

**APPENDIX 3. DEFINITIONS CONTAINED IN NON-FEDERAL FISHERY MANAGEMENT PLANS**

**American Lobster**

Overfishing defined	Overfished defined
Overfishing would occur if the average fishing mortality rate for the three most recent years was higher than the median threshold. A stock would be “depleted” if average abundance for the three most recent years fell below the median threshold level.	The stock status is determined by comparison of the average F and average abundance during the most recent three years to stock-specific median values (computed for the fixed years 1982-2003 for GOM and GBK and 1984-2003 for SNE). Median abundance and median fishing mortality, over the fixed time period of 1982-2003 for GOM and GBK and 1984-2003 for SNE, as threshold reference points for each American lobster stock.

**Atlantic Menhaden**

Overfishing defined	Overfished defined
Overfishing occurs if $F_{\text{threshold}}$ is exceeded. The F-based benchmarks are $F_{\text{THRESHOLD}} = 1.18$ and $F_{\text{TARGET}} = 0.75$ .	A stock is overfished if it falls below the fecundity threshold = 13.3 trillion maturing or ripe eggs. The fecundity target = 26.6 trillion maturing or ripe eggs.

**Northern Shrimp**

Overfishing defined	Overfished defined
Overfishing occurs when the fishing mortality target of $F_{\text{TARGET}} = F_{50\%} = 0.22$ is exceeded. The fishing mortality limit is $F_{\text{LIMIT}} = F_{20\%} = 0.6$ .	The northern shrimp population is considered overfished when the stock biomass is less than the threshold of $B_{\text{THRESHOLD}} = 9,000$ metric tons. The stock biomass limit is $B_{\text{LIMIT}} = 6,000$ metric tons.

**Striped Bass**

Overfishing defined	Overfished defined
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## 2006 Status of U.S. Fisheries

<p>Overfishing occurs when F exceeds the fishing mortality threshold <math>F_{MSY}</math>, which is currently estimated to be 0.41. The fishing mortality target is set equal to <math>F=0.30</math>, and <math>F=0.27</math> for the Chesapeake Bay and the Albemarle Sound/Roanoke River stocks, respectively.</p>	<p>A striped bass population is considered overfished when the female spawning stock biomass falls below the threshold spawning stock biomass level of 30.9 million pounds (14,000 mt). The female spawning stock biomass target is set at 38.6 million pounds (17,500 metric tons).</p>
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### Tautog

Overfishing defined	Overfished defined
<p>Overfishing occurs when F exceeds the threshold, or the interim, fishing rate of 0.29. The FMP established a target fishing rate equal to that of natural mortality (<math>F=M=0.15</math>).</p>	<p>Undefined</p>

### Weakfish

Overfishing defined	Overfished defined
<p>Overfishing occurs if the fishing mortality threshold is greater than <math>F_{THRESHOLD} = F_{20\%} - 0.5</math>. The fishing mortality target of <math>F_{TARGET} = 0.31</math>. The ASMFC assessment for Weakfish through 2000, found that the fishing mortality rate for weakfish was between F 0.31 and F 0.45.</p>	<p>A stock is overfished when the biomass is less than <math>SSB_{20\%}</math>. The best available estimate of <math>SSB_{20\%}</math> is 31.8 million pounds.</p>

### Atlantic Croaker

Overfishing defined	Overfished defined
<p>Overfishing occurs when F exceeds <math>F_{msy}</math>, currently estimated to be 0.39. There is a fishing mortality target of <math>0.75 F_{MSY}</math> (0.29). The fishing mortality threshold and target are for the mid-Atlantic region only. The latest F estimates (2002) for Atlantic croaker in the mid-Atlantic region are 0.11. The status of the stock for the south-Atlantic remains unknown due to a lack of data.</p>	<p>The stock is overfished when biomass is less than is 70% of <math>SSB_{msy}</math> (20,252 mt). The biomass target is the spawning stock biomass that allows for maximum sustainable yield (<math>SSB_{MSY}</math>), currently estimated at 28,932 MT. The SSB target and threshold are for the mid-Atlantic region only. The latest SSB estimates (2002) for Atlantic croaker are approximately 80,000 MT.</p>

**APPENDIX 4. OVERFISHING DEFINITIONS CONTAINED IN FEDERAL FISHERY MANAGEMENT PLANS**

NOTE: Unless otherwise noted, definitions have been approved in conformance with the Sustainable Fisheries Act amendments (i.e. are post SFA criteria)

The following definitions are as contained in the Fishery Management Plans, with minor editing changes to maintain consistency of terms. See Appendix 2 for definitions of acronyms used in this appendix.

**ATLANTIC SCALLOP**

<b>Overfishing defined</b>	<b>F<sub>MAX</sub></b>	<b>Overfished defined</b>	<b>B<sub>MAX</sub></b>	<b>½ B<sub>MAX</sub></b>
Overfishing occurs when one of the three conditions apply: F exceeds F <sub>MAX</sub> (proxy for F <sub>MSY</sub> ) when the stock biomass is equal to or greater than B <sub>MAX</sub> (proxy for B <sub>MSY</sub> ); fishing mortality exceeds the level that has a 50 percent probability of achieving B <sub>MAX</sub> in 10 years when the stock biomass is below B <sub>MAX</sub> but above ½B <sub>MAX</sub> , and in that case overfishing occurs when F is above a level to rebuild in 5 years; or F is greater than zero and the stock biomass is below ¼B <sub>MAX</sub> .	0.24	The scallop stock is overfished when the scallop biomass is below ½B <sub>MAX</sub> .	5.6 kg/tow	2.8 kg/tow

**ATLANTIC SALMON**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>B<sub>threshold</sub></b>
Overfishing is currently not defined (fishing mortality is set equal to zero).	undefined	A stock is overfished when the stock biomass falls below B <sub>MSY</sub>	54,000 spawning salmon	54,000 spawning salmon

**NORTHEAST MULTISPECIES****Cod - Gulf of Maine**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub></b>
Overfishing occurs when F exceeds F <sub>MSY</sub> .	0.23	The stock is overfished when the total stock biomass is less than ½ B <sub>MSY</sub> .	82,800 mt	41,400 mt

**Cod - Georges Bank**

2006 Status of U.S. Fisheries

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{MSY}$ .	0.18	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	216,800 mt	108,400 mt

Haddock - Gulf of Maine

Overfishing defined	$F_{MSY \text{ proxy}}$	Overfished defined	$B_{MSY \text{ survey proxy}}$	$\frac{1}{2} B_{MSY \text{ survey proxy}}$
Overfishing occurs when the relative exploitation index (catch/autumn biomass index) exceeds $F_{MSY \text{ proxy}}$ .	0.23	The stock is overfished when the total stock biomass is less than the survey proxy for $\frac{1}{2} B_{MSY}$ .	22.18 kg/tow	11.09 kg/tow

Haddock - Georges Bank

Overfishing defined	$F_{MSY \text{ proxy}}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{40\%}$ .	0.26	The stock is overfished when the spawning stock biomass is less than $\frac{1}{2} B_{MSY}$ .	250,300 mt	125,150 mt

American Plaice

Overfishing defined	$F_{MSY \text{ proxy}}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{40\%}$ .	0.17	The stock is overfished when the spawning stock biomass is less than $\frac{1}{2} B_{MSY}$ .	28,600 mt	14,300 mt

Redfish

Overfishing defined	$F_{MSY \text{ proxy}}$	Overfished defined	$B_{\text{target}} (B_{MSY})$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{50\%}$ .	0.04	The stock is overfished when the spawning stock biomass is less than $\frac{1}{2} B_{MSY}$ . $B_{MSY}$ is based on total biomass.	236,700 mt	118,350 mt

Witch Flounder

Overfishing defined	$F_{MSY \text{ proxy}}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds the $F_{MSY \text{ proxy}}$ ( $F_{40\%}$ ).	0.23	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	25,200 mt	12,600 mt

Yellowtail Flounder - Georges Bank

2006 Status of U.S. Fisheries

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{MSY}$ .	0.25	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	58,800 mt	29,400 mt

**Yellowtail Flounder - Southern New England/Mid-Atlantic**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{MSY}$ .	0.26	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	69,500 mt	34,750 mt

**Yellowtail Flounder - Cape Cod/Gulf of Maine**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{MSY}$ .	0.17	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	12,600 mt	6,300 mt

**White Hake**

Overfishing defined	$F_{MSY \text{ proxy}}$	Overfished defined	$B_{MSY \text{ proxy}}$	$\frac{1}{2} B_{MSY \text{ proxy}}$
Overfishing occurs when F exceeds $F_{MSY \text{ proxy}}$ .	0.55	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	7.70 kg/tow	3.85 kg/tow

**Pollock**

Overfishing defined	$F_{MSY \text{ proxy}}$	Overfished defined	$B_{MSY \text{ proxy}}$	$\frac{1}{2} B_{MSY \text{ proxy}}$
Overfishing occurs when F exceeds the $F_{MSY}$ proxy, a relative exploitation index (catch/survey biomass index).	5.88 catch/ survey index	The stock is overfished when the total stock biomass is less than the survey proxy for $\frac{1}{2} B_{MSY}$	3.0 kg/tow	1.5 kg/tow

**Ocean Pout**

Overfishing defined	$F_{MSY \text{ proxy}}$	Overfished defined	$B_{MSY \text{ proxy}}$	$\frac{1}{2} B_{MSY \text{ proxy}}$
Overfishing occurs when F exceeds $F_{MSY \text{ proxy}}$ .	0.31 catch/ survey index	The stock is overfished when the total stock biomass is less than the $\frac{1}{2} B_{MSY \text{ proxy}}$	4.9 kg/tow	2.45 kg/tow

**Atlantic Halibut**

Overfishing defined	$F_{MSY \text{ proxy}}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
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2006 Status of U.S. Fisheries

Overfishing occurs when F exceeds the FMSY catch-YPR proxy	0.06	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	5,400 mt	2,700 mt
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**Windowpane Flounder - Gulf of Maine/Georges Bank**

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	$\frac{1}{2} B_{MSY}$ proxy
Overfishing occurs when F exceeds the FMSY proxy of a relative exploitation index	1.11 catch/ survey index	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ proxy.	0.94 kg/tow	0.47 kg/tow

**Windowpane Flounder - Southern New England/Middle Atlantic**

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	$\frac{1}{2} B_{MSY}$ proxy
Overfishing occurs when F exceeds the FMSY proxy of a relative exploitation index	0.98 catch/ survey index	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ proxy.	0.92 kg/tow	0.46 kg/tow

**Winter Flounder - Gulf of Maine**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{MSY}$ .	0.43	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	4,100 mt	2,050 mt

**Winter Flounder - Georges Bank**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{MSY}$ .	0.22 (biomass weighted)	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	10,136 mt	5,068 mt

**Winter Flounder - Southern New England**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds $F_{MSY}$ .	0.32	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ .	30,100 mt	15,050 mt

**Silver Hake - Gulf of Maine/Northern Georges Bank**

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	$\frac{1}{2} B_{MSY}$ proxy
Overfishing occurs when F exceeds $F_{MSY}$ proxy exploitation index	2.57	The stock is overfished when the total stock biomass is less than $\frac{1}{2} B_{MSY}$ proxy.	6.63 kg/tow	3.315 kg/tow

2006 Status of U.S. Fisheries

Silver Hake - Southern Georges Bank/Middle Atlantic

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	½ B <sub>MSY proxy</sub>
Overfishing occurs when F exceeds F <sub>MSY proxy</sub> exploitation index	34.39	The stock is overfished when the total stock biomass is less than ½ B <sub>MSY proxy</sub>	1.78 kg/tow	0.89 kg/tow

Offshore Hake

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold
Undefined	undefined	The stock is overfished when the 3-year moving average weight per individual in the autumn survey falls below the 25th percentile of the average weight per individual from the autumn survey time series 1963-1997 (0.236) and when the 3-year moving average of the abundance of immature fish less than 30 cm falls below the median value of the 1963-1997 autumn survey abundance of fish less than 30 cm (0.33).	not estimated	0.236 and 0.33

Note: The overfishing definition is the approved definition from Amendment 12 to the NE Multispecies FMP; however, there is an error in this definition that needs to be corrected by the New England Fishery Management Council in the next FMP amendment. The overfishing definition in the FMP should read that “overfishing is occurring when . . .” not that offshore hake is overfished. Thus, the approved overfishing definition contains a B component but not an F component. In this case, overfishing, per se, is undefined. In practice, the correct overfishing definition should contain an F component, leaving the B component undefined.

Red Hake - Gulf of Maine/Northern Georges Bank

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY proxy</sub>	½ B <sub>MSY proxy</sub>
Overfishing occurs when F exceeds F <sub>MSY</sub>	0.65	The stock is overfished when the total stock biomass is less than ½ B <sub>MSY proxy</sub>	1.6 kg/tow	0.8 kg/tow

Red Hake - Southern Georges Bank/Middle Atlantic

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold
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2006 Status of U.S. Fisheries

Undefined	undefined	The southern stock of red hake is in an overfished condition when the 3-year moving average weight per individual in the autumn survey falls below the 25th percentile of the average weight per individual from the autumn survey time series 1963-1997 (0.12) and when the 3-year moving average of the abundance of immature fish less than 25 cm falls below the median value of the 1963-1997 autumn survey abundance of fish less than 25 cm (4.72).	not available	0.12 and 4.72
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Note: The overfishing definition is the approved definition from Amendment 12 to the NE Multispecies FMP; however, there is an error in this definition that needs to be corrected by the New England Fishery Management Council in the next FMP amendment. The overfishing definition in the FMP should read that “overfishing is occurring when . . .” not that the southern stock of red hake is overfished. Thus, the approved overfishing definition contains a B component but not an F component. In this case, overfishing, per se, is undefined. In practice, the correct overfishing definition should contain an F component, leaving the B component undefined.

**NORTHEAST SKATE COMPLEX**

**Winter Skate**

<b>Overfishing defined</b>	<b>F<sub>M<sub>SY</sub></sub> proxy</b>	<b>Overfished defined</b>	<b>B<sub>M<sub>SY</sub></sub> proxy</b>	<b>½ B<sub>M<sub>SY</sub></sub> proxy</b>
Overfishing occurs when the 3-year moving average of the autumn survey mean weight per tow declines 20% or more, or when the autumn survey mean weight per tow declines for 3 consecutive years.	See Overfishing defined	The stock is in an overfished condition when the 3-year moving average of the autumn survey mean weight per tow is less than one-half of the 75 <sup>th</sup> percentile of the mean weight per tow observed in the autumn trawl survey from the selected reference time series.	6.46 kg/tow	3.23 kg/tow

**Thorny Skate**

<b>Overfishing defined</b>	<b>F<sub>M<sub>SY</sub></sub> proxy</b>	<b>Overfished defined</b>	<b>B<sub>M<sub>SY</sub></sub> proxy</b>	<b>½ B<sub>M<sub>SY</sub></sub> proxy</b>
Overfishing occurs when the 3-year moving average of the autumn survey mean weight per tow declines 20% or more, or when the autumn survey mean weight per tow declines for 3 consecutive years.	See Overfishing defined	The stock is in an overfished condition when the 3-year moving average of the autumn survey mean weight per tow is less than one-half of the 75 <sup>th</sup> percentile of the mean weight per tow observed in the autumn trawl survey from the selected reference time series.	4.40 kg/tow	2.20 kg/tow



2006 Status of U.S. Fisheries

**Little Skate**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>1/2 B<sub>MSY proxy</sub></b>
Overfishing occurs when the 3-year moving average of the spring survey mean weight per tow declines 20% or more, or when the spring survey mean weight per tow declines for three consecutive years.	See Overfishing defined	The stock is in an overfished condition when the 3-year moving average of the spring survey mean weight per tow is less than one-half of the 75 <sup>th</sup> percentile of the mean weight per tow observed in the spring trawl survey from the selected reference time series.	6.54 kg/tow	3.27 kg/tow

**Barndoor Skate**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>1/2 B<sub>MSY proxy</sub></b>
Overfishing occurs when the 3-year moving average of the autumn survey mean weight per tow declines 30% or more, or when the autumn survey mean weight per tow declines for 3 consecutive years.	See Overfishing defined	The stock is in an overfished condition when the 3-year moving average of the autumn survey mean weight per tow is less than one-half of the mean weight per tow observed in the autumn trawl survey from 1963-1966.	1.62 kg/tow	0.81 kg/tow

**Smooth Skate**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>1/2 B<sub>MSY proxy</sub></b>
Overfishing occurs when the 3-year moving average of the autumn survey mean weight per tow declines 30% or more, or when the autumn survey mean weight per tow declines for 3 consecutive years.	See Overfishing defined	The stock is in an overfished condition when the 3-year moving average of the autumn survey mean weight per tow is less than one-half of the 75 <sup>th</sup> percentile of the mean weight per tow observed in the autumn trawl survey from the selected reference time series.	0.32 kg/tow	0.16 kg/tow

**Clearnose Skate**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>1/2 B<sub>MSY proxy</sub></b>
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2006 Status of U.S. Fisheries

Overfishing occurs when the 3-year moving average of the autumn survey mean weight per tow declines 30% or more, or when the autumn survey mean weight per tow declines for 3 consecutive years.	See Overfishing defined	The stock is in an overfished condition when the 3-year moving average of the autumn survey mean weight per tow is less than one-half of the 75 <sup>th</sup> percentile of the mean weight per tow observed in the autumn trawl survey from the selected reference time series.	0.56 kg/tow	0.28 tow
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Rosette Skate

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	1/2 B <sub>MSY proxy</sub>
Overfishing occurs when the 3-year moving average of the autumn survey mean weight per tow declines 60% or more, or when the autumn survey mean weight per tow declines for 3 consecutive years.	See Overfishing defined	The stock is in an overfished condition when the 3-year moving average of the autumn survey mean weight per tow is less than one-half of the 75 <sup>th</sup> percentile of the mean weight per tow observed in the autumn trawl survey from the selected reference time series.	0.02 kg/tow	0.01 kg/tow

ATLANTIC HERRING

Atlantic Herring

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY proxy</sub>	1/2 B <sub>MSY proxy</sub>
If the stock biomass is equal to or greater than B <sub>MSY</sub> , overfishing occurs when F exceeds F <sub>MSY</sub> . If the stock biomass is less than B <sub>MSY</sub> , overfishing occurs when F exceeds the level that has a 50-percent probability of rebuilding the stock biomass to B <sub>MSY</sub> in 5 years (F <sub>THRESHOLD</sub> ).	0.31	The stock is overfished when stock biomass is less than 1/2 B <sub>MSY</sub> .	629,000 mt	314,500 mt

RED CRAB

Deep-Sea Red Crab

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY proxy</sub>	1/2 B <sub>MSY proxy</sub>
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2006 Status of U.S. Fisheries

<p>Overfishing is defined as any rate of exploitation such that the ratio of current exploitation to an idealized exploitation under MSY conditions exceeds a value of 1.0 (the actual measure of exploitation used is determined by the availability of suitable data).</p>	<p>not available</p>	<p>The stock is overfished when one of the following three conditions is met:</p> <p>Condition 1 – The current biomass in the management unit is below <math>\frac{1}{2} B_{MSY}</math>.</p> <p>Condition 2 – The annual fleet average CPUE, measured as marketable crabs landed per trap haul, continues to decline below a baseline level for 3 or more years. The baseline level = <math>\frac{1}{2}</math> CPUE under virgin stock conditions (not currently specified).</p> <p>Condition 3 – The annual fleet average CPUE, measured as marketable crabs landed per trap haul, declines below a minimum threshold level in any single year. The minimum threshold level = <math>\frac{1}{4}</math> CPUE under virgin stock conditions (not currently specified).</p>	<p>not estimated</p>	<p>not estimated</p>
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**MONKFISH**

**Monkfish - Northern Stock**

Overfishing defined	$F_{threshold}$	Overfished defined	$B_{target}$	$B_{threshold}$
<p>Overfishing occurs when <math>F</math> exceeds <math>F_{THRESHOLD}</math>, which is set equal to <math>F_{MAX}</math>.</p>	<p>0.2</p>	<p>The stock is overfished when the survey index is less than <math>B_{THRESHOLD}</math>, which is set equivalent to <math>\frac{1}{2} B_{TARGET}</math>. Thus, <math>B_{THRESHOLD}=1.25</math> kg/tow for the northern stock.</p>	<p>2.50 kg/tow</p>	<p>1.25 kg/tow</p>

**Monkfish - Southern Stock**

Overfishing defined	$F_{threshold}$	Overfished defined	$B_{target}$	$B_{threshold}$
<p>Overfishing occurs when <math>F</math> exceeds <math>F_{THRESHOLD}</math>, which is set equal to <math>F_{MAX}</math>.</p>	<p>0.2</p>	<p>The stock is overfished when the survey index is less than <math>B_{THRESHOLD}</math>, which is set equivalent to <math>\frac{1}{2} B_{TARGET}</math>. Thus, <math>B_{THRESHOLD}=1.25</math> kg/tow for the northern stock.</p>	<p>1.86 kg/tow</p>	<p>0.93 kg/tow</p>

**SPINY DOGFISH**

2006 Status of U.S. Fisheries

**Spiny Dogfish**

Overfishing defined	$F_{\text{threshold}}$	Overfished defined	$B_{\text{target}}$	$B_{\text{threshold}}$
Overfishing occurs when $F$ exceeds $F_{\text{THRESHOLD}}$ , the mortality rate that stabilizes the population at $SSB_{\text{MAX}}$ when size at entry to the fishery is at 27.5 inches (70cm).	0.39 ( $F_{\text{target}}=0.08$ )	The stock is overfished when the biomass is less than $\frac{1}{2}SSB_{\text{MAX}}$ .	not estimated	100,000 mt female biomass

**SUMMER FLOUNDER, SCUP, AND BLACK SEA BASS**

**Summer Flounder**

Overfishing defined	$F_{\text{MAX}}$	Overfished defined	$B_{\text{MSY}}$	$\frac{1}{2} B_{\text{MSY}}$
Overfishing occurs when $F$ exceeds the threshold of $F_{\text{MAX}}$ ( $F_{\text{MAX}}$ is used as a proxy for $F_{\text{MSY}}$ ).	0.280	The stock is overfished when the total stock biomass falls below the minimum biomass threshold of $\frac{1}{2}B_{\text{MSY}}$ . <b>NOTE:</b> The current definition will be replaced by the following definition when a framework change to the FMP is implemented: The stock is overfished when the spawning stock biomass falls below the minimum biomass threshold of $\frac{1}{2}B_{\text{MSY}}$ . The best available estimate for the proxy of $B_{\text{MSY}}$ is 89,411 mt of spawning stock biomass.	92,645 mt	46,322 mt

**Scup**

Overfishing defined	$F_{\text{MAX}}$	Overfished defined	$B_{\text{MSY}}$	$B_{\text{THRESHOLD}}$
Overfishing occurs when $F$ exceeds the threshold $F_{\text{MAX}}$ ( $F_{\text{MAX}}$ is used as a proxy for $F_{\text{MSY}}$ ).	0.26	The stock is overfished when the minimum biomass index for rebuilding is less than $B_{\text{THRESHOLD}}$ , which is the maximum value of a 3-year moving average of the Northeast Fisheries Science Center's spring survey catch per tow of spawning stock biomass (SSB).	not estimated	2.77 kg/tow (avg. of 1977-1979)

**Black Sea Bass**

Overfishing defined	$F_{\text{MAX}}$	Overfished defined	$B_{\text{MSY}}$	$B_{\text{THRESHOLD}}$
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2006 Status of U.S. Fisheries

Overfishing occurs when F exceeds the threshold $F_{MAX}$ ( $F_{MAX}$ is used as a proxy for $F_{MSY}$ ).	0.33	The stock is overfished when the minimum biomass index for rebuilding is less than $B_{THRESHOLD}$ , which is the maximum value of a 3-year moving average of the Northeast Fisheries Science Center's spring survey exploitable biomass index (fish >22 cm).	not estimated	0.976 kg/tow.
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**BLUEFISH**

**Bluefish (except Gulf of Mexico)**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds the threshold $F_{MSY}$ .	0.19	The stock is overfished when the minimum biomass is less than $\frac{1}{2}B_{MSY}$ .	147,052 mt	73,526 mt

**ATLANTIC SURFCLAM AND OCEAN QUAHOG**

**Surfclam**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$ proxy	$\frac{1}{2} B_{MSY}$ proxy
Overfishing occurs when F exceeds $F_{MSY} = M$ (the natural mortality rate).	0.15	The stock is overfished when the current biomass estimate is less than $\frac{1}{2}$ of the $B_{MSY}$ proxy ( $\frac{1}{2}$ of the $B_{1999}$ ).	730,250 mt (meat weight)	365,125 mt (meat weight)

**Ocean Quahog**

Overfishing defined	$F_{TARGET}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when the overfishing target is exceeded, which is $F_{TARGET} = F_{0.1}$ for the exploited region. The best available estimate of $F_{0.1}$ is 0.028.	0.028	The stock is overfished when the minimum biomass is less than the biomass threshold of $\frac{1}{2}B_{MSY}$ or $\frac{1}{4}$ of the virgin biomass.	1.2 million mt (meat weight).	0.6 million mt (meat weight)

**ATLANTIC MACKEREL, SQUID, AND BUTTERFISH**

***Illex* Squid**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
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2006 Status of U.S. Fisheries

Overfishing occurs when F exceeds the fishing mortality threshold of $F_{MSY}$ .	1.22	The stock is overfished when the minimum biomass is less than $\frac{1}{2}B_{MSY}$ .	39,300 mt	19,650 mt
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*Loligo* Squid

Overfishing defined	$F_{MAX}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds the fishing mortality threshold of $F_{MAX}$ ( $F_{MAX}$ is a proxy for $F_{MSY}$ ).	0.7 and 1.2 for winter and summer cohorts, respectively	The stock is overfished when the minimum biomass is less than the biomass threshold of $\frac{1}{2}B_{MSY}$ .	80,000 mt	40,000 mt

Atlantic Mackerel

Overfishing defined	$F_{MAX}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$ PROXY
Overfishing occurs when F exceeds the fishing mortality threshold of $F_{MSY}$ . To avoid low levels of recruitment, the threshold F decreases linearly from 0.45 at 644,000 mt SSB to zero at 161,000 mt SSB ( $\frac{1}{4}B_{MSY}$ ).	0.16	The stock is overfished when the SSB is less than 322,000 mt. The estimates of the component parts of this overfishing definition were not re-estimated from past levels and therefore remain the best available estimates.	644,000 mt	322,000 mt

Butterfish (Atlantic)

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing occurs when F exceeds the fishing mortality threshold of $F_{MSY}$ . Overfishing is defined as $F_{0.1}$	0.38	The stock is overfished when the minimum biomass is less than the biomass threshold of $\frac{1}{2}B_{MSY}$ .	22,800 mt	11,400 mt

TILEFISH

Golden Tilefish (except South Atlantic and Gulf of Mexico)

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$ ( $B_{threshold}$ )
Overfishing occurs when the catch associated with a threshold F of $F_{MSY}$ is exceeded.	0.21	The stock is overfished when the total stock biomass falls below the minimum biomass threshold ( $B_{THRESHOLD}$ ) of $\frac{1}{2}B_{MSY}$ .	9,384 mt	4,692 mt

2006 Status of U.S. Fisheries

**GOLDEN CRAB OF THE SOUTH ATLANTIC**

**Golden Crab**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing occurs when the F associated with the fishing mortality rate that produces maximum sustainable yield (F <sub>MSY</sub> ) is exceeded.	0.21	A stock is overfished when the current biomass (B <sub>CURRENT</sub> ) is less than the minimum stock size threshold (MSST). The MSST is defined as a ratio of current biomass (B <sub>CURRENT</sub> ) to biomass at MSY or (1-M)* B <sub>MSY</sub> , where 1-M should never be less than 0.5.	837,000 lbs	753,000 lbs

**Jonah Crab and Red Crab**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>MSST</b>
Undefined	Undefined	Undefined	Undefined	Undefined

**SHRIMP FISHERY OF THE SOUTH ATLANTIC**

**White Shrimp**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>MSST</b>
Overfishing (MFMT) is a fishing mortality rate that diminishes the stock below the designated MSY stock abundance (B <sub>MSY</sub> ) for two consecutive years.	The proxy for B <sub>MSY</sub> is CPUE = 5.868 individual per hectare.	MSST is established with two thresholds: (1) if the stock diminishes to ½ MSY abundance (½ B <sub>MSY</sub> ) in one year, or (b) if the stock is diminished below MSY abundance (B <sub>MSY</sub> ) for two consecutive years. In addition a stock is overfished when the overwintering white shrimp population within a state's water declines by 80% or more following severe winter resulting in prolonged cold water temperatures. A proxy for B <sub>MSY</sub> 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.	CPUE = 5.868 individuals per hectare	The proxy for B <sub>MSY</sub> is CPUE = 5.868 individual per hectare.

2006 Status of U.S. Fisheries

**Rock Shrimp**

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	MSST
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 is a fishing mortality rate that leads 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.	14,687,775 pounds heads on) for two consecutive years.	A stock is overfished when it falls below MSST, which is the parent stock size less than 1/2 (B <sub>MSY</sub> ) for two consecutive years. A proxy for B <sub>MSY</sub> has not been defined.	not estimated	14,687,775 pounds heads on) for two consecutive years.

**Brown Shrimp**

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	MSST
Overfishing (MFMT) is a fishing mortality rate that diminishes the stock below the designated MSY stock abundance (B <sub>MSY</sub> ) for two consecutive years and MSST is established with two thresholds: (1) if the stock diminishes to 1/2 MSY abundance (1/2 B <sub>MSY</sub> ) in one year, or (b) if the stock is diminished below MSY abundance (B <sub>MSY</sub> ) for two consecutive years.	The proxy for B <sub>MSY</sub> is CPUE = 2.000 individuals per hectare.	MSST is established with two thresholds: (1) if the stock diminishes to 1/2 MSY abundance (1/2 B <sub>MSY</sub> ) in one year, or (b) if the stock is diminished below MSY abundance (B <sub>MSY</sub> ) for two consecutive years. A proxy for B <sub>MSY</sub> 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.	CPUE = 2.000 individuals per hectare	The proxy for B <sub>MSY</sub> is CPUE = 2.000 individuals per hectare.

**Pink Shrimp**

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	MSST
Overfishing (MFMT) is a fishing mortality rate that diminishes the stock below the designated MSY stock abundance (B <sub>MSY</sub> ) for two consecutive years and MSST is established with two thresholds: (1) if the stock diminishes to 1/2 MSY abundance (1/2 B <sub>MSY</sub> ) in one year, or (b) if the stock is diminished below MSY abundance (B <sub>MSY</sub> ) for two consecutive years.	Specified in overfishing definition. The proxy for B <sub>MSY</sub> = 0.461 individuals per hectare.	MSST is established with two thresholds: (1) if the stock diminishes to 1/2 MSY abundance (1/2 B <sub>MSY</sub> ) in one year, or (b) if the stock is diminished below MSY abundance (B <sub>MSY</sub> ) for two consecutive years. A proxy for B <sub>MSY</sub> 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.	CPUE = 0.461 individuals per hectare	The proxy for B <sub>MSY</sub> = 0.461 individuals per hectare.



2006 Status of U.S. Fisheries

**SOUTH ATLANTIC SNAPPER-GROUPER**

**Tilefish**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> .	0.043	Overfished is defined as a stock size less than MSST. MSST = (1-M)B <sub>MSY</sub> and M = 0.08.	1,938,750 lbs	1,783,650 lbs.

**Snowy Grouper**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> .	0.05	Overfished is defined as a stock size less than MSST. MSST = (1-M)B <sub>MSY</sub> and M = 0.12.	4,664,980 lbs	4,105,182 l lbs.

**Black Sea Bass**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> .	0.43	Overfished is defined as a stock size less than MSST. MSST = 1-M(B <sub>MSY</sub> ) and M = 0.30.	15.0 million lbs or 6,813 mt	10.5 million lbs. or 4,768 mt

**Red Porgy**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> .	0.19	Overfished is defined as a stock size less than MSST. MSST = (1-M)B <sub>MSY</sub> and M = 0.225.	7.13 million lbs or 3,236 mt	5.53 million lbs. or 2,508 mt

**Gag**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> where F <sub>MSY</sub> = F <sub>30%SPR</sub> .	0.20	Overfished is defined as a stock size less than MSST, where MSST = 1-M*B <sub>MSY</sub> .	7,925,000 lbs*	6816000*

\* Estimate is preliminary pending final review of stock assessment

**Greater Amberjack**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> where F <sub>MSY</sub> = F <sub>30%SPR</sub> .	0.26	Overfished is defined as a stock size less than MSST, where MSST = 1-M*B <sub>MSY</sub> and M = 0.25.	6,631,258	4,973,444

2006 Status of U.S. Fisheries

**Vermilion Snapper**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> .	0.38	Overfished is defined as a stock size less than MSST = (1-c)B <sub>MSY</sub> , where c is the lesser of M or 0.5. M = 0.25; the best estimate of MSST is 0.75B <sub>MSY</sub> .	not estimated	not estimated

**Nassau Grouper**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> , where F <sub>MSY</sub> = F <sub>40%SPR</sub> .	There is no estimate of F <sub>40%SPR</sub> . M = 0.18, which could be used as an approximation of F <sub>MSY</sub> .	Overfished is defined as a stock size less than MSST. MSST = 1-M*B <sub>MSY</sub> .	not estimated	not estimated

**Red Snapper**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> where F <sub>MSY</sub> = F <sub>30%SPR</sub> .	0.40	Overfished is defined as a stock size less than MSST. MSST = 1-M*B <sub>MSY</sub> .	not estimated	not estimated

**Speckled Hind**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = F <sub>MSY</sub> where F <sub>MSY</sub> = F <sub>30%SPR</sub> .	0.14	Overfished is defined as a stock size less than MSST. MSST = 1-M*B <sub>MSY</sub> .	not estimated	not estimated

2006 Status of U.S. Fisheries

Scamp

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.23	Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

White Grunt

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.26	Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

Gray Triggerfish

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.80	Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

Red Grouper

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.28	Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

2006 Status of U.S. Fisheries

**Black Grouper**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.25	Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

**Yellowedge Grouper**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.20	Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

**Warsaw Grouper**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.18	Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

**Wreckfish**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.36	Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

2006 Status of U.S. Fisheries

Lane Snapper

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.67	Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated
<p>Mutton Snapper, Gray (Mangrove) Snapper, Queen Triggerfish, Ocean Triggerfish, Yellow Jack, Blue Runner, Crevalle Jack, Bar Jack, Lesser Amberjack, Almaco Jack, Banded Rudderfish, Atlantic Spadefish, Black Margate, Porkfish, Margate, Tomtate, Smallmouth Grunt, French Grunt, Spanish Grunt, Cottonwick, Sailors Choice, Bluestriped Grunt, Hogfish, Puddingwife, Black Snapper, Queen Snapper, Schoolmaster, Blackfin Snapper, Cubera Snapper, Mahogany Snapper, Dog Snapper, Silk Snapper, Blueline Tilefish, Sand Tilefish, Bank Sea Bass, Rock Sea Bass, Rock Hind, Graysby, Coney, Red Hind, Misty Grouper, Yellowmouth Grouper, Tiger Grouper, Yellowfin Grouper, Sheepshead, Grass Porgy, Jolthead Porgy, Saucereye Porgy, Whitebone Porgy, Knobbed Porgy, Longspine Porgy, Scup</p>				
Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	not estimated	Overfished is defined as a stock size less than MSST, where $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

SOUTH ATLANTIC SNAPPER-GROUPER AND REEF FISH RESOURCES OF THE GULF OF MEXICO

Goliath Grouper

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F in excess of the fishing mortality rate corresponding to a 40% Static SPR.	Unknown	South Atlantic - Overfished is defined as a stock size less than MSST. Gulf of Mexico - Overfished is undefined.	not estimated	See Overfished Definition

Yellowtail Snapper

2006 Status of U.S. Fisheries

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ .	0.33	Overfished is defined as a stock size less than $MSST = (1-c)B_{MSY}$ , where c is the lesser of M or 0.5. $M = 0.2$ ; the best estimate of MSST for yellowtail snapper is $0.8B_{MSY}$ .	4,522 mt	3,618 mt

**ATLANTIC COAST RED DRUM**

**Red Drum**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.8	Overfished is defined as a stock size less than MSST, where $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

**CORAL, CORAL REEFS, AND LIVE / HARD BOTTOM HABITATS OF THE SOUTH ATLANTIC REGION**

**Fire Corals, Hydrocorals, Octocorals, Stony Corals, Black Corals**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an annual level of harvest that exceeds optimum yield (OY). OY for coral reefs, stony corals, hydrocorals, black corals, seafans, and live rock is zero, except as may be authorized for scientific and educational purposes. Harvest of allowable octocorals in the EEZ is specified by the South Atlantic Council each year.	0 for all species except octocorals ( $F/F_{MSY} < 1$ )	In South Atlantic overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

**PELAGIC SARGASSUM HABITAT OF THE SOUTH ATLANTIC REGION**

2006 Status of U.S. Fisheries

**Sargassum**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as the rate of harvest which compromises the stock's ability to produce MSY.	*not estimated	A stock is overfished when the stock is reduced below MSST.	50,000 mt	25,000 mt

\*Although the MFMT was disapproved, an examination of the rate of harvest (currently zero), relative to the approved MSY level (100,000 mt), indicates that overfishing is not occurring. In addition, no directed fishery for this stock currently exists. This species has the capacity to increase its biomass through vegetative growth by as much as 10 percent per day, thus doubling its biomass every two weeks.

**DOLPHIN WAHOO**

**Wahoo**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as a fishing mortality rate (F) in the excess of $F_{MSY}$ (F30% Static SPR).	Unknown	A stock is overfished if current biomass ( $B_{curr}$ ) is less than MSST and would be recovered when current biomass was equal or greater than the biomass at MSY. MSST is defined $(1-M)*B_{MSY}$ , where 1-M should never be less than 0.5. Using the best estimates of natural mortality ( $M = 0.68-0.80$ ) in the formula results in a MSST of 50% $B_{MSY}$ .	not estimated	not estimated

**DOLPHIN WAHOO AND COASTAL MIGRATORY PELAGICS OF THE GULF OF MEXICO AND SOUTH ATLANTIC**

**Dolphin**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
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2006 Status of U.S. Fisheries

Overfishing is defined as a fishing mortality rate (F) in the excess of $F_{MSY}$ ( $F_{30\% SPR}$ ).	0.49	A stock is overfished if current biomass ( $B_{curr}$ ) is less than MSST and would be recovered when current biomass was equal or greater than the biomass at MSY. MSST is defined $(1-M)*B_{MSY}$ , where $1-M$ should never be less than 0.5. Using the best estimates of natural mortality ( $M = 0.68-0.80$ ) in the formula results in a MSST of 50% $B_{MSY}$ .	$B_{1998}/B_{msy} = 1.56$ ; $B_{msy}$ not estimated.	$B_{1998}/MSST > 1$ ; MSST not estimated
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**COASTAL MIGRATORY PELAGICS OF THE SOUTH ATLANTIC AND GULF OF MEXICO**

<b>King Mackerel - Gulf Group</b>				
<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\% SPR}$ .	0.269	A stock is overfished when the stock size is less than the minimum stock size threshold. For Gulf group King Mackerel, MSST = $(1-M)*B_{MSY}$ or 80% of $B_{MSY}$ .	6.385 trillion eggs	5.108 trillion eggs

**King Mackerel - Atlantic Group**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\% SPR}$ .	0.26-0.35	A stock is overfished when the stock size is less than the minimum stock size threshold. For Atlantic group King Mackerel, MSST = $(1-M)*B_{MSY}$ or 85% of $B_{MSY}$ .	4.7-7.2 (unitless relative fecundity estimate in millions)	4.0-6.1 (unitless relative fecundity estimate in millions)

**Spanish Mackerel - Gulf Group**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\% SPR}$ .	0.629	A stock is overfished when the stock size is less than the minimum stock size threshold. MSST = $(1-M)*B_{MSY}$ or 70% of $B_{MSY}$ .	16.486 mp	11.5402 mp

**Spanish Mackerel - Atlantic Group**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
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2006 Status of U.S. Fisheries

Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.38-0.48	A stock is overfished when the stock size is less than the minimum stock size threshold. $MSST = (1-M)*B_{MSY}$ or 70% of $B_{MSY}$	12.1-15.9 (unitless relative fecundity estimate in millions)	8.5-11.1 (unitless relative fecundity estimate in millions)
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**Little Tunny**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the F is in excess of the F corresponding to a 30% Static SPR.	0.197	Undefined (Gulf); In South Atlantic overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	3,561,000 mt	1,780,500 to 2,848,800

**Cobia**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F that exceeds MFMT = $F_{MSY}$ where $F_{MSY} = F_{30\%SPR}$ .	0.33	A stock is overfished when the stock size is less than the minimum stock size threshold. $MSST = (1-M)*B_{MSY}$ or 70% of $B_{MSY}$	960 mt	1,372 mt

**Cero Mackerel**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the F is in excess of the F corresponding to a 30% Static SPR.	not estimated	(Gulf) Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

**Bluefish - Gulf of Mexico only**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the F is in excess of the F corresponding to a 30% Static SPR.	0.29	(Gulf) Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

**SPINY LOBSTER FISHERY OF THE SOUTH ATLANTIC AND GULF OF MEXICO**

**Spiny Lobster**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as an F in excess of the fishing mortality rate corresponding to a 20% SPR where $F_{MSY} = F_{20\%SPR}$ .	0.42	(Gulf) Overfished is defined as a stock size less than MSST. $MSST = 1-M*B_{MSY}$ .	not estimated	not estimated

2006 Status of U.S. Fisheries

Slipper Lobster

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Undefined	Undefined	Undefined	Undefined	Undefined

STONE CRAB FISHERY OF THE GULF OF MEXICO

Stone Crab

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs and a stock is overfished when the realized egg production per recruit is reduced below 70% of potential production. This will be avoided when there is a minimum claw length (length of prodopus) that assures survival of the crabs to achieve 70% egg production per recruit potential.	$F < F_{msy}$ $F_{msy}$ is not known; however, $F$ is considered to be very low because all stone crab are released alive in shallow water after removing a claw.	Undefined	Undefined	Undefined

SHRIMP FISHERY OF THE GULF OF MEXICO

Brown Shrimp

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing is occurring when the parent stock levels are reduced below 125 million shrimp. -Parent stock is defined for brown shrimp as the number of age 7+ (months) shrimp during the November through February period.	Parent stock level = 125 million shrimp.	An overfished condition would result when a parent stock number falls below one-half of the overfishing definition.	125 million shrimp	63 million shrimp

2006 Status of U.S. Fisheries

**Pink Shrimp**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>
Overfishing is occurring when parent stock levels are reduced below 100 million shrimp. Parent stock is defined for pink shrimp as the number of 5+ (months) shrimp during the July through June period.	Parent stock level = 100 million shrimp.	An overfished condition would result when a parent stock number falls below one-half of the overfishing definition.	100 million shrimp	50 million shrimp

**White Shrimp**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>
Overfishing is occurring when parent stock levels are reduced below 330 million shrimp. Parent stock is defined for white shrimp as the number of age 7+ (months) shrimp during the May through August period.	Parent stock = 330 million shrimp.	An overfished condition would result when a parent stock number falls below one-half of the overfishing definition.	330 million shrimp	165 million shrimp

**Royal Red Shrimp**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>

2006 Status of U.S. Fisheries

<p>The overfishing threshold for royal red shrimp is defined as the fishing mortality rate (F) that results in an annual catch exceeding MSY for 2 consecutive years. Under the current management regime for royal red shrimp, OY is equal to MSY at a range of 392,000 to 650,000 pounds.</p>	<p>OY = 392,000 - 650,000 pounds of tails.</p>	<p>The royal red shrimp stock would be considered as overfished when its spawning stock biomass (B) is less than 50% of <math>B_{MSY}</math>. B and <math>B_{MSY}</math> are unknown.</p>	<p>not estimated</p>	<p>not estimated</p>
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**Rock Shrimp and Seabob Shrimp**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Undefined	Undefined	Undefined	Undefined	Undefined

**CORAL AND CORAL REEFS OF THE GULF OF MEXICO**

**Fire Corals, Hydrocorals, Octocorals, Stony Corals, Black Corals**

Overfishing defined (pre-SFA)	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
<p>Overfishing is defined as an annual level of harvest that exceeds optimum yield (OY). OY for coral reefs, stony corals, hydrocorals, black corals, seafans, and live rock is zero, except as may be authorized for scientific and educational purposes. Harvest of allowable octocorals in the EEZ is not to exceed 50,000 colonies per year (Gulf and South Atlantic EEZ combined).</p>	<p>0 for all species except octocorals (<math>F/F_{MSY} &lt; 1</math>)</p>	Undefined	Undefined	Undefined

**REEF FISH OF THE GULF OF MEXICO**

**Red Snapper**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
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2006 Status of U.S. Fisheries

Overfishing is occurring when the fishing mortality rate is in excess of MFMT = $F_{MSY}$ .	$F_{26\%SPR} = 0.18$ (Gulfwide)	A stock is overfished when it is below the MSST = $(1-M) \cdot B_{MSY}$ ( $M = 0.1$ ).	Number of effective spawners at MSY = 14,152,500	Number of effective spawners at MSST = 12,737,250
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**Red Grouper**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as a fishing mortality rate that exceeds MFMT = $F_{MSY}$ .	0.213	Overfished is defined as a stock size less than MSST = $(1-c) \cdot B_{MSY}$ , where c is the lesser of M or 0.5. $M = 0.14$ , MSST = $(1-c) \cdot SS_{MSY}$ .	591 MT of eggs	508 MT of eggs

**Greater Amberjack**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the fishing mortality rate exceeds that associated with a 30% static SPR.	0.57	Overfished is defined as a stock size less than MSST = $(1-c) \cdot B_{MSY}$ , where c is the lesser of M or 0.5. $M=0.25$ ; the best estimate of MSST = $0.75B_{MSY}$ .	8.87 million lbs	6.65 million lbs.

**Vermilion Snapper**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
The post SFA definition of overfishing is MFMT = $F_{MSY}$ .	0.81	Overfished is defined as a stock size less than MSST = $(1-M) \cdot B_{MSY}$ . $M=0.25$ .	69 trillion eggs	51.7 trillion eggs

**Nassau Grouper**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the fishing mortality rates exceeds that associated with a 40% static SPR.	$0.18 = M$	Undefined	Undefined	Undefined

**Gag**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
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2006 Status of U.S. Fisheries

Overfishing occurs when the fishing mortality rates exceeds that associated with a 30% static SPR.	0.25	Undefined	Undefined	Undefined
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**Gray Triggerfish**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing occurs when the fishing mortality rates exceeds that associated with a 30% static SPR.	0.27	Undefined	Undefined	Undefined

Lesser Amberjack, Almaco Jack, Banded Rudderfish, Queen Snapper, Mutton Snapper, Schoolmaster, Blackfin Snapper, Cubera Snapper, Gray (Mangrove) Snapper, Dog Snapper, Mahogany Snapper, Lane Snapper, Silk Snapper, Wenchman, Goldface Tilefish, Blackline Tilefish, Anchor Tilefish, Blueline Tilefish, Tilefish, Rock Hind, Speckled Hind, Yellowedge Grouper, Red Hind, Misty Grouper, Warsaw Grouper, Snowy Grouper, Black Grouper, Yellowmouth Grouper, Scamp, Yellowfin Grouper, Hogfish, Dwarf Sand Perch, Sand Perch

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing occurs when the fishing mortality rate exceeds that associated with a 30% static SPR.		Undefined	Undefined	Undefined

**GULF OF MEXICO RED DRUM**

**Red Drum**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>
Overfishing occurs when the fishing mortality rates exceeds that associated with a 30% static SPR.	$F_{30\%SPR} = 0.50$	Undefined	Undefined	Undefined

**SPINY LOBSTER FISHERY OF PUERTO RICO AND THE U.S. VIRGIN ISLANDS**

**Spiny Lobster**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSST</b>

2006 Status of U.S. Fisheries

Overfishing is defined as a fishing mortality rate that exceeds $MFMT = F_{MSY}$ . When the data needed to determine $F_{MSY}$ are not available, natural mortality ( $M$ ) is used as a proxy for $F_{MSY}$ .	0.34	Overfished is defined as a stock size less than $MSST$ is set = $B_{MSY}(1-c)$ ; where $c$ = the natural mortality rate ( $M$ ) or 0.50, whichever is smaller.	2,217,000 lbs.	1,463,000 lbs.
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**QUEEN CONCH RESOURCES OF PUERTO RICO AND THE U.S. VIRGIN ISLANDS**

**Queen Conch**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$MSST$
Overfishing is defined as a fishing mortality rate that exceeds $MFMT = F_{MSY}$ .	0.30	Overfished is defined as a stock size less than $MSST$ is set = $B_{MSY}(1-c)$ ; where $c$ = the natural mortality rate ( $M$ ) or 0.50, whichever is smaller.	2,005,000 lbs.	1,404,000 lbs.

Data Collection Purposes only - Atlantic Triton's Trumpet, Cameo Helmet, Green Star Shell, Hawkwing Conch, Milk Conch, Roostertail Conch, West Indian Fighting Conch, and True Tulip.

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$MSST$
N/A	N/A	N/A	N/A	N/A

**CORAL AND REEF ASSOCIATED INVERTEBRATES OF PUERTO RICO AND THE U.S. VIRGIN ISLANDS**

Innumerable species for data collection purposes only

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$MSST$
N/A	N/A	N/A	N/A	N/A

**REEF FISH OF PUERTO RICO AND THE U.S. VIRGIN ISLANDS**

Snapper Unit 1 (Silk snapper, Blackfin Snapper, Black Snapper, Vermilion Snapper)

2006 Status of U.S. Fisheries

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as a fishing mortality rate that exceeds MFMT = $F_{MSY}$ .	0.86	Overfished is defined as a stock size less than MSST is set = $B_{MSY}(1-c)$ ; where $c$ = the natural mortality rate ( $M$ ) or 0.50, whichever is smaller.	1,202,000 lbs.	601,000 lbs.

NOTE: A combination of qualitative and quantitative data were used to make the most recent status determination for Snapper Unit 1.

**Snapper Unit 2** (Queen Snapper, Wenchman)

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as a fishing mortality rate that exceeds MFMT = $F_{MSY}$ .	0.44	Overfished is defined as a stock size less than MSST is set = $B_{MSY}(1-c)$ ; where $c$ = the natural mortality rate ( $M$ ) or 0.50, whichever is smaller.	516,000 lbs.	289,000 lbs.

**Snapper Unit 3** (Gray Snapper, Lane Snapper, Mutton Snapper, Dog Snapper, Schoolmaster, Mahogany Snapper)

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as a fishing mortality rate that exceeds MFMT = $F_{MSY}$ .	0.30	Overfished is defined as a stock size less than MSST is set = $B_{MSY}(1-c)$ ; where $c$ = the natural mortality rate ( $M$ ) or 0.50, whichever is smaller.	2,403,000 lbs.	1,682,000 lbs.

**Snapper Unit 4** (Yellowtail Snapper)

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as a fishing mortality rate that exceeds MFMT = $F_{MSY}$ .	0.20	Overfished is defined as a stock size less than MSST is set = $B_{MSY}(1-c)$ ; where $c$ = the natural mortality rate ( $M$ ) or 0.50, whichever is smaller.	2,214,000 lbs.	1,771,000 lbs.

**Grouper Unit 1** (Nassau Grouper)

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing is defined as a fishing mortality rate that exceeds MFMT = $F_{MSY}$ .	0.18	Overfished is defined as a stock size less than MSST is set = $B_{MSY}(1-c)$ ; where $c$ = the natural mortality rate ( $M$ ) or 0.50, whichever is smaller.	20,000-190,000 lbs.	18,000-171,000 lbs.

NOTE: A combination of qualitative and quantitative data were used to make the most recent status determination for Grouper Unit 1.

**Grouper Unit 2** (Goliath Grouper)



2006 Status of U.S. Fisheries

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY</sub>	MSST
Overfishing is defined as a fishing mortality rate that exceeds MFMT = F <sub>MSY</sub> .	0.13	Overfished is defined as a stock size less than MSST is set = B <sub>MSY</sub> (1-c); where c = the natural mortality rate (M) or 0.50, whichever is smaller.	40,000-120,000 lbs.	38,000-114,000 lbs.

NOTE: A combination of qualitative and quantitative data were used to make the most recent status determination for Grouper Unit 2.

**Grouper Unit 3** (Red Hind, Coney, Rock Hind, Graysby, Creole-fish)

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY</sub>	MSST
Overfishing is defined as a fishing mortality rate that exceeds MFMT = F <sub>MSY</sub> .	0.18	Overfished is defined as a stock size less than MSST is set = B <sub>MSY</sub> (1-c); where c = the natural mortality rate (M) or 0.50, whichever is smaller.	1,045,000 lbs.	857,000 lbs.

**Grouper Unit 4** (Red Grouper, Yellowedge Grouper, Misty Grouper, Tiger Grouper, Yellowfin Grouper)

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY</sub>	MSST
Overfishing is defined as a fishing mortality rate that exceeds MFMT = F <sub>MSY</sub> .	0.18	Overfished is defined as a stock size less than MSST is set = B <sub>MSY</sub> (1-c); where c = the natural mortality rate (M) or 0.50, whichever is smaller.	626,000 lbs.	513,000 lbs.

NOTE: A combination of qualitative and quantitative data were used to make the most recent status determinations for Grouper Unit 4.

**Grunts** (White grunt, Margate, Tomtate, Bluestriped Grunt, French Grunt, Porkfish), **Goatfishes** (Spotted Goatfish, Yellow Goatfish), **Porgies** (Jolthead Porgy, Sea Bream, Sheepshead Porgy, Pluma), **Squirrelfishes** (Blackbar Soldierfish, Bigeye, Longspine Squirrelfish, Squirrelfish), **Tilefishes** (Blackline Tilefish, Sand Tilefish), **Jacks** (Blue Runner, Horse-eye Jack, Black Jack, Almaco Jack, Bar Jack, Greater Amberjack, Yellow Jack), **Parrotfishes** (Blue Parrotfish, Midnight Parrotfish, Princess Parrotfish, Queen Parrotfish, Rainbow Parrotfish, Redfin Parrotfish, Redtail Parrotfish, Stoplight Parrotfish, Redband Parrotfish, Striped Parrotfish), **Surgeonfishes** (Blue Tang, Ocean Surgeonfish, Doctorfish), **Triggerfishes** (Ocean Triggerfish, Queen Triggerfish, Sargassum Triggerfish), **Filefishes** (**Scrawled Filefish, Whitespotted Filefish, Black Durgon**), **Boxfishes** (Honeycomb Cowfish, Scrawled Cowfish, Trunkfish, Spotted Trunkfish, Smooth Trunkfish), **Wrasses** (Hogfish, Puddingwife, Spanish Hogfish), **Angelfishes** (Queen Angelfish, Gray Angelfish, French Angelfish)

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY</sub>	MSST
Undefined	Undefined	Undefined	Undefined	Undefined

## WASHINGTON, OREGON, AND CALIFORNIA GROUND FISH

Stock	Overfishing Definition	2005 ABC (mt) (F <sub>MSY proxy</sub> )	Overfished Definition	40% SSBO (BMSY Proxy) *2005 unless otherwise noted	25%SSBO (MSST) *2005 unless otherwise noted	NOTES
Lingcod	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is F <sub>45%</sub> for other groundfish such as sablefish and lingcod.	2,922	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	21140	13213	Values for Bmsy and MSST taken from 2005 Coastwide Lingcod stock assessment.
Pacific Ocean Perch	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	966	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	15135	9460	ABC applies to area north of 40o10' Lat. Southern catch is included in the Other Slope Rockfish category.
Bocaccio	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	566	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	5361	3351	ABC applies to area south of 40o10' Lat. Northern catch is included in Other Shelf Rockfish category. Bmsy and MSST are reported in Spawning Output (10 <sup>9</sup> eggs)
Canary rockfish	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	270	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	13734	8584	40%SSBO and 25%SSBO are an average of base and alternate cases from 2005 stock assessment as recommended by the SSC.
Cowcod	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (FMSY) on a continual basis. The default FMSY proxy used for setting acceptable biological catches (ABCs) is for F50% rockfish (including thornyheads).	24	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	1218	761	ABC applies to the area south of 40o10' Lat. Northern catch is included in Other Shelf Rockfish category.
Darkblotched rockfish	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (FMSY) on a continual basis. The default FMSY proxy used for setting acceptable biological catches (ABCs) is for F50% rockfish (including thornyheads).	269	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	10660	6663	Bmsy and MSST are reported in Spawning Output (10 <sup>7</sup> eggs)

2006 Status of U.S. Fisheries

Stock	Overfishing Definition	2005 ABC (mt) (F <sub>MSY</sub> proxy)	Overfished Definition	40% SSBO (BMSY Proxy) *2005 unless otherwise noted	25%SSBO (MSST) *2005 unless otherwise noted	NOTES
<b>Widow rockfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	3218	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	19871	12420	Bmsy and MSST are reported in Spawning Output (10 <sup>9</sup> eggs)
<b>Yelloweye rockfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	54	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	1,329	831	40% SSBO and 25%SSBO are taken from coastwide base case model in 2006 stock assessment
<b>Bank rockfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	350	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	537,889 - 536,571 eggs	336,181 - 335,357 eggs	This ABC is based on a 2000 stock assessment for the Monterey and Conception areas. This stock contributes 263 mt towards the minor rockfish OY in the south. Point estimates were not available for 40% and 25% SSBO but the range is included and reported in Spawning Output (eggs). However, the 2000 stock assessment results indicated the stock was between 26-31% of unfished levels.
<b>Shortspine thornyhead</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	1055	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	52258	32662	
<b>Longspine thornyhead</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	2461	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	42063	26289	
<b>Yellowtail rockfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	3896	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	12406	7754	ABC applies to area north of 40°10' Lat. Southern catch are included in the Other Shelf Rockfish category

2006 Status of U.S. Fisheries

Stock	Overfishing Definition	2005 ABC (mt) (F <sub>MSY</sub> proxy)	Overfished Definition	40% SSBO (BMSY Proxy) *2005 unless otherwise noted	25%SSBO (MSST) *2005 unless otherwise noted	NOTES
<b>Pacific Whiting</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is F <sub>40%</sub> for flatfish and Whiting.	269,545	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	1,524,000	9,525,000	40% SSBO and 25%SSBO are from coastwide (US and Canada) "base case" model in 2006 stock assessment. An equally plausible "alternate model" estimated SSB40 and SSB25 at 1,714,800 and 1,071,750 mt, respectively. 2005 used for overfishing determination.
<b>Sablefish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is F <sub>45%</sub> for other groundfish such as sablefish and lingcod.	8,368	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	87544	54715	
<b>Dover sole</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is F <sub>40%</sub> for flatfish and Whiting.	8,522	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	119622	74764	
<b>English sole</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is F <sub>40%</sub> for flatfish and Whiting.	3,100	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	13725	8578	
<b>Petrale sole</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is F <sub>40%</sub> for flatfish and Whiting.	2,762	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	12147	7592	
<b>Chillipepper rockfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	2,700	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	23,406	14,629	ABC applies to area south of 40o10'. Northern catch is included in the Other Shelf Rockfish category. BMSY proxy based on Spawning Output (eggs) from 1998 stock assessment.

2006 Status of U.S. Fisheries

Stock	Overfishing Definition	2005 ABC (mt) (F <sub>MSY</sub> proxy)	Overfished Definition	40% SSBO (BMSY Proxy) *2005 unless otherwise noted	25%SSBO (MSST) *2005 unless otherwise noted	NOTES
<b>Shortbelly rockfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	13,900	The overfished determination is presumably based on the 1989 stock assessment where virgin spawning biomass was estimated from an acoustic survey and a potential yield model was used to estimate MSY. Because this assessment was conducted pre-SFA, neither current biomass estimates nor an overfished threshold were identified.	Not available	Not available	No fishery exists for this species. Shortbelly rockfish was last assessed as part of Council action in 1989. A recent assessment has been conducted by the SWFSC to determine current status of this species but has not been reviewed by the PFMCs SSC and has not been used as a basis for management.
<b>Arrowtooth flounder</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is F <sub>40%</sub> for flatfish and Whiting.	5,800	This overfished determination is presumably based on the 1993 assessment which estimated an equilibrium yield per recruit using a dynamic pool model. Because the assessment was conducted pre-SFA, neither the overfished threshold nor current biomass estimate were identified.	Not available	Not available	Arrowtooth flounder is scheduled to be assessed and reviewed again in 2007.
<b>Black rockfish - North</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is for F <sub>50%</sub> rockfish (including thornyheads).	1,293	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	1,257,864	786,165	The ABC for the area N of 46o16' lat. is 540 mt and S of 46o10' is 753 mt. The overfished determination for the northern stock is based on a 2003 assessment. Overfished reference points refer to spawning output in numbers of larvae.
<b>Starry flounder</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) are is F <sub>40%</sub> for flatfish and whiting.	NA	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	2,864	1,790	Starry flounder was first assessed in 2005 and was estimated to be above target of 40%SSBO. An individual ABC did not exist for this species in 2005.
<b>Cabezon South</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is F <sub>45%</sub> for other groundfish such as sablefish and lingcod.	103	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	544	340	ABC applies to south of 42oN lat.
<b>Kelp Greenling - Oregon</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (F <sub>MSY</sub> ) on a continual basis. The default F <sub>MSY</sub> proxy used for setting acceptable biological catches (ABCs) is F <sub>45%</sub> for other groundfish such as sablefish and lingcod.	NA	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	128	80	Kelp greenling - Oregon stock was first assessed in 2005 and was estimated to be above target of 40%SSBO. An individual ABC did not exist for this stock in 2005.

2006 Status of U.S. Fisheries

Stock	Overfishing Definition	2005 ABC (mt) (F <sub>MSY</sub> proxy)	Overfished Definition	40% SSBO (BMSY Proxy) *2005 unless otherwise noted	25%SSBO (MSST) *2005 unless otherwise noted	NOTES
<b>Blackgill Rockfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (FMSY) on a continual basis. The default FMSY proxy used for setting acceptable biological catches (ABCs) is for F50% rockfish (including thornyheads).	343	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	3,799	2,376	ABC of 343 mt is the sum of the Conception area ABC of 268 mt based on the stock assessment and the Monterey area ABC of 75 mt. Northern catch is included in the Other Slope Rockfish category.
<b>Gopher Rockfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (FMSY) on a continual basis. The default FMSY proxy used for setting acceptable biological catches (ABCs) is for F50% rockfish (including thornyheads).	NA	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	798	499	Gopher rockfish was assessed in 2005 and was estimated to be above target of 40%SSBO. An individual ABC did not exist for this species in 2005.
<b>California Scorpionfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (FMSY) on a continual basis. The default FMSY proxy used for setting acceptable biological catches (ABCs) is F45% for other groundfish such as sablefish and lingcod.	NA	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	409	256	California scorpionfish was first assessed in 2005 and was estimated to be above target of 40%SSBO. An individual ABC did not exist for this species in 2005.
<b>Pacific Cod</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (FMSY) on a continual basis. The default FMSY proxy used for setting acceptable biological catches (ABCs) is F45% for other groundfish.	*See note	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	Unknown	Unknown	An ABC of 3,200 mt is based on historical landings data and is set at the same level as it was in 2004. An assessment has not been conducted.
<b>Silvergrey Rockfish</b>	Overfishing occurs when the catch exceeds the fishing mortality rate needed to produce the maximum sustainable yield (FMSY) on a continual basis. The default FMSY proxy used for setting acceptable biological catches (ABCs) is for F50% rockfish (including thornyheads).	Contributes 38 mt to the Northern Remaining Rockfish	A stock is overfished if its current biomass is less than 25% of the unfished biomass level or if the current biomass is less than 50% of the biomass that would produce the maximum sustainable yield (MSY).	Unknown	Unknown	Silvergrey is a non-FSSI stock.

WEST COAST SALMON

With NMFS approval of Amendment 14 to the Pacific Coast Salmon Plan (Salmon FMP) on September 27, 2000, the Pacific Fishery Management Council's (PFMC) criteria for an overfishing concern are met if, in three consecutive years, the post-season estimates indicate a natural stock has fallen short of its conservation objective (MSY, maximum sustainable production (MSP2), or spawner floor as noted for some harvest rate objectives) as listed in Table 3-1 of the Salmon FMP.

California Central Valley Chinook - Sacramento River Fall

Conservation Objective

Stock	Overfishing Definition	2005 ABC (mt) (F <sub>MSY proxy</sub> )	Overfished Definition	40% SSBO (BMSY Proxy) *2005 unless otherwise noted	25%SSBO (MSST) *2005 unless otherwise noted	NOTES
122,000 to 180,000 adult spawners (hatchery + natural)						
<b>Northern California Coast Chinook Klamath River Fall (Klamath and Trinity Rivers)</b>						
<b>Conservation Objective</b>						
33-34% of the potential spawners in each brood year, but not less than 35,000 natural spawners.						
<b>Oregon Coast Chinook Southern Oregon (Aggregate of Fall and Spring stocks in all streams south of Elk River; Rogue River Fall stock is used to indicate relative abundance and ocean contribution rates)</b>						
<b>Conservation Objective</b>						
Unspecified portion of 150,000 to 200,000 natural spawners (>60 natural spawners/mile of accessible spawning habitat)						
<b>Oregon Coast Chinook Central and Northern Oregon (Aggregate of Fall and Spring stocks in all streams from the Elk River to just south of the Columbia River)</b>						
<b>Conservation Objective</b>						
Unspecified portion of 150,000 to 200,000 natural spawners (>60 natural spawners/mile of accessible spawning habitat)						
<b>Oregon Coastal Natural comprised of Southern, South-Central, North-Central, and Northern Oregon Stocks. (Southern Stock - ESA Threatened 1997)</b>						
<b>Conservation Objective</b>						
Total exploitation rate of no more than 13-35% depending on parent escapement and survival index						
<b>Washington Coastal Coho Grays Harbor</b>						
<b>Conservation Objective</b>						
>35,400 natural spawners						
<b>Washington Coastal Coho Queets</b>						
<b>Conservation Objective</b>						
>5,800 natural spawners						
<b>Washington Coastal Coho Hoh</b>						
<b>Conservation Objective</b>						

2006 Status of U.S. Fisheries

Stock	Overfishing Definition	2005 ABC (mt) (F <sub>MSY proxy</sub> )	Overfished Definition	40% SSBO (BMSY Proxy) *2005 unless otherwise noted	25%SSBO (MSST) *2005 unless otherwise noted	NOTES
>2,000 natural spawners						
<b>Washington Coastal Coho Quillayute Fall</b>						
<b>Conservation Objective</b>						
>6,300 natural spawners						
<b>Washington Coastal Coho Western Strait of Juan De Fuca (Sekiu, Hoko, Clallam, Pysht, East and West, and Lyre Rivers and miscellaneous streams west of the Elwha River)</b>						
<b>Conservation Objective</b>						
>11,900 natural spawners						
<b>Puget Sound Coho Eastern Strait of Juan De Fuca (streams east of Salt Creek through Chimacum Creek)</b>						
<b>Conservation Objective</b>						
>950 natural spawners						
<b>Puget Sound Coho Hood Canal</b>						
<b>Conservation Objective</b>						
>21,500 natural spawners						
<b>Puget Sound Coho Skagit</b>						
<b>Conservation Objective</b>						
>30,000 natural spawners						
<b>Puget Sound Coho Stillaguamish</b>						
<b>Conservation Objective</b>						
>17,000 natural spawners						
<b>Puget Sound Coho Snohomish</b>						
<b>Conservation Objective</b>						



2006 Status of U.S. Fisheries

Stock	Overfishing Definition	2005 ABC (mt) (F <sub>MSY</sub> proxy)	Overfished Definition	40% SSBO (BMSY Proxy) *2005 unless otherwise noted	25%SSBO (MSST) *2005 unless otherwise noted	NOTES
>70,000 natural spawners						
<b>All other salmon stocks</b>						
<b>Conservation Objective</b>						
All other salmon stocks are exempt from overfishing and overfished criteria. The Salmon FMP contains three exceptions to the application of overfishing criteria and subsequent PFMC actions for stocks or stock complexes with conservation objectives in Table 3-1: (1) hatchery stocks, (2) stocks for which PFMC management actions have inconsequential impacts, and (3) stocks listed under the ESA.						

2006 Status of U.S. Fisheries

**COASTAL PELAGIC SPECIES**

**Pacific (Chub) Mackerel**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>
Overfishing occurs whenever catch exceeds ABC, which is the annual value of the MSY control rule	0.3	A stock is overfished when the biomass level is low enough to jeopardize the capacity of the stock to produce MSY on a continuing basis	115,000 mt	18,200 mt

**Pacific Sardine**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>
Overfishing occurs whenever catch exceeds ABC, which is the annual value of the MSY control rule	0.05-0.15	A stock is overfished when the biomass level is low enough to jeopardize the capacity of the stock to produce MSY on a continuing basis	1,952,000 mt	50,000 mt

**Jack Mackerel**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>
Overfishing occurs whenever catch exceeds ABC, which, based on the default MSY control rule used for monitored species, is set at 25% of estimated MSY.	0.25	A stock is overfished when the biomass level is low enough to jeopardize the capacity of the stock to produce MSY on a continuing basis	194,000 mt	48,500 mt

**Northern Anchovy - Central Subpopulation**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>
Overfishing occurs whenever catch exceeds ABC, which, based on the default MSY control rule used for monitored species, is set at 25% of estimated MSY.	0.25	A stock is overfished when the biomass level is low enough to jeopardize the capacity of the stock to produce MSY on a continuing basis	733,000 mt	183,250 mt

**Market Squid**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>

2006 Status of U.S. Fisheries

Overfishing occurs when market squid are harvested at a rate or level that results in egg escapement falling below 30 percent of the potential maximum level.	1.5	A stock is overfished when the ratio of egg escapement compared to the potential maximum level results in a ratio below 30 percent.	not estimated	0.25 -0.60
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Northern Anchovy - Northern Subpopulation

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold
Overfishing occurs whenever catch exceeds ABC, which, based on the default MSY control rule used for monitored species, is set at 25% of estimated MSY.	0.25	A stock is overfished when the biomass level is low enough to jeopardize the capacity of the stock to produce MSY on a continuing basis	100,000 mt	25,000 mt

WEST COAST HIGHLY MIGRATORY SPECIES

Skipjack Tuna - Eastern Pacific

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M=1.5)	not available	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M=1.5)	not available	not available

Yellowfin Tuna - Eastern Pacific

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M=0.8),	not available	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M=0.8),	420,343 mt	210,172 mt

Striped Marlin - Eastern Pacific

2006 Status of U.S. Fisheries

Overfishing defined	F <sub>MSY</sub> proxy	Overfished defined	B <sub>MSY</sub> proxy	Overfished Threshold
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5.	not available	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5.	not available	not available

**PELAGIC FISHERIES OF THE WESTERN PACIFIC and WEST COAST HIGHLY MIGRATORY SPECIES**

**Albacore - North Pacific**

Overfishing defined	F <sub>MSY</sub> proxy	Overfished defined	B <sub>MSY</sub> proxy	Overfished Threshold
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5.	0.3-0.42	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5.	562,000-656,000 mt	393,400-459,200

**Bigeye Tuna - Eastern Pacific**

Overfishing defined	F <sub>MSY</sub> proxy	Overfished defined	B <sub>MSY</sub> proxy	Overfished Threshold
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M = 0.4)	not available	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M = 0.4)	326,329 mt	195,792 mt

**Bluefin Tuna - Pacific**

2006 Status of U.S. Fisheries

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	not estimated

Common Thresher Shark - North Pacific

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	not estimated

Bigeye Thresher Shark - North Pacific

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	not estimated

Pelagic Thresher Shark - North Pacific

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	not estimated

2006 Status of U.S. Fisheries

Shortfin Mako Shark - North Pacific

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	not estimated

**PELAGIC FISHERIES OF THE WESTERN PACIFIC**

**Yellowfin Tuna - Central Western Pacific**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M = 0.8-1.6)	not available	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M = 0.8-1.6)	not available	not available

**Skipjack Tuna - Central Western Pacific**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M > 0.5)	not available	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M > 0.5)	not available	not available

**Striped Marlin - Central Western Pacific**

<b>Overfishing defined</b>	<b>F<sub>MSY proxy</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY proxy</sub></b>	<b>Overfished Threshold</b>
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5.	not estimated	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5.	not estimated	not estimated

**Albacore - South Pacific**

2006 Status of U.S. Fisheries

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M = 0.3)	not available	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M = 0.3)	not available	not available

**Indo-Pacific Blue Marlin - Pacific**

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M = 0.2)	not available	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5. (M = 0.2)	not available	not available

**Shortbill Spearfish - Pacific, Wahoo - Pacific, Kawakawa - Tropical Pacific, Moonfish (Opah) - Pacific, other tuna relatives (Auxis spp., Scomber spp., and Allothunnus spp.) - Tropical Pacific, Scomber spp., Black Marlin - Pacific, Pomfrets - Pacific, Sailfish - Pacific, Oilfish family - Western Pacific, Longfin Mako Shark - North Pacific, Silky Shark - Tropical Pacific, Oceanic Whitetip Shark - Tropical Pacific, Salmon Shark - North Pacific**

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold
Overfishing occurs when F is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass (B) is less than or equal to $c B_{MSY}$ , or when F is greater than $F_{MSY}$ if the stock biomass (B) is greater than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5.	not estimated	A stock is overfished when stock biomass (B) is less than $c B_{MSY}$ , where c is equal to the greater of 1 minus the natural mortality rate (M) and 0.5.	not estimated	not estimated

**PELAGIC FISHERIES OF THE WESTERN PACIFIC and WEST COAST HIGHLY MIGRATORY SPECIES**

**Albacore - North Pacific, Dolphinfin (Dorado or Mahimahi) - Pacific, Bluefin Tuna - Pacific, Common Thresher Shark - North Pacific, Bigeye Thresher Shark - North Pacific, Pelagic Thresher Shark - North Pacific, Shortfin Mako Shark - North Pacific**



2006 Status of U.S. Fisheries

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	not estimated

**Bigeye Tuna - Western Pacific**

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5. ( $M = 0.4$ )	not available	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5. ( $M = 0.4$ )	not available	not available

**Swordfish - North Pacific**

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5. ( $M = 0.2$ )	not available	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5. ( $M = 0.2$ )	not available	not available

**Blue Shark - North Pacific**

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold

2006 Status of U.S. Fisheries

Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not available	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not available	not available
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**CRUSTACEANS OF THE WESTERN PACIFIC**

**Lobster complex (Red and Green spiny lobster and Common, Chinese, and Giant slipper lobster) of the Northwestern Hawaiian Islands**

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $B_{MSY}$	not estimated	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5.	not estimated	not estimated

**Lobster complex (Red and Green spiny lobster and Common, Chinese, and Giant slipper lobster) of areas other than the Northwestern Hawaiian Islands**

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Undefined	undefined	Undefined	undefined	undefined

**Kona Crab of the Hawaiian Archipelago**

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Undefined	undefined	Undefined	undefined	undefined

**WESTERN PACIFIC PRECIOUS CORALS**

2006 Status of U.S. Fisheries

**Precious Corals Multi-Species Complex - Makapu'u Bed** [Pink Corals (*Corallium secundum*, *Corallium regale*, *Corallium laauense*), Gold Corals (*Gerardia* spp., *Callogorgia gilberti*, *Narella* spp., *Calyptrophora* spp.), Bamboo Corals (*Lepidisis olapa*, *Acanella* spp.), Black Corals (*Antipathes grandis*, *Antipathes dichotoma*, *Antipathes ulex*)]

**Precious Corals Multi-Species Complex - Conditional Beds** [Pink Corals (*Corallium secundum*, *Corallium regale*, *Corallium laauense*), Gold Corals (*Gerardia* spp., *Callogorgia gilberti*, *Narella* spp., *Calyptrophora* spp.), Bamboo Corals (*Lepidisis olapa*, *Acanella* spp.), Black Corals (*Antipathes grandis*, *Antipathes dichotoma*, *Antipathes ulex*)]

**Black Coral - Au'Au Bed** [Black Corals (*Antipathes grandis*, *Antipathes dichotoma*, *Antipathes ulex*)]

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold
Overfishing occurs when F is greater than 0.066	0.066	A stock is overfished when the ratio of the total spawning stock biomass for all species combined to the estimated unfished total spawning stock biomass for all species combined (SPR) is less than 0.3, based on cohort analysis of the pink coral, <i>Corallium secundum</i> .	not estimated	not estimated

**BOTTOMFISH AND SEAMOUNT GROUND FISH OF THE WESTERN PACIFIC**

**Bottomfish Multi-Species Complex - Hawaiian Archipelago** [Seabass (*hapu upuu*), Squirrelfish Snapper (*ehu*), Red Longtail Snapper (*onaga*), Silver Jaw Jobfish (*lehi*), Gray Jobfish (*uku*), Blueline Snapper (*taape*), Yellowtail Snapper (*yellow tail kalekale*), Crimson Jobfish (*opakapaka*), Yelloweye Snapper (*yelloweye opakapaka*), Von Siebolds snapper (*kalekale*), Oblique-banded snapper (*gindai*), Giant Trevally (*white ulua*), Black Trevally (*black ulua*), Thick Lipped Trevally (*pig ulua*), Amberjack (*kahala*), Blacktip Grouper, Lunartail Grouper, Ambon Emperor (*mafuti*), Redgill Emperor (*mafuti*)]

**Bottomfish Multi-Species Complex - American Samoa** [Seabass (*hapu upuu*), Squirrelfish Snapper (*ehu*), Red Longtail Snapper (*onaga*), Silver Jaw Jobfish (*lehi*), Gray Jobfish (*uku*), Blueline Snapper (*taape*), Yellowtail Snapper (*yellow tail kalekale*), Crimson Jobfish (*opakapaka*), Yelloweye Snapper (*yelloweye opakapaka*), Von Siebolds snapper (*kalekale*), Oblique-banded snapper (*gindai*), Giant Trevally (*white ulua*), Black Trevally (*black ulua*), Thick Lipped Trevally (*pig ulua*), Amberjack (*kahala*), Blacktip Grouper, Lunartail Grouper, Ambon Emperor (*mafuti*), Redgill Emperor (*mafuti*)]

**Bottomfish Multi-Species Complex - Northern Mariana Islands** [Seabass (*hapu upuu*), Squirrelfish Snapper (*ehu*), Red Longtail Snapper (*onaga*), Silver Jaw Jobfish (*lehi*), Gray Jobfish (*uku*), Blueline Snapper (*taape*), Yellowtail Snapper (*yellow tail kalekale*), Crimson Jobfish (*opakapaka*), Yelloweye Snapper (*yelloweye opakapaka*), Von Siebolds snapper (*kalekale*), Oblique-banded snapper (*gindai*), Giant Trevally (*white ulua*), Black Trevally (*black ulua*), Thick Lipped Trevally (*pig ulua*), Amberjack (*kahala*), Blacktip Grouper, Lunartail Grouper, Ambon Emperor (*mafuti*), Redgill Emperor (*mafuti*)]

**Seamount Groundfish Complex - Hancock Seamount** (Pelagic Armorhead, Alfonsin, Raftfish)

Overfishing defined	F <sub>MSY proxy</sub>	Overfished defined	B <sub>MSY proxy</sub>	Overfished Threshold

2006 Status of U.S. Fisheries

Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5. Effort ( $E$ ) is used as a proxy for $F$ . ( $M=0.3$ )	not available	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5. CPUE is used as a proxy for $B$ . ( $M=0.3$ )	not available	not available
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**Bottomfish Multi-Species Complex - Guam** [Seabass (hapu upuu), Squirrelfish Snapper (ehu), Red Longtail Snapper (onaga), Silver Jaw Jobfish (lehi), Gray Jobfish (uku), Blueline Snapper (taape), Yellowtail Snapper (yellow tail kalekale), Crimson Jobfish (opakapaka), Yelloweye Snapper (yelloweye opakapaka), Von Siebolds snapper (kalekale), Oblique-banded snapper (gindai), Giant Trevally (white ulua), Black Trevally (black ulua), Thick Lipped Trevally (pig ulua), Amberjack (kahala), Blacktip Grouper, Lunartail Grouper, Ambon Emperor (mafuti), Redgill Emperor (mafuti)]

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
Overfishing occurs when $F$ is greater than $F_{MSY} B / c B_{MSY}$ if the stock biomass ( $B$ ) is less than or equal to $c B_{MSY}$ , or when $F$ is greater than $F_{MSY}$ if the stock biomass ( $B$ ) is greater than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5. Effort ( $E$ ) is used as a proxy for $F$ . ( $M=0.3$ )	not estimated	A stock is overfished when stock biomass ( $B$ ) is less than $c B_{MSY}$ , where $c$ is equal to the greater of 1 minus the natural mortality rate ( $M$ ) and 0.5. CPUE is used as a proxy for $B$ . ( $M=0.3$ )	not estimated	not estimated

**CORAL REEF ECOSYSTEMS OF THE WESTERN PACIFIC**

**Coral Reef Ecosystem Multi-Species Complex - Hawaiian Archipelago** (This complex contains up to 146 "currently harvested coral reef taxa" and innumerable "potentially harvested coral reef taxa."), **Bigeye Scad - Hawaiian Archipelago, Mackerel Scad - Hawaiian Archipelago, Coral Reef Ecosystem Multi-Species Complex - American Samoa** (This complex contains up to 146 "currently harvested coral reef taxa" and innumerable "potentially harvested coral reef taxa."), **Coral Reef Ecosystem Multi-Species Complex - Northern Mariana Islands** (This complex contains up to 146 "currently harvested coral reef taxa" and innumerable "potentially harvested coral reef taxa."), **Coral Reef Ecosystem Multi-Species Complex - Guam** (This complex contains up to 146 "currently harvested coral reef taxa" and innumerable "potentially harvested coral reef taxa."), **Coral Reef Ecosystem Multi-Species Complex - Pacific remote island areas** (This complex contains up to 146 "currently harvested coral reef taxa" and innumerable "potentially harvested coral reef taxa.")

Overfishing defined	$F_{MSY}$ proxy	Overfished defined	$B_{MSY}$ proxy	Overfished Threshold
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2006 Status of U.S. Fisheries

<p>Overfishing occurs when <math>F</math> is greater than <math>F_{MSY} B / c B_{MSY}</math> if the stock biomass (<math>B</math>) is less than or equal to <math>c B_{MSY}</math>, or when <math>F</math> is greater than <math>F_{MSY}</math> if the stock biomass (<math>B</math>) is greater than <math>c B_{MSY}</math>, where <math>c</math> is equal to the greater of 1 minus the natural mortality rate (<math>M</math>) and 0.5. Effort (<math>E</math>) is used as a proxy for <math>F</math>. (<math>M = 0.3</math>)</p>	<p>not estimated</p>	<p>A stock is overfished when stock biomass (<math>B</math>) is less than <math>c B_{MSY}</math>, where <math>c</math> is equal to the greater of 1 minus the natural mortality rate (<math>M</math>) and 0.5. CPUE is used as a proxy for <math>B</math>. (<math>M=0.3</math>)</p>	<p>not estimated</p>	<p>not estimated</p>
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2006 Status of U.S. Fisheries

**GULF OF ALASKA GROUND FISH**

**Walleye Pollock - Western/Central**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	110,100 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	192,500 t	96,250 t

**Walleye Pollock - Eastern**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	8,209 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Pacific Cod**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	95,500 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	90,500 t	45,250 t

**Arrowtooth Flounder**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
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2006 Status of U.S. Fisheries

Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	207,678 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: 1/2 the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: 1/2 BMSY is one of 2 reference points used in defining MSST.	477,685 t	238,842 t
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**Pacific Ocean Perch (includes Western, Central and Eastern)**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	1/2 B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	16,927 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: 1/2 the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: 1/2 BMSY is one of 2 reference points used in defining MSST.	78,769 t	39,384 t

**Northern Rockfish - Western/Central**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	1/2 B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	7,673 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: 1/2 the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: 1/2 BMSY is one of 2 reference points used in defining MSST.	19,897 t	9,948 t

**Flathead Sole**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	1/2 B <sub>MSY</sub> *
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2006 Status of U.S. Fisheries

Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	47,003	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: 1/2 the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: 1/2 BMSY is one of 2 reference points used in defining MSST.	36,968 t	18,484 t
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**Dusky Rockfish** (indicator species for **Pelagic Shelf Rockfish Complex**, which consists of Dark Rockfish, Dusky Rockfish, Widow Rockfish, and Yellowtail Rockfish.)

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	1/2 B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	5,927 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: 1/2 the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: 1/2 BMSY is one of 2 reference points used in defining MSST.	16,004 t	8,002 t

**Dover Sole** (indicator species for **Deepwater Flatfish Complex**, which consists of Deepsea Sole, Dover Sole, and Greenland Turbot)

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	1/2 B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	10,764 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: 1/2 the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: 1/2 BMSY is one of 2 reference points used in defining MSST.	18,906 t	9,453 t

**Rex Sole**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	1/2 B <sub>MSY</sub> *
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2006 Status of U.S. Fisheries

Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	12,000 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ B <sub>MSY</sub> is one of 2 reference points used in defining MSST.	18,825 t	9,412 t
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**Atka Mackerel**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	6,200 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Shortspine Thornyhead** (indicator species for **Thornyhead Rockfish Complex**, which consists of Longspine Thornyhead and Shortspine Thornyhead)

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	2,945 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Yelloweye Rockfish** (indicator species for **Demersal Shelf Rockfish Complex**, which consists of Canary Rockfish, China Rockfish, Copper Rockfish, Quillback Rockfish, Rosethorn Rockfish, Tiger Rockfish, and Yelloweye Rockfish)

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	626 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Rougheye Rockfish**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
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2006 Status of U.S. Fisheries

Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	1,180 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	7,349 t	3,674 t
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**Other Slope Rockfish Complex** (consists of Blackgill Rockfish, Bocaccio, Chilipepper, Darkblotched Rockfish, Greenstriped Rockfish, Harlequin Rockfish, Northern Rockfish (Eastern GOA only), Pygmy Rockfish, Redbanded Rockfish, Redstripe Rockfish, Sharpchin Rockfish, Silvergray Rockfish, Splitnose Rockfish, Stripetail Rockfish, Vermilion Rockfish, and Yellowmouth Rockfish)

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	5,394 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Shallow Water Flatfish Complex** (consists of Alaska Plaice, Butter Sole, C-O Sole, Curlfin Sole, English Sole, Northern Rock Sole, Pacific Sanddab, Petrale Sole, Sand Sole, Slender Sole, Southern Rock Sole, Speckled Sanddab, Starry Flounder, and Yellowfin Sole)

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	62,418 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Big Skate**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	4,726 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Longnose Skate**

2006 Status of U.S. Fisheries

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	3,860 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Other Skates Complex** (consists of Alaska Skate, Aleutian Skate, Bering Skate, Deepsea Skate, Roughshoulder Skate, Roughtail Skate, and White blotched Skate)

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	2,156 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Shorthead Rockfish**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	1,124 t	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Other Species Complex** (consists of Pacific Sleeper Shark, Salmon Shark, Spiny Dogfish, Antlered Sculpin, Armorhead Sculpin, Bigmouth Sculpin, Blackfin Sculpin, Blob Sculpin, Brightbelly Sculpin, Brown Irish Lord, Buffalo Sculpin, Crested Sculpin, Darkfin Sculpin, Dusky Sculpin, Eyeshade Sculpin, Fourhorn Sculpin, Frog Sculpin, Frogmouth Sculpin, Great Sculpin, Grunt Sculpin, Longfin Sculpin, Northern Sculpin, Pacific Staghorn Sculpin, Plain Sculpin, Red Irish Lord, Ribbed Sculpin, Roughspine Sculpin, Roughskin Sculpin, Sailfin Sculpin, Scissortail Sculpin, Silverspotted Sculpin, Slim Sculpin, Smoothcheek Sculpin, Smoothhead Sculpin, Spatulate Sculpin, Spectacled Sculpin, Spinyhead Sculpin, Sponge Sculpin, Spotfin Sculpin, Tadpole Sculpin, Thorny Sculpin, Threaded Sculpin, Threadfin Sculpin, Warty Sculpin, Yellow Irish Lord, Sculpin Arctidiellus sp., Sculpin Icelus euryops, Flapjack Devilfish, Giant Pacific Octopus, Pelagic Octopus, Red Octopus, Smoothskin Octopus, Vampire Squid, North Pacific Bigeye Octopus, Squid Berryteuthis anonychus, Squid Berryteuthis magister, Squid Chiroteuthis calyx, Squid Cranchia scabra, Squid Eogonatus tinro, Squid Galiteuthis phyllura, Squid Gonatopsis makko, Squid Gonatus berryi, Squid Gonatus katschaticus, Squid Gonatus madokai, Squid Gonatus onyx, Squid Gonatus pyros, Squid Histioteuthis hoylei, Squid Loligo opalescens, Squid Moroteuthis robusta, Squid Octopoteuthis deletron, and Squid Onychoteuthis borealijaponicus)

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub>
There is no MFMT defined for this complex.	undefined	No B <sub>MSY</sub> estimate exists. Therefore, no MSST is defined.	undefined	undefined

2006 Status of U.S. Fisheries

**BERING SEA / ALEUTIAN ISLANDS GROUND FISH**

**Walleye Pollock - Eastern Bering Sea**

<b>Overfishing defined</b>	<b>2006 OFL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub>*</b>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	2,090,000 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	2,060,000 t	1,030,000 t

**Walleye Pollock - Aleutian Islands**

<b>Overfishing defined</b>	<b>2006 OFL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub>*</b>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	39,100 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	35,330 t	17,665 t

**Pacific Cod**

<b>Overfishing defined</b>	<b>2006 OFL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub>*</b>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	230,000 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	280,000 t	140,000 t

2006 Status of U.S. Fisheries

**Yellowfin Sole**

<b>Overfishing defined</b>	<b>2006 OFL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub>*</b>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	144,000 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	249,800 t	124,900 t

**Greenland Turbot**

<b>Overfishing defined</b>	<b>2006 OFL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub>*</b>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	14,200 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	41,800 t	20,900 t

**Arrowtooth Flounder**

<b>Overfishing defined</b>	<b>2006 OFL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub>*</b>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	166,000 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	297,000 t	148,500 t

**Rock Sole**

2006 Status of U.S. Fisheries

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	150,000 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	139,350 t	69,675 t

**Flathead Sole**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	71,800 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	127,099 t	63,549 t

**Pacific Ocean Perch**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	17,600 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	115,905 t	57,952 t

**Atka Mackerel**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
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2006 Status of U.S. Fisheries

Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	130,000 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	83,100 t	41,550 t
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**Alaska Plaice**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	237,000 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	120,662 t	60,331 t

**Northern Rockfish**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	10,100 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: ½ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: ½ BMSY is one of 2 reference points used in defining MSST.	45,458 t	22,729 t

**Rougheye Rockfish**

Overfishing defined	2006 OFL	Overfished defined	B <sub>MSY</sub>	½ B <sub>MSY</sub> *
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2006 Status of U.S. Fisheries

Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	299 t	No $B_{MSY}$ estimate exists. Therefore, no MSST is defined.	undefined	undefined
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Walleye Pollock - Bogoslof

Overfishing defined	2006 OFL	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	50,600 t	No $B_{MSY}$ estimate exists. Therefore, no MSST is defined.	undefined	undefined

Shortraker Rockfish

Overfishing defined	2006 OFL	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	774 t	No $B_{MSY}$ estimate exists. Therefore, no MSST is defined.	undefined	undefined

Other Rockfish Complex

Overfishing defined	2006 OFL	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	1,870 t	No $B_{MSY}$ estimate exists. Therefore, no MSST is defined.	undefined	undefined

Other Flatfish Complex

Overfishing defined	2006 OFL	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
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2006 Status of U.S. Fisheries

Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	24,200 t	No $B_{MSY}$ estimate exists. Therefore, no MSST is defined.	undefined	undefined
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**Squid Complex**

<b>Overfishing defined</b>	<b>2006 OFL</b>	<b>Overfished defined</b>	<b><math>B_{MSY}</math></b>	<b><math>\frac{1}{2} B_{MSY}</math></b>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	2,620 t	No $B_{MSY}$ estimate exists. Therefore, no MSST is defined.	undefined	undefined

**Other Species Complex**

<b>Overfishing defined</b>	<b>2006 OFL</b>	<b>Overfished defined</b>	<b><math>B_{MSY}</math></b>	<b><math>\frac{1}{2} B_{MSY}</math></b>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	89,404 t	No $B_{MSY}$ estimate exists. Therefore, no MSST is defined.	undefined	undefined

**GULF OF ALASKA GROUND FISH and BERING SEA / ALEUTIAN ISLANDS GROUND FISH**

**Sablefish**

<b>Overfishing defined</b>	<b>2006 OFL</b>	<b>Overfished defined</b>	<b><math>B_{MSY}</math></b>	<b><math>\frac{1}{2} B_{MSY}^*</math></b>
Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). The catch corresponding to fishing at a rate equal to the MFMT is referred to as the “overfishing level” (OFL).	25,300 t	A stock is overfished when it falls below its MSST, defined as whichever of the following is greater: $\frac{1}{2}$ the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. *NOTE: $\frac{1}{2} B_{MSY}$ is one of 2 reference points used in defining MSST.	108,412 t	54,206 t

2006 Status of U.S. Fisheries

**BERING SEA / ALEUTIAN ISLANDS KING AND TANNER CRABS**

**Blue King Crab - Pribilof Islands**

<b>Overfishing defined</b>	<b>SYL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub></b>
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2. The catch corresponding to fishing at a rate equal to the MFMT is referred to as the "sustainable yield level" (SYL).	0.32 million lbs.	A stock is overfished when it falls below MSST, which is equal to ½ the MSY stock size	13.2 million lbs.	6.6 million lbs.

**Blue King Crab - Saint Matthews Island**

<b>Overfishing defined</b>	<b>SYL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub></b>
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2. The catch corresponding to fishing at a rate equal to the MFMT is referred to as the "sustainable yield level" (SYL).	1.6 million lbs.	A stock is overfished when it falls below MSST, which is equal to ½ the MSY stock size	22 million lbs.	11 million lbs.

**Red King Crab - Bristol Bay**

<b>Overfishing defined</b>	<b>SYL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub></b>
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2. The catch corresponding to fishing at a rate equal to the MFMT is referred to as the "sustainable yield level" (SYL).	30.7 million lbs.	A stock is overfished when it falls below MSST, which is equal to ½ the MSY stock size	89.6 million lbs.	44.8 million lbs.

**Red King Crab - Pribilof Islands**

<b>Overfishing defined</b>	<b>SYL</b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>½ B<sub>MSY</sub></b>
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2006 Status of U.S. Fisheries

Overfishing is defined as any rate of fishing mortality in excess of M, where $M = 0.2$ . The catch corresponding to fishing at a rate equal to the MFMT is referred to as the "sustainable yield level" (SYL).	3.8 million lbs.	A stock is overfished when it falls below MSST, which is equal to $\frac{1}{2}$ the MSY stock size	6.6 million lbs.	3.3 million lbs.
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**Snow Crab - Bering Sea**

Overfishing defined	SYL	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where $M = 0.3$ . The catch corresponding to fishing at a rate equal to the MFMT is referred to as the "sustainable yield level" (SYL).	163.9 million lbs.	A stock is overfished when it falls below MSST, which is equal to $\frac{1}{2}$ the MSY stock size	921.6 million lbs.	460.8 million lbs.

**Tanner Crab - Eastern Bering Sea**

Overfishing defined	SYL	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where $M = 0.3$ . The catch corresponding to fishing at a rate equal to the MFMT is referred to as the "sustainable yield level" (SYL).	75.8 million lbs.	A stock is overfished when it falls below MSST, which is equal to $\frac{1}{2}$ the MSY stock size	189.6 million lbs.	94.8 million lbs.

**Blue King Crab - Saint Lawrence Island**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where $M = 0.2$	0.2	Overfished is not defined	undefined	undefined

**Red King Crab - Aleutian Islands, Dutch Harbor**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where $M = 0.2$	0.2	Overfished is not defined	undefined	undefined

**Tanner Crab - Adak (Western Aleutians)**

2006 Status of U.S. Fisheries

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.3	0.3	Overfished is not defined	undefined	undefined

**Tanner Crab - Eastern Aleutian Islands**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.3	0.3	Overfished is not defined	undefined	undefined

**Tanner Crab - Western Aleutian Islands Grooved**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.3	0.3	Overfished is not defined	undefined	undefined

**Golden King Crab - Aleutian Islands**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2	0.2	Overfished is not defined	undefined	undefined

**Red King Crab - Aleutian Islands, Adak**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2	0.2	Overfished is not defined	undefined	undefined

**Red King Crab - Norton Sound**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2	0.2	Overfished is not defined	undefined	undefined

**Golden King Crab - Northern District**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2	0.2	Overfished is not defined	undefined	undefined

2006 Status of U.S. Fisheries

**Golden King Crab - Pribilof Islands**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2	0.2	Overfished is not defined	undefined	undefined

**Scarlet King Crab - Aleutian Islands**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2	0.2	Overfished is not defined	undefined	undefined

**Scarlet King Crab - Eastern Bering Sea**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.2	0.2	Overfished is not defined	undefined	undefined

**Tanner Crab - Eastern Aleutian Islands Grooved**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.3	0.3	Overfished is not defined	undefined	undefined

**Tanner Crab - Eastern Aleutian Islands Triangle**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.3	0.3	Overfished is not defined	undefined	undefined

**Tanner Crab - Eastern Bering Sea Grooved**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.3	0.3	Overfished is not defined	undefined	undefined

**Tanner Crab - Eastern Bering Sea Triangle**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$

2006 Status of U.S. Fisheries

Overfishing is defined as any rate of fishing mortality in excess of M, where M = 0.3	0.3	Overfished is not defined	undefined	undefined
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**ALASKA WEATHERVANE SCALLOPS**

**Alaska Scallops**

<b>Overfishing defined</b>	$F_{MSY=}$ F <sub>overfishing</sub>	<b>Overfished defined</b>	$B_{MSY}$	$\frac{1}{2} B_{MSY}$
Overfishing is a level of fishing mortality that jeopardizes the long-term capacity of a stock or stock complex to produce MSY on a continuing basis	0.13	A stock is overfished when it falls below MSST, which is equal to $\frac{1}{2}$ the MSY stock size	9.54 million lbs. of shucked meats	4.77 million lbs. of shucked meats

**PACIFIC HALIBUT**

**Pacific Halibut**

<b>Overfishing defined</b>	$F_{MSY}$	<b>Overfished defined</b>	$B_{MSY}$	<b>MSBL</b>
Overfishing is defined as a rate of fishing that exceeds the constant exploitation yield	0.5	A stock is overfished if it falls below the minimum spawning biomass limit equal to 20% of the unfished level.	not available	not available

**ALASKA SALMON**

**Salmon Fisheries in the EEZ off the Coast of Alaska** - These overfishing definitions separate the salmon stocks caught in the southeast Alaska (SEAK) EEZ into three tiers. Tier 1 stocks are chinook stocks covered by the Pacific Salmon Treaty (PST). The overfishing definition is based on a harvest based on a relationship between a pre-season relative abundance index generated by the Pacific Salmon Commission's Chinook Technical Committee and a harvest control rule specified in the PST. Tier 2 are coho salmon stocks. Tier 3 stocks are coho, pink, chum, and sockeye salmon stocks managed as mixed-species complexes, with coho salmon stocks as indicator stocks.

Chapter 3 of Annex IV of the Pacific Salmon Treaty (PST) as amended June 30, 1999 (also referred to as the US/Canada bilateral agreement for the Southeast Alaska all-gear chinook catch).

## 2006 Status of U.S. Fisheries

### **Tier 1: Chinook stocks**

- 1) Under the PST, the MSY control rule consists of a segmented linear relationship between catch and relative abundance.
- 2) The fishing mortality rate for these stocks is expressed as cumulative catch per generation time.
- 3) The maximum fishing mortality threshold is 1.075 times the fishing mortality rate associated with the MSY control rule.
- 4) Should the fishing mortality rate exceed the MFMT in any year, it will be determined that the stocks are being subjected to overfishing.
- 5) The productive capacity of a stock group is measured as the sum of the indicator stocks' escapements from the most recent generation.
- 6) The minimum stock size threshold for a stock group is equal to one-half the sum of the indicator stocks' MSY escapement goals from the most recent generation, where each MSY escapement goal is set at the midpoint of the respective escapement goal range established by the Chinook Technical Committee.
- 7) Should a stock group's productive capacity fall below the MSST in any year, it will be determined that the stock group is overfished.

### **Tier 2: Coho stocks managed as individual units**

- 1) The MSY control rule is of the "constant escapement" form. Specifically, the catch corresponding to the control rule in any given year is equal to the amount that would result in a post-harvest run size equal to the MSY escapement goal, unless the pre-harvest run size fails to exceed the MSY escapement goal, in which case the catch corresponding to the control rule is zero.
- 2) The fishing mortality rate for these stocks is expressed as an exploitation rate, and is computed as a weighted average of run-specific exploitation rates observed in the stock from the most recent generation.
- 3) The maximum fishing mortality threshold for these stocks is computed as a weighted average of run-specific exploitation rates corresponding to the MSY control rule from the most recent generation.
- 4) Should the fishing mortality rate exceed the MFMT in any year, it will be determined that the stock is being subjected to overfishing.
- 5) The productive capacity of a stock is measured as the sum of the stock's escapements from the most recent generation.
- 6) The minimum stock size threshold for a stock is equal to one-half the sum of the stock's MSY escapement goals from the most recent generation.
- 7) Should a stock's productive capacity fall below the MSST in any year, it will be determined that the stock is overfished.

### **Tier 3: Coho, sockeye, pink, and chum salmon stocks managed as complexes**

The MSY control rule is of the "constant escapement" form. The difference with respect to Tier 2 is not the form of the control rule, but rather the level of aggregation at which it is applied. Using the same definitions and criteria described under Tier 2, a determination that one or more indicator coho stocks is being subjected to overfishing or is overfished will constitute a determination that the respective stock complex is being subjected to overfishing or is overfished, except that overfishing of one or more stocks in a stock complex may be permitted, and will not result in a determination that the entire stock complex is being subjected to overfishing, under the conditions set forth in 50 CFR §600.310(d)(6).

**Pink Salmon, Sockeye Salmon, Chum Salmon, Coho Salmon** - A stock is overfished if it falls below MSST in any year, which is equal to one-half the sum of the indicator coho stocks' MSY escapement goals from the most recent T coho years.

**Chinook Salmon** - A stock is overfished if it falls below MSST in any year, which is equal to one-half the sum of the indicator stocks' MSY escapement goals from the

2006 Status of U.S. Fisheries

**ATLANTIC HIGHLY MIGRATORY SPECIES**

**Blue Marlin - Atlantic**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not available	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ .	not available	not available

**White Marlin - Atlantic**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not available	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ .	not available	not available

**Sailfish - West Atlantic**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not available	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ .	not available	not available

**Bigeye Tuna - Atlantic**

<b>Overfishing defined</b>	<b>F<sub>MSY</sub></b>	<b>Overfished defined</b>	<b>B<sub>MSY</sub></b>	<b>MSST</b>



2006 Status of U.S. Fisheries

Overfishing occurs when the MFMT is exceeded, which is set at $F_{\text{limit}} = F_{\text{MSY}}$ .	not available	A stock is overfished when the stock level biomass falls below MSST, which is set at $\text{MSST} = B_{\text{LIMIT}} = (1-M)B_{\text{MSY}}$ when $M < 0.5$ ; $\text{MSST} = B_{\text{LIMIT}} = 0.5B_{\text{MSY}}$ when $M > 0.5$ .	not available	not available
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**Albacore - North Atlantic**

Overfishing defined	$F_{\text{MSY}}$	Overfished defined	$B_{\text{MSY}}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{\text{limit}} = F_{\text{MSY}}$ .	not available	A stock is overfished when the stock level biomass falls below MSST, which is set at $\text{MSST} = B_{\text{LIMIT}} = (1-M)B_{\text{MSY}}$ when $M < 0.5$ ; $\text{MSST} = B_{\text{LIMIT}} = 0.5B_{\text{MSY}}$ when $M > 0.5$ .	not available	not available

**Bluefin Tuna - West Atlantic**

Overfishing defined	$F_{\text{MSY}}$	Overfished defined	$B_{\text{MSY}}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{\text{limit}} = F_{\text{MSY}}$ .	not available	A stock is overfished when the stock level biomass falls below MSST, which is set at $\text{MSST} = B_{\text{LIMIT}} = (1-M)B_{\text{MSY}}$ when $M < 0.5$ ; $\text{MSST} = B_{\text{LIMIT}} = 0.5B_{\text{MSY}}$ when $M > 0.5$ .	not available	not available

**Yellowfin Tuna - Atlantic**

Overfishing defined	$F_{\text{MSY}}$	Overfished defined	$B_{\text{MSY}}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{\text{limit}} = F_{\text{MSY}}$ .	not available	A stock is overfished when the stock level biomass falls below MSST, which is set at $\text{MSST} = B_{\text{LIMIT}} = (1-M)B_{\text{MSY}}$ when $M < 0.5$ ; $\text{MSST} = B_{\text{LIMIT}} = 0.5B_{\text{MSY}}$ when $M > 0.5$ . For Yellowfin Tuna, $\text{MSST} = 0.5B_{\text{MSY}}$ .	not available	not available

**Swordfish - North Atlantic**

2006 Status of U.S. Fisheries

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not available	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ .	not available	not available

Sandbar Shark

Overfishing defined	$F_{MSY}$	Overfished defined	$SSF_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	0.15	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . In 2006 stock assessment M ranged from 0.1 to 0.2 depending on age.	5.94 e+5	4.75-5.35e+5

Blacktip Shark - Gulf of Mexico

Overfishing defined	$F_{MSY}$	Overfished defined	$SSF_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	0.2	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . In 2006 stock assessment M ranged across ages; stock assessment unable to determine which model to use so range across all of them.	1.23-1.78 e+7	0.99-1.07 e+7

Blacktip Shark - Atlantic

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not estimated	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . From 2006 stock assessment.	not estimated	not estimated

2006 Status of U.S. Fisheries

**Large Coastal Shark Complex** (In addition to Sandbar Shark, Gulf of Mexico Blacktip Shark, and Atlantic Blacktip Shark, the Large Coastal Shark Complex also consists of additional stocks including Spinner Shark, Silky Shark, Bull Shark, Tiger Shark, Lemon Shark, Nurse Shark, Scalloped Hammerhead Shark, Great Hammerhead Shark, and Smooth Hammerhead Shark. In addition, several LCS species cannot be retained in commercial or recreational fisheries, including Dusky Shark, Bignose Shark, Galapagos Shark, Night Shark, Caribbean Reef Shark, Narrowtooth Shark, Sand Tiger Shark, Bigeye Sand Tiger Shark, Whale Shark, Basking Shark, White Shark)

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY</sub>	MSST
Overfishing occurs when the MFMT is exceeded, which is set at F <sub>limit</sub> = F <sub>MSY</sub> .	not estimated	A stock is overfished when the stock level biomass falls below MSST, which is set at MSST = BLIMIT = (1-M)B <sub>MSY</sub> when M < 0.5; MSST = BLIMIT = 0.5B <sub>MSY</sub> when M > 0.5. From 2006 stock assessment.	not estimated	not estimated

**Finetooth Shark**

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY</sub>	MSST
Overfishing occurs when the MFMT is exceeded, which is set at F <sub>limit</sub> = F <sub>MSY</sub> .	0.03-0.44	A stock is overfished when the stock level biomass falls below MSST, which is set at MSST = B <sub>LIMIT</sub> = (1-M)B <sub>MSY</sub> when M < 0.5; MSST = B <sub>LIMIT</sub> = 0.5B <sub>MSY</sub> when M > 0.5. From 2002 stock assessment and 2003 Amendment 1.	08-1.65	0.4-1.4

**Atlantic Sharpnose Shark**

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY</sub>	MSST
Overfishing occurs when the MFMT is exceeded, which is set at F <sub>limit</sub> = F <sub>MSY</sub> .	0.04-0.42	A stock is overfished when the stock level biomass falls below MSST, which is set at MSST = B <sub>LIMIT</sub> = (1-M)B <sub>MSY</sub> when M < 0.5; MSST = B <sub>LIMIT</sub> = 0.5B <sub>MSY</sub> when M > 0.5. From 2002 stock assessment and 2003 Amendment 1.	23-43.3	11.5-33.4

**Blacknose Shark**

Overfishing defined	F <sub>MSY</sub>	Overfished defined	B <sub>MSY</sub>	MSST

2006 Status of U.S. Fisheries

Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	0.03-0.32	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . From 2002 stock assessment and 2003 Amendment 1.	3.3-5.4	1.6-4.5
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**Bonnethead Shark**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	0.05-0.53	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . From 2002 stock assessment and 2003 Amendment 1.	4.6-9.2	2.3-7.3

**Small Coastal Shark Complex** (In addition to Finetooth Shark, Atlantic Sharpnose Shark, Blacknose Shark, and Bonnethead Shark, the Small Coastal Shark Complex also consists of: Atlantic Angel Shark, Caribbean Sharpnose Shark, and Smalltail Shark)

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	0.04-0.28	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . From 2002 stock assessment and 2003 Amendment 1.	32.3-60.75	16.2-50.2

**Shortfin Mako Shark**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not estimated	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . From ICCAT stock assessment.	not estimated	not estimated

**Porbeagle Shark**

Overfishing defined	$F_{MSY}$	Overfished defined	$SSN_{MSY}$	MSST

2006 Status of U.S. Fisheries

Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	0.033 - 0.065	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . From 2005 Canadian stock assessment; Assessment provides only Z, not M.	29382 - 40676	not available
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**Blue Shark**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not estimated	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . From ICCAT stock assessment.	not estimated	not estimated

**Dusky Shark**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	0.0115	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ . From 2006 Dusky Shark stock assessment; tables do not include M; used state space age structured model.	4409144	not available

**Longbill Spearfish - West Atlantic**

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not estimated	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ .	not estimated	not estimated

**Skipjack Tuna - West Atlantic**

2006 Status of U.S. Fisheries

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not estimated	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ .	not estimated	not estimated

**Pelagic Shark Complex** (In addition to Shortfin Mako Shark, Blue Shark, and Porbeagle Shark, the Pelagic Shark Complex also consists of: Oceanic Whitetip Shark and Thresher Shark. This complex also consists of stocks that cannot be retained in recreational or commercial fisheries, which include: Bigeye Thresher Shark, Bigeye Sixgill Shark, Longfin Mako Shark, Sevengill Shark, and Sixgill Shark)

Overfishing defined	$F_{MSY}$	Overfished defined	$B_{MSY}$	MSST
Overfishing occurs when the MFMT is exceeded, which is set at $F_{limit} = F_{MSY}$ .	not estimated	A stock is overfished when the stock level biomass falls below MSST, which is set at $MSST = B_{LIMIT} = (1-M)B_{MSY}$ when $M < 0.5$ ; $MSST = B_{LIMIT} = 0.5B_{MSY}$ when $M > 0.5$ .	not estimated	not estimated