

Asian green mussel (*Perna viridis*)

The Asian green mussel, *Perna viridis*, is a nuisance even within its native range in the Indo-Pacific, mainly due to its large size (up to 150 mm [6"] shell length) and its capacity to grow rapidly and reach maturity at a young age. The species was transported from the Indo-Pacific to Trinidad in 1990, via ballast water or hull-fouling communities on ocean-going vessels. By 1993 it had become established in Venezuela, and in 1999 it was discovered in Tampa Bay, FL, where



it obstructed flow through cooling water intakes at several power plants. Subsequently, the mussel made its way to the Atlantic coast of northeast Florida, and by the fall of 2003 it had extended its range northward as far as the mouth of the Savannah River. Although a number of laboratory and field studies have reported thermal tolerances of *Perna viridis*, there is no consensus on the likely limits to its northward expansion along the United States east coast. Despite predictions that it would not survive north of Georgia, it



was found in the Folly River and Charleston Harbor in 2006 and 2007, although little is known about its status in South Carolina since that time. The capacity of the species to increase its thermal tolerance with prolonged acclimation and the potential effect of genetic selection for cold-tolerant individuals remain unknown. The impacts of this species have the potential to be severe. In addition to hampering the effectiveness of cooling systems, it also heavily fouls navigation buoys, floating docks, piers and pilings. Ecological studies in Florida have shown that *P. viridis* is detrimental to

intertidal oyster reefs, where it displaces adult oysters and reduces the density of juvenile oysters. The efficacy of various methods to exterminate it has been studied, with the goal of mitigating the financial burden it imposes due to the fouling of power plant intakes and other infrastructure exposed to seawater.