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## Reports

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# Preliminary Observations of Barndoor Skates (*Raja laevis*) on Georges Bank

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**Preliminary Observations of Barndoor Skates (*Raja laevis*)  
on Georges Bank**

**Virginia Marine Resource Report  
No. 99-9**

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## **Introduction**

An article published in Science magazine last year (Casey and Myers, 1998) has generated increased concern about the status of the barndoor skate (*Raja laevis*) in the North Atlantic. Very little information is available and a better understanding of the barndoor's life history, distribution and abundance is necessary for proper management. This document serves to provide preliminary data from an ongoing study that may aid in the current understanding of the barndoor skate population.

## **Materials and Methods**

Graduate students and staff from the Virginia Institute of Marine Science collected data while conducting research aboard commercial scallop vessels in the closed areas of Georges Bank. These areas were closed to the use of mobile fishing gear in December 1994 in an effort to rebuild groundfish stocks. Almost five years later, a large biomass of sea scallops (*Placopecten magellanicus*) resulted and a plan (the Sea Scallop Exemption Program) was developed to allow scallop dredge vessels to harvest over 9 million pounds of scallops from a section of Closed Area II. (see Figure 1)

Scientists worked aboard commercial scallop vessels in the open portion of Closed Area II south of 41° 30' N latitude. Vessels fished with two 15 foot New Bedford style sea scallop dredges towing in 30-40 fathoms of water at 5-6 knots. Between June 15<sup>th</sup> and October 5<sup>th</sup> six trips, lasting between 5 and 12 days, were completed with four more before December 31<sup>st</sup> planned. Although the barndoor skate is not a significant percentage of bycatch weight they were observed frequently enough to amass a significant database on allometric/morphometric measurements. Biological samples, including reproductive tracts, vertebra, and tissue samples were collected for age, growth, reproductive, and population genetics studies.

## **Results**

To date 916 barndoors have been observed with 52.3% (n=479) females and 47.7% (n=437) male. Disk width, disk length, total length, clasper length, and clasper width measurements were taken from all individuals. Total length ranged from 20-129.4 cm with an average of 55.7 cm and a median of 52.9 cm. Figure 2 illustrates a size/frequency histogram for all observations.

Clasper length measurements show male sexual maturity to occur at approximately 100 cm total length (see Figure 3). Samples of reproductive tracts have also been collected to determine female maturation size (n=69) and verify the male allometric plot (n=66) (see

Figure 4). In addition, vertebrae samples have been collected from 251 individuals (see Figure 5) for age and growth studies.

We would like to stress that the data presented in this paper is from an ongoing study and only from a portion of Closed Area II. Data has also been collected from the NLCA and Closed Area I. Our study will continue with our ongoing research efforts with the commercial scallop fleet.

This study has been made possible through the use of the research TAC set-aside as part of the Georges Bank Closed Area II Sea Scallop Exemption Program.

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Casey, J.M. and R.A. Myers. 1998 Near Extinction of a Large, Widely Distributed Fish. *Science* 281, 690-692

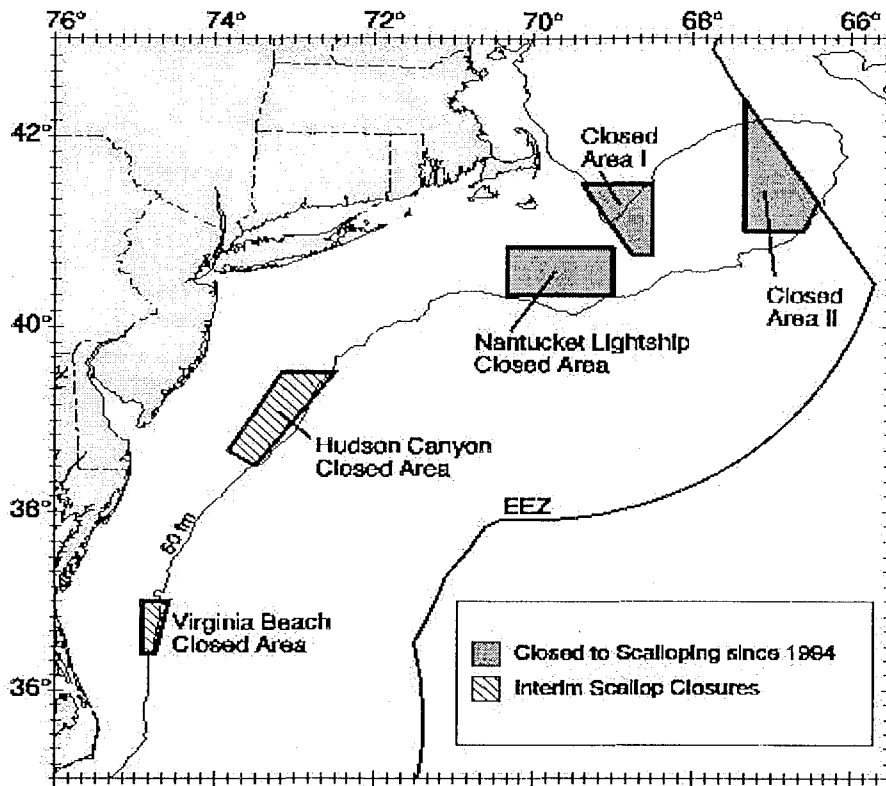


Figure 1.

### All Barndoor skates Recorded

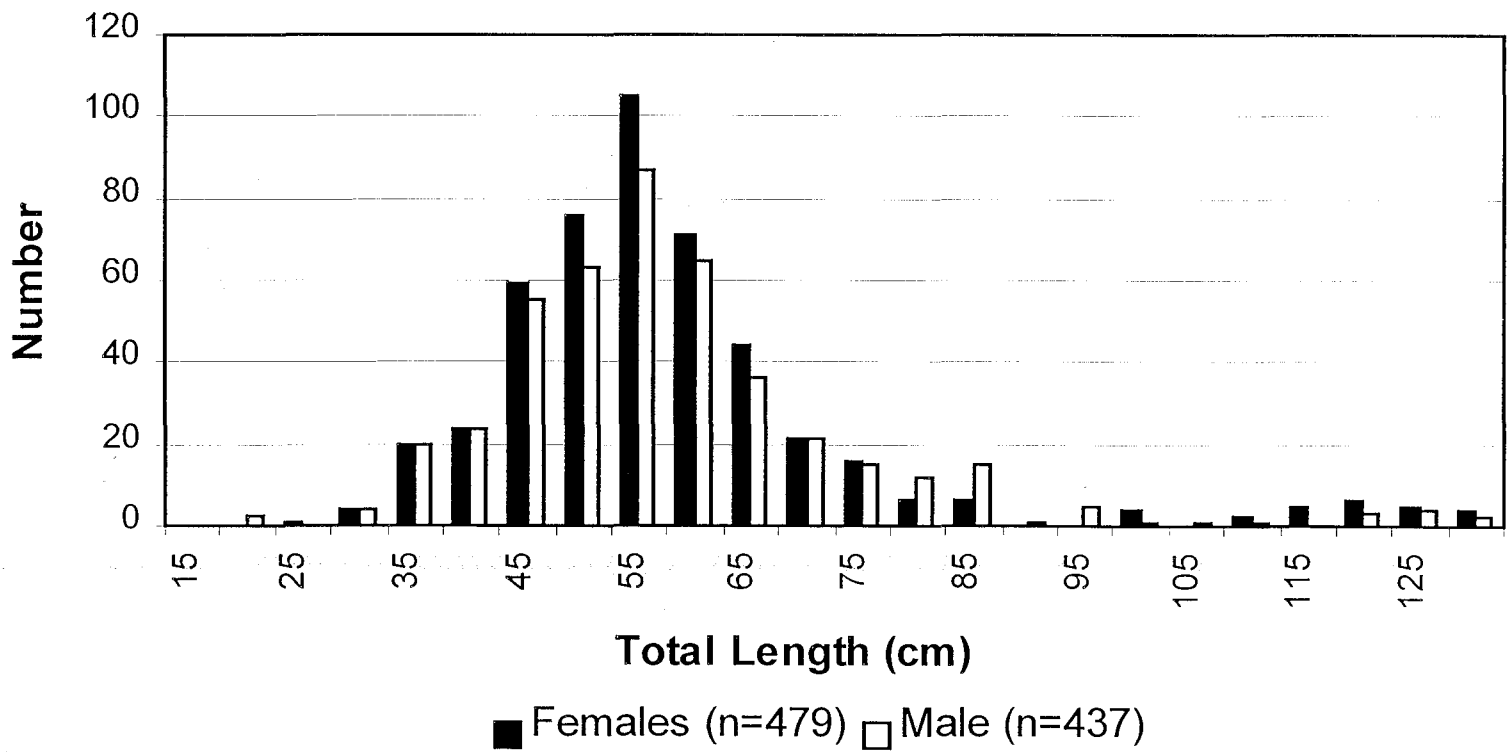


Figure 2.

### Male Barndoor Skates Clasper Lengths (n=434)

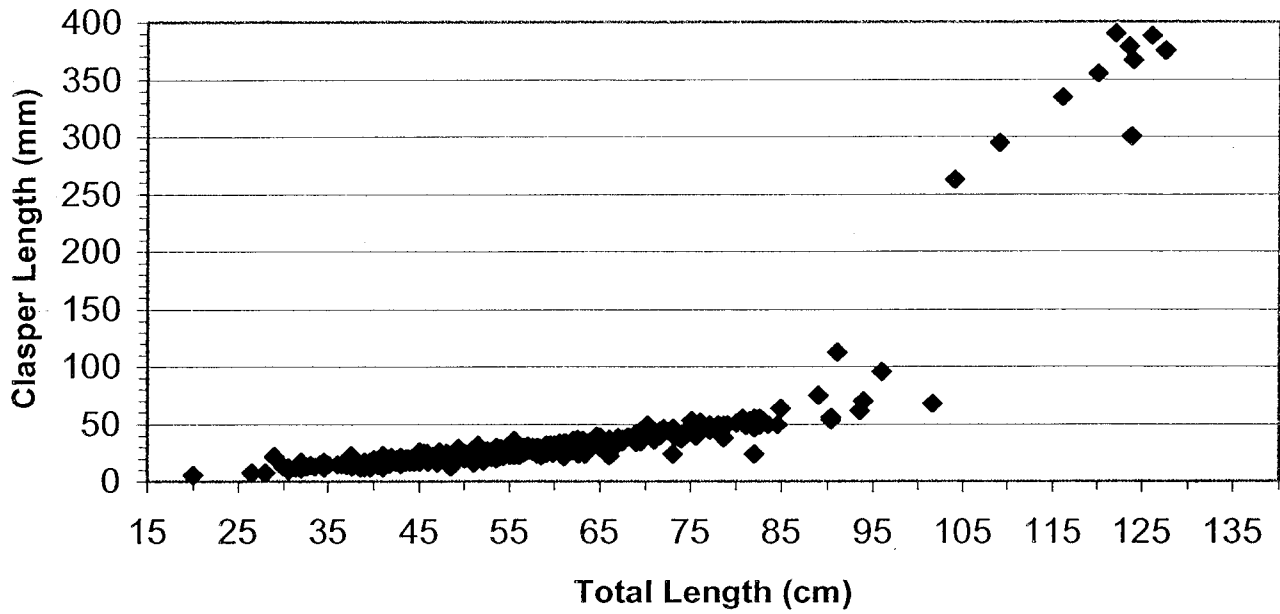


Figure 3.

### Reproductive Tract Samples (n=135)

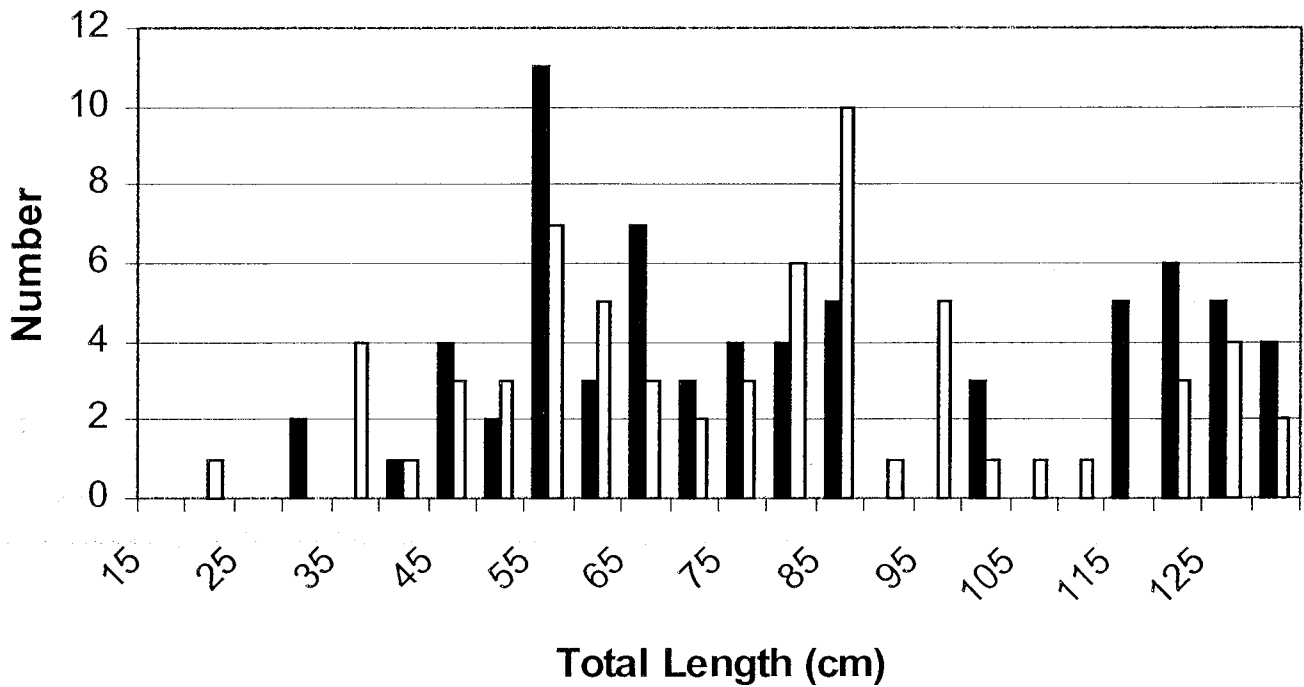


Figure 4.

■ Female (n=69) □ Male (n=66)

Vertebrae Samples (n=251)

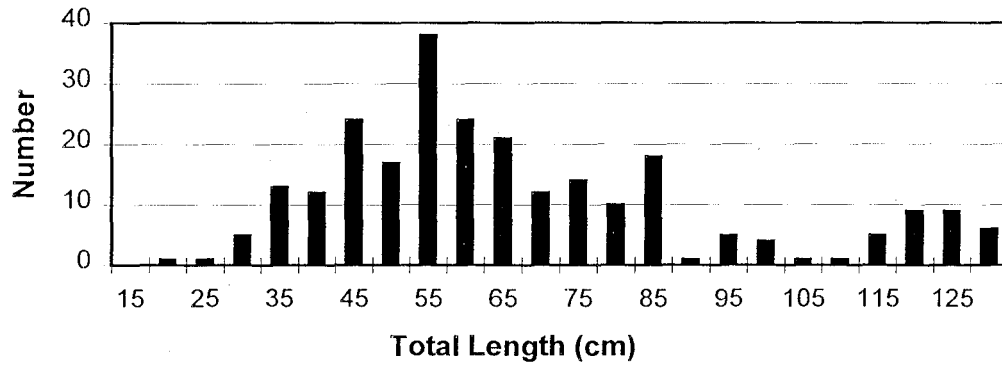


Figure 5.