

2. STATUS OF THE STOCKS

The thresholds used to determine the status of Atlantic HMS are presented in Figure 2.1. These thresholds are fully described in Chapter 3 of the 1999 Tunas, Swordfish, and Shark FMP (1999 FMP) and in Amendment 1 to the Billfish FMP. These thresholds were carried over in full in the 2006 Consolidated HMS FMP and are based upon the thresholds described in a paper providing the technical guidance for implementing NS 1 of the Magnuson-Stevens Act (Restrepo et al., 1998). These types of figures are often used by stock assessment scientists to summarize the results of various stock assessment models. Generally, if the model results are in the white portion of the figure, the stock may have a status of “not overfished” and “overfishing is not occurring.” Similarly, if the model results are in the gray portions of the figure, the stock may have a status of “overfished,” “overfishing is occurring,” or both.

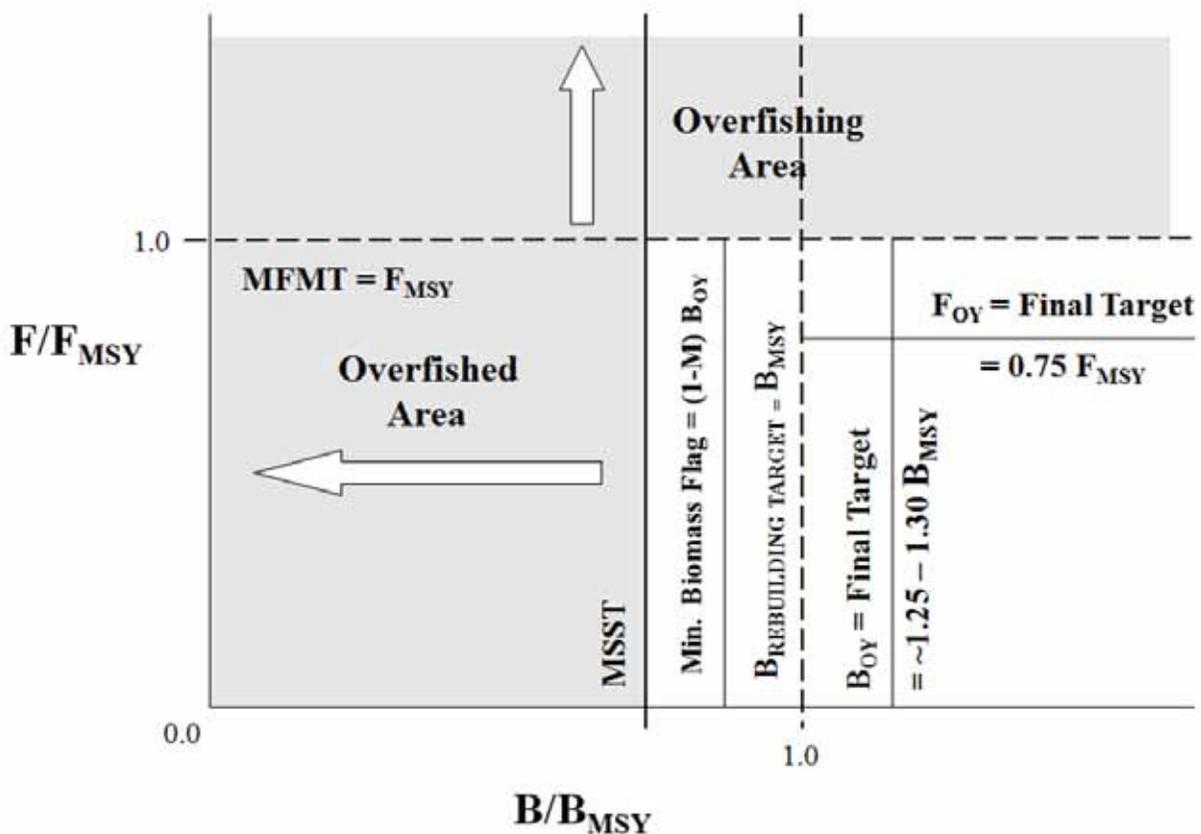


Figure 2.1 Illustration of the Status Determination Criteria and Rebuilding Terms

In summary, a species is considered “overfished” when the current biomass (B) is less than the minimum stock size threshold ($B < B_{MSST}$). The minimum stock size threshold ($MSST$) is determined based on the natural mortality of the stock and the biomass at maximum sustainable yield (B_{MSY}). Maximum sustainable yield (MSY) is the maximum long-term average yield that can be produced by a stock on a continuing basis. The biomass can be lower than B_{MSY} , and the stock not be declared overfished as long as the biomass is above B_{MSST} . If a species is declared overfished, action to rebuild the stock is required by law. A species is

considered rebuilt when B is greater than B_{MSY} . It is important to note that other bodies, such as ICCAT, use different thresholds for stock status determination. For instance, the ICCAT Convention defines an overfished status as $B_{year}/B_{MSY} < 1.0$, not $B_{year}/B_{MSY} < MSST$.

“Overfishing may be occurring” on a species if the current fishing mortality (F) is greater than the fishing mortality at MSY (F_{MSY}) ($F > F_{MSY}$). In the case of F, the maximum fishing mortality threshold is F_{MSY} . Thus, if F exceeds F_{MSY} , the stock is experiencing overfishing. If overfishing is occurring, action to end overfishing is required by law.

A species is considered healthy when B is greater than or equal to the biomass at optimum yield (B_{OY}) and F is less than or equal to the fishing mortality at optimum yield (F_{OY}).

The domestic thresholds used to calculate the domestic status of Atlantic HMS, as described in the 1999 FMP and Amendment 1 to the Billfish FMP, are:

- Maximum Fishing Mortality Threshold (MFMT) = $F_{limit} = F_{MSY}$;
- Overfishing is occurring when $F_{year} > F_{MSY}$;
- Minimum Stock Size Threshold (MSST) = $B_{limit} = (1-M)B_{MSY}$ when $M < 0.5$; $MSST = 0.5B_{MSY}$ when $M \geq 0.5$ (for billfish, the specific MSST values are: blue marlin = $0.9B_{MSY}$; white marlin = $0.85B_{MSY}$; west Atlantic sailfish = $0.75B_{MSY}$); M = natural mortality. In many cases an average M across age classes or sensitivity runs from a stock assessment model is used to calculate MSST. Overfished when $B_{year}/B_{MSY} < MSST$;
- Biomass target during rebuilding = B_{MSY} ;
- Fishing mortality during rebuilding $< F_{MSY}$;
- Fishing mortality for healthy stocks = $0.75F_{MSY}$;
- Biomass for healthy stocks = $B_{OY} \approx 1.25$ to $1.30B_{MSY}$;
- Minimum biomass flag = $(1-M)B_{OY}$; and
- Level of certainty of *at least* 50 percent but depends on species and circumstances.
- For some stocks (e.g., bluefin tuna, albacore), spawning stock biomass (SSB) is used as a proxy for biomass.
- For sharks, in some cases, spawning stock fecundity (SSF) or number of fish (N) can be used as a proxy for biomass since biomass does not influence pup production in sharks. SSF is the sum of the number of mature sharks at age multiplied by pup-production at age.

Table 2.1 and Table 2.2 present the stock assessment information and the current stock status of Atlantic HMS as of November 2014 under both the domestic and international thresholds (e.g., whether a species is considered to be overfished on a domestic, and when appropriate, international level). In some cases, these statuses are preliminary as NMFS is still reviewing the most recent stock assessment results. NMFS updates all U.S. fisheries stock statuses each quarter and provides a Status of U.S. Fisheries Report to Congress on an annual

basis. The stock statuses provided in that report are final. The status of the stock reports are available at: http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/.

With the exception of many Atlantic sharks stocks, stock assessments for Atlantic HMS are conducted by ICCAT's SCRS. In 2014, the SCRS completed stock assessments for Atlantic bluefin tuna and skipjack tuna. All SCRS final stock assessment reports are available at <http://www.iccat.int/en/assess.htm>.

Atlantic shark stock assessments for large coastal, small coastal, and smoothhound sharks are generally completed by the Southeast Data, Assessment, and Review (SEDAR) process. SEDAR assessments for bonnethead and sharpnose sharks were conducted in 2013 and the preliminary stock status results were provided in the 2013 SAFE report. Since that time, the stock statuses for these species have been finalized; the updated stock statuses are provided in the following tables. In 2014, SEDAR began the process to assess smoothhound sharks. That assessment is expected to be complete in early 2015 and any results would be included in next year's SAFE report. As completed, documents related to the smoothhound stock assessment are provided at http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=39.

In some cases, NMFS looks to available resources, including peer reviewed literature, for external assessments that, if deemed appropriate, could be used for domestic management purposes. NMFS followed this process in determining the stock status of scalloped hammerhead sharks based on an assessment for scalloped hammerhead sharks that was completed by Hayes et al. (2009).

Table 2.1 Atlantic HMS Stock Status Summaries (Domestic and International): Overfished (and Years to Rebuild) and Not Overfished

Species	Current Relative Biomass Level	B _{MSY}	International Threshold	Domestic Minimum Stock Size Threshold	International Stock Status	Domestic Stock Status	Years to Rebuild	Rebuilding Start Date (Rebuilding End Date)	Date of Most Recent Assessment
West Atlantic bluefin tuna	SSB ₂₀₁₃ /SSB _{MSY} * = 2.25 (1.92 - 2.68) (low recruitment) SSB ₂₀₁₃ /SSB _{MSY} * = 0.48 (0.35 - 0.72) (high recruitment)	SSB _{MSY} = 13,226 mt (low recruitment; 12,969-13,645 mt) SSB _{MSY} = 63,102 mt (high recruitment; 50,096-72,921 mt)	B _{MSY}	0.86 SSB _{MSY} (11,374 mt; low recruitment) (54,268 mt; high recruitment)	Low recruitment scenario: Not overfished High recruitment scenario: Overfished	Low recruitment scenario: Not overfished* High recruitment scenario: Overfished*	20	5/1/1999 (2019)	2014
Atlantic bigeye tuna	B ₂₀₀₉ /B _{MSY} = 1.01 (0.72 - 1.34)	422,630 mt	B _{MSY}	0.6 B _{MSY} (253,578 mt)	Not overfished	Not overfished (Rebuilding)	Not available†††	1/1/1999	2010
Atlantic yellowfin tuna	B ₂₀₁₀ /B _{MSY} = 0.85 (0.61 - 1.12)	<i>Unknown†</i>	B _{MSY}	0.5 B _{MSY} (age 2+)	Overfished	Not overfished			2011
North Atlantic albacore tuna	SSB ₂₀₁₁ /SSB _{MSY} = 0.94 (0.74 - 1.14)	SSB _{MSY} = 81,110 mt	B _{MSY}	0.7 B _{MSY} (56,777 mt; based on SSB _{MSY})	Overfished	Not overfished (Rebuilding)	10	1/1/2010 (2020)	2013
West Atlantic skipjack tuna	B ₂₀₁₃ /B _{MSY} : Probably close to 1.3	30,755 mt	B _{MSY}	<i>Unknown</i>	Not overfished	Not overfished			2014
North Atlantic swordfish	B ₂₀₁₁ /B _{MSY} = 1.14 (1.05 - 1.24)	65,060 mt	B _{MSY}	0.8 B _{MSY} ; (52,048 mt)	Not overfished	Not overfished			2013
South Atlantic swordfish	B ₂₀₁₁ /B _{MSY} = <i>Unknown but likely above 1</i>	<i>Unknown</i>	B _{MSY}	0.8 B _{MSY} (<i>Unknown</i>)	Not overfished	Not overfished			2013
Blue marlin	B ₂₀₀₉ /B _{MSY} = 0.67 (0.53 - 0.81)	25,411 mt (SSB _{MSY})	B _{MSY}	0.9 B _{MSY} (22,870 mt; based on SSB _{MSY})	Overfished	Overfished	Not available†††	6/1/2001	2011
White marlin (and roundscale spearfish)	B ₂₀₁₀ /B _{MSY} = 0.5 (0.42-0.60)	29,240 mt (27,260 - 30,720 mt)	B _{MSY}	0.85 B _{MSY} (23,171-26,112 mt)	Overfished	Overfished	Not available†††	6/1/2001	2012

Species	Current Relative Biomass Level	B _{MSY}	International Threshold	Domestic Minimum Stock Size Threshold	International Stock Status	Domestic Stock Status	Years to Rebuild	Rebuilding Start Date (Rebuilding End Date)	Date of Most Recent Assessment
West Atlantic sailfish	B ₂₀₀₇ < B _{MSY} : Possibly	Unknown	B _{MSY}	0.78 B _{MSY}	Possibly overfished	Overfished	Not available†††	1/1/1999	2009
Longbill spearfish	Unknown	Unknown	B _{MSY}	Unknown	Unknown	Unknown			1997
Northwest Atlantic porbeagle sharks	B ₂₀₀₈ /B _{MSY} = 0.43 – 0.65	29,382 - 40,676 mt	B _{MSY}	(1-M)B _{MSY} **	Overfished	Overfished	100	7/24/2008 (2108)	2009
North Atlantic blue sharks	B ₂₀₀₇ /B _{MSY} = 1.87 - 2.74	Unknown†	B _{MSY}	(1-M)B _{MSY}	Not overfished	Not overfished			2008
North Atlantic shortfin mako sharks	B ₂₀₁₀ /B _{MSY} = 1.15 - 2.04	183,612 mt - 863,655 mt††	B _{MSY}	(1-M)B _{MSY} **	Not overfished	Not overfished			2012
Sandbar sharks	SSF ₂₀₀₉ /SSF _{MSY} = 0.51 – 0.72	SSF _{MSY} = 349,330 - 1,377,800 (numbers of sharks)	NA	301,821 – 1,190,419 (based on SSF _{MSY})	NA	Overfished	66	1/1/2005 (2070)	2010
Gulf of Mexico blacktip sharks	SSF ₂₀₁₀ /SSF _{MSY} = 2.00-2.66	SSF _{MSY} = 1,570,000 - 6,440,000 (numbers of sharks)	NA	1,327,697 - 5,446,093 (1-M)SSF _{MSY}	NA	Not overfished			2012
Atlantic blacktip sharks	Unknown	Unknown	NA	(1-M)B _{MSY}	NA	Unknown			2005/2006
Dusky sharks	SSB ₂₀₀₉ /SSB _{MSY} = 0.41 - 0.50	Unknown†	NA	(1-M)SSB _{MSY}	NA	Overfished	100	7/24/2008 (2108)	2010
Scalloped hammerhead sharks	N ₂₀₀₅ /N _{MSY} = 0.45	N _{MSY} = 62,000 (numbers of sharks)	NA	(1-M)N _{MSY}	NA	Overfished	10	7/3/2013 (2023)	2009
Atlantic Bonnethead sharks	Unknown	Unknown	NA	Unknown	NA	Unknown			2013

Species	Current Relative Biomass Level	B _{MSY}	International Threshold	Domestic Minimum Stock Size Threshold	International Stock Status	Domestic Stock Status	Years to Rebuild	Rebuilding Start Date (Rebuilding End Date)	Date of Most Recent Assessment
Gulf of Mexico Bonnethead sharks	<i>Unknown</i>	<i>Unknown</i>	<i>NA</i>	<i>Unknown</i>	<i>NA</i>	<i>Unknown</i>			2013
Atlantic sharpnose sharks – Atlantic stock	SSF ₂₀₁₁ /SSF _{MSY} = 2.07	SSF _{MSY} = 4,860,000 (numbers of sharks)	<i>NA</i>	(1-M)SSF _{MSY}	<i>NA</i>	Not overfished			2013
Atlantic sharpnose sharks - Gulf of Mexico stock	SSF ₂₀₁₁ /SSF _{MSY} = 1.01	SSF _{MSY} = 17,900,000	<i>NA</i>	(1-M)SSF _{MSY}	<i>NA</i>	Not overfished			2013
Atlantic blacknose sharks – Atlantic stock	SSF ₂₀₀₉ /SSF _{MSY} = 0.43 – 0.64	SSF _{MSY} = 77,577 - 288,360 (numbers of sharks)	<i>NA</i>	62,294 - 231,553 (1-M)SSF _{MSY}	<i>NA</i>	Overfished	30	7/3/2013 (2043)	2010
Atlantic blacknose sharks – Gulf of Mexico stock	<i>Unknown</i>	<i>Unknown</i>	<i>NA</i>	(1-M)B _{MSY}	<i>NA</i>	<i>Unknown</i>			2010
Finetooth sharks	N ₂₀₀₅ /N _{MSY} = 1.80	N _{MSY} = 3,200,000 (numbers of sharks)	<i>NA</i>	2,400,000 (1 - M)N _{MSY}	<i>NA</i>	Not overfished			2007

*Future stock productivity is based upon two hypotheses about future recruitment: a “high recruitment scenario” in which future recruitment has the potential to achieve levels that occurred in the early 1970s and a “low recruitment scenario” in which future recruitment is expected to remain near present levels. The SCRS, as stated in the stock assessment, has insufficient evidence to favor either scenario over the other and notes that both are plausible (but not extreme) lower and upper bounds on rebuilding potential. **M is unknown. †A value for B_{MSY} (or its proxy) was not provided in the stock assessment. ††Only the BSP model provided B_{MSY} values. The B_{MSY} range encompasses the 16 scenarios run of the BSP model. †††There is insufficient information to estimate how many years it will take this stock to rebuild. Sources: SCRS, 2007, 2008, 2009a, 2009b, 2010, 2011, 2012a, 2012b, 2013, 2014; Gibson and Campana, 2005; Cortés et al., 2006; NMFS, 2006; NMFS, 2007; Hayes et al., 2009; SEDAR 2011a, 2011b, 2011c, 2011d, 2013a, 2013b.

Table 2.2 Atlantic HMS Stock Status Summaries (Domestic and International): Overfishing is Occurring and Overfishing is Not Occurring

Species	Current Relative Fishing Mortality Rate	Maximum Fishing Mortality Threshold	International Stock Status	Domestic Stock Status	Date of Most Recent Assessment
West Atlantic bluefin tuna	$F_{2010-2012}/F_{MSY}^* = 0.36$ (0.28 - 0.43) (low recruitment) $F_{2010-2012}/F_{MSY}^* = 0.88$ (0.64 - 1.08) (high recruitment)	$F_{MSY} = 0.20$ (0.17-0.24) (low recruitment) $F_{MSY} = 0.08$ (0.07-0.10) (high recruitment)	Low recruitment scenario: Overfishing is not occurring* High recruitment scenario: Overfishing is not occurring*	Low recruitment scenario: Overfishing is not occurring* High recruitment scenario: Overfishing is not occurring*	2014
Atlantic bigeye tuna	$F_{2009}/F_{MSY} = 0.95$ (0.65 - 1.55)	$F_{MSY} = 0.214$	Overfishing is not occurring	Overfishing not occurring	2010
Atlantic yellowfin tuna	$F_{2010}/F_{MSY} = 0.87$ (0.68 - 1.40)	$F_{MSY} \uparrow$	Overfishing is not occurring	Overfishing not occurring	2011
North Atlantic albacore tuna	$F_{2011}/F_{MSY} = 0.72$ (0.55 - 0.89)	$F_{MSY} = 0.149$	Overfishing is not occurring	Overfishing not occurring	2013
West Atlantic skipjack tuna	F_{2013}/F_{MSY} : probably close to 0.7	$F_{MSY} = 1.02$ (0.78 - 1.25)	<i>Overfishing not occurring</i>	<i>Overfishing not occurring</i>	2014
North Atlantic swordfish	$F_{2011}/F_{MSY} = 0.82$ (0.73 - 0.91)	$F_{MSY} = 0.21$ (0.17 - 0.26)	Overfishing is not occurring	Overfishing not occurring	
South Atlantic swordfish	$F_{2011}/F_{MSY} = \text{Unknown but likely above 1}$	<i>Unknown</i>	Overfishing is not occurring	Overfishing not occurring	
Blue marlin	$F_{2009}/F_{MSY} = 1.63$ (1.11 - 2.16)	$F_{MSY} = 0.07$	Overfishing is occurring	Overfishing is occurring	2011
White marlin (and roundscale spearfish)	$F_{2010}/F_{MSY} = 0.99$ (0.75-1.27; low productivity) $F_{2010}/F_{MSY} = 0.72$ (0.51-0.93; high productivity)	$F_{MSY} = 0.03$ (0.027-0.035)	Overfishing is not likely occurring	Overfishing is occurring	2012
West Atlantic sailfish	$F_{2007} > F_{MSY}$: Possibly	<i>Unknown</i>	Overfishing is possibly occurring	Overfishing is occurring	2009

Species	Current Relative Fishing Mortality Rate	Maximum Fishing Mortality Threshold	International Stock Status	Domestic Stock Status	Date of Most Recent Assessment
Longbill spearfish	<i>Unknown</i>	<i>Unknown</i>	<i>Unknown</i>	<i>Unknown</i>	1997
Northwest Atlantic porbeagle sharks	$F_{2008}/F_{MSY} = 0.03 - 0.36$	0.025 - 0.075	Overfishing is not occurring	Overfishing not occurring	2009
North Atlantic blue sharks	$F_{2007}/F_{MSY} = 0.13 - 0.17$	0.15	Overfishing is not occurring	Overfishing not occurring	2008
North Atlantic shortfin mako sharks	$F_{2010}/F_{MSY} = 0.16 - 0.92$	0.029 - 0.104††	Overfishing is not occurring	Overfishing not occurring	2012
Sandbar	$F_{2009}/F_{MSY} = 0.29 - 2.62$	0.004 - 0.06	Not assessed internationally	Overfishing not occurring	2010
Gulf of Mexico blacktip	$F_{2010}/F_{MSY} = 0.05 - 0.27$	0.021 - 0.163	Not assessed internationally	Overfishing not occurring	2012
Atlantic blacktip	<i>Unknown</i>	<i>Unknown</i>	Not assessed internationally	<i>Unknown</i>	2005/2006
Dusky sharks	$F_{2009}/F_{MSY} = 1.39 - 4.35$	0.01 - 0.05	Not assessed internationally	Overfishing is occurring	2010
Scalloped hammerhead sharks	$F_{2005}/F_{MSY} = 1.29$	0.11	Not assessed internationally	Overfishing is occurring	2009
Bonnethead sharks – Atlantic stock	<i>Unknown</i>	<i>Unknown</i>	Not assessed internationally	<i>Unknown</i>	2013
Bonnethead sharks – Gulf of Mexico stock	<i>Unknown</i>	<i>Unknown</i>	Not assessed internationally	<i>Unknown</i>	2013
Atlantic sharpnose sharks – Atlantic stock	$F_{2011}/F_{MSY} = 0.23$	0.184	Not assessed internationally	Overfishing not occurring	2013
Atlantic sharpnose sharks - Gulf of Mexico stock	$F_{2011}/F_{MSY} = 0.57$	0.331	Not assessed internationally	Overfishing not occurring	2013
Atlantic blacknose sharks – Atlantic stock	$F_{2009}/F_{MSY} = 3.26 - 22.53$	0.01 - 0.15	Not assessed internationally	Overfishing is occurring	2010
Atlantic blacknose sharks – Gulf of Mexico stock	<i>Unknown</i>	<i>Unknown</i>	Not assessed internationally	<i>Unknown</i>	2010
Finetooth sharks	$F_{2005}/F_{MSY} = 0.17$	0.03	Not assessed internationally	Overfishing not occurring	2007

*Where F year refers to the geometric mean of the estimates for 2010-2012 (a proxy for recent F levels). †A value for F_{MSY} was not provided in the stock assessment. ††Both the BSP and catch-free model estimated F_{MSY} . The F_{MSY} range encompasses the lowest estimate of the 16 scenarios run of the BSP model and the highest estimate of the 10 scenarios run for the catch-free model. Sources: SCRS, 2007, 2008, 2009a, 2009b, 2010, 2011, 2012a, 2012b, 2013, 2014; Gibson and Campana, 2005; Cortés et al., 2006; NMFS, 2006; NMFS, 2007; Hayes et al., 2009; SEDAR 2011a, 2011b, 2011c, 2011d, 2013a, 2013b.

2.1 Stock Assessment Details

SCRS reports are available online at: <http://www.iccat.int/en/meetings.asp> All SEDAR reports are available online at: <http://www.sefsc.noaa.gov/sedar/>

Detailed stock assessments for the species in Table 2.1 and Table 2.2 are available at these websites:

Western Atlantic Bluefin Tuna

Assessed by ICCAT's SCRS in 2014:

http://www.iccat.int/Documents/Meetings/Docs/2014_BFT_ASSESS-ENG.pdf

Atlantic Bigeye Tuna

Assessed by ICCAT's SCRS in 2010:

http://www.iccat.int/Documents/Meetings/Docs/2010_BET_Assessment_REP_ENG.pdf

Atlantic Yellowfin Tuna

Assessed by ICCAT's SCRS in 2011:

http://www.iccat.int/Documents/Meetings/Docs/2011_YFT_ASSESS_REP.pdf

North Atlantic Albacore Tuna

Assessed by ICCAT's SCRS in 2013:

http://www.iccat.int/Documents/Meetings/Docs/2013_ALB_ASSESS_REP_ENG.pdf

West Atlantic Skipjack Tuna

Assessed by ICCAT's SCRS in 2014:

http://www.iccat.int/Documents/Meetings/Docs/2014_SKJ_ASSESS_ENG.pdf

<http://www.iccat.int/Documents/SCRS/DetRep/DET-YFT-SKJ.pdf> *North Atlantic Swordfish*

Assessed by ICCAT's SCRS in 2013:

http://www.iccat.int/Documents/Meetings/Docs/2013_SWO_ASSESS_REP_ENG.pdf

South Atlantic Swordfish

Assessed by ICCAT's SCRS in 2013:

http://www.iccat.int/Documents/Meetings/Docs/2013_SWO_ASSESS_REP_ENG.pdf

Blue Marlin

Assessed by ICCAT's SCRS in 2011:

http://www.iccat.int/Documents/Meetings/Docs/2011_BUM_ASSESS_ENG.pdf

White Marlin and Roundscale Spearfish

Assessed by ICCAT's SCRS in 2012:

http://www.iccat.int/Documents/Meetings/Docs/2012_WHM_ASSESS_ENG.pdf

West Atlantic Sailfish

Assessed by ICCAT's SCRS in 2009:

http://www.iccat.int/Documents/Meetings/Docs/2009_SAI_ASSESS_ENG.pdf

Longbill Spearfish

Longbill spearfish have not been individually assessed by ICCAT's SCRS due to the paucity of data. Some information can be found in the 2009 sailfish stock assessment: <https://www.iccat.int/Documents/SCRS/DetRep/DET-SAI.pdf>

Sandbar Sharks

Assessed in 2010/2011 through the SEDAR process:

http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=21

Gulf of Mexico Blacktip Sharks

Assessed in 2012 through the SEDAR process:

http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=29

Atlantic Blacktip Sharks

Assessed in 2006 through the SEDAR process:

http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=11

Dusky Sharks

Assessed in 2010/2011 through the SEDAR process:

http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=21

Bonnethead Sharks (Atlantic and Gulf of Mexico)

Assessed in 2013 through the SEDAR process:

http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=34

Atlantic Sharpnose Sharks (Atlantic and Gulf of Mexico)

Assessed in 2013 through the SEDAR process:

http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=34

Blacknose Sharks (Atlantic and Gulf of Mexico)

Assessed in 2010/2011 through the SEDAR process:

http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=21

Finetooth Sharks

Assessed in 2007 through the SEDAR process:

http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=13

Northwest Atlantic Porbeagle Sharks

Assessed by ICCAT's SCRS in 2009:

http://www.iccat.int/Documents/Meetings/Docs/2009_POR_ASSESS_ENG.pdf

North Atlantic Blue Sharks

Assessed by ICCAT's SCRS in 2008:

http://www.iccat.int/Documents/Meetings/Docs/2008_SHK_Report.pdf

North Atlantic Shortfin Mako Sharks

Assessed by ICCAT's SCRS in 2008:

http://www.iccat.int/Documents/Meetings/Docs/2012_SHK_ASS_ENG.pdf

Scalloped Hammerhead Sharks

Assessed in Hayes et al. (2009).

Smoothhound Sharks (Atlantic and Gulf of Mexico)

Currently being assessed through the SEDAR process:

http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=39

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