



Survivor

The horseshoe crab: Just lucky?

The North American horseshoe crab (*Limulus polyphemus*) is a real survivor. The standard evolution-based interpretation of fossil evidence is that horseshoe crabs have survived virtually unchanged for 445 million years despite living through times of massive geologic and environmental upheaval.¹ Recently, some conservationists have claimed that the horseshoe crab may need the help of humans to survive.² But does it? Why would such a stout survivor need our help when it seems to have done just fine on its own?

One of only four species of horseshoe crab worldwide, *Limulus polyphemus* is a mild-mannered arthropod which wears its horseshoe-shaped skeleton on the outside and bears a long tail or telson, which it uses to right itself when flipped upside down by waves. It lives along the Atlantic coast from Maine to Florida, and in the Gulf of Mexico as far south as the Yucatan Peninsula. Every year during May and June, millions of adults migrate to sandy beaches like those in Delaware Bay to spawn. Each female can lay between 80,000 and 100,000 eggs over several days and can live as long as 20 years. This massive release of horseshoe crab eggs not only ensures its own survival but also that of thousands of birds who eat the eggs as a vital energy source on their northward migration. The horseshoe crab is also a favored bait of fishermen, and its blood is part of a test to detect bacterial contamination in vaccines for human use.

But the horseshoe crab has survived more than human economic use and the predation of its eggs by birds. The geologic record shows that the earth has changed tremendously over time. A key testament to this change is that over 99 percent of all species of animals that ever lived are now extinct. There is also geologic evidence of a time past in which 95 percent of all ocean-dwelling species went extinct.³ And the horseshoe crab survived all of this without human help. No doubt the simple, rigid tail is one of many keys to its ability to survive and continue to reproduce.



“And the LORD God took the man, and put him into the garden of Eden to tend it and to keep it.” (Gen. 2:15)

Despite this track record for survival, a horseshoe crab conservation campaign has begun in Delaware Bay which is called “Just Flip ‘em”.² It asks beach goers to flip over upside down horseshoe crabs to help them get back into the ocean. Yet the animal already possesses a well designed solution to the problem in its long, rigid tail and biologists are still unsure whether horseshoe crab populations are declining and might benefit from such a strategy or not. Flip ‘em? Sure—it may not help much in the case of the horseshoe crab because they are survivors, but it makes us feel good to help animals. And since all people bear the image of God, however faded, it is not surprising that some respond to the ancient—but still compelling—command to cultivate and keep the garden even though they may have forgotten the One who planted it to begin with. 📌

—MICHAEL G. WINDHEUSER, PH.D.

1 Royal Ontario Museum, “Oldest Horseshoe Crab Fossil Found, 445 Million Years Old,” *Science Daily* (Feb. 8, 2008), <http://bit.ly/sciencedailycrab>

2 Jennifer H. Mattei & Mark A. Beckey, “The Horseshoe Crab Conundrum: Can we Harvest and Conserve?” *Wrack Lines* 8:1 (Spring/Summer 2008), <http://digitalcommons.uconn.edu/wracklines/37>

3 Microsoft® Encarta® Online Encyclopedia 2009, s.v. “Extinction (biology),” <http://encarta.msn.com>