

All about the Louisiana Crayfish (*Procambarus clarkii*)

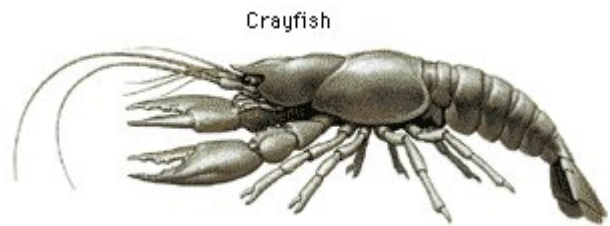


Crayfish are freshwater crustaceans resembling small lobsters, to which they are closely related. They are found in bodies of water that do not freeze to the bottom, and which have shelter against predators. Nearly all crayfish live in freshwater, although a few survive in salt water. More than half of the more than 500 species occur in North America, mostly in Kentucky and Louisiana.

Procambarus clarkii is the species of freshwater crayfish found in the Laguna. It is native to the south-eastern United States, but is also found on other continents, where it is often an invasive pest.

Crayfish? Crawdad? Crawfish? The name "crayfish" does not derive from the word "fish", but rather from the Old French word *escrevisse* (Modern French *écrevisse*) meaning "crevice" and referring to crayfish habitat. The word has been modified to "crayfish" by association with "fish". Some kinds of crayfish are known as crawdads, mudbugs, crawfish, yabbies, or spoodogs.

Crayfish Appearance The crayfish is typical of most shrimp-like crustaceans and is characterized by a joined head and thorax (midsection), and a segmented body which is yellow, green, white, pink or dark brown in color.



The head has two pairs of sensory antennae and a pair of eyes on movable stalks. The appendages of the thorax include four pairs of walking legs which are also used to probe cracks and crevices between rocks looking for food. Crayfish also have one pair of "claw legs" (chelipeds) which extend in front of its body while moving. These strong pinchers are specialized for cutting, capturing food, attack, and defense (a pinch can hurt!). The crayfish also has several pairs of specialized food handling "legs," bailers to cycle water over the gills, and five pairs of swimmerets which are under the abdomen. All of these "legs" can regenerate if broken off.

Louisiana Crayfish are usually about 3 inches long, but the smallest crayfish species is about 1 inch and the largest can reach 16 inches, and weigh up to 8 pounds!



Crayfish Behavior Crayfish are common in streams and lakes, but often conceal themselves under rocks or logs. They feed on snails, algae, insect larvae, worms, dead fish, and tadpoles; some eat vegetation. Adults (one year old) become active at dusk and continue heavy feeding activity until daybreak. Young crayfish are more likely to be out during bright sunny days, while older crayfish are more active on cloudy days and at night. General movement is always a slow walk, but if startled, crayfish use rapid flips of their tail to swim backwards and escape danger.

Most crayfish live less than two years, therefore, rapid, high-volume reproduction is important for the survival of the species. Crayfish become sexually mature and mate in the October or November after they're born, but egg laying usually occurs the

following spring. The fertilized eggs (up to 700!) are attached to the female's swimmerets on the underside of her jointed abdomen. The egg-carrying female is said to be "in berry," because the egg mass looks something like a berry. Females are often seen in berry during May or June. The eggs change from dark to translucent as they develop, and hatch in 2 to 20 weeks, depending on water temperature.



Newly-hatched crayfish stay attached to their mother until shortly after their second molt. Baby crayfish can molt on a daily basis but as they grow older, the regularity of molts decreases to a period of weeks or even months.

Molting in Crayfish

Crayfish have a hard outside skeleton. This jointed exoskeleton provides protection and allows movement, but limits growth. As a result, the crayfish regularly gets too big for its skeleton, sheds it, and grows a new one. This "molting" occurs up to ten times during the first year of rapid growth. For a few days following each molt, crayfish have soft exoskeletons and are more vulnerable to predators (including other crayfish).



The early signs of molting include lack of appetite and a slowdown in activity. During this period the crayfish ingests calcium into an internal organ, not into the exoskeleton. When the crayfish is ready to molt, it will find a hiding spot. Then it will move onto its back

and begin fanning its pincers, legs and swimmerets in order to get as much oxygen as possible. The carapace will begin to crack behind the head, the new appendages will pierce the old shell, and after about five minutes, a sudden thrust will detach the old shell from the crayfish.

The freshly molted crayfish eats its old shell to replace the lost calcium and strengthen the weakened carapace.



Holding and observing crawdads are one of the highlights of our field trips to the Laguna, thanks to docent John Condon. He catches them in a creek near his home, and brings them to the field. Thanks, John!

Information from Wikipedia.com
Some illustrations from our students!