Interesting Facts and Anatomy of Ghost Shrimp

by Rhonda Jean Kay

Ghost Shrimp

Palaemonetes pludosus

commonly known as ghost shrimp, eastern grass shrimp or glass shrimp are found primarily fresh water habitats such as ponds, rivers and streams in coastal plain areas from Florida to New Jersey. They reside in dense beds of submerged vegetation or aquatic cover or intertidal sand and mudflats.

Ghost shrimp are transparent and grow to be 47mm to 50mm long. They can vary in color from white to pink, red and orange. They are omnivors and will eat almost anything including dead plants, shrimp, fish or algae and need a Calcium supplement for healthy shell growth. Ghost shrimp have a hierarchy for eating, the larger shrimp eat first. The species is inexpensive and assist in keeping tanks clean by searching for remnants of food.

Eye & Head

They have bilateral symmetry, and well developed rostrum. The eye stalk is twice as long as wide and flattens slightly dorso-ventrally. The eyes are well developed with globular pigmented corneas.

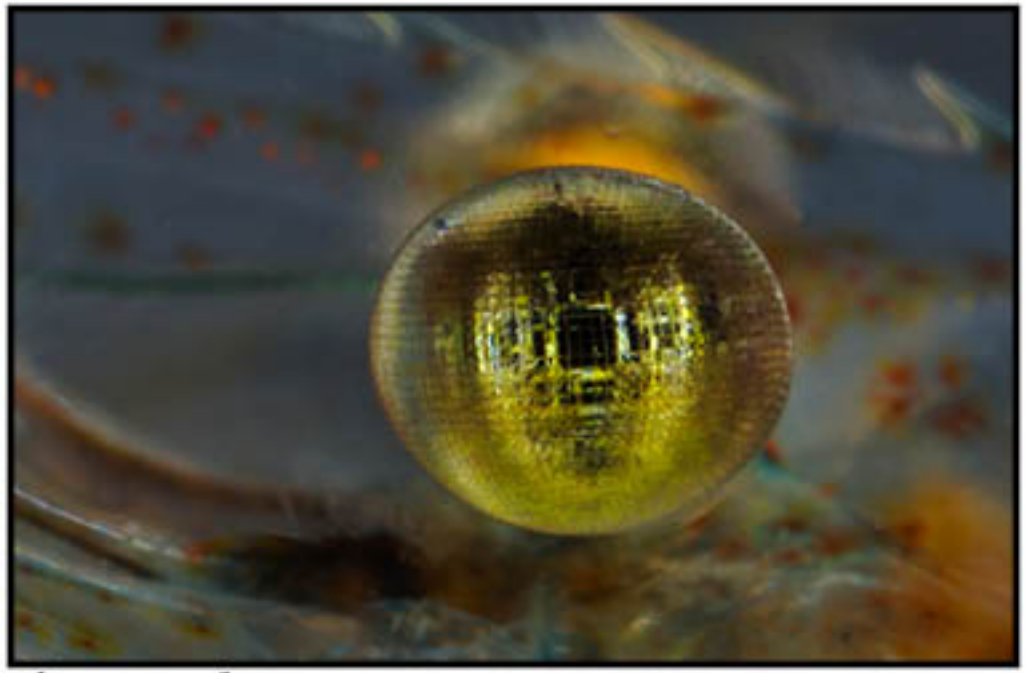


Figure 1: Close-up Eye

A Ghost Shrimp have a pair of long antenna and a pair of short antenna. Their rostrum is on the top of their head right between their eyes. Behind the rostrum is a carapace area. Its in this carapace area where many of the inner workings of this shrimp can be seen, especially when feeding.

Figure 2: Close-up Head

Size, Shape & Appearance

Ghost Shrimp size varies by age, but generally they grow to be about 1 1/2 inches in length. In terms of width, thier size is generally about the
diameter of a pencil eraser when fully grown.
Ghost Shrimp tend to be thinner and more streamline. A little hump can be seen midway down the length of their tail. They resemblance crayfish but there are some differences, the biggest being the size of the creature and the pliability of their shell. Ghost Shrimp have much softer shells than crayfish. Behind the carapace, they have six abdominal segments that form a flexible covering. The area between the third and fourth abdominal segments comes together to form what appears to be a slight pointed area that juts up slightly higher than the other segments. Little clear swimmerets are tucked under the abdominal segments. These swimmerets can be seen fluttering back and forth as the shrimp moves up and down through the water column.

Tail

The sixth abdominal segment connects to the tail. The tail is also made up of flexible, moving segments. But these segments are thin and flat. In the middle of the tail is the telson. Under the telson are the four segments of soft shell that make up the uropod. The uropod can expand and contrast slightly to make the tail more broad or more narrow as need be. And on the edges of the uropod segments, the shrimp has very fine filament-like "fringe". Similar looking "fringe" filaments also appear on the edges of the swimmerets.

When the shrimp needs to move very quickly, in case of danger, it can be seen becoming very streamline and quickly flapping its uropod under its abdomen. This causes the shrimp to propel itself backwards at very high speeds. Often, one quick thrust backward is sufficient to get out of dangerous situations like conflicts over a piece of food. But it's not uncommon for them to pump their uropod a couple times in a row to put some real distance between themselves and danger. When this happens, the shrimp can end up retreating to other side of the tank in an instant.

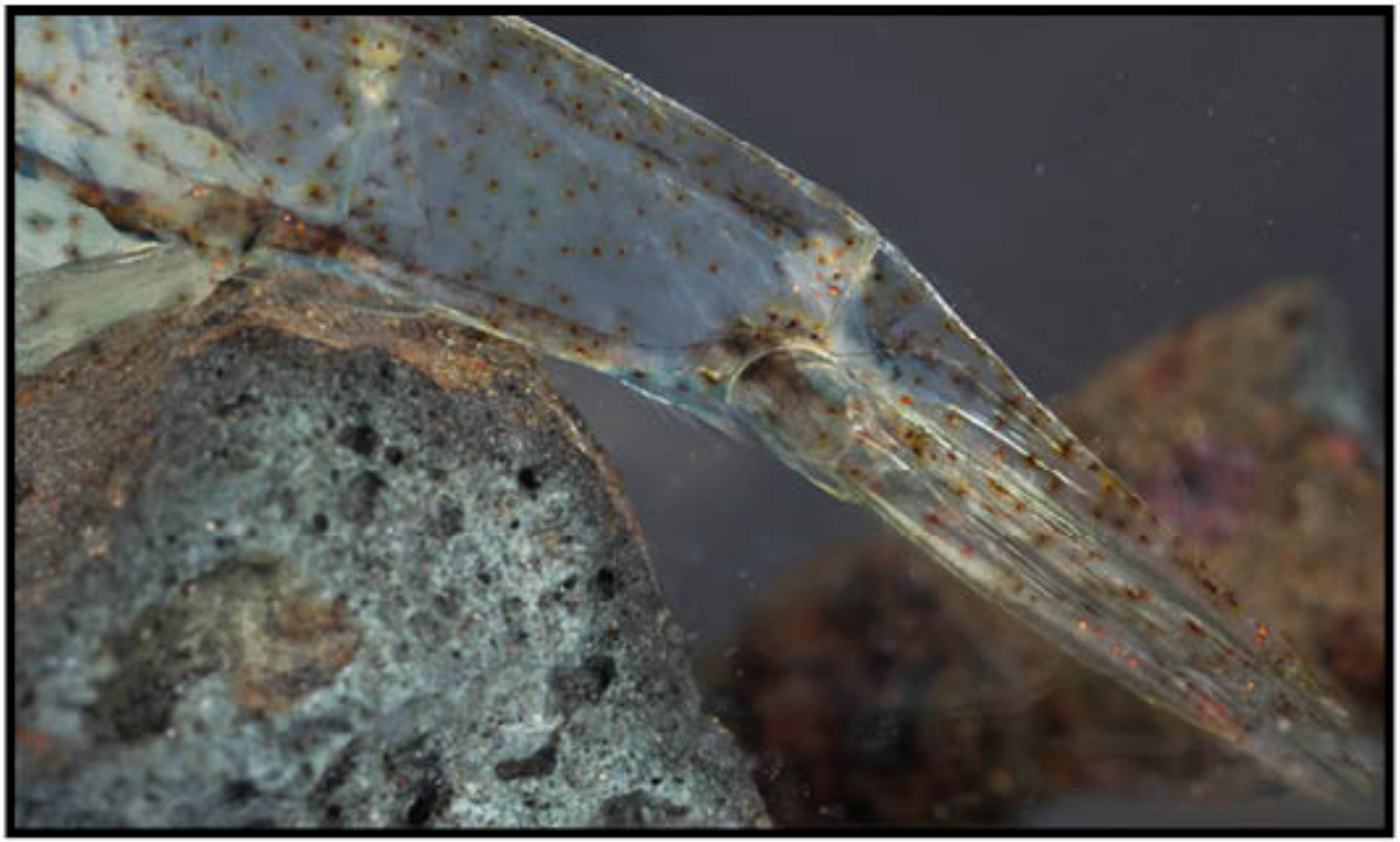


Figure 4: Close-up Tail

Development & Reproduction

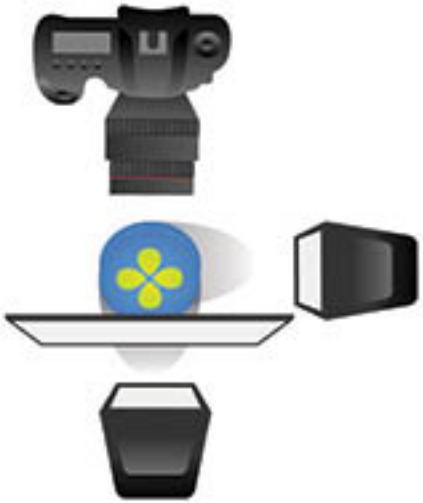
Both males and females are dimorphic and can be differentiated by their first and second pleopods. The males utilize the first and second pleopod for transferring spermatophores to the female. Ghost shrimp larvae have an incubation period of 12-14 days and hatch from eggs.

The development from hatching to maturity takes 2 to 3 months at a water temperature of 23 degrees Celsius, cooler temperatures delay maturation. 2 The females use their pleopod to carry eggs and the ovaries take on a greenish color during ripening. Females will have 20 to 30 eggs at a time, it takes about 3 weeks for a ghost shrimp to lay it eggs. The swimmerets paddle to bring oxygen to the eggs, which hatch in about three weeks. At that time, the female will use her swimmerets to disperse the baby shrimp into the water column. Some young females will drop some or all their eggs due to small size of inexperience. Poor water conditions and stress can also cause female to abandon eggs, Young ghost shrimp go through a larval form and are susceptible to predators.

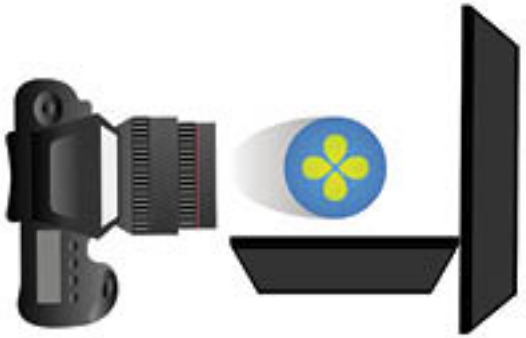
Figure 4: Close-up Female with Eggs

Equipment & Setup

Canon 5D Mark iii
(2) Canon Flash
Small Bellows
Zeiss 25mm lens
Glass Tank for Sample
Sheet Glass for Stand



Canon 5D Mark iii
Canon Flash
Canon 65mm lens
Tripod
Glass Tank for Sample
Background



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