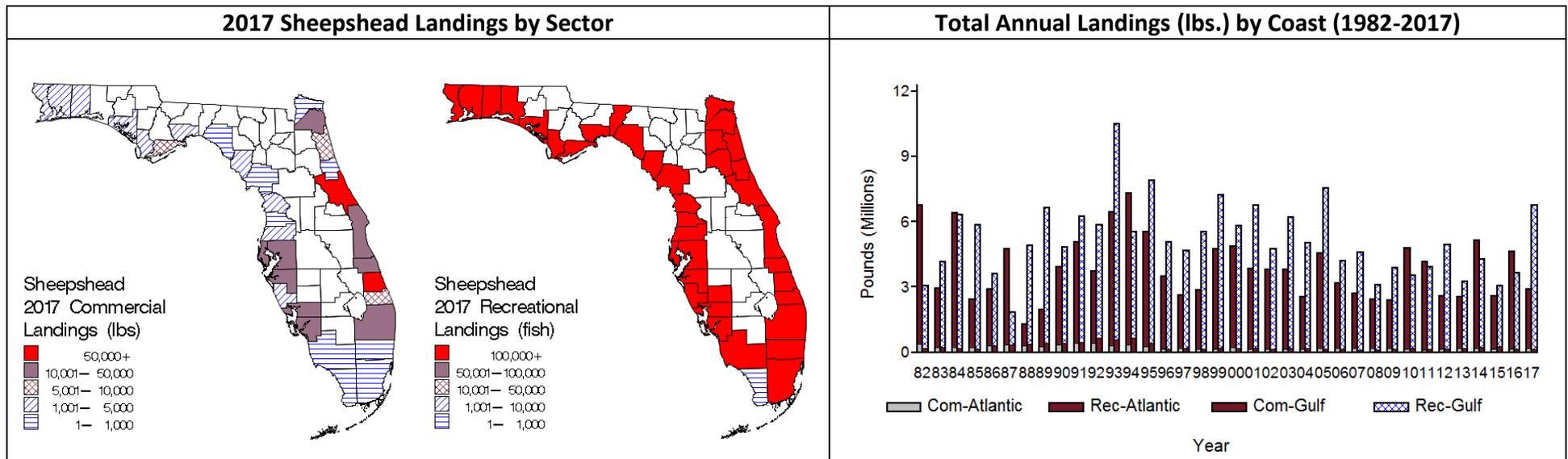


Sheepshead, *Archosargus probatocephalus* (Walbaum, 1792)



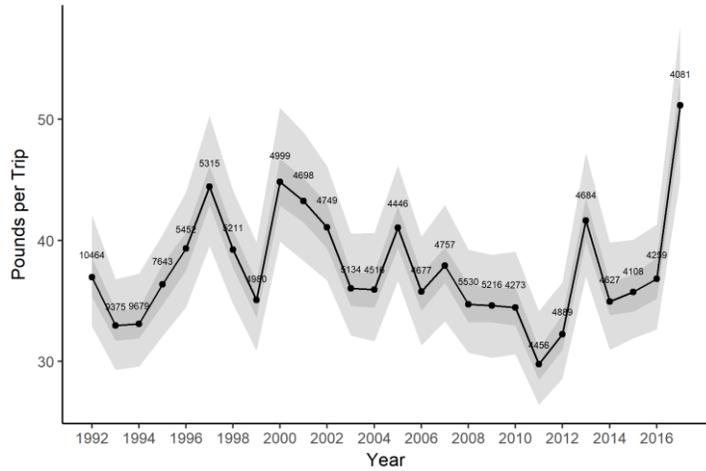
Life History

Sheepshead range from Nova Scotia south to Mexico's Campeche Bank. Genetic markers (Sheepshead-specific microsatellites) divided the Sheepshead populations into three clusters; the western Gulf, the eastern Gulf, and the Atlantic (Seyoum et al. 2017). The first genetic break occurred near the boundary between two purported subspecies distinguished by meristic characters (number and size of body bars), while the second break occurred in south Florida (between Miami and Palm Beach, FL), an area known to act as a geographic impediment to gene flow between populations in estuary dependent fishes (Seyoum et al. 2016, in press). Adult Sheepshead feed on algae and invertebrates (Ogburn 1984). Sheepshead apparently mature at age 2. The length of a Sheepshead is a poor predictor of its age when it attains fork lengths (FL) greater than about 8 inches. Average predicted size at age 1 in Florida is 8.1 inches FL (T. MacDonald, FWC-FWRI unpubl. data). Maximum life span for Sheepshead is at least 20 on the Gulf coast and 25 on the Atlantic coast (Adams et al. 2018). Sheepshead are estuarine-dwelling fish; they move offshore to spawn following the onset of cool weather and return to inshore waters in the spring after spawning. They are fractional spawners and estimates of spawning frequency range from daily to once every 20 days (Render and Wilson 1992). According to Benson (1982), juvenile Sheepshead eat zooplankton as well as polychaetes and larval chironomids; large juveniles and adults prey on blue crab, young oysters, clams, crustaceans, and small fish.

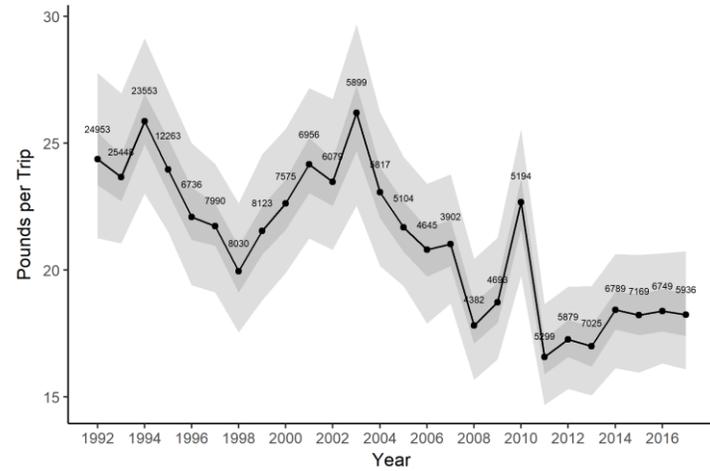


Fishers landed 9,619,893 pounds in 2017 which were 31.5% higher than the previous 5-year average (2012-2016). Coast wide, 70% of these were from the Gulf and 30% were from the Atlantic. Recreational landings constituted 96.6% of the total landings.

Atlantic Coast

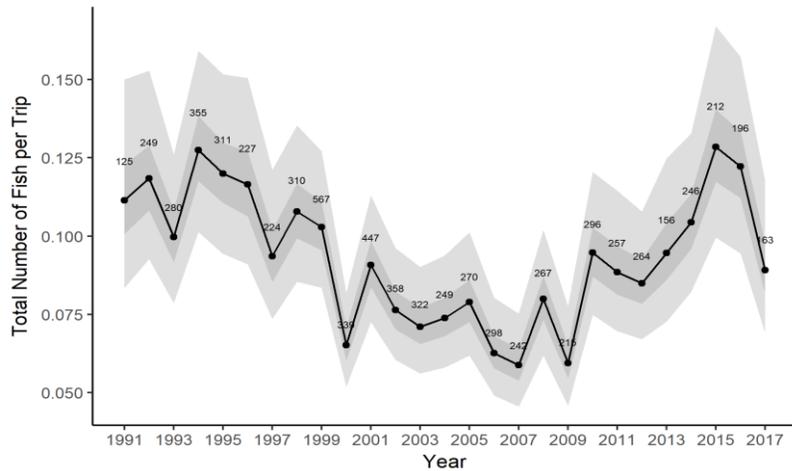


Gulf Coast

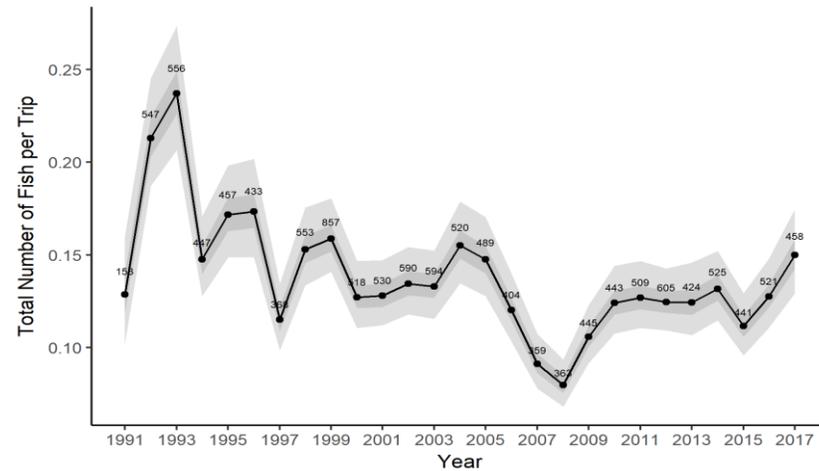


Standardized Commercial Catch Rates: Standardized commercial catch rates on the Atlantic coast have remained very stable and have mostly fluctuated between 30 and 40 pounds per trip throughout the time series but there was an increase in 2017. Commercial catch rates on the Gulf coast have decreased slightly though 2008 and then have stabilized. Dark grey ribbons represent first and third quartiles while the light grey ribbons represent the 2.5% – 97.5% quantiles.

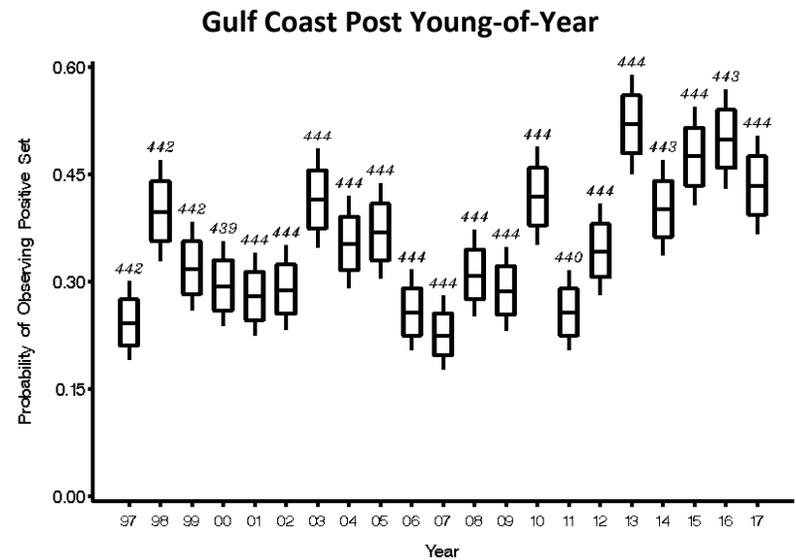
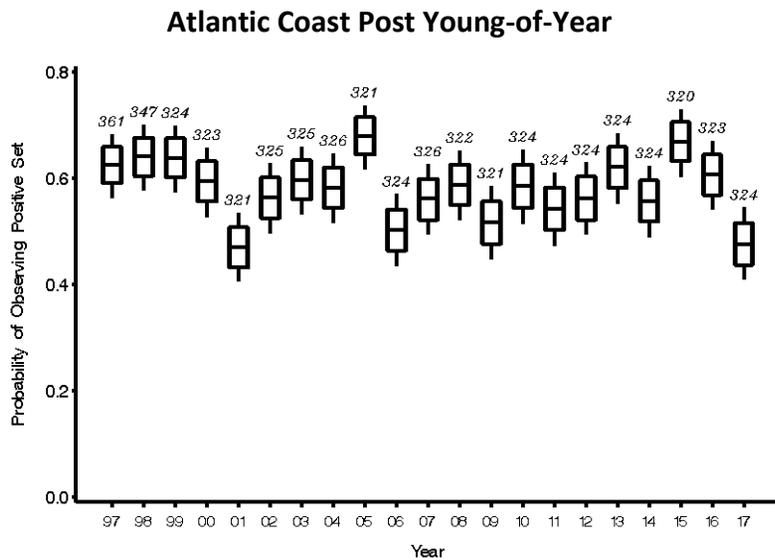
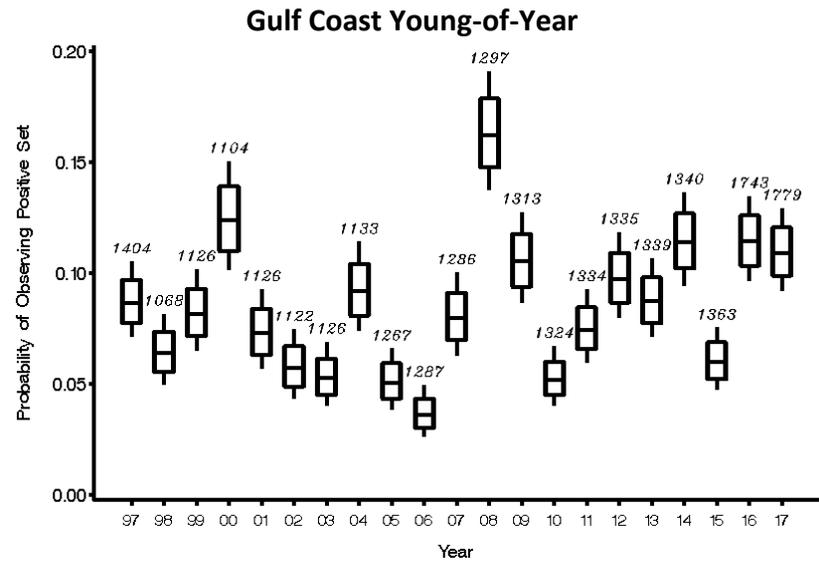
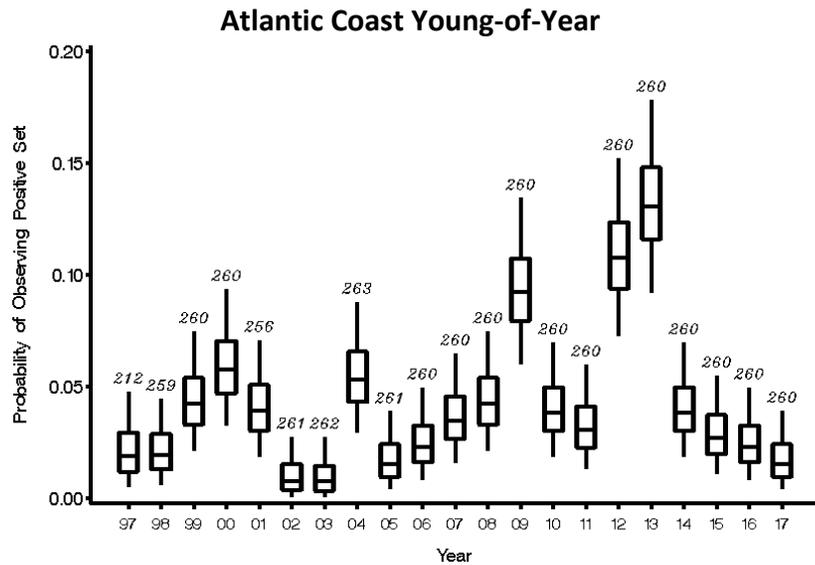
Atlantic Coast



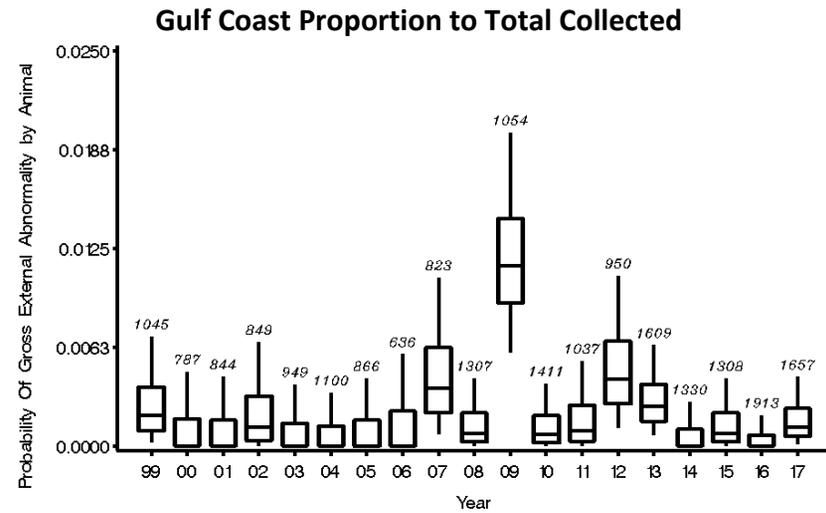
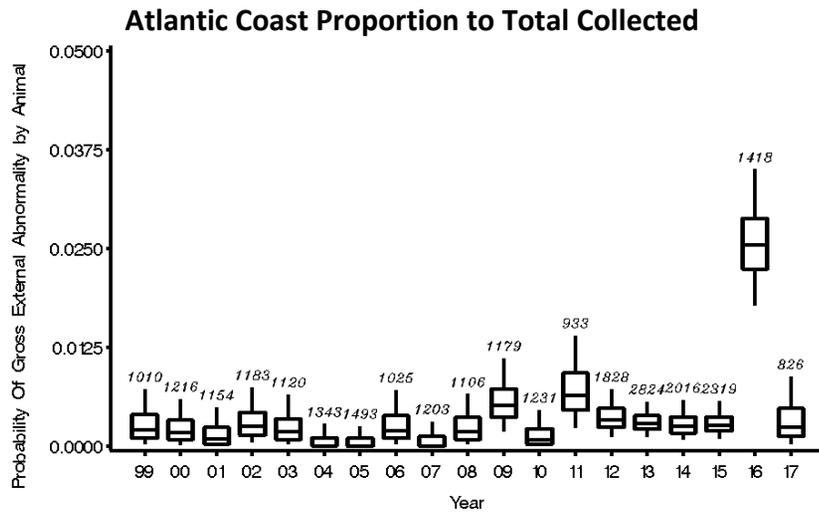
Gulf Coast



Standardized Recreational Total Catch Rates: Standardized catch rates by recreational anglers on the Atlantic coast declined quickly from 1995 to 2000 and have fluctuated since that time before increasing notably in 2015 but then dropping to more average conditions in 2017. Gulf coast recreational catch rates were stable from 1994-2005, steeply declined from 2006-2008, increased through 2010, and have remained stable and slightly increasing. Dark grey ribbons represent first and third quartiles while the light grey ribbons represent the 2.5% – 97.5% quantiles.



Fishery-Independent Monitoring: The index of abundance for young-of-the-year (YOY) Sheepshead on the Atlantic coast peaked in 2000, 2004, 2009, and 2012-2013 but has declined in the most recent years. On the gulf coast the YOY index of abundance varied without a major trend but a strong year class was detected in 2000 and 2008. The post-YOY abundance index for the Atlantic coast follows a cyclical pattern with lows in 2001, 2006, and 2009; a modest increase occurred in 2015. On the gulf coast the post-YOY index follows a pattern of high abundances in 1998, 2003, 2010, and 2013-2017.

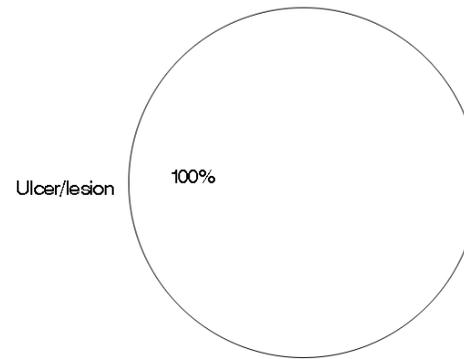


Atlantic Coast Percentage of Abnormality Types

No Data Available

Gulf Coast Percentage of Abnormality Types

Percentage of gross external abnormalities



Fish Health: The proportion of Sheepshead ≥ 75 mm with gross external abnormalities on the Atlantic coast remained low and variable with peaks occurring in 2009, 2011, and 2016. Proportions increased on the Gulf coast in 2007, most notably in 2009, and in 2012-2013. Ulcers and lesions were the most frequently observed affliction on the Gulf coast.

Stock Status

Current Condition: not currently overfished and is not undergoing overfishing

Management History: In 1996, Sheepshead was designated a restricted species in Florida. Effective January 1, 1996, a 12-inch fork length (FL) minimum-size limit for all harvesters and a 10-fish recreational bag limit were established. Commercial fishing was restricted to the use of hook-and-line, cast net, beach and haul-seine gears, with a 50-pound bycatch allowance for harvest by non-conforming gears. These regulations were amended in 1997, 1998, 2006, and 2013. In 1997, the recreational bag limit was increased to 15 fish per person and commercial spearfishing was allowed. In 2006, the 12-inch minimum-size limit was defined in terms of total length (TL) instead of fork length, effectively decreasing the minimum-size limit.

Assessments of Sheepshead indicate that overfishing may have occurred on the Atlantic coast in 1994 and on the gulf coast in 1988, 1989 and during 1992–1994 using a hypothetical spawning potential ratio (SPR) of 30% (Muller and Murphy 1994; Murphy et al. 1997; Murphy and MacDonald 2000; Munyandorero et al. 2006; Munyandorero et al. 2017). Fishing mortality has since declined in response to several management initiatives. Fishery management actions in the mid-1990s that led to a drop in total landings of Sheepshead and a change in the size of fish landed included restrictions to the use of entangling nets, restricted species designation for Sheepshead, the 12-inch TL minimum-size limit, a 10-fish bag limit (changed to 15 fish), and a 50-fish commercial possession limit. The associated decline in fishing mortality and shift in age-specific vulnerability to the fishery has been enough to allow for the increase in the spawning stock of Sheepshead in Florida. The most recent stock assessment also suggested that gulf coast Sheepshead may have been overfished during 1994–2001, but is not currently overfished (Munyandorero et al. 2017). In response to the drop in fishing mortality, the transitional spawning potential ratios on both coasts have risen steadily since 1996. The estimated transitional SPR has increased from under 40% in 1995 to nearly 60% in 2015 on the Atlantic coast and from 25% over the period 1994-1997 to almost 50% in 2015 on the gulf coast (Munyandorero et al. 2017). This increase in spawning stock is enough that recruitment failure for either the Atlantic coast or gulf coast stocks is highly unlikely.

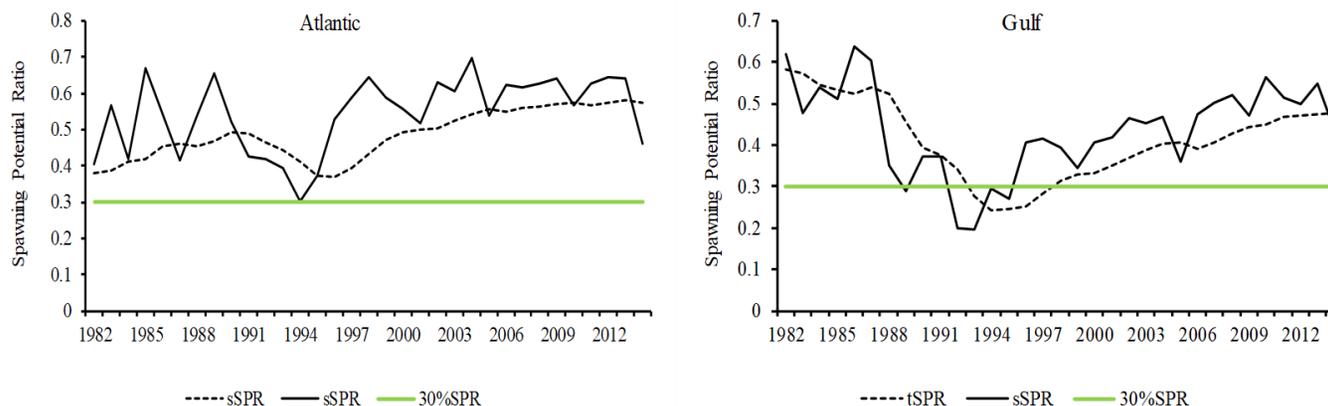


Figure 7.2 from Munyandorero et al. 2017 which depicts static and transitional spawning potential ratios (sSPR and tSPR) estimated using SS3 base model results for Sheepshead on the Atlantic coast and Gulf coast of Florida during 1982–2014. The level of the equilibrium 30%SPR is also indicated for comparison.