

Meadow Vole (*Microtus pennsylvanicus*)
Pine Vole (*Pitymys pinetorum*)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
Eastern Cottontail (*Sylvilagus palustris*)
Opossum (*Didelphis marsupialis*)

WHY SHOULD WE CARE? THE IMPORTANCE OF MARSHES

Besides the overwhelming number of birds which rely specifically on marsh habitats for food, breeding grounds, and nesting materials, a surprising number of fish and animal species rely upon marshes as well. In many marshes, as vegetation grows, leaves and stems break down in the water to form detritus, which is the principal food source for many aquatic microorganisms and invertebrates, such as clams, oysters, crabs, and also for small species of fish. Many of these organisms in turn become food for shrimp, larger fish, fur-bearing animals, reptiles, and birds.

Most of the important coastal species of fish spawn offshore but use marshes as protective nursery areas for rearing their young. Several significant species are permanent residents, while others, like striped bass, bluefish, salmon, and flounder are transients that feed in marshes as they pass through. Just as important as the commercial species are the many sport-fishing species which rely upon natural wetlands at some stage of their lives.

Fur bearing mammals such as muskrat and otter, as well as reptiles like turtles, also make tidal marshes their homes.

Not only are tidal marshes important to fish and animals, research has shown that in many ways, tidal marshes are as critical to the quality of human life as they are to the many species that have adapted to their water reliant regime.

Because of their intermediate role between terrestrial and aquatic ecosystems, tidal marshes are also very valuable in helping maintain and improve water quality. Their complicated water-soil-plant structure not only intercepts runoff before it reaches the sea, it also forms an important nutrient processing area

where microorganisms conduct important phases of the carbon, nitrogen, phosphorus, and sulfur cycles, breaking down harmful pollutants into simple forms, which in turn can be utilized by other organisms for food.

In their natural state, tidal marshes act as buffers against storm-driven floodwaters. They store water from overflowing riverbanks and excess surface waters. In addition to the sponging effect of the soil, wetland vegetation helps slow the speed of floodwaters, lowering flood levels and reducing erosion. Coastal wetlands offer protection from storm runoff and extreme tidal fluctuation, preventing shorelines from eroding away.

BIBLIOGRAPHY

- Carlson, Cathy, and Fowler, John, *The Salt Marsh of Southern New Jersey*, Stockton Center for Environmental Research.
- Collins, B. and Anderson, K., *Plant Communities of New Jersey*, Rutgers Press, 1984.
- Curtis, Helena, *Biology*, Second Edition, Worth Publishers, Inc., New York, 1976.
- Kane, Patricia F., Rosselet, Dale A., Anderson, Karl, *Bridges to the Natural World*, New Jersey Audubon Society, 1992.
- Kinsey and Walters, *Hands on Agronomy*, Acres USA Press, 1993.
- Lewis, Barry, "Wetlands - Much More Than a Swamp," *Know Your Environment*, Academy of Natural Sciences, Philadelphia, May 1995.
- Minard, James P., 1969, *Geology of Sandy Hook Quadrangle*, New Jersey, U.S. Geol. Survey Bull. 1276.
- Middletown Township Environmental Commission, *Field Study*, 1992.
- Munday, J.C. & M.S. Fedosh, 1983, *Landsat Analysis of Coastal Turbidity Dynamics Along Northeastern North America*, National Marine Fisheries Service Contract NA-80-FA-C-00051 Final Report, 41 pages.
- New Jersey Marine Sciences Consortium, *The Hook Book: A Guide to Common Marine Organisms of Sandy Hook*, New Jersey Marine Sciences Consortium, Sandy Hook, NJ, 1987.
- Peterson, Rodger Tory, *A Field Guide to The Birds East of the Rockies*, 4th Edition Houghton Mifflin Co., Boston, 1980.