

# Wildlife Populations: Surf Clam

## Background

Atlantic surf clams, *Spisula solidissima*, are distributed in the western North Atlantic from the southern Gulf of St. Lawrence to Cape Hatteras. Commercial concentrations are found primarily off New Jersey, the Delmarva Peninsula, and on Georges Bank. In New Jersey, surf clams are found from the beach zone to a depth of about 60 meters (m). Below 40 m, however, abundance is low.<sup>1</sup>

New Jersey's commercial inshore surf clam season begins October 1 and extends to May 31 each year. The Commissioner of the Department of Environmental Protection, with the advice of the Atlantic Coast Section of the New Jersey Shellfisheries Council and the Surf Clam Advisory Committee, establishes annually a season quota between 250,000 and 1,000,000 bushels of surf clams provided the quota does not exceed 10 percent of the estimated standing stock.

The surf clam fishery is currently the largest molluscan fishery in New Jersey, accounting for 60.6 percent (by weight) of the State's total molluscan commercial landings in 2003. Historically, New Jersey leads all other states in surf clam landings because New Jersey vessels participate in fisheries in both state and federally controlled waters.

## Trend

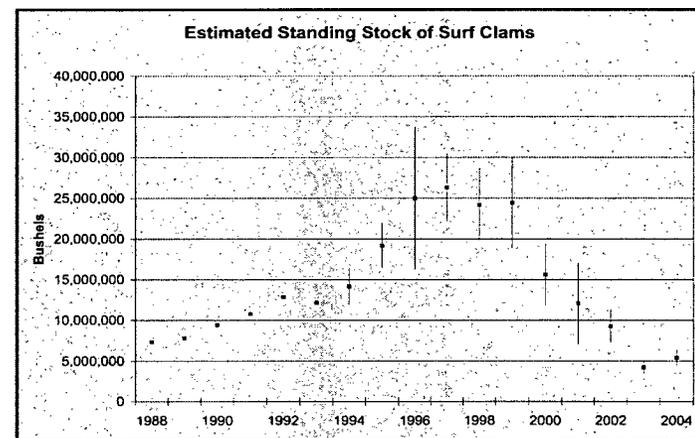
Past success of the New Jersey surf clam fishery was a result of a favorable habitat capable of supporting commercially viable concentrations of surf clams and the development of state management programs. However, over the last decade, the stocks of New Jersey surf clams have dramatically declined from all time highs that were recorded in the mid- to late 1990s. This same trend has also been observed within Federal waters off the Delmarva Peninsula during the same time period.

While some reduction in the population may be attributed to harvest, other as yet to be determined factors must be involved to account for a decrease in standing stock of this magnitude including loss of large mature clams and lack of recruitment. One theory is that there has been a warm water intrusion over the mid-Atlantic shelf. Over the

last few years, this intrusion may have caused mortality in larger surf clams. The possible effects of increased water temperature in the mid-Atlantic region may be a gradual northward shift in the distribution of surf clams. This shift may have been indicated in the increase in New York's surf clam biomass over the past few years after several years of good recruitment in the late 1990s.

DEP estimated the total surf clam standing stock for 2003, in New Jersey, to be between 3.5 and 4.9 million bushels. The estimated standing stock steadily declined from 15.6 million bushels in 2000 to 4.2 million bushels in 2003. This represented a continuation of the downward trend from the maximum of 26.3 million bushels recorded in 1997 (see chart below). Stock estimates are conservative because they assume 100 percent removal of all size classes of surf clams within the path of the dredge. However, earlier investigations by Rutgers University showed a 70 percent to 80 percent removal rate to be more likely.

Surf clam harvest records indicate that the majority of harvest activities occurred in the harvest zones between Absecon Inlet and Barnegat Inlet. New Jersey vessels harvested a total of 197,152 industry bushels (71.7 percent of the season quota) of surf clams from New Jersey's territorial waters during the 2003-2004 season. In addition, the bait clam harvest was 55,406 industry bushels in 2003. Bait clams are surf clams that are harvested from waters the Department has closed to shellfish harvesting due to sanitary concerns. These bait clams are used as bait in other fishing industries.



## Outlook and Implications

At present, various proposals have been submitted by industry and academic groups to look into the surf clam decline. In 2003, Rutgers University collected surf clam samples from a surf clam "mortality line" off the Delmarva Peninsula in the Mid-Atlantic region to look to see if there was any physiological reason for the surf clam decline, such as disease. The results revealed no evidence of disease, but the surf clams showed evidence of malnutrition.

The development and future success of surf clam management programs is dependent on the availability of accurate and up-to-date information on the status of the resource. Current knowledge of stock size, population structure, and recruitment is especially important because of the tremendous harvesting power that presently exists within the industry and because the potential for over harvest is large in relation to the size and stability of the resource. DEP is working with other states and federal partners to determine how best to manage the population in the face of declining stocks.

## **More Information**

<http://www.nefsc.noaa.gov/sos/spsyn/iv/surfclam/>

## **References**

<sup>1</sup> Weinberg, J. 2000. Atlantic Surf Clam. <http://www.nefsc.noaa.gov/sos/spsyn/iv/surfclam/>. December 9, 2004.

Unless otherwise cited, the information in this report was provide by the DEP Division of Fish and Wildlife report to the US Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service, entitled Inventory of New Jersey's Surf Clam (*Spisula solidissima*) Resource.