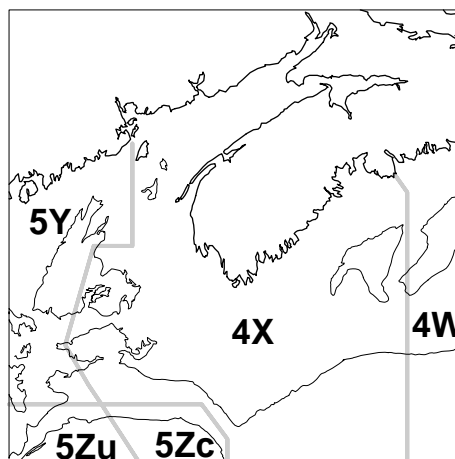


## BROWNS BANK SCALLOP



### Background

The Sea Scallop, *Placopecten magellanicus*, is found in the Northwest Atlantic, from Cape Hatteras to Labrador. Scallops are aggregated in patches and harvestable concentrations are called beds. Major areas of offshore fishing activity are Georges Bank, the Scotian Shelf (Middle Grounds, Sable Island Bank, Western Bank, Browns Bank, and German Bank), and St. Pierre Bank. Scallops prefer a sandy, gravel bottom and occur in depths of 35 to 120 m.

Scallops have separate sexes. They mature at age 2. The female gonad is red in colour and the male gonad colour is creamy white. The major spawning period is August to October. The fertilized eggs develop in the water column until settlement on the bottom within 30 to 60 days.

Growth is estimated from the position of annual rings on the shell. The growth rate varies from one area to another and is influenced by season, depth, and temperature.

Offshore scallop vessels range from 27 to 46 m length overall. The offshore fleet uses a New Bedford offshore scallop rake or drag, 4 to 4.9 m in width. Two drags are fished simultaneously, one on each side of the vessel.

### The Fishery

Landings (hundred metric tons)

Year	1990	1991	1992	1993	1994	1995
TAC	2.0	2.2	4.5	6.0	14.0	20.0
Catch	2.0	2.1	4.5	5.8	14.0	20.0
Area fished (km <sup>2</sup> )	<300	388	512	560	765	901

During the 1970's and early 1980's, a scallop fishery took place on the southern part of Browns Bank and along the edge of the Bank at depths over 100m. Landings ranged between 4 and 270 t with moderate catch-rates. The 'recent' fishery started in 1989 on the northern part of Browns Bank in areas not previously fished. During the past 7 years, catches have risen as new grounds were exploited and year-classes were regularly recruiting to the fishery. The size of the area fished has increased 5 times since 1989.

Since 1989, the fishery in Scallop Fishing Area 26 (4X) has been managed with a catch limit

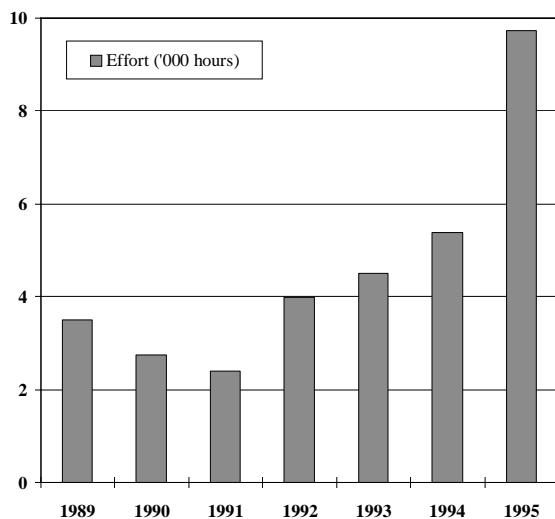
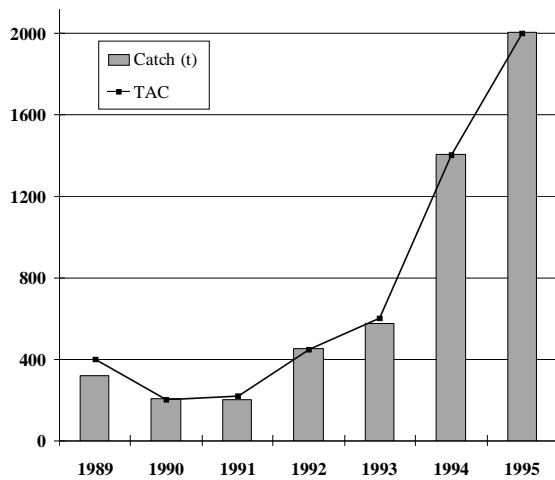
and a meat count set at 55 meats per 500 g. It was reduced to 40 in 1994. The 1995 Browns Bank TAC was increased to 2,000 t from 1,400 t in 1994 based on research survey biomass estimates in the areas previously exploited. While catches rose 40% from 1994 to 1995, effort increased by 80%.

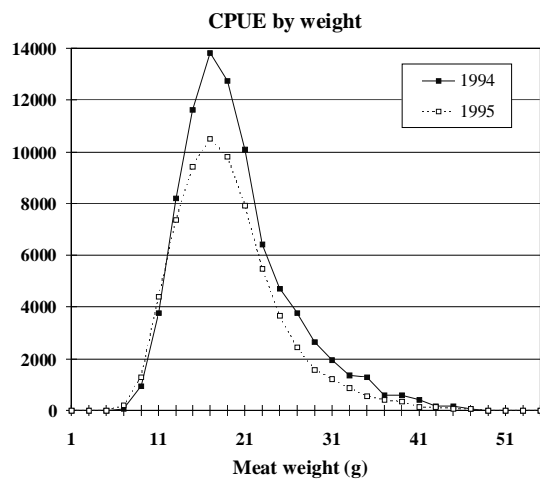
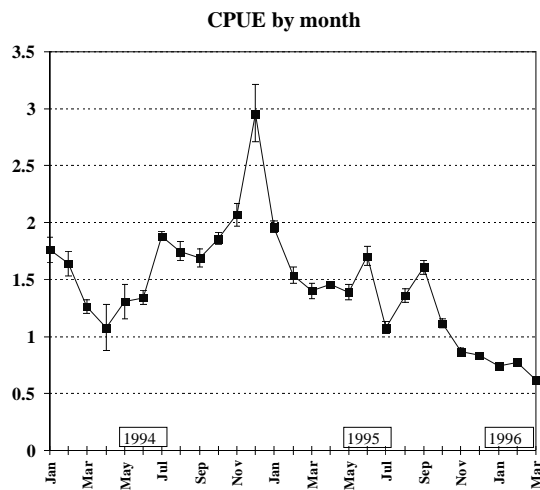
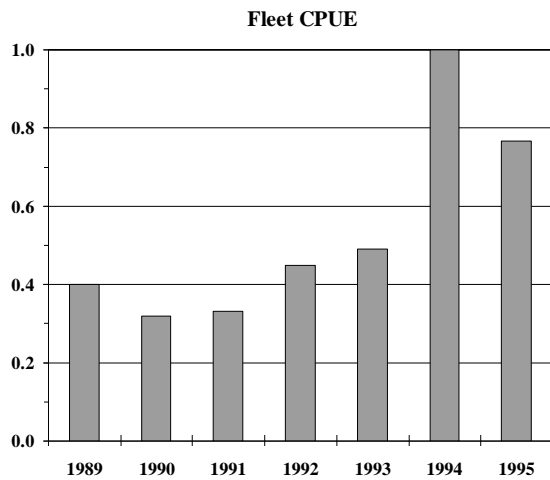
In 1995, the fishery directed mainly for the 1987 and 1988 year-classes; these ages (7 and 8) met the meat count without blending. In the spring, industry sponsored a monitoring programme to discourage the presence of very small meats (50+ count) in the catch.

**Resource Status**

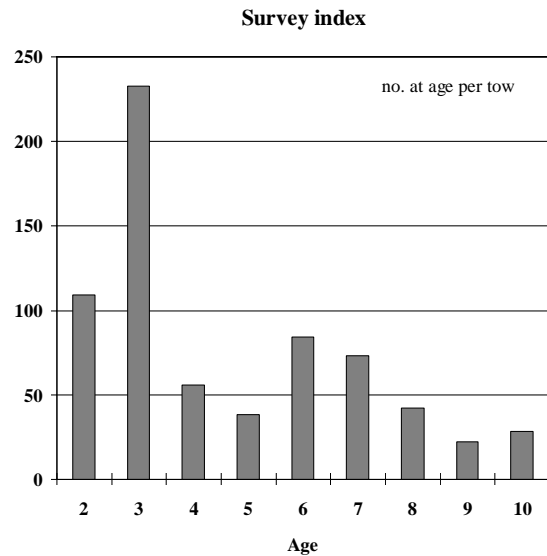
Logbooks provide catch and effort data from which catch-rates are estimated. Landings are monitored at dockside. The catch is sampled for size distribution. Research surveys followed the fishery distribution and provided information on size at age. Given the short history of this fishery, an analytical assessment is not yet possible, hence population biomass is not available. Stock status is based on commercial catch-rates, size of meats in the catch, and research survey indices. Survey tow biomass of scallop sizes equal to 40 meats per 500g or less, without blending, is used to establish fishing scenarios.

The geographical area fished, as indicated in the landings table, has expanded since the fishery began in 1989, complicating the interpretation of commercial catch-rates. However, the catch-rates in 1994 and 1995 were considered somewhat comparable. The fishery on the northern part of Browns Bank experienced the highest catches of its short history in 1995. The 1995 catch-rates are high until mid-year then dropped and remained lower for the rest of the year. The average catch-rate on an annual basis decreased 20% from the 1994 rate. Preliminary observations indicate that catch-rates continue to decline in 1996. The catch-rate derived from catch data in 2-g intervals also shows an important decline for meats in the 10 to 30-g range from 1994 to 1995.





The 1995 research survey showed moderate densities of old recruits (ages 7+, mainly the 1987 and 1988 year-classes), low densities for young recruits (ages 4 and 5, the 1990 and 1991 year-classes), and good densities for pre-recruits (age 3, the 1992 year-class).



**Outlook**

The scallop fishery on the northern part of Browns Bank might be approaching a mature stage from the expansionary phase it had been under. It is assumed to be a self-sustaining stock.

The 1996 interim TAC is 750 t. It is highly doubtful that the 1995 TAC level of 2,000 t could be maintained without a sharp drop in catch-rates. Given the drop in catch-rates from 1994 to 1996 and the low abundance of the 1990 and 1991 year classes, the 1996 TAC level should not be increased above the interim TAC of 750 t.

It might become difficult to meet the 40 meat count if too many young recruits are harvested. These events could be precipitated knowing the weakness of 2 incoming year-classes (1990 and 1991 year-classes). Commercial catch-rates

have already decreased in 1995 from 1994 and continue to drop in 1996. Maintaining or lowering exploitation rates while directing for age 7 scallops would appear to be a better short term solution. In-season monitoring of catch-rates should also be recommended.

***For More Information*****Contact:**

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