

Life in the Mud

By Nicole Hynes

When peering out over the mudflats at low tide around the Bay of Fundy the last thing that comes to mind are the thousands of tiny creatures teeming just below the surface. The most important of these creatures is a tiny amphipod crustacean called *Corophium volutator*. Ranging in size from a grain of rice as juveniles, to 10 or 11 mm long as adults, *Corophium* can affect the entire mudflat ecosystem and its productivity.



Commonly known as 'mud shrimp', the elusive burrowing *Corophium volutator* is actually a type of crustacean called an amphipod. This specimen was from a mudflat near Avonport, Nova Scotia. Photographed by SEM, courtesy J. M. Ehrman, Digital Microscopy Facility, Mount Allison University (www.mta.ca/dmf).

Sometimes called mud shrimp, *Corophium* live beneath the surface in u-shaped tubes that are formed by gluing together tiny particles of sand. They emerge in search of food and mates but quickly return to the safety of their burrows. Their outer protective armour is similar to that of a lobster, divided into short segments each with a pair of limbs used for feeding or moving. According to the Department of Fisheries and Oceans, as many as 60,000 *Corophium* can be found in a single square meter of mud and can even be heard during low tide, producing a snap, crackle, pop sound.

As primary consumers, *Corophium* feed on microorganisms and organic matter. They belong to a short and unique food chain, being the most common prey of mudflat birds and fish. Each year millions of shorebirds flock to the Fundy shores, anxiously awaiting low tide so they can feed on *Corophium*. Sandpipers come to fatten up on this diet mainstay before their non stop migration to South America. Unlike us, they have never been fooled by the seemingly lifeless expanse of mud.

High tides are no safer for *Corophium* as they are also a food source for various fish species. Less is known about this relationship however, since it is hidden beneath the water. Other threats include human induced changes to the mudflats from causeways and worm or clam harvesting which can alter sedimentation and destroy burrows. Toxic materials that wash into the marine environment and nutrient runoff from agriculture practices can have negative effects as well.

Undoubtedly *Corophium* play a key ecological role in mudflat life, but there is always more to learn. The next time you dig your toes into the mud consider the thousands of *Corophium volutator* that may be just below the surface.

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