Mollusks

Canaveral National Seashore (CANA) is the southernmost limit for undisturbed, intertidal reefs of the **Eastern oyster** (*Crassostrea virginica*) along the Atlantic Seaboard. Several hundred oyster reefs occur in the northern end of Mosquito Lagoon. These reefs are unique and important habitats, providing refuge and food for many organisms. The oysters also play a vital role in maintaining good water quality. As it feeds, an oyster filters water at a rate of about 1500 times its body volume per hour. This action can concentrate contaminants such as heavy metals and bacteria, making the oyster a good marker for water quality assessments.

The oyster is also an important commercial and recreational crop. As with other aquatic species, a significant increase in harvesting has the park concerned about sustainability. Efforts to monitor oyster reefs in Mosquito Lagoon utilizing aerial photography revealed another problem. Noticeable areas of dead shells, not seen in earlier photographs, were apparent on certain reefs. These tended to be along channels and may be caused by wakes from passing boats. Studies are now in progress to determine the cause of this phenomena. Oysters are also subject to intense predation by natural predators such as blue crabs, stone crabs, whelks, oyster drills, skates, rays and fish, such as red and black drum. What saves the oyster at CANA is that it is intertidal; during periods when it it above water, the predators must retreat, offering the oyster relief. Barnacles offer another, possibly more serious, threat. Recent research at CANA has shown that barnacles tend to take up almost all the hard substrate (mainly dead and live oyster shells), leaving almost none for the oyster larvae to settle on.

The **hard clam** or **quahog** (*Mercenaria mercenaria*) is another ecologically and economically important mollusk. It too has been subject to increased harvesting pressure, as evidenced by the increase in applications for commercial shellfish permits each year. Hard clams are also being grown through aquaculture, where clams are grown in bags underwater to deter predators. Aquaculture is not allowed in the park but does occur just outside the park boundary in Oak Hill.

The oysters and clams, along with the tiny, colorful **coquina shells** (*Donax variabilis*) found along the beach offer evidence that Mosquito Lagoon served as a bountiful source of food to humans long before Europeans arrived. Over 100 archeological sites have been recorded in the park, some dating back more than 3,000 years. The vast majority of these consist of piles (called middens) of oyster, clam or coquina shells. Some were just discarded after use, others were deliberately built into huge mounds such as Turtle Mound, which stands almost 40 feet high and contains over 1.5 million bushels of oyster shells. Examining the clam shells in these middens, lends valuable insight into the lives of the people who once lived here. Clam shells have growth rings, much like trees, that can be used to tell what time of year the shells were harvested. The shells also offer environmental clues on temperature and quality of the water when they were alive. The Seminole Rest site contains fewer large clams than we

see today, indicating that overharvesting of aquatic resources may not be unique to our times.