

## Horseshoe Crab Factoids

What animal:

- Has 10 eyes
- Eats through its brain
- Needs a book to breathe
- Sees as well at night as during the day
- Looks and moves like a tank
- Has a tail that was once used as a spear
- Has a heart that cannot beat on its own
- Has eyes that know the time of day
- Chooses females who run away
- Walked with the dinosaurs
- Refuels migratory birds
- Tells time with its tail
- Chews with its legs
- Has blue blood
- Is called a Living Fossil

Eyes:

- 10 eyes –
  - 2 large lateral eyes
  - 2 rudimentary eyes at the back edges of the lateral eyes
  - 2 on either side of the “nose”
  - 2 more welded together in the middle of the “nose” - like Cyclops (“which is why the species is named after the mythical one-eyed giant, Polyphemus”)
  - 2 ventral eyes located on the underside ½ way on an imaginary line drawn between the mouth and where the “nose” is on the backside.
  - The 10<sup>th</sup> “eye” is a line of photoreceptors on telson.
- Lateral eye:
  - Largest photoreceptors in the animal kingdom (little black dots in eye that we can see, each one is an individual retinal receptor
  - 100x bigger than our rods and cones
  - Wide field of vision – can see in front, behind, to the sides and above
  - Hsc can see surprisingly well under water with only starlight (eyes increase sensitivity as light decreases)
  - Hsc detect motion extremely well. MOVE SLOWLY around crabs on beach

- Tail:
  - Native Americans used for spear tips
  - Has photoreceptors that are sensitive to circadian rhythms
- Legs:
  - have a v large # chemo receptors giving sensory input comparable to antennae.
  - Probably helps select spawning beaches.

#### Nests:

- No other marine invertebrate crawls from the sea to nest
- No other living arthropod has external fertilization
- Eggs laid in clusters of 2000-4000 (# varies widely), about 5-10" down
- Newly laid eggs stick to each other and sand (extremely sticky)
- 2-5 clutches laid/tide (can vary from 1-15)
- Female usually nests only during one tide cycle/yr
- Eggs develop for 2-4 weeks and molt 4x before hatching
- Larvae remain in clusters in sand for several weeks (not feeding). They will molt to tiny spiny juveniles and swim out on the next moon cycle (usually)
- Young crabs will spend a few weeks to a year near nest beach

#### Tides:

- When the 2 tides/day are not the same height, crabs prefer to nest on the higher tide.
- During the spring and early summer, the higher tides occur at night
- Northern hsc are more nocturnal than southern hsc
- In Del Bay and Mass, more crabs spawn only after peak of tide!

#### Mating:

- Males after their final molt have a "thumb" on their newly specialized front grasping claws. This breaks off with first mating so you can tell a virgin male crab!
- Scientists think there is a special "locking mechanism" for the clasping claws that lock the male onto her so muscles don't fatigue.
- Males stay attached for the tide cycle or longer. Some will hang on as long as possible, even burying with her in the mud for the winter

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