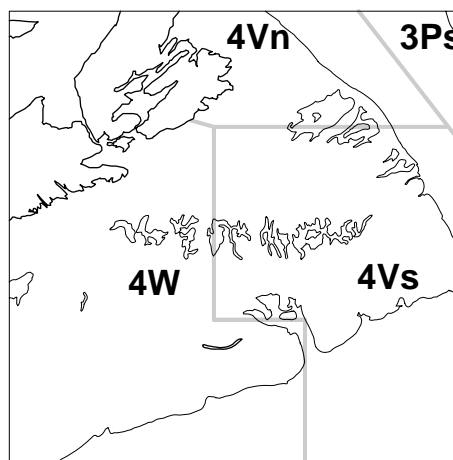


EASTERN SCOTIAN SHELF SCALLOP



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 through several stages 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 (hundreds of tonnes)

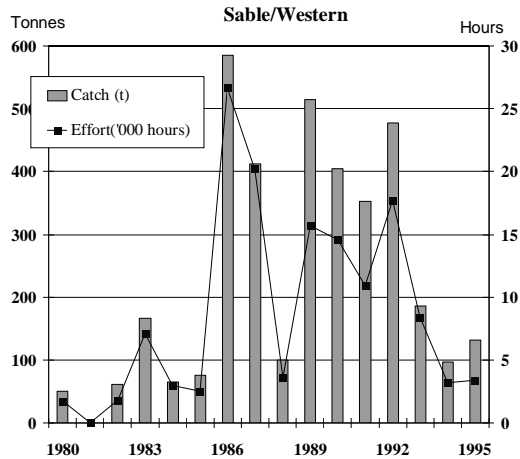
Year	80-89 Avg.	1991	1992	1993	1994	1995
TAC*	-	-	-	-	1.5	1.5
Sab/West	2.3	3.5	4.8	1.9	1.0	1.3
Middle	0.3	0.3	0.4	0.5	0.1	0.2

* - TAC for both areas

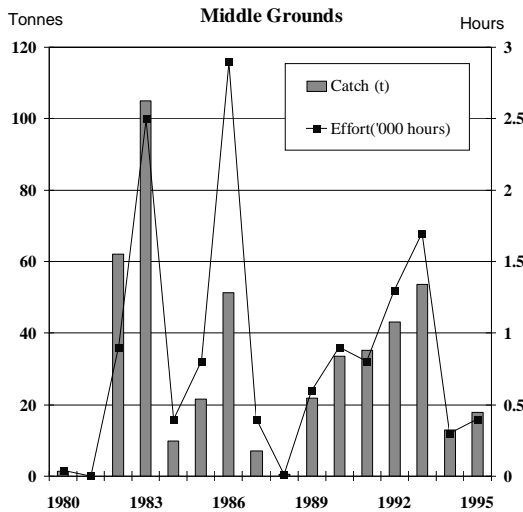
Scallop beds on the Scotian Shelf offer alternatives to Georges Bank for the offshore scallop fleet although catch-rates are lower on the eastern Shelf. Traditionally the fishery has been pursued on a competitive basis. Limited entry and a meat count of 45 meats per 500 g are the two main management tools prior to 1994. In 1994, a TAC of 150 t was implemented.

Scallop fishing grounds on the eastern Scotian Shelf (Middle Grounds, Sable Island Bank, and Western Bank) were grouped under one allocation plan in 1995 with a TAC of 150 t. The catch limit was based on the low end of historical catches over the period 1980 to 1994. The Sable Island Bank / Western Bank area has the most important scallop beds. Scallop beds have been found in an area of 3,500 km² on these Banks. **Catches** have yet to return to the long term average of 250 t. Effort has followed the same trends as catches. Both have increased slightly from 1994 to 1995.

Available from: Maritimes Regional Advisory Process, Department of Fisheries and Oceans, P.O. Box 1006, Stn. B105, Dartmouth, Nova Scotia, Canada B2Y 4A2 Telephone: 902-426-8487 Email: d_geddes@bionet.bio.dfo.ca.



Middle Grounds is a shallow bank of which 900 km² may carry commercial densities of scallops. Scallop production, measured as catch, has been irregular over the last 15 years. Recently, catches rose from 20 to 50 t, then dropped to less than 20 t in 1994 and 1995. There has been a small increase in effort from 1994 to 1995.

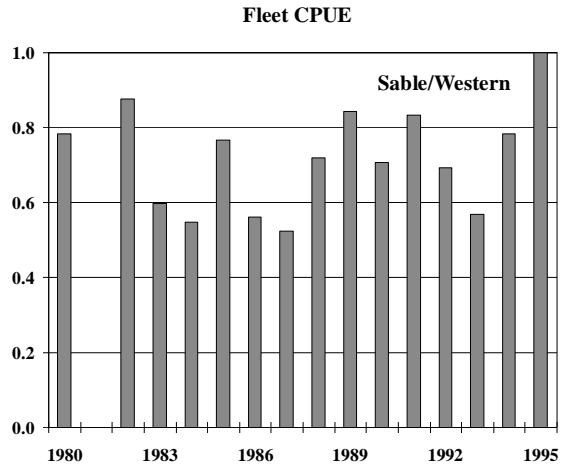


Resource Status

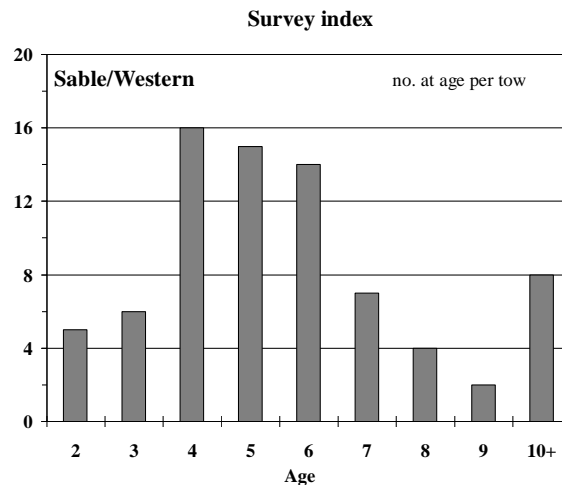
Logbooks provide catch and effort data from which **catch-rate** (CPUE) is estimated. Landings are monitored at dockside. The catch is sampled at dockside for size distribution. Research surveys provide average numbers-at-age of scallops per standard tow. CPUE, size of meats in the catch and research survey abundance indices are used to determine stock status.

After exploring the Sable Island/Western banks area in the early 1980's, landings increased but CPUE remained low. In 1994, a catch limit of 150 t was supported by industry to allow for rehabilitation of the stock. The 1994

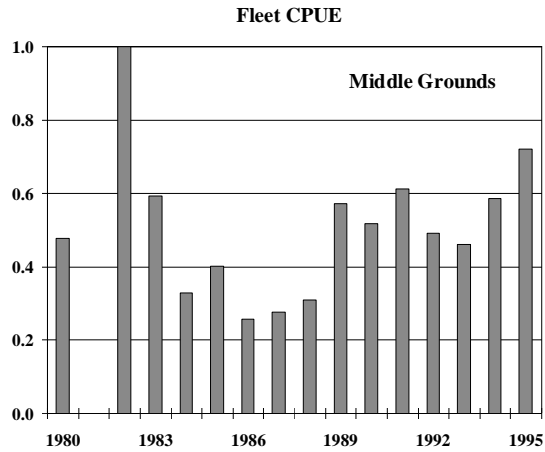
CPUE, under the first year of quotas, was 40% better than in 1993. It improved another 14% from 1994 to 1995.



The 1995 **research survey** indicates no improvement in densities of pre-recruits but an increase in densities of young recruits (ages 5 and 6) and age 10+. **Recruited biomass** has doubled due to the presence of young recruits.



Commercial catch-rates on Middle Grounds continued the rise started in 1993. They improved slightly from 1994 to 1995.



because of the lack of pre-recruits in the survey. Commercial CPUE improved only slightly from 1994 to 1995. All indications are that the recent average catch levels appear appropriate.

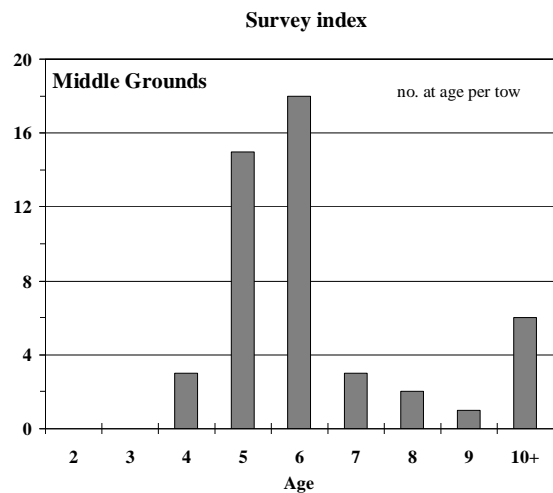
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Research survey catch-rate indices show low abundance of scallops except for the first survey in 1983. Given the relatively low fishery performance, survey work was not carried out every year. Recruited densities (ages 5+) rose by a factor of four from 1994 to 1995, mainly due to young recruits. Very few prerecruits have been observed. Notwithstanding the uncertainty in the survey indices, it appears from the commercial catch-rates that biomass has not declined due to recent fishing activities.



Outlook

There has been an improvement in the abundance index from research surveys mainly due to young recruits. However, they would contribute little yield to the fishery at 60 - 90+ meats per 500 g. It is important to keep existing meat count regulations to allow the incoming recruitment to realise its growth potential.

The management plan is focusing on a recovery strategy. Effort has declined after 1993 while catch-rate increased. Effort on Middle Grounds should not be increased