Presenter: Dr. Peter Davie - Senior Curator of Crustacea (Biodiversity Program)

Topic: Swimming Crabs - Blue Swimmer and Mud crab

Hello. My name's Peter Davie. I'm senior Curator of Crustacea here at the Queensland Museum. Today, I'm going to talk to you a little bit about some adaptations of swimming crabs, which are the family Portunidae. Like other arthropods, the Phylum Arthropoda, have a hard **exoskeleton**, a hard shell with **jointed limbs** which makes them different from us because their skeleton is on the outside rather than the inside. So, all the muscle attachments that operate the claws and the legs and so on are all attached internally to the shell.

The swimming crabs are particularly identified by having these **flattened paddles** on the last pair of legs. The other legs are all sharp but the paddles here are specifically for fast swimming and for digging into the soft sediments. Swimming crabs are **very aggressive** – very sharp-pointed fingers and lots of teeth here which are specifically for catching fish and other marine creatures. They're very fast, they swim very fast. At the back here there are molars just like in humans and these molars are for crunching up hard shells.

This is a sand crab, preserved, so the colours are gone. It's the common commercial sand crab.

You can tell the differences in the sexes of crabs by the **shape** of this **male abdomen** here. Well this is a male. The abdomen is very narrow and it fits in closely to the sternum of the crab. For example, this is a mud crab which is related to the sand crab. This is a **female**. You can tell by the huge number of eggs but the abdomen here is **wide and broad** and it's specifically designed to hold these eggs. Here are the swimmerets or the **pleopods**. In a lobster or in a prawn they are used to help swim, but in a crab they wrap around and hold the eggs in place. In many of the swimming crabs and in the mud crab, for example there are up to two, three or even four million eggs in a large female mud crab and it will **open and shut the abdomen** to get water flow through the eggs to keep them aerated and healthy.

Now a mud crab is different from a sand crab in a number of ways. A mud crab tends to live in estuaries and mangrove areas whereas the sand crab lives in sea grass areas and it tends to be a motley colour which helps to **camouflage** it against the background. Whereas, the mud crab is a dark browny-black colour, which again camouflages it against the muddy environment in which it lives.

Mud crabs will eat anything. They scavenge, they'll eat fish and so on but they're really designed to eat shells – snails. On this claw they have this very **heavy molar** at the back which will crunch very thick shells and they're able to pick the meat out with this other claw. In that sense, they're adapted to different food sources.

In the last few years, I have been looking at, with colleagues from fisheries departments and from overseas and with universities, to look at the difference of these two commercial species and not just within Australia but within the broad, what we call the Indo-Pacific region which is the Indian and Pacific, or west Pacific oceans and this has been an exciting part of this sort of research we've been doing here at the Queensland Museum.

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