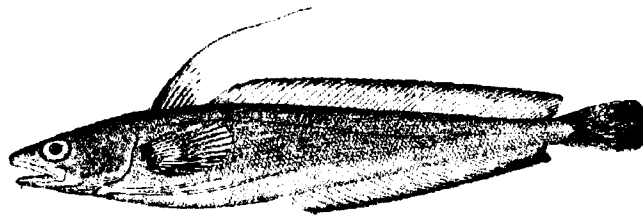


Red Hake



by K. Sosebee

The red hake, *Urophycis chuss*, is distributed from the Gulf of St. Lawrence to North Carolina, but is most abundant between Georges Bank and New Jersey. Red hake undergo extensive seasonal migrations, moving into shallower waters to spawn in spring and summer and offshore to winter in deep waters of the Gulf of Maine and along the outer continental shelf and slope south and southwest of Georges Bank. Spawning occurs from May through November, with primary spawning areas located on the southwest part of Georges Bank and off southern New England. Red hake feed primarily on crustaceans, but adult red hake also feed extensively on fish. The maximum length attained by red hake is approximately 50 cm (19.7 in.). Maximum age is reported to be about 12 years, but few fish survive beyond 8 years of age. Two stocks have been tentatively identified, a Gulf of Maine-Northern Georges Bank stock and a Southern Georges Bank-Middle Atlantic stock.

Otter trawls are the principal commercial fishing gear used to catch red hake. Recreational catches are of minor importance. Following the arrival of distant-water fleets in the early 1960s, total landings from both stocks peaked at 113,600 mt in 1966. Annual landings declined sharply after 1966, increased again to 76,400 mt in 1972, and then declined steadily with increased restrictions on distant-water fleets.

Prior to implementation of the Magnuson Fisheries Conservation and Management Act (MFCMA) in 1977, approximately 93 and 83 percent of the total landings from the northern and southern stock, respectively, were taken by distant-water fleets. Between

Total Landings, All Areas Red Hake

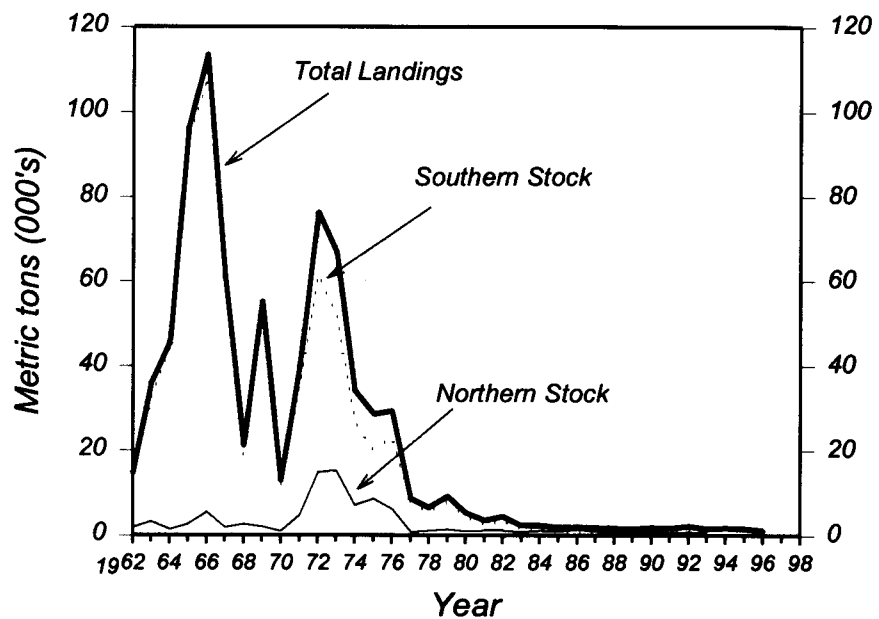
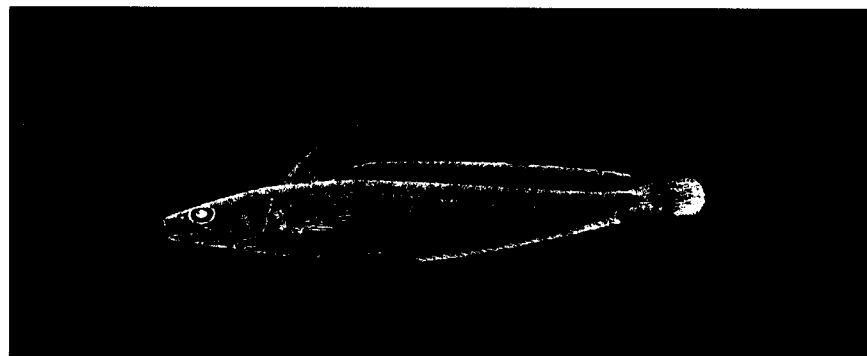


Table 5.1 Recreational catches and commercial landings (thousand metric tons)

Category	Year										
	1977-86 Average	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
U.S. recreational	0.2	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.1	<0.1
Commercial											
United States	3.7	1.9	1.7	1.7	1.6	1.7	2.2	1.7	1.7	1.6	1.1
Canada	-	-	-	-	-	-	-	-	-	-	-
Other	0.9	-	-	-	-	-	-	-	-	-	-
Total nominal catch	4.8	1.9	1.7	1.7	1.6	1.9	2.4	1.7	1.7	1.6	1.1





Gulf of Maine- Northern Georges Bank Red Hake

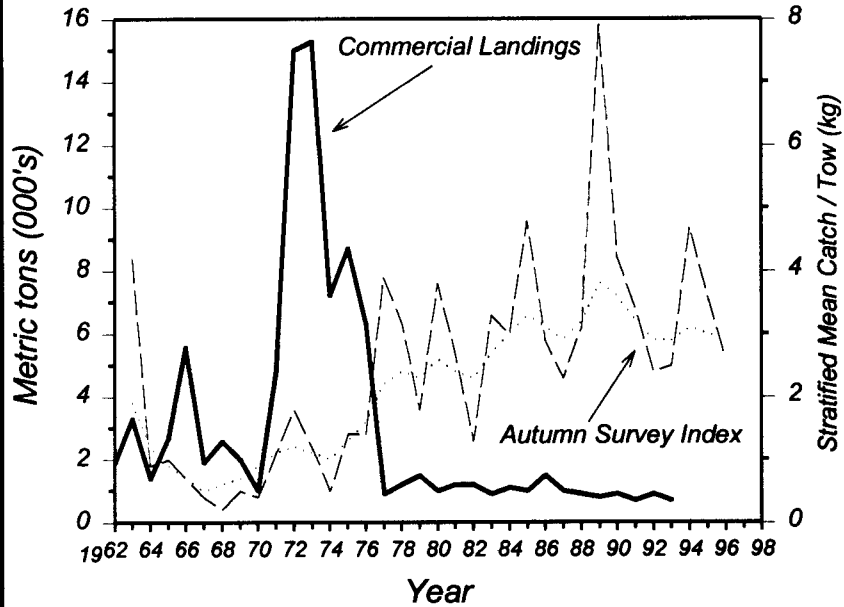
1977 and 1986, landings declined more or less continually due to restrictions placed on foreign fishing; and for more recent years landings have been exclusively domestic. Red hake are included in the New England Fishery Management Council's Multispecies Fishery Management Plan under the "nonregulated multispecies" category. Total commercial landings during the last decade (1987-1996) averaged 1,700 mt annually. In 1996, landings were 35% lower than the 1987-1996 average and remain far below historic levels.

Gulf of Maine - Northern Georges Bank

The NEFSC autumn bottom trawl survey biomass index increased steadily from the early 1970s to a peak in 1989, the highest value in the time

"This stock is underexploited and could support substantially higher catches."

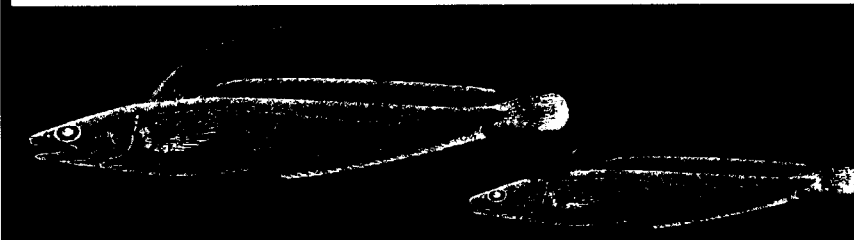
series. This index has declined somewhat during the past five years, although values remain high. This decline does not appear to be fishery-related given the low level of landings. Survey data indicate that most year classes of red hake since 1985 have been moderate, but with low landings these year classes have been sufficient to maintain stock biomass at moderate to high levels. This stock is under-exploited and could support substantially higher catches.



Summary Status

Long-term potential catch	=	Unknown
Importance of recreational fishery	=	Insignificant
Management	=	Multispecies FMP
Status of exploitation	=	Underexploited
Age at 50% maturity	=	1.4 years, males 1.8 years, females
Size at 50% maturity	=	22 cm (8.7 in.), males 27 cm (10.6 in.), females
Assessment level	=	Yield per recruit
Overfishing definition	=	3-year moving average of NEFSC autumn bottom trawl survey index falls within lowest quartile of the time series
Fishing mortality rate corresponding to overfishing definition	=	N/A

$M = 0.4$ $F_{0.1} = 0.5$ $F_{max} = \text{None}$ $F_{1996} < F_{0.1}$



“...this stock is considered to be overexploited according to the existing overfishing definition.”

Southern Georges Bank-Middle Atlantic

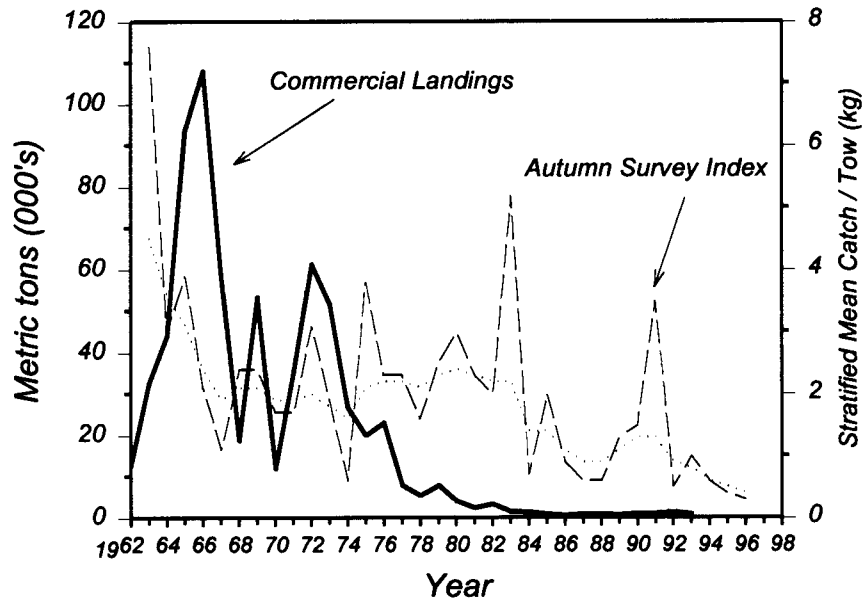
The NEFSC autumn survey biomass index declined from 1963-1967 and was subsequently relatively constant between 1968 and 1982. The index then declined to a record low in 1987. From 1988 to 1991, the survey index increased, but has since dropped sharply to historically low levels. The declining trend in survey values from 1983 onward does not appear to be fishery related; landings during the past decade have been very low (less than 2,000 mt per year) compared with the late 1960s and early 1970s (more than 20,000 mt in most years) when the survey index was stable. However, this stock is considered to be overexploited according to the existing overfishing definition.

For further information

NEFC [Northeast Fisheries Center]. 1986. Report of the Second Stock Assessment Workshop. Woods Hole, MA: NOAA/NMFS/NEFC. *Lab. Ref. Doc.* 86-09.

NEFSC [Northeast Fisheries Science Center]. 1990. Report of the Eleventh Stock Assessment Workshop (11th SAW), Fall 1990. Woods Hole, MA: NOAA/NMFS/NEFSC. *NEFC Ref. Doc.* 90-09.

Southern Georges Bank - Middle Atlantic Red Hake



Summary Status

Long-term potential catch	=	Unknown
Importance of recreational fishery	=	Minor
Management	=	Multispecies FMP
Status of exploitation	=	Overexploited
Age at 50% maturity	=	1.8 years, males 1.7 years, females
Size at 50% maturity	=	24 cm (9.5 in.), males 25 cm (9.8 in.), females
Assessment level	=	Yield per recruit
Overfishing definition	=	3-year moving average of NEFSC autumn bottom trawl survey index falls within lowest quartile of the time series
Fishing mortality rate corresponding to overfishing definition	=	N/A
M = 0.4 F_{0.1} = 0.5 F_{max} = None F₁₉₉₆ = Unknown		