

# KOLMUNNI – BLUE WHITING

## *Micromesistius poutassou*

### RÁÐGJÖF – ADVICE

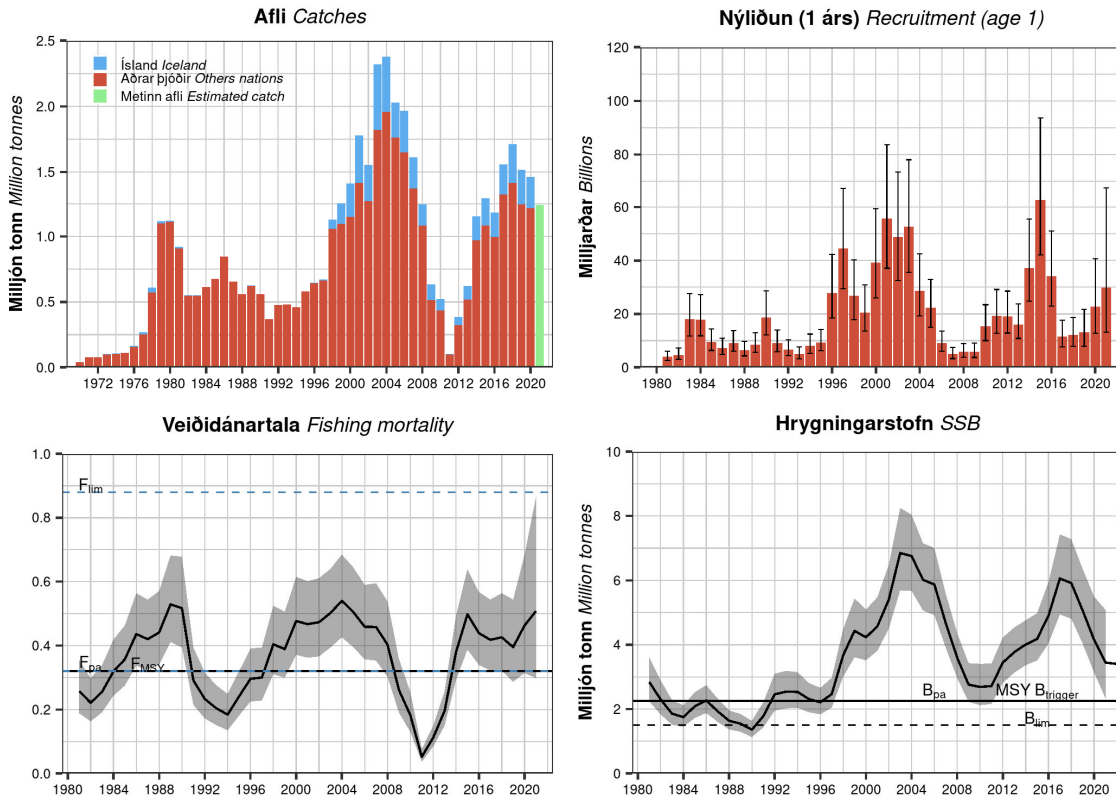
Alþjóðahafrannsóknaráðið (ICES) ráðleggur í samræmi við langtímanýtingarstefnu samþykka af Evrópusambandinu, Færeyjum, Íslandi og Noregi að afli ársins 2022 verði ekki meiri en 752 736 tonn.

*ICES advises that when the long-term management strategy agreed by the European Union, the Faroe Islands, Iceland, and Norway is applied, catches in 2022 should be no more than 752 736 tonnes.*

### STOFNÞRÓUN – STOCK DEVELOPMENT

Veiðidánartala er metin yfir þeim fiskveiðidauða sem gefur hámarksafurkastur til lengri tíma litið ( $F_{MSY}$ ) og yfir gátmörkum ( $F_{pa}$ ) en undir varúðarmörkum ( $F_{lim}$ ). Stærð hrygningarstofns er metinn yfir lífmassa aðgerðarmörkum ( $MSY B_{trigger}$ ), gátmörkum ( $B_{pa}$ ) og varúðarmörkum ( $B_{lim}$ ).

*Fishing pressure on the stock is above  $F_{MSY}$  and between  $F_{pa}$  and  $F_{lim}$ ; spawning-stock size is above  $MSY B_{trigger}$ ,  $B_{pa}$  and  $B_{lim}$ .*



**Kolmunni.** Heildarafli og afli Íslendinga, nýliðun 1 árs, veiðidánartala og stærð hrygningarstofns.

**Blue whiting.** Total and Icelandic catches, recruitment at age 1, fishing mortality and spawning stock biomass (SSB).

### STOFNMAT OG VIÐMIÐUNARMÖRK – BASIS OF ASSESSEMENT AND REFERENCE POINTS

Forsendur ráðgjafar Basis of the advice	Langtímaaflegra. Long-term management strategy.
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Aflaregla <i>Management plan</i>	Langtímaafaregla samþykkt af Evrópusambandinu, Færeyjum, Íslandi og Noregi 2016 (Anon. 2016). Aflaregla stenst MSY viðmið ICES (ICES 2016). <i>A long-term management strategy was agreed by the European Union, the Faroe Islands, Iceland and Norway in 2016 (Anon 2016). ICES evaluated the strategy and found it to be precautionary (ICES 2016).</i>
Stofnmat <i>Assessment type</i>	Aldursafllíkan sem notar aflagögn í stofnmati og framreikningum. <i>Age-based analytical assessment (SAM; ICES 2021) that uses catches for the model and the forecast.</i>
Inntaksgögn <i>Input data</i>	Aldursgreindur afli og bráðabirgða aldursgreindur afli fyrir janúar til júní árið sem stofnmatið er framkvæmt. Vísitala úr stofnmælingaleiðangri á hrygningarslóð að vorlagi (IBWSS) sem gefur vísitölu fyrir 1–8 ára fisk árlega frá 2004–2020, fyrir utan árin 2010 og 2020. Kynþroskahlutfall metið 1994 fyrir allt útbreiðslusvæði stofnsins. Fastur náttúrulegur dauði er 0.2 og er ákvarðaður frá aldursamsetningu stofnsins áður en veiðar hófust upp úr 1980. <i>Commercial catches, preliminary estimate of catch-at-age in the year (Q1–Q2) in which the assessment is carried out. One survey index (International Blue Whiting Spawning Stock Survey (A1142, A6148 and A8414 [IBWSS]) ages 1–8, 2004–2021, excluding 2010 and 2020). Fixed maturity estimated in 1994 by combining maturity ogives from the southern and northern areas. Natural mortality fixed at 0.2, derived in the 1980s from age compositions before the targeted fishery started.</i>

Nálgun <i>Framework</i>	Viðmiðunarmörk <i>Reference point</i>	Gildi <i>Value</i>	Grundvöllur <i>Basis</i>
Aflaregla <i>Management plan</i>	SSB <sub>mgt_lower</sub>	1 500 000 t	B <sub>lim</sub>
	SSB <sub>mgt</sub>	2 250 000 t	B <sub>pa</sub>
	F <sub>mgt_lower</sub>	0.05	Valið lágt gildi fyrir F. <i>Arbitrary low F.</i>
	F <sub>mgt</sub>	0.32	F = F <sub>MSY</sub>
MSY nálgun <i>MSY approach</i>	MSY B <sub>trigger</sub>	2 250 000 t	B <sub>pa</sub>
	F <sub>MSY</sub>	0.32	Slembireikningar í aflaregluhermun með hrygningarstofns-nýliðunnar sambandi. <i>Stochastic simulations with segmented regression stock–recruitment relationship capped at Fp05.</i>
Varúðarnálgun <i>Precautionary approach</i>	B <sub>lim</sub>	1 500 000 t	Um það bil B <sub>loss</sub> (minnsti útreiknaði hrygningarstofn). <i>Approximately B<sub>loss</sub>.</i>
	B <sub>pa</sub>	2 250 000 t	B <sub>lim</sub> * exp(1.645 * σ), with σ = 0.246.
	F <sub>lim</sub>	0.88	Veiðidánartala sem leiðir til þess að hrygningarstofn er yfir B <sub>lim</sub> með 50% líkum. <i>Equilibrium scenarios with stochastic recruitment: F value corresponding to 50% probability of (SSB &lt; B<sub>lim</sub>).</i>
	F <sub>pa</sub>	0.32	Veiðidánartala sem leiðir til þess að hrygningarstofn er yfir B <sub>lim</sub> með 95% líkum. <i>F<sub>p05</sub>; the F that leads to SSB ≥ B<sub>lim</sub> with 95% probability.</i>

## HORFUR – PROSPECTS

Nýliðun fyrir árin 2020–2021 er metin hærri en fyrir árin 2017–2019 og leiða til aukningar í hrygningarstofni árið 2023.

Ráðgjöfin fyrir árið 2021 var byggð á sveiflujöfnun í samræmi við aflareglu, um að afli mætti ekki breytast meira en 20% milli ára, sem leiddi til F = 0.36. Ráðgjöfin 2022 byggir á F = 0.32 og leiðir til 19% lægri afla en fyrir árið 2021.

*Recruitment in 2020–2021 is estimated to be higher than recruitment in the three previous years. These recruits will mature and contribute to the SSB in 2023.*

*The advice for 2022 is 19% lower than that for 2021 due to a lower advised F for 2022 of 0.32 compared to the advice for 2021 which was based on an F of 0.36 because the TAC constraint in the management plan was applied.*

**Kolmuni.** Áætluð þróun stærðar hrygningarstofns (tonn) miðað við afla samkvæmt langtímaafareglu.

**Blue whiting.** Projection of SSB (tonnes) based on adopted long-term management strategy.

2021		2022			2023
Áætlaður afli <i>Estimated catches</i>	F	Aflamark skv. aflareglu <i>TAC based on management strategy</i>	Hrygn. stofn SSB	F	Hrygn. stofn SSB
1 242 727	0.51	752 736	3 403 663	0.32	4 052 163

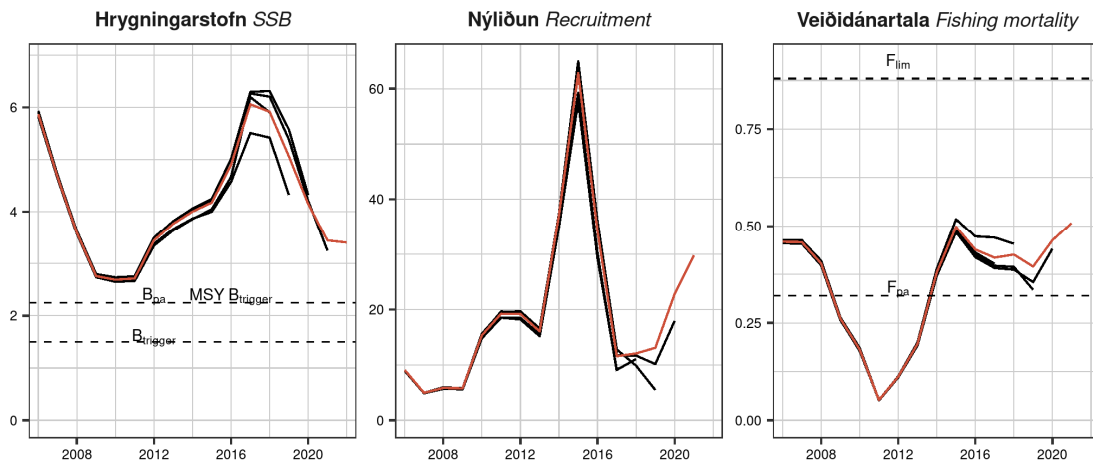
## GÆÐI STOFNMATS – QUALITY OF THE ASSESSMENT

Stofnmatið byggir á aldursgreindum fjöldavísitölum úr bergmálsleiðangri sem féll niður vorið 2020 vegna COVID-19, en var farinn vorið 2021. Nýjasta stofnmælingin er á ári hverju mikilvægust í stofnmati og er því stofnmatið í ár með minni óvissu en í fyrra.

Skammtímaspá byggir mat á nýliðun fyrir árin 2022 og 2023 á faldmeðaltali síðan 1996, meðan fyrri ár var byggt á faldmeðaltali síðan 1981. Styttra tímabilið endurspeglar hagstæðari umhverfisskilyrði á uppeldissvæði kolmunna og betri nýliðun. Þessi breyting hækkar ráðgjöf um 1,3%.

*The assessment uses data from one survey only, the International Blue Whiting Spawning Stock Survey, which was cancelled in 2020 due to the COVID-19 disruption but continued in 2021. The lack of 2020 survey data in this year's assessment has a limited impact on the uncertainty of assessments results compared to last year due to the availability of a survey estimate for 2021.*

*Recruitment estimates for 2022 and 2023 used for forecast are now based on the geometric mean of the historical recruitment 1996-2020, while previous years' forecast used the full time series back to 1981. The change was made to better reflect the environmental changes and higher recruitment in general since 1996. This change had a minor effect on the predicted catch, e.g. a 1.3% higher catch advice for the  $F_{MSY}$  option.*



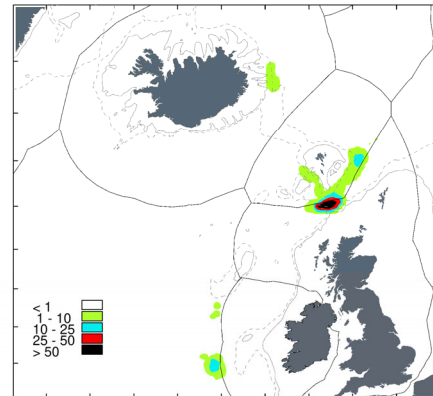
**Kolmuni.** Samanburður á stofnmati árána 2017–2021 (rauð lína: 2021).

**Blue whiting.** Current assessment (red line) compared with previous estimates (2017–2020).

## VEIÐAR ÍSLENDINGA – THE ICELANDIC FISHERY

Kolmunnaafli íslenskra skipa árið 2020 var tæplega 244 þúsund tonn sem er 9% minnkun frá 2019. Líkt og fyrri ár var mest veitt innan færeyskrar lögsögu, ríflega 188 þús. tonn. Um 4.5% aflans fékkst innan íslenskrar lögsögu. Heildarafli úr stofninum árið 2020 var tæp 1,5 milljón tonn sem var álíka og 2019.

*Icelandic landings of blue whiting in 2019 were just below 244 thousand tonnes which is 9% less than in 2019. The bulk of the catches were taken within the EEZ of Faroes, around 188 tho. tonnes. Around 4.5% of catches were caught within the Icelandic EEZ. The total blue whiting landings (all nations) in 2020 were just below 1.5 million tonnes which is similar to the 2019 catches.*



**Kolmuni.** Veiðisvæði íslenskra skipa árið 2020 (t/sjm<sup>2</sup>)  
**Blue whiting.** Fishing grounds of the Icelandic fleet in 2020 (t/nmi<sup>2</sup>).

## AÐRAR UPPLÝSINGAR – OTHER INFORMATION

Veiðar úr stofninum hafa verið umfram ráðgjöf samkvæmt langtímaaflareglu síðan 2018. Ráðgjöfin fyrir þennan stofn byggir á fiskveiðdauða samkvæmt samþykktri aflareglu strandríkja að stofninum. Við prófanir á aflareglunni (ICES, 2016) var ekki tekið tillit til að afli væri kerfisbundið umfram ráðgjöf samkvæmt aflareglu. Við núverandi umframveiðar uppfyllir aflareglan mögulega ekki varúðarsjónarmið.

*The advice does not take into account consistent deviations from the long-term management strategy as evident from the sum of unilateral quotas since 2018. During the evaluation of the management strategy (ICES, 2016), the implementation error in the form of a consistent overshoot of the TAC was not included. Therefore, failing to adhere to the advised catches as derived from the application of the current implementation of the long-term management strategy may no longer be precautionary in the long term.*

## RÁÐGJÖF, AFLAMARK OG AFLI – ADVICE, TAC AND CATCH

**Kolmuni.** Tillögur um hámarksafla, aflamark samkvæmt ákvörðun stjórnvalda og afli (tonn).

**Blue whiting.** Recommended TAC, national TAC and catches (tonnes).

Ár Year	Tillaga ICES Rec. TAC ICES	Aflamark Ísland* Iceland national TAC*	Afli Íslendinga Catches Iceland	Aflamark allra þjóða Total national TAC	Afli alls Total catch
2011	40 100–223 000	6 507	5 887	40 000	103 620
2012	391 000	63 447	63 056	391 000	384 021
2013	643 000	104 339	104 918	643 000	628 169
2014	948 950	194 722	182 879	1 200 000	1 155 279
2015	839 886	202 958	214 870	1 260 000	1 396 244
2016	≤ 776 391	163 570	186 914	1 147 000	1 183 187
2017	≤ 1 342 330	264 000	228 935	1 675 400	1 558 061
2018	≤ 1 387 872	275 971	292 952	1 727 964	1 711 477
2019	≤ 1 143 629	226 727	268 351	1 483 208	1 515 527
2020	≤ 1 161 615	230 111	243 725	1 161 615	1 495 248
2021	≤ 929 292	196 081		1 157 604	
2022	≤ 752 736				

\*Reglugerðir um stjórn kolmunnaveiða íslenskra skipa - Regulations about blue whiting TAC of Icelandic vessels

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**HEIMILDIR OG ÍTAREFNI – REFERENCES AND FURTHER READING**

Anon. 2016. Agreed record of conclusions of fisheries consultations between the European Union, the Faroe Islands, Iceland and Norway on the management of blue whiting in the north-east Atlantic in 2017. 6 pp. <https://d3b1dqw2kzexi.cloudfront.net/media/8742/agreed-record-blue-whiting-2017.pdf>

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