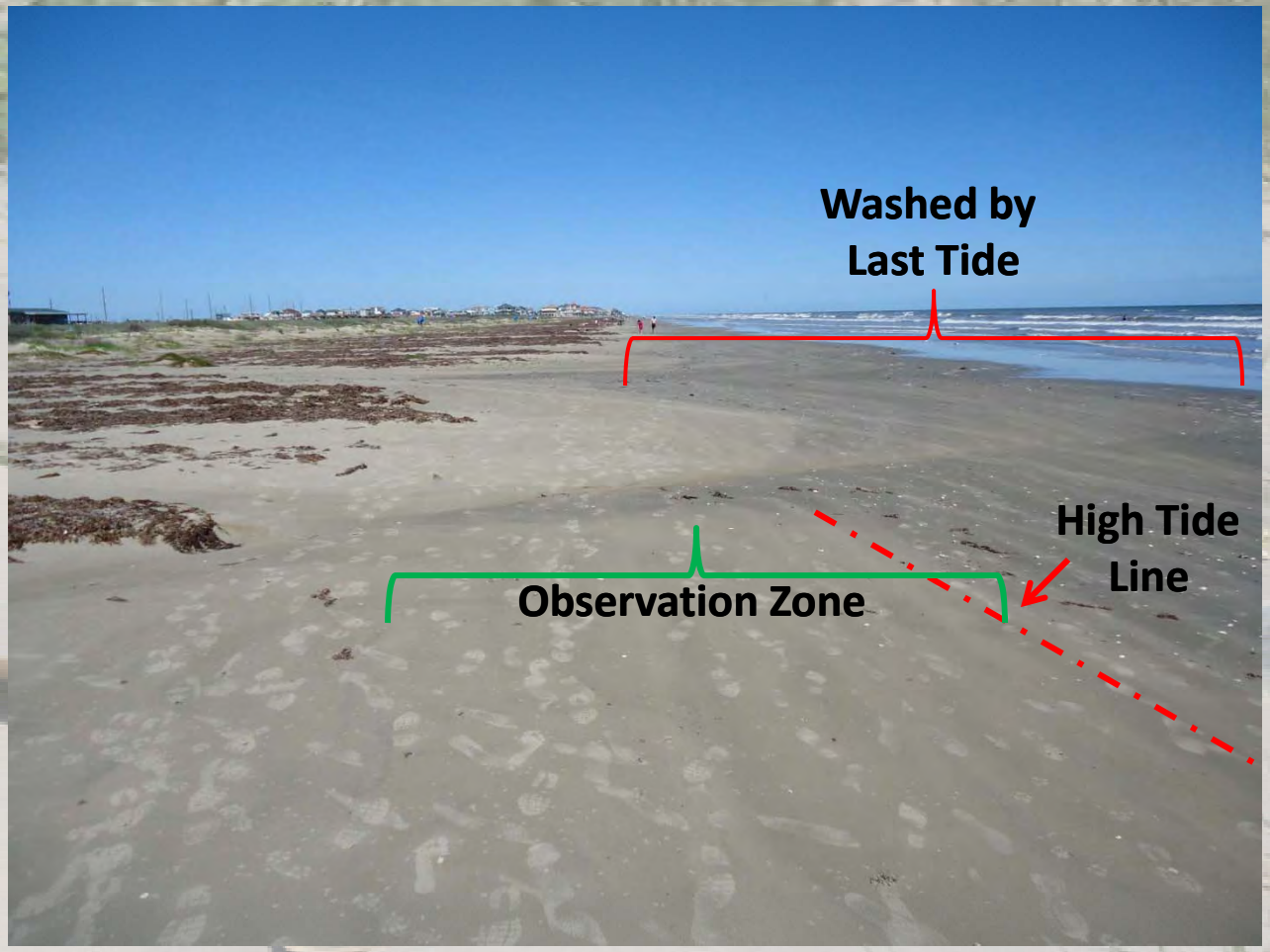


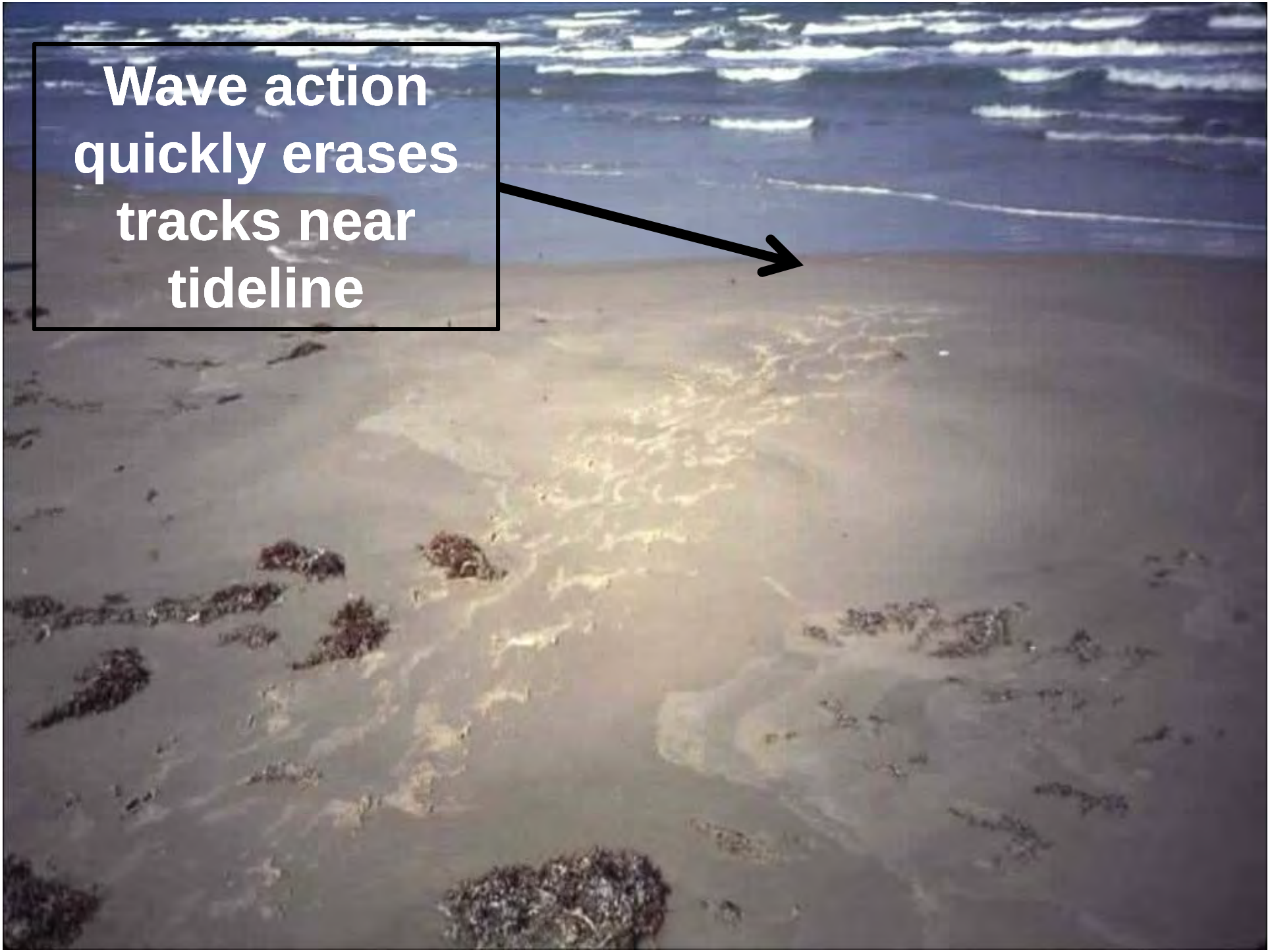


- **Tracks can be laid across the entire beach width**
- **Integrity of tracks & potential for discovering them depend on:**
  - **beach section**
    - **tide- vs non-ti**
  - **activities on be**
    - **beach cleanin**
    - **vehicular traf**
    - **beach goers**
  - **environmental**
    - **windy vs calm days**
    - **rainy vs rain-free days**
    - **dry, loose sand vs moist, semi-packed sand**

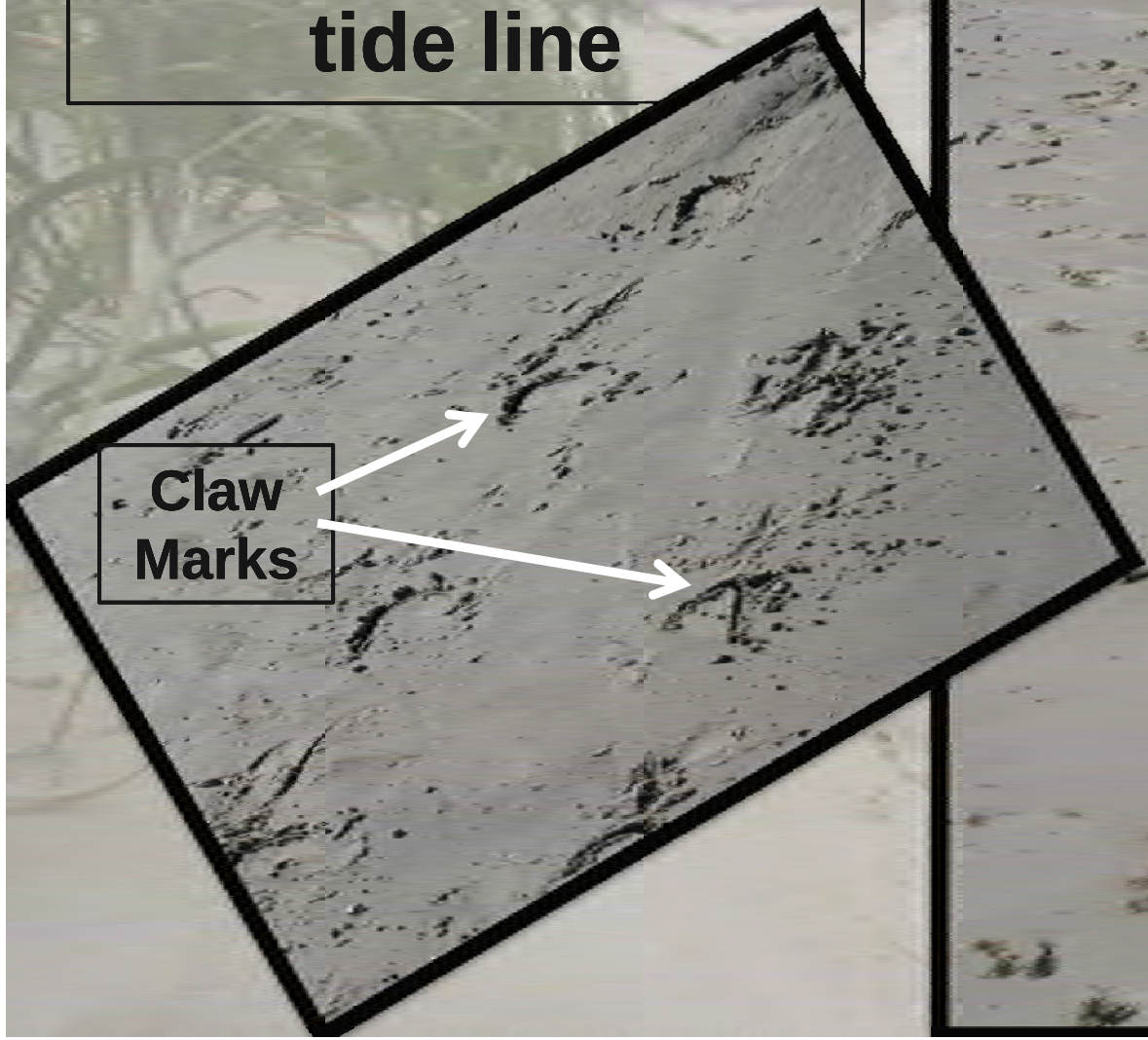
- **MONITOR'S #1 OBSERVATIONAL PRIORITY:**
  - **LOOK FOR TRACKS IMMEDIATELY LANDWARD OF HIGH-TIDE LINE**
  - **RESTRICT OBSERVATIONAL FIELD TO A 10 TO 20' EXPANSE BEYOND FRESHEST HIGH-TIDE LINE**
- **Tracks below high-tide line are washed away by surf**
- **Tracks initially laid up beach become increasingly compromised as time goes on**
  - **wind blows sand across tracks to hide them**
  - **vehicular and foot traffic obliterate tracks**


"Dunes"
Nesting Area
NESTER'S TRACKS
Fresh High
Tide Line
Tide-washed
Zone
(tracks vanish)
Dry, Loose Sand
(tracks hard to detect)
MONITORING
PATH


Washed by
Last Tide
High Tide
Line
Observation Zone

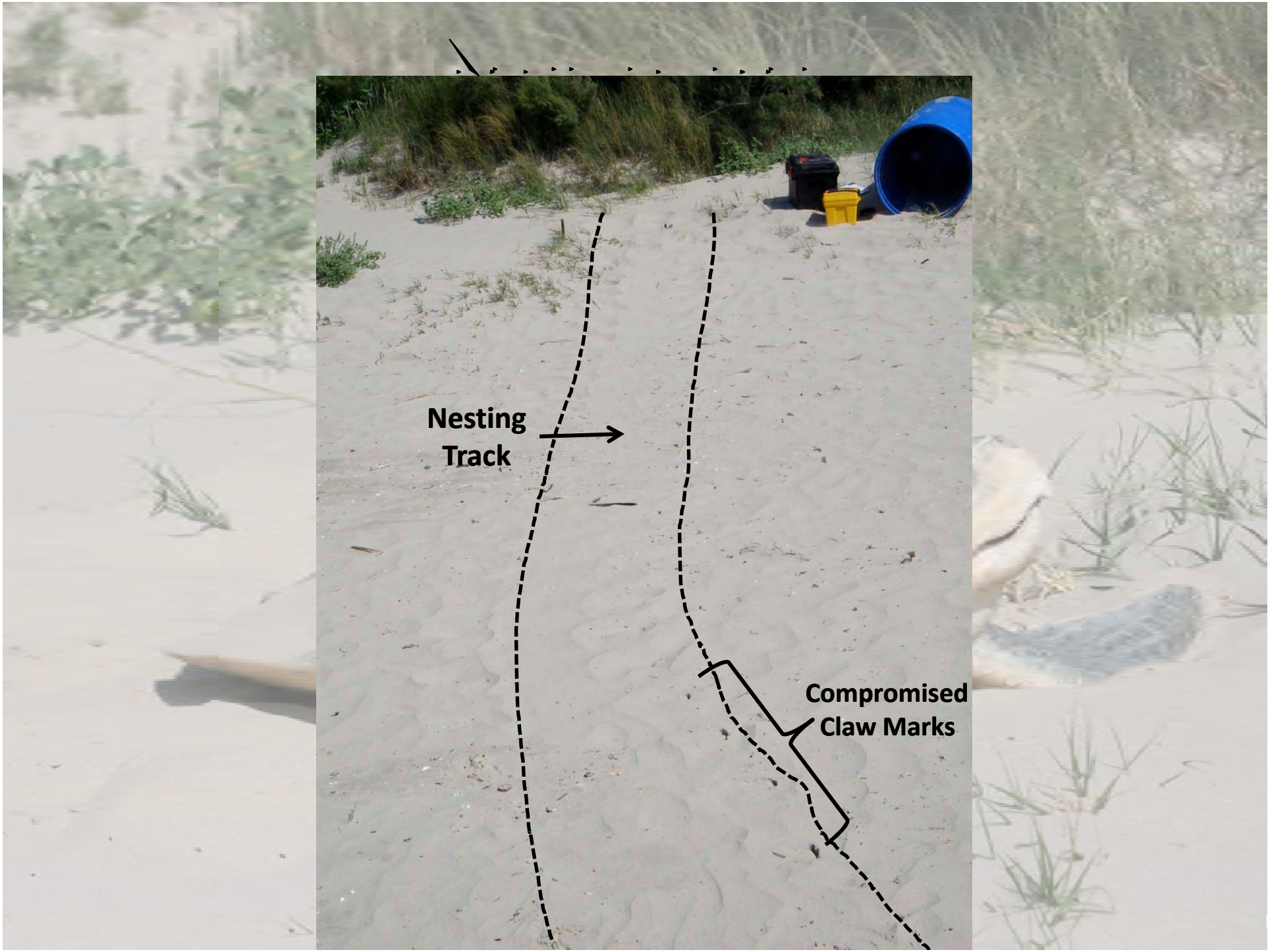

Wave action quickly erases tracks near tideline

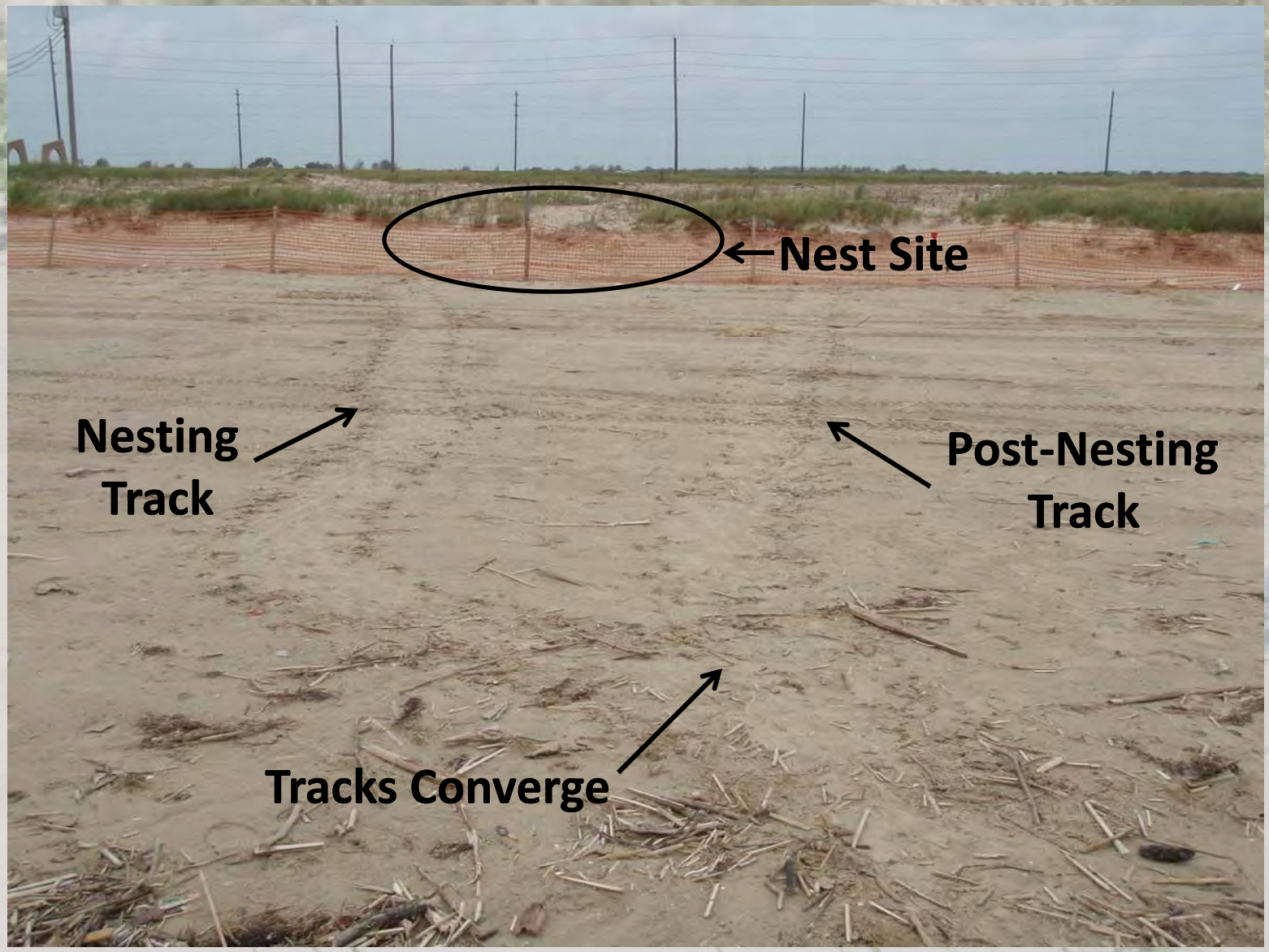
First look for tracks in damp sand above high tide line




Note depth of vehicle tire tracks vs. sea turtle tracks


Tracks disappear
quickly in dry sand.
06/27/2008

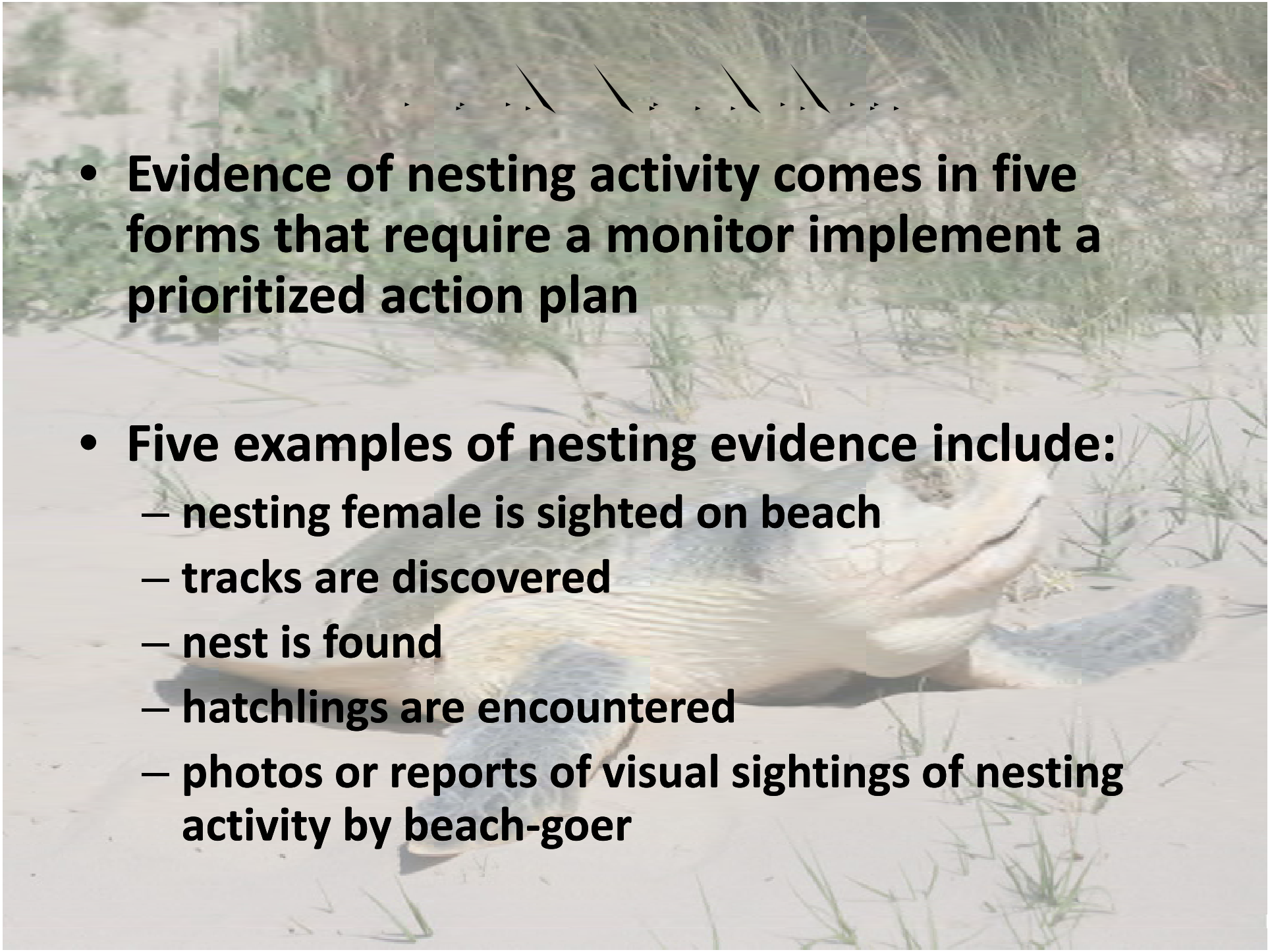

Nesting
Track
Compromised
Claw Marks


Nest Site
Nesting Track
Post-Nesting Track
Tracks Converge

Post-nesting female leaving beach across wet sand

- **Tracks lead to other signs of nesting activity**
  - **Nest**
    - most common result
  - **Nester**
    - nesting typically lasts <45 min
    - likelihood of seeing nester is reduced
    - **finding nester is a BONUS!!!**
      - ease in locating eggs
        - » increased survival!!


SEA TURTLE
TRACKS



- **Evidence of nesting activity comes in five forms that require a monitor implement a prioritized action plan**

- **Five examples of nesting evidence include:**
  - **nesting female is sighted on beach**
  - **tracks are discovered**
  - **nest is found**
  - **hatchlings are encountered**
  - **photos or reports of visual sightings of nesting activity by beach-goer**

- **Monitor's response falls into 1 of 3 action plan priorities dictated by type of evidence**
  - **First priority: nester and hatchlings**
  - **Second priority: nest**
  - **Third priority: tracks and photos/reports of activity**

WHEN YOU FIND A TURTLE

FIRST PRIORITY:

1. **DETERMINE WHETHER IT IS A SEA TURTLE**
2. **IF SO, RESPOND TO THE FOLLOWING SCENARIOS**

SCENARIO #1: Turtle crawling up beach toward dunes

1. Keep turtle safe! Direct vehicles and people away from the turtle.
2. CALL NESTING HOTLINE: 409-771-2872
3. Implement instructions from hotline responder that may include:
    a. temporarily stopping any on-beach activity that may threaten turtle
    b. photographically documenting turtle on beach
4. Continue to keep bystanders well away from turtle.
    a. inform bystanders who you are and why are monitoring area
    b. minimize bystander movement and commotion
    c. restrict use of flashlights, cameras and other light sources, if monitoring at night

SCENARIO #2: Turtle is nesting (laying eggs)

1. Same as response steps 1-4 in Scenario #1
2. Hotline responder will likely request the following:
    a. mark the turtle's nest
        i. approach turtle from behind only after she has laid several eggs
        ii. dig a 12" deep hole directly behind turtle's nest
        iii. insert nest marker (rope, reflective tape) into hole and secure marker
        iv. lay marker on sand behind turtle
    b. examine all flippers for tags and, if present, record 6-digit tag number(s)
    c. examine carapace for living tag
    d. photograph turtle tracks, carapace and flippers

SCENARIO #3: Turtle is returning to water

1. Same as steps 1-4 in Scenario #1
2. Hotline responder may instruct you to photograph turtle or safely restraint and care for turtle for subsequent retrieval by permitted responders
3. Otherwise, keep turtle's path to water clear of vehicles and bystanders
4. Take additional action(s) only as directed by hotline responder

MARINE MAMMAL STRANDINGS: 1-800-9MAMMAL

- **FIRST PRIORITY**
  - Determine if it is a sea turtle
    - Painted sliders & diamondback terrapins are often confused for sea turtles on beach
    - Mistaking a semi-aquatic turtle for a sea turtle may result in:
      - Lost time and/or money to:
        - » Contractor of a permitted activity on beach
        - » Responding agency/university
        - » monitor (as well as time lost in surveying beach for nesting activity)
          - **EMBARRASSMENT!!!**

Diamondback Terrapin

Kemp's Ridley

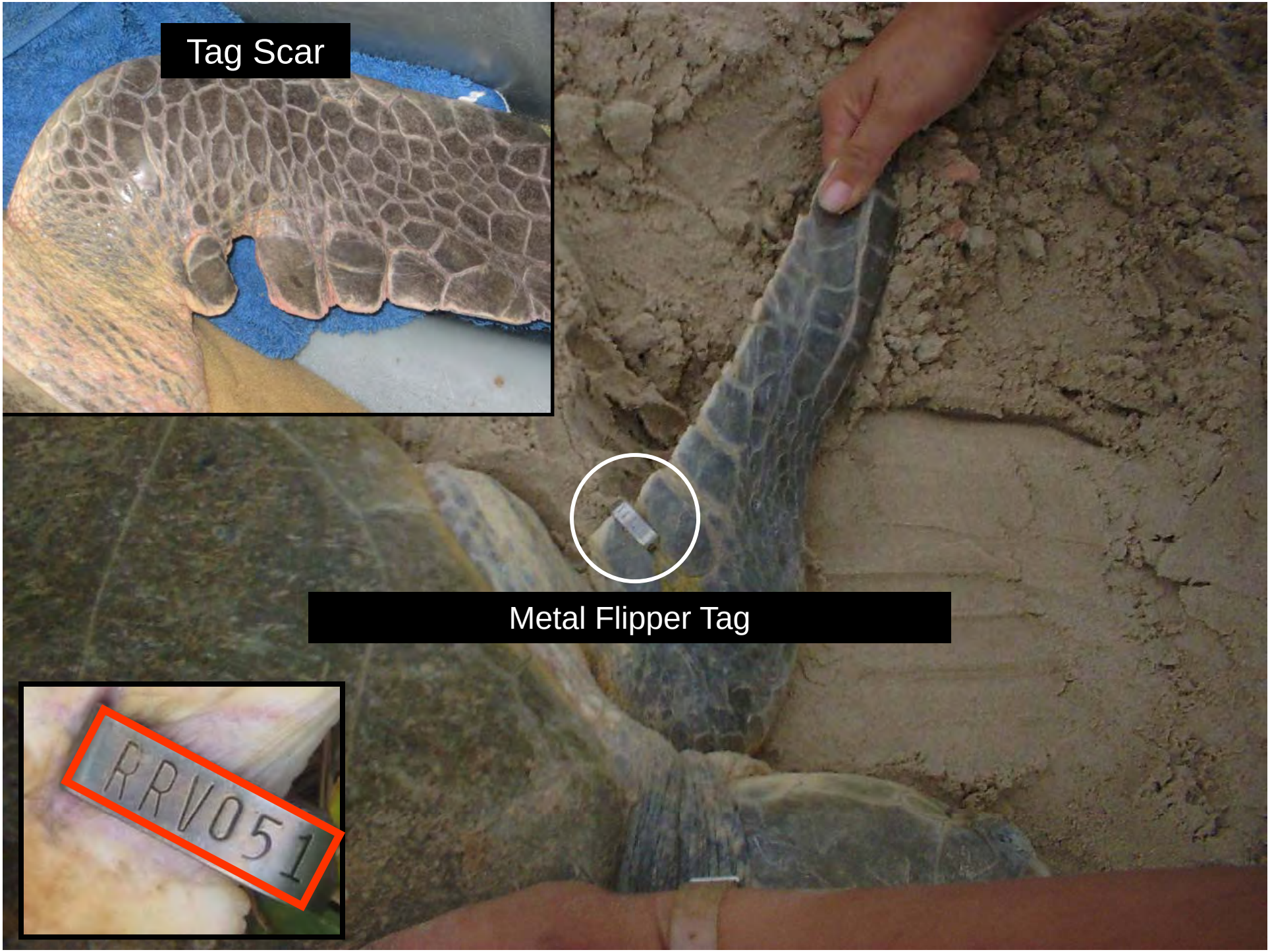
#1

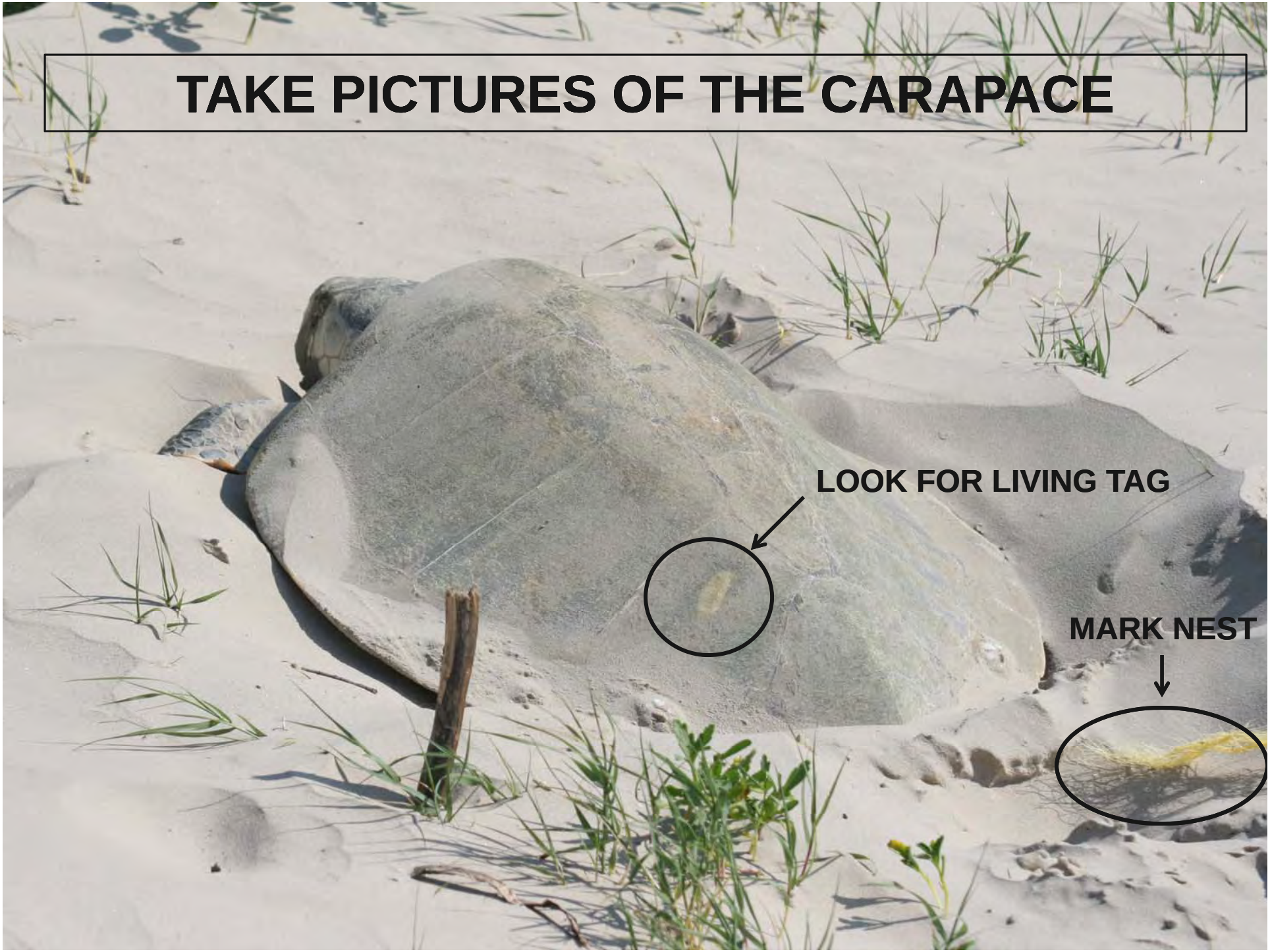
- **KEEP TURTLE SAFE! Direct vehicles and people away from turtle**
- **CALL NESTING HOTLINE: 1-866-TURTLE-5 (18668878535)**
- **Implement instructions from hotline responder that may include:**
  - **stopping on-beach activity that may threaten turtle**
  - **photographically documenting turtle**
- **Continue to keep bystanders away from turtle**
  - **inform bystanders who you are and why you are monitoring**
  - **minimize bystander movement and commotion**
  - **restrict use of flashlights, cameras and other light sources, if monitoring at night**

. \ . . #2

\ . . . .

- **Repeat “turtle protection” steps 1-4 in Scenario #1**
- **Implement hotline responder requests to:**
  - **mark the turtle’s nest**
    - **approach turtle from behind only after she has laid several eggs**
    - **dig a 12” deep hole directly behind turtle’s nest**
    - **insert nest marker (rope, reflective tape) into hole and secure marker**
    - **lay marker on sand behind turtle**
  - **examine all flippers for tags and, if present, record 6-digit tag number(s)**
  - **examine carapace for living tag**
  - **photograph turtle tracks, carapace and flippers**


Tag Scar
Metal Flipper Tag
RRV051


TAKE PICTURES OF THE CARAPACE
LOOK FOR LIVING TAG
MARK NEST


Living Tissue Tags

. \ .. #3 (\. 1)

. \ .. \\ . .. . . \

- **Repeat “turtle protection” steps 1-4 in Scenario #1**
- **Hotline responder may instruct you to:**
  - **photograph nester**
  - **safely restraint and care for nester for possible retrieval by permitted responders**
- **K f s**
- **Ta c h**

. \ .. #3 (\. 2)

. .. . . \ . \ . .. . . \

- **Scenario likely to occur during nighttime hours**
  - **survival strategy on part of hatchlings**
- **Repeat "turtle protection" steps 1-4 in Scenario #1**
  - **reduce amount of artificial light used**
    - **avoid misorienting hatchlings away from path to water**
- **n**
- **u**
- **g**
- **r**
- **i**
- **e**

. \ .. #3 (\. 2)

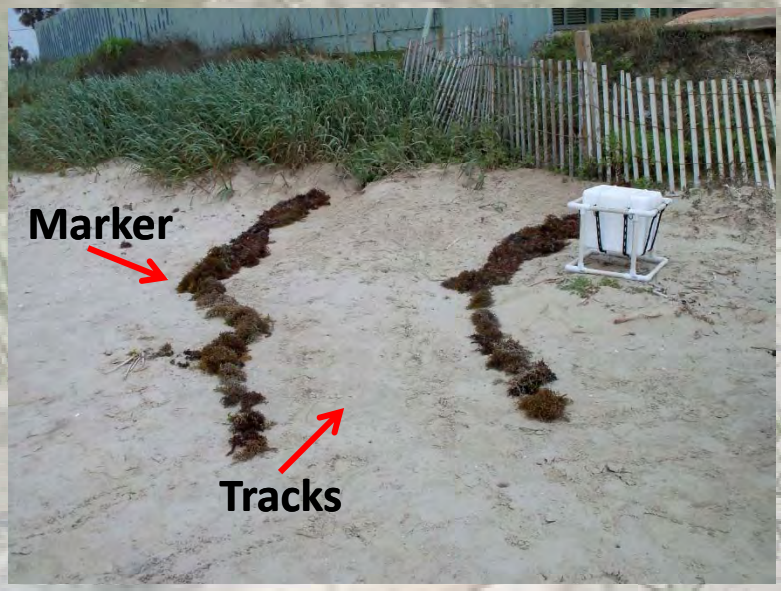
. .. . . \ . \ . .. . . \

- **Take additional action(s) only as directed by hotline responder**
- **These actions may include:**
  - **trace hatchling tracks “up beach”to locate nest**
  - **mark the nest cavity**
  - **wait for permitted official who will:**
    - **examine nest**
    - **release any straggler hatchlings**
    - **retrieve dead hatchlings, unhatched eggs & eggshells**

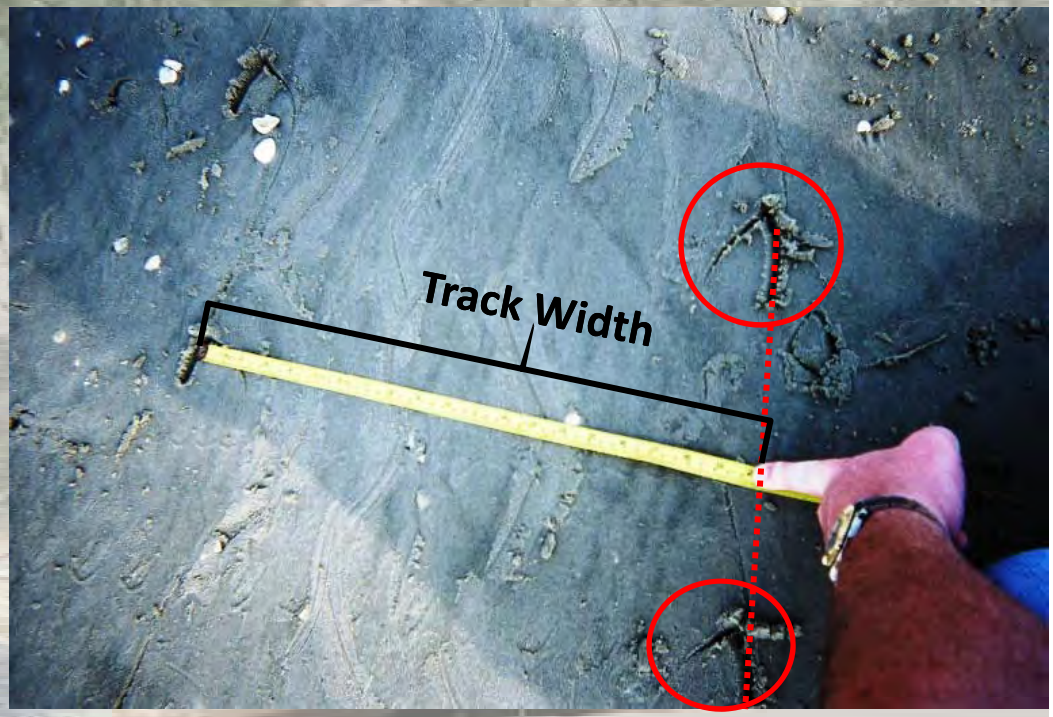
#4

- Determine tracks are those of a sea turtle
- If so,
  - Look for incoming and outgoing tracks
  - Do not to step on tracks
  - Follow tracks up beach to look for nester and nest

- **Marking nesting tracks & a nest simply requires:**
  - **using highly visible beach debris as markers**
  - **placing debris adjacent to both sides of a track**
    - **do not lay debris on tracks or step on tracks**
    - **mark entire set of tracks (i.e., up- and down-beach tracks)**
  - **placing debris around outer margin of a possible nest site**



- Monitor may be told to measure track width
- To do so:
  - find clear set of tracks
  - choose 2 successive claw marks on same side of track
  - draw line in sand between outer edges of these claw marks
  - measure <u>track width</u> from outer edge of opposing claw mark to line in sand



- **Permit may require that monitoring forms be completed**
- **Required information could include:**
  - **monitoring statistics**
    - **protocol used (i.e., foot- or ATV-facilitated)**
    - **effort expended (time and duration)**
      - **frequency of patrols**
      - **time spent and distance covered**
    - **signs of nesting activity detected?**
      - **if so, what kind? (tracks, nester, hatchlings, possible nest)**
      - **monitor's actions upon detection of nesting activity**
  - **beach project activity status**
    - **nature of activities underway during monitoring**
    - **contractor's actions when nesting activity encountered**

2008 TAMUG/GLO NESTING PATROL EFFORT - FOOT PATROLS

DATE	NAME	SECTION	START TIME	END TIME	TOTAL TIME	DIST. (mi)	WEATHER & COMMENTS	TL

TEXAS DATA SHEET FOR SEA TURTLE TRACKS AND NESTS

TEXAS CLUTCH NUMBER: 128 **SPECIES:** LK

PROJECT ID: TAMU 19 **LOCATION:** Brazoria N of Surfside

General Information

Date detected: 5-19-11 Time detected: 0800 am/pm

Found by: Chaff Smith (turtle patroller, beach worker or visitor)

First investigated by: Mark Traton

Specific location: 7 mi west of San Luis Pass

GPS Reading: 29° 00.502' N095° 12.783' W

Wind speed/direction:

Which found: X Nest (check one) ___ False crawl Grid #: ___ Unknown (tracks ended in soft sand)

Turtle seen by (circle): visitor - (patroller) - responder

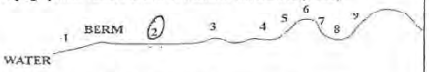
Track Information

Flipper impressions: X alternate ___opposite

Width of Tracks: 58.0 cm

Estimated age of tracks (if no female present):

Topographical feature at end of tracks or at nest site (circle)



1-forebeach, 2-backbeach, 3-embryonic dunes, 4-base of foredunes, 5-upslope of first foredune, 6-top of first foredune, 7-downslope of first foredune, 8-foredune depression, 9-upslope of second foredune

Nest Information

Was a nest found? X Yes ___No (circle)

Date and time eggs excavated: 5-19-11 0950

Eggs excavated by: Claire Felton Katie St Clair

Eggs transported by:

Top nest depth: 19.5 cm

Bottom nest depth: 34.0 cm

Neck width: 10.1 cm

Bottom width: 20.5 cm

Total number of eggs at nest excavation: 102

# of tiny eggs

of "normal size" eggs: 102

of undamaged eggs: 102

# of broken eggs: 0 Time collected:

Sand sample collected: X Time collected: 1058

Eggs Incubated (check one):

X Incubation Facility — Box 1 of 2 51 eggs

___Corral — Box 2 of 2 51 eggs

___In-situ

Date & time eggs placed in incubation facility/corral:

Placed in incubation facility/corral by:

Temperature datalogger placed in nest? ___Yes ___No

Datalogger ID #:

Temperature probe placed in nest? X Yes ___No

2 m to HTL; 2m Dune Height

Additional remarks, comments, data, or sketches on tracks, turtle, nest site on back of form? ___Yes ___No

Notify immediately and mail/fax forms to:

Dr. Donna Shaver, Padre Island National Seashore
P.O. Box 181300, Corpus Christi, TX 78480-1300
Office (361) 949-8173 ext. 226; fax (361) 949-9134

Turtle Information

Action when first encountered turtle (circle):
emerging - (digging) - laying - covering - returning to sea

Orientation of turtle when laying eggs:
(12 o'clock facing inland, 6 o'clock facing towards sea): 12 o'clock inland

Carapace measurements **using metal calipers (SLCL):**

Straight length (notch-tip): ___cm

Minimum length (notch-notch): ___cm

Straight width (widest point): ___cm

Carapace measurements **using non-metal measuring tape:**

Curved length (notch-tip): 67.3 cm

Minimum length (notch-notch): 67.0 cm

Curved width (widest point): 67.7 cm

Checked for **Metal Tags?** X Yes ___No

*APPLY ALL TAGS TO LEFT FLIPPERS IN TEXAS

Left Front: 44N738 Present or (Applied) (circle)

Right Front: ___ Present or Applied (circle)

Left Rear: ___ Present or Applied (circle)

Right Rear: ___ Present or Applied (circle)

Metal Tag Scars (list location, describe):

Scanned for **PIT Tag?** X Yes ___No

*APPLY ALL TAGS TO LEFT FLIPPERS IN TEXAS

Left Front (Present or Applied): 446209 3549 (if applied, attach sticker)

Right Front (Present or Applied): ___ (if applied, attach sticker)

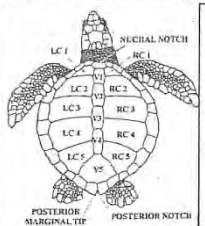
Scanned for **Coded Wire (Magnetic) Tag?** ___Yes X No

If magnetic tag, which flipper: ___left front ___right front

Checked for **Living Tag?** X Yes ___No

Was carapace scrubbed? ___Yes ___No

If found, record location and deformities (mark and describe):
LC = left costal, V = vertebral, RC = right costal



Transmitter ID # (applied or present):

Samples collected (record time):

Biopsy-tissue (1): 0858

Biopsy-tissue (2): 0858

Carapace swipe: ___

Biopsy-scutes: ___

Blood: ___

PCV value: ___

- Permitt … tor to carry c…
  - moni…
  - perm…

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

3-201 (1/97)

FEDERAL FISH AND WILDLIFE PERMIT

1. PERMITTEE
TEXAS A & M UNIVERSITY - GALVESTON
SEA TURTLES & FISHERIES ECOLOGY RES. LAB
5001 AVENUE U, SUITE 104
GALVESTON, TX 77554
U.S.A.

2. AUTHORITY-STATUTES
16 USC 1539(a)
16 USC 1533(d)

REGULATIONS
50 CFR 17.22
50 CFR 17.32

50 CFR 13

3. NUMBER: TE776123-2 — AMENDMENT
4. RENEWABLE: ☒ YES ☐ NO
5. MAY COPY: ☒ YES ☐ NO
6. EFFECTIVE: 03/29/2011
7. EXPIRES: 04/01/2014

8. NAME AND TITLE OF PRINCIPAL OFFICER *(If #1 is a business)*
DR. ANDRE M. LANDRY, JR.
PROFESSOR

9. TYPE OF PERMIT
NATIVE ENDANGERED & THREATENED SP. RECOVERY - E & T WILDLIFE

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED
Texas Gulf Coast

11. CONDITIONS AND AUTHORIZATIONS:

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13 AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

D. Your permit is being renewed as follows. The ter… 19, 2010, and any subsequent amendments or renewal…

E. Acceptance of this permit serves as evidence that … Native Endangered and Threatened Wildlife Species …

F. Acceptance of this permit serves as evidence that … **terms and conditions within this permit may have … available or in response to requests by applicants …** conditions of this permit are inclusive. Any activity … these conditions carefully as violations of permit term… denial of a new permit when the current one expires. … contribute to a violation of the Endangered Species A… penalties.

☒ ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS
REPORT DUE 12/15 OF EACH YEAR.

ISSUED BY: Susan Jacobsen, Acting — TITLE: ARD - ECOLOGICAL …

Certificate of Completion

Sea Turtle Monitor Training Program

This is to certify that

has completed the above Training/Educational Program and earned
16 credit hours

Andre M. Landry, Jr., Ph.D.
Director

Date of Completion

Program funded by the General Land Office Coastal Coordination Advisory Committee

- **Signage may or may not be required for on-beach activities authorized during nesting season**
  - **requirement is usually project- and/or agency-dependent**
  - **when required:**
    - **adds additional rigor to permittee's conduct of monitoring**
    - **provides outreach related to sea turtle & habitat conservation**
    - **makes permitting agency(ies) and contractor look good**

- **Permit may require signage identify:**
  - contractor's name and contact information
  - scheduled duration of on-beach activity
  - reason that monitoring is required
  - brief description of monitoring program
  - entity responsible for monitoring
    - contact information
    - monitor staging area
      - indicate where monitor can be found by beach-going public
  - nesting hotline number: 1-866-TURTLE-5

Galveston Island State Park

Bolivar Peninsula

Bolivar Peninsula

West Galveston Island

- **What is a “stranding”?**
  - **the uncontrolled beaching of an aquatic animal along the Gulf–beach interface**

- **Aquatic animals that strand include:**
  - **sea turtles**
  - **marine mammals**

- **Strandings are reported as “dead” or “live”**
  - **dead: denotes animal that died of natural or man-made causes**
  - **live: denotes an injured, sick and/or disoriented animal**
    - **in need of care or attention**

- **Strandings of protected species such as sea turtles & marine mammals should be reported**
  - **this is especially true for live strandings**
    - **enables proper response**
      - **possible rehabilitation & recovery of animal**
- **Monitors patrolling Gulf beaches may encounter stranded animals**
  - **shoulder the responsibility to report an encounter**

- **Contact information for reporting strandings**
  - **sea turtles: Sea Turtle Stranding & Salvage Network**
    - **Texas: 1-866-TURTLE-5 (1-866-887-8535)**
    - **Louisiana: 1-337-962-7092**
    - **Mississippi: 1-888-SOS-DOLPHIN or 1-888-767-3657**
    - **Alabama: 1-866-Sea-Turtle or 1-866-732-887853**
    - **Florida: 1-888-404-FWCC or 1-888-404-3922**
  - **marine mammals: Marine Mammal Stranding Network**
    - **Texas: 1-800-9-MAMMAL (1-800-962-6625)**
    - **Louisiana: 1-504-235-3005**
    - **Mississippi: 1-888-806-1674**
    - **Alabama: 1-888-767-3657**
    - **Florida: 1-888-404-FWCC (1-888-404-3922)**

SEA TURTLE STRANDING AND SALVAGE NETWORK – STRANDING REPORT

OBSERVER'S NAME / ADDRESS / PHONE:
First _____ M.I.____ Last _____
Affiliation _____
Address _____
_____
Area code/Phone number _____

Year 20☐☐ Month ☐☐ Day☐☐
Turtle number by day ☐☐

State coordinator must be notified within 24 hrs; this was done by ☐phone (252)725-5328 ☐email (wmc3@vol.com)

SPECIES: (check one)
☐ CC = Loggerhead
☐ CM = Green
☐ DC = Leatherback
☐ EI = Hawksbill
☐ LK = Kemp's ridley
☐ UN = Unidentified
CHECK UNIDENTIFIED IF NOT POSITIVE: DO NOT GUESS
PHOTOS TAKEN? ☐YES ☐NO
Species verified by Project Biologist? ☐YES ☐NO

STRANDING LOCATION: ☐Offshore (Atlantic or Gulf beach) ☐Inshore (bay, river, sound, inlet,
State _____ **County** _____
Location (be specific): _____
_____
LATITUDE: _____ **LONGITUDE:** _____

SEX: (check one)
☐ Undetermined
☐ Female ☐ Male
How was sex determined?
☐ Necropsy
☐ Tail length (adult only)
Length of tail beyond carapace _____ cm / in

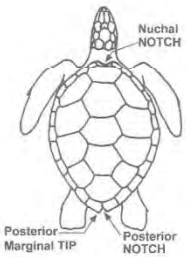
CONDITION (check one)
☐ 0 = Alive
☐ 1 = Fresh dead
☐ 2 = Moderately decomposed
☐ 3 = Severely decomposed
☐ 4 = Dried carcass
☐ 5 = Skeleton, bones only

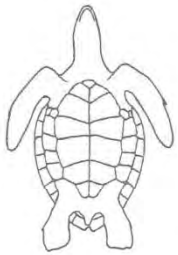
FINAL DISPOSITION:
☐1 = Left on beach where found; painted? ☐Yes* ☐No(5)
☐2 = Buried: ☐ on beach / ☐ off beach;
carcass painted before buried? ☐ Yes* ☐ No
☐3 = Salvaged: ☐ all / ☐ part(s), what/why? _____
_____
_____
☐4 = Pulled up on beach/dune; painted? ☐Yes* ☐No
☐6 = Alive, released
☐7 = Alive, taken to rehab. facility, where? _____
_____
☐8 = Left floating, not recovered; painted? ☐Yes* ☐No
☐9 = Disposition unknown, explain _____
_____
If painted, what color? _____

TAGS: ***CONTACT STATE COORDINATOR BEFORE DISPOSING OF ANY TAGGED ANIMAL***
Flipper tags present? ☐ Yes ☐ No
Check all 4 flippers. If found, record tag number(s) / tag location / return address
_____
_____
_____
PIT tag scan? ☐ Yes ☐ No
If found, record number / tag location
_____
_____
Coded wire tag scan? ☐ Yes ☐ No
If positive response, record location (flipper)
_____
Checked for living tag? ☐Yes ☐ No
If found, record location (scute number & side)
_____

CARAPACE MEASUREMENTS (see drawing)
Using calipers **Circle unit**
Minimum length (NOTCH-NOTCH) _____ cm / in
Straight width (Widest Point) _____ cm / in
Using non-metal measuring tape **Circle unit**
Curved length (NOTCH–TIP) _____ cm / in
Minimum length (NOTCH-NOTCH) _____cm / in
Curved width (Widest Point) _____ cm / in

Circle unit
Weight ☐ actual / ☐ estimated ___ kg / lb





Mark wounds / abnormalities on diagrams at left and describe below (note tar or oil, gear or debris entanglement, propeller damage, epibiota, papillomas, emaciation, etc.). **Please write down something, even if no wounds / abnormalities are found.**
_____
_____
_____
_____
_____
_____

- **Safety and individual awareness are critical to successful monitoring**

- **Factors impacting this success include:**
  - **Weather**
  - **Landscape/terrain**
  - **Vehicular traffic**
  - **Beach goers**
  - **Animals and insects**
  - **Monitoring equipment**

- **Sea turtle season spans 3.5 months and a wide range of weather conditions**
  - cold and windy in April
  - hot and humid in June-July
  - stormy in April & early May

- **Dealing with challenging environmental conditions on Gulf beaches requires:**
  - thermal clothing (cold)
  - breathable clothing (hot)
  - layered clothing
    - shed layers as conditions dictate
  - raingear

- **Adverse Weather: Seek Shelter**
  - Especially during lightning events
- **Terminate monitoring**
- **Find refuge nearby**
  - Beach home
  - Portable toilet
  - Other stable structures
  - Drainage culverts (except flooding)
  - Within dunes (lay flat)
- **Monitor should record:**
  - His/her safety response
  - duration monitoring did not occur

- **Gulf beaches offer an array of landscape hazards**
  - **trash and debris**
  - **venomous organisms**
    - **catfish spines**
    - **jellyfish (Portuguese Man-o-War)**
  - **rugged terrain**
    - **deep sand**
    - **large holes**
    - **pooled water**
    - **storm-induced cuts in beach**
- **Foot- and ATV-Patrollers must be visually aware of these hazards and avoid them**

- **Some Gulf communities allow public driving on beaches**
  - **Bolivar Peninsula**
  - **Galveston Island (certain parts)**

- **Vehicles are a threat & hassle to monitors, especially on**
    - **crowded beaches**
    - **eroded beaches**
  - **may require patrol deviation**

- **Foot- and ATV-Patrollers must be visually aware of these hazards and avoid them**

- **Beach goers: THE GOOD**
  - tremendous interest in nesting
  - information sources on nesting
  - target of outreach/ecotourism
- **Beach goers: THE BAD**
  - possibly deviant?
  - intoxicated
  - rowdy
  - “anti-turtle”
  - too talkative
- **Foot- and ATV-Patrollers must be prepared to remove themselves from a bad situation**

“\ . . . \”

- **Alter foot & ATV travel through observation zone to avoid**
  - **beach goers & vehicular traffic**
  - **large holes**
  - **obstacles to safe transit**
    - **trash & debris**
    - **drift wood and Sargassum**
    - **fish skeletons**
- **Stop when encountering**
  - **small children & families**
  - **vehicular traffic**

- **Threats to monitors include:**
  - wild or unleashed animals
    - dogs
    - coyotes
    - snakes
    - alligators
    - rabid skunks
  - nesting birds
    - terns
  - insects
    - mosquitoes
    - gnats (no-see-ems)
    - deer flies
    - ants

- **Monitors should carry a fully-charged cell phone**

- **Cell phone contacts:**
  - **911**
  - **local sheriff/police office**
  - **nesting hotline**
  - **beach contractor/foreman**
  - **marine mammal stranding network hotline**

- **Cell phone should have apps for easy access to:**
  - **weather forecasts and emergency alerts**

- Monitor sl… essential to performar…
  - a list of t…
  - choose s… olume
    - minim…
- These sup… able to monitor
  - carried i… ck
    - should…
    - ATV-m…

- **Monitors must:**

- **Stay hydrated**
  - Drink, drink, drink and drink

- **Guard against sun exposure**
  - use high SPF sunscreen
  - wear protective, light weight clothing & head gear
  - take rest breaks
    - seek shade, if available
    - get off hot sand
    - get off hot ATV

MONITOR EQUIPMENT CHECKLIST

PERSONAL SUPPLIES

Cell phone (fully charged)
Water
Food/Snacks and cooler
Polarized sun glasses
Sunscreen
Appropriate clothing (sun protection)
Closed-toe shoes
Hat/cap
Disposable rain gear
Helmet (if monitoring aboard ATV)
First aid kit
Insect repellant
Meat tenderizer (non-seasoned, for jellyfish stings)
Hand sanitizer
Mace (a consideration for those wanting personal protection)

MONITORING-RELATED SUPPLIES

Turtle response instruction list
Walkie-Talkies (if needed to communicate with contractor in cell poor area)
Binoculars (if monitoring large areas)
GPS unit (in protective case or Ziploc bag)
Vinyl measuring tape
Disposable camera
Flashlight (if monitoring during hours of poor or no sunlight)
Paint brush (to clean turtle's carapace)
Extra AA batteries (2+ for GPS unit)
Latex gloves
Nest marker
Large towel (keeping turtle hydrated, if instructed to do so by hotline responder)
Permits & authorization letters (if a monitor on federally-permitted activity)
Dry erase board and pen (field-labeling of pictures)
Notepad, sharpie, pen and pencil
Clipboard with nesting data sheets (if the latter are used in monitoring)
Daily log of monitoring/patrol effort (if a permit requirement)

\. . \. . . \. . ?

- **A monitor's readiness to patrol on an ATV is dependent upon:**
  - **Knowing how to safely operate the vehicle**
  - **Feeling well and being in good physical & mental condition**
  - **Wearing an approved helmet, eye protection and appropriate clothing**
  - **Being free of alcohol and drugs in his/her system**

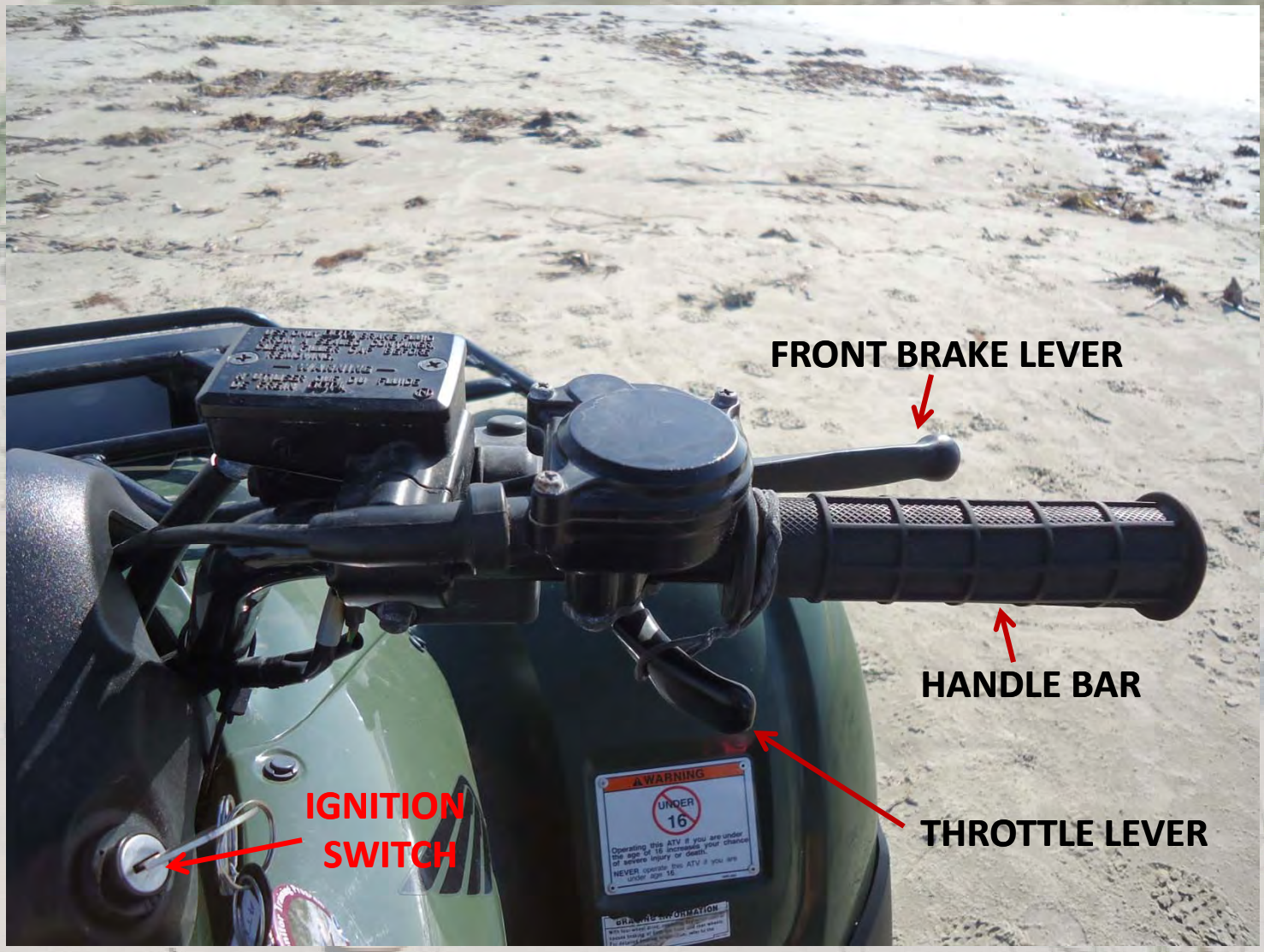
HONDA FOURTRAX RANCHER

- **Training on Honda Fourtrax Rancher ATV**
- **User-friendly ATV for novice & seasoned riders**
  - **420 cc engine**
  - **electric shift**
    - **5 forward gears**
  - **2 wheel and 4 wheel drive capability**
  - **excellent for monitoring long distances**

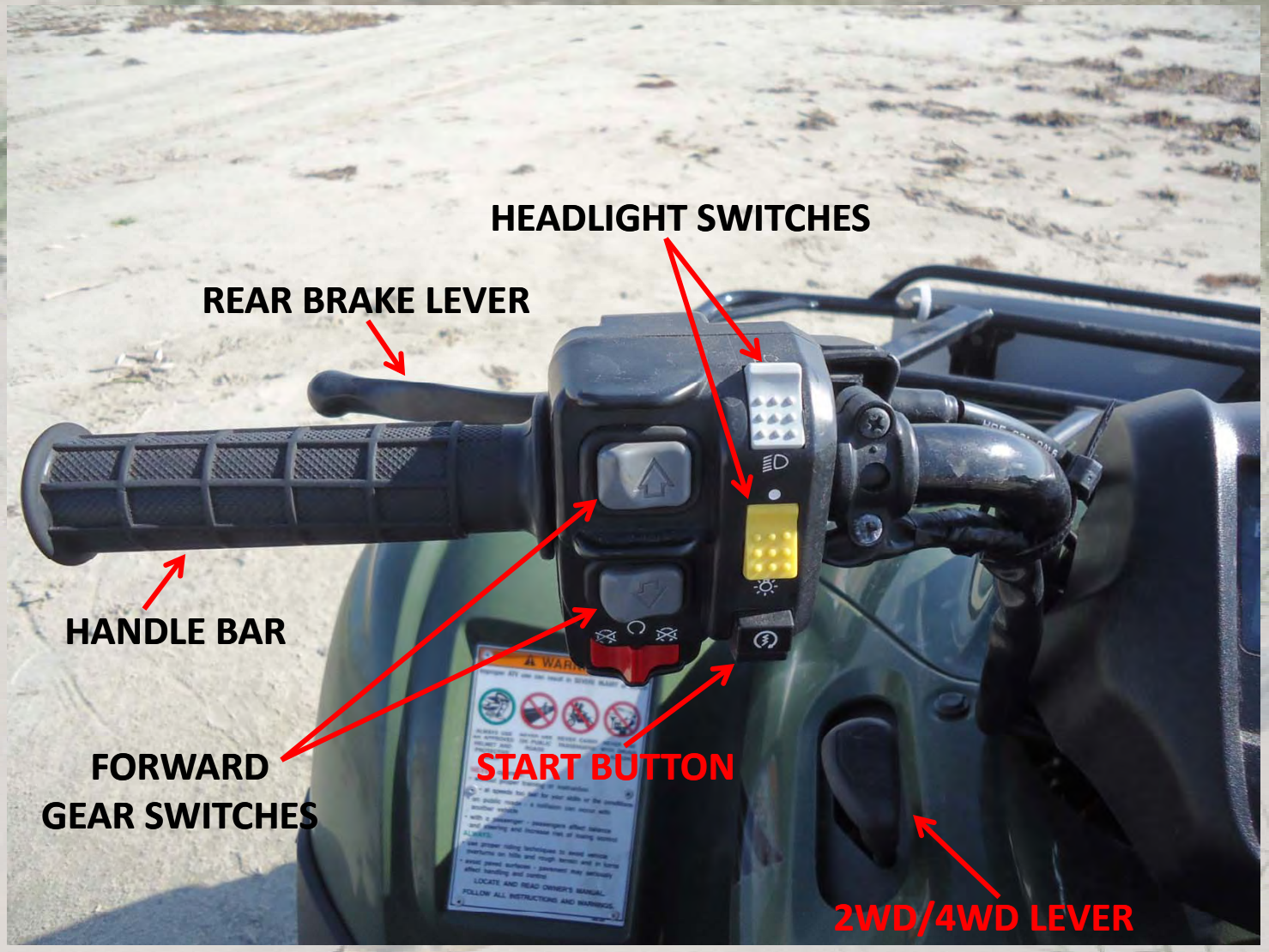
FRONT VIEW

REAR VIEW

INSTRUMENTS AND CONTROLS

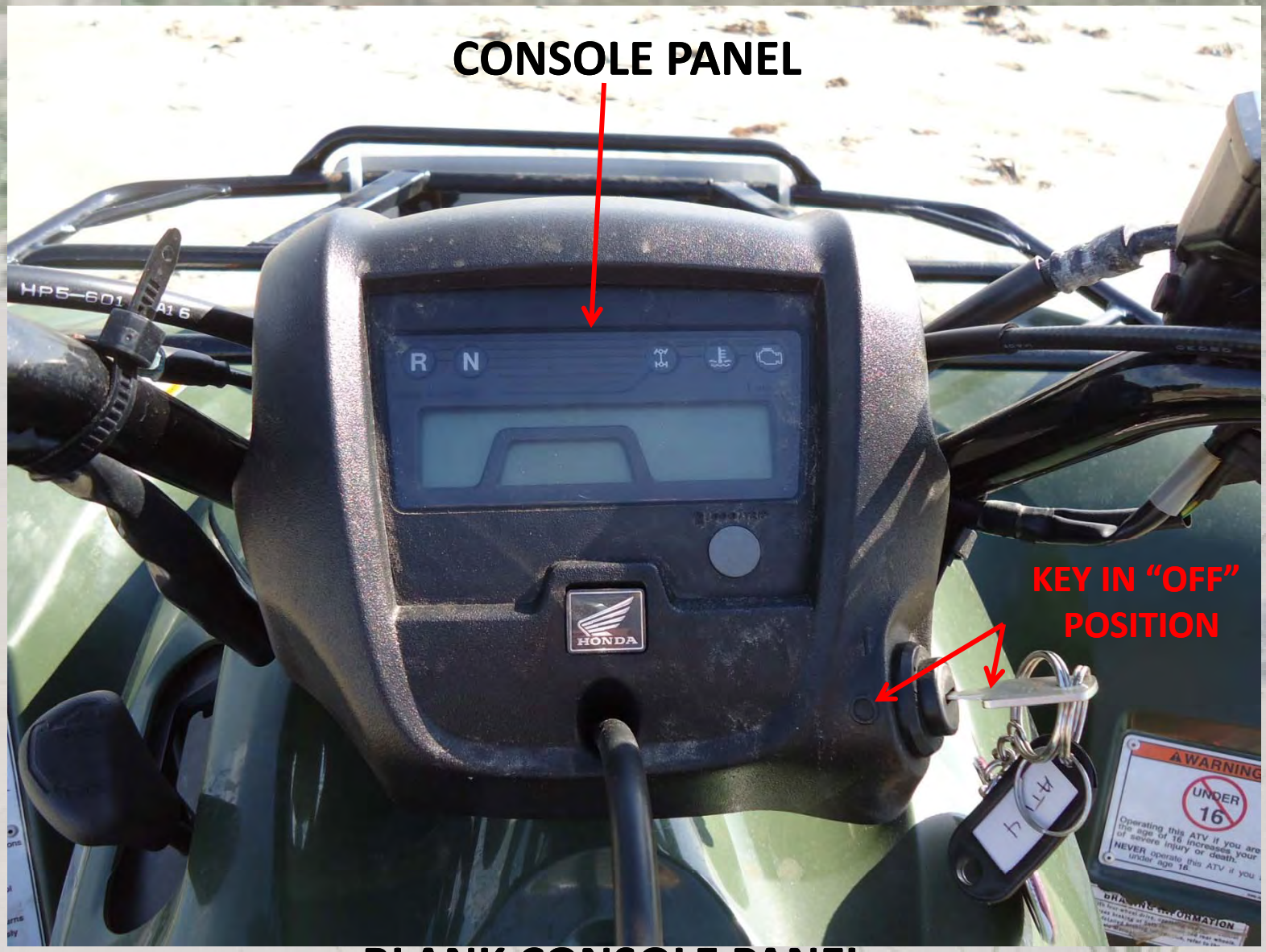


RIGHT HANDLE BAR INSTRUMENTS



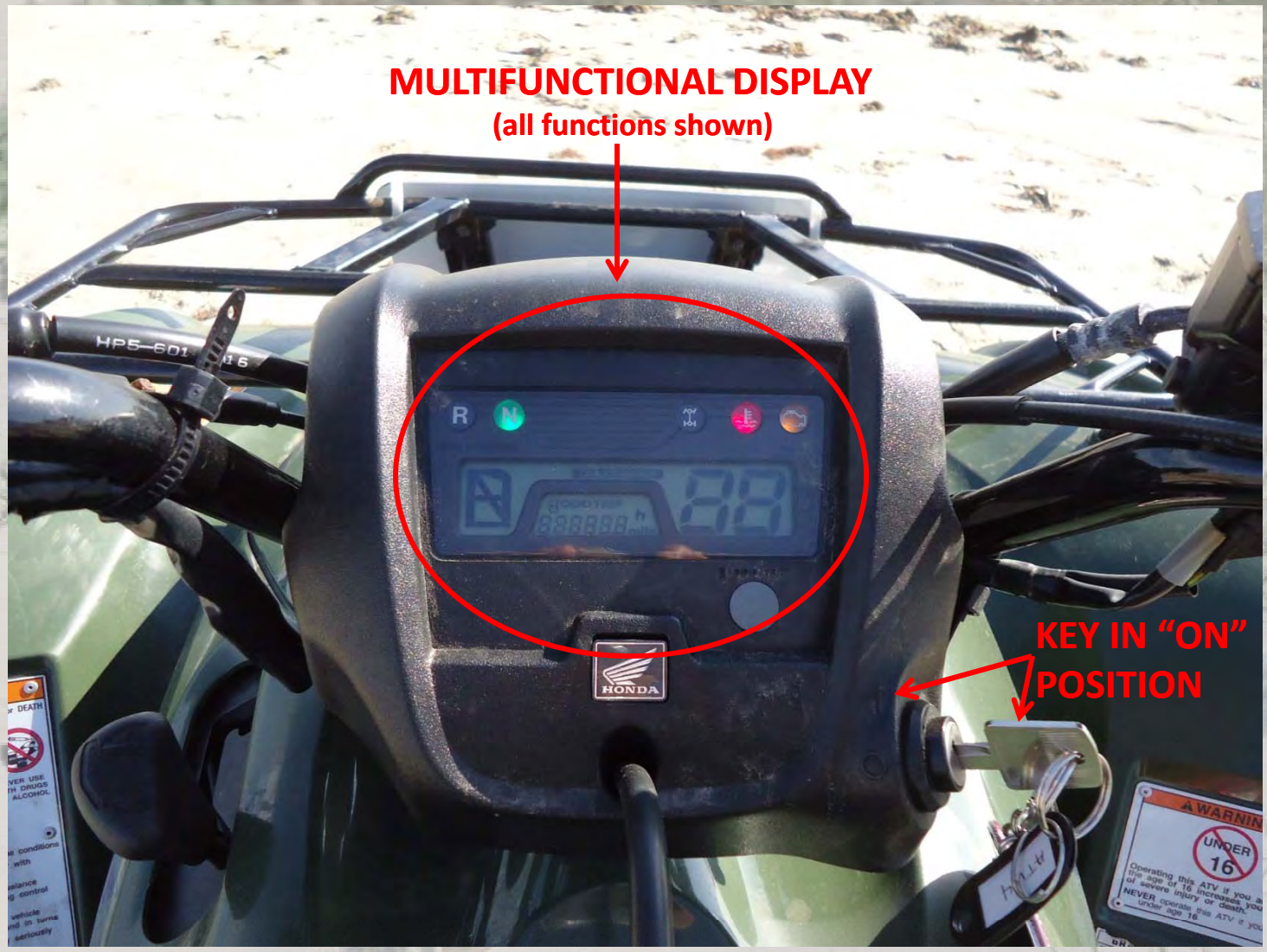
LEFT HANDLE BAR INSTRUMENTS

LEFT HANDLE BAR INSTRUMENTS



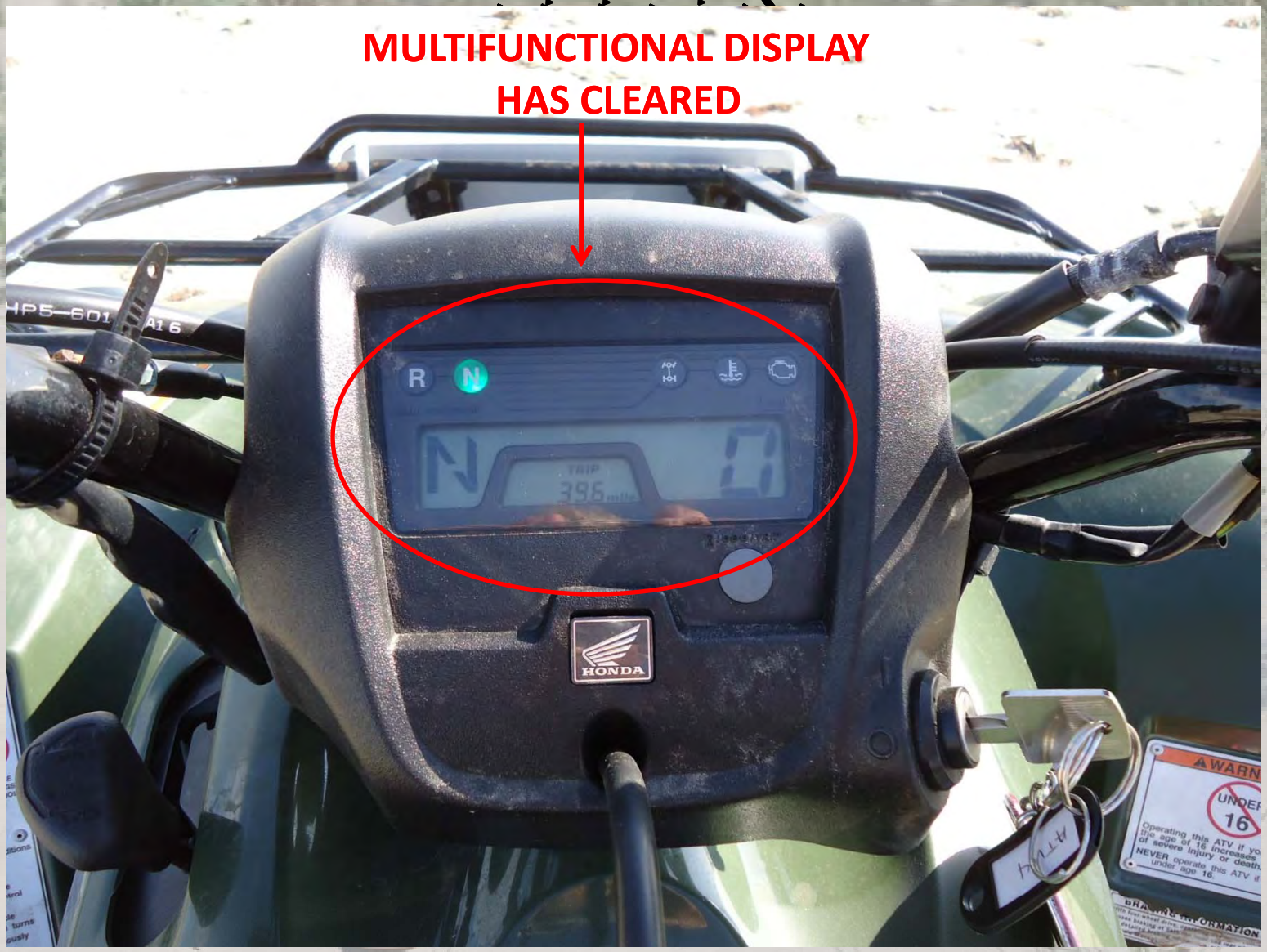
BLANK CONSOLE PANEL

(engine completely off)



VIEW OF MULTIFUNCTIONAL DISPLAY

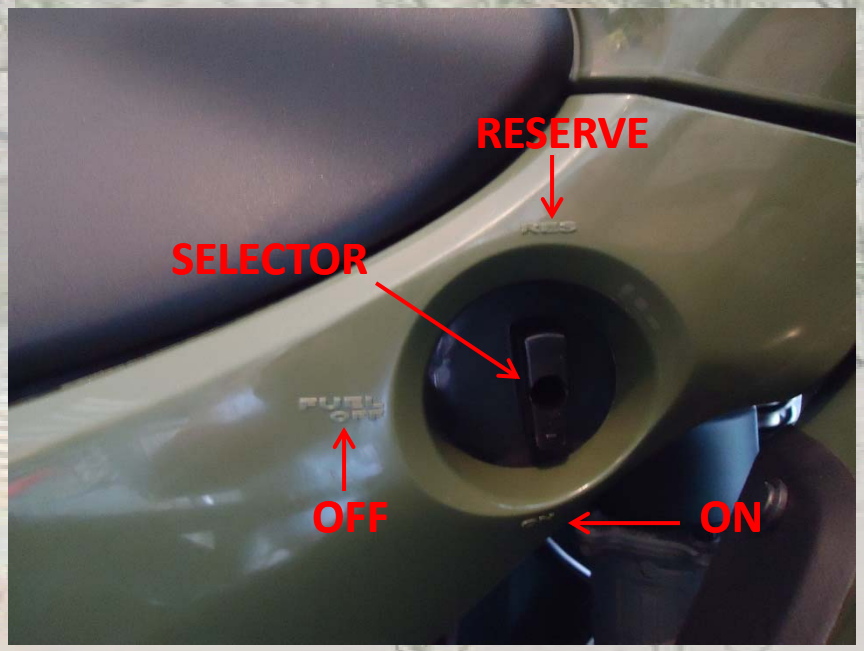
(no engine ignition yet)



CONSOLE VIEW @ STARTUP

(push starter button now)

FUEL GAUGE



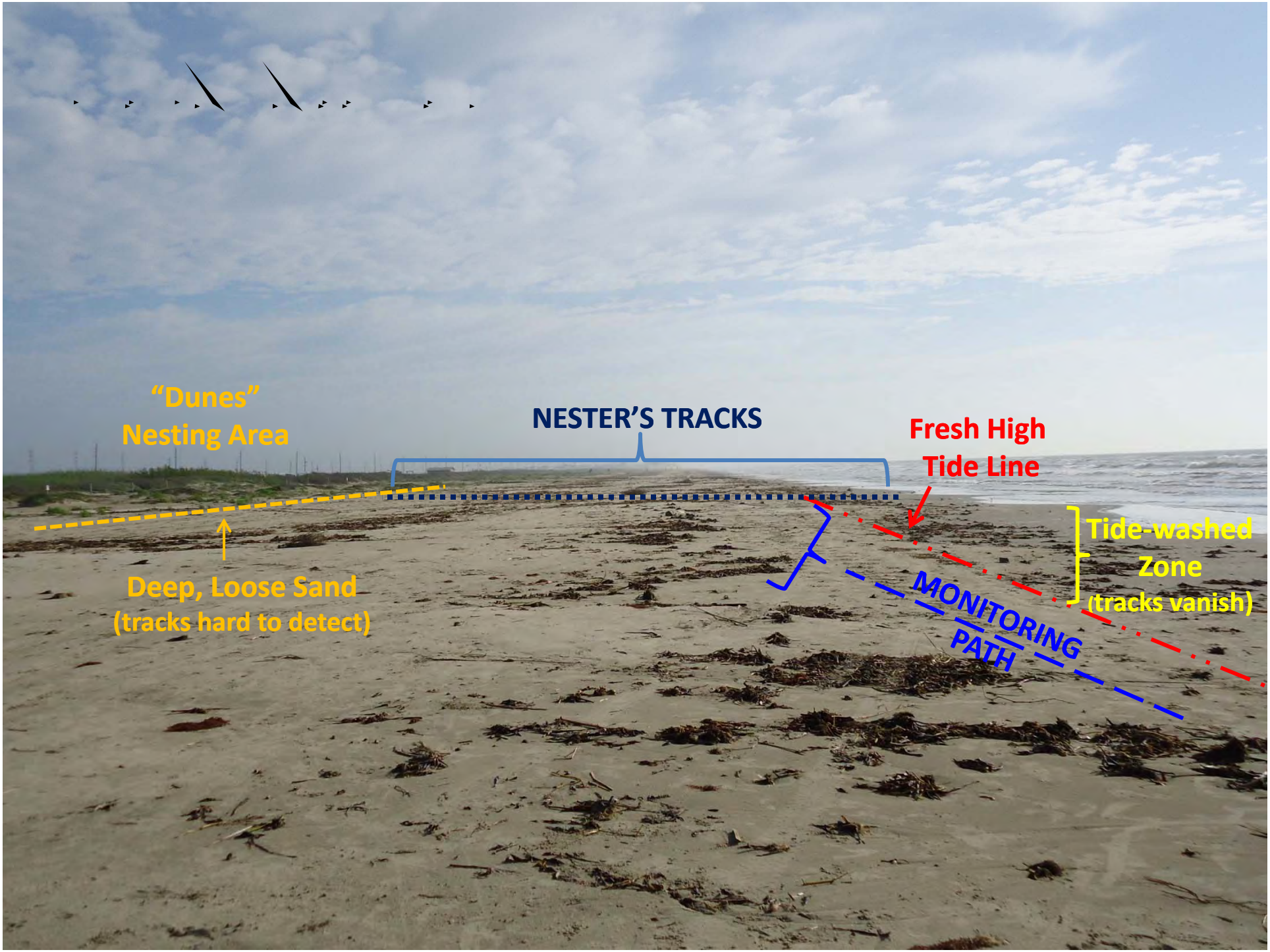
FUEL ACCESS SELECTOR

- Check gas gauge to ensure adequate fuel supply
- Turn key to “On” position
  - wait for console’s multifunctional display to clear
- Push start button to engage ignition
  - do not touch throttle lever (=leave in closed position)
- With transmission in neutral (=N) & parking brake released,
  - press upshift switch once to shift into 1st gear while squeezing rear brake lever
- Release rear brake lever & open throttle slowly to drive forward

. \ \ . . & . \ . . . . .

- **Increasing speed & shifting into higher gear**
  - **with ATV in 1st gear, increase speed to 2 to 3 mph by opening throttle**
  - **release throttle and shift into 2nd gear by pressing upshift switch once**
  - **repeat this sequence to progressively shift to 3rd and 4th gears, with successive opening of throttle**
    - **do not exceed 12 mph during training sessions**
- **Decreasing speed & downshifting into lower gear**
  - **close throttle and press the downshift switch once**
  - **repeat this sequence to reduce speed and reach proper gear level**

- **Before riding in reverse**
  - ensure area behind ATV is clear of objects
  - only operate ATV at low speed
- **Riding in reverse**
  - bring vehicle to complete stop
  - make sure transmission is in neutral (=N)
  - push reverse selector knob in & squeeze rear brake lever
  - press downshift switch once to shift into reverse (=R)
- **Release rear brake lever & open throttle slowly to back up**


"Dunes"
Nesting Area
NESTER'S TRACKS
Fresh High
Tide Line
Tide-washed
Zone
(tracks vanish)
Deep, Loose Sand
(tracks hard to detect)
MONITORING
PATH

- Proceed to ATV-demonstration staging area
- Hands-on familarization with ATV operation & safety
- ATV driving practice
- On-beach monitoring
- Track observations

PARTICIPANT WAIVER AND HOLD HARMLESS FORM

THE TEXAS A&M UNIVERSITY SYSTEM

1. In consideration for receiving permission to participate in **_Sea Turtle Monitor Training Program** (herein referred to as **ACTIVITY**), which is sponsored by Texas A & M University at Galveston_ (herein referred to as SPONSOR), a component member of The Texas A&M University System, I hereby **RELEASE, WAIVE, DISCHARGE, AND COVENANT NOT TO SUE, AND AGREE TO HOLD HARMLESS** for any and all purposes SPONSOR, The Texas A&M University System, the Board of Regents for The Texas A&M University System, and their officers, servants, agents, volunteers, or employees (herein referred to as RELEASEES) **FROM ANY AND ALL LIABILITIES, CLAIMS, DEMANDS, OR INJURY, INCLUDING DEATH**, that may be sustained by me while participating in such activity, or while on the premises owned or leased by RELEASEES, ***including injuries sustained as a result of the negligence of RELEASEES***. I acknowledge there may be physically strenuous activities. I know of no medical reason why I should not participate.

2. I am fully aware that there are inherent risks involved with ACTIVITY, and I choose to voluntarily participate in said activity with full knowledge that said activity may be hazardous to me and my property. **I VOLUNTARILY ASSUME FULL RESPONSIBILITY FOR ANY RISKS OF LOSS, PROPERTY DAMAGE OR PERSONAL INJURY, INCLUDING DEATH**, that may be sustained by me as a result of participating in said activity ***including injuries sustained as a result of the negligence of RELEASEES***. I further agree to indemnify and hold harmless the RELEASEES for any loss, liability, damage or costs, including court costs and attorney's fees that may occur as a result of my participation in said activity.

3. I understand that RELEASEES do not maintain any insurance policy covering any circumstance arising from my participation in this activity or any event related to that participation. As such, I am aware that I should review my personal insurance coverage.

4. It is my express intent that this Covenant Not to Sue and Agreement to Hold Harmless shall bind the members of my family and spouse, if I am alive, and my heirs, assigns and personal representatives, if I am deceased, and shall be governed by the laws of the State of Texas.

5. In signing this Covenant Not to Sue and Agreement to Hold Harmless, I acknowledge and represent that I have read the foregoing Covenant Not to Sue and Agreement to Hold Harmless, understand it and sign it voluntarily as my own free act and deed; no oral representations, statements, or inducements apart from the foregoing agreement that has been reduced to writing have been made. I execute this document for full, adequate and complete consideration fully intending to be bound by the same, now and in the future.

SIGNED this _____ day of _____, 20____.

Participant Signature: _____

Printed Name: _____

Parent or Legal Guardian Signature: _____
(If Participant is under 18 years old)

Parent or Legal Guardian Printed Name: _____
(If Participant is under 18 years old)

Witness Signature: _____

Witness Printed Name:_____

INSTRUCTIONS TO SPONSORS

1. *Complete all blanks in form prior to execution.*
2. *Provide copy of executed form to Participant.*
3. *If a special event or other policy of insurance is in effect for the Activity, delete paragraph 3 and initial.*
4. *Attach additional pages as necessary to describe Activity or Inherent Risks, and have Participant initial all such pages at the time of execution of this document.*
5. *Keep this release on file in appropriate office of Sponsor.*

SEA TURTLE MONITOR TRAINING WORKSHOP
HOMEWORK: July 18, 2012

I encourage you to go to You Tube and access a video entitled "Saving The Kemp's ridley – Episode 1 with fav song Thank you" prior to Wednesday's training session. The 2009 video is 7:32 minutes long and a nice overview of many of the aspects you learned during the workshop's first day. Copyright restrictions and lack of internet access in Galveston Island State Park's Education Center prevent me from showing the video in my power point presentations during workshop sessions. Hopefully, the video will be available to you when you return home or to your hotel Wednesday evening. Assuming so, you may access the video at www.youtube.com/watch?v=F8zJKNBAWuU or by going to You Tube and searching for the video under the aforementioned title.

You are encouraged to make your viewing of the video an informative challenge where you make note of various things related to knowing more about the endangered Kemp's ridley sea turtle, its nesting behavior, and conservation initiatives to speed its population recovery. As such, please use the video to prepare to participate in a review of nesting dynamics during the first training session on Wednesday morning. To do so, see if you can provide any information on the following topics or questions:

1. **Where was the video filmed?**
2. **How many species of sea turtles are shown in the video? What are these species?**
3. **How many life stages of Kemp's ridley are shown in the video? What are these life stages?**
4. **How many different nesters are shown laying eggs in the video? How can you distinguish between these nesters (Hint: attempt to do so morphologically and by location of nesting)?**
5. **What direction do the nesters in Question #4 face when on a nest?**
6. **Where are the nester's tracks most visible on the video? Why?**
7. **What is the nester doing when she stops on her way back to the water?**
8. **What might be one concern about the manner in which eggs are taken out of a nest and put into the sack shown in the video?**
9. **What do you call the fenced area in which you see a beach worker digging holes?**
10. **What do you think will go in these holes?**
11. **What information might the small stakes inside the fenced area provide?**
12. **What might be one concern you have when seeing operation of the ATVs in the video?**

FIRST AND FOREMOST, ENJOY THE VIDEO!!! Hopefully, it will enable a fruitful discussion amongst all of us!

SEA TURTLE MONITOR TRAINING WORKSHOP
ON-BEACH MONITORING EXERCISE

Instructions:

1. **Ride east on the State Park's beach**
2. **Continue riding until you find evidence of nesting activity or your assigned observation period has expired**
3. **Record your observations below**

Observations:

A. Did you encounter a set of tracks?

___No

___Yes

If yes, describe a landmark on the beach that would allow a permitted responder to easily find the tracks.

Landmark description: _____

Did the tracks lead to a potential nest site?

___No

If no, what type of tracks did you find? _____

___Yes

If yes, what type of tracks did you find? _____

B. Did you encounter a second set of tracks?

___No

___Yes

If yes, describe a landmark on the beach that would allow a permitted responder to easily find the tracks.

Landmark description: _____

Did the second set of tracks lead to a potential nest site?

___No

If no, what type of tracks did you find? _____

___Yes

If yes, what type of tracks did you find? _____

SEA TURTLE MONITOR TRAINING WORKSHOP
ON-BEACH MONITORING EXERCISE

Instructions:

1. **Ride west on the State Park's beach**
2. **Continue riding until you find evidence of nesting activity or your assigned observation period has expired**
3. **Record your observations below**

Observations:

A. Did you encounter a set of tracks?

___No

___Yes

If yes, describe a landmark on the beach that would allow a permitted responder to easily find the tracks.

Landmark description: _____

Did the tracks lead to a potential nest site?

___No

If no, what type of tracks did you find? _____

___Yes

If yes, what type of tracks did you find? _____

B. Did you encounter a second set of tracks?

___No

___Yes

If yes, describe a landmark on the beach that would allow a permitted responder to easily find the tracks.

Landmark description: _____

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If no, what type of tracks did you find? _____

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If yes, what type of tracks did you find? _____

Certificate of Completion

Sea Turtle Monitor Training Program

This is to certify that

has completed the above Training/Educational Program and earned

16 credit hours

Andre M. Landry, Jr., Ph.D.
Director

Date of Completion

Program funded by the General Land Office Coastal Coordination Advisory Committee

SEA TURTLE MONITOR TRAINING PROGRAM
WORKSHOP EVALUATION

The General Land Office, as program sponsor, and I, as program coordinator, would like your candid evaluation of the workshop you just attended. Please answer each of the questions below in the space provided.

1. Did you find the workshop informative? If so, how? If not, why?

2. How can workshop presentations and on-beach demonstrations be improved?

3. Did workshop sessions sufficiently train you to recognize signs of sea turtle nesting activity as well as on what to do if you were a federally-permitted monitor or simply someone picnicking with your family at the beach?

4. Did the workshop provide you with a better understanding and respect for the importance of sea turtle protection during the nesting season? If so, how?

5. Which workshop component - classroom lectures or on-beach demonstration of monitoring techniques – did you enjoy most? Why?

6. Will you enter the sea turtle hotline number (1-866-TURTLE-5) in your phone and use it to report a sighting of sea turtle nesting activity?

7. Would you recommend the workshop to a co-worker, friend or relative?

By attending the Sea Turtle Monitor Training Workshop, you have proven to be a good steward of the environment and are concerned about the survival of a magnificent creature, the sea turtle, who has managed to outlive the dinosaurs. Thank you for sharing your time with us. We wish your days on a beach are blessed with sea turtle encounters.