

# FSO

## "Gateway to Decisions"

Making decisions that affect thousands of individuals, families and businesses is serious business. Collecting data that support those decisions is FSO's business. With thousands of vessels and dealers from Maine to Virginia, the responsibility is far reaching and highly challenging. Assembling and analyzing these data is the cornerstone of fisheries management.

### That's FSO.

*In the Field* and *In the Office* helping NOAA and industry steer a steady course.

For more information visit our website:

[www.nero.noaa.gov/fso](http://www.nero.noaa.gov/fso)

# Fisheries Statistics Office

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## Atlantic Cod



## Sampling Program



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# BIOLOGICAL SAMPLING PROGRAM

## "Gateway to Decisions"

The **Fisheries Statistics Office (FSO)** is a key component of **NOAA Fisheries** in the northeast. One of the office's primary functions is to collect fishery data and biological samples. These data are essential to the fishery management process.

Both in the field and in the office, FSO works to provide our customers, other NOAA fisheries groups, fishing industry and other constituents with accurate, reliable and timely data. **FSO** operates 11 field offices covering states from Maine to Virginia. Each office is staffed with knowledgeable personnel who serve as the agency's front line to the fishing industry.

Under the direction of John Witzig, Ph.D., FSO's central office is located in NOAA Fisheries' Regional Office in Gloucester, Massachusetts.

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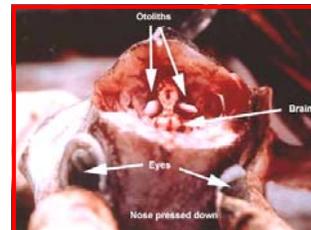
**Atlantic Cod**



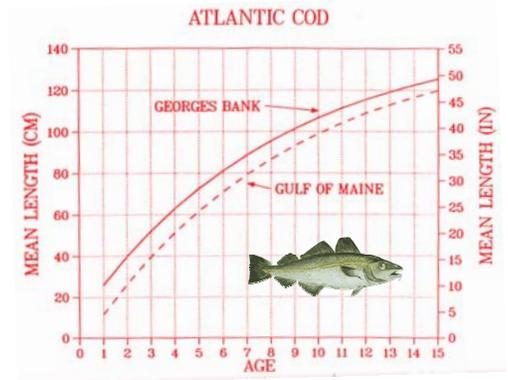
NOAA field staff, Katie Almeida, displays a cod fish that she just measured. Measuring marine fish helps scientists determine age and growth patterns.

**What We Do and How:** The mission of the sampling program is to obtain raw data essential to understanding the ages and the size distributions of individual stocks of marine fish. Field work provides the biological foundation for many fisheries assessments. Biological data, which can only be collected in the field, are used in models designed to guide management decisions and future research.

The ages of cod, redfish and many other marine fishes are determined by measuring and extracting **otoliths** from the head - commonly called ear bones. Otoliths contain growth rings which are counted much the same as counting rings on a tree stump. Each ring usually represents one year. Other species, such as flounders are aged using **scales** which also contain growth rings.



Notice the two white "ear bones" or otoliths located just behind the brain.



**Age and Growth:** The graph above and the table below illustrate different growth rates of **ATLANTIC COD**. On Georges Bank an average 4-year old is 63 cm long. However, in the Gulf of Maine, a 4-year old cod is only 51 cm long. **Why?** Many factors influence growth rates such as water temperature and food supply.

Age	Georges Bank		Gulf of Maine	
	Length (in)	Length (cm)	Length (in)	Length (cm)
1	10.3	26.1	4.6	11.7
2	15.7	39.9	10.4	26.4
3	20.5	52.1	15.6	39.6
4	24.8	63.0	20.2	51.3
5	28.6	72.6	24.3	61.7
6	31.9	81.1	28.0	71.0
7	34.9	88.7	31.2	79.3
8	37.6	95.4	34.1	86.6
9	39.9	101.4	36.7	93.2
10	42.0	106.7	39.0	99.0
11	43.9	111.4	41.0	104.2
12	45.5	115.5	42.9	108.9
13	45.9	119.2	44.5	113.0
14	48.2	122.5	45.9	116.7
15	49.4	125.4	47.2	119.9