

3.8 Mid Atlantic Yellowtail Flounder

Catch and Survey Indices

A fishery for yellowtail flounder in the Mid-Atlantic Bight developed in the 1940s, and expanded in the 1960s. Landings ranged from 3,000 to 9,000 mt between 1967 and 1973, but subsequently declined to less than 1,000 mt after 1975 and have not exceeded 500 mt since 1985 (Figure 3.8.1). The fishery for yellowtail in the Mid-Atlantic area occurs in proximity to the western boundary of the Southern New England yellowtail stock.

Survey catches indicate relatively high biomass in the 1960s and early 1970s, followed by a sharp decrease in the mid 1970s (Figure 3.8.1). Survey indices have been less than 10% of historical levels since the late 1980s.

Stock Assessment

The Mid-Atlantic yellowtail flounder stock has never been assessed through the SAW/SARC process. The state of this stock was most recently evaluated in 2000 via index assessment (NEFSC 2001a). At that time, it was noted that the average fall biomass index for the last three years (1997-1999 average=0.26 kg/tow) was about 2% of the current B_{MSY} proxy (1963-1972 median=11.69 kg/tow) and well below the biomass threshold ($B_{MSY}/2=5.85$ kg/tow).

Survey observations from 1963-1966 are not directly comparable to subsequent observations, because strata south of New Jersey were not sampled prior to 1967. However, the median survey biomass index for 1967-1972 (12.91 kg/tow) is similar to the median for 1963-1972. Therefore, a revised B_{MSY} proxy of 12.91 kg/tow indicates essentially the same stock status as the current proxy.

The recent average exploitation index (landings/fall survey biomass index = 2.01) was 618% of the F_{MSY} proxy (0.28), derived as the MSY proxy (1964-1969 average annual landings, 3300 mt) divided by the current B_{MSY} proxy.

Relative Exploitation Rate Analyses

The replacement ratio analysis for Mid-Atlantic Bight yellowtail suggests that the stock can replace itself at an exploitation index of 0.33 (with a CV of 48% and marginally significant correlation of replacement ratio and exploitation index, $P=0.108$; Figure 3.8.2; Table 4.1.1). Using the revised biomass proxy, which is based on consistent survey data (median biomass index for 1967-1972 = 12.91 kg/tow), the MSY proxy is 4,300 mt ($F_{MSY} \cdot B_{MSY} = 0.33 \cdot 12.91$; Table 4.2).

Mid-Atlantic Yellowtail Flounder

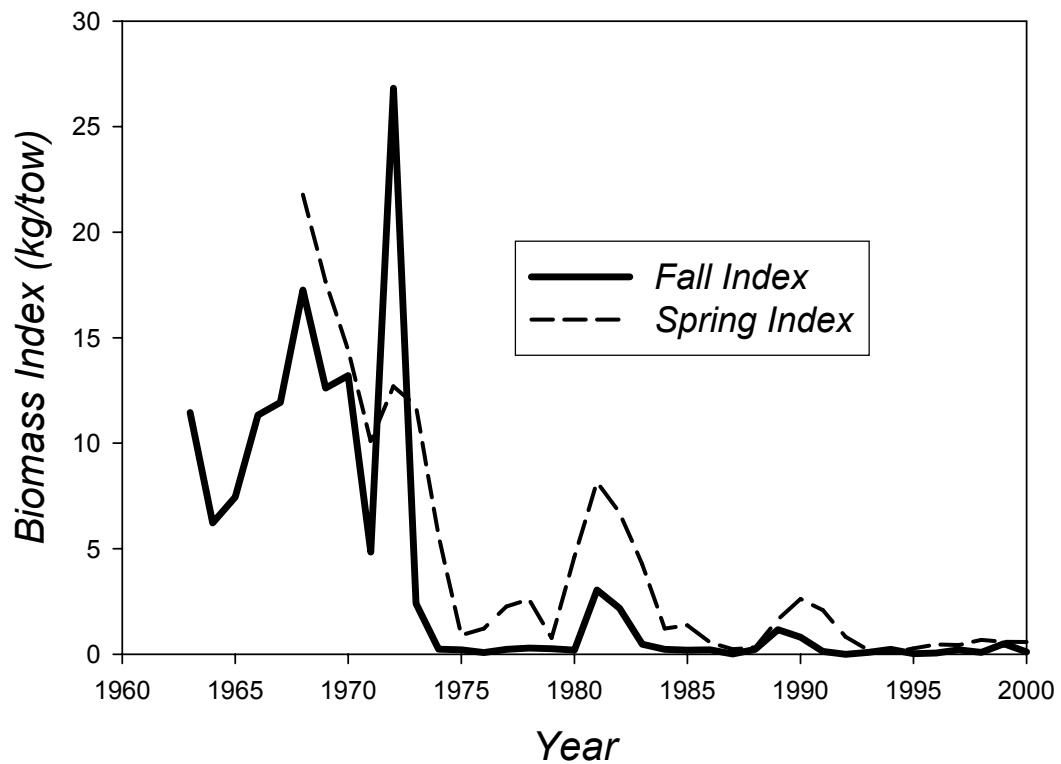
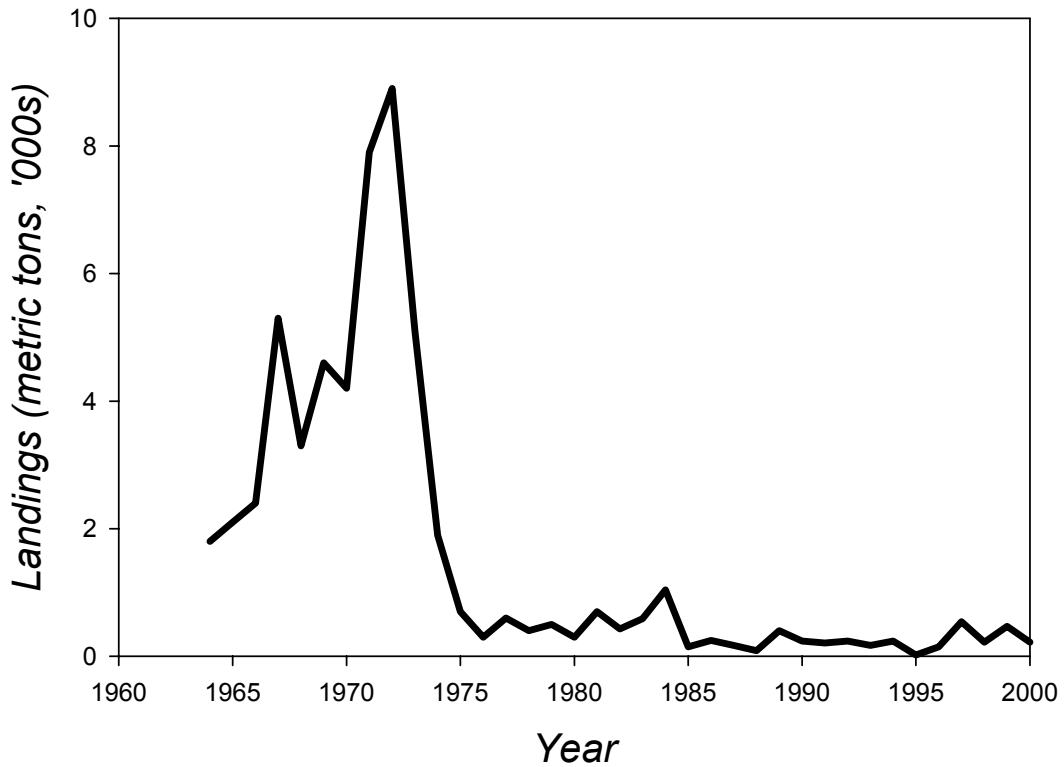


Figure 3.8.1. Landings and research vessel survey abundance indices for Mid-Atlantic yellowtail flounder.

Mid Atl Yellowtail, Fall

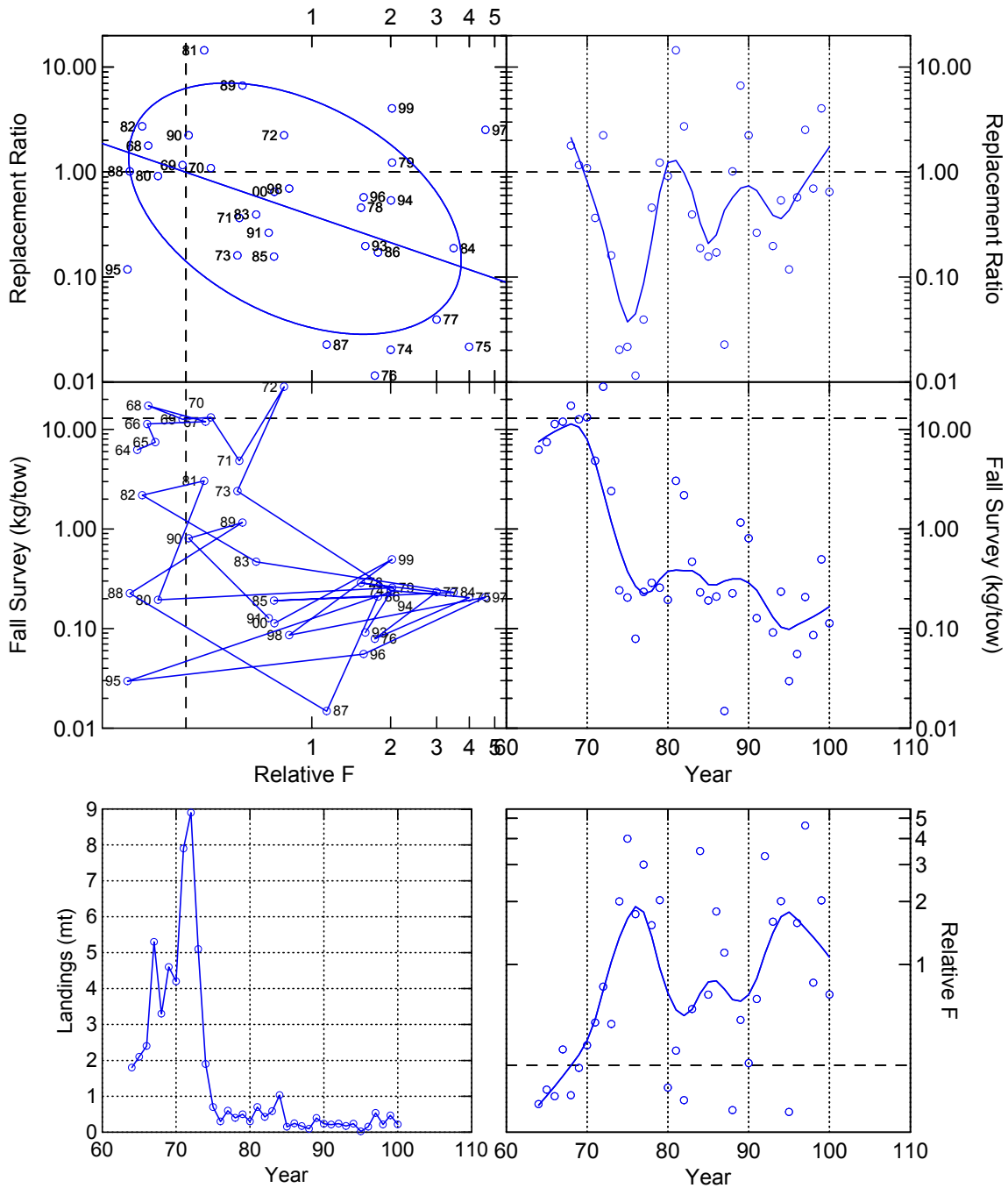


Figure 3.8.2. Trends in relative biomass, landings, fishing rate mortality rate indices (landings/survey index) and replacement ratios for Mid-Atlantic yellowtail - fall. Dashed lines indicate proposed biomass and fishing mortality rate proxies of Bmsy and Fmsy.