NORSK-ÍSLENSK VORGOTSSÍLD
NORWEGIAN SPRING-SPAWNING HERRING
Clupea harengus

RÁÐGJÖF – *ADVICE*

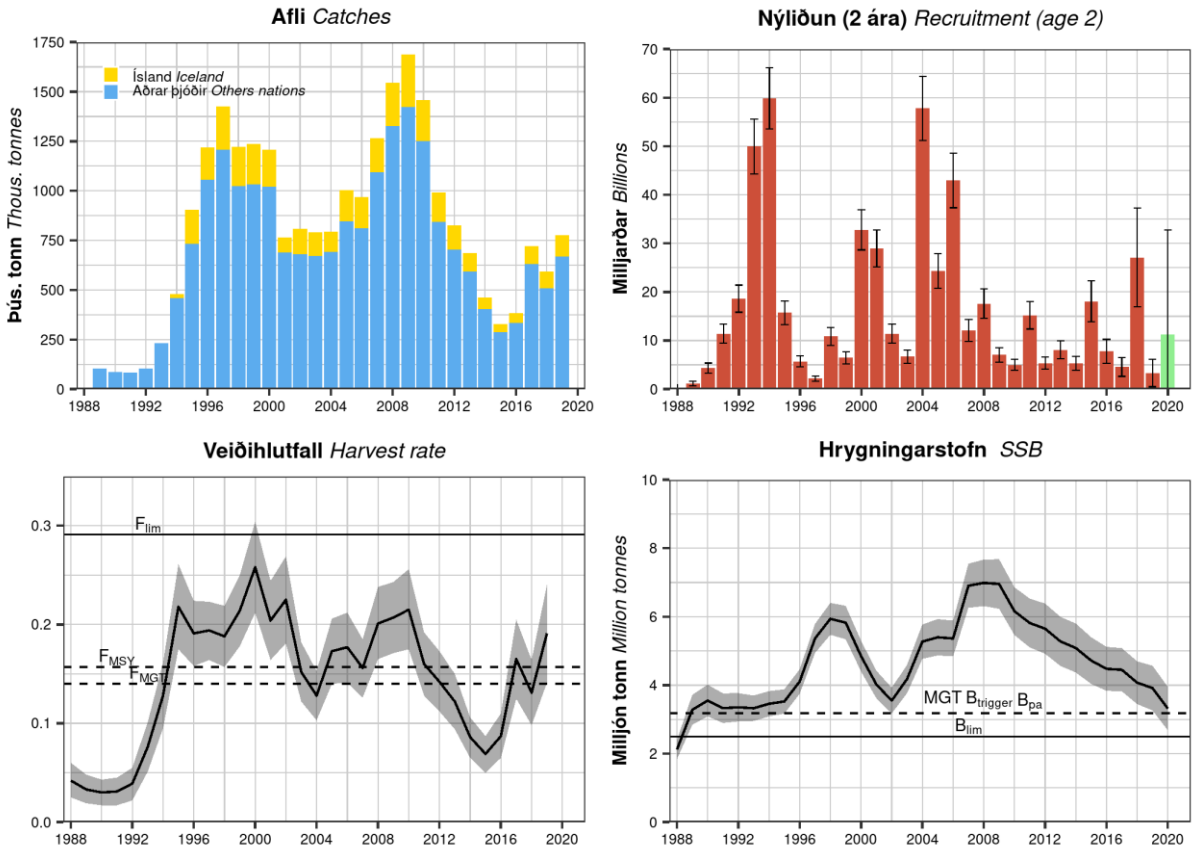
Alþjóðahafrannsóknaráðið (ICES) ráðleggur í samræmi við langtímanýtingarstefnu samþykkta af Evrópusambandinu, Færeyjum, Íslandi, Noregi og Rússlandi að afli ársins 2021 verði ekki meiri en 651 033 tonn.

Athugið: Ráðgjafarskjalið er ekki eins ítarlegt í ár miðað við fyrri ár út af Covid-19 faraldrinum.

ICES advises that when the long-term management strategy agreed by the European Union, the Faroe Islands, Iceland, Norway, and the Russian Federation is applied, catches in 2021 should be no more than 651 033 tonnes.

Note: This advice sheet is abbreviated due to the Covid-19 disruption.

STOFNÞRÓUN – *STOCK DEVELOPMENT*



Norsk-íslensk vorgotssíld. Afli, nýliðun 2 ára, veiðidánartala og hrygningarstofn. Stofnmat keyrt frá 1988, eftir að stofn tók að stækka aftur eftir hrun á sjöunda áratug síðustu aldar. Nýliðun 2020 er byggð á slembiútreiknuðu miðgildi áranna 1988-2019.
Norwegian spring-spawning herring. *Catches, recruitment at age 2, fishing mortality and spawning stock biomass (SSB). Assessment run starts in 1988, when the stock has started to rebuild after collapse in the 1960s. Recruitment 2020 is based on Median stochastic recruitment based on the years 1988–2019.*

STOFNMAT OG GÁTMÖRK – *BASIS OF ASSESSEMENT AND REFERENCE POINTS*

Forsendur ráðgjafar *Basis of the advice*	Aflaregla *Management strategy*
Aflaregla *Management strategy*	Langtímaaflaregla sem var samþykkt árið 2018 (Anon. 2018). *A long-term management strategy agreed in 2018 (Anon. 2018).*
Stofnmat *Assessment type*	Tölfræðilegt stofnmatslíkan (XSAM; ICES 2018a; 2018b) sem notar aflagögn í stofnmati og framreikningum ásamt óvissumati á afla og fjöldavísitölum. *Statistical assessment model (XSAM; ICES 2018a; 2018b) that uses catches in the model and in the forecast, and includes error structures in catches and abundance indices.*
Inntaksgögn *Input data*	Fjöldi eftir aldri úr afla (meðalþyngdir í stofni eftir aldri frá leiðöngrum, en aflagögnum frá 2009). Aldursvísitölur frá þremur leiðöngrum: Norska bergmálsleiðangrinum á hrygningarslóð í feb./mars (1994–2005, 2015–2020); Alþjóðlega vistfræðileiðangrinum í Austurdjúp í maí sem nær yfir fullorðna hluta stofnsins í Noregshafi (1996–2020) og tveggja ára síld í Barentshafi (1991–2019, enginn leiðangur 2020). Stofnstærðarháð mat á kynþroskahlutfalli eftir aldri. Fastur náttúrulegur dauði ákvarðaður frá eldri gögnum (settur 0.9 fyrir tveggja ára og 0.15 fyrir eldri en tveggja ára). *Commercial catches-at-age (stock weight-at-age from surveys and since 2009 from catch sampling). Three survey indices: Norwegian acoustic survey on spawning grounds in February/March (NASF, 1994–2005, 2015–2020); International Ecosystem Survey in the Nordic Seas (IESNS) covering the adult stock in the Nordic seas (1996–2020) and number at age 2 in the Barents Sea (IESNS; 1991–2019, no survey in 2020). Maturity ogive variable by year-class strength. Natural mortalities are fixed values from historical analyses (age 2 = 0.9, ages greater than 3 = 0.15).*

Nálgun *Framework*	Viðmiðunarmörk *Reference point*	Gildi *Value*	Grundvöllur *Basis*
Aflaregla *Management strategy*	SSB_{mgt_lower}	2 500 000 t	Aflaregla prófuð af ICES sem stenst varúðarnálgun *Precautionary harvest control rule evaluated by ICES*
	SSB_{mgt}	3 184 000 t	
	F_{mgt_lower}	0.05	
	F_{mgt}	0.14	
MSY nálgun *MSY approach*	MSY $B_{trigger}$	3 184 000 t	B_{pa}
	F_{MSY}	0.157	Byggt á hermunum. *Stochastic simulation (ICES 2018b)*
Varúðarnálgun *Precautionary approach*	B_{lim}	2 500 000 t	Ásættanleg lágmarksstærð hrygningarstofns *Minimum biological acceptable level (MBAL)*
	B_{pa}	3 184 000 t	$B_{lim} \times \exp(0.147 \times 1.645)$ (ICES 2018a)
	F_{lim}	0.291	F sem leiðir til B_{lim} miðað við meðal nýliðun *F corresponding to B_{lim} with average recruitment*
	F_{pa}	0.227	$F_{lim} \exp(-1.645 \times \sigma)$, with $\sigma = 0.152$

HORFUR – *PROSPECTS*

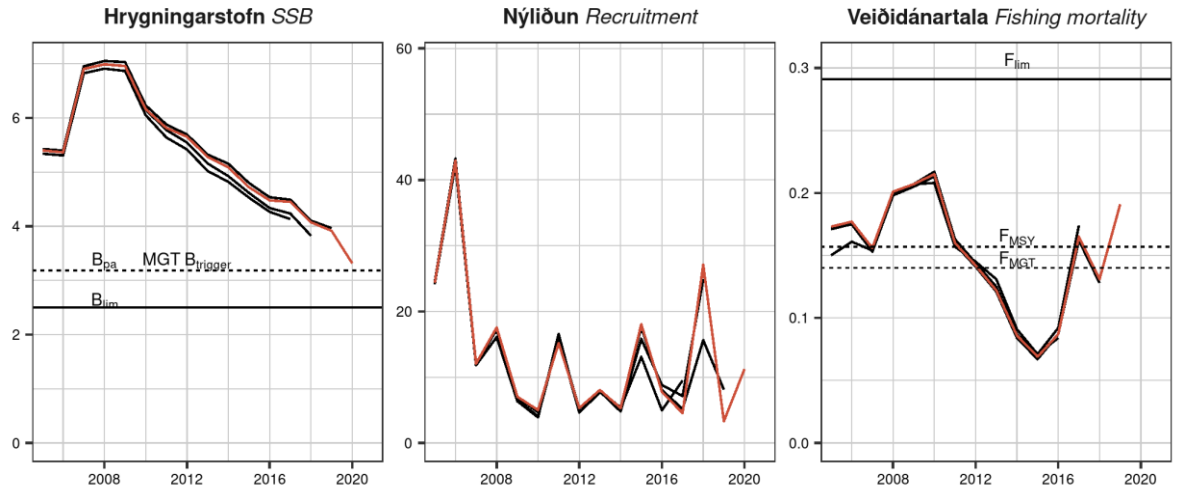
Ráðlagt aflamark fyrir 2021 er 24% hærra en fyrir 2020 vegna þess að árgangurinn frá 2016 er nú metinn stærri en í síðasta stofnmati og mun koma meira inn í veiðina 2021.

The advice for 2021 is 24% higher than that for 2020 due to an upwards revision in the 2016 year class which contributes more to the catches in 2021.

Norsk-íslensk síld. Áætluð þróun stærðar hrygningarstofns (tonn) miðað við veiðar samkvæmt aflareglu.
Norwegian spring-spawning herring. *Projection of SSB (tonnes) based on adopted management strategy.*

2020		2021			2022
Áætlaður afli *Estimated catches*	F	Aflamark skv. aflareglu *TAC based on management strategy*	Hrygn. stofn *SSB*	F	Hrygn. stofn *SSB*
693 915	0.187	651 033	3 504 683	0.14	3 683 236

GÆÐI STOFNMATS – *QUALITY OF THE ASSESSEMENT*

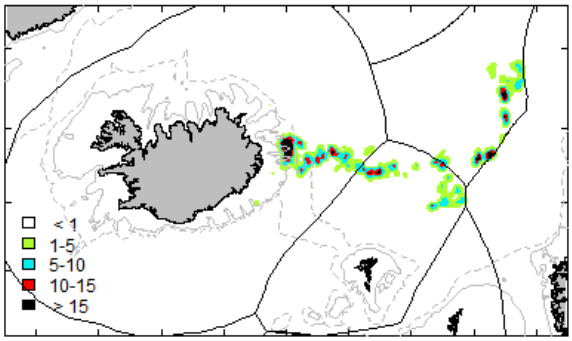


Norsk-íslensk vorgotssíld. Samanburður á stofnmati áranna 2013–2020 (rauð lína: 2020).
Norwegian spring-spawning herring. *Current assessment (red line) compared with previous estimates (2013–2019).*

VEIÐAR ÍSLENDINGA – *THE ICELANDIC FISHERY*

Afli íslenskra skipa úr norsk-íslenska síldarstofninum árið 2019 var 108 046 tonn og var allur veiddur í flotvörpu. Tæp 74% aflans fékkst innan íslenskrar lögsögu, um 12% í færeyskri lögsögu og rúm 14% á alþjóðahafsvæðinu. Veiðar úr stofninum fóru fram frá júlí til nóvember og var mest veitt í september (45%). Heildarafli allra þjóða úr stofninum árið 2019 var 777 165 tonn.

The Icelandic catch of Norwegian spring-spawning herring in 2019 was 108 046 tonnes, all caught with pelagic trawl. About 74% of the catches were taken within the Icelandic EEZ, 12% within the Faroese EEZ, and 14% in international waters. The fishery took place in July to November with the highest catches in September (45%). The total catch of all nations in 2019 came to 777 165 tonnes.



Norsk-íslensk síld. Veiðisvæði íslenskra skipa árið 2019 (t/sjm^2)
NSS herring. *Fishing grounds of the Icelandic fleet in 2019 (t/nmi^2)*

AÐRAR UPPLÝSINGAR – *OTHER INFORMATION*

Ekki er í gildi samkomulag milli þeirra þjóða sem stunda veiðar úr norsk-íslenska síldarstofninum um skiptingu aflahlutdeildar og hver þjóð hefur því sett sér aflamark. Afleiðingarnar eru að frá árinu 2013 hafa veiðar umfram ráðgjöf ICES numið 4–42% á ári. Samhliða hefur stofninn farið minnkandi vegna lélegrar nýliðunar allt frá árinu 2005.

Ráðgjöfin fyrir þennan stofn byggir á fiskveiðidauða samkvæmt samþykktri aflareglu strandríkja að stofninum en hún tekur ekki tillit til frávika frá aflamarki sem á sér stað ár eftir ár.

Since 2013, a lack of agreement by the coastal states on their share in the TAC has led to unilaterally set quotas, which together are 4–42% higher than the TAC indicated by the management strategy. Simultaneously, the stock size has declined because of relatively poor recruitment since 2005.

The advice is based on the target fishing mortality in the long-term management strategy agreed by the European Union, the Faroe Islands, Iceland Norway and the Russian Federation and does not take into account the deviations from the plan as evident from the sum of declared unilateral quotas.

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

Norsk-íslensk síld. Tillögur um hámarksafla, aflamark samkvæmt ákvörðun stjórnvalda og afli (tonn).
Norwegian spring-spawning herring. *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	988 000–1 170 000	145 000	151 074	988 000	992 997
2012	833 000	121 000	120 956	833 000	826 000
2013	619 000	90 000	90 729	692 000*	684 743
2014	418 487	61 000	58 828	436 893*	461 306
2015	283 013	41 000	42 626	328 206*	328 740
2016	≤ 316 876	46 000	50 186	376 612*	383 174
2017	≤ 437 364**	103 000	90 400	805 142*	721 566
2018	≤ 384 197	72 428	83 392	546 448*	592 899
2019	≤ 588 562	102 174	108 046	773 750*	777 165
2020	≤ 525 594	91 243		693 915*	
2021	≤ 651 033				

* Ekkert samkomulag um heildaraflamark; því er sýnd summan af aflamarki allra þjóða - *There was no agreement on the TAC; the number is the sum of autonomous quotas from the individual parties.*

** Fyrri ráðgjöf upp á 646 075 þús. tonn var endurskoðuð í nóvember 2017 eftir að villa í stofnmati uppgötvaðist. - *The advice was revised in November 2017 from* 646 075 tonnes after an error in the assessment was noted.

HEIMILDIR OG ÍTAREFNI – *REFERENCES AND FURTHER READING*

Anon. 2018. Arrangement for the long-term management of the Norwegian Spring Spawning (Atlanto-scandian) Herring stock. Coastal States meeting, London, UK, October 2018.

ICES. 2018a. Report of the Workshop on the determination of reference points for Norwegian Spring Spawning Herring (WKNSSHREF), 10–11 April 2018, ICES Headquarters, Copenhagen, Denmark. ICES CM 2018/ACOM:45. 83 pp

ICES. 2018b. Report of the Workshop on a long-term management strategy for Norwegian Spring-spawning herring (WKNSSHMSE), 26-27 August 2018, Torshavn, Faroe Islands. ICES CM 2018/ACOM: 53. 108 pp.

ICES. 2020a. Herring (*Clupea harengus*) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, Norwegian spring-spawning herring (the Northeast Atlantic and Arctic Ocean). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, her.27.1-24a514a. https://doi.org/10.17895/ices.advice.5876.

ICES. 2020b. Working Group on Widely Distributed Stocks (WGWIDE). ICES Scientific Reports. 2:82. 1019 pp. http://doi.org/10.17895/ices.pub.7475.

Recommended citation: ICES. 2020a. Herring (*Clupea harengus*) in subareas 1, 2, and 5, and in divisions 4.a and 14.a, Norwegian spring-spawning herring (the Northeast Atlantic and Arctic Ocean). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, her.27.1-24a514a. https://doi.org/10.17895/ices.advice.5876.