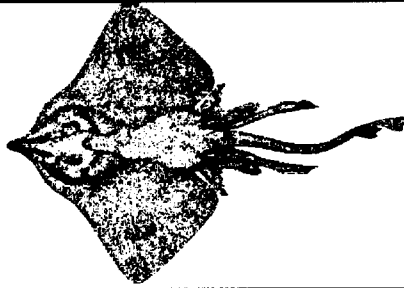


Skates



by K. Sosebee

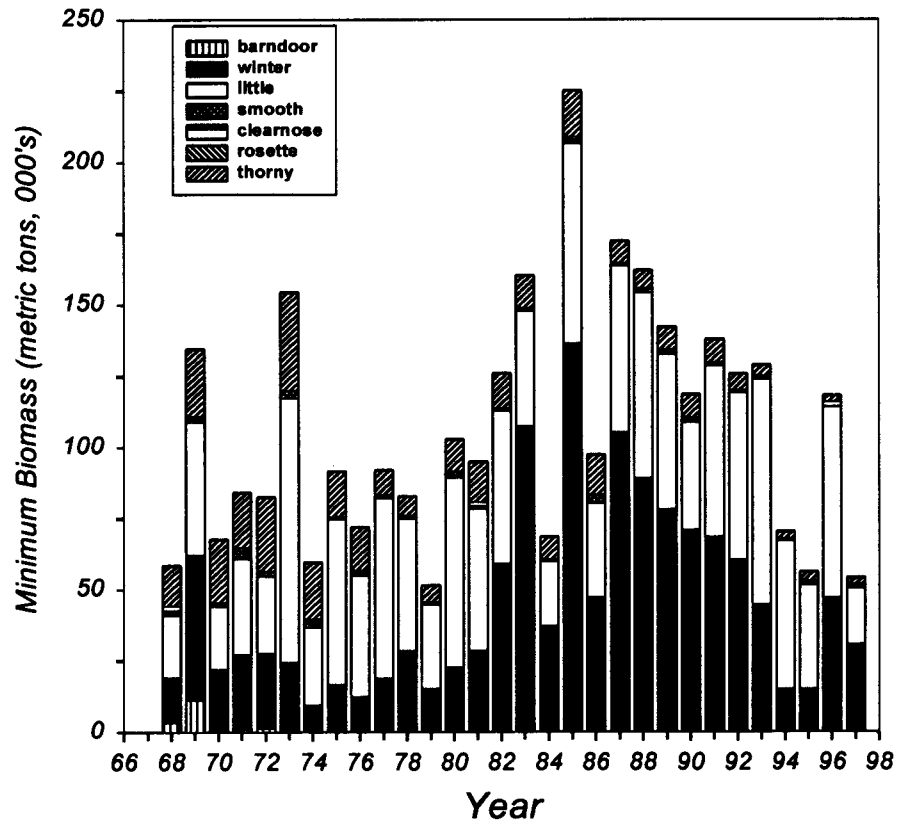
Skates, Family Rajidae, are distributed throughout the Northwest Atlantic from near the tide line to depths exceeding 700 m (383 fathoms). Members of this family lay eggs that are enclosed in a hard, leathery case commonly called a mermaid's purse. Incubation time is 6 to 12 months, with the young having the adult form at the time of hatching. There are seven species of *Raja* occurring along the North Atlantic coast of the United States: little skate (*Raja erinacea*), winter skate (*R. ocellata*), barndoor skate (*R. laevis*), thorny skate (*R. radiata*), clearnose skate (*R. eglanteria*), rosette skate (*R. garmani*) and smooth skate (*R. senta*).

The center of distribution for the little and winter skates is Georges Bank and Southern New England. The thorny, barndoor, and smooth skates are commonly found in the Gulf of Maine. The clearnose and rosette skates are southern species, located primarily in the Chesapeake Bight and Southern New England. Skates are not known to undertake large-scale migrations, but they do move seasonally in response to changes in water temperature, generally offshore in summer and early autumn and *vice-versa* during winter and spring.

The principal commercial fishing method used to catch skates is otter trawling. Skates are frequently taken as bycatch during ground fishing operations and discarded. Recreational and foreign landings are insignificant. There are currently no regulations governing the harvesting of skates in U.S. waters.

Skates have been reported in New England fishery landings since the late 1800s. However, landings (primarily from off Rhode Island) never exceeded

Skates Spring Survey Species Composition



several hundred metric tons until the advent of distant-water fleets during the 1960s. Skate landings peaked in 1969 at 9,500 mt, but declined quickly during the 1970s and bottomed out at 500 mt in 1981. Landings have since increased substantially, partially in response to increased demand for lobster bait, and, more significantly, to the increased export market for skate wings. Wings are taken from winter and thorny skates, the two species currently known to be used for human consumption. Bait landings appear to be primarily from little skate, based on areas fished and known species distri-

bution patterns. Landings increased to 12,900 mt in 1993 and then declined somewhat to 7,200 mt in 1995; however, the 1996 total was 14,200, the highest on record.

Minimum biomass estimates have been developed from NEFSC spring bottom trawl survey data by area-swept calculations, smoothed to better reflect resource trends. From 1968 to 1980, estimates were relatively constant, at around 80,000 mt, and then increased significantly to peak levels in the mid-to late 1980s. Since 1988, estimates have steadily declined to former levels.

“Skates have a limited reproductive capacity, and stock size could be quickly reduced through intensive exploitation.”



Recent increases in skate landings and the potential for rapidly expanding export markets bring into question the level at which sustainable fisheries for these species can be maintained. Skates have a limited reproductive capacity, and stock size could be quickly reduced through intensive exploitation. In areas of the world where skates are more fully utilized, their numbers have been reduced to extremely low levels (e.g., Irish Sea). Abundance of winter skate and thorny skate has declined in recent years.

For further information

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Gulf of Maine - Middle Atlantic Skates

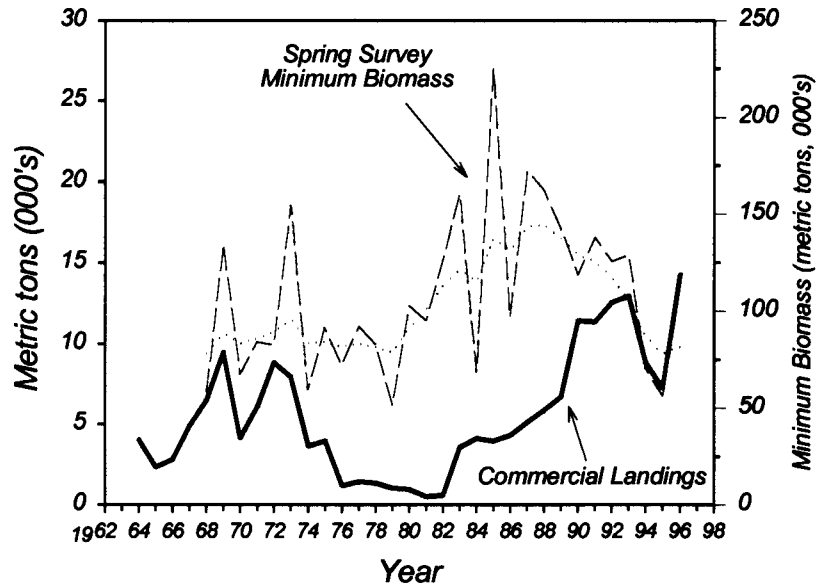


Table 26.1 Recreational catches and commercial landings (thousand metric tons)

Category	Year										
	1977-86 Average	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
U.S. recreational	-	-	-	-	-	-	-	-	-	-	-
Commercial											
United States	1.6	5.1	5.9	6.7	11.4	11.3	12.5	12.9	8.8	7.2	14.2
Canada	<0.1	-	<0.1	<0.1	-	-	-	-	-	-	-
Other	0.6	0.1	-	-	-	-	-	-	-	-	-
Total nominal catch	2.2	5.1	5.9	6.7	11.4	11.3	12.5	12.9	8.8	7.2	14.2

Summary Status

Long-term potential catch	=	Unknown
SSB for long-term potential catch	=	Unknown
Importance of recreational catch	=	Insignificant
Management	=	None
Status of exploitation	=	Fully exploited
Age at 50% maturity	=	4 years ¹
Size at 50% maturity	=	40 cm (15.8 in.) ¹
Assessment level	=	Index
Overfishing definition	=	None
Fishing mortality rate corresponding to overfishing definition	=	Unknown

$M = 0.4^1$ $F_{0.1} = 0.49^1$ $F_{max} = 1.0^1$ $F_{1996} = \text{Unknown}$

¹Pertains to little skate