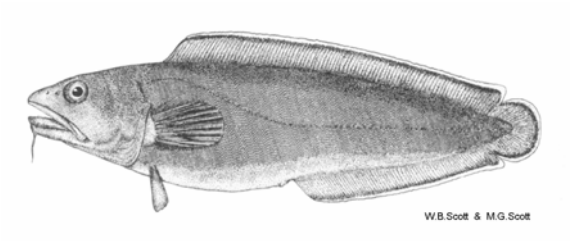
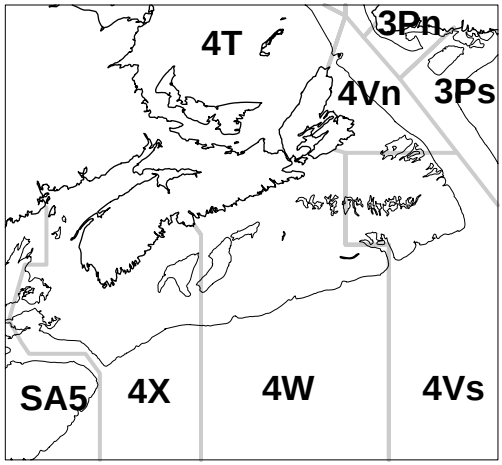


CUSK ON THE SCOTIAN SHELF



Background

Cusk (Brosme brosme) are a solitary, weak swimming fish, found primarily in 4X, on the southwestern Scotian Shelf and Slope and in the Fundian Channel, that seldom move from bank to bank. Based on July research surveys, cusk occur in temperatures ranging from 3 to 11°C with most being caught in the 6-10 ^{0} C range, in depths of 50 to 200 meters with some apparent preference for the 75-150 m range. They also prefer a rocky bottom, or gravel and occasional mud but seldom sand, (Bigelow and Schroeder 1953). There is no evidence for any day night effects on catch rates.

Spawning on the Scotian Shelf is believed to occur from May to Aug., peaking in June. The buoyant eggs are 1.3-1.5 mm in diameter with a pinkish oil globule. The entire surface of the egg is finely pitted. The pelagic larvae are about 4 mm when hatched, migrating to the bottom when they are grown to approximately 50 mm in length. Males appear to grow slightly faster than females, (reaching 45 cm at five years of age) and appear to mature more rapidly.

The diet of cusk on the Scotian Shelf is unknown, as their stomachs evert when they are brought to the surface. In European waters, cusk feeds primarily on crabs and molluscs, along with the occasional starfish. A feeding record on this side of the Atlantic, by Bigelow and Schroeder (1953), has them feeding on crabs and the occasional mollusc off the coast of Maine. The only known predation record was by a hooded seal off Greenland, dining on cusk (Scott and Scott 1988). There is no record of cusk occurring in seal stomachs on the Scotian Shelf.

The Fishery

Landings (thousands of tons)

Year	70-79 Avg.	80-89 Avg.	1990	1991	1192	1993	1994	1995
4VW	0.5	0.4	0.6	0.7	0.5	0.3	0.3	0.3
4X	4.0	2.9	2.5	3.1	3.7	2.0	1.2	1.5
TOTAL	4.5	3.3	3.1	3.8	4.2	2.3	1.5	1.8

Commercial **landings**, were derived from Halliday and Clark (1995), NAFO Statistical Bulletins, and provisional catch statistics for recent years. Cusk are primarily caught by longline (95%), with over 80% of the landings coming from 4X. In 4X landings have varied from a maximum of 5,130t in 1973 to a low of 1,572t in 1994. The general pattern is one of a slow decrease form the early 1970s to the present. Landings in Division 4W rarely exceed 500t, while landings in Division 4V have been negligible.

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

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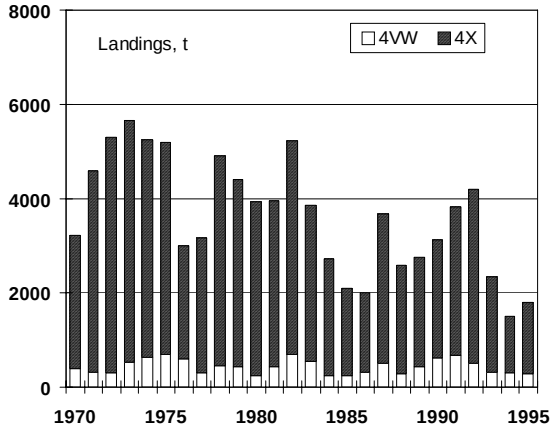
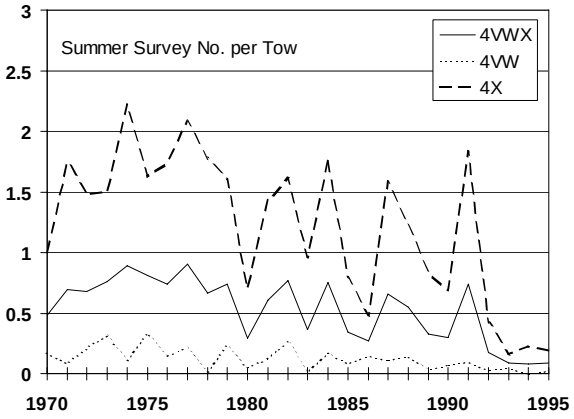




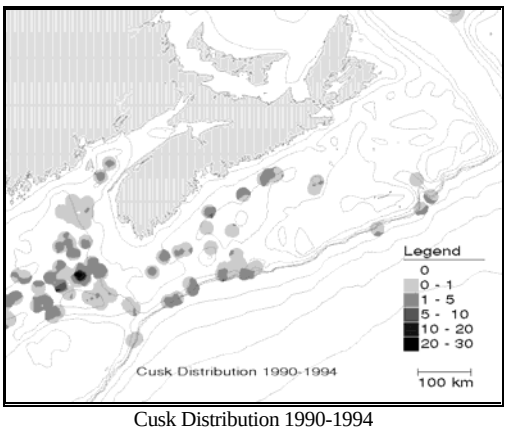
Commercial sampling data shows that the most abundant size fish caught in the 1970s to the early 1980s were 64 to 67 cm long, similar to the research surveys. In 1985, the three longline samples showed a marked decrease in size, down to a peak of 52 cm, with several other smaller peaks. Since 1985 this peak has varied greatly, and indicates more fish at smaller sizes.

Resource Status

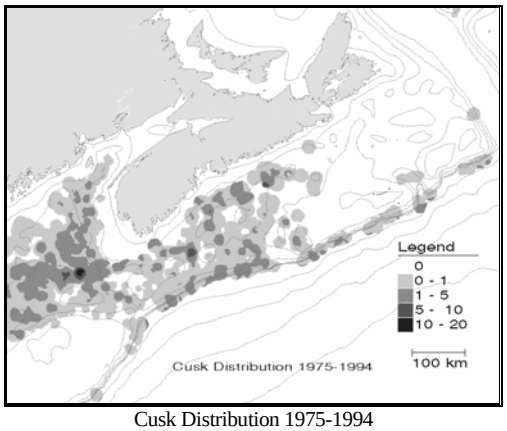
A comparison of the long-term (1970-1989) geographic distribution from **summer surveys** to that of the more recent distribution (1990-1994) indicates a significant decline in both the prevalence and abundance of cusk in recent years. The range of this species appears to have contracted with no cusk now caught along the seaward edges of Western/Emerald/Sable Island and Banquereau banks. Research survey information shows a decrease in numbers of fish per tow from 1987 to 1995.

Summer surveys also show that cusk at lengths greater than 52 cm have become less abundant than they were over the long-term average (1970-1994).

Cusk **biomass** in both 4W and 4X (the centre of the historic distribution) has shown a gradual decline since the inception of groundfish monitoring surveys in 1970. Trawlable biomass in 4X has declined from a high of over 8,000t to well under 1,000t presently. The most significant decline has occurred since 1987. Estimates of trawlable biomass in 4V and 4W are presently negligible.



Cusk Distribution 1990-1994



Cusk Distribution 1975-1994

Outlook

This resource has shown a long-term decline in biomass, with present estimates at their lowest observed values. Given the estimate of low and declining biomass, catches should be restricted to below 2,000t.

For More Information

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