

## **Fish Stocks in Rebuilding Plans: A Trend Analysis**

### Introduction

When a stock is determined to be overfished, the Regional Fishery Management Council must implement a plan to rebuild the stock to the level that can produce the maximum sustainable yield.

Rebuilding a stock will generally occur if more fish survive to maturity than are lost to mortality, so it is important to set catch levels at a rate that will allow stocks to rebuild. Sometimes, factors such as habitat loss, environmental variability, and disease outbreaks hamper rebuilding efforts and stocks do not rebuild as expected. In most cases, if fishing mortality is kept within the levels specified in the rebuilding plan, the stock should rebuild as expected.

### Categories of the Trends Analysis

Using the most recent stock assessment, stocks were reviewed and grouped into four categories based on the level of fishing mortality (F) and how biomass (B) is responding:

- 1) The most recent year's estimate of F is below the overfishing level (not subject to overfishing);
- 2) The most recent year's estimate of F is above the overfishing level (subject to overfishing);
- 3) The biomass has increased since the rebuilding plan was implemented; and
- 4) The biomass has decreased or there is no substantial increasing trend since the rebuilding plan was implemented.

Inclusion of a stock in the "biomass has increased" category does not necessarily mean that the stock is rebuilding at the rate that is expected in the rebuilding plan.

### Results

As of December 31, 2014, there were 53 stocks in need of rebuilding, or were rebuilt in 2014. Of these 53 stocks, 46 stocks are currently in rebuilding plans, one stock has a rebuilding plan that must be implemented by December 2015, and three stocks that completed rebuilding under a rebuilding plan. An additional three stocks do not require rebuilding plans under the Magnuson-Stevens Act, but are pursuing recovery under the Endangered Species Act or international measures. All of these stocks are listed in Table 2, indicating if they were included in the analysis, and if not, an explanation of why they were not included. A total of 35 stocks were included in the analysis and are grouped into one of the four categories described above, and listed by region in Table 1.

The percentage of stocks in each category is as follows:

- 1) Not Subject to Overfishing/ Biomass Increasing – 55%
- 2) Not Subject to Overfishing/ Biomass Not Increasing – 17%

- 3) Subject to Overfishing/ Biomass Increasing – 11%
- 4) Subject to Overfishing/ Biomass Not Increasing – 17%

**Table 1. Regional and Total Categories**

<b>Northeast Region</b>				
<b>Stock</b>	<b>Not Subject to Overfishing/ Biomass Increasing</b>	<b>Not Subject to Overfishing/ Biomass Not Increasing</b>	<b>Subject to Overfishing / Biomass Increasing</b>	<b>Subject to Overfishing/ Biomass Not Increasing</b>
American plaice - Gulf of Maine / Georges Bank	√			
Atlantic cod - Georges Bank				√
Atlantic cod - Gulf of Maine				√
Atlantic halibut – Northwestern Atlantic Coast		√		
Barndoor skate - Georges Bank / Southern New England	√			
Ocean pout - Northwestern Atlantic Coast		√		
Butterfish - Gulf of Maine / Cape Hatteras	√			
Smooth skate – Gulf of Maine	√			
Thorny skate - Gulf of Maine				√
Tilefish - Mid-Atlantic Coast	√			
White hake - Gulf of Maine / Georges Bank	√			
Winter flounder – Georges Bank	√			
Winter flounder - Southern New England / Mid-Atlantic		√		
Yellowtail flounder - Cape Cod / Gulf of Maine			√	
Yellowtail flounder - Georges Bank				√
<b>Percentage of Stocks in Category</b>	47%	20%	6%	27%
<b>Southeast Region</b>				
Gag – Gulf of Mexico	√			
Gray triggerfish – Gulf of Mexico			√	
Greater amberjack – Gulf of Mexico			√	
Red porgy - Southern Atlantic Coast	√			
Red snapper – Gulf of Mexico	√			
Snowy grouper - Southern Atlantic Coast	√			
<b>Percentage of Stocks in Category</b>	66%	-	17%	17%

<b>Northwest Region</b>				
<b>Stock</b>	<b>Not Subject to Overfishing/ Biomass Increasing</b>	<b>Not Subject to Overfishing/ Biomass Not Increasing</b>	<b>Subject to Overfishing / Biomass Increasing</b>	<b>Subject to Overfishing/ Biomass Not Increasing</b>
Bocaccio - Southern Pacific Coast	√			
Canary rockfish - Pacific Coast	√			
Cowcod - Southern California	√			
Darkblotched rockfish - Pacific Coast	√			
Pacific ocean perch - Pacific Coast	√			
Petrale sole – Pacific Coast	√			
Yelloweye rockfish - Pacific Coast	√			
<b>Percentage of Stocks in Category</b>	100%	-	-	-
<b>Alaska Region</b>				
Blue king crab – Pribilof Islands		√		
<b>Percentage of Stocks in Category</b>	-	100%	-	-
<b>Highly Migratory Species Division</b>				
Albacore - North Atlantic	√			
Bigeye tuna - Atlantic		√		
Blue Marlin – Atlantic				√
Bluefin Tuna – Western Atlantic			√	
Dusky Shark - Atlantic				√
Sandbar Shark - Atlantic		√		
<b>Percentage of Stocks in Category</b>	17%	33%	17%	33%
<b>National Totals</b>				
<b>Percentage of Stocks in Category</b>	55%	17%	11%	17%

**Table 2.** Stocks that have been declared overfished and their status of inclusion or rationale for exclusion in the analysis. Some stocks may be in rebuilding plans but not included in the analysis for the following reasons:

- 1) A formal rebuilding program was not submitted under the Magnuson-Stevens Act<sup>1</sup>.
- 2) In a rebuilding plan, but the most recent stock assessment does not yet include a full year under the plan.
- 3) In a rebuilding plan, but the stock does not have reliable time series estimates of biomass and/or fishing mortality.
- 4) The stock has been recently declared overfished, so a rebuilding plan has not yet been implemented.
- 5) Stock does not require a domestic rebuilding plan under section 304(i) of the Magnuson-Stevens Act because status is due to excessive international fishing pressure; NMFS is working internationally to rebuild this stock.

Stock	Jurisdiction	Current Rebuilding Program Progress	Status in Analysis
<b>NORTHEAST REGION</b>			
American plaice - Gulf of Maine / Georges Bank	NEFMC	1/10-year plan second rebuilding plan	Included
Atlantic cod - Georges Bank	NEFMC	11/23-year plan	Included
Atlantic cod - Gulf of Maine	NEFMC	1/10-year plan second rebuilding plan	Included
Atlantic halibut - Northwestern Atlantic Coast	NEFMC	11/52-year plan	Included
Atlantic salmon - Gulf of Maine	NEFMC	N/A	Excluded – 1
Atlantic wolffish - Gulf of Maine / Georges Bank	NEFMC	Year 5 of plan	Excluded – 2
Barndoor skate - Georges Bank / Southern New England	NEFMC	Year 12 of plan	Included
Butterfish - Gulf of Maine / Cape Hatteras	MAFMC	Rebuilt	Included
Ocean pout - Northwestern Atlantic Coast	NEFMC	11/10-year plan	Included
Smooth skate - Gulf of Maine	NEFMC	5/10-year plan	Included
Thorny skate - Gulf of Maine	NEFMC	12 of 25-year plan	Included
Tilefish - Mid-Atlantic Coast	MAFMC	Rebuilt	Included
White hake - Gulf of Maine / Georges Bank	NEFMC	11/10-year plan	Included
Windowpane - Gulf of Maine / Georges Bank	NEFMC	5/7-year plan	Excluded – 2
Winter flounder - Georges Bank	NEFMC	5/7-year plan	Included
Winter flounder - Southern New England / Mid-Atlantic	NEFMC	2/10-year plan Second rebuilding plan	Included
Witch flounder - Northwestern Atlantic Coast	NEFMC	5/7-year plan	Excluded – 2
Yellowtail flounder - Cape Cod / Gulf of Maine	NEFMC	11/19-year plan	Included
Yellowtail flounder - Georges Bank	NEFMC	9/26-year plan	Included

<sup>1</sup> Applicable to Atlantic salmon only - a Final Recovery Plan for the Gulf of Maine Distinct Population Segment of Atlantic Salmon has been developed under the Endangered Species Act.

Stock	Jurisdiction	Current Rebuilding Program Progress	Status in Analysis
<b>SOUTHEAST REGION</b>			
Nassau grouper - Caribbean	CFMC	10/25-year plan	Excluded – 3
Blueline tilefish - Southern Atlantic Coast	SAFMC	N/A	Excluded - 4
Goliath grouper - Caribbean	CFMC	10/30-year plan	Excluded – 3
Gag - Gulf of Mexico	GMFMC	Rebuilt	Included
Gray triggerfish – Gulf of Mexico	GMFMC	7/10-year plan	Included
Greater amberjack – Gulf of Mexico	GMFMC	12/10-year plan	Included
Queen conch – Caribbean	CFMC	10/15-year plan	Excluded – 3
Red grouper - Southern Atlantic Coast	SAFMC	3/10-year plan	Excluded – 2
Red porgy - Southern Atlantic Coast	SAFMC	16/18-year plan	Included
Red snapper – South Atlantic	SAFMC	4/35-year plan	Excluded – 2
Red snapper - Gulf of Mexico	GMFMC	14/27-year plan	Included
Snowy grouper - Southern Atlantic Coast	SAFMC	9/34-year plan	Included
<b>NORTHWEST REGION</b>			
Bocaccio - Southern Pacific Coast	PFMC	15/22-year plan	Included
Canary rockfish - Pacific Coast	PFMC	14/29-year plan	Included
Cowcod - Southern California	PFMC	14/67-year plan	Included
Darkblotched rockfish - Pacific Coast	PFMC	13/23-year plan	Included
Pacific ocean perch - Pacific Coast	PFMC	15/51-year plan	Included
Petrale sole - Pacific Coast	PFMC	3/4-year plan	Included
Yelloweye rockfish - Pacific Coast	PFMC	12/71-year plan	Included
Pacific bluefin tuna - Pacific	PFMC / WPFMC	N/A	Excluded - 5
<b>PACIFIC ISLANDS REGION</b>			
Seamount Groundfish Complex - Hancock Seamount	WPFMC	Year 29 of plan	Excluded – 3
Striped marlin - Central Western - Pacific	PFMC / WPFMC	N/A	Excluded - 5
<b>ALASKA REGION</b>			
Blue King Crab - Pribilof Islands	NPFMC	11/10-year plan	Included
<b>HIGHLY MIGRATORY SPECIES</b>			
Blue marlin – North Atlantic	HMS	Year 14 of plan	Included
Albacore - North Atlantic	HMS	5/10-year plan	Included
Bigeye tuna – Atlantic	HMS	Year 16 of plan	Included
Blacknose shark – Atlantic	HMS	2/30-year plan	Excluded – 2
Bluefin tuna – Western Atlantic	HMS	16/20-year plan	Included
Dusky shark – Atlantic	HMS	7/100-year plan	Included
Porbeagle shark – Atlantic	HMS	7/100-year plan	Excluded – 2
Sailfish – Western Atlantic	HMS	Year 16 of plan	Excluded – 3
Sandbar shark – Atlantic	HMS	10/66-year plan	Included
Scalloped hammerhead – Atlantic	HMS	2/10-year plan	Excluded – 2
White marlin – North Atlantic	HMS	Year 14 of plan	Excluded – 3

**Table 3. Rebuilding stocks quadrant**

	<b>Not Subject to Overfishing</b>	<b>Subject to Overfishing</b>
<b>Biomass Increasing</b>	<ul style="list-style-type: none"> <li>• Albacore - North Atlantic</li> <li>• American plaice - Gulf of Maine / Georges Bank</li> <li>• Barndoor skate - Georges Bank/Southern New England</li> <li>• Bocaccio - Southern Pacific Coast</li> <li>• Butterfish - Gulf of Maine / Cape Hatteras</li> <li>• Canary rockfish - Pacific Coast</li> <li>• Cowcod - Southern California</li> <li>• Darkblotched rockfish - Pacific Coast</li> <li>• Gag – Gulf of Mexico</li> <li>• Pacific ocean perch - Pacific Coast</li> <li>• Petrale sole – Pacific Coast</li> <li>• Red porgy - Southern Atlantic Coast</li> <li>• Red snapper – Gulf of Mexico</li> <li>• Smooth skate – Gulf of Maine</li> <li>• Tilefish - Mid-Atlantic Coast</li> <li>• White hake - Gulf of Maine / Georges Bank</li> <li>• Winter flounder - Georges Bank</li> <li>• Yelloweye rockfish - Pacific Coast</li> </ul>	<ul style="list-style-type: none"> <li>• Bluefin tuna – Western Atlantic</li> <li>• Gray Triggerfish – Gulf of Mexico</li> <li>• Greater amberjack – Gulf of Mexico</li> <li>• Snowy grouper - Southern Atlantic Coast</li> <li>• Yellowtail flounder - Cape Cod/Gulf of Maine</li> </ul>
<b>Biomass Not increasing</b>	<ul style="list-style-type: none"> <li>• Atlantic halibut - Northwestern Atlantic Coast</li> <li>• Bigeye tuna - Atlantic</li> <li>• Blue king crab - Pribilof Islands</li> <li>• Ocean pout - Northwestern Atlantic Coast</li> <li>• Sandbar Shark – Atlantic</li> <li>• Winter Flounder – Southern New England / Mid-Atlantic</li> </ul>	<ul style="list-style-type: none"> <li>• Atlantic cod – Georges Bank</li> <li>• Atlantic cod - Gulf of Maine</li> <li>• Blue marlin – Atlantic</li> <li>• Dusky Shark – Atlantic</li> <li>• Thorny skate - Gulf of Maine</li> <li>• Yellowtail Flounder - Georges Bank</li> </ul>