

## Note on update of Chapter 8 Assessment of the northern rock sole stock in the Bering Sea and Aleutian Islands

James Ianelli  
September 2020

Northern rock sole (*Lepidopsetta polyxystra*) are assessed on a biennial stock assessment schedule as part of the National Marine Fisheries Service assessment prioritization plan implemented in 2017. The most recent “full” assessment for this stock was in 2018. In the process of making refinements for 2020, an error was detected in an input file to the 2018 assessment. The purpose of this document is to highlight the extent of the difference this error caused in preparing for the “full” 2020 assessment to be presented in November 2020. In 2019 the following table was updated from the 2018 assessment (and applies to both the 2018 and 2019 assessments):

<b>Quantity</b>	As estimated or <i>specified last year for:</i>		As estimated or <i>recommended this year</i> for:	
	2019	2020	2020	2021
<i>M</i> (natural mortality rate)	0.15	0.15	0.15	0.15
Tier	1a	1a	1a	1a
Projected total (age 6+)	828,000	1,001,400	1,068,000	1,608,000
Female spawning biomass (t)	417,800	380,600	380,600	356,000
Projected				
<i>B</i> <sub>0</sub>	515,680		515,680	
<i>B</i> <sub>MSY</sub>	186,000	186,000	186,000	186,000
<i>F</i> <sub>OFL</sub>	0.147	0.147	0.147	0.147
<i>maxF</i> <sub>ABC</sub>	0.144	0.144	0.144	0.144
<i>F</i> <sub>ABC</sub>	0.144	0.144	0.144	0.144
OFL (t)	122,000	157,300	<b>157,300</b>	236,800
maxABC (t)	118,900	153,300	<b>153,300</b>	230,700
ABC (t)	118,900	153,300	<b>153,300</b>	230,700
<b>Status</b>	As determined <i>last year for:</i>		As determined <i>this year</i>	
	2017	2018	2018	2019
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No

Using the same data files, the updated table should have read:

<b>Quantity</b>	As estimated or <i>specified last year for:</i>		As estimated or <i>recommended this year</i> for:	
	2019	2020	2020	2021
<i>M</i> (natural mortality rate)	0.15	0.15	0.15	0.15
Tier	1a	1a	1a	1a
Projected total (age 6+)	899,800	1,154,000	1,154,000	1,729,000
Female spawning biomass (t)	458,100	415,000	415,000	389,000
Projected				
<i>B</i> <sub>0</sub>	546,800		546,800	
<i>B</i> <sub>MSY</sub>	197,400	197,400	197,400	197,400
<i>F</i> <sub>OFL</sub>	0.147	0.147	0.147	0.147
<i>maxF</i> <sub>ABC</sub>	0.146	0.146	0.146	0.146
<i>F</i> <sub>ABC</sub>	0.142	0.142	0.142	0.142
OFL (t)	131,100	168,000	168,000	251,800
maxABC (t)	127,700	163,700	163,700	245,400
ABC (t)	127,700	163,700	163,700	245,400
<b>Status</b>	As determined <i>last year for:</i>		As determined <i>this year</i>	
	2017	2018	2018	2019
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No

The error was traced to a line near the end of the datafile that was intended to be commented out. The 2016 version of the model was also investigated for this error and it was found to be free from this transcription issue.

To summarize, the following shows the relative change from the original table used for specifications:

<b>Quantity</b>	As estimated or <i>specified last year for:</i>		As estimated or <i>recommended this year for:</i>	
	2019	2020	2020	2021
<i>M</i> (natural mortality rate)	0.15	0.15	0.15	0.15
Tier	1a	1a	1a	1a
Projected total (age 6+) biomass (t)	9%	15%	8%	8%
Female spawning biomass (t)	10%	9%	9%	9%
Projected				
<i>B</i> <sub>0</sub>		6%		6%
<i>B</i> <sub>MSY</sub>		6%		6%
<i>F</i> <sub>OFL</sub>	-0.9%	-0.9%	-0.9%	-0.9%
<i>maxF</i> <sub>ABC</sub>	-1.4%	-1.4%	-1.4%	-1.4%
<i>F</i> <sub>ABC</sub>	-1.4%	-1.4%	-1.4%	-1.4%
OFL (t)	7.5%	6.8%	6.8%	6.3%
maxABC (t)	7.4%	6.8%	6.8%	6.4%
ABC (t)	7.4%	6.8%	6.8%	6.4%