

NORSK-ÍSLENSK VORGOTSSÍLD

NORWEGIAN SPRING-SPAWNING HERRING

Clupea harengus

RÁÐGJÖF – ADVICE

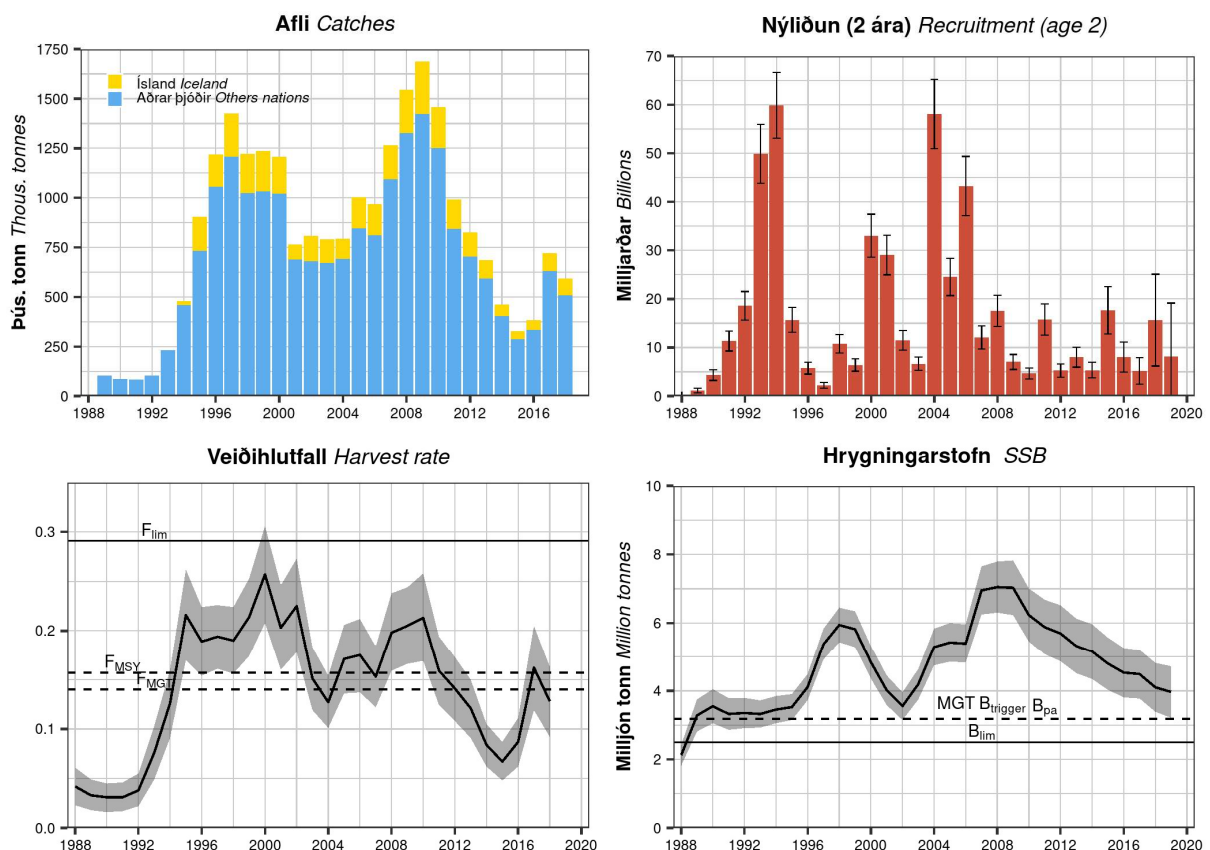
Alþjóðahafrannsóknaráðið (ICES) ráðleggur í samræmi við samþykktu aflareglu strandrjúka að afli ársins 2020 verði ekki meiri en 525 594 tonn.

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 2020 should be no more than 525 594 tonnes.

STOFNÞRÓUN – STOCK DEVELOPMENT

Fiskveiðidauði hefur farið hækkandi síðan 2015 en er metinn undir F_{MSY} árið 2018. Hrygningarstofninn hefur farið minnkandi síðan 2008 en er metinn yfir aðgerðarmörkum ($MSY B_{trigger}$) árið 2019. Síðan 2007 hefur nýliðun verið undir meðalstærð eða lítil.

Fishing mortality has increased since 2015, but is estimated to be below F_{MSY} in 2018. The spawning stock biomass (SSB) is declining since 2008 but estimated to be above $MSY B_{trigger}$ in 2019. Since 2007, recruitment is estimated to be average or small.



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.

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.

STOFNMAT OG GÁTMÖRK – BASIS OF ASSESSEMENT AND REFERENCE POINTS

Forsendur ráðgjafar <i>Basis of the advice</i>	Aflaregla <i>Management strategy</i>
Aflaregla <i>Management strategy</i>	Langtímaaflaregla sem var samþykkt árið 2018 (Anon. 2018). <i>A long-term management strategy agreed in 2018 (Anon. 2018).</i>
Stofnmat <i>Assessment type</i>	Tölfræðilegt stofnmatslíkan (XSAM; ICES 2018a; 2018b) sem notar aflagögn í stofnmati og framreikningum ásamt óvissumati á afla og fjöldavísitölum. <i>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.</i>
Inntaksgögn <i>Input data</i>	Fjöldi eftir aldri úr afla (meðalþyngdir í stofni eftir aldri frá leiðöngrum, en aflagögnum frá 2009). Aldursvísitölur frá þremur leiðöngrum: Norska bergmálsleiðöngrunum á hrygningarslóð í feb./mars (1994–2005, 2015–2019); Alþjóðlega vistfræðileiðöngrunum í Austurdjúpi í maí sem nær yfir fullorðna hluta stofnsins í Noregshafi (1996–2019) og tveggja ára síld í Barentshafi (1991–2019). 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). <i>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, 2015–2019); International Ecosystem Survey in the Nordic Seas (IESNS) covering the adult stock in the Nordic seas (1996–2019) and number at age 2 in the Barents Sea (IESNS; 1991–2019). 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).</i>

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

HORFUR – PROSPECTS

Ráðlagt aflamark fyrir 2020 er 11% lægra en fyrir 2019 sem stafar af minnkun á stærð hrygningarstofns.

Catch advice for 2020 is 11% lower than that for 2019. This is due to a decline in the stock.

Norsk-islensk síld. Áætluð þróun stærðar hrygningarstofns (tonn) miðað við veiðar samkvæmt aflareglu.

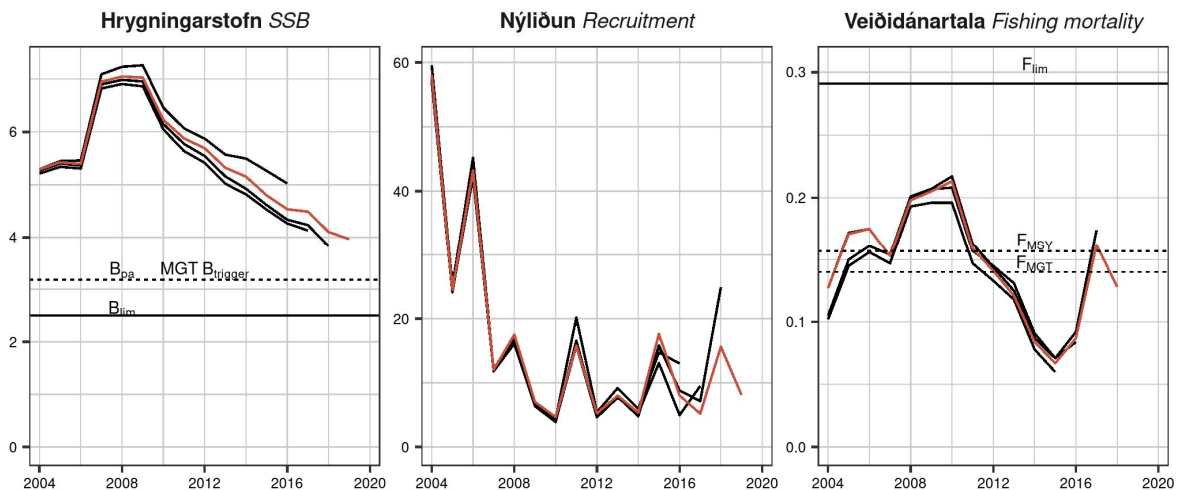
Norwegian spring-spawning herring. Projection of SSB (tonnes) based on adopted management strategy.

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>
773 750	0.186	525 594	3 652 236	0.14	3 660 436

GÆÐI STOFNMATS – QUALITY OF THE ASSESSEMENT

Hrygningarstofn síðustu ára er metinn stærrí nú en fyrri ára en hækkunin er innan óvissumarka stofnmatsins. Mat á stærð 2016 árgangsins er lægra en mat síðasta árs en óvissan á þessu mati er veruleg.

There is an upward revision of SSB for later years in this year's assessment but the revision is within the confidence limits of the model. There is a downward revision of the 2016 year class in this year's assessment. The uncertainty around the estimate of recent year-classes is, however, generally high.



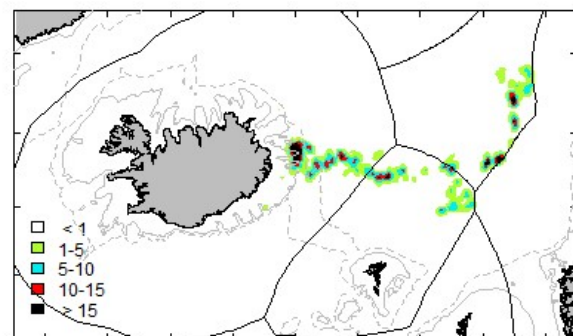
Norsk-íslensk vorgotssíld. Samanburður á stofnmati árána 2013–2019 (rauð lína: 2018). Fram til 2015 miðaðist nýliðun frá stofnmati við fjölda 0 ára í stað 2 ára og þeim árum er því sleppt hér.

Norwegian spring-spawning herring. Current assessment (red line) compared with previous estimates (2013–2018). Recruitment estimates from assessments conducted before 2016 are not shown as they refer to age 0 instead of age 2.

VEIÐAR ÍSLENDINGA – THE ICELANDIC FISHERY

Afli íslenskra skipa úr norsk-íslenska síldarstofninum árið 2018 var 83 392 tonn og var allur veiddur í flotvörpu. Tæp 46% aflans fékkst innan íslenskrar lögsögu, um 28% í færeyskri lögsögu og um 26% á alþjóðahafsvæði. Veiðar úr stofninum fóru fram frá ágúst til nóvember og var mest veitt í október (67%). Þungamiðja veiðanna hefur því verið seinna á árinu undanfarin ár. Heildarafli allra þjóða úr stofninum árið 2018 var 592 899 tonn.

The Icelandic catch of Norwegian spring-spawning herring in 2018 was 83 392 tonnes, all caught with pelagic trawl. About 46% of the catches were taken within the Icelandic EEZ, around 28% within the Faroese EEZ, and around 26% in international waters. The fishery took place in August to November with the highest catches in October (67%). The fishery is taken place later in the season every year. The total catch of all nations in 2018 came to 592 899 tonnes.



Norsk-íslensk síld. Veiðisvæði íslenskra skipa árið 2018 (t/sjm²)
NSS herring. Fishing grounds of the Icelandic fleet in 2018 (t/nmi²)

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 fráviks 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		773 750*	
2020	≤ 525 594				

* 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 states.

** 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

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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. 2019a. 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, 2019. ICES Advice 2019, her.27.1-24a514a. <https://doi.org/10.17895/ices.advice.4882>.

ICES. 2019b. Working Group on Widely Distributed Stocks (WGWISE). ICES Scientific Reports. 1:36. 948 pp. <http://doi.org/10.17895/ices.pub.5574>.

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