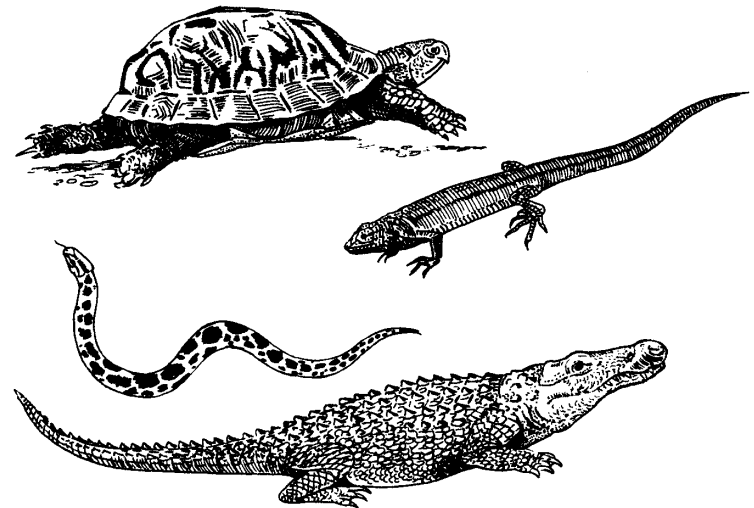


# Sea Turtles



# Characteristics of Reptiles

- Dry skin covered with scales
- Two pairs of legs – except snakes
- Three chambered heart
- Well-developed lungs protected by rib cage
- Internal fertilization
- External development (eggs)



# Marine Reptiles

- Sea turtles
- Sea snakes – Pacific and Indian Oceans
  - 50 species
  - Poisonous
  - Laterally flattened body
- Marine lizards – only Galapagos marine iguana



# Sea Turtles

- Found in tropical and subtropical waters
  - Cold blooded – need warmer waters
  - Some found as far north as Long Island
- Evolved about 200 million years ago



# Sea Turtles – 8 species



Kemp's Ridley

Green



Loggerhead



Hawksbill

Leatherback  
(largest)

These species can be found in the waters around Long Island



# Sea Turtles – 8 species



Pacific Black

Flatback

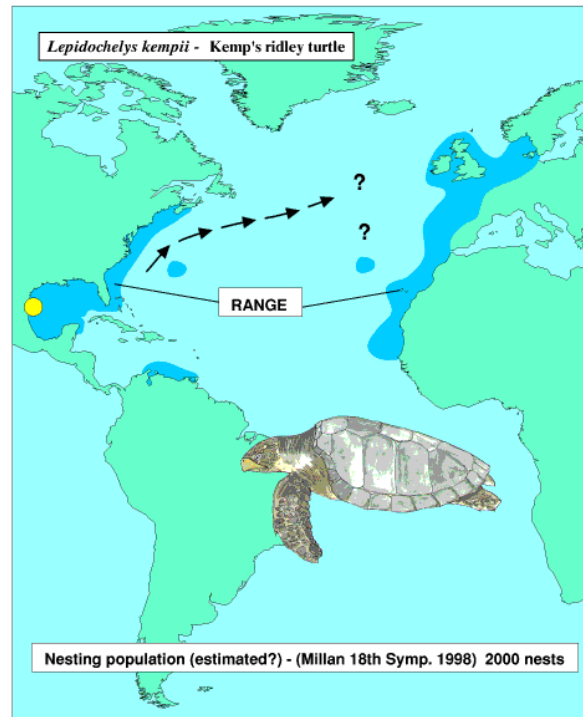
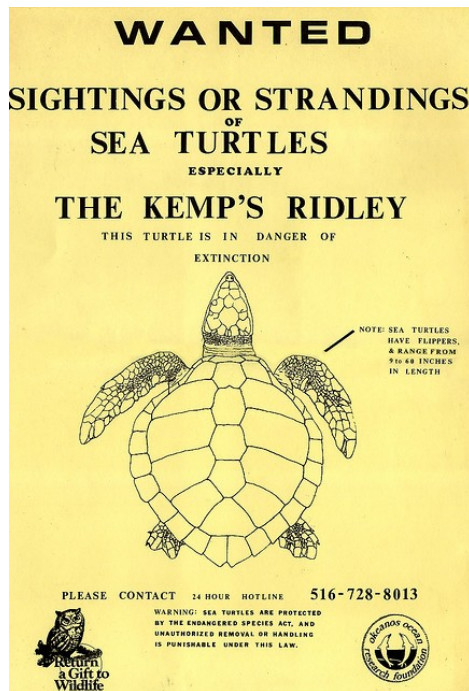


Olive Ridley

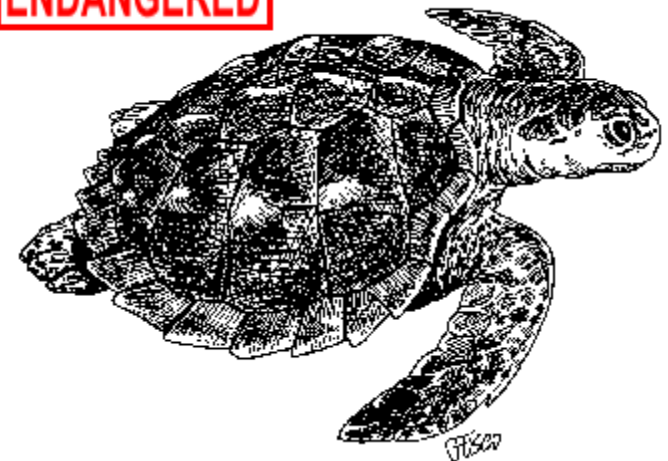


# Status

- All species of sea turtles are endangered or threatened
- Ex: Kemp's Ridley – most endangered
  - 42,000 in 1947, 400 - 500 today
  - nest only on few beaches in Mexico



**ENDANGERED**



# Sea Turtles Near Long Island

## Peconic Bay

- Loggerhead, Kemp's ridley, green, leatherback, (rarely hawksbill)
- Mostly juveniles
- May be important juvenile feeding ground
- If stay too long get cold stunned, stranded & die



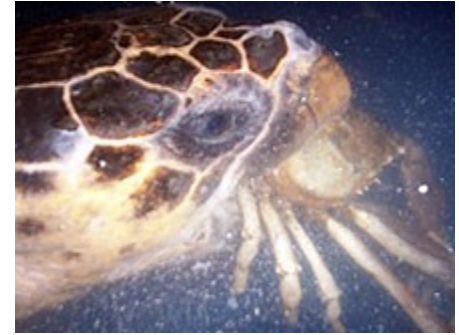
stranded





# Feeding

- No teeth – have a **beak**
- Feed on: crabs, other shellfish, jellyfish, seagrasses, seaweeds

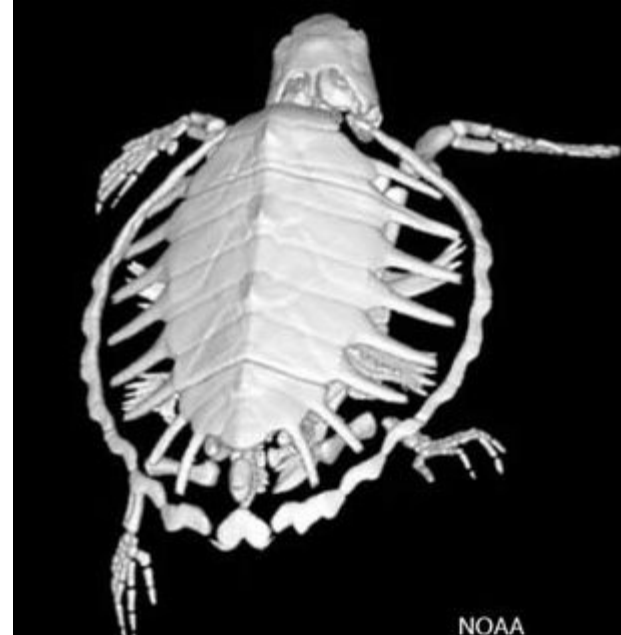
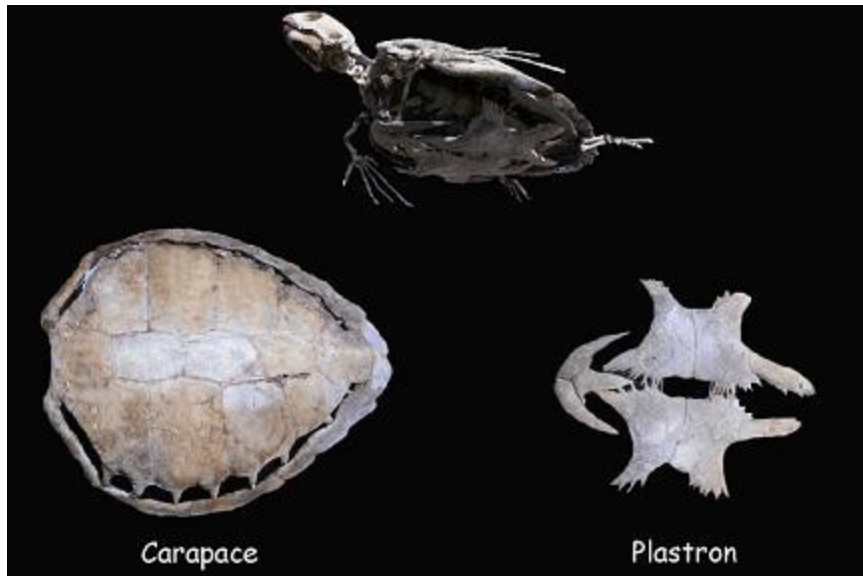


# Anatomy

- Internal and external skeleton
  - for protection and support

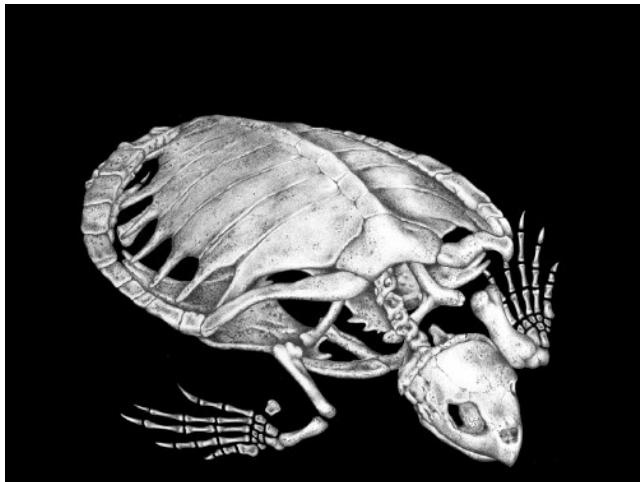
**Plastron** – lower part of shell

**Carapace** – upper part of shell

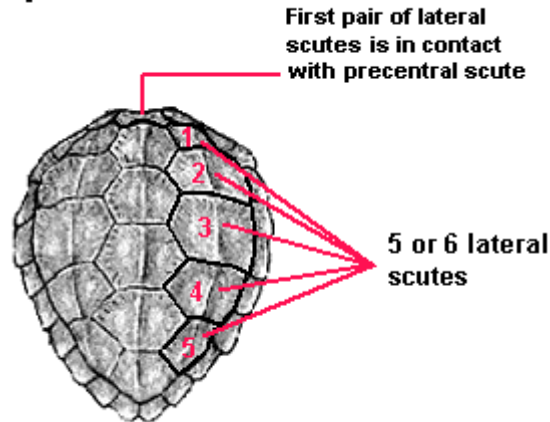


# Anatomy

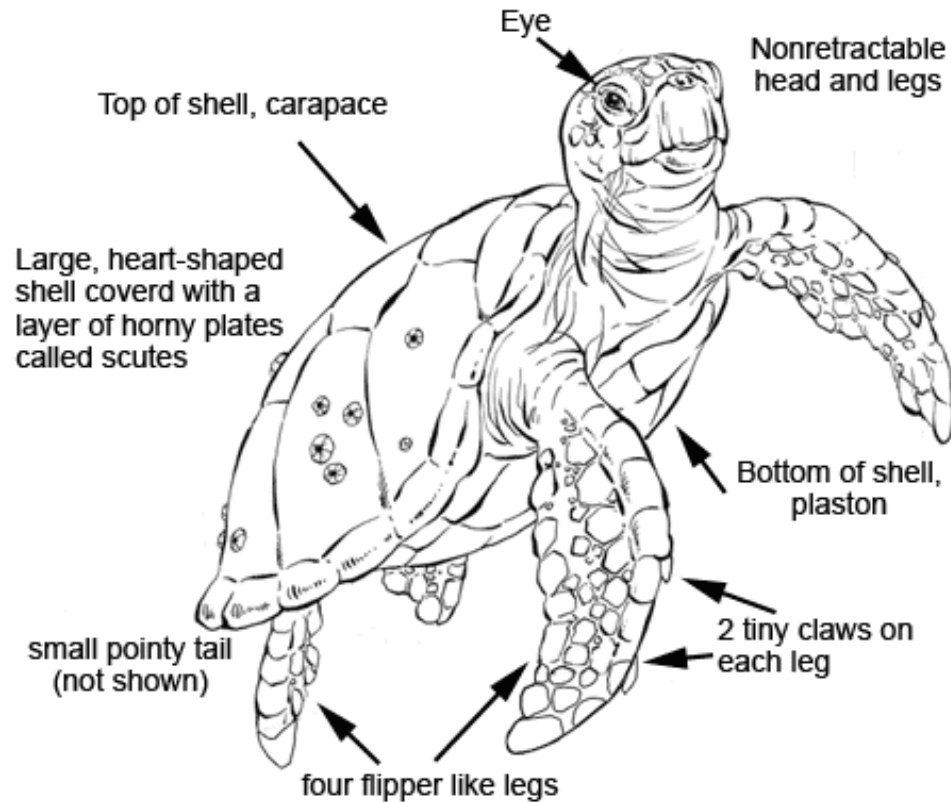
- Carapace
  - broadened, fused ribs, spine fused to it
  - cannot withdrawal into shells
  - leatherback - exception with leathery skin over many small bones (allows to dive to 3,000 feet)
- **Scutes** - firm, pliant plates covering carapace
  - help distinguish species



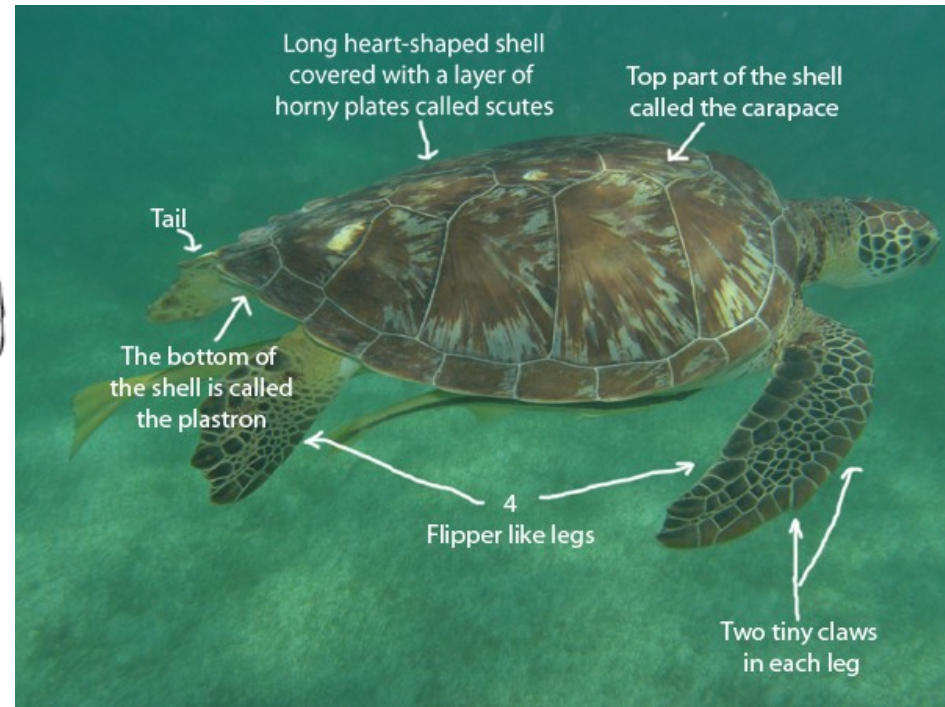
Top view




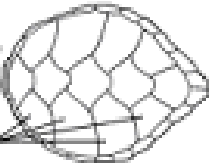
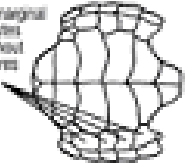


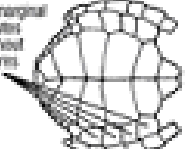

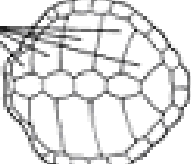
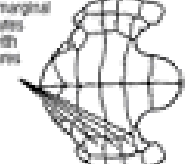

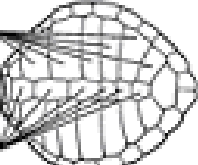
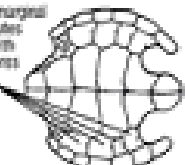






# Anatomy



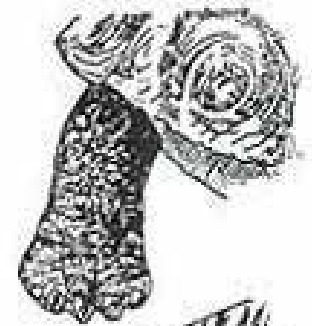
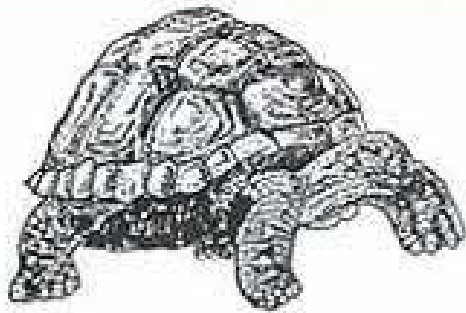
Modified from [http://www.nationalgeographic.com/coloringbook/sketch\\_loggerheads.html](http://www.nationalgeographic.com/coloringbook/sketch_loggerheads.html)  
Illustrated by Nataiya Zahn, National Geographic Society



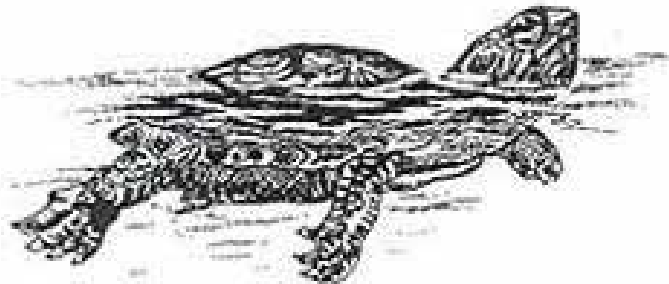
SPECIES IDENTIFICATION

head	carapace	plastron
<p>2 pairs of prefrontal scales</p> 	<p>scales imbricated (overlapping)</p> <p>4 lateral scutes</p> 	<p>4 inframarginal scutes without pores</p> 
<p><b>Haremskillo - <i>Emocheelys imbricata</i></b></p>		
<p>1 pair of prefrontal scales</p> 	<p>4 lateral scutes</p> <p>lower jaw serrated</p> 	<p>4 inframarginal scutes without pores</p> 
<p><b>Green turtle - <i>Chelonia mydas</i></b></p>		
<p>more than 1 pair of prefrontal scales</p> 	<p>5 lateral scutes</p> 	<p>4 inframarginal scutes with pores</p> 
<p><b>Kemp's ridley - <i>Lepidochelys kempi</i></b></p>		
<p>more than 1 pair of prefrontal scales</p> 	<p>6 or more lateral scutes</p> <p>6 or more vertebral scutes</p> 	<p>4 inframarginal scutes with pores</p> 
<p><b>Olive ridley - <i>Lepidochelys olivacea</i></b></p>		
<p>more than 1 pair of prefrontal scales</p> 	<p>5 lateral scutes</p> 	<p>3 inframarginal scutes without pores</p> 
<p><b>Loggerhead - <i>Caretta caretta</i></b></p>		
<p>no scales</p> 	<p>ridges</p> 	<p>no scutes</p> 
<p><b>Leatherback - <i>Dermochelys coriacea</i></b></p>		

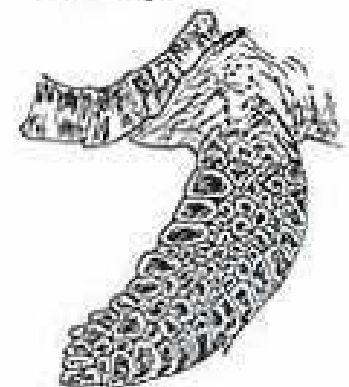
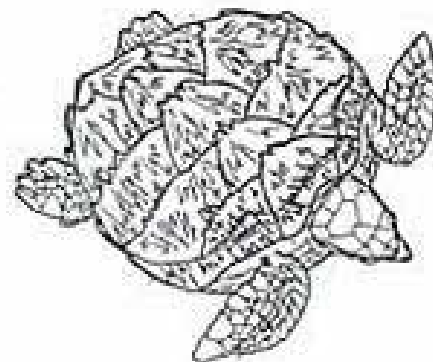
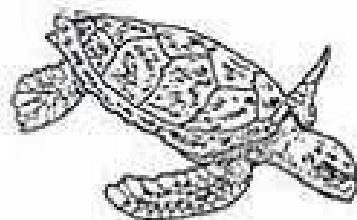
a).



b).



c).



source: Turtles Zoo Book 2

# Oxygen

- Use lungs to breathe air
- Can dive for 2.5 hours at rest



# Movement

- Streamlined carapace
- Forelimbs for swimming
- Hind limbs act as rudders





- Salt glands near eyes – removes excess salt gained from drinking sea water – looks like tears
- No ears
- Good sense of smell

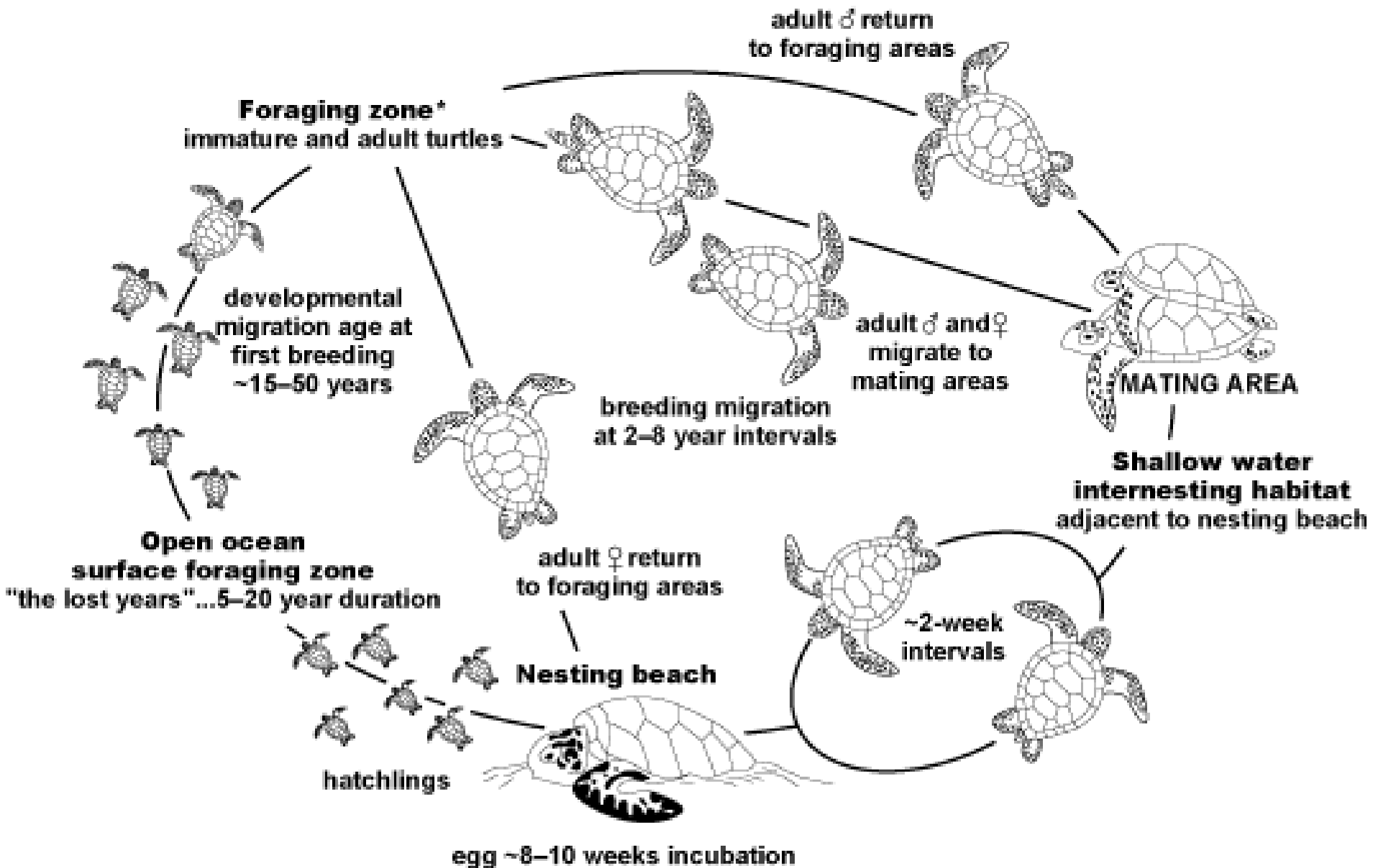


- Male
  - Long tail

- Female
  - Short tail



# Life Cycle



# Life Cycle

- spend most of life at sea
- return to beach they were born to lay eggs every 2 – 4 years
- mating is just offshore
- internal fertilization



# Life Cycle

- female climbs to upper beach at night
- excavates pit
- lays 100 - 160 eggs in pit and covers
- eggs – leathery, look like ping pong balls
- drags herself back to water
- can nest several times per season



# Life Cycle

- eggs incubate for about 60 days
- cool temperatures produce males
- warm temperatures produce females
- hatch and dig to surface (few days to dig)
- emerge at night and instinctively find way to water



# Life Cycle

- lost years - swim in sea for several years
- then often return to adult feeding grounds
- find way by sensing wave motion and earth's magnetic field
- reach maturity at 15 - 30 years old
- lay eggs on beach they were born

# Threats

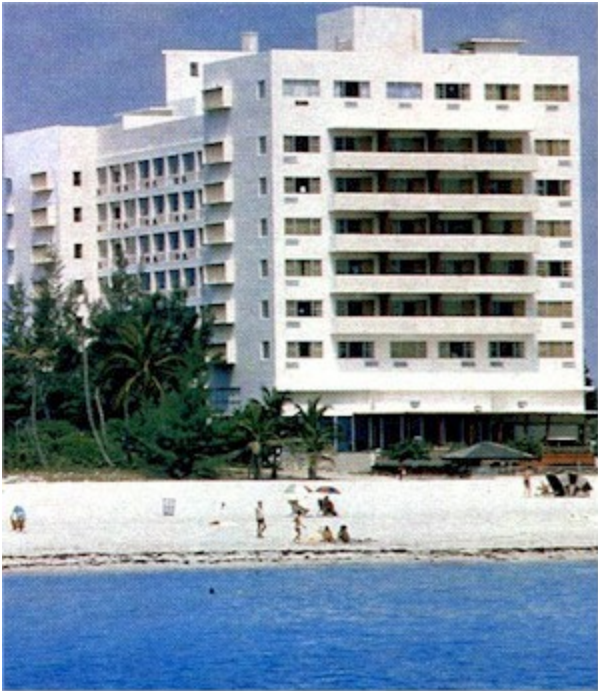
- predation by humans, raccoons, dogs, birds, fish, etc. - hatchlings, adults and eggs



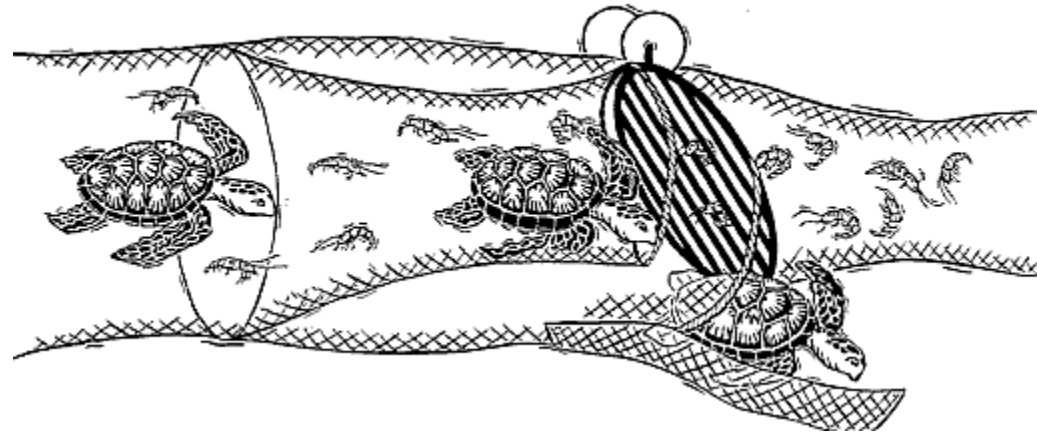


# Threats

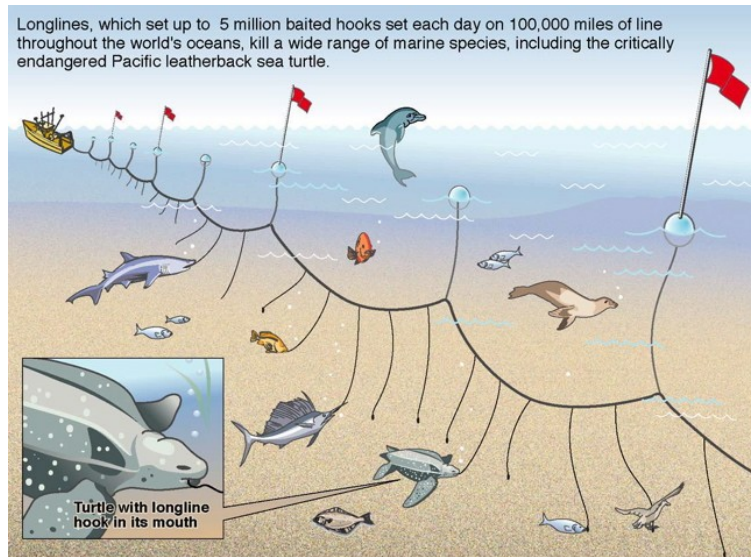
- destruction of nesting habitat
  - development
  - beach erosion
  - compacting beach sediments – by cars



# Threats



- drowning in fishing nets, long lines
- TEDs (turtle exclusion devices) on shrimp trawls
- choking on floatable debris (i.e., plastic bags)



# Threats

- artificial lighting - disorients hatchlings
- hit by boats
- shells for jewelry, etc

