Guana Tolomato Matanzas National Estuarine Research Reserve (GTMNERR)

~~ RESEARCH UPDATE ~~

GREEN MUSSELS; A SPREADING MENACE

By Susan van Hoek – GTM NERR Environmental Educator

Hordes of an elegant, edible bivalve commonly known as the green mussel have traveled from their home base of the Indo-Pacific region and made their way into the Western Hemisphere. Now a number of scientists want to know how and why they have managed to invade Florida waters, what that means and what to do about it.

Green mussels (*Perma viridis*) are welcome in their home range where they are harvested and eaten, but they create havoc when they move into somebody else's territory. Furthermore, they are not considered to be a good food source in Florida because they readily absorb pollutants. Previous studies show that these mussels are inclined to spawn in great densities, have no known natural enemies and could compete for food or crowd out native species. According to a report out of the Ft. Pierce Smithsonian Marine Station, in great numbers they might even deprive water of oxygen. Making matters worse, they also attach themselves to just about anything solid including docks, jetties, boats and the backs of turtles, oysters and clams.

After being first sited in Trinidad in the West Indies, this tropical and sub-tropical species was discovered colonizing Tampa Bay in 1999. Since then they are thought to have wiped out entire oyster reefs. By 2002 the invaders had moved into the temperate waters of Florida's Intracoastal Waterway at St. Augustine. They are now found as far south as Mosquito Lagoon near Titusville, as far north as the entire coast of Georgia and there's a possibility they may be entering North Carolina waters.

No-one is certain how the mussels got from the Indo-Pacific region to the West Indies but it's suspected that adults moved from Trinidad to Tampa by hitch-hiking on ship hulls and their larvae may have drifted on ocean currents. Universities, government agencies and research institutions are diligently seeking solutions to the growing invasion. At the Guana Tolomato Matanzas National Estuarine Research Reserve(GTM), Dr. Matt Gilg of the University of North Florida (UNF) is studying the biology of the green mussel with project partners Eric Hoffman of the GTM Reserve and Linda Walters of the University of Central Florida. UNF students, with the aid of GTM research assistant Katie Petrinec, are also participating in the study.

In the lab, monthly collections of recently settled larvae samples from the waterway are undergoing genetic analysis for comparison to larvae in their home region. According to Dr. Gilg, the researchers want to determine "where it comes from, what governs its dispersal and

settlement throughout the Intracoastal Waterway and what affects its survival." Aspects of the research include learning how far larvae travel, what the ultimate source of the green mussel introduction to the Western Hemisphere is and if these unwelcome visitors actually are having a negative effect on oyster growth and survival.

For more information on green mussel research, contact Matt Gilg at (904) 461-4064 or at mgila@unf.edu . To learn about other research projects contact the GTM Reserve Environmental Education Center, (904) 823-4500, located off A1A in Ponte Vedra Beach across from the Atlantic Ocean. The center is open to the public and offers interpretive exhibits, nature movies, aquariums, the Nature Store, beach and nature trails and a variety of educational programs and outdoor activities. The GTM NERR protects the estuary habitat for long-term research, monitoring, education and stewardship. The reserve covers the Guana and Tolomato rivers in northern St. Johns County and the Matanzas River south of St. Augustine to Pellicer Creek.

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