

BAY SCALLOP, *Argopecten irradians*



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Life History

Bay scallops (*Argopecten irradians*) are estuarine-dependent, filter feeding shellfish found in seagrass beds. Bay scallops are hermaphroditic (contain both sex cells), and they mature and spawn within their first year. Their lifespan is 12 to 26 months. In North Carolina, bay scallops spawn mostly from August through January and again in March through May. The larvae go through several swimming stages before attaching to a suitable surface such as a blade of seagrass. Upon reaching a size of approximately 1 inch, bay scallops drop to the bottom. Although other structures can be used for attachment, bay scallops use seagrass beds almost exclusively, and are highly dependent on this habitat for successful recruitment. Predators of bay scallops include cownose rays, blue crabs, starfish, whelks and sea birds.

Fisheries

Bay scallop abundance and harvest have widely fluctuated since landings have been recorded. Landings are closely linked to weather and other environmental factors. Commercial landings ranged from a peak of approximately 1.4 million pounds of meats in 1928 when North Carolina led the nation in bay scallop production, to a low of zero landings

in 2005 even though there was an open harvest season. Commercial and recreational landings have been virtually non-existent since 2005.

The red tide (algal bloom) event of late autumn 1987 and early 1988 killed approximately 21 percent of the adult bay scallops in Bogue and Back sounds in Carteret County. This event also reduced juvenile scallops the following spring to 2 percent of normal. These mortalities had long-lasting impacts to the bay scallop fisheries, and bay scallop abundance has not fully recovered since. The number of bay scallops in recent years have been extremely low because of additive impacts from environmental factors, such as exposure from low tides and hurricanes and predation.

The state implemented a moratorium on harvest from 2006 to 2008 through the 2005 N.C. Bay Scallop Fishery Management Plan. Amendment 1 initiated the use of abundance estimates to determine whether to open the fishery and what levels harvest would occur based on the number of bay scallops sampled in a region. An open commercial and recreational harvest season occurred in Core and Pamlico sounds in 2009 and in Pamlico Sound in 2010 (Figure 1). Bogue Sound and all areas south of Bogue Sound to the South Carolina line were opened to harvest to in internal waters in 2013. Commercial landings during the open seasons in 2010 and 2013 were very low.

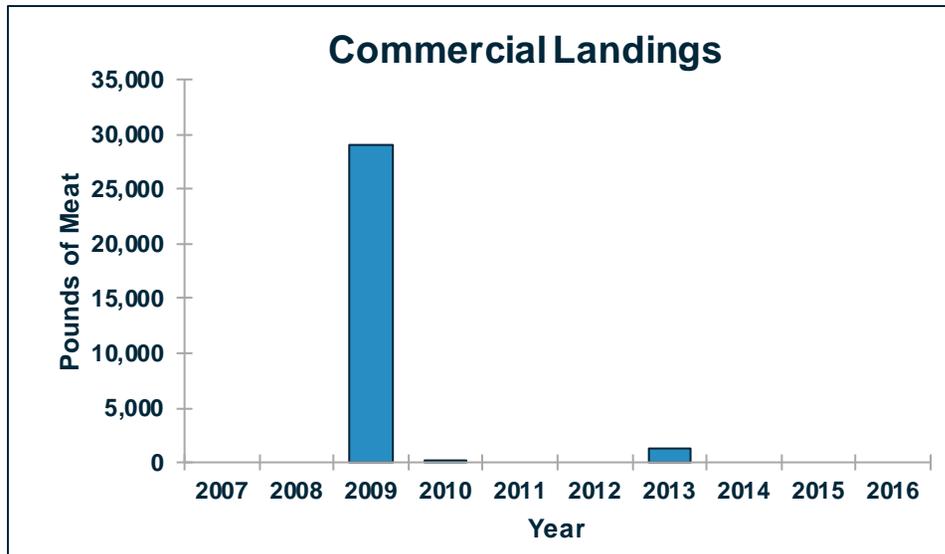


Figure 1. Annual commercial landings of bay scallops in North Carolina, 2007-2016.

The recreational harvest of bay scallops in North Carolina does not require a fishing license, thus the total recreational landings cannot be estimated and remains unknown.

Management

The North Carolina Bay Scallop Fishery Management Plan was adopted in November 2007. The plan implemented prohibited take of bay scallop from 2006 to 2008 until an independent sampling indicator was established for re-opening harvest in 2009. Amendment 1 of the plan was finalized in 2010 to provide more flexibility to open the fisheries as the bay scallop population recovers. Target abundances were established from sampling conducted before the red tide event in 1984 and 1985 in Core, Back, and Bogue sounds. A separate sampling indicator for re-opening was developed in 2009 for Pamlico Sound. Amendment 2, adopted in 2015, continues to use the abundance thresholds for opening the harvest season and defining the harvest levels for all areas, except areas south of Bogue Sound. Areas south of Bogue Sound are not managed with a specific abundance threshold, but can be opened or remain closed based on the division's judgement from sampling in this region. Additional recommendations in Amendment 2 were to expand sampling in all areas, including areas south of Bogue Sound, to improve the reliability of the data for the recreational

scallop harvest. The current management strategy for private culture and enhancement is to modify rules for bottom culture (leases) and aquaculture operations to be consistent with rules for other shellfish species. The Shellfish Research Hatchery in Wilmington will establish a pilot program to distribute cultured bay scallop seed on private bottom, and depending on the results, potentially expand the pilot program to include enhancement for public bottom.

Stock Status Overview

North Carolina's bay scallop stocks are listed as a species of concern based on low abundance and other environmental factors that affect the stock. Annual commercial landings of bay scallops show large fluctuations through time and are presumed to be driven by changing climate conditions (i.e., winter freezes, high freshwater runoff), predation, and red tide. Bay scallops are vulnerable to overharvest because of the many different factors affecting their survival.

Independent sampling of bay scallops for management has been conducted by the Division of Marine Fisheries since 1975, and has varied from monthly sampling at twenty stations to seasonal monitoring at fewer locations. Trends observed in catches in this sampling over the past ten years show bay scallop abundance is very low in all regions of the state. This overall low abundance is also reflected in relatively low landings when a harvest season is opened.

Research Needs

Research needs for bay scallop include development of methods to determine population size and number of separate stocks in North Carolina; study the effects of treading on juveniles and adults; study the effects of aquaculture on seagrass; study economic impact of recreational bay scallop fishing; and study the importance of bay scallops born in the spring.

Links

Management Agencies

[North Carolina Division of Marine Fisheries](#)

Fishery Management Plans, Amendments, Revisions, & Supplements

[North Carolina Fishery Management Plan](#)



Contacts

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