

Hermit Crabs

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Why? Why? Why?

Why evolve with an exoskeleton on the front half of the body, but a soft, delicate abdomen? Why evolve to be dependent on a different type of aquatic fauna to provide a protective shell? Why choose to drag around a heavy structure? I'm afraid I have the questions, but not the answers to this riddle of nature.

Hermit crabs are found on rocky shores and headlands, intertidal zones, and mangrove wetlands on the Sunshine Coast. At the Wetlands Sanctuary, I occasionally find Yellow-striped Hermit Crabs (*Clibanarius taeniatus*) or Yellow-footed Hermit Crabs (*Clibanarius virescens*). They usually appear when the mud is soft, especially after floods, and generally where there are fallen twigs or branches. At times, they may be seen clinging on to floating debris. Both species are more commonly found on rocky headlands or in shallow sub-tidal areas. Both species are relatively common and easily recognized. The Yellow-striped Hermit Crab has longitudinal yellow stripes on dark green legs, claws, and body. The Yellow-footed Hermit Crab is dark green and has yellow on the ends of its walking legs and white spines and fingers on its claws.

The Yellow-striped Hermit Crab eats only the soft material of the detritus (organic waste) whilst other species are opportunistic and omnivorous, having a more varied diet. They can be somewhat social, and it is not unusual to find many animals together feeding on a rich food source. They are, of course, decapods [literally meaning having ten feet]. The ten appendages in this case are actually one pair of chelae [claws], three pairs of legs, and one pair of "grabbers", the rear legs having evolved into small abdominal appendages to hold its acquired shell. The second and third pairs of legs are used for locomotion. The chelae are used for both feeding and locomotion.

Having an exoskeleton on its thorax, head, chelae, and legs, this crustacean must moult to grow. However, its soft vulnerable abdomen must be protected by use of an acquired structure. There must be additional protection or benefit to the crab in dragging around a heavy shell rather than providing the extra body resources to produce an exoskeleton on the abdomen. The mollusc shell it uses is a dead frame, so must be exchanged when outgrown. The hermit crab firstly selects a potential shell, and examines it by turning it over and around. If it seems a satisfactory replacement, only then will the hermit crab leave its old home and test the new shell for fit and comfort. If it proves not to be satisfactory, the hermit crab moves back into its original shell and continues the search. The shell it selects must allow it to withdraw inside when danger threatens, securing the entrance with its hardened claws.



Yellow-striped Hermit Crab – MASA Website



Yellow-footed Hermit Crab – Qld Education Website