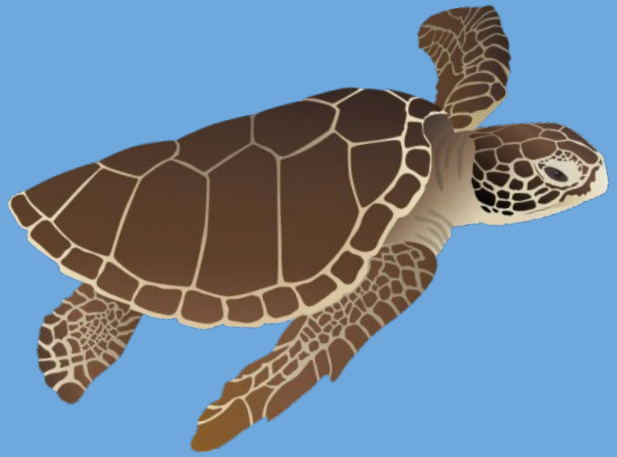
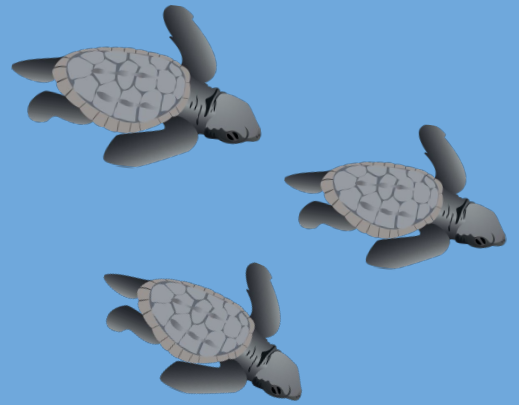


Sea Turtle Patrol



Prepared by Anna Poslednik





VA SEA

VIMS | William & Mary

Virginia Institute of Marine Science

Image Credits: Tracey Saxby, Kim Kraeer, Lucy Van Essen-Fishman, Integration and Application Network (ian.umces.edu/media-library)

About the Scientist

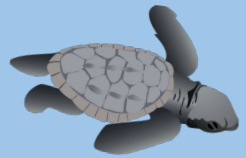




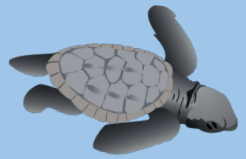


Hi! My name is Anna and I'm a graduate student at the Virginia Institute of Marine Science. I used to be a research patrol member at the Georgia Sea Turtle Center, where I worked with nesting loggerhead sea turtles! Today you'll get to see what it's like to be on sea turtle patrol!

Think/pair/share:



What is one fact you know about sea turtles?



What is one question you have about sea turtles?





Hatchling image credit: Kim Kraeer, Lucy Van Essen-Fishman, Integration and Application Network (ian.umces.edu/media-library)





Sea Turtle Facts

- 7 species
- Nearly all species are considered **endangered** (at risk of extinction)
- Biggest threats to sea turtles:
  - Habitat destruction
  - Illegal harvesting
  - Climate change
  - Pollution
  - Fisheries bycatch
- Scientists monitor the population size of sea turtles (check if they are increasing or decreasing over time). To do this, they conduct **night and dawn patrols** during the nesting season.

Sea turtle nesting

- Loggerhead sea turtles come up to the beach to lay their eggs at night, this is called **nesting.**
- If a turtle gets scared by a human, another animal, or bright lights they will **false crawl,** which is when they go back to the ocean without laying their eggs.
- Patrol members use red lights while collecting data because it doesn't scare the turtles.
- So it's important to stay very quiet and not use white lights on the beach at night so as not to scare any mama turtles away!



Flipper Tags

- To keep track of individual turtles and know how many turtles are out there, we tag them using **flipper tags** and **PIT tags**.
- Flipper tags: small metal clips with unique letter and number combinations, which we put on sea turtle's two flippers. These are similar to the ear tags you might see on cows at a farm.





Image Credit: Right: Author - AnnieSpratt - pixabay.com

PIT TAGS

- After many years of swimming in the ocean, sometimes the flipper tags fall off the turtles. So we also use **PIT tags** to keep track of which turtle is which.
- PIT Tags: tiny microchips inserted into the turtle's shoulder (like microchipping your pets). When we scan the turtle with a PIT tag reader, a unique combination of numbers and letters appear on the screen, telling us the identity of that turtle, like scanning a QR code or barcode at the supermarket.



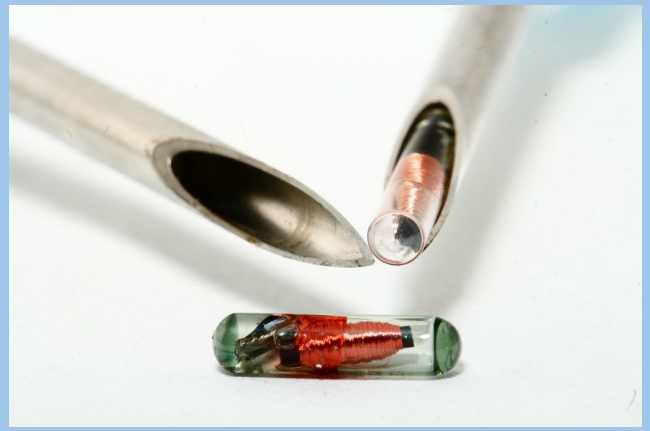


Image credit: Right: Wikimedia commons author: Sternrenette; Left: Flickr author: Jake

First Activity: Night Patrol







- Your patrol team needs to have:
  - Data Recorder
  - Tag Reader
  - Measurer(s)
- Fill out your night patrol data sheet for all turtles you encounter on your beach by:
  - Measuring each turtle (length, width, head size)
  - Figure out if the turtle nested or false crawled
  - Recording all tags
- If you have a new turtle, give it new tags (and a name!)

Finding Nests is like a Scavenger Hunt



- Turtles do a very good job of hiding their nests under the sand so predators like raccoons, crabs, and foxes don’t find them.
- Dawn patrollers spend a lot of time trying to find the nests, so they can protect them further with a screen.







Can you guess how many eggs turtles lay in one nest?



Can you guess how many eggs turtles lay in one nest?



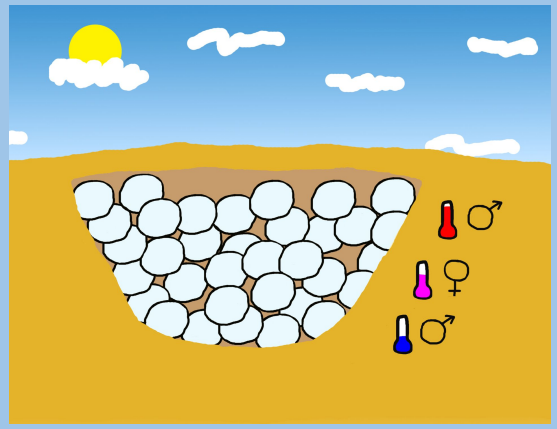


80-120 EGGS!



Hot Chicks Cool dudes

- The number of female and male turtles that hatch out of a nest depends on the temperature at which the eggs were incubated at.
- So eggs that developed during hotter temperatures produce all females, while cooler temperatures produce more males.



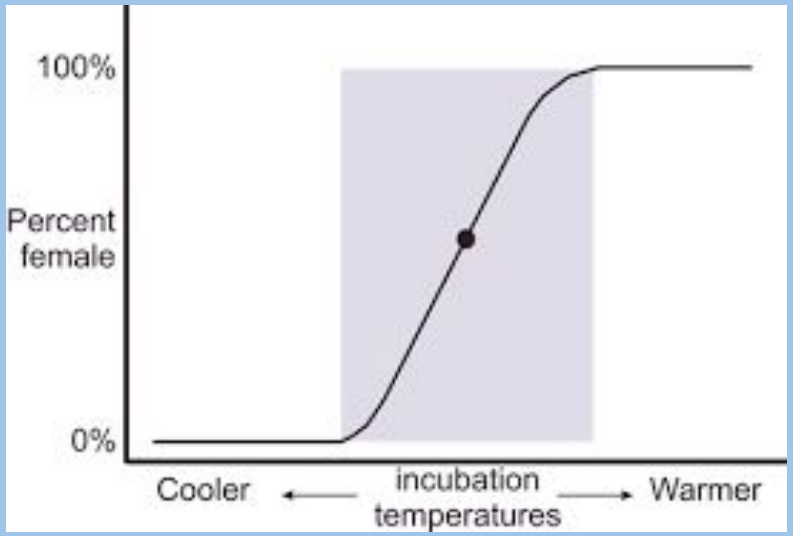


Image credit: top: Wikimedia commons Author: Planetseeker
bottom: Mrosovsky, Nicholas and Matthew H. Godfrey. “Editorial: Thoughts on Climate Change and Sex Ratio of Sea Turtles*.” (2010).

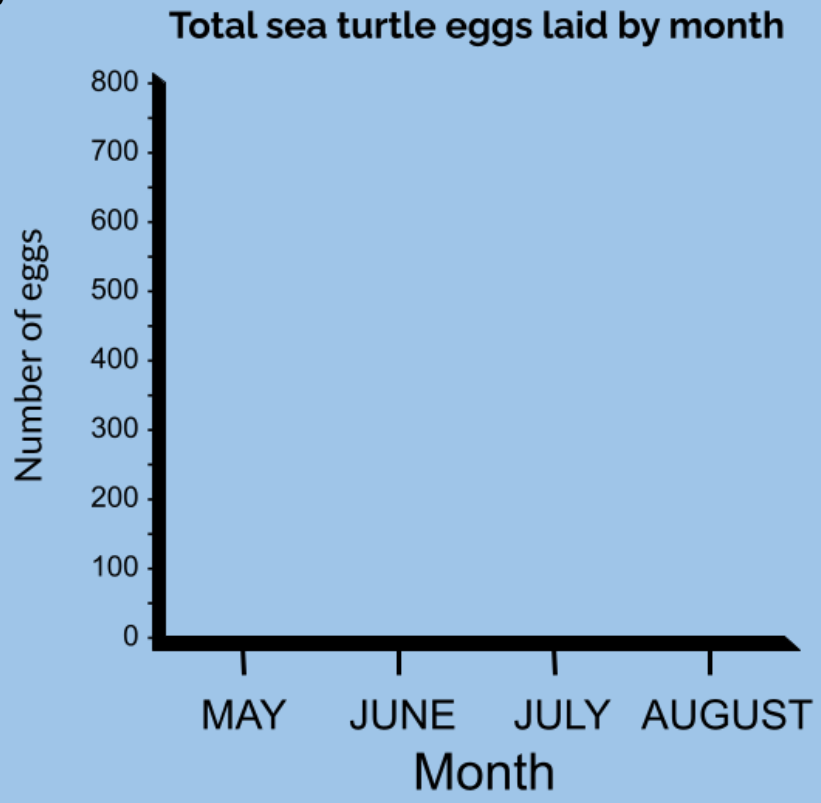
Second Activity: Dawn Patrol



- Count the number of female “F” and male “M” hatchlings that came out of each of your nests, by counting the number of eggs in each brown paper bag.
- Add up the number of eggs across all nests on your data sheet.
- As a class we will graph this data to see how these numbers change throughout one nesting season!

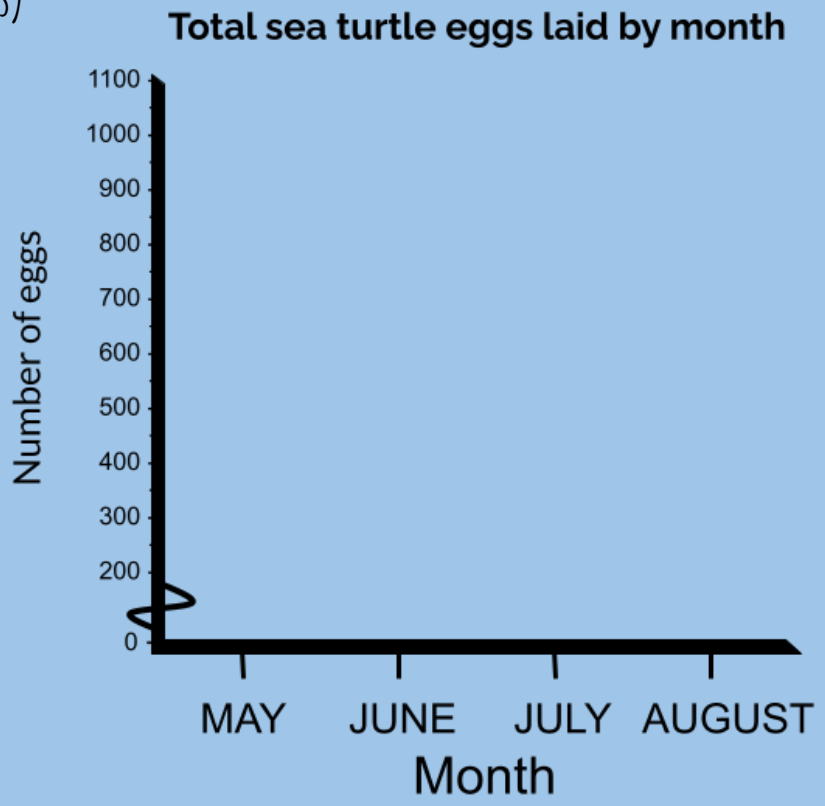
Class Totals & Line graph (6 groups)

Month	Total eggs by group	TOTAL EGGS
May	____	
June	____ + ____	
July	____ + ____	
August	____	



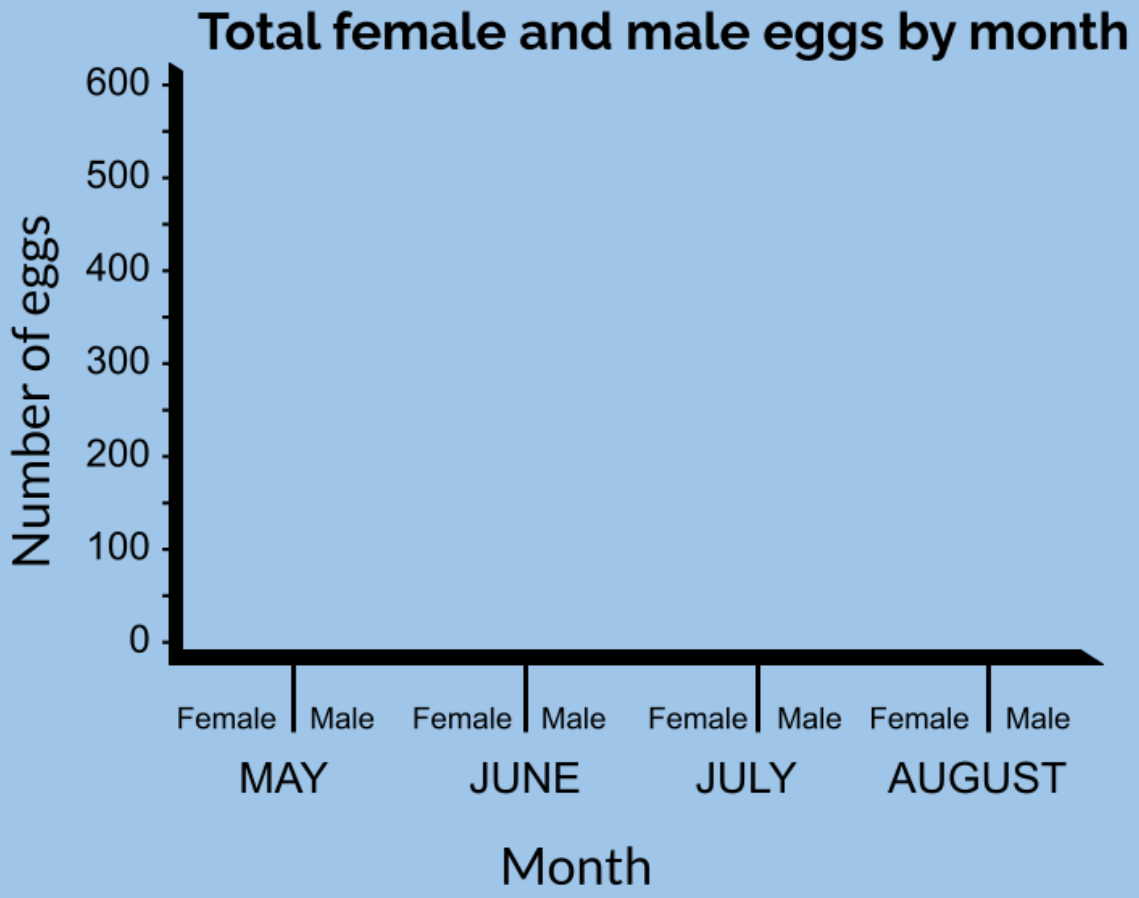
Class Totals & LINE GRAPH (9 groups)

Month	Total eggs by group	TOTAL EGGS
May	____	
June	__ + __ + __	
July	__ + __ + __	
August	____	



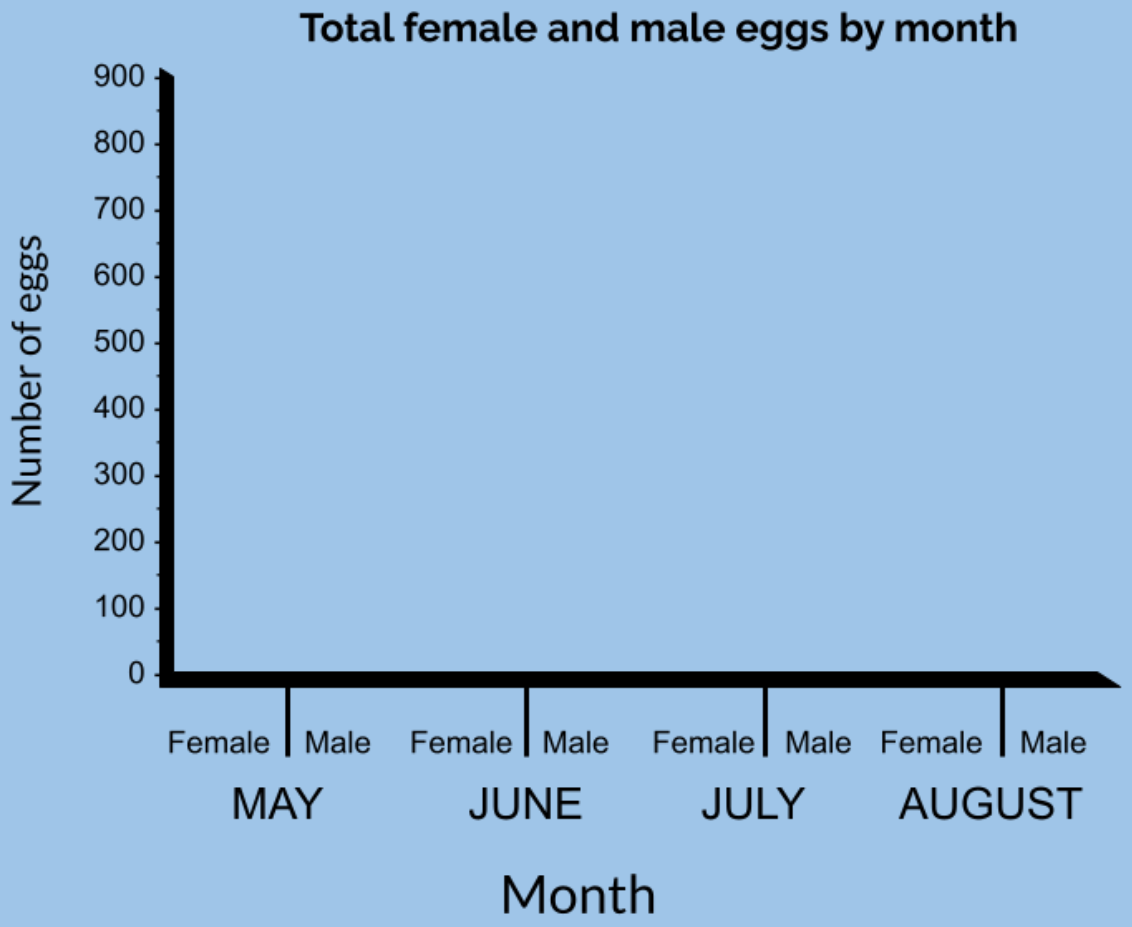
Bar graph (6 groups)





Bar graph (9 groups)





How can we help sea turtles?

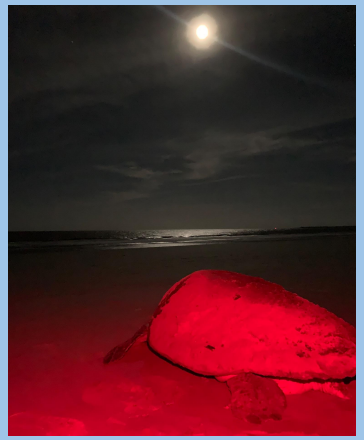






Image credit: top right: Kira Wilson, Georgia Sea Turtle Center
bottom: Flickr author: thebiggoodbye

How can we help sea turtles?

- Leave no trace when going to the beach!
- Participate in beach clean-ups
- Fill in holes and knock down sand castles before leaving the beach
- Reduce plastic use
- If on a nesting beach at night, only use red lights (or no lights at all)
- Do not touch or disturb nesting sea turtles, nests, eggs, or hatchlings
- Don’t abandon fishing gear in the water

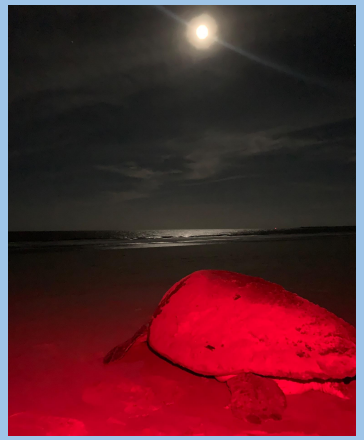






Image credit: top right: Kira Wilson, Georgia Sea Turtle Center
bottom: Flickr author: thebiggoodbye