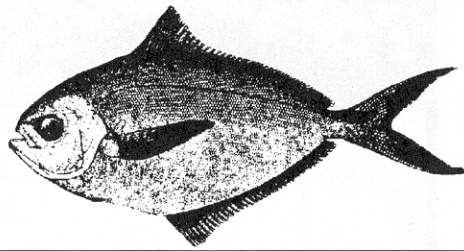


Butterfish



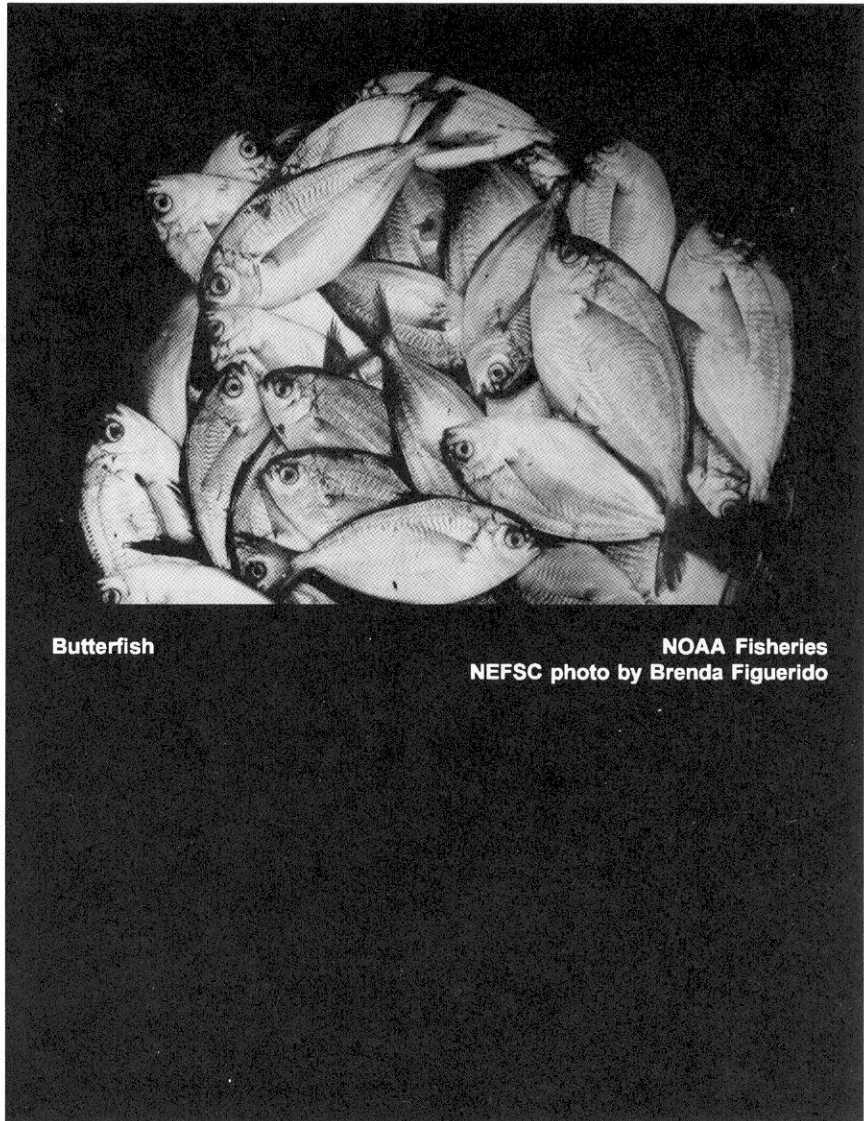
by W. Overholtz



The butterfish (*Peprilus triacanthus*) is a small bony foodfish weighing up to 0.5 kg with a thin oval body and delicious oily flesh. Butterfish are short-lived and grow rapidly. Few live to more than 3 years of age, and most are sexually mature at age 1. Butterfish range from Florida to Newfoundland, but are primarily found from Cape Hatteras to the Gulf of Maine where the population is considered to be a unit stock.

The butterfish stock migrates in response to seasonal changes in water temperature. During summer, butterfish move northward and inshore to feed and spawn. Spawning occurs during June to August and peaks progressively later at higher latitudes. During winter, the stock moves southward and offshore to avoid cool waters. Butterfish are primarily pelagic and form loose schools that feed upon small fish, squid, and crustaceans. Butterfish have a high natural mortality rate and are preyed upon by many species including silver hake, bluefish, swordfish, and long-finned squid. During summer, juvenile butterfish associate with jellyfish to avoid predators.

Butterfish have been landed by domestic fishermen since the 1800s. From 1920 to 1962, the annual domestic harvest averaged 3,500 mt. In the 1960s distant water fleets began to exploit butterfish; and from 1965 to 1976, butterfish landings increased to an average of 10,000 mt per year with a peak of 19,500 mt in 1973. During 1977 to 1986 when foreign fishing was being phased out, butterfish landings averaged 6,300 mt. From 1987 to 1995, annual landings averaged 3,000 mt; the 1996 total was 3,600 mt. Otter trawls are the primary fishing gear



Butterfish

NOAA Fisheries
NEFSC photo by Brenda Figuerido

used to capture butterfish and accounted for 95% of the 1996 landings.

The butterfish stock is managed under provisions of the Mid-Atlantic Fishery Management Council's Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. Management is based on annual quota specifi-

cations. For 1997, domestic annual harvest (DAH) was set at 5,900 mt within an allowable biological catch (ABC) of 7,200 mt.

Data from the NEFSC autumn bottom trawl survey indicate that butterfish stock biomass was above its long-term average in 1994. The biom-

“Data collected at sea by fishery observers suggest that much of the fishing-induced mortality of butterfish is attributable to discarding at sea, and discarding may be a factor in the recent low levels of yield.”

ass index (total weight for all ages) declined to about 25% of this level in 1996.

Butterfish landings have averaged less than 30% of the DAH since 1987, and recent yields from this stock are well below historical yields. Data collected at sea by fishery observers suggest that much of the fishing-induced mortality of butterfish is attributable to discarding at sea, and discarding may be a factor in the recent low levels of yield. Demand for Atlantic butterfish exports in the important Japanese market has also decreased in recent years. This has probably had a negative impact on the fishery.

Overall, it appears that the butterfish stock is underexploited and at a medium abundance level.

For further information

Murawski, S. and G. Waring. 1979. A population assessment of butterfish, *Peprilus triacanthus*, in the Northwest Atlantic Ocean. *Trans. Am. Fish. Soc.* 108:427-439.

NEFSC [Northeast Fisheries Science Center]. 1994. Report of the 17th Northeast Regional Stock Assessment Workshop (17th SAW), Stock Assessment Review Committee (SARC) consensus summary of assessments. Woods Hole, MA: NOAA/NMFS/NEFSC. *NEFSC Ref. Doc.* 94-06.

Gulf of Maine - Middle Atlantic Butterfish

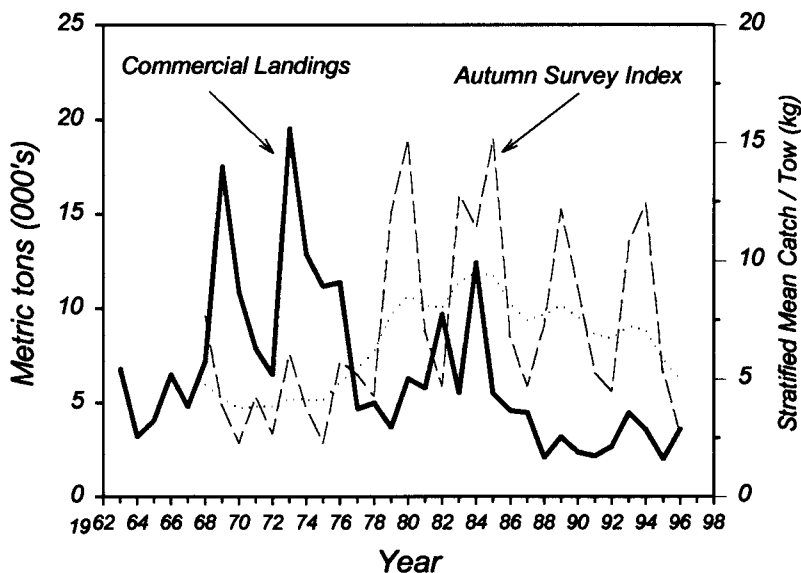


Table 23.1 Recreational and commercial catches (thousand metric tons)

Category	Year										
	1977-86 Average	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
U.S. recreational	-	-	-	-	-	-	-	-	-	-	-
Commercial											
United States	5.3	4.5	2.1	3.2	2.4	2.2	2.8	4.5	3.6	2.0	3.6
Canada	-	-	-	-	-	-	-	-	-	-	-
Other	1.0	0.0	0.0	<0.1	<0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total nominal catch	6.3	4.5	2.1	3.2	2.4	2.2	2.8	4.5	3.6	2.0	3.6

Summary Status

- Long-term potential catch = 16,000 mt
- SSB for long-term potential catch = Unknown
- Importance of recreational fishery = Insignificant
- Management = Mackerel, Squid, and Butterfish FMP
- Status of exploitation = Underexploited
- Age at 50% maturity = 0.9 years (both sexes)
- Size at 50% maturity = 11.4 cm (4.5 in.), males
12.0 cm (4.7 in.), females
- Assessment level = Yield per recruit
- Overfishing definition = 3-year moving average of autumn prerecruit index falls within lowest quartile of the time series

M = 0.80 F_{0.1} = 1.60 F_{max} > 2.50 F₁₉₉₆ = Unknown