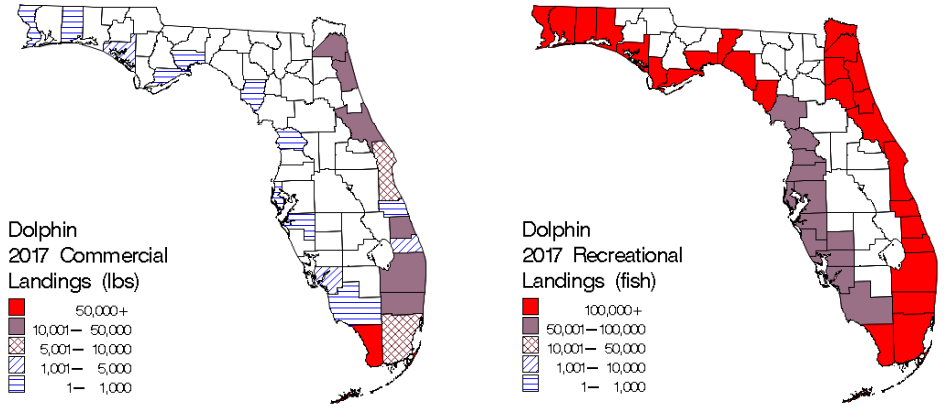
Dolphinfish, *Coryphaena hippurus* (Linnaeus, 1758)

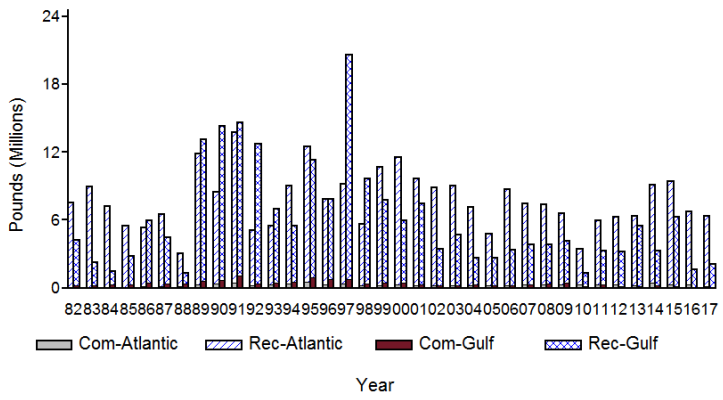
Life History

Dolphinfish are pelagic fishes found worldwide in tropical and subtropical seas (Palko *et al*. 1982). Oxenford and Hunte (1986) showed that differences in the seasonality of catch data, mean size landed, growth, and maturity supported their hypothesis that two stocks of Dolphinfish occurred in the northwest Atlantic. Dolphinfish in the northern stock inhabit waters around the Greater Antilles, the Bahamas, and Puerto Rico during the winter, arrive in Florida around May or June, arrive in North Carolina and Bermuda during the summer, then migrate south for the fall and winter. The stock structure of Dolphinfish may be more complex than this if the observed seasonality of catches are actually due to a more generalized north-south movement or an onshore-offshore movement (Mahon and Mahon 1987). Dolphinfishes grow rapidly throughout their four-year life span (Beardsley 1967; Rose and Hassler 1968). Length at age is similar between males and females (Rose and Hassler 1968) with males reportedly heavier than females when larger than 18 inches FL (Beardsley 1967). Spawning in the Florida Current peaks in March and extends from November through July. Females begin to mature at 14 inches FL and all are mature by 22 inches; males matured at a slightly larger size. Stomach content analyses indicated that Dolphinfish are generalists that feed mostly during the day (Gibbs and Collette 1959; Oxenford and Hunte 1999). Prey, varied with season and the size of Dolphinfish, includes small oceanic pelagics (flyingfish, halfbeaks, man-o-war fish, sargassum, and rough triggerfish), juveniles of large oceanic pelagics (tunas, billfishes, jacks, snake mackerels, frigate mackerels, and Dolphinfish), pelagic larvae of neritic, benthic species (flying gunards, triggerfish, pufferfish, and grunts), and invertebrates (cephalopods, crabs, mysids, and scyphozoans). (Palko *et al.* 1982; Mathews *et al*. 1977; Tinker 1978; Stevens and Wiley 1986; Abitia-Cardenas *et al.* 1997).

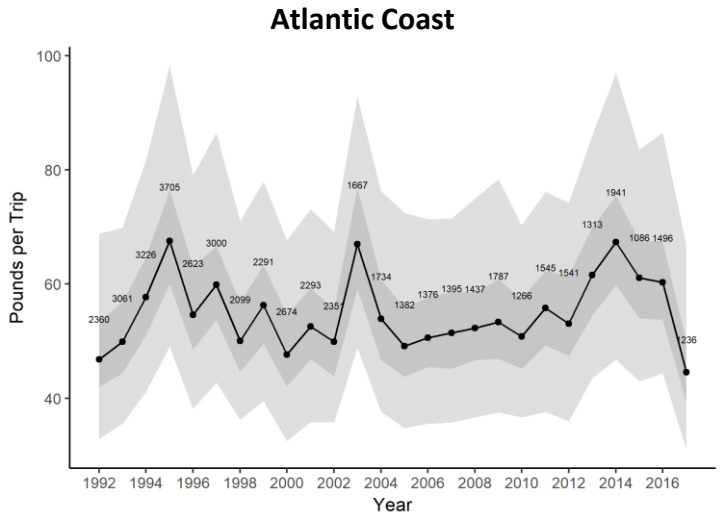
2017 Dolphinfish Landings by Sector

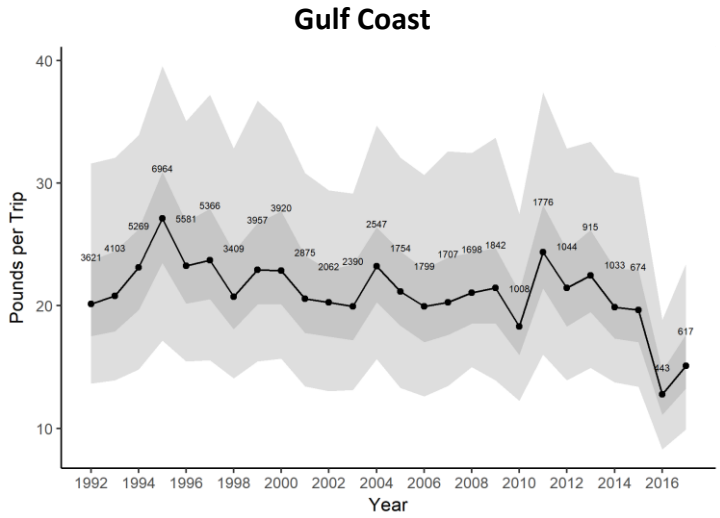


Total Annual Landings (lbs.) by Coast (1982-2017)

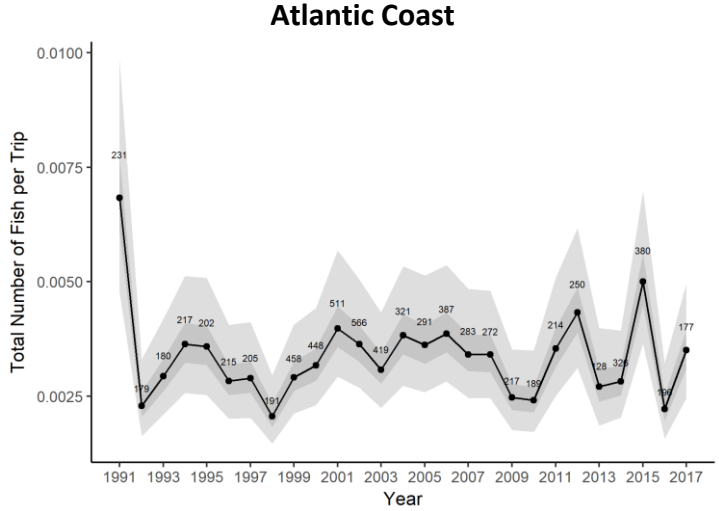


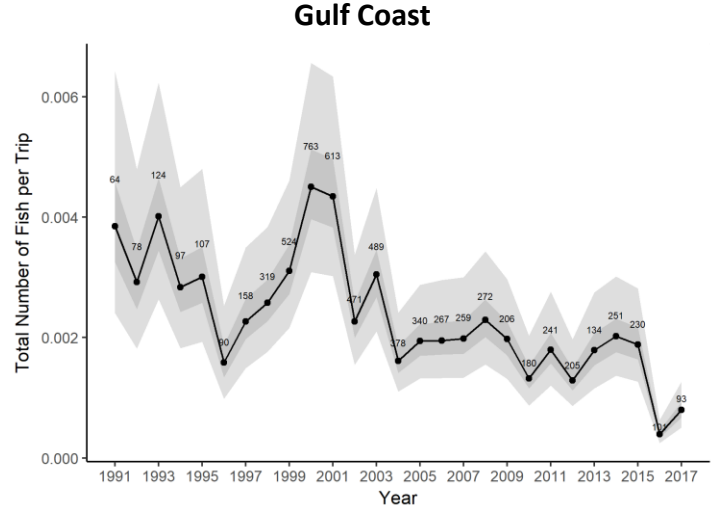
Fishers landed 8,407,377 pounds in 2017 which were 26.9% lower than the previous 5-year average (2012-2016). Coastwide, 75.5% of these were from the Atlantic and 24.5% were from the Gulf. Recreational landings constituted 97.4% of the total landings.





Standardized Commercial Catch Rates: Commercial catch rates on the Atlantic and Gulf coasts varied without trend with notable lows in recent or terminal years. Dark grey figure lines represent first and third quartiles while the light grey lines represent the 2.5% – 97.5% quantiles.





Standardized Recreational Total Catch Rates: Total catch rates for recreational anglers on the Atlantic coast have also varied without trend. On the Gulf, total catch rates have decreased overall with notable lows observed in recent years. Dark grey figure lines represent first and third quartiles while the light grey lines represent the 2.5% – 97.5% quantiles.

Stock Status

Current Condition: unknown

Management History: In Florida, the recreational minimum size limit is 20 inches fork length on the Atlantic coast and no size limit on the Gulf coast. Ten Dolphinfish per person may be harvested per day with a 60 per vessel per day limit (vessel limit does not apply to for-hire vessels). Commercial harvest of Dolphinfish on both coasts carry a 20 inch minimum size limit and an incidental bycatch limit of 10 per person.
Assessments conducted on Dolphinfish indicate that this species should be able to withstand a high level of exploitation. However, in all assessment attempts, it was clear that little data are available to actually measure the current level of exploitation. In the U.S. South Atlantic region, there appeared to be an increasing trend in landings by weight in the recreational and commercial fisheries during 1984–1996 (Thompson 1998). In the Gulf of Mexico, while commercial landings appeared to be stable over the time series, the recreational landings were increasing. Increased landings over the broad U.S. South Atlantic and Gulf of Mexico regions provide some evidence that exploitation of Dolphinfish was increasing during 1984–1996. Thompson (1998), however, also noted that the average weight of Dolphinfish landed in each fishery increased between 1988 and 1996, which would not be expected if the entire stock were under increasing exploitation. Given the life history characteristics of fast growth, high fecundity, and low age at maturity, Dolphinfish are considered quite resistant to overfishing (Gulf of Mexico and South Atlantic Fishery Management Councils 1985).
In 1998, the estimated biomass of the U.S. stock of Dolphinfish appeared to be higher than that needed to produce maximum sustainable yield (Prager 2000). However, these findings were highly uncertain because the accuracy of the assumed stock structure and index of abundance was not known. It is likely that the population of Dolphinfish caught in Florida waters extends into other state and federal waters and into the waters of several Caribbean nations; therefore, biological and fisheries data are needed from across the entire range of the stock before an assessment of the status of Dolphinfish can be accomplished.