

South Atlantic Shrimp

The Council has established MSY and OFL for the three penaeid and rock shrimp species in the South Atlantic. According to the ACL Final Rule, the Council now needs to establish and ABC level and an ABC Control Rule for species in the shrimp fishery management unit.

Penaeid Shrimp

Shrimp Amendment 6 (SAFMC 2004) revised stock status determination criteria for brown, pink and white shrimp as follows:

Using the established MSY and OY values, revise or establish overfishing and overfished definitions for penaeid shrimp based on an MSY control rule. Overfishing (MFMT) for all penaeid species is a fishing mortality rate that diminishes the stock below the designated MSY stock abundance (B_{MSY}) for two consecutive years and MSST is established with two thresholds: (a) if the stock diminishes to $\frac{1}{2}$ MSY abundance ($\frac{1}{2} B_{MSY}$) in one year, or (b) if the stock is diminished below MSY abundance (B_{MSY}) for two consecutive years. In addition, white shrimp would be considered overfished when the overwintering white shrimp population within a state's waters declines by 80% or more following severe winter resulting in prolonged cold water temperatures. A proxy for B_{MSY} would be established for each species using CPUE information from SEAMAP-SA data as the lowest values in the 1990-2003 time period that produced catches meeting MSY the following year (Table 4.2-5).

Brown shrimp = 2.000 individuals per hectare

Pink shrimp = 0.461 individuals per hectare

White shrimp = 5.868 individuals per hectare.

Table 4.2-5. Annual densities (number per hectare) of brown shrimp, pink shrimp and white shrimp taken by SEAMAP along the Southeast Coast of the United States compared to commercial landings (pounds) of brown shrimp, pink shrimp and white shrimp from North Carolina, South Carolina, Georgia and East Florida (not including Monroe County). Data from 1979-2000 are General Canvas from the Accumulated Landings System (ALS) at the Southeast Fisheries Science Center in Miami, FL. Pink shrimp and brown shrimp landings from 1993-2001 were adjusted for unclassified shrimp landings in proportion the average proportions of brown shrimp (78.5%) and pink shrimp (21.5%) landed during 1979-1991. Ten percent (recreational catch) added to all white shrimp landings, except SC.

Year	Brown Shrimp MSY = 9.2 million lb		Pink Shrimp MSY = 1.8 million lb.		White Shrimp MSY = 14.5 million lb.	
	#/ha	Landings	#/ha	Landings	#/ha	Landings
1990	4.022	8,782,156	0.568	1,648,182	9.028	12,113,579
1991	2.469	10,763,798	0.873	2,691,072	12.880	19,797,678
1992	2.000	5,002,502	0.511	2,157,005	5.868	16,404,798
1993	5.899	9,313,990	0.673	1,639,172	5.665	15,370,876
1994	5.568	8,987,076	0.594	1,874,057	10.606	13,320,088
1995	3.104	10,908,183	1.728	2,157,387	17.535	23,691,923
1996	10.277	8,290,098	0.461	1,897,802	12.913	11,260,847
1997	2.275	8,356,936	0.948	2,115,827	7.447	14,146,372
1998	1.975	5,934,817	0.853	1,545,877	18.256	14,883,054
1999	2.972	8,700,428	**0.450**	1,477,074	34.799	19,966,819
2000	7.697	9,627,576	**0.211**	738,443	13.060	15,793,579
2001	8.637	9,109,913	0.502	757,657	10.454	8,645,567
2002	3.347	9,178,658	0.867	1,386,480	9.186	14,599,972
2003	9.640		0.418		7.372	

It is clear that if a penaeid stock drops below MSY abundance for one year, it is capable of producing MSY the following year, and certainly the stock can result in landings at MSY levels within two years. Thus, for a single year below the threshold, remedial action need not be taken. If, however, the stock drops below the threshold for two or more consecutive years, remedial actions would be appropriate. Using a two-year time period as a threshold would have triggered an overfishing and overfished condition only once: that would be for pink shrimp during the years 1999, 2000 and 2001. For highly variable annual stocks such as shrimp, an MSST that only triggered an overfished determination one time seems appropriate and preferable over a threshold that triggered more frequently, given the uncontrollable non-fishing effects from environmental variables on recruitment.

Rock Shrimp

Shrimp Amendment 6 (SAFMC 2004) established stock status determination criteria for rock shrimp as follows:

Establish stock status determination criteria consistent with those of penaeid shrimp, where MSY/OY for rock shrimp is the mean total landings for the South Atlantic during 1986 through 2000 (4,912,927 pounds heads on), where overfishing (MFMT) for rock shrimp would be a fishing mortality rate that led to annual landings larger than two standard deviations

(9,774,848 pounds heads on) above MSY ($4,912,927 + 9,774,848 = 14,687,775$ pounds heads on) for two consecutive years, and MSST would be parent stock size less than $\frac{1}{2}$ (B_{MSY}) for two consecutive years.