

Horseshoe Crabs

A Living Dinosaur

It's no wonder that horseshoe crabs are referred to as "living fossils." In many ways, their bodies are remarkably similar to the fossils of ancient horseshoe crabs from 445 million years ago. That's 200 million years before dinosaurs were alive!

BLUE BLOOD THAT KEEPS US HEALTHY?



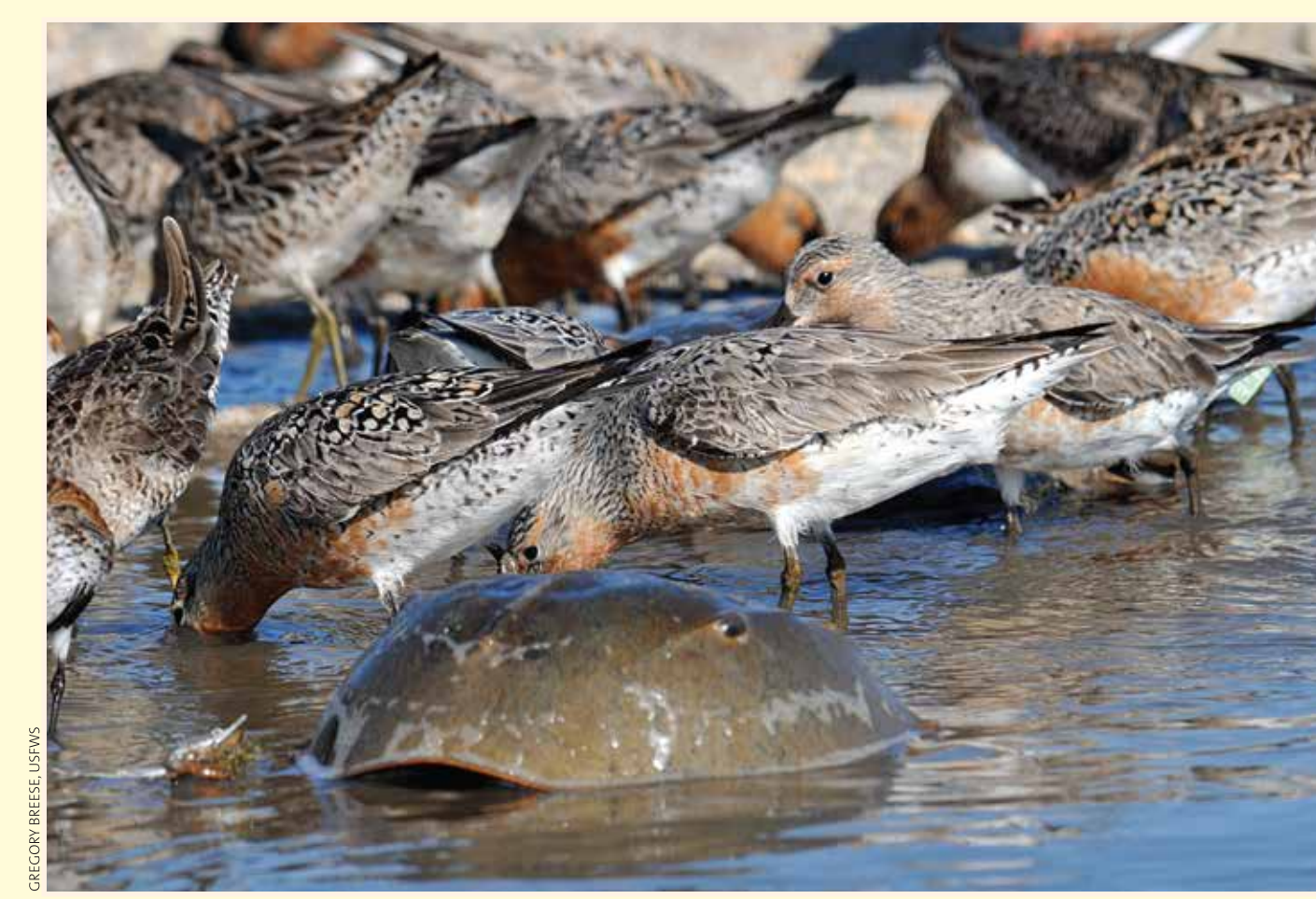
Horseshoe crabs' blue blood is used to test human vaccines for impurities before the vaccines are made available to people.

Did you know that the horseshoe crab's blood is blue? This is because it contains **hemocyanin**, a copper-based molecule that clots around bacteria, serving as a sort of ancient antibiotic. Since the horseshoe crab lacks an

immune system, its blue blood might be one of the keys to its survival throughout the eons. It is also a key to our health! If you've received a vaccine, chances are the horseshoe crab's blood was used to test the medication for impurities before it was made available to humans. While the horseshoe crab's blood is medically important, the process of capturing, bleeding and then returning the horseshoe crabs to the sea is controversial. While the majority of horseshoe crabs survive this process, companies are working to identify alternatives to the horseshoe crab blood for medical research.

A KEYSTONE SPECIES

Horseshoe crabs play an important ecological role for migrating shorebirds, particularly the **red knot**. The red knot makes one of the longest migrations of any bird—from the southernmost tip of South America to their breeding grounds in the Arctic. The red knot takes one of its only major breaks in the Delaware Bay, timed with a massive horseshoe crab spawning event. The birds then consume as many horseshoe crab eggs as possible to gain weight and refuel for their final leg of the journey to their Arctic breeding grounds. If horseshoe crab populations dwindle, it's big trouble for this beautiful shorebird.



Red knots and other shorebirds feed on the eggs of horseshoe crabs at Delaware Bay.



Scientists have found fossils of horseshoe crabs that lived 445 million years ago.

A LONG HISTORY THAT MAY BE CUT SHORT

Over the millennia, horseshoe crabs have survived five mass extinctions, several ice ages, and periods of extreme global warmth! But despite their incredible resilience and ability to adapt to changing environments, horseshoe crab numbers are in decline due to habitat destruction and their being used as fishing bait. By protecting our oceans from development and pollution, you can help this creature, which plays such an important role in so many lives.

Did you know horseshoe crabs aren't really crabs? Horseshoe crabs are in a class by themselves and are more closely related to spiders, scorpions, and ticks than to crabs. True crabs have no antennae and no mandibles (mouth parts for grinding food). Additionally, horseshoe crabs, like spiders, have a pair of chelicerae (small appendages for moving food into their mouth).

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