

18 Ocean pout

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This assessment of the ocean pout (Zoarces americanus) stock is an operational assessment of the 2015 operational assessment (NEFSC 2015). Based on the 2015 assessment, the stock was overfished but overfishing was not occurring. This assessment updates commercial fishery catch data, research survey indices and the exploitation ratios through 2016. There are no stock projections.

State of Stock: Based on the current assessment, the ocean pout (*Zoarces americanus*) stock is overfished and overfishing is not occurring (Figures 86-87). Retrospective adjustments were not made to the model results. Biomass proxy (B) in 2016 was estimated to be 0.223 (kg/tow) which is 5% of the biomass target (B_{MSY} proxy = 4.94; Figure 86). The 2016 fully selected fishing mortality was estimated to be 0.221 which is 29% of the overfishing threshold proxy (F_{MSY} proxy = 0.76; Figure 87).

Table 52: Catch and model results table for ocean pout. Catch weights are in (mt), survey biomass is in (kg/tow), and the relative exploitation ratio is the total catch / NEFSC 3 year average spring biomass index. Model results are from the current updated index assessment. Note: A 2014 landings database correction was made.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<i>Data</i>										
US Commercial discards	164	118	165	125	76	94	68	74	63	49
US Commercial landings	4	7	3	0	0	0	0	0	0	0
Other landings	0	0	0	0	0	0	0	0	0	0
Catch for Assessment	167	126	168	126	77	90	68	74	63	49
<i>Model Results</i>										
NEFSC 3 yr average Spring Survey	0.475	0.513	0.479	0.44	0.343	0.298	0.357	0.29	0.317	0.223
Relative Exploitation Ratio	0.352	0.245	0.35	0.286	0.224	0.302	0.191	0.256	0.197	0.221

Table 53: Comparison of reference points estimated in an earlier assessment and from the current updated assessment. For ocean pout, median NEFSC 3 year average Spring survey biomass and median exploitation ratio during 1977-1985 are used as B_{MSY} and F_{MSY} proxies, respectively.

	2015	2017
F_{MSY} proxy	0.76	0.76
B_{MSY} proxy (kg/tow)	4.94	4.94
MSY (mt)	3,754	3,754
<i>Overfishing</i>	No	No
<i>Overfished</i>	Yes	Yes

Projections: The index-based assessment approach does not support catch projections; catch advice for ocean pout has been based on the target exploitation rate and the most recent centered 3-year average biomass index from the NEFSC spring survey.

Special Comments:

- What are the most important sources of uncertainty in this stock assessment? Explain, and describe qualitatively how they affect the assessment results (such as estimates of biomass, F , recruitment, and population projections).
An important source of uncertainty is the stock has not responded to low catch as expected.
- Does this assessment model have a retrospective pattern? If so, is the pattern minor or major? (A major retrospective pattern occurs when the adjusted SSB or F_{Full} lies outside of the approximate joint confidence region for SSB and F_{Full} ; see Table 8).
The model used to estimate status of this stock does not allow estimation of a retrospective pattern.
- Based on this stock assessment, are population projections well determined or uncertain? If this stock is in a rebuilding plan, how do the projections compare to the rebuilding schedule?
N/A
- Describe any changes that were made to the current stock assessment, beyond incorporating additional years of data and the effect these changes had in the assessment and stock status.
A database correction was made to the 2014 ocean pout landings. This change had a negligible effect on the assessment. Recreational landings were updated and were found to be negligible (time series average of recreational landings to total catch was less than 1%) and therefore not included in this assessment.
- If the stock status has changed a lot since the previous assessment, explain why this occurred.
Ocean pout stock status has not changed since the previous assessment.
- Provide qualitative statements describing the condition of the stock that relate to stock status.
Discards comprise most of the catch since the no possession regulation was implemented in May 2010. The NEFSC survey indices remain at near-record low levels; there are few large fish in the population. The ocean pout stock remains in poor condition.
- Indicate what data or studies are currently lacking and which would be needed most to improve this stock assessment in the future.
The ocean pout assessment could be improved with studies that explore why this stock is not rebuilding as expected.
- Are there other important comments?
Biological reference points are based on catch; the estimated discards used in the catch are based on a mix of direct (1989 onward) and indirect (1988 and back) methods. The catch

used to determine MSY is based on indirect methods. Minimum estimates of scientific research removals of ocean pout ranged between 0.2 and 24.9 mt, with an average of 3 mt between 1963 and 2016. The NEFSC bottom trawl surveys, Massachusetts Division of Marine Fisheries inshore surveys, Atlantic States Marine Fisheries Commission summer shrimp surveys, and various Cooperative Research surveys (e.g., such as Industry-based surveys for cod and for yellowtail flounder) and gear studies have contributed to scientific research removals.

18.1 Reviewer Comments: Ocean pout

Assessment Recommendation:

The panel concluded that the operational assessment was acceptable as a scientific basis for management advice.

Alternative Assessment Approach:

Not applicable

Status Recommendation:

Based on the operational assessment, the panel agrees with the conclusion that the ocean pout stock is overfished and overfishing is not occurring. Discards comprise most of the catch since the no possession regulation was implemented in May 2010. The National Marine Fisheries Service survey indices remain at near-record low levels, and there are few large fish in the population. The ocean pout stock remains in poor condition.

Key Sources of Uncertainty:

An important source of uncertainty is that the stock size has not increased as a result of catch reductions. The majority of catch is comprised of discards, which are estimated using both direct and indirect methods. There are questions over whether the current perspective of the stock is due to environmental drivers influencing stock abundance.

Research Needs:

The ocean pout assessment could be improved with studies that explore why this stock is not rebuilding, in particular an exploration of whether fishing mortality, biological dynamics, or environmental drivers may be causing this issue.

References:

Northeast Fisheries Science Center. 2015. Operational Assessment of 20 Northeast Groundfish Stocks, Updated Through 2014. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 15-24; 251 p. [CRD15-24](#)

Northeast Fisheries Science Center. 2012. Assessment or Data Updates of 13 Northeast Groundfish Stocks through 2010. US Dep Commer, NOAA Fisheries, Northeast Fish Sci Cent Ref Doc. 12-06; 789 p. [CRD12-06](#)

Northeast Fisheries Science Center. 2008. Assessment of 19 Northeast Groundfish Stocks through 2007: Report of the 3rd Groundfish Assessment Review Meeting (GARM III), Northeast Fisheries Science Center, Woods Hole, Massachusetts, August 4-8, 2008. US Dep Commer, NOAA Fisheries, Northeast Fish Sci Cent Ref Doc. 08-15; 884 p + xvii. [CRD08-15](#)

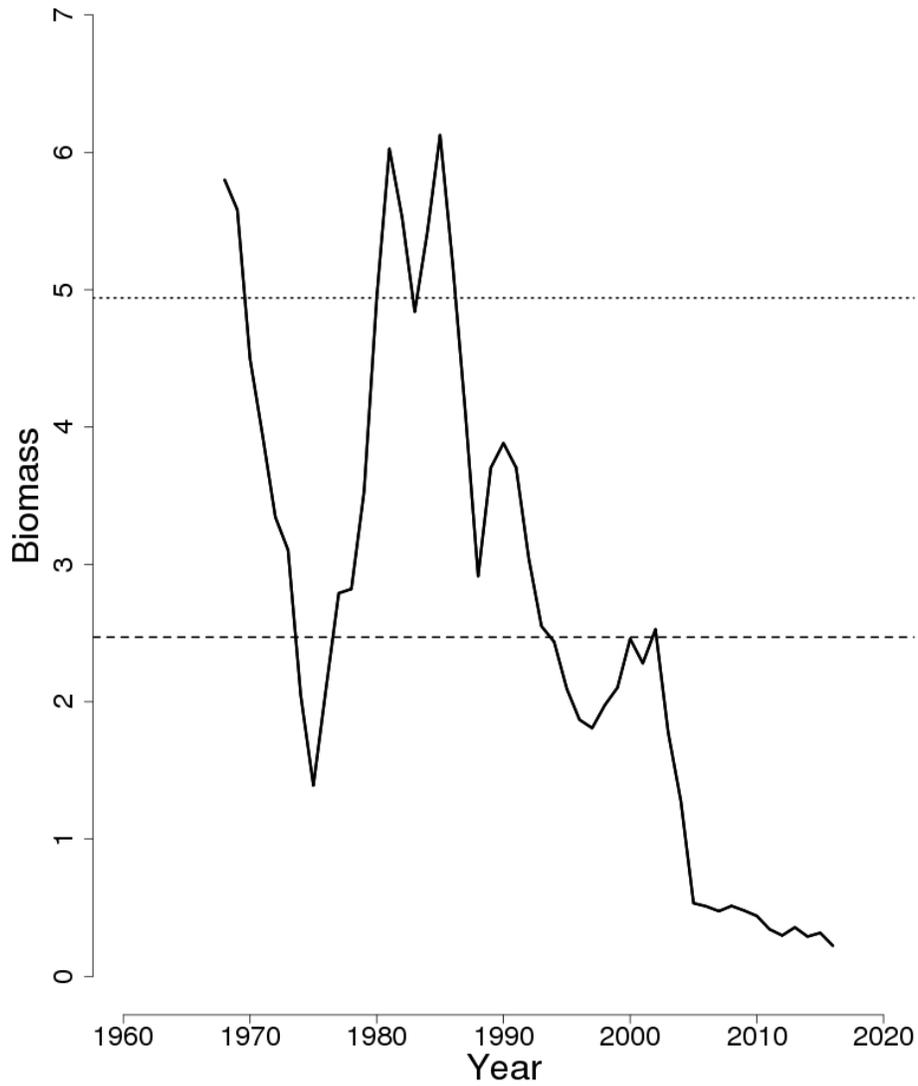


Figure 86: Trends in biomass (kg/tow) of ocean pout between 1968 and 2016 from the current (solid line) and previous (dashed line) assessment, and the corresponding $B_{Threshold}$ ($\frac{1}{2} B_{MSY}$ proxy; horizontal dashed line) as well as B_{Target} (B_{MSY} proxy; horizontal dotted line) based on the current assessment.

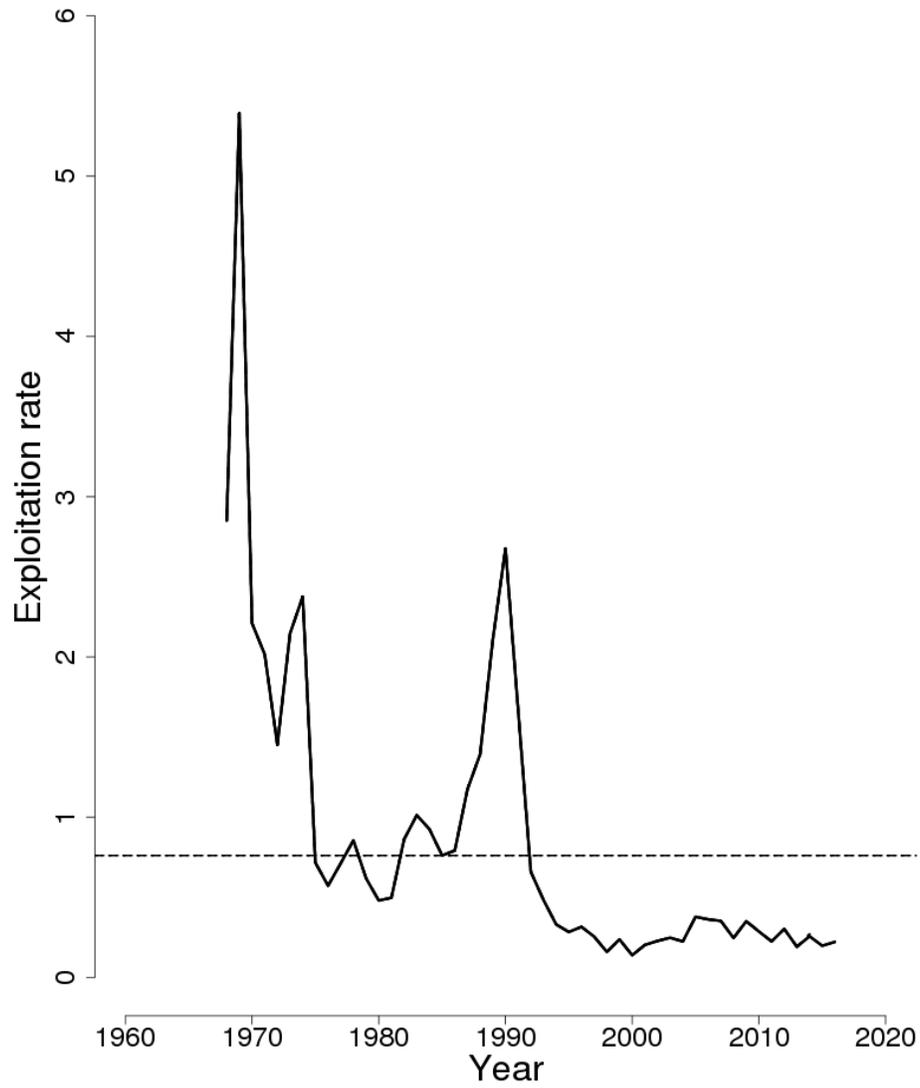


Figure 87: Trends in the exploitation rate of ocean pout between 1968 and 2016 from the current (solid line) and previous (dashed line) assessment and the corresponding $F_{Threshold}$ (F_{MSY} proxy=0.76; horizontal dashed line) based on the current assessment.

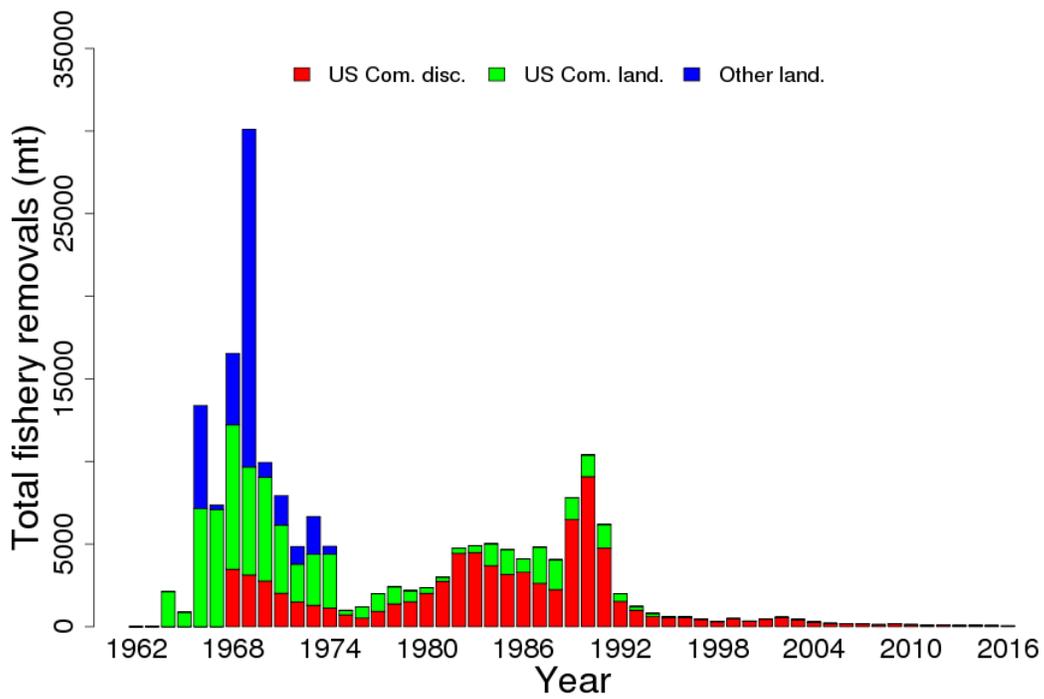


Figure 88: Total catch of ocean pout between 1968 and 2016 by fleet (US and Other) and disposition (landings and discards).

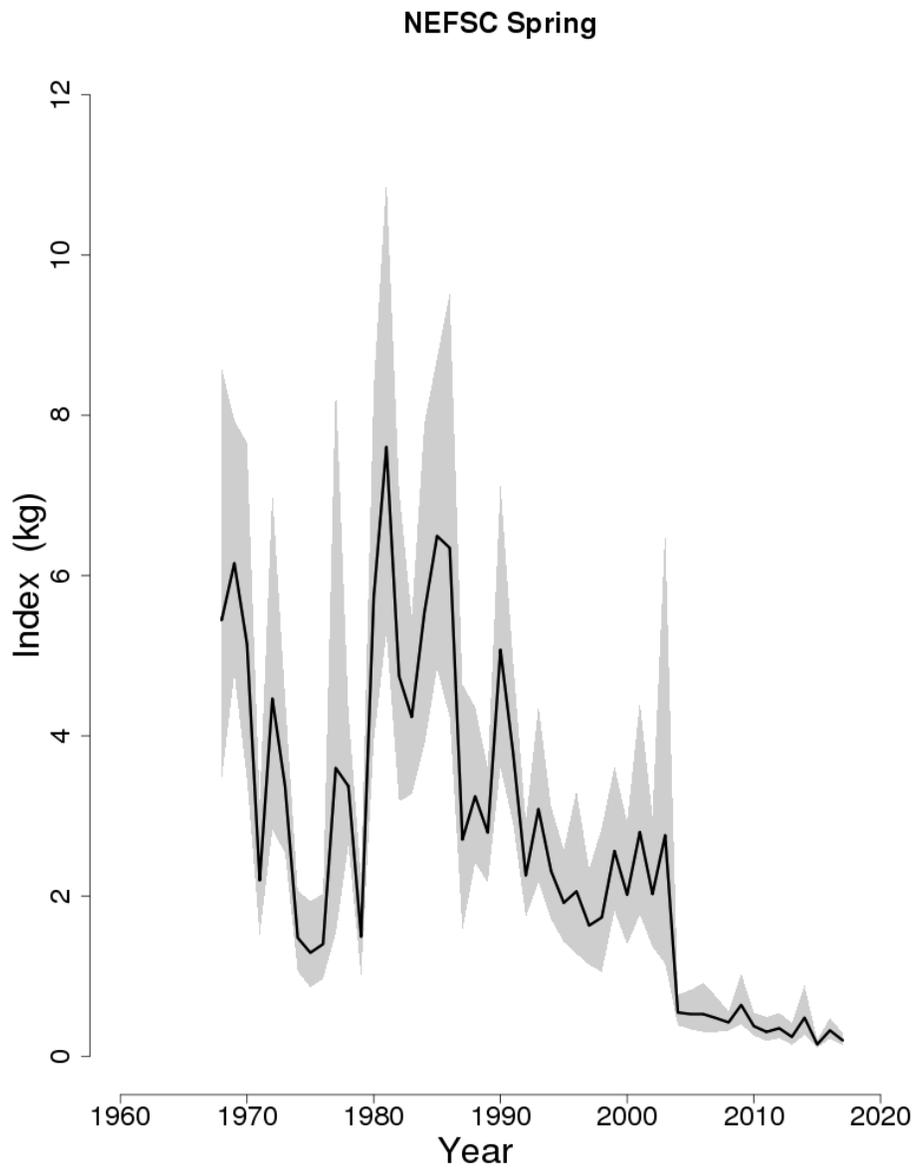


Figure 89: Indices of biomass (kg/tow) for ocean pout between 1968 and 2017 for the Northeast Fisheries Science Center (NEFSC) spring survey. The approximate 90% lognormal confidence intervals are shown.