

# KOLMUNNI – BLUE WHITING

## *Micromesistius poutassou*

### RÁÐGJÖF – ADVICE

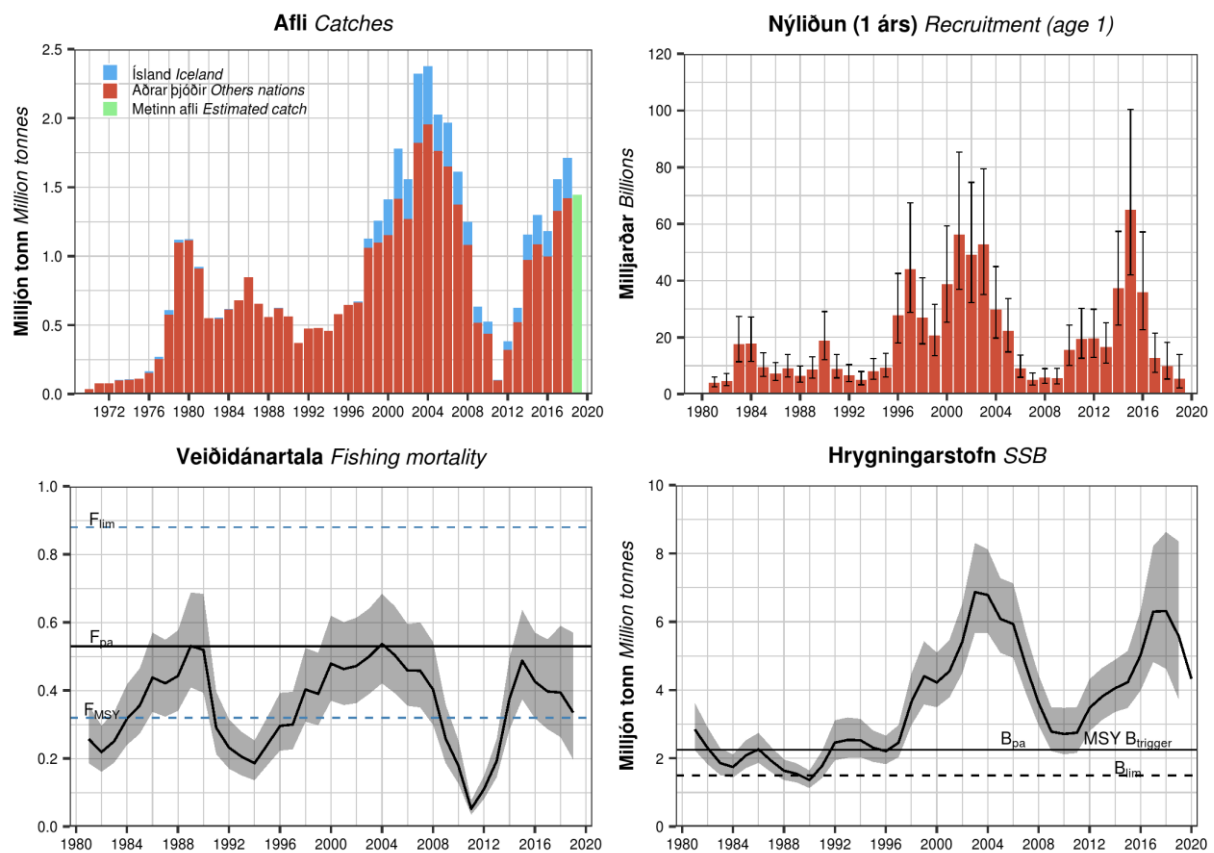
Alþjóðahafrannsóknaráðið (ICES) ráðleggur í samræmi við langtímanýtingarstefnu samþykpta af Evrópusambandinu, Færeyjum, Íslandi og Noregi að afli ársins 2020 verði ekki meiri en 1 161 615 tonn.

*ICES advises that when the long term management strategy agreed by the European Union, the Faroe Islands, Iceland, and Norway is applied, catches in 2020 should be no more than 1 161 615 tonnes.*

### STOFNÞRÓUN – STOCK DEVELOPMENT

Frá árinu 2015 hefur veiðidánartala lækkað en er árið 2019 metin yfir þeim fiskveiðidauða sem gefur hámarks-afkrastur til lengri tíma litið ( $F_{MSY}$ ). Hrygningarstofninn hefur minnkað frá árinu 2018 en er þó vel ofan við aðgerðamörk ( $MSY B_{trigger}$ ). Nýliðun árganga 2016-2018 er metin undir meðallagi en árgangar 2013-2015 voru allir stórir.

*Fishing mortality (F) has decreased since 2015 but is estimated to be above  $F_{MSY}$  in 2019. Spawning-stock biomass (SSB) has decreased since 2018 but it is estimated to remain well above  $MSY B_{trigger}$ . Recruitment (R) in 2017 to 2019 is estimated to be low, following a period of high recruitment.*



**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 <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). Aðgerðarmörk 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 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. <i>Catch in numbers and age disaggregated index from an acoustic survey</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

Samkvæmt stofnmatslíkani er 2018 árgangurinn lítill, sem er í samræmi við niðurstöður rannsóknaleiðangra sem ekki eru notaðar í líkaninu. Stofninn muni því líklega minnka næstu árin og að sama skapi mun aflamark lækka þegar litlu árgangarnir frá 2016–2018 koma að fullu inn í veiðistofninn.

*The assessment estimates a low 2018 year class, which is confirmed by a series of surveys not used in the assessment model. This low recruitment in combination with low 2016–2017 year classes will result in a decrease in stock size, and a reduction in fishing opportunities when the 2016–2018 year classes are fully selected in the fishery.*

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

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

2019		2020			2021
Áætlaður afli <i>Estimated catches</i>	F	Aflamark skv. aflareglu <i>TAC based on management strategy</i>	Hrygn. stofn <i>SSB</i>	F	Hrygn. stofn <i>SSB</i>
1 444 301	0.34	1 161 615	4 325 386	0.32	3 435 240

## GÆÐI STOFNMATS – QUALITY OF THE ASSESSMENT

Frá árinu 2016 hafa bráðabirgðatölur fyrir aldursgreind aflagögn frá tímabilinu janúar til júní líðandi árs verið notuð í stofnmati en yfir 90% af aflu 3 ára og eldri kolmunna er veiddur fyrri hluta árs sem gerir það mögulegt að meta heildarafla ársins. Þetta var gert til að draga úr árabreytileika í stofnmati sem stafaði af miklum sveiflum milli ára í bergmálmælingum á hrygningarstofni að vori.

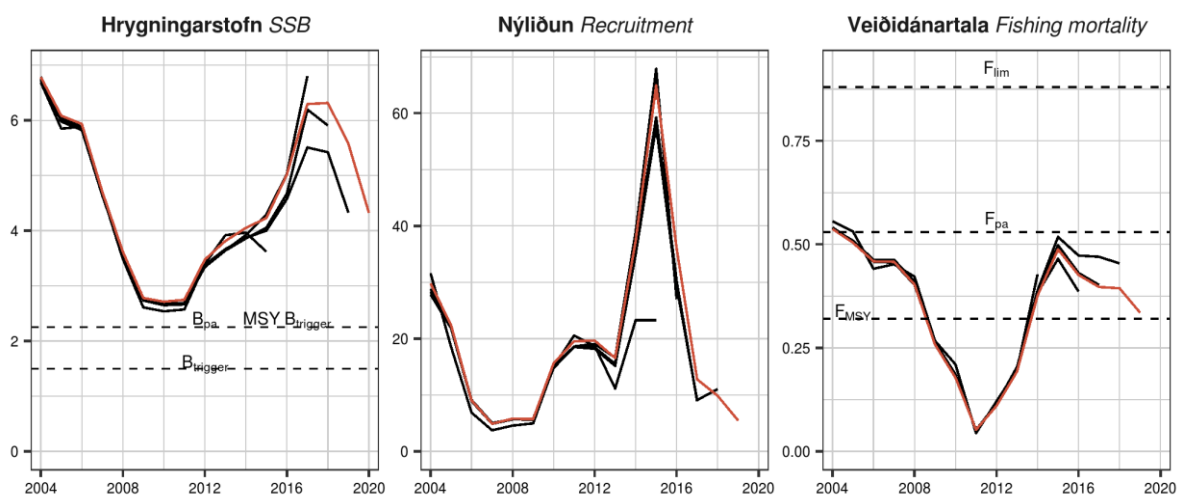
Í stofnmati undanfarinna ára var þriggja ára meðaltal af meðalþyngd eftir aldri notuð fyrir stofnþyngdir núverandi árs. Vegna lækkandi meðalþyngdar eftir aldri hjá aldurshópum sem eru uppistaðan í veiðistofninum þá hefur notkun á þriggja ára meðaltali valdið ofmati á spáðum meðalþyngdum. Þetta olli ofmati á stærð hrygningarstofns og vanmati á fiskveiðidauða. Í stofnmati ársins 2019 voru þess í stað notaðar meðalþyngdir frá sýnum fyrri hluta ársins. Þessi breyting hefur dregið úr þessu kerfisbundna ofmati á stærð hrygningarstofns og vanmati á fiskveiðidauða.

Aðalástæðan fyrir herra mati á stærð hrygningarstofns og lægri fiskveiðidauða í stofnmatinu árið 2019 í samanburði við síðasta ár, er há mæling á stærð 2014 árgangsins í bergmálmælingum á hrygningarstofni síðast liðið vor.

*Since 2016, the assessment has used a preliminary estimate of catch-at-age in the year in which the assessment is carried out to supplement information from the acoustic survey conducted in the spring. In recent years around 90% of the annual catches of the age 3+ fish were taken in the first half year, which makes it reasonable to estimate the total annual catch-at-age from preliminary data for the first half of the year.*

*In previous assessments a three-year average of the mean-weights-at-age was used for the preliminary catch data. Due to a decreasing trend in mean weight for the main age classes in the fishery, these values were an overestimate compared to the final mean weights obtained in the following year. This gave a tendency to overestimate SSB and underestimate F. For 2019, the preliminary mean weights were used in the assessment. This has partly removed the previously observed bias in SSB and F.*

*The upward revision in SSB and downward revision in F this year are mainly due to a high survey index for the large 2014 year-class.*



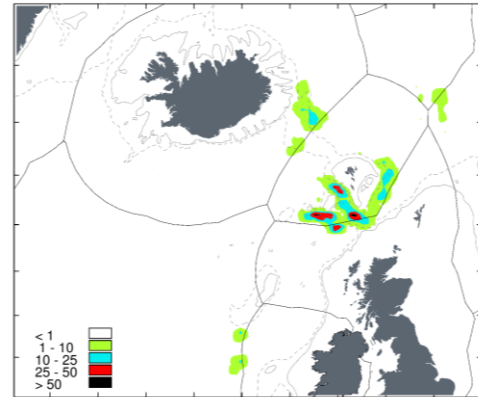
**Kolmuni.** Samanburður á stofnmati árána 2015–2019 (rauð lína: 2019).

**Blue whiting.** Current assessment (red line) compared with previous estimates (2015–2019).

## VEIÐAR ÍSLENDINGA – THE ICELANDIC FISHERY

Kolmunnaafli íslenskra skipa árið 2018 var tæp 293 þúsund tonn sem er 28% aukning frá 2017. Mest var veitt innan færeyskrar lögsögu, tæp 230 þús. tonn. Um 11% aflans fékkst innan íslenskrar lögsögu, sem er svipað og verið hefur frá árinu 2006. Til samanburðar var um 60% afla íslenskra skipa veiddur innan íslenskrar lögsögu á árunum 1997–2005. Heildarafli úr stofninum árið 2018 var rúm 1,7 milljón tonn sem er 10% aukning frá 2017.

*Icelandic landings of blue whiting in 2018 were just below 293 thousand tonnes which is 28% more than in 2017. The bulk of the catches were taken within the EEZ of Faroes, around 230tho. tonnes. Around 11% of catches were caught within the Icelandic EEZ which is similar as in 2006–2017. In 1997–2005, on average 60% were caught within the Icelandic EEZ. The total blue whiting landings (all nations) in 2018 were just above 1.7 million tonnes which is a 10% increase compared to 2017.*



Kolmunni. Veiðisvæði íslenskra skipa árið 2018 (t/sjm<sup>2</sup>)  
**Blue whiting.** Fishing grounds of the Icelandic fleet in 2018 (t/nmi<sup>2</sup>)

## AÐRAR 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 fráviks frá aflamarki sem á sér stað ár eftir ár.

*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 and does not take into account the deviations from the plan as evident from the sum of unilateral quotas.*

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

Kolmunni. Tillögur um hámarksafli, 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		1 483 208	
2020	≤ 1 161 615				

\*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>

Berg, C. W., and Nielsen, A. 2016. Accounting for correlated observations in an age-based state–space stock assessment model. *ICES Journal of Marine Science*, 73: 1788–1797. doi: 10.1093/icesjms/fsw046

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ICES. 2019a. Blue whiting (*Micromesistius poutassou*) in subareas 1-9, 12, and 14 (Northeast Atlantic and adjacent waters). In Report of the ICES Advisory Committee, 2019. ICES Advice 2019, whb.27.1-91214. [ICES advice 2019 Blue whiting](#)

ICES. 2019. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports. 1:36. 948 pp. [ICES WGWIDE report 2019](#)