

# KOLMUNNI – BLUE WHITING

## *Micromesistius poutassou*

### RÁÐGJÖF – ADVICE

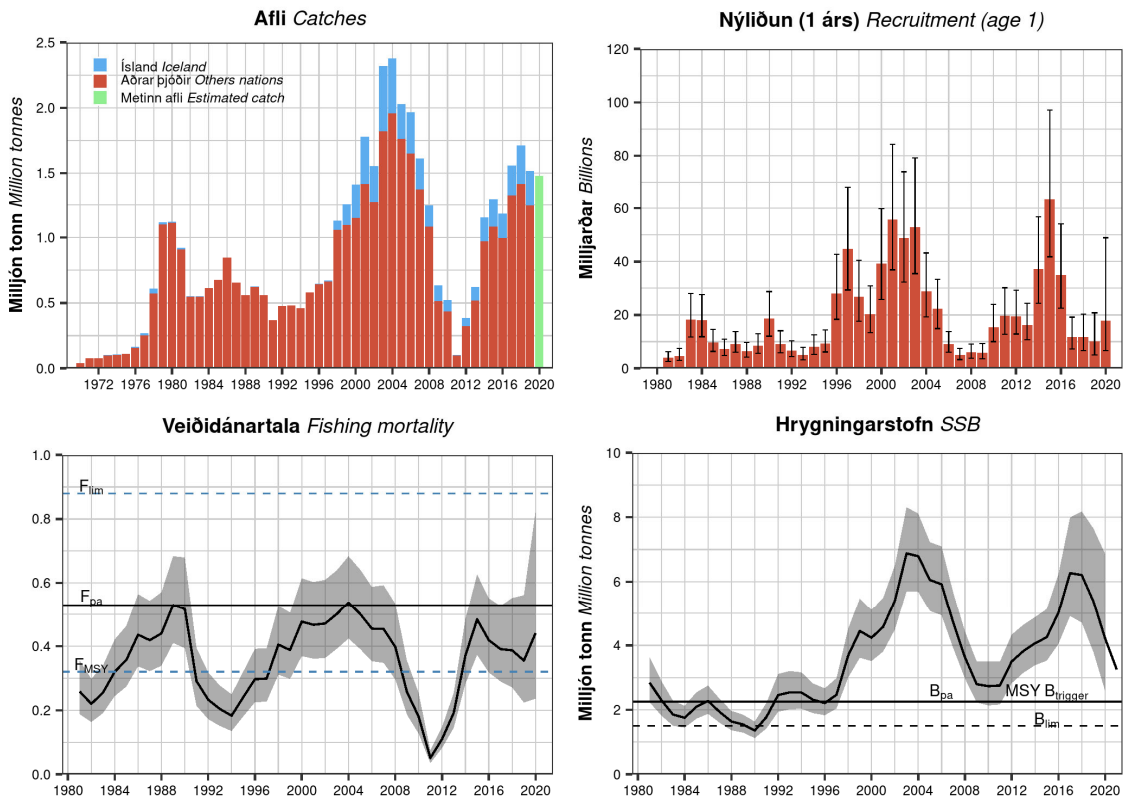
Alþjóðahafrannsóknaráðið (ICES) ráðleggur í samræmi við langtímanýtingarstefnu samþykka af Evrópusambandinu, Færeyjum, Íslandi og Noregi að afli ársins 2021 verði ekki meiri en 929 292 tonn.

ICES advises that when the long-term management strategy agreed by the European Union, the Faroe Islands, Iceland, and Norway is applied, catches in 2021 should be no more than 929 292 tonnes.

### STOFNÞRÓUN – STOCK DEVELOPMENT

Frá árinu 2014 hefur veiðidánartala verið metin yfir þeim fiskveiðidauða sem gefur hámarksafkastur til lengri tíma litið ( $F_{MSY}$ ). Hrygningarstofninn hefur minnkað frá árinu 2018 en er þó enn ofan við aðgerðarmörk ( $MSY B_{trigger}$ ). Nýliðun árganga 2017-2020 er metin undir meðallagi en þrjár fyrri árgangar, 2014-2016, voru allir metnir stórir.

Fishing mortality ( $F$ ) is estimated to be above  $F_{MSY}$  since 2014. Spawning-stock biomass ( $SSB$ ) has been decreasing since 2018; however, it is estimated to remain above  $MSY B_{trigger}$ . Recruitment ( $R$ ) from 2017 to 2020 is estimated to be low, following a three-year period of high recruitment.



**Kolmunni.** Heildarafli og afli Íslendinga, nýliðun 1 árs, veiðidánartala (aldur 3-7) og stærð hrygningarstofs.

**Blue whiting.** Total and Icelandic catches, recruitment at age 1, fishing mortality (ages 3-7) and spawning stock biomass (SSB).

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

Forsendur ráðgjafar <i>Basis of the advice</i>	Langtímaafلاغla <i>Long-term management strategy</i>
Aflaregla <i>Management plan</i>	Langtímaafلاغla samþykkt af Evrópusambandinu, Færeyjum, Íslandi og Noregi 2016 (Anon. 2016). Aðgerðamörk í aflareglu standast 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>	Aldurs-afla líkan (SAM; Berg and Nielsen, 2016) sem notar aflagögn í stofnmati og framreikningum. <i>Age-based analytical assessment (SAM; Berg and Nielsen, 2016) that uses catches for the model and the forecast</i>
Inntaksgögn <i>Input data</i>	Aldursgreindur afli og aldursgreindar fjöldavísitölur úr bergmálsleiðangri, enginn leiðangur 2020 <i>Catch in numbers and age disaggregated index from an acoustic survey, no survey in 2020</i>
Önnur gögn <i>Indicators</i>	Mat á nýliðun frá eftirfarandi rannsóknaleiðöngnum: stofnmæling botnfiska í Barentshafi, Alþjóðlegur vistfræðileiðangrinum í Austurdjúpi í maí, stofnmæling botnfiska í landrunni Færeyja og stofnmæling botnfiska við Ísland að vorlagi. <i>Estimates of recruitment from surveys: Norwegian bottom-trawl survey in the Barents Sea, International Ecosystem Survey in the Nordic Seas in May (IESNS), the Faroese bottom-trawl surveys and the Icelandic bottom-trawl survey in spring.</i>

Nálgun <i>Framework</i>	Viðmiðunarmörk <i>Reference point</i>	Gildi <i>Value</i>	Grundvöllur <i>Basis</i>
Aflaregla <i>Management plan</i>	MGT SSB <sub>lower</sub>	1 500 000 t	B <sub>lim</sub>
	MGT SSB	2 250 000 t	B <sub>pa</sub>
	MGT F <sub>lower</sub>	0.05	Valið lágt gildi fyrir F <i>Arbitrary low F</i>
	MGT F	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 ákveðnu sambandi milli hrygningarstofns og nýliðunar <i>Stochastic simulations with segmented regression stock–recruitment relationship</i>
Varúðarnálgun <i>Precautionary approach</i>	B <sub>lim</sub>	1 500 000 t	B <sub>loss</sub> . Hrygningarstofn með miklum líkum á skertri nýliðun <i>B<sub>loss</sub>. SSB with high probability of impaired recruitment</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 F which will maintain the stock above B<sub>lim</sub> with a 50% probability</i>
	F <sub>pa</sub>	0.53	5% líkur á að veiðidánartala sé yfir F <sub>lim</sub> <i>5% probability that true F is above F<sub>lim</sub></i> F <sub>lim</sub> * exp(-1.645 × σ), with σ = 0.299

## HORFUR – PROSPECTS

Nýliðun hefur verið lág undanfarin fjögur ár og er það í samræmi við niðurstöður úr rannsóknaleiðöngnum. Eins er óvissa í mati á nýliðun meiri í ár en undanfarin ár. Stofninn mun því líklega minnka næstu árin og að sama skapi mun aflamark lækka á komandi árum.

*Even though the recruitment uncertainty is higher this year, low recruitment in the most recent 4 years is confirmed by a number of other surveys. This low recruitment will result in a decrease in stock size, and a reduction in fishing opportunities in the coming years.*

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

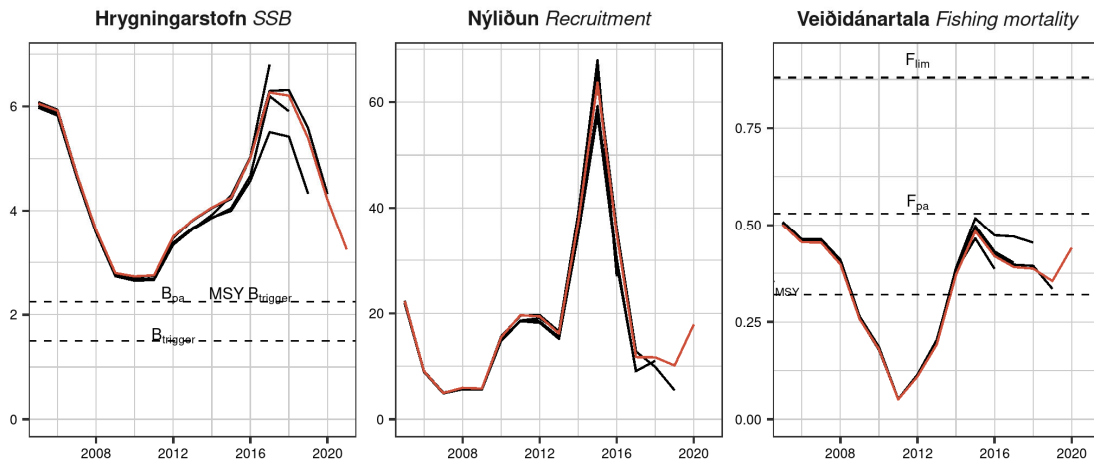
**Blue whiting.** Projection of SSB (tonnes) based on adopted long-term management strategy.

2020		2021			2022
Áætlaður afli <i>Estimated catches</i>	F <sub>aldur 3-7</sub> F <sub>ages3-7</sub>	Aflamark skv. aflareglu <i>TAC based on management strategy</i>	Hrygn. stofn SSB	F <sub>aldur 3-7</sub> F <sub>ages3-7</sub>	Hrygn. stofn SSB
1 478 358	0.44	929 292	3 248 023	0.36	3 046 216

## GÆÐI STOFNMATS – QUALITY OF THE ASSESSMENT

Stofnmatið notar aldursgreindar fjöldavísitölur úr bergmálsleiðangri sem var ekki farinn vorið 2020 vegna kórónuheimsfaraldursins. Þetta veldur aukinni óvissu í stofnmatinu, sérstaklega fyrir yngri aldursflokka. Sérstaklega hefur óvissa í mati á 1 árs fiski aukist þar sem inntaksgögn í stofnamatslíkanið fyrir þennan árgang er einungis byggt á aflatölum. Niðurstöður úr rannsóknaleiðöngurum, sem ekki eru notaðir í stofnmatinu, benda til þess að nýliðun hafi verið léleg síðan 2017 og styðja þannig niðurstöður stofnmatsins. Metin nýliðun í stofnmatinu í ár hefur lítil áhrif á aflamark 2021 þar sem uppistaða aflans verður kynþroska fiskur.

*The assessment uses data from one survey only, IBWSS, which was cancelled in 2020 due to the COVID-19 disruption. The lack of IBWSS 2020 data increases the uncertainties of the assessment results in the terminal year, especially for the youngest cohorts. Because the model estimate of recruitment in 2020 is only based on the catch numbers of age 1 in 2020, it is more uncertain than in previous years. However, additional surveys not included in the assessment model indicate that recruitments have been of a low magnitude since 2017, which is in line with the assessment results. The magnitude of the 2020 recruitment estimate has a minor effect on catch opportunities for 2021, as the main part of the catches is mature fish.*



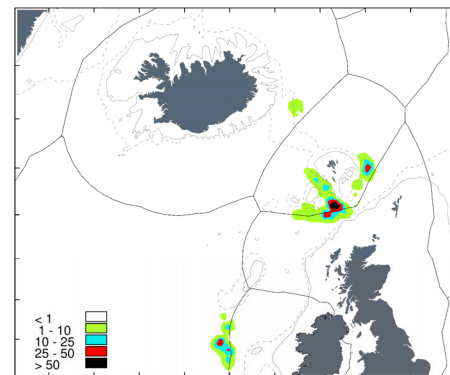
**Kolmunni.** Samanburður á stofnmati árána 2016–2019 (rauð lína: 2020).

**Blue whiting.** Current assessment (red line) compared with previous estimates (2016–2019).

## VEIÐAR ÍSLENDINGA – THE ICELANDIC FISHERY

Kolmunnaafli íslenskra skipa árið 2019 var rúmlega 268 þúsund tonn sem er 8% minni afli en 2018. Líkt og fyrri ár var mest veitt innan færeyskrar lögsögu, ríflega 167 þús. tonn. Einungis rúmlega 1% aflans fékkst innan íslenskrar lögsögu í samanburði við 8-20% á árunum 2006-2018 og að meðaltali um 60% á árunum 2000-2005. Heildarafli úr stofninum árið 2019 var rúm 1,5 milljón tonn sem er 11% minni afli en árið 2018.

*Icelandic landings of blue whiting in 2018 were just above 268 thousand tonnes which is 8% less than in 2018. The bulk of the catches were taken within the EEZ of Faroes, around 167tho. tonnes. Approximately 1% of catches were caught within the Icelandic EEZ compare to 8-20% during the period 2006–2018 and on average 60% in 2000-2005. The total blue whiting landings (all nations) in 2019 were just above 1.5 million tonnes which is a 11% decrease compared to 2018.*



**Kolmunni.** Veiðisvæði íslenskra skipa árið 2019 (t/sjm<sup>2</sup>)  
**Blue whiting.** Fishing grounds of the Icelandic fleet in 2019 (t/nmi<sup>2</sup>)

## ÆÐRAR UPPLÝSINGAR – OTHER INFORMATION

Ekki hefur náðst samkomulag milli þeirra þjóða sem stunda veiðar úr stofninum um skiptingu aflamarks og hafa veiðar frá 2014 verið 16-66% umfram ráðgjöf ICES.

Ráðgjöfin byggir á fiskveiðidauða samkvæmt aflareglu Evrópusambandsins, Færeyja, Íslands og Noregs en hún tekur ekki tillit til frávika frá aflamarki sem á sér stað ár eftir ár. Við útreikninga á ráðlögðu aflamark þá er aflamark síðasta árs, en ekki veitt aflamagn, notað sem viðmið fyrir 20% hámarks breytingu á aflamarki. Þegar aflareglan var metin á sínum tíma þá var ekki gerð hermun sem tók tillit til frávika frá aflamarki (ICES, 2016). Þess vegna er mögulegt er að núverandi aflaregla standis ekki lengur MSY viðmið.

*There is no agreement between the participating nations about catch allocation. This has resulted in catches exceeding the advice given by ICES since 2014 by 16-66%.*

*The advice is based on the application of the long-term management strategy agreed by the European Union, the Faroe Islands, Iceland, and Norway. The recommended catch uses the latest TAC (ICES advice) as the basis from which to calculate the option relating to the -20% TAC constraint. The advice does not take into account consistent deviations from the plan as evident from the sum of unilateral quotas. 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, the current implementation of the long-term management strategy may no longer be precautionary.*

## 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	1 181 850
2017	≤ 1 342 330	264 000	228 935	1 675 400	1 558 061
2018	≤ 1 387 872	293 000	292 952	1 727 964	1 711 477
2019	≤ 1 143 629	241 000	268 351	1 483 208	1 515 527
2020	≤ 1 161 615	245 101		1 161 615	
2021	≤ 929 292				

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

## 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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