

---

**Hafrannsóknir nr. 176**

**NYTJASTOFNAR SJÁVAR  
2013/2014**

**AFLAHORFUR  
FISKVEIÐIÁRIÐ 2014/2015**

State of Marine Stocks in  
Icelandic Waters 2013/2014

Prospects for the  
Quota Year 2014/2015

Hafrannsóknastofnun Marine Research Institute 2014

This is an unofficial translation presented only for information purposes.  
Any official interpretation of the content of this document  
must be done consulting the original in Icelandic.

---

---

Editors: Þorsteinn Sigurðsson, Árni Magnússon, Birkir Bárðarson og Jón Sólmundsson.

This report is produced under the supervision of the fisheries advisory board.

Chairman of the board is Björn Ævarr Steinarsson. Other members of the board are Árni Magnússon, Ásta Guðmundsdóttir, Einar Hjörleifsson, Einar Jónsson, Guðmundur Þórðarson, Höskuldur Björnsson, Ingibjörg Jónsdóttir, Sigurður Þ. Jónsson, and Þorsteinn Sigurðsson. The following scientists have also worked closely with the board in the production of the report: Ásgeir Gunnarsson, Ástþór Gíslason, Gísli A. Víkingsson, Guðmundur Guðmundsson, Guðmundur J. Óskarsson, Guðrún G. Þórarinsdóttir, Héðinn Valdimarsson, Jacob M. Kasper, Jón Sólmundsson, Jónas P. Jónasson, Jónbjörn Pálsson, Kristján Kristinsson, Sveinn Sveinbjörnsson, and Þorvaldur Gunnlaugsson. The illustrator Jón Baldur Hlíðberg is thanked for giving the institute permission to use his works in the report.

English translation by Eric dos Santos.

Tilvísun í þessa skýrslu:

*Hafrannsóknastofnun. 2014. Nýttjastofnar sjávar 2013/2014 - Aflahorfur fiskveiðirárið 2014/2015. Hafrannsóknir 176. 188 s. [http://www.hafro.is/Bokasafn/Timarit/fjolrit-176.pdf]*

Recommended format of citation:

*Marine Research Institute. 2014. State of Marine Stocks in Icelandic Waters 2013/2014 - Prospects for the Quota Year 2014/2015. Marine Research in Iceland 176. 188 pp. [http://www.hafro.is/Bokasafn/Timarit/fjolrit-176.pdf]*

---

---

*Contents*

<i>Foreword</i> .....	5
<i>Summary in Icelandic</i> .....	7
<b>1. Environmental conditions</b> .....	15
<b>2. State of marine stocks</b> .....	17
2.1 <i>Cod</i> .....	17
2.2 <i>Haddock</i> .....	22
2.3 <i>Saithe</i> .....	25
2.4 <i>Golden redfish</i> .....	28
2.5 <i>Deep sea redfish</i> .....	31
2.6 <i>Sebastes viviparus</i> .....	36
2.7 <i>Greenland halibut</i> .....	37
2.8 <i>Halibut</i> .....	39
2.9 <i>Plaice</i> .....	41
2.10 <i>Dab</i> .....	43
2.11 <i>Long rough dab</i> .....	45
2.12 <i>Witch</i> .....	47
2.13 <i>Lemon sole</i> .....	49
2.14 <i>Megrim</i> .....	50
2.15 <i>Atlantic wolffish</i> .....	51
2.16 <i>Spotted wolffish</i> .....	53
2.17 <i>Blue ling</i> .....	55
2.18 <i>Ling</i> .....	57
2.19 <i>Tusk</i> .....	59
2.20 <i>Whiting</i> .....	61
2.21 <i>Anglerfish</i> .....	62
2.22 <i>Lumpfish</i> .....	64
2.23 <i>Herring</i> .....	66
2.24 <i>Capelin</i> .....	70
2.25 <i>Blue whiting</i> .....	72
2.26 <i>Mackerel</i> .....	74
2.27 <i>Pearlside</i> .....	76
2.28 <i>Greater silver smelt</i> .....	77
2.29 <i>Nephrops</i> .....	79
2.30 <i>Northern shrimp</i> .....	81
2.31 <i>Iceland scallop</i> .....	86
2.32 <i>Ocean quahog</i> .....	88
2.33 <i>Common whelk</i> .....	89
2.34 <i>Sea cucumber</i> .....	90
2.35 <i>Sea urchin</i> .....	91
2.36 <i>Whales</i> .....	92
2.37 <i>Seals</i> .....	95
<b>3. Tables</b> .....	97
<b>4. English summary</b> .....	177
<b>5. Appendices</b> .....	183

---

---

---



## Foreword

In this report on the state of marine stocks in Icelandic waters for the quota year 2013/2014 and projections for the quota year 2014/2015 is provided customary information about the state of specific stocks, development of fisheries, stock size and the recommended total allowable catch (TAC), based on potential yield and a precautionary approach. In addition, there are chapters about stocks that Iceland shares with other nations. At the beginning of the report is a brief discussion of local environmental conditions and their effects on marine life.

As before, the report is based on contributions from many employees of the Marine Research Institute (MRI) and collaborators at sea and on land, and their diligence and professionalism under the management of Björn Ævarr Steinarsson and the editors led by Þorsteinn Sigurðsson is much appreciated. As always, the most important fish populations in Icelandic waters have been covered by committees within the International Council for the Exploration of the Sea (ICES) and the reader is directed to their website for further information: [www.ices.dk](http://www.ices.dk).

Official adoption of long-term objectives and harvest control rules (HCR, a mathematical method to determine the TAC) are key aspects of managing fisheries as is required by the international community. This means that on the basis of catch data and biological understanding of species, including measurements of growth and condition of the stocks, HCRs developed by recognized methods are evaluated to make sure that they fulfill goals for sustainable fishing and continued yield of the resource.

Management plans of this type make predictions for at least a few years and it is expected that they be followed for the length of time specified—5 years in the case of long-lived species like cod, haddock and saithe—before review is necessary. The time has come for the development of long-term policies for fisheries harvesting and appropriate HCRs, and positive steps have been made in this direction. Last year, the government decided that fishing of the haddock and saithe stocks follow HCRs that have been developed over the last few years. Previously, a special committee within ICES recognized these HCRs as compliant with accepted notions of a precautionary approach and that they meet the requirements of the Icelandic government's commitment to sustainable fisheries and maximum sustainable yield.

At the request of the Minister of Fisheries, the MRI drew up a proposal for a management plan and HCR for golden redfish and the special committee in ICES has verified that this HCR satisfies the most important goals. The HCR was officially adopted in March, 2014 but agreement with Greenland and the Faeroes has not been reached. The basis of the HCR are the defined thresholds  $B_{\text{trigger}}$  (220 thous. tonnes) and  $B_{\text{lim}}$  (the historical minimum spawning stock) which are calculated from the spawning stock biomass. The HCR aims at maximum yield, while decreasing catches if the stock declines below  $B_{\text{trigger}}$ .

Estimates of the cod stock are about 1106 thous. tonnes and the spawning stock is about 411 thous. tonnes. The spawning stock is currently about three times larger than the historical minimum from 1992–1994, and the reference stock is higher than any time in the last three decades. In the last decade the harvest rate has fallen from 34–40% to about 20% of the fishable stock in 2013. The average sized cohorts of 2005–2010, which now form the bulk of the stock, is about 140 million age three recruits which is about 80% of mean cohort size between 1955–2012. All cohorts from 2010, except that from 2011, are below the historical mean.

Although recruitment has been below average in recent decades, the cod stock has grown, mainly as a result of reduced effort. Considering recent trends in recruitment, it is hardly possible to expect better yield than what we have now and if the HCR is followed it is likely that the yield will be similar in the coming years. According to the current HCR, the TAC will be 218 thous. tonnes in quota year 2014/2015.

Many of our fished stocks are well balanced and the harvests are moderate so changes in stock size and recommendations are due mostly to variations in recruitment. For instance, the redfish and saithe stocks seem to be growing well in recent years. Projections of the haddock stock, which is in rapid decline following many years of poor recruitment, are not as positive.

Variable distribution and stock size characterize Iceland's most important pelagic stocks. Blue whiting stocks are growing well after a low period in recent years. Icelandic spring-spawning herring has been subject to considerable mortalities recently, both due to infection and the oxygen depletion in Kolgrafafjord in the winter of 2012/2013. Despite this loss, recruitment has been good so the spawning stock has been consistent in size in the last four years. Although the capelin season last winter was poor, projections for the next season are good, as the last fall survey showed a large population of young fish and based on that a preliminary TAC has been advised.

It is interesting to note that recruitment in many species from warmer seas has declined in recent years. Projections have worsened for tusk, ling, blue ling, monkfish, witch, Norway lobster, and other species that typically stay in the warmer sea south and west of Iceland. The reasons for this trend is unknown, but there are no signs of ocean cooling in Icelandic waters. Ocean warming has definitely had an effect on the growing mackerel migrations in recent years. Distribution of mackerel has extended well west of Iceland each year since 2011 and newly spawned mackerel eggs have been found over a relatively large area off the south and east coasts within Icelandic waters. We cannot make an assertion about whether or not increased migrations of mackerel has had a negative effect on the recruitment of important stocks. However, this is a research question that calls for attention. Marine conditions will have to be closely monitored in Icelandic waters because variations in temperature and currents have a strong effect on the size and migrations of fish populations, especially pelagic stocks.

Reykjavík, 12. júní 2014

Jóhann Sigurjónsson

---

## Ágrip af skýrslu Hafrannsóknastofnunar um nytjastofna sjávar 2013/2014 og aflahorfur fiskveiðiárið 2014/2015

### 2.1. Þorskur

Þorskaflí árið 2013 var 223 þús. tonn samanborið við 196 þús. tonn árið 2012. Aflamark fyrir fiskveiðiárið 2013/2014, byggt á aflareglu, er 215 þús. tonn.

Heildarvísitala í stofnmælingu botnfiska í mars (SMB) meira en tvöfaldaðist á síðustu sjö árum, náði hámarki árið 2012 en hefur fallið um 20% síðustu tvö ár. Fjöldavísitölur 6 ára og eldri þorsks eru yfir meðaltali og í sögulegu hámarki í fiski 8 ára og eldri. Meðalþyngd í SMB og í afla hefur aukist undanfarin ár og er nú nálægt meðaltalinu frá 1985.

Samkvæmt stofnmælingu er viðmiðunarstofninn árið 2014 metinn um 1106 þús. tonn og hrygningarstofninn 411 þús. tonn. Hrygningarstofninn er nú þrefalt stærri en þegar hann var í lágmarki 1992–1994 og viðmiðunarstofninn stærri en hann hefur verið undanfarna þrjú áratugi. Á síðasta áratug hefur veiðihlutfallið fallið úr 34–40% í um 20% og veiðidánartalan úr rúmum 0.7 árið 2000 í um 0.3 árið 2013.

Meðalstærð árganga 2005–2010, sem nú eru uppistaðan í stofninum, er um 140 milljónir 3 ára nýliða. Það er 80% af meðaltali árganga 1955–2012 sem er 176 milljónir. Árgangur 2010 er slakur, árgangur 2011 í meðallagi og árgangur 2012 undir meðallagi. Fyrstu mælingar á 2013 árganginum benda til þess að hann sé slakur eða um 110 milljónir.

Þar sem nýliðun á undangengnum áratug hefur verið nokkuð undir meðallagi, er stækkun stofnsins á undanförunum árum afleiðing minni sóknar. Ef aflareglunni er fylgt eru líkur á að afli haldist svipaður á komandi árum. Meiri afla er ekki hægt að búast við nema nýliðun batni.

Samkvæmt gildandi aflareglu verður aflamark fiskveiðiárið 2014/2015 218 þús. tonn. Hafrannsóknastofnun ítrekar að við úthlutun aflahlutdeildar sé tekið fullt mið af væntanlegum afla utan aflamarks.

### 2.2. Ýsa

Ýsuaflinn á árinu 2013 var 44 þús. tonn samanborið við 46 þús. tonn árið 2012. Aflamark fiskveiðiársins 2013/2014, byggt á aflareglu, var 38 þús. tonn.

Mjög góð nýliðun ýsu árin 1998–2003 leiddi til mikillar stækkunar ýsustofnsins á árunum eftir aldamótin. Árgangar 2004–2007 eru nærri meðallagi, en árgangar 2008–2013 mjög litlir. Stofninn hefur því minnkað hratt undanfarin ár þegar stórir og meðalstórir árgangar hafa horfið úr stofninum og litlir árgangar komið í staðinn. Vöxtur var mjög

hægur á árunum 2004–2009, en batnaði verulega 2010–2012 þegar hann var yfir meðaltali árunum 1985–2011. Vöxtur 2013 var nálægt þessu meðaltali. Þyngd eftir aldri er nálægt meðaltali hjá árgöngum 2007 og eldri, en yfir meðaltali hjá litlu árgöngunum frá 2008–2013.

Stofnstærð 3 ára og eldri ýsu í upphafi árs 2014 er metin 104 þús. tonn og hrygningarstofn 67 þús. tonn. Árgangar 2008–2013 eru að meðaltali aðeins um 27 milljónir nýliða sem svarar til um 23 þús. tonna afla úr hverjum þeirra.

Samkvæmt aflareglu er aflamark næsta fiskveiðiárs 40% af áætluðum lífmassa 45 cm og stærri ýsu (viðmiðunarstofn) í upphafi næsta almanaksárs. Ef hrygningarstofn fer undir gátmörk (45 þús. tonn) er veiðihlutfallið lækkað. Viðmiðunarstofninn er að meðaltali álíka stór og hrygningarstofn, en ekki háður sveiflum í kynþroskahlutfalli sem myndu leiða til óþarfa breytileika í aflamarki.

Samkvæmt stofnmælingu gefur aflareglan 30 400 tonna aflamark fyrir fiskveiðiárið 2014/2015. Fyrirséð er að ýsuaflí muni minnka á næstu árum þegar árgangar 2007 og eldri hverfa úr stofninum.

### 2.3. Ufsi

Ufsaaflinn árið 2013 var 58 þús. tonn samanborið við 52 þús. tonn árið 2012. Aflamark fyrir fiskveiðiárið 2013/2014, byggt á aflareglu, er 57 þús. tonn.

Meðalþyngdir í afla hafa aukist hjá 6–9 ára ufsa en eru undir meðaltali hjá öðrum aldursflokkum. Heildarvísitala úr SMB var há árin 2012–2013, en lækkaði talsvert 2014.

Viðmiðunarstofn ufsa fjögurra ára og eldri í ársbyrjun 2014 er metinn 296 þús. tonn og veiðihlutfall ársins 2013 er metið 19%. Árgangar 1998–2000 og 2002 voru stórir, en nýliðun hefur verið í meðallagi eftir það. Framreikningar benda til að viðmiðunarstofninn í ársbyrjun 2015 verði um 272 þús. tonn.

Samkvæmt gildandi aflareglu verður aflamark fyrir ufsa fiskveiðiárið 2014/2015 58 þús. tonn.

### 2.4. Gullkarfi

Afli gullkarfa á Íslandsmiðum var rúm 53 þús. tonn árið 2013 sem er rúmlega 8 000 tonna aukning frá árinu áður. Aflamark fyrir fiskveiðiárið 2013/2014 er 52 þús. tonn.

Samkvæmt stofnmælingu hefur fiskveiðidauði undanfarin ár verið nálægt því sem gefur hámarksafkrastur til lengri tíma ( $F_{MSY, 9-19} = 0.097$ ). Hrygningarstofninn hefur stækkað hratt undanfarin fjögur ár og er nú svipaður og hann var um 1985. Árgangar frá árunum 1996–2004 eru nú metnir stórir. Vísbendingar eru hins vegar um að nýliðun hafi verið léleg við Ísland

og Austur-Grænland undanfarin ár.

Íslensk stjórnvöld hafa nú tekið upp formlega nýtingarstefnu fyrir stjórn gullkarfaveiða. Aflareglan miðast við svæðið Austur-Grænland/Ísland/Færeyjar og eiga grænensk og færeysk stjórnvöld eftir að staðfesta aflaregluna. Samkvæmt stofnmæti gefur aflaregla 48 þús. tonn á svæðinu Austur-Grænland/Ísland/Færeyjar á fiskveiðiarinu 2014/2015. Sú sókn leiðir til afla sem er nálægt hámarksafkrasti úr stofninum.

## 2.5. Djúpkarfi

Tæp 8 800 tonn voru veidd af **djúpkarfa í landgrunnshlíðum Íslands** árið 2013 sem er um 3 000 tonna minni afli en árið 2012. Ráðgjöf fyrir stofninn byggist á þróun hans samkvæmt stofnmælingu botnfiska að hausti (SMH) sem sýnir að veiðistofninn minnkaði nokkuð á tímabilinu 2000–2013. Hafrannsóknastofnun og ICES leggja til að djúpkarfaafli í landgrunnshlíðum Íslands á fiskveiðiarinu 2014/2015 fari ekki yfir 10 þús. tonn.

**Efri stofn úthafskarfa** hefur að mestu veiðst suður og suðaustur af Grænlandi. Mjög litlar veiðar voru stundaðar á þessu svæði árið 2013, en aflinn var rúm 1 500 tonn og að mestu veiddur af Rússum suður af Hvarfi. Árlegur afli fór mest í um 100 þús. tonn á árunum 1993–1995. Vegna mjög neikvæðrar þróunar stofnstærðar hefur ICES ráðlagt að engar beinar veiðar verði stundaðar úr efri stofni úthafskarfa.

Veiðisvæði **neðri stofns úthafskarfa** er að mestu vestan við Reykjanes hrygg, við lögsögumörk Íslands og Grænlands og innan þeirrar íslensku. Skráður afli allra veiðipjóða var áætlaður tæp 46 þús. tonn árið 2013 samanborið við 33 þús. tonn árið 2012. Afli Íslendinga árið 2013 var rúmlega 8 000 tonn. Heildarafli allra veiðipjóða var á bilinu 75–140 þús. tonn árin 1995–2004. ICES telur að vegna neikvæðrar þróunar á stofnstærð neðri stofns úthafskarfa á undanförunum árum, sé nauðsynlegt að draga verulega úr sókn í stofninn þar sem hún hefur verið langt umfram afkrastursgetu hans. Því leggur ICES til að hámarksafli árið 2015 fari ekki yfir 10 þús. tonn.

## 2.6. Litli karfi

Beinar veiðar á litla karfa hófust árið 1997 og var aflinn það ár tæp 1 200 tonn en minnkaði hratt til ársins 2000. Frá þeim tíma og allt til ársins 2009 var aflinn óverulegur. Veiðar hófust að nýju árið 2010 og var aflinn um 2 600 tonn, en hefur minnkað síðan og var árlegur afli árin 2012 og 2013 um 530 tonn. Í varúðarskyni leggur Hafrannsóknastofnun til að sókn verði takmörkuð og að hámarksafli fiskveiðiaríð 2014/2015 fari ekki yfir 1 500 tonn.

## 2.7. Grálúða

Grálúða við Austur-Grænland, Ísland og Færeyjar er talin vera af sama stofni. Heildarafli grálúðu á þessu svæði var tæp 27 þús. tonn árið 2013 og var

hlutdeild Íslendinga um 15 þús. tonn. Afli á sóknareiningu á Íslandsmiðum hefur vaxið lítillega frá sögulegu lágmarki árið 2005. Stofnvísitala grálúðu við Grænland og Ísland hefur aukist undanfarin ár og er nú nálægt því sem hún var hæst árin 1998–2001.

ICES og Hafrannsóknastofnun leggja til að aflamark í grálúðu miðist við þá sókn sem gefur hámarksafkrastur til lengri tíma litið. Sú sókn samsvarar því að heildarafli grálúðu á svæðinu Austur-Grænland/Ísland/Færeyjar fari ekki yfir 25 þús. tonn fiskveiðiaríð 2014/2015.

## 2.8. Lúða

Í ársbyrjun 2012 tók gildi reglugerð sem bannar beinar lúðuveiðar og kveður á um að allri lífvænlegri lúðu skuli sleppt, sama í hvaða veiðarfæri hún er veidd. Síðan hefur landaður lúðuafli á Íslandsmiðum verið mjög lítill og var einungis 44 tonn árið 2013. Lúða hefur aðallega veiðst sem meðafli við aðrar veiðar, en á árunum fyrir 2012 var aukning á beinni sókn með línu. Vísitölur úr SMB hafa lækkað mikið á seinni árum og virðist ástand lúðustofnsins vera afar slæmt. Engar vísbendingar eru um aukna nýliðun í hrygningarstofninn á næstu árum.

Hafrannsóknastofnun leggur til að umrædd reglugerð verði í gildi þar til merki sjást um verulegan bata í stofninum.

## 2.9. Skarkoli

Skarkolaafli árið 2013 var um 6 000 tonn. Aldursskiptar vísitölur úr stofnmælingu botnfiska í mars sýna að nýliðun hefur batnað nokkuð á undanförunum árum. Vísbendingar eru um að stofnstærð sé vaxandi og fiskveiðidánartala hafi lækkað umtalsvert á síðustu árum.

Hafrannsóknastofnun leggur til að aflamark fiskveiðiaríð 2014/2015 fari ekki yfir 7 000 tonn. Auk þess leggur stofnunin til áframhaldandi friðun á hrygningarstöðvum við suður-, suðvestur- og vesturströndina á hrygningartíma.

## 2.10. Sandkoli

Sandkoolaafli var mestur árin 1996 og 1997 eða tæp 8 000 tonn en hefur minnkað síðan og var um 720 tonn árið 2013. Afli á sóknareiningu hefur aukist nokkuð og verið stöðugur síðustu ár. Vísitala sandkola í stofnmælingu botnfiska í mars hefur einnig hækkað. Hafrannsóknastofnun leggur til að sandkoolaafli fiskveiðiaríð 2014/2015 á skilgreindu aflamarkssvæði, sem nær frá Snæfellsnesi suður um að Stokksnesi, fari ekki yfir 1 000 tonn.

## 2.11. Skrápflúra

Árið 2013 var landaður skrápflúruafli einungis um 80 tonn en var mestur 6 400 tonn árið 1996. Vísitala veiðistofns og afli á sóknareiningu hafa verið við sögulegt lágmark síðustu ár og beinar veiðar ekki arðbærar. Í ljósi þess að skrápflúra veiðist nú fyrst og fremst sem meðafli og landaður afli er langt undir úthlutun aflamarki leggur



Hafrannsóknastofnun ekki fram tillögur um hámarksafla fiskveiðiárið 2014/2015. Vegna bágs ástands stofnsins leggur stofnunin til að helstu hrygningarsvæðum skráplúru verði lokað á hrygningartíma.

### 2.12. Langlúra

Frá árinu 1988 hefur langlúruaflí verið á bilinu 900–3 000 tonn og var tæplega 1 200 tonn árið 2013. Vísitala veiðistofns (stærri en 30 cm) í humarleiðangri náði hámarki árið 2005, en hefur lækkað síðan þá. Afli á sóknareiningu meira en tvöfaldaðist 1998–2006, en hefur minnkað síðan. Veiðistofninn virðist heldur hafa minnkað síðustu ár og slök nýliðun bendir til að hann muni enn minnka á næstu árum. Hafrannsóknastofnun leggur til að aflamark langlúru á fiskveiðiárinu 2014/2015 fari ekki yfir 1 100 tonn.

### 2.13. Þykkvalúra

Árið 2013 var þykkvalúruaflinn 1 800 tonn. Afli á sóknareiningu hefur meira en tvöfaldast frá því sem hann var 1993–1998. Vísitala veiðistofns hefur verið há frá árinu 2003 þrátt fyrir nokkra lækkingu frá og með árinu 2011. Nýliðun virðist hafa verið góð undanfarin ár. Stofnmat bendir til þess að veiðidánartölur séu háar. Hafrannsóknastofnun leggur til að hámarksaflí þykkvalúru fiskveiðiárið 2014/2015 verði 1 600 tonn.

### 2.14. Stórkjafra

Stórkjafra veiðist sem meðafli, einkum í dragnót og humarvörpu. Landaður afli árið 2013 var 376 tonn. Lítið er vitað um stofnstærð og veiðiþol stórkjöftu. Hafrannsóknastofnun gerir ekki tillögu um hámarksafla stórkjöftu fyrir fiskveiðiárið 2014/2015.

### 2.15. Steinbítur

Steinbítisafli á árinu 2013 var tæp 9 000 tonn, sem er minnsti ársaflí síðan 1982. Vísitala veiðistofns er nálægt meðaltali en nýliðunarvísitala steinbíts hefur verið við sögulegt lágmark. Samkvæmt stofnmati hefur veiðistofninn farið minnkandi frá árinu 2006 og fyrirséð er áframhaldandi minnkun stofnsins á komandi árum sökum slakrar nýliðunar. Hafrannsóknastofnun leggur til að steinbítisafli miðist við þá veiðidánartölu sem gefur hámarksafrakstur og samsvarar 7 500 tonna hámarksafla á fiskveiðiárinu 2014/2015. Einnig ítrekar stofnunin að steinbítur á hrygningarslóð á Látragrundi verði áfram friðaður á hrygningar- og klaktíma.

### 2.16. Hlýri

Hlýraafli á árinu 2013 var um 2 400 tonn. Meðalaflinn var rúm 900 tonn á árunum 1982–1997 en hefur aukist í um 2 300 tonn eftir 1997. Vísitölur nýliðunar, stofnstærðar og veiðistofns eru í sögulegu lágmarki og vísitala veiðihlutfalls er þrefalt hærri en hún var á árunum 1985–1997. Ráðgjöf Hafrann-

sóknastofnunar miðar að því að lækka veiðihlutfallið niður í helming af meðaltalinu frá 2000 og leggur til að hámarksaflí hlýra á fiskveiðiárinu 2014/2015 verði 900 tonn.

### 2.17. Blálanga

Blálönguafli árið 2013 var um 3 100 tonn. Samkvæmt niðurstöðum stofnmælinga stækkaði blálöngustofninn mikið á árunum 2005–2010 en niðurstöður haustmælinga 2012 og 2013 benda til að stofninn fari nú minnkandi. Nýliðunarvísitala hefur verið mjög lág undanfarin ár og því mun stofninn minnka enn frekar á næstu árum.

Þar sem veiðiþol blálöngu er lítt þekkt og litlar rannsóknir stundaðar á tegundinni ber að fara varlega við nýtingu hennar. Hafrannsóknastofnun leggur til að afli á komandi fiskveiðiári fari ekki yfir 3 100 tonn. Sá afli mun vera nálægt því nýtingarhlutfalli sem var á árunum 2002–2009 þegar stofninn stækkaði. Jafnframt leggur stofnunin til að þekktum hrygningarsvæðum suður af Vestmannaeyjum og á Franshól verði áfram lokað á hrygningartíma.

### 2.18. Langa

Lönguafli ársins 2013 var um 11 400 tonn og hefur afli aukist nokkuð stöðugt frá árinu 2001. Vísitala veiðistofns hefur á árunum 2007–2014 verið há í sögulegu samhengi en nýliðunarvísitala verið lág síðastliðin tvö ár. Niðurstöður stofnmats sýna að stofninn hefur stækkað mikið á undanföllum árum og fiskveiðidánartala lækkað mikið á sama tíma, og var hún nálægt kjörsókn árið 2013. Lítil nýliðun mun í náinni framtíð leiða til minni stofnstærðar og afla.

Hafrannsóknastofnun leggur til að lönguafli fiskveiðiárið 2014/2015 miðist við kjörsókn ( $F_{MSY}$ ) og fari ekki yfir 14 300 tonn, að meðtöldum afla erlendra skipa sem að meðaltali hefur verið um 1 100 tonn á undanföllum fjórum árum.

### 2.19. Keila

Keiluaflinn árið 2013 var um 6 300 tonn, að mestu veiddur á línu. Vísitala veiðistofns hækkaði umtalsvert á árunum 2001–2012, en hefur farið lakkandi undanfarin tvö ár. Vísitala ungfisks hefur lækkað mikið síðan 2006 og er nú við sögulegt lágmark.

Hafrannsóknastofnun leggur til að heildaraflinn á fiskveiðiárinu 2014/2015 fari ekki yfir 4 000 tonn, að meðtöldum afla erlendra skipa, sem hefur að jafnaði verið um fjórðungur aflans á undanföllum árum. Ráðgjöfin miðar að því að hámarka afrakstur til lengri tíma litið. Jafnframt er lagt til áframhaldandi veiðibann á uppvaxtarsvæðum við Suðaustur- og Suðurland til verndar smákeilu.

### 2.20. Lýsa

Árið 2013 var lýsuaflí um 1 000 tonn og hefur farið minnkandi síðustu tvö ár, eftir að hafa náð hámarki í tæpum 3 000 tonnum árið 2011. Lýsa mun

lengst af hafa verið meðafli, en nokkur togskip hafa um árabil sótt beint í lýsu á hrygningarslóð hennar, síðla vetrar og á vorin. Vísitala veiðistofns hefur farið nær stöðugt lakkandi eftir 2005 og nýliðun hefur mælst léleg síðustu fimm ár. Hafrannsóknastofnun gerir ekki tillögu um hámarksafli lýsu fiskveiðiárið 2014/2015 en ljóst er að stofninn er minnkandi vegna lélegrar nýliðunar undanfarinna ára.

### 2.21. Skötuselur

Skötuselsaflinn árið 2013 var um 1 500 tonn og hefur farið minnkandi frá árinu 2009. Niðurstöður úr stofnmælingum og afli á sóknareiningu benda til að veiðistofninn hafi verið stór, enda nýliðun mjög góð, frá 1998–2007. Nýliðun undanfarin sex ár mælist verulega minni. Veiðistofn skötusels er enn nokkuð stór, en vegna slakrar nýliðunar mörg undanfarin ár má ætla að hann minnki verulega á næstu árum. Hafrannsóknastofnun leggur til að hámarksafli skötusels fiskveiðiárið 2014/2015 verði 1 000 tonn.

### 2.22. Hrognkelsi

Á árinu 2013 veiddust tæp 4 600 tonn af grásleppu við Ísland, sem er undir meðaltali árána 1971–2012. Lágur vísitölur grásleppu og rauðmaga í stofnmælingu í mars benda til þess að gæta þurfi aukinnar varúðar við hrognkelsaveiðarnar.

Hafrannsóknastofnun leggur til að upphafsafli mark grásleppu á fiskveiðiárinu 2014/2015 verði takmarkað við 1 400 tonn. Stofnunin mun veita ráðgjöf um heildaraflamark að lokinni stofnmælingu í mars 2015. Jafnframt er lagt til að áhersla verði lögð á skráningu og eftirlit með rauðmagaveiðum og hrognkelsum sem aukaafli við aðrar veiðar.

### 2.23. Síld

Á vertíðinni 2013/2014 var afli úr stofni íslensku sumargotssíldarinnar rúm 72 þús. tonn, en úthlutað aflamark var 87 þús. tonn. *Ichthyophonus* sýking mælist enn há í stofninum, en greiningar hafa sýnt að afföll vegna sýkingar eru minni en fyrst var talið og nánast engin síðan 2010. Stofnmat og framreikningar þessa árs tóku mið af þessum niðurstöðum, svo og metnu magni síldar sem drapst í Kolgrafafirði veturinn 2012/2013. Hrygningarstofninn árið 2014 er metinn 430 þús. tonn. Hafrannsóknastofnun leggur til að aflinn verði miðaður við kjörsókn ( $F_{0.1}$ ) og að hámarksafli fiskveiðiárið 2014/2015 verði 83 þús. tonn.

Árið 2013 veiddu Íslendingar tæp 91 þús. tonn úr norsk-íslenska síldarstofninum og heildarveiði allra þjóða er áætluð um 692 þús. tonn, sem er 73 þús. tonn umfram ráðgjöf ICES. Þar sem hrygningarstofninn árið 2014 er metinn undir gátmörkum skal skv. aflareglu lækka veiðihlutfallið. Fyrir árið 2014 hefur ICES því lagt til að hámarksafli verði 419 þús. tonn sem samsvarar fiskveiðidánartölu nálægt 0.1. Aflamark íslenskra skipa árið 2014 er um 62 þús. tonn, en ekki er samstaða allra strandríkja um

skiptingu aflaheimilda og því líklegt að heildaraflí árið 2014 verði umfram ráðgjöf ICES, líkt og árið 2013. ICES veitir ráðgjöf um hámarksafli fyrir árið 2015 í október 2014.

### 2.24. Loðna

Endanlegt aflamark loðnu vertíðina 2013/2014 var 160 þús. tonn. Heildaraflinn á vertíðinni var 142 þús. tonn og þar af veiddu íslensk skip 111 þús. tonn.

Loðnuvertíðin 2014/2015 mun byggjast á árgöngunum frá 2012 og 2011. Um 60 milljarðar fiska af þessum árgöngum mældust haustið 2013. Hafrannsóknastofnun leggur til að upphafsafli mark verði 50% af spáðum heildarafla eða 225 þús. tonn. Ráðgjöfin verður endurskoðuð að loknum mælingum á stofninum veturinn 2014/2015. Hafrannsóknastofnun leggur jafnframt til að veiðar haustið 2014 hefjist ekki fyrir en í október, að loknum aðalvaxtartíma loðnunnar.

### 2.25. Kolmunni

Árið 2013 veiddu Íslendingar um 105 þús. tonn af kolmunna og heildaraflinn í Norðaustur-Atlantshafi er talinn hafa verið rúm 640 þús. tonn. Samkvæmt stofnmati sem gert var árið 2013 minnkaði hrygningarstofn kolmunna um 60% á tímabilinu 2003–2010 eða úr 7,2 milljónum tonna í um 2,9 milljónir tonna. Nýliðun var léleg á árunum 2006–2009, en hrygningarstofninn fer nú aftur stækkandi með tilkomu stórra árganga frá 2010–2012 og er talinn hafa verið um 5,5 milljónir tonna 2013.

ICES lagði til að hámarksafli verði 949 þús. tonn árið 2014, en strandríkin ákváðu að heildaraflinn yrði 1,2 milljónir tonna og er hlutur Íslendinga 195 þús. tonn. ICES mun veita ráðgjöf um hámarksafli fyrir árið 2015 í október 2014.

### 2.26. Makrill

Undanfarin ár hefur makrillgengd aukist á miðunum austur, suður og vestur af landinu. Afli Íslendinga árið 2013 var 151 þús. tonn, en gert er ráð fyrir að heildaraflí allra þjóða á árinu 2013 hafi verið 895 þús. tonn sem er verulega umfram ráðgjöf. Samkvæmt nýju stofnmati sem gert var í febrúar 2014, þar sem tekið er tillit til fleiri rannsókna en áður, stækkaði hrygningarstofninn á árunum 2003–2013 úr 1,9 í 4,7 milljónir tonna. ICES lagði til að heildaraflinn árið 2014 yrði á bilinu 927–1011 þús. tonn. ICES veitir ráðgjöf um hámarksafli fyrir árið 2015 í október 2014.

### 2.27. Gulldepla

Tilraunaveiðar með flotvörpu á norrænu gulldeplu hófust 2008 og mestur varð aflinn árið 2009, rúm 46 þús. tonn, en hefur minnkað síðan þá og var engum afla landað árið 2013. Hafrannsóknastofnun leggur til að varlega verði farið í nýtingu stofnsins og hámarksafli fiskveiðiárið 2014/2015 verði 30 þús. tonn.

### 2.28. Gullax

Aflinn 2013 var um 7 200 þús tonn, sem er umtalsverð lækkun frá árinu 2010 þegar aflinn var í sögulegu hámarki eða rúm 16 þús. tonn. Vísitala veiðistofns gullax lækkaði milli árunna 2012 og 2013. Niðurstöður síðastliðinna þriggja stofnmælinga benda til góðrar nýliðunar.

Hafrannsóknastofnun leggur til að hámarksafli gullax fiskveiðiárið 2014/2015 verði 8 000 tonn

### 2.29. Humar

Humaraflinn árið 2013 var 1 724 tonn, samanborið við 1 914 tonn árið 2012. Stofnvísitala hefur farið lækkandi frá árinu 2008 og mælist nú undir meðaltali síðastliðins aldarfjórðungs. Veiðistofn humars (6 ára og eldri) árið 2014 er nú metinn tæp 11 þús. tonn og hefur minnkað frá síðasta mati. Humarstofninn stækkaði mjög á árunum 1997–2007, sem rekja má til aukinnar nýliðunar og hóflegar sóknar í stofninn. Samfara minnkandi nýliðun undanfarin ár hefur veiðistofninn minnkað hratt og er nú metinn við sögulegt lágmark. Hins vegar er stofn stórhumars (10 ára og eldri) yfir langtímameðaltali. Hafrannsóknastofnun leggur sem fyrr til að humaraflinn miðist við kjörsókn ( $F_{0.1}$ ) og fari ekki yfir 1 650 tonn fiskveiðiárið 2014/2015.

### 2.30. Rækja

Á yfirstandandi fiskveiðiári voru rækjuveiðar á grunnslóð leyfðar í Arnarfirði, Ísafjarðardjúpi, við Eldey og Snæfellsnes. Hafrannsóknastofnun leggur til að upphafsafli fyrir veiðisvæðið við Snæfellsnes verði 600 tonn á komandi fiskveiðiári. Hafrannsóknastofnun mun veita ráðgjöf um veiðar á öðrum grunnslóðar svæðum að loknum könnunum haustið 2014.

Rækjuafli á djúpslóð var 7 000 tonn árið 2013 en var mestur um 65 þús. tonn árið 1997. Stofnvísitala rækju var líkt og undanfarin ár nærri sögulegu lágmarki. Slök nýliðun rækju undanfarin tíu ár bendir til að stofnstærð úthafs rækju muni ekki aukast í bráð. Hafrannsóknastofnun leggur til að aflamark úthafs rækju fyrir fiskveiðiárið 2014/2015 verði 5 000 tonn.

### 2.31. Hörpudiskur

Engar hörpudisksveiðar voru heimilaðar fiskveiðiárið 2013/2014. Stærð veiðistofnsins í Breiðafirði minnkaði ört eftir árið 2000 og er í sögulegu lágmarki. Hnignun stofnsins má einkum rekja til stórauðsfalla vegna frumdýrasýkingar. Auk þess mælast árgangar 2004–2009 allir mjög litlir en yngri árgangar og sérstaklega frá 2012 eru greinanglegir. Hafrannsóknastofnun leggur til að veiðar á hörpudiski verði ekki heimilaðar á hefðbundnum veiðisvæðum fiskveiðiárið 2014/2015, tólfta árið í röð.

### 2.32. Kúfiskel

Veiðar á kúfiskel til manneldis hafa verið stundaðar með hléum síðan 1987 og hefur ársafli

verið mjög breytilegur, en var mestur árið 2003, 14 400 tonn. Árið 2009 lögðust allar hefðbundnar veiðar af og var landaður afli árið 2013 aðeins 20 tonn. Hafrannsóknastofnun leggur til að aflamark verði bundið við ákveðin veiðisvæði og að árlegur afli á tilteknu tímabili (4–7 ár) verði að jafnaði ekki meiri en 2,5% af áætlaðri stofnstærð eða samtals 32 500 tonn fiskveiðiárið 2014/2015 fyrir svæðið frá Garðskaga réttisælis að Ingólfshöfða.

### 2.33. Beitukóngur

Gildruveiðar á beitukóngi hófust í Breiðafirði árið 1996. Aflinn var 89 tonn árið 2013 samanborið við 375 tonn árið 2012. Samkvæmt stofnmælingu í Breiðafirði sumarið 2012 virðast veiðar undanfarinna 15 ára ekki hafa haft veruleg áhrif á stofnstærð. Hafrannsóknastofnun leggur til að hámarksafli í Breiðafirði fiskveiðiárið 2014/2015 verði 750 tonn.

### 2.34. Sæbjúga

Tilraunaveiðar á sæbjúgum hófust 2003, en landaður afli var mjög lítil til ársins 2008, þegar hann var tæp 1 000 tonn. Árið 2013 var aflinn rúm 1 400 tonn. Frekar lítið er vitað um útbreiðslu og stofnstærð sæbjúga við landið utan þekktra veiðisvæða. Hafrannsóknastofnun leggur til að afli fiskveiðiárið 2014/2015 fari ekki yfir 10% af áætlaðri stofnstærð á hverri þekktri veiðislóð.

### 2.35. Ígulker

Veiðar á ígulkerum hófust hér við land árið 1993 og náðu hámarki ári síðar er aflinn var tæp 1 500 tonn. Aðalveiðisvæðið hefur ávallt verið í Breiðafirði. Veiðar voru mjög litlar á árunum 1997–2006 eða á bilinu 0–40 tonn. Frá árinu 2007 hefur aflinn verið á bilinu 125–145 tonn, var 129 tonn árið 2013. Lítið er vitað um afrakstursgetu stofnsins og svæði með ígulkerum af viðunandi gæðum eru mjög afmörkuð að stærð. Því ber að fara varlega í nýtingu þeirra.

### 2.36. Hvalir

Eftir tveggja áratuga hlé á hvalveiðum í atvinnuskyni hófust veiðar á hrefnu og langreyði að nýju árið 2006. Alls voru 35 hrefnur veiddar á árinu 2013 eða 17 færri en árið 2012. Veiðar á langreyði voru ekki stundaðar árin 2011 og 2012, en árið 2013 voru veidd 134 dýr.

Samkvæmt úttektum vísindanefnda Alþjóðahvalveiðiráðsins (IWC) og Norður-Atlantshafs Sjávarspendýraráðsins (NAMMCO) er ástand **hrefnustofnsins** við Ísland (Miðnorður-Atlantshafsstofn) gott og stofnstærðin metin nálægt því sem hún er talin hafa verið áður en atvinnuveiðar hófust. Á grundvelli nýrra úttekta á vegum IWC og NAMMCO mælir Hafrannsóknastofnun með að árlegar veiðar nemi að hámarki 229 hrefnum á íslenska landgrunnssvæðinu og auk þess 121 hrefnu á svokölluðu Jan Mayen undirsvæði, sem að hluta til er innan íslenskrar lögsögu. Ráðgjöf þessi gildir fyrir almanaksárin 2014 og 2015.

Niðurstöður talninga á **langreyði** frá 2007 benda til að heildarstofninn á hafsvæðinu Austur-Grænland/Ísland/Jan Mayen sé um 21 þús. dýr, sem er svipað og niðurstöður úr talningum frá 1995 og 2001. Á grundvelli úttekta á vegum IWC og NAMMCO mælir Hafrannsóknastofnun með að árlegar veiðar á hefðbundnum hvalveiðimiðum vestan Íslands nemi að hámarki 154 langreyðum almanaksárin 2014 og 2015. Ráðgjöfin byggist á sjónarmiðum um sjálfbærni og varúðarnálgun.

### 2.37. Selir

Alls bárust upplýsingar um veiðar á 632 selum við Ísland árið 2012, en ekki liggja fyrir veiðitölur ársins 2013.

Samkvæmt stjórnunarmarkmiðum er stefnt að því að halda stofni landsels nálægt 12 þús. dýrum. Byggt á talningum í júlí–september 2011 var stofnstærð **landsels** metin um 11 þús. dýr sem er svipað og árin 2003 og 2006, en stofninn hefur minnkað verulega síðan árið 1980 er hann var metinn um 34 þús. dýr.

Samkvæmt stjórnunarmarkmiðum er stefnt að því að halda stofni útsels nálægt 4 100 dýrum. Byggt á talningum haustið 2012 var stofnstærð **útsels** metin um 4 200 dýr sem er talsvert minna en í talningum 2008/2009 en nálægt viðmiðunarmörkum íslenskra stjórnvalda. Útselsstofninn hefur minnkað verulega á undanförunum áratugum, en hann var metinn um 12 þús. dýr árið 1990.

---



Tafla 1.

## Tillögur um hámarksafla fiskveiðiarin 2014/2015 og 2013/2014, ásamt aflamarki samkvæmt ákvörðun stjórnvalda fiskveiðiaríð 2013/2014 (þús. tonn).

TACs recommended by the Marine Research Institute for the quota years 2014/2015 and 2013/2014, and national TACs for the quota year 2013/2014 (thous. tonnes).

Stofn Stock	Tillaga 2014/2015 Recomm. TAC 2014/2015	Tillaga 2013/2014 Recomm. TAC 2013/2014	Aflamark 2013/2014 National TAC 2013/2014
Porskur ( <i>Cod</i> )	218 <sup>1)</sup>	215 <sup>1)</sup>	214,4
Ýsa ( <i>Haddock</i> )	30,4 <sup>1)</sup>	38 <sup>1)</sup>	38
Ufsi ( <i>Saithe</i> )	58 <sup>1)</sup>	57 <sup>1)</sup>	57
Gullkarfi ( <i>Golden redfish</i> )	48 <sup>1)</sup>	52	52
Litli karfi ( <i>Sebastes viviparus</i> )	1,5	1,5	-
Djúpkarfi ( <i>Deep sea redfish</i> )	10	10	10
Úthafskarfi ( <i>Pelagic redfish</i> )	10 <sup>2)</sup>	20 <sup>2)</sup>	42(6,2) <sup>3)</sup>
Grálúða ( <i>Greenland halibut</i> )	25 <sup>2)</sup>	20 <sup>2)</sup>	22,3(12,48) <sup>3)</sup>
Skarkoli ( <i>Plaice</i> )	7	6,5	6,5
Sandkoli ( <i>Dab</i> )	1	0,5 <sup>5)</sup>	0,5
Skráplúra ( <i>Long rough dab</i> )	-	0,2 <sup>5)</sup>	0,2
Langlúra ( <i>Witch</i> )	1,1	1,1	1,1
Þykkvalúra ( <i>Lemon sole</i> )	1,6	1,6	1,6
Steinbítur ( <i>Atlantic wolffish</i> )	7,5	7,5	7,5
Hlýri ( <i>Spotted wolffish</i> )	0,9	0,9	-
Íslensk sumargotssíld ( <i>Herring</i> )	83	87	86,5
Norsk-íslensk vorgotssíld ( <i>Atlanto-Scandian herring</i> )	- <sup>4)</sup>	418(62)	692(62) <sup>3)</sup>
Loðna ( <i>Capelin</i> )	225 <sup>6)</sup>	160	160(123) <sup>3)</sup>
Kolmunni ( <i>Blue whiting</i> )	- <sup>4)</sup>	949	1200(195) <sup>3)</sup>
Makrill ( <i>Mackerel</i> )	- <sup>4)</sup>	927–1011	1396(148) <sup>3)</sup>
Guldepla ( <i>Pearlside</i> )	30	30	-
Blálanga ( <i>Blue ling</i> )	3,1	2,4	2,4
Langa ( <i>Ling</i> )	14,3	14	13,5
Keila ( <i>Tusk</i> )	4	6,3	5,9
Gulllax ( <i>Greater silver smelt</i> )	8	8	8
Skötuselur ( <i>Anglerfish</i> )	1	1,5	1,5
Hrognkelsi ( <i>Lumpfish</i> )	1,4 <sup>6)</sup>	4,3	-
Humar ( <i>Nephrops</i> )	1,65	1,75	1,75
Rækja á grunnsl. ( <i>Inshore shrimp</i> )	0,6 <sup>7)</sup>	2,45	1,5
Rækja á djúpsl. ( <i>Offshore shrimp</i> )	5	5	-
Hörpudiskur ( <i>Iceland scallop</i> )	0	0	0
Kúfiskel ( <i>Ocean quahog</i> )	32,5	31,5	-
Beitukóngur ( <i>Common whelk</i> )	0,75	0,75	-
Hrefna ( <i>Common minke whale</i> ) <sup>8)</sup>	229	229	229
Langreyður ( <i>Fin whale</i> ) <sup>8)</sup>	154	154	154

<sup>1)</sup> Samkvæmt aflareglu. According to management plan.<sup>2)</sup> Aflamark á öllu útbreiðslusvæði stofns fyrir almanaksár. TAC for the total area of distribution for calendar year.<sup>3)</sup> Samanlagt heildaraflamark allra veiðipjóða og aflamark ákveðið fyrir Ísland (í sviga). Total TAC and national TAC within parentheses.<sup>4)</sup> Ráðgjöf fyrir almanaksárið 2015 verður veitt í október 2014. Recommended TAC for calendar year 2015 will be given in October 2014.<sup>5)</sup> Aflamark verði ekki herra en sem nemi þeim afla er ætla má að fáist sem aukaafli við aðrar veiðar. Recommended TAC not to exceed expected bycatch levels caught in other fishing operations.<sup>6)</sup> Tillaga um afla í upphafi vertíðar. Provisional TAC.<sup>7)</sup> Eingöngu svæðið við Snæfellsnes. Ráðgjöf fyrir önnur svæði veitt haustið 2014. Only Snæfellsnes area. Advice for other areas given in autumn 2014.

**Tafla 2.****Aðrar tillögur Hafrannsóknastofnunar fyrir fiskveiðiárið 2014/2015.**

*Additional advice for the quota year 2014/2015.*

**Þorskur** – Við úthlutun aflamarks til íslenskra skipa verði tekið mið af afla erlendra skipa og annars afla sem nú er utan aflamarks.

**Lúða** – Áframhaldandi bann við beinni sókn og reglugerð til verndunar lúðu verði áfram í gildi.

**Skarkoli** – Áframhaldandi friðun á hrygningarsstöðvum á hrygningartíma.

**Skráplúra** – Friðun helstu hrygningarsvæða á hrygningartíma.

**Steinbítur** – Áframhaldandi friðun á hrygningarsvæðum á Látragrunni á hrygningar- og klaktíma.

**Blálanga** – Þekktum hrygningarsvæðum verði áfram lokað á hrygningartíma.

**Langa** – Við úthlutun aflamarks til íslenskra skipa verði tekið mið af afla erlendra skipa.

**Keila** – Við úthlutun aflamarks til íslenskra skipa verði tekið mið af afla erlendra skipa. Áframhaldandi veiðibann á afmörkuðum uppvaxtarsvæðum til verndar smákeilu.

**Kúfiskel** – Aflamarki verði úthlutað eftir svæðum með tilliti til stofnstærðar á hverju svæði.

**Sæbjúga** – Afli fari ekki yfir 10% af áætlaðri stofnstærð hvernar veiðislóðar.

*Cod* – *Expected catches by foreign fleets and other catches not subject to TAC be subtracted from TAC before allocation of quota to Icelandic vessels.*

*Atlantic halibut* – *Continued ban on directed halibut fishery and implemented conservation act for protection of the stock.*

*Plaice* – *Continued closure of spawning areas during spawning season.*

*Long rough dab* – *Closure of main spawning areas during spawning season.*

*Atlantic wolffish* – *Continued closure of spawning areas off the west coast of Iceland during spawning season.*

*Blue ling* – *Continued closure of known spawning areas during spawning time.*

*Ling* – *Subtract expected catches by foreign fleets from TAC before allocation of quota to Icelandic vessels.*

*Tusk* – *Subtract expected catches by foreign fleets from TAC before allocation of quota to Icelandic vessels. Continued ban on fishery in nursery areas in order to protect juveniles.*

*Ocean quahog* – *TAC should be divided by areas according to stock size in each area.*

*Sea cucumber* – *Annual catch not exceeding 10% of estimated biomass within each fishing area.*

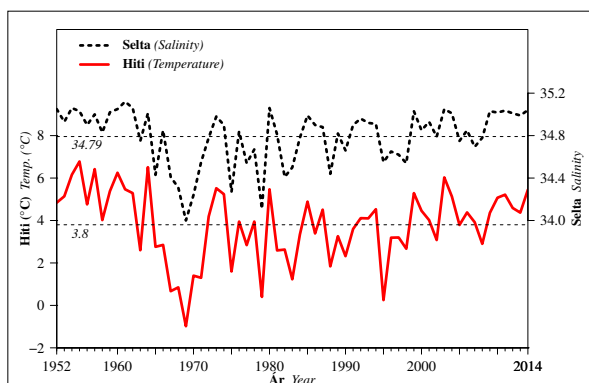
# 1. ENVIRONMENTAL CONDITIONS

Estimates of seasonal conditions in Icelandic waters have been partially based on data saved during the annual spring cruise in May/June. During this cruise, Icelandic waters are sampled to evaluate the general condition of the ocean, marine vegetation, and zooplankton. Emphasis is placed upon comparable sampling from year to year in order to follow changes in the marine environment. Repeat sampling at a smaller scale has been conducted in the same areas in other seasons.

Analysis has shown that seasonal conditions are highly variable between years. Studies during recent decades indicate that warm currents in the northern region support increased total production, but a complex combination of environmental factors influences the food web and the success of exploited stocks in Icelandic waters. The following is a brief discussion of recent seasonal conditions in Icelandic waters. More detailed accounts are provided in the Marine Research Institute report *Environmental Conditions in Icelandic Waters*, Marine Studies nr. 175 (2014).

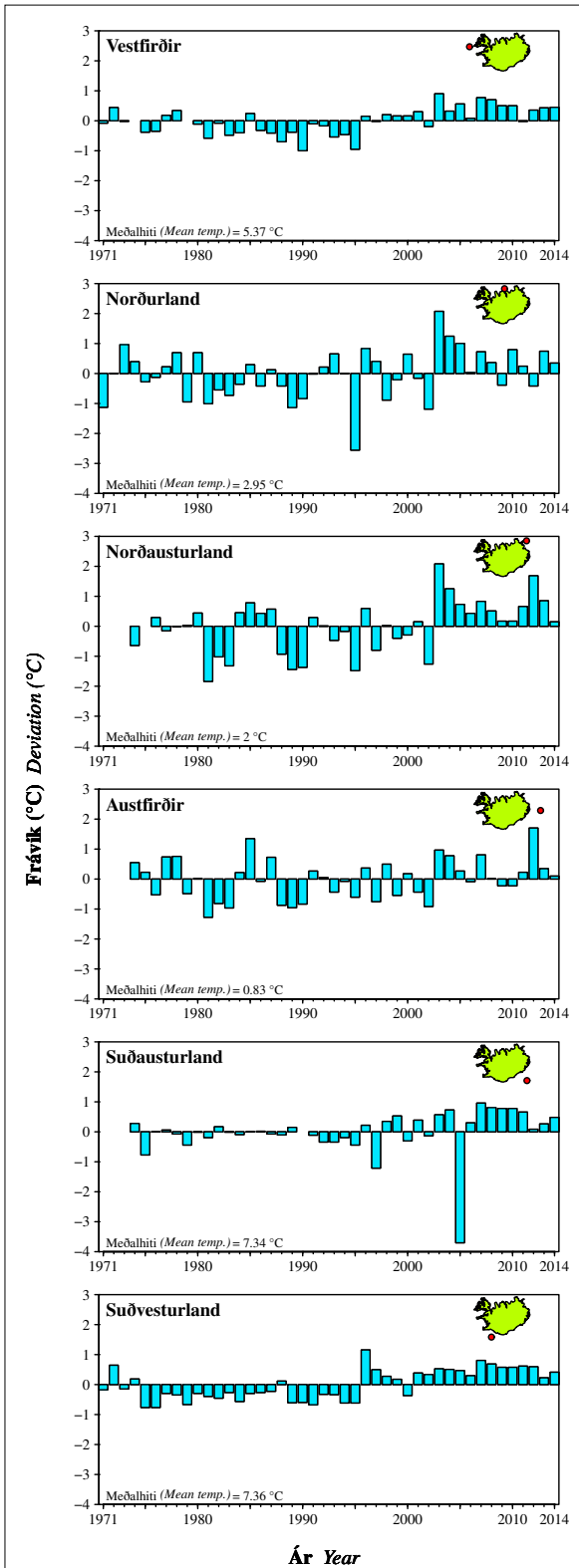
## 1.1. Temperature and salinity off North Iceland

For more than 50 years annual temperature and salinity measurements have been taken off Siglunes (Fig. 1.1). These measurements appear to be a good indication of the general state of the ocean north of Iceland and the influx of warm saline Atlantic water into the region. Following a warm period in the North Atlantic was the so-called Sea Ice Years, 1965–1971, because of cold, low salinity Polar currents entering the Iceland Sea. Since then, warm and cold years have alternated and the years 1979 and 1995 were the coldest. Measurements in the last decade have shown a warming trend in the North Atlantic after 1995. Since 1998 temperature and



Mynd 1.1. Hiti og selta að vori á 50 m dýpi á stöð 3, um 20 sjómílar norður af Siglunesi frá árinu 1952. Láréttu línurnar tákna meðaltöl fyrir tímabilið.

Fig. 1.1. Temperature and salinity in spring at 50 m depth at station 3 on the Siglunes section since 1952. The horizontal lines indicate the means for the same period.



Mynd 1.2. Frávik frá meðalhita yfir botni (°C) á mismunandi svæðum umhverfis Ísland í maí/júní frá árinu 1971.

Fig. 1.2. Temperature anomalies (°C) near bottom in Icelandic waters in May/June since 1971.

salinity have been at or above average. From 2006–2008 spring surface (0–50 m) temperatures and salinities were average, but they were well above average from 2009–2014. At greater depth, temperature and salinity have been above average, reflecting the warmer more saline waters to the west and south (Fig. 1.2).

### 1.2. Bottom temperature

Bottom temperatures in Icelandic waters reflect even heat distribution in upper layers. Bottom temperature is usually lower to the north and east due to cold waters from the north, whereas the southern and western waters are warmed by southern waters. Figure 1.2 shows mean temperature at 50–100 m above the bottom around the country, except for the northern samples that are from 150–300 m depth.

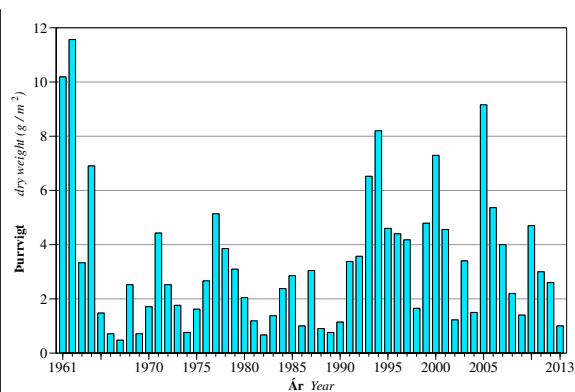
Bottom temperatures on the shelf are usually lowest from February–March and highest from August–September or later. Annual fluctuation on the shelf is higher in shallow waters than at great depth. Outside the shelf margin bottom temperature is always below 0°C (Northern Seas deep water). Off the north-central coast (in Eyjafjarðará, depth as much as 700 m) the cold deep water coming closest to land divides the northern fishing grounds into western and eastern regions. On the slope south and west lands bottom temperature decreases with depth, but rarely drops below 4°C.

Temperature has been mostly above average for a decade (Fig. 1.2) in Icelandic waters. An exception was in 2005 when the southeast current shifted for a short period. Measurements in spring 2014 show the bottom temperature around or above the average.

### 1.3. Zooplankton

Zooplankton plays a crucial role in the ecosystem as a primary food source of herring and capelin stocks, but also as the primary food of all other stocks in their larval and fry stages. The abundance of zooplankton is considered important to the survivability of fish just starting to catch their own food. Marine Research Institute (MRI) studies have shown a connection between zooplankton abundance southwest of Iceland in the spring and the number of cod fry in August. This connection is an indication of the ecological connections between species from the lowest to highest parts of the food chain.

Studies aimed at following the long term trends in zooplankton abundance began around 1960. Figure 1.3 shows the results of zooplankton abundance measurements off North Iceland (Siglunes section), which is the longest time series. In 2013 the zooplankton abundance off North Iceland was below the historical average, but preliminary results from May 2014 indicate that the zooplankton abundance is above average.



Mynd 1.3. Átumagn (g þurrvigt m<sup>-2</sup>, 0–50 m) að vorlagi á Siglunes-sniði frá árinu 1961. Súlurnar sýna meðaltöl allra stöðva á sniðinu. Gildið fyrir árið 2014 er bráðabirgðatala sem getur breyst við endanlega úrvinnslu.

Fig. 1.3. Zooplankton biomass (g dry weight m<sup>-2</sup>, 0–50 m) in spring at Siglunes section since 1961. The columns show means for all stations at the section. Provisional value for 2014.

## 2. State of marine stocks

### 2.1. COD *Gadus morhua*



#### 2.1.1. Landings, effort and year classes

Landings of Icelandic cod in 2013 were 223 thousand tonnes (kt), as compared to 196 kt in 2012 (Fig. 2.1.1 and Table 3.1.1). TAC for quota year 2012/2013 was set by the catch rule at 196 kt but total catch was 212 kt. Probably, the landings exceeding the catch rule will be of similar size in the current quota year. TAC and landings by year are shown in table 2.1.1.

In 2013 landings by gear were: 46% bottom trawl, 34% longline, 9% gillnet, 7% handline, and 4% seine (Fig. 2.1.1). There was a continuing trend of increasing longline use and decreasing gillnet use.

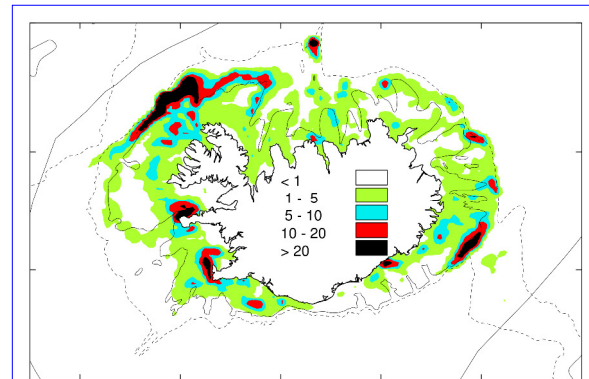
The age composition in the 2013 catch shows proportionally more young fish and fewer old fish than expected (Fig. 2.1.2). Compared to the last ten years, the proportion of older fish is higher in the 2013 catch (Table 3.1.2).

Catch per unit effort (CPUE) was relatively high in all gears in 2013 (Fig. 2.1.3). Drawing conclusions about the trends in stock size is difficult. On one hand, gears are more efficient and on the other it is difficult to distinguish between targeted effort and landings where effort is made to avoid a high proportion of cod in catch.

#### 2.1.2. Mean weight and maturity

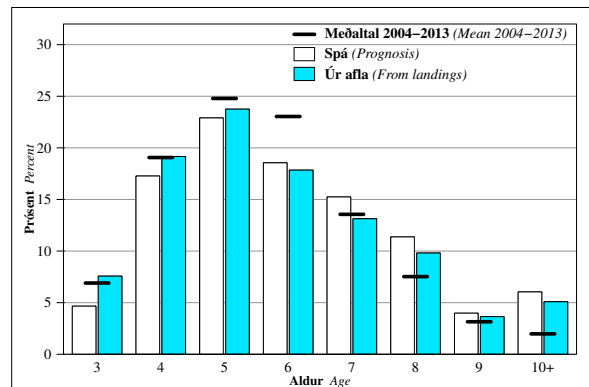
Mean weight at age in catches (Table 3.1.3) has increased in recent years and in 2013 was close to the historical average (1955–2012). Based on the March groundfish survey (SMB) it is predicted that mean weight of age 5–8 cod will decrease somewhat in landings in 2014.

Maturity at age in fish younger than age 9 is estimated based on observations in SMB (Table



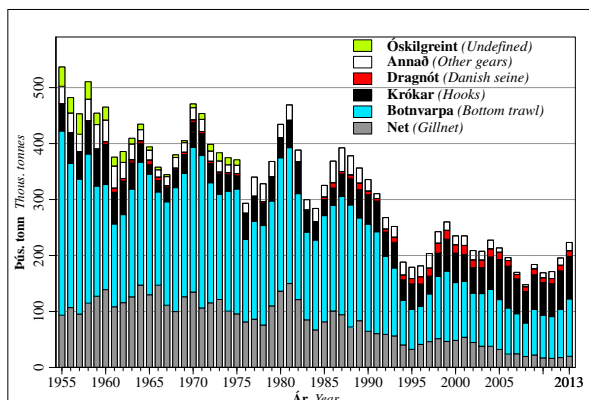
**ÞORSKUR.** Veiðisvæði við Ísland árið 2013 (tonn/sjm<sup>2</sup>). Veiðisvæði mismunandi veiðarfæra eru sýnd í viðauka 5.2.

**COD.** Fishing grounds in 2013 (tonnes/nmi<sup>2</sup>). Information on fishing grounds by gear type are given in Appendix 5.2.



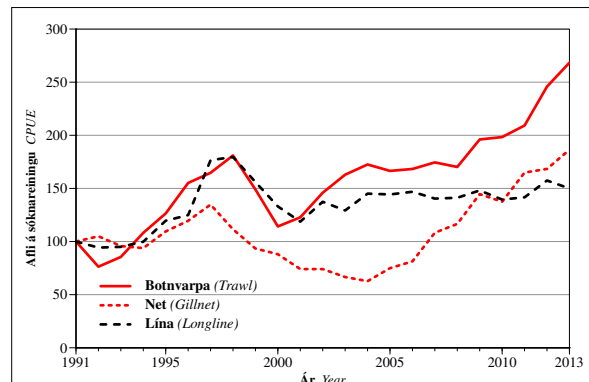
Mynd 2.1.2. **ÞORSKUR.** Aldursdreifing afla (% af fjölda) árið 2013, ásamt spá frá í maí 2013. Meðalaldursdreifing árána 2004–2013 er jafnframt sýnd.

Fig. 2.1.2. **COD.** Age distribution in the 2013 catch (% by number), compared to last year's prediction. Mean age distribution 2004–2013 is also shown.



Mynd 2.1.1. **ÞORSKUR.** Landaður afli eftir veiðarfærum frá árinu 1955.

Fig. 2.1.1. **COD.** Landings by gear type since 1955.



Mynd 2.1.3. **ÞORSKUR.** Hlutfallslegar breytingar í afla á söfnareiningu eftir veiðarfærum (miðað við 100 árið 1991).

Fig. 2.1.3. **COD.** Relative changes in CPUE by fishing gear (1991 set at 100).

3.1.5). Just under half of cod reach maturity by age 6. The proportion mature by age 4–5 has been low in recent years, but that of age 7–8 fish has been somewhat higher than the historical average.

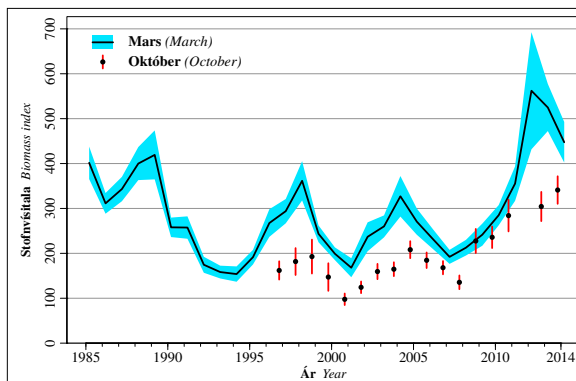
### 2.1.3. Biomass indices

Total biomass indices for cod in the SMB the fall groundfish survey (SMH) have increased significantly in recent years (Fig. 2.1.4) and for three years running these indices have been at an historical high. However, the biomass reported in the SMB has decreased slightly in the last two years.

All cohorts of cod are present in the groundfish surveys so the indices for ages 1–10 are used in stock estimates as an indication of trends in stock size. Indices for cohorts 2001–2007 from the SMB indicate that they were near or below average at ages 1–4 (Table 3.1.6) but they are bigger when the fish are older (ages 6–11). This can be attributed mainly to decreased fishing pressure in recent years. Preliminary indications suggest that the 2013 cohort is significantly below average.

TAFLA 2.1.1 ÞORSKUR. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (þús. tonn). Cod. TAC recommended by the Marine Research Institute, national TAC and landings (thous. tonnes).					
Ár Year	Tillaga Rec. TAC	Aflamark National TAC	Afli Íslendinga Landings (Iceland)	Afli annarra Landings (others)	Afli alls Total catch
1984	200	242	281	2.0	283
1985	200	263	323	3.0	326
1986	300	300	365	3.0	369
1987	300	330	390	2.0	392
1988	300	350	376	2.0	378
1989	300	325	354	2.0	356
1990	250	300	333	2.0	335
1991 <sup>1)</sup>	240	245	243	2.0	244
1991/92	250	265	273	1.9	275
1992/93	190	205	240	0.8	241
1993/94	150	165	196	0.9	197
1994/95	130	155	164	0.7	165
1995/96	25% aflaregla	155	169	0.6	170
1996/97	25% aflaregla	186	201	0.4	202
1997/98	25% aflaregla	218	227	1.1	228
1998/99	25% aflaregla	250	253	1.4	254
1999/00	25% aflaregla	250	256	1.3	257
2000/01	25% aflaregla	220	222	1.3	223
2001/02	25% aflaregla	190 <sup>2)</sup>	217	1.3	218
2002/03	25% aflaregla	179	197	7.1	204
2003/04	25% aflaregla	209	219	7.5	226
2004/05	25% aflaregla	205	207	5.6	214
2005/06	Lækka veiðihlutfall	198	202	2.9	205
2006/07	Lækka veiðihlutfall	193 <sup>2)</sup>	187	3.7	191
2007/08	20% aflaregla (130)	130	138	3.0	141
2008/09	20% aflaregla (124)	160	168	1.1	169
2009/10	20% aflaregla (150)	155	166	1.5	168
2010/11	20% aflaregla (160)	160	167	2.0	169
2011/12	20% aflaregla (177)	177	183	2.0	185
2012/13	20% aflaregla (196)	195	210	1.7	212
2013/14	20% aflaregla (215)	215			
2014/15	20% aflaregla (215)	218			

<sup>1)</sup> Tímabilið janúar–ágúst 1991. January–August 1991.  
<sup>2)</sup> Aflareglu breytt. Amended harvest control rule.



Mynd 2.1.4. ÞORSKUR. Heildarvísitölur (þyngd) úr stofnmælingum í mars 1985–2014 og október 1996–2013, ásamt staðalfrávikum.

Fig. 2.1.4. COD. Total biomass indices from the Icelandic groundfish surveys in March 1985–2014 and October 1996–2013, along with the standard deviation.

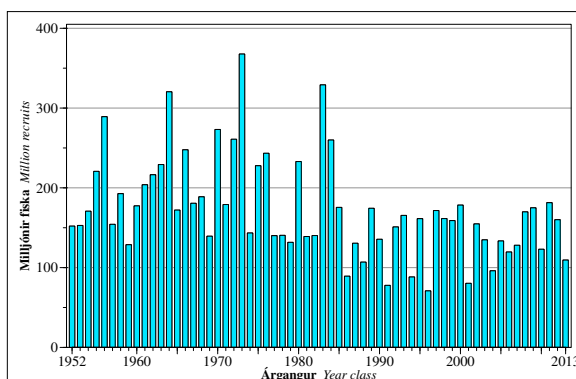
### 2.1.4. Stock assessment and assumptions

Estimates of stock size are based on age distributed catch data (Table 3.1.2) and cohort indices from SMB and SMH (Table 3.1.6). A natural mortality of 0.2 is used for all cohorts age 3 and older. An ADCAM model provides this estimate but a few other models are run that have different assumptions regarding error terms (See Appendix 5.1).

Reference biomass (age 4 and older), based on mean weight by age in landings, has been used to calculate TAC in accordance with the catch rule, which is based on mean weight at age in landings. Mean weight by age in the spawning stock is based on data for fish age 7 and younger from the SMB and for fish age 8 and older from landings (Table 3.1.4).

In 2010 the reference points ( $B_{trigger}$ ) and ( $B_{lim}$ ) were determined for Icelandic cod. These reference points relate to the spawning stock and  $B_{lim}$  is 125 kt which is an historical minimum and  $B_{trigger}$  is 220 kt. According to the harvest control rule, the harvest rate is decreased if the spawning stock goes below  $B_{trigger}$ .

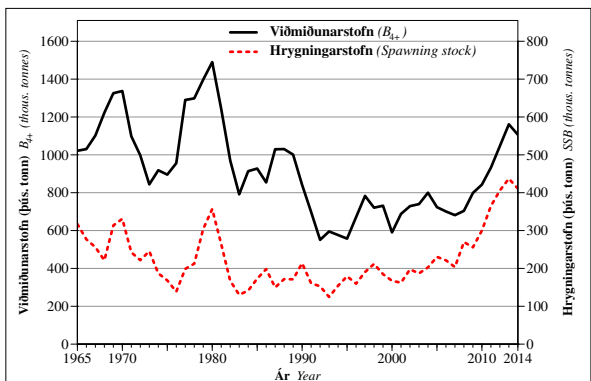
To evaluate TAC for the coming year the mean weight by age in catches in 2014 is estimated based on the mean weights recorded in the SMB in 2014.



Mynd 2.1.5. ÞORSKUR. Áætluð stærð árganga við þriggja ára aldur (í milljónum).

Fig. 2.1.5. COD. Estimated year class size at age 3 (in millions).





Mynd 2.1.6. ÞORSKUR. Stærð viðmiðunarstofns (fjögurra ára og eldri) og hrygningarstofns á hrygningartíma í þús. tonna.

Fig. 2.1.6. *COD*. Reference- (ages 4+) and spawning stock biomass at spawning time (thous. tonnes).

### 2.1.5. Status and projections

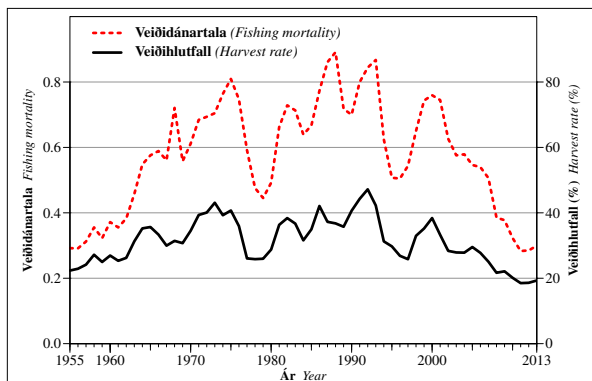
Mean size of cohorts from 2005–2010, which are now the bulk of the spawning and reference stock, is about 141 million age 3 recruits (Fig. 2.1.5 and Table 3.1.7), or 80% of the historical cohort average of 176 million (1955–2012). The 2010 cohort is small at 120 million compared to cohorts 2011 and 2012 at about 180 and 160 million, respectively. Preliminary indications suggest that, at 109 million, the 2013 cohort is also small.

According to the stock assessment, the reference biomass was about 1 106 kt and the spawning stock was about 411 kt at the beginning of 2014 (Fig. 2.1.6 and Table 3.1.7). The reference biomass has increased by about 50% in the last 6 years and is now considered to be larger than any time in the last three decades. The spawning stock biomass is more than twice what it was for most of the last decade.

Harvest rate (landings as a proportion of the reference biomass) and mean fishing mortality of 5–10 year old fish are measurements of fishing pressure. Harvest rate describes total effort on the stock and fishing mortality is an indicator of pressure on older cohorts. When gillnetting is uncommon, as it has been recently, fishing mortality is low in relation to harvest rate. The harvest rate has fallen over the last decade from 35–40% to about 20%. Fishing mortality has decreased from 0.75 in 2000 to 0.30 in 2013 (Fig. 2.1.7 and Table 3.1.7) and is now at an historical minimum.

Since recruitment over the last decade has been below average, growth in stocks can be attributed to decreased fishing pressure. Decreased pressure allows cohorts to remain in the reference biomass longer. Consistent with this, the proportion of older fish is larger than in previous decades and the spawning stock has grown more than the reference biomass (Fig. 2.1.6).

In the 2013 assessment reference biomass was estimated at about 1173 kt in the beginning of 2013 (current estimate: 1161 kt).



Mynd 2.1.7. ÞORSKUR. Veði hlutfall og veiðidánarstuðlar ( $F_{5-10}$ ).

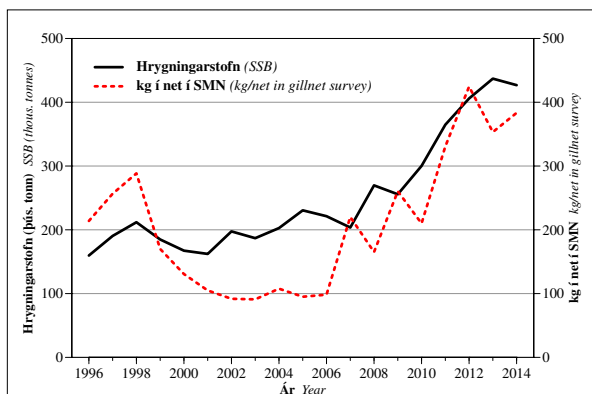
Fig. 2.1.7. *COD*. Harvest rate and fishing mortality ( $F_{5-10}$ ).

In the assessment, indices from both the SMB and SMH are used as input data for models. Estimated stock size of reference biomass in 2014 is about 100 kt lower if only SMB data are used and about 100 kt higher when only SMH data is used. When only age distributed landings are used, the fishing mortality is higher and stock increase is somewhat less than when both landings and reference points are used.

A gillnet survey (SMN) has been conducted annually since 1996 and it provides an indicator of the size of the spawning stock, though it is not used in the assessment. Although the SMN indices are rather different from the estimates of spawning stock biomass, both have grown considerably over the last few years (Figure 2.1.8).

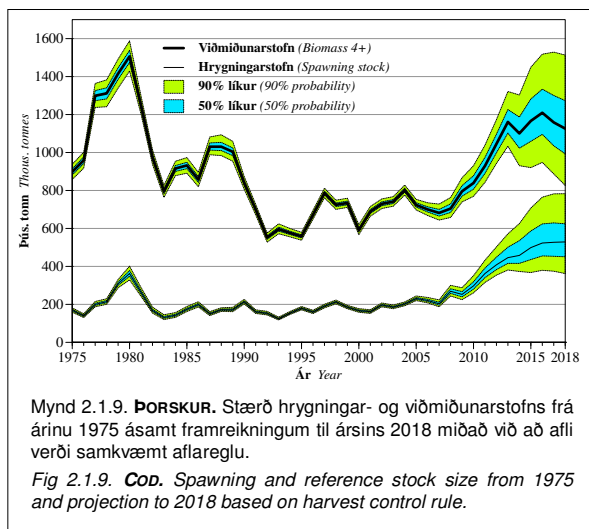
Biomass projections (Figure 2.1.9) include uncertainty in the description of trends in mean weight and size estimates of developing year classes as well as other causes of skew. Projections until the year 2018 are shown, and current biomass estimates describe all the cohorts that will constitute the stock until that time.

Projections suggest that if the HCR is followed the stock should remain as it is now (Fig. 2.1.9).



Mynd 2.1.8. ÞORSKUR. Stærð hrygningarstofns samkvæmt stofnmati og þróun aflabragða í stofnmælingu með netum.

Fig. 2.1.8. *COD*. Spawning stock biomass according to stock assessment and average catches in the gillnet survey.



However, there is much uncertainty and there is a chance that the stock and landings could shrink.

Older fish will likely be a higher proportion of landings in relation to the average from 2004–2013 (Fig. 2.1.10) and age 10 and older fish will comprise more than 10% of landings by weight. Such a high proportion has not been seen since 1983 when net fishing was three times as prevalent as it is now.

### 2.1.6. Advice

According to the current stock estimate a 20% HCR, in which the current year's TAC is considered, leads to a TAC of 218 kt in the quota year 2014/2015 (Table 2.1.2). The MRI emphasizes that before vessel quotas can be allotted it is necessary to incorporate estimates of expected landings that are outside the TAC system. In the quota year 2012/2013 these landings amounted to 8% of the total catch.

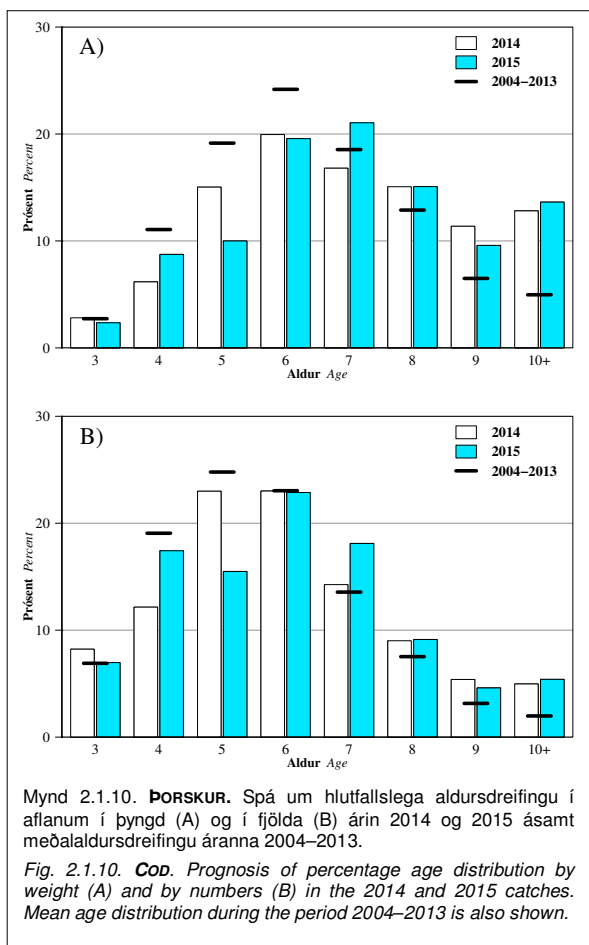
**TAFLA 2.1.2**

**ÞORSKUR. Áhrif á áætlaða stofnstærð (í þús. tonna) miðað við veiðar samkvæmt aflareglu.**

*COD*. Projection of reference stock and spawning stock biomass (thous. tonnes) based on adopted harvest control rule.

Aætll. afli Pred. landings	2014			2015			2016		
	Viðm. stofn B <sub>4+</sub>	Hrygn. stofn SSB	F <sup>1)</sup>	Afla- mark TAC	Viðm. stofn B <sub>4+</sub>	Hrygn. stofn SSB	F <sup>1)</sup>	Viðm. stofn B <sub>4+</sub>	Hrygn. stofn SSB
224	1106	411	0.3	218	1171	442	0.29	1220	477

<sup>1)</sup> Meðalveiðidánartala 5–10 ára þorsks. Average fishing mortality of age groups 5–10.

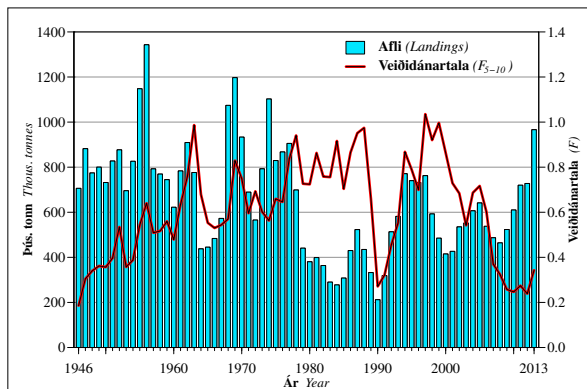




### 2.1.7. The Barents Sea cod stock

Landings of cod from the stocks in the Barents Sea from WWII until 1980 averaged about 800 kt (Fig. 2.1.11). In the 1980s these landings averaged 350 kt despite heavy fishing. Since 2008 landings have nearly doubled in size, and were in 2013 almost 970 kt. Icelanders fished for cod in the Barents Sea and around Svalbard in the first part of the 20th century but then ceased for a long period ending in 1993. In 1998–2013 Icelandic landings have increased from about 1 500 tonnes to just under 18 kt.

Recruitment has been at or near average for the last decade, fishing mortality has decreased (Fig. 2.1.11) and the stock size has grown considerably. Spawning stock is estimated at 1.8 million tonnes, which is less than in 2013. ICES recommends a 2015 TAC according to a catch rule amounting to 894 kt so the fishing mortality will be about 0.41.

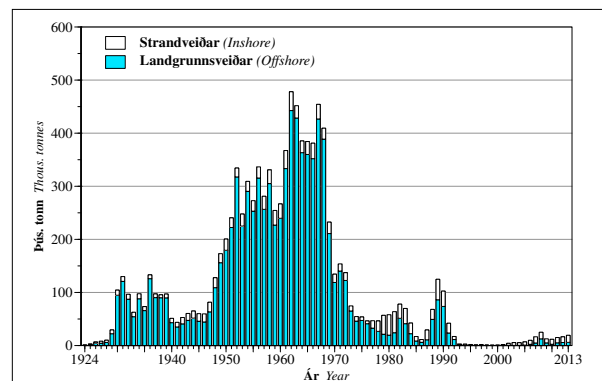


Mynd 2.1.11. ÞORSKUR Í BARENTSHAFI. Landaður afli og veiðidánartölur (F) 5–10 ára frá árinu 1946.

Fig. 2.1.11. *NORTHEAST ARCTIC COD*. Annual landings and  $F_{5-10}$  since 1946.

### 2.1.8. Cod stocks off Greenland

Cod fishing on the Greenland shelf began in earnest in 1925 and landings in 1931 were about 120 kt (Fig. 2.1.12). Landings were small from 1940–1945 after which they increased to a peak in 1962 of about 450 kt. Landings were between 350–430 kt until 1968, then rapidly declined to about 100 kt in 1973. Since then, landings have been small except for the years around 1980 and from 1988–1990. The increased landings in these years was due to large cohorts from 1973, 1984 and 1985. From 1990 until 2001 landings were insignificant, often less than 1 000 tonnes. From 1998–2008 landings increased yearly, reaching a peak in 2008 at 25 kt. This increase in landings until 2008 was partially due to the 2003 cohort, which was estimated at one third the size of the 1984 cohort at age 3. Landings last year exceeded 19 kt, of which about 13 kt was caught in the fjords of West Greenland. ICES recommends that cod fishing in Greenlandic waters remain limited.



Mynd 2.1.12. ÞORSKUR VIÐ GRÆNLAND. Heildarafli (þús. tonna) frá árinu 1924.

Fig. 2.1.12. *GREENLAND COD*. Total landings (thous. tonnes) since 1924.

## 2.2. HADDOCK *Melanogrammus aeglefinus*

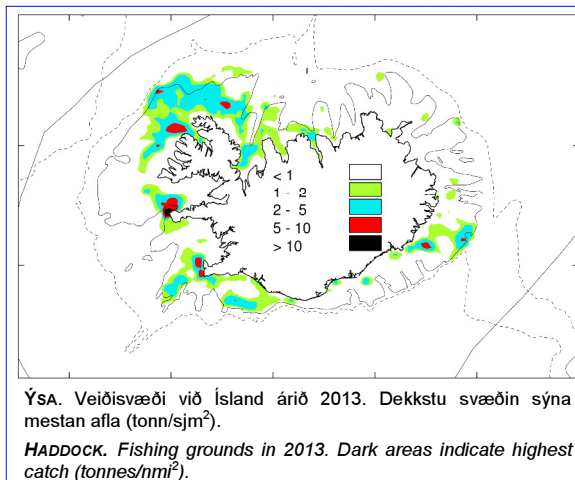


### 2.2.1. Landings and year classes

Haddock landings in 2013 were about 44 kt compared with 46 kt in 2012. TAC for quota year 2013/2014 followed the HCR or 38 kt (Table 2.2.1). In the first 8 months of the current quota year landings were 32 kt, which is the same as that period in quota year 2012/2013.

Figure 2.2.1 shows haddock landings by gear from 1982–2013 and landings since 1950 are listed in Table 3.2.1. Since 1995 haddock landings from longline and seine have increased while bottom trawl has become less important. In 2013, 44% were caught in bottom trawl, 44% on longlines, 11% by seine, and 2% in other gears. Less than 1% of haddock landings were caught in gillnets last year, compared to 10–25% in 1982–1993.

The age distribution of catch in 2013 is presented in Figure 2.2.2 and landings in numbers by age are in Table 3.2.2. The 2007 cohort was most important in 2012 or 42% in number and 43% of biomass. Age 9+



haddock were about 20% of landed biomass but only about 3.5% from 1979–2012. The proportion comprised of age 5 and younger was about 27% of biomass and has not been lower since 1983, except for in 2009 and 2010 when the large 2003 cohort was dominant.

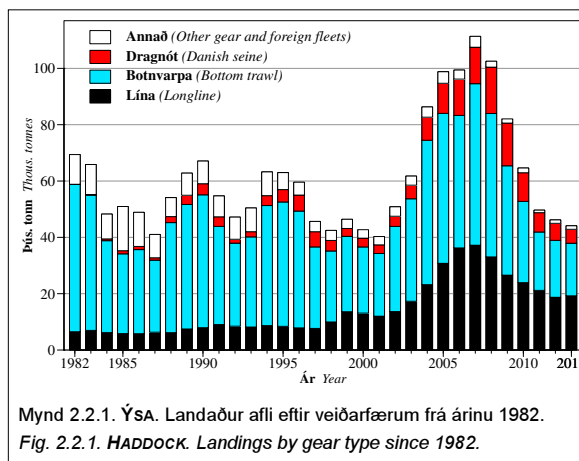
Results of a study of haddock discards indicate that from 1991–1998 discard amounted to 8–20% of numbers of landed fish, in 2001–2010 it was 2–6%, and it was less than 1% in 2011–2013 when there was very little of young haddock.

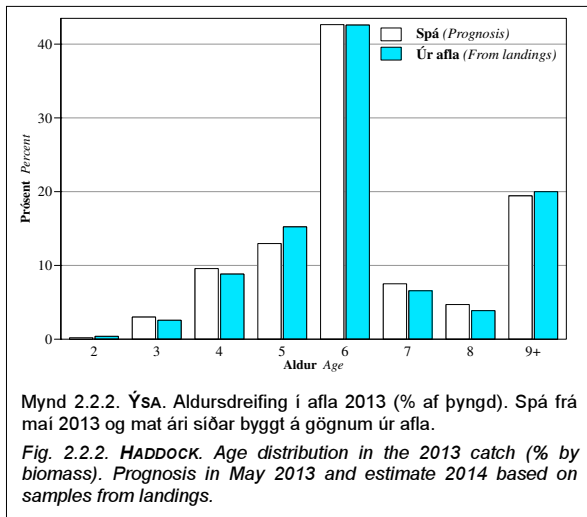
### 2.2.2. Mean weight and maturity

Mean weight at age (Table 3.2.3) is calculated from SMB data. Mean weight was very low from 2004–2009 but increased considerably from 2010–2013. Mean weight of age 6+ in 2014 is near average whereas mean weight of younger fish is higher. Mean weight in haddock stock is somewhat variable and is usually lower in large cohorts. The 2003 cohort was very large, and therefore also rather light. The youngest haddock cohorts are small, so the mean weight is high. The low mean weight of large cohorts is apparent at age 2 but after that growth

TAFLA 2.2.1.					
ÝSA. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (þús. tonn).					
HADDOCK. TAC recommended by the Marine Research Institute, national TAC, and landings (thous. tonnes).					
Ár	Tillaga	Aflamark	Afli	Afli	Afli alls
Year	Rec. TAC	National TAC	Íslendinga Landings (Iceland)	annarra Landings (others)	Total landings
1984	55	60	47	1	48
1985	45	60	50	1	51
1986	50	60	47	1	48
1987	50	60	40	1	41
1988	60	65	53	1	54
1989	60	65	62	1	63
1990	60	65	66	1	67
1991 <sup>1)</sup>	38	48	40	1	41
1991/92	50	50	47	1	48
1992/93	60	65	47	1	48
1993/94	65	65	56	1	57
1994/95	65	65	60	1	61
1995/96	55	60	53	1	54
1996/97	40	45	50	1	51
1997/98	40	45	37	1	38
1998/99	35	35	45	1	46
1999/00	35	35	41	1	40
2000/01	30	30	39	1	40
2001/02	30	41	44	1	45
2002/03	55	55	55	1	56
2003/04	75	75	78	1	79
2004/05	90	90	96	1	97
2005/06	105	105	97	1	98
2006/07	95	105	100	2	102
2007/08	95	100	110	1	111
2008/09	83	93	89	1	90
2009/10	57	63	68	1	69
2010/11	45	50	50	0	51
2011/12	37	45	49	0	50
2012/13	32	36	40	1	41
2013/14	38 <sup>2)</sup>	38			
2014/15	30.4 <sup>2)</sup>				

<sup>1)</sup> Tímabilið janúar–ágúst 1991. January–August 1991.  
<sup>2)</sup> 40% aflareгла. 40% harvest control rule.





often is similar to that in smaller cohorts. From 2005–2009 all cohorts experienced slow growth, but the stock was very large. From 2010–2012 growth rate increased much but decreased again in 2013, which led to a lower mean weight in 2014 than was predicted in the last assessment.

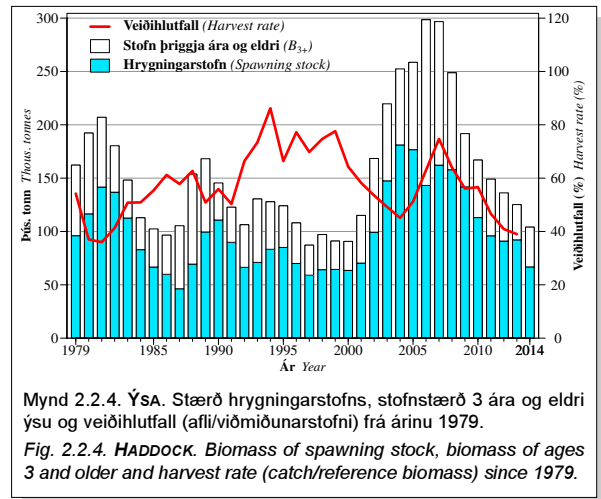
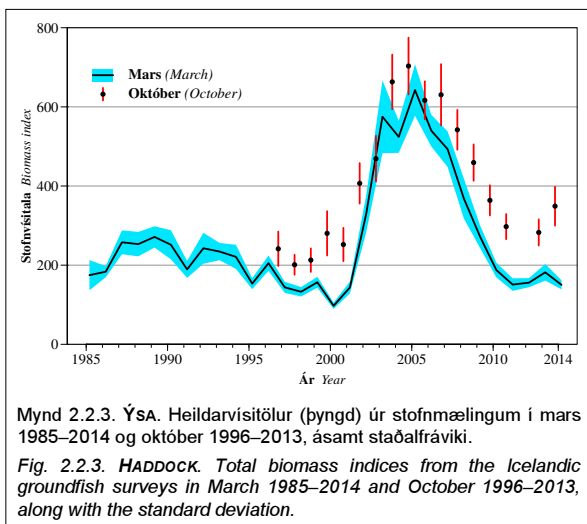
Weight at age from commercial catches (Table 3.2.4) follows mean weight in stock surveys rather well. But, mean weight of the youngest cohorts is much higher than in the surveys because fishing targets only haddock of a certain size.

Maturity at age is calculated from SMB data (Table 3.2.5). Proportion mature was low from 1985–1990, high from 1991–2002 and has decreased since then. This is apparently due to a growing proportion of the catch consisting of northern haddock which are smaller than haddock from southern waters, though growth rates are similar.

**2.2.3. Stock surveys**

All ages of haddock are well represented in the groundfish surveys so there is a significant estimate of cohort size from the first year of life.

Age disaggregated indices from the surveys are shown in Tables 3.2.6 and 3.2.7. In the SMB cohorts



from 1998–2000, 2002, 2003 and 2007 were large, cohorts from 2001 and 2008–2013 were small, and those from 2004–2006 near average. Biomass indices from surveys (Figure 2.2.3) rose much from 2001–2005 when the biomass of the large cohorts of 1998–2000 grew quickly. Biomass indices were very high from 2004–2007 and proportional observational error was low due to the even distribution of haddock in Icelandic waters. The biomass index dropped rapidly from 2007–2010 and has changed little since, despite poor recruitment. The biomass index from the SMH has decreased less than that from the SMB data and this indicates a better condition of the stock.

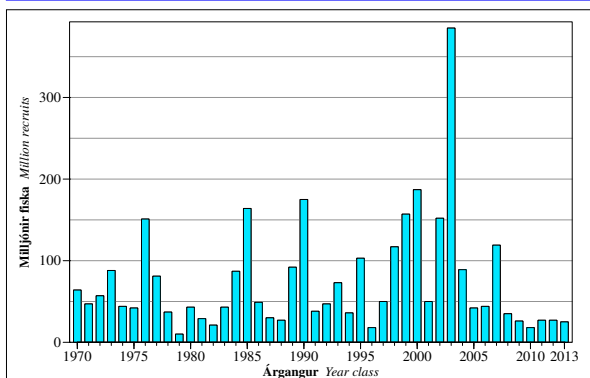
**2.2.4. Stock assessment assumptions**

Various models, which use age disaggregated landings data and indices from SMB and SMH data, are used in the estimation of haddock stocks. The assumed mortality rate from other causes than recorded landings is 0.2 for the season. In projections it is assumed the growth will be in 2014 as it was in 2013, when it was near the historical average from 1985–2012. So, expected landings in quota year 2013/2014 should meet the TAC requirements.

**2.2.5. Stock status and prognosis**

The haddock stock has declined rapidly since 2006 as the large cohorts from 1998–2003 have disappeared from the stock and smaller cohorts have replaced them. All cohorts since 2005, except that from 2007, are small and despite moderate fishing pressure, the stock has decreased. All assessment models indicate that the stock will decrease further when the 2007 cohort leaves the stock and the younger cohorts become the larger proportion. The importance of the 2007 cohort is obvious when considering that in 2013 it was nearly 43% of landings and is expected to be about 35% of the landed biomass in 2014.

Although all models suggest that the stock will continue to decline in coming years, there is a



Mynd 2.2.5. Ýsa. Áætluð stærð árganga við tveggja ára aldur (í milljónum).

Fig. 2.2.5. HADDOCK. Estimated size of year classes at age 2 (in millions).

difference between results based on SMB data and those based on SMH data. Models based on SMB predict a smaller stock and the biomass indices from the SMB have decreased faster than those from the SMH. The final stock assessment is based on a model that uses both data sets to balance this difference.

Age 3+ haddock at the beginning of 2014 are estimated at 104 kt and the spawning stock biomass as 67 kt (Figure 2.2.4 and Table 3.2.8). The 2014 stock assessment indicates a similar status as in 2013. Mean weight at age was lower than predicted but the numbers of fish were higher. The catch/reference for haddock in 2013 (Figure 2.2.4 and Table 3.2.8) is an estimated 40%, which is in agreement with the HCR.

Cohorts from 2008–2013 are all estimated to be little (Figure 2.2.5), on average about 27 million age 2 recruits. This number would mean a maximum yield of about 23 kt from each. There is a tendency to underestimate the size of small cohorts so the yield could prove to be somewhat more than 23 kt per cohort.

It is expected that the 2007 cohort and fish age 9 and older will comprise the largest proportion of landings in 2014 and 2015, or 50 and 38% of landings, respectively (Figure 2.2.6).

When the haddock stock was at a maximum the estimation of growth rate was the largest source of uncertainty. There remains some uncertainty about growth, but more so about the size of cohorts, as evidenced by the more than 30% difference between assessments based on SMB as opposed to SMH data.

## 2.2.6. Advice

Table 2.2.1 shows MRI recommendations, official TAC, and haddock landings since 1984.

The Icelandic government adopted an HCR for haddock in 2013. According to this rule, the TAC for the coming quota year is 40% of the estimated biomass of haddock 45 cm and larger (reference stock) at the beginning of the next calendar year, which is estimated at 76 kt (Table 3.2.8).  $B_{lim}$  of the

TAFLA 2.2.2.

Ýsa. Áhrif á áætlaða stofnstærð (í þús. tonna) miðað við veiðar samkvæmt aflareglu.

HADDOCK. Projection of stock and spawning stock biomass (thous. tonnes) based on adopted harvest control rule.

2014				2015		2016		
Áætl. afli Pred. landings	Stofn 3+ B <sub>3+</sub>	Hrygn. stofn SSB	F <sup>1)</sup>	Afla- mark TAC	Stofn 3+ B <sub>3+</sub>	Hrygn. stofn SSB	Hrygn. Stofn 3+ B <sub>3+</sub>	Stofn SSB
35	104	67	0.32	30.4 <sup>2)</sup>	90	70	78	61

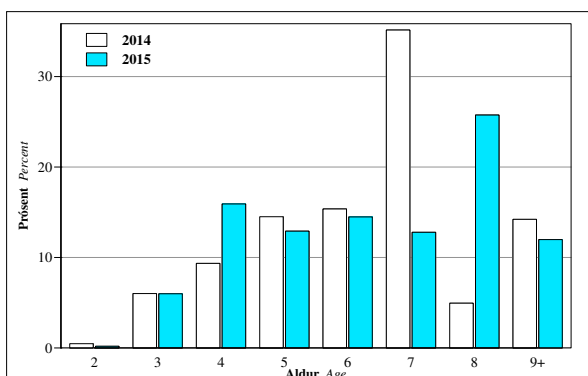
1) Meðalveiðidánartala 4–7 ára ýsu. Mean fishing mortality of age groups 4–7.

2) Aflamark fiskveiðiárið 2014/2015 samkvæmt aflareglu.

TAC in quota year 2014/2015 based on harvest control rule.

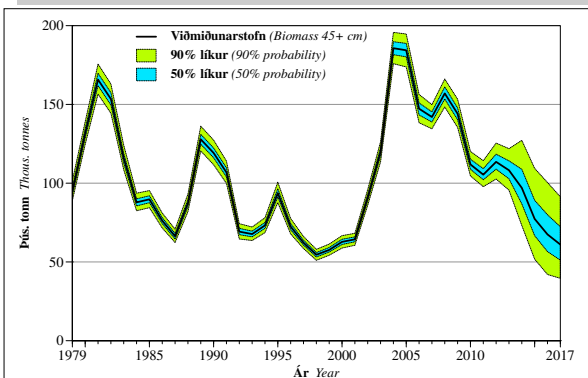
spawning stock, according to the HCR, is defined as the historical minimum of 45 kt.  $B_{trigger}$  in 2013 was defined as the same. According to HCR, the harvest rate (catch/reference biomass) is lowered when the spawning stock is estimated lower than  $B_{trigger}$ .

According to the current assessment, a 40% HCR is 30 400 tonnes in quota year 2014/2015. Estimated effects of this TAC on stock size are shown in Table 2.2.2 and Figure 2.2.7 shows projections of stock size until 2016, following the HCR. The stock will continue to decrease in coming years due to poor recruitment.



Mynd 2.2.6. Ýsa. Spá um aldersdreifingu (% af þyngd) í afla 2014 og 2015.

Fig. 2.2.6. HADDOCK. Prognosis of percentage age distribution (in biomass) in 2014 and 2015 landings.



Mynd 2.2.7. Ýsa. Stærð viðmiðunarstofns frá árinu 1979 ásamt framreikningum til ársins 2017 miðað við að afli verði samkvæmt aflareglu.

Fig 2.2.7. HADDOCK. Reference biomass (45 cm and larger) from 1979 and projection to 2017 based on harvest control rule.

## 2.3. SAITHE *Pollachius virens*

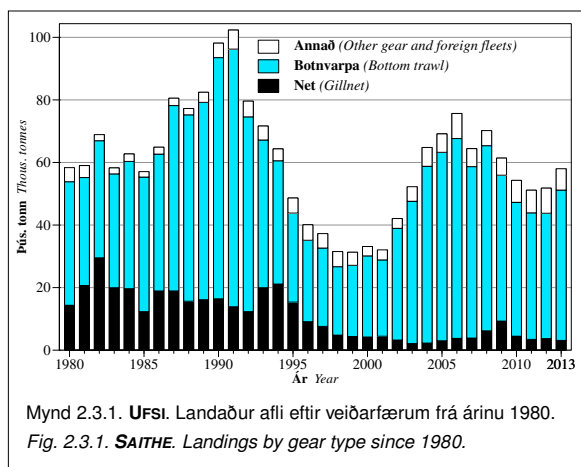


### 2.3.1. Landings and cohort distribution

Saithe landings in 2013 were 58 kt compared to 52 kt in 2012 (Fig. 2.3.1 and Table 3.3.1). In the last decade, Icelandic landings reached a minimum of just over 30 kt in 1998–2001. From 2001, landings increased to 76 kt in 2006, but decreased thereafter. TAC in 2012/2013 was 50 kt but total landings were 52 kt (Table 2.3.1).

Bottom trawl accounted for 84% of total landings in 2013, while nets caught 5%, consistent with gear use trends since 2000. A significant change in preferred saithe gear was seen in the 1990s when gillnet proportions went from 26% between 1982–1996 to less than 10% after that period.

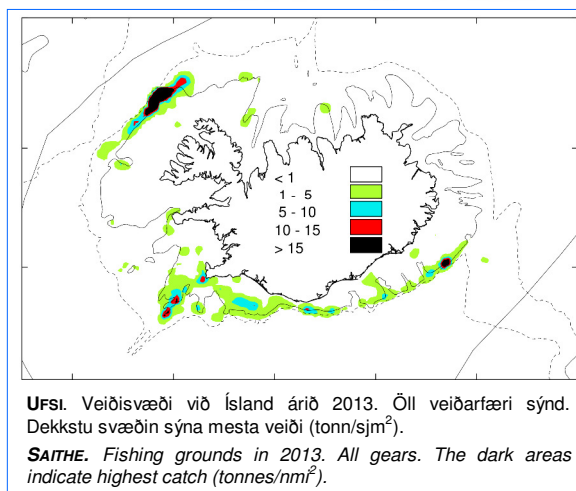
Figure 2.3.2 shows landings by age in 2013 and prognosis of the spring 2013 assessment. Table 3.3.2 shows catch in numbers at age since 1980. The proportion represented by age 4 and 5 saithe in landings was somewhat higher than both expectations and the historical average, but that of other ages was lower.



### 2.3.2. Mean weight and maturity

Mean weight at age was low from 2005–2009 but has increased, especially among age 6–8 saithe which are now close to the historical average (Table 3.3.3). There is a negative correlation between cohort size and mean weight in saithe. Also, mean weight can stagnate or decrease with age. This trend is thought to result from strong recruitment of slow-growing saithe into Icelandic waters. It is difficult to determine whether weather density and environmental conditions or recruitment from other waters explains this decrease in mean weight.

Mean weight from the SMB shows a similar pattern as mean weight in landings (Tables 3.3.3 and 3.3.4). However, in the survey there is more variation of mean weight within each age group than in landings. The assessment calculates the size of the



spawning and reference stock based on weight in landings of age groups.

Mean weights of ages 4–9 in landings in 2014 are predicted with a model based on mean weights for

**TAFLA 2.3.1.**  
UFSI. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (þús. tonna).

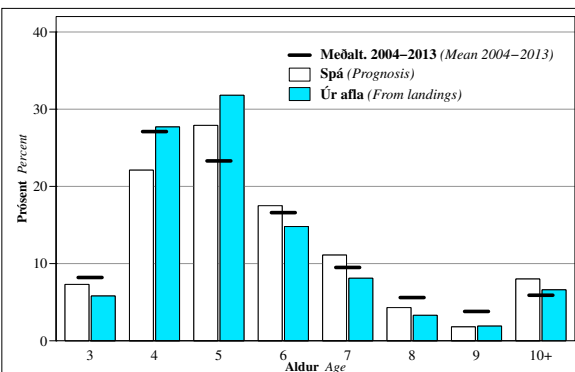
SAITHE. TAC recommended by the Marine Research Institute, national TAC, and landings (thous. tonnes).

Ár Year	Tillaga Rec. TAC	Aflamark National TAC	Afli Íslendinga Landings (Iceland)	Afli annarra þjóða Landings (others)	Afli alls Total landings
1984	65	70	60	2	63
1985	60	70	55	2	57
1986	60	70	64	1	65
1987	65	70	78	2	81
1988	75	80	74	3	77
1989	80	80	80	3	82
1990	90	90	95	3	98
1991 <sup>1)</sup>	65	65	69	2	71
1991/92	70	75	86	2	88
1992/93	80	92	76	2	78
1993/94	75	85	67	2	69
1994/95	70	75	50	1	61
1995/96	65	70	40	1	41
1996/97	50	50	37	1	38
1997/98	30	30	32	1	33
1998/99	30	30	31	1	32
1999/00	25	30	30	0	30
2000/01	25	30	32	0	32
2001/02	25	37	36	0	36
2002/03	35	45	47	0	47
2003/04	50	50	56	0	56
2004/05	70	70	70	1	71
2005/06	80	80	78	0	78
2006/07	80	80	66	0	66
2007/08	60	80	68	0	68
2008/09	50	65	62	0	62
2009/10	35	50	58	0	58
2010/11	40	50	52	1	52
2011/12	45	52	50	1	51
2012/13	49	50	51	1	52
2013/14	57 <sup>2)</sup>	57			
2014/15	58 <sup>2)</sup>				

<sup>1)</sup> Tímabilið janúar–ágúst 1991. January–August 1991.

<sup>2)</sup> 20% aflaregla. 20% harvest control rule.





Mynd 2.3.2. **UFSI.** Aldursdreifing í afla 2013 (% af fjölda) borin saman við spá frá í fyrra. Meðalaldursdreifing síðustu tíu ára er jafnframt sýnd.

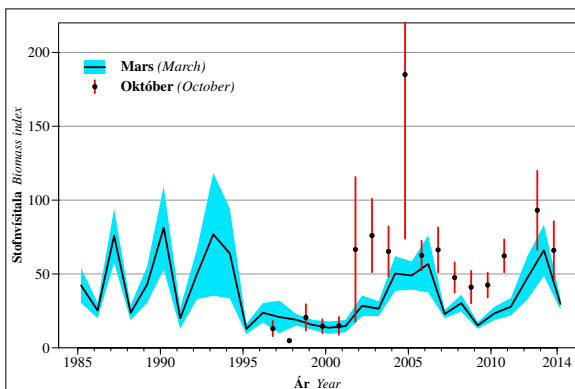
Fig. 2.3.2. **SAITHE.** Age distribution in the 2013 catch (% by number) compared to last year's prediction. Mean age distribution from the last ten years is also shown.

each cohort in landings from the previous year and mean weight in the survey from the current year. Mean weights for ages 3 and 10–14 are estimated from the average of the last three years. In projections, the mean weight in landings is assumed to be similar as in 2014.

Information about maturity at age comes from surveys, and there is considerable variation in proportion mature between years (Table 3.3.5). This is related to where saithe are caught in the survey. When evaluating the spawning stock size, maturity is estimated using a model based on spring survey (SMB) data and projections are based on the current year's model.

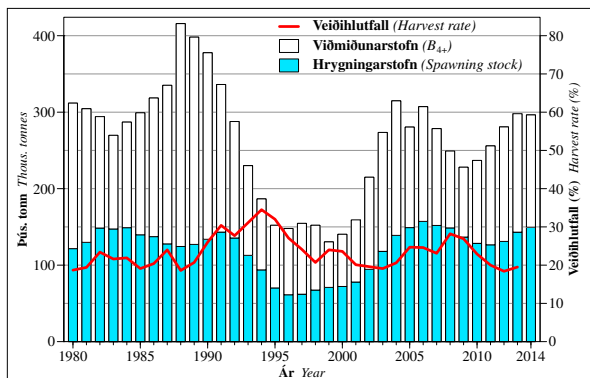
### 2.3.3. Surveys

Saithe is poorly sampled by bottom trawl because it is a schooling fish that is often distributed well above the bottom. This is reflected in varying survey indices from year to year, especially in 1996 (Fig. 2.3.3). Variation in survey indices between years is the main source of uncertainty in the assessment of saithe. Despite the poor sampling of saithe in the survey, comparison of previous years shows that the



Mynd 2.3.3. **UFSI.** Heildarvísitölur (þyngd) úr stofnmælingum í mars 1985–2014 og október 1996–2013, ásamt staðalfrávik.

Fig. 2.3.3. **SAITHE.** Total biomass indices from the Icelandic groundfish surveys in March 1985–2014 and October 1996–2013, along with the standard deviation.



Mynd 2.3.4. **UFSI.** Stærð hrygningarstofns og viðmiðunarstofns og veðihlutfall (aflí/viðmiðunarstofn) frá árinu 1980.

Fig. 2.3.4. **SAITHE.** Spawning stock biomass and reference biomass (ages 4+) and harvest rate (landings/reference stock) since 1980.

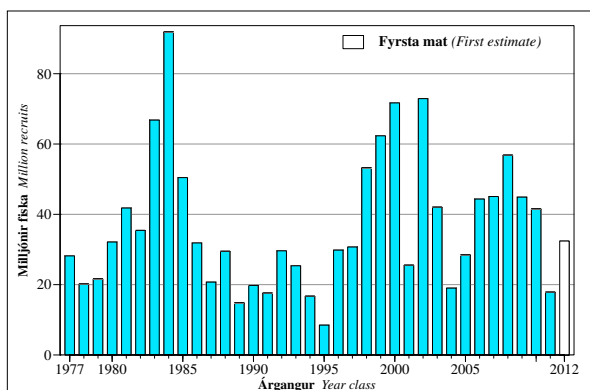
SMB indices are usable (Table 3.3.6) for estimation of stock size. Total SMB biomass indices were low from 2007–2011, increased from 2012–2013, then decreased in 2014 (Fig. 2.3.3). The fall survey (SMH) and CPUE data show similar trends.

### 2.3.4. Stock status and prognosis

A statistical catch-at-age model is used for the estimation of stock size based on commercial and SMB catch at age data. Selectivity is fixed within three periods: 1980–1996, 1997–2003, and from 2004 to present. The beginning of the second period is marked by the decreased proportion of gillnets since 1997. The beginning of the third period is based on indications in the data that selectivity has shifted toward smaller fish in recent years.

The spawning stock in early 2014 was 150 kt and the reference stock (age 4 and older) was 296 kt (Fig. 2.3.4 and Table 3.3.7). The reference biomass is estimated above the historical mean, similar size to that in 2004–2006, but smaller than in 1988–1991. Harvest rate (landings/reference biomass) in 2013 is estimated at 19%.

Recruitment is estimated as the number of age 3 saithe. Cohorts from 1998–2000 and 2002 were estimated to be large but recruitment has been around average since 2002 (Fig. 2.3.5). Good recruitment from 1998–2002 caused the reference

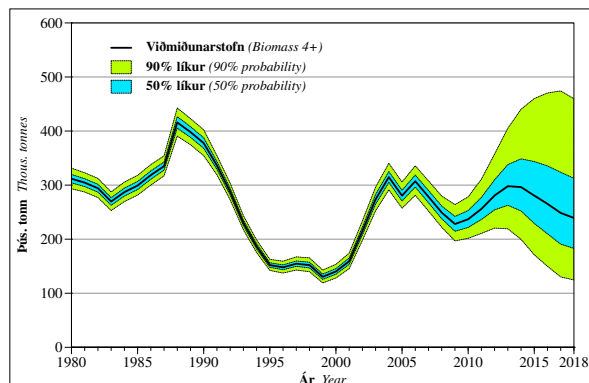


Mynd 2.3.5. **UFSI.** Stærð árganga við þriggja ára aldur (í milljónum).  
Fig. 2.3.5. **SAITHE.** Size of year classes at age 3 (in millions).

stock to be large from 2003–2007, when landings averaged 65 kt and harvest rate averaged 22%. As these cohorts disappeared from the stock, the fishing pressure was not decreased so the harvest rate increased in 2008 and 2009 to 28%.

Projections based on the HCR assume landings in 2014 will be about 57 kt, fishable stock at the beginning of 2015 will be about 272 kt, and spawning stock will be 157 kt (Fig. 2.3.6).

The statistical catch-at-age model gives a rather higher stock size than other models, but the difference is not as pronounced as in recent years.



Mynd. 2.3.6. UFSI. Stærð viðmiðunarstofns ásamt framreikningum miðað við að afli verði samkvæmt aflareglu.

Fig 2.3.6. SAITHE. Reference biomass and projection based on harvest control rule.

TAFLA 2.3.2.  
UFSI. Áhrif á áætlaða stofnstærð (þús. tonn) miðað við veiðar samkvæmt aflareglu.

SAITHE. Projection of stock and spawning stock biomass (thous. tonnes) based on adopted harvest control rule.

2014			2015			2016	
Áætl. afli Pred. landings	Viðm. stofn $B_{4+}$	Hrygn. stofn SSB	Aflamark TAC	Viðm. stofn $B_{4+}$	Hrygn. stofn SSB	Viðm. stofn $B_{4+}$	Hrygn. stofn SSB
57	296	150	58	272	157	259	156

### 2.3.5. Advice

Table 2.3.1 shows TAC recommendations from MRI, official TAC, and saithe landings since 1984.

In April 2013, the Icelandic government officially adopted a management policy for saithe fishing that ICES deems in accordance with a precautionary approach to stock management, and is in accordance with the Icelandic government's policy for sustainable fisheries and maximum sustainable yield. This management policy is based on a harvest control rule that sets as the TAC for the coming quota year as the average of the current TAC and 20% of the reference stock of the current quota year. If the spawning stock goes below  $B_{\text{trigger}}$  (65 kt) the harvest rate is decreased. For the management of the saithe fishery, the HCR will lead to less fluctuations in TAC between years, compared to the fluctuations in the stock assessment.

According to the stock assessment, a 20% HCR, taking into account the TAC of the current quota year, will yield 58 kt for the quota year 2014/2015. Prognosis based on this TAC on the development of stock size is shown in Table 2.3.2.

## 2.4. GOLDEN REDFISH *Sebastes norvegicus*



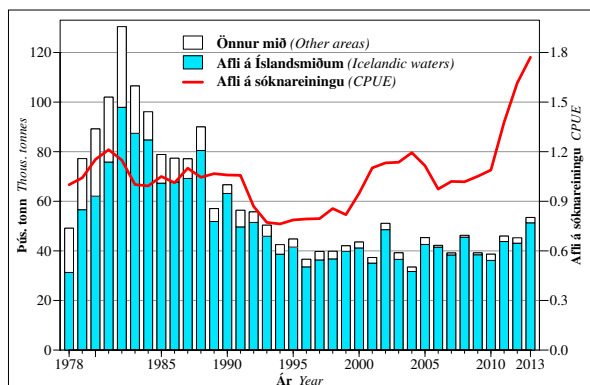
### 2.4.1. Landings, effort, and year classes

Golden redfish in the East Greenland/Iceland/Faroe Islands region is considered a single stock. For two decades 90–98% of all golden redfish landings have come from Icelandic waters (Table 3.4.1 and Fig. 2.4.1). In 1982 landings totalled 130 kt, which is an historical record, but after that landings decreased steadily until 1996. From 1996–2012 landings were between 33 and 48 kt. Total landings in 2013 were 53 kt, which is about 8 kt more than the previous year.

Annual landings in Greenland increased from over 200 tonnes in 2009 to about 1 700 tonnes from 2010–2013, which is the largest catch since the early 1990s. Annual landings in the Faroe Islands have decreased considerably in recent years to 400–600 tonnes from 2006–2013.

Most golden redfish landed from Icelandic waters is caught by bottom trawl. CPUE in this gear was relatively steady from 1978 until 2010, with a slight decrease in 1992–1999 (Fig. 2.4.1). In the last three years CPUE has increased rapidly and in 2013 it was the highest since the commencement of monitoring in 1978.

Two strong cohorts (1985 and 1990) comprised the majority of landings from 1995–2008. In recent years, these cohorts have decreased in the stock and in 2013 they were replaced by cohorts from 1998–2004 in landings (Fig. 2.4.2).



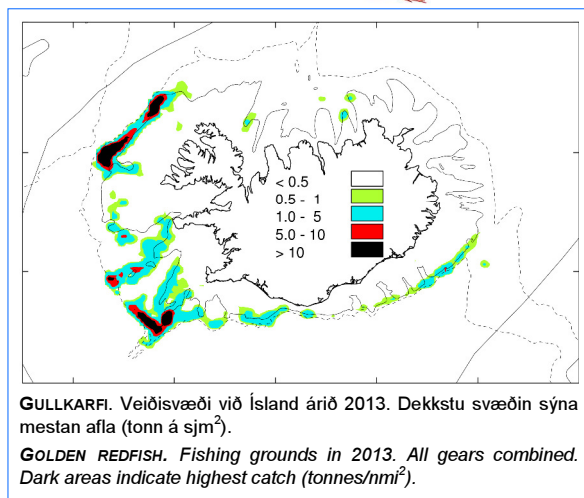
Mynd 2.4.1. GULLKARFI. Landaður afli á svæðinu Austur-Grænland/Ísland/Færeyjar og vísitala afli á togtíma frá árinu 1978.

Fig. 2.4.1. GOLDEN REDFISH. Landings from East Greenland, Icelandic and Faroese waters and CPUE index since 1978.

### 2.4.2. Surveys

Biomass indices from the spring (SMB) and fall (SMH) surveys are shown in Figure 2.4.3.

The biomass index from SMB decreased rapidly from 1985 until 1995. Since 1996 the index has increased with some fluctuations, and indices of the last five years have been the highest since 1985. Golden redfish under 30 cm have been rare in



GULLKARFI. Veiðisvæði við Ísland árið 2013. Dekkstu svæðin sýna mestan afla (tonn á sjm<sup>2</sup>).

GOLDEN REDFISH. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nmi<sup>2</sup>).

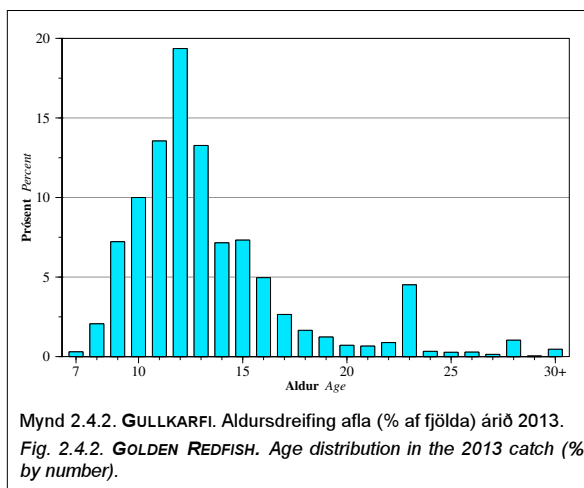
landings in recent years.

SMH biomass indices represent a shorter time period than those in SMB. As with the SMB, indices have steadily increased in the SMH since 2000 and in 2012 and 2013 they were the highest they have been since monitoring began in 1996.

Age disaggregated indices from the SMH indicate that cohorts from 1996–2004 are larger than average. Unlike the strong cohorts of 1985 and 1990, those from 1996–2004 were not observed as young fish in the survey, which suggests that increase in the fishable stock is due to recruitment from other waters. Age disaggregated indices also indicate that 2006–2010 cohorts are the smallest since 1996.

### 2.4.3. Stock assessment assumptions

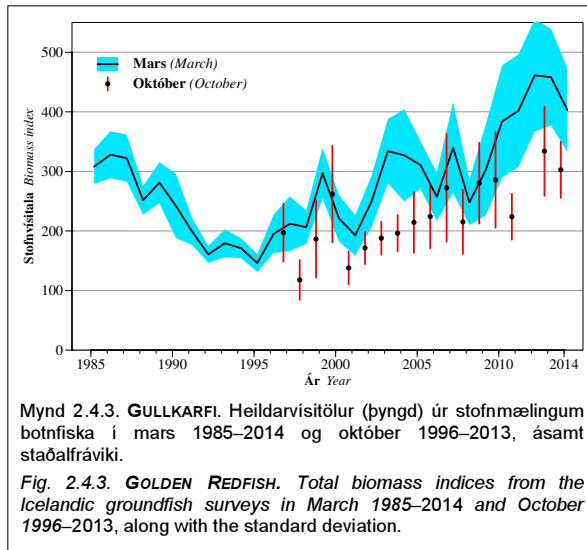
The Gadget catch-at-age model is used in estimating golden redfish stock in the East Greenland/Iceland/Faroe Islands region (Gadget, see Appendix 5.1). The model uses age and length data from landings in the region as well as survey data



Mynd 2.4.2. GULLKARFI. Aldursdreifing afli (% af fjölda) árið 2013.

Fig. 2.4.2. GOLDEN REDFISH. Age distribution in the 2013 catch (% by number).





from Greenland and Iceland. The model also incorporates trends in growth rate since 2000 and golden redfish grows and reaches maturity faster than they did before the turn of the last century.

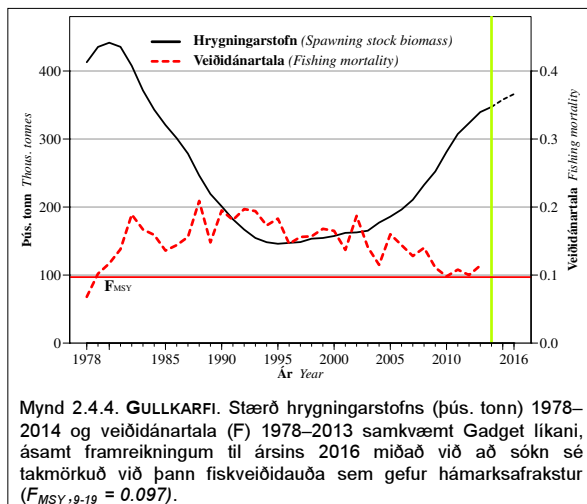
**2.4.4. Stock status and projections**

Figure 2.4.4 shows trends in the spawning stock and fishing mortality for ages 9–19. Fishing mortality averaged 0.16 from 1980–2005, but later decreased and was 0.11 in 2013.

The spawning stock decreased rapidly from 1985 to 1995. From 2005 until 2009 the stock grew slowly until a recent surge in growth to nearly the level it was in the beginning of the 1980s.

Surveys from Iceland and Greenland show poor recruitment in recent years. Cohorts from 2006–2010 in SMH have not been smaller since 1996. Golden redfish of under 30 cm have been rare in surveys from Iceland and Greenland in recent years.

If the HCR is followed the spawning stock



should increase somewhat in the coming years unless recruitment is very poor. Further analysis of recruitment data from Greenland is necessary before they can be included in the stock assessment. The projections in Figure 2.4.4 are based on average recruitment since 2006, but this is likely too optimistic. However, assumptions about recruitment have little effect on TAC for the next year, according to the HCR.

**2.4.5. Advice**

Table 2.4.1 shows MRI recommendations, Icelandic TAC, and total landings of golden redfish since the quota year 1994/1995.

At the request of the Minister of Fisheries, the MRI has developed a management plan and harvest control rule (HCR) for golden redfish in the Greenland/Iceland/Faroe Islands region. This was completed in February of 2014 after ICES reviewed the proposal. The HCR is deemed in accordance with a precautionary approach and will lead to maximum sustainable yield. The HCR was formally adopted by the Icelandic government in March of 2014, but an agreement with Greenland and the Faroe Islands has not been confirmed.

A technical review of the assessment model for the golden redfish stock was conducted by ICES in January, 2014 and the reference points  $B_{lim}$  and  $B_{trigger}$  were defined. These reference points refer to the spawning stock and are 160 kt (which is the historical minimum of the spawning stock) and 220 kt, respectively. The HCR aims to maximize

**TAFLA 2.4.1**  
GULLKARFI. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (þús. tonn).  
GOLDEN REDFISH. TAC recommended by the Marine Research Institute, national TAC, and landings (thous. tonnes).

Ár Year	Tillaga Rec. TAC	Aflamark National TAC	Afli á Íslandsmiðum Landings from Icelandic waters	Afli á öðrum miðum <sup>1)</sup> Landings (other areas) <sup>1)</sup>	Heildar-afli Total landings
1994/95	25	77 <sup>2)</sup>	40	3	43
1995/96	25	65 <sup>2)</sup>	37	2	39
1996/97	30	65 <sup>2)</sup>	36	3	39
1997/98	35	65 <sup>2)</sup>	35	3	38
1998/99	35	65 <sup>2)</sup>	41	1	42
1999/00	35	60 <sup>2)</sup>	37	2	39
2000/01	35	57 <sup>2)</sup>	37	2	39
2001/02	30	65 <sup>2)</sup>	46	2	48
2002/03	35	60 <sup>2)</sup>	42	2	44
2003/04	35	57 <sup>2)</sup>	30	1	31
2004/05	35	57 <sup>2)</sup>	40	3	43
2005/06	35	57 <sup>2)</sup>	38	1	39
2006/07	35	57 <sup>2)</sup>	42	1	43
2007/08	35	57 <sup>2)</sup>	35	1	36
2008/09	30	50 <sup>2)</sup>	44	1	45
2009/10	30	50 <sup>2)</sup>	36	2	38
2010/11	30	37.5	39	2	41
2011/12	40	40	44	2	46
2012/13	45	45	46	2	48
2013/14	52	52			
2014/15		48 <sup>3)</sup>			

<sup>1)</sup> Almanaksárið. Calendar year.  
<sup>2)</sup> Sameiginlega fyrir gull- og djúpkarfa. Both *Sebastes norvegicus* and demersal *S. mentella*.  
<sup>3)</sup> Aflaregla. Harvest control rule.

yield while maintaining a fishing mortality of  $F_{MSY,9-19}=0.097$ , and fishing mortality is lowered if the stock drops below  $B_{trigger}$ .

According to the available stock assessment, the HCR will yield 48 kt for the quota year 2014/2015 in the East Greenland/Iceland/Faroe Islands region.

---

## 2.5. DEEP SEA AND PELAGIC REDFISH *Sebastes mentella*



### 2.5.1. Population structure

Deep sea redfish on the continental slopes of Greenland, Iceland, and the Faroe Islands and pelagic redfish in the Greenland Sea and surrounding waters is a single species. Targeting of deep sea redfish began in the early 1970s, whereas pelagic redfish have been targeted since 1982. ICES distinguishes three biologically separate *S. mentella* populations:

1. Deep sea redfish on the Icelandic slope.
2. Pelagic redfish in the Greenland Sea above 500m.
3. Pelagic redfish in the Greenland Sea below 500 m.

The shelf and slope of Greenland are thought to be the nursery for redfish from these populations.

Management of redfish exploitation by depth is not considered feasible, so recommendations are provided by region. ICES has suggested four management areas for fishing targeting deep sea redfish:

1. Icelandic slope.
2. South-western Greenland Sea.
3. North-eastern Greenland Sea.
4. Waters off East Greenland.

The regional management strategy is based on the assumption that targeting of the species in the north-eastern Greenland Sea is conducted mostly below 500 m of depth and fishing in the south-western Greenland sea is mainly shallower than 500 m.

Pelagic redfish are targeted in Icelandic and Greenlandic waters, as well as in international zones in the Greenland Sea. The North East Atlantic Fisheries Commission (NEAFC) oversees management of fishing and ICES provides advice.

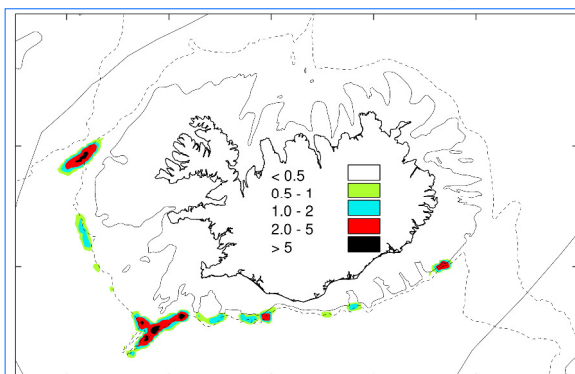
In this chapter the three populations—deep sea redfish on the Icelandic slope, pelagic redfish above 500 m (pelagic), and pelagic redfish below 500 m (demersal)—are discussed separately.

### 2.5.2. Deep sea redfish on the Icelandic slope

Deep sea redfish in Icelandic waters has mostly been targeted by bottom trawl. In the 1990s there was some effort to use pelagic trawls but this has ceased. The preferred fishing grounds are on the slope at depths of 450–600 m, from Víkurál west of the West Fjords, south and east to the western edge of the Faroe Islands Ridge.

#### 2.5.2.1. Landings and effort

Estimated deep sea redfish landings in 2013 were nearly 9 000 tonnes, which is about 3 000 tonnes less than the previous year. This is the lowest catch since 1980 (Table 3.5.1 and Fig. 2.5.1). Landings were largest in 1994 at about 57 kt, ranged from 29–38 kt from 1996–2000, and 12–28 kt from 2001–2012. In



DJÚPKARFI. Veiðisvæði við Ísland árið 2013. Dökkstu svæðin sýna mestan afla (tonn á sjm<sup>2</sup>).

DEMERSAL DEEP SEA REDFISH. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nmi<sup>2</sup>).

the last three years, landings have decreased considerably.

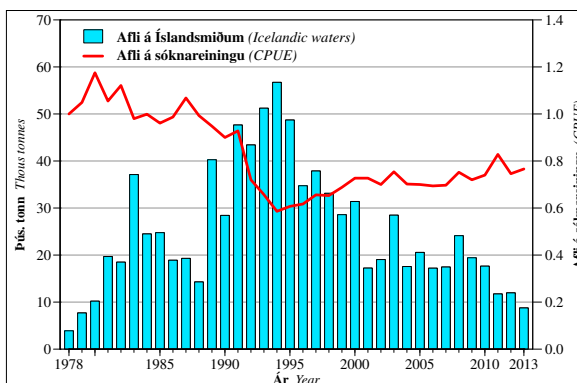
CPUE in bottom trawl rapidly decreased from 1986–1994 then increased somewhat in 2000 (Fig. 2.5.1). From 2000–2013 CPUE changed little.

#### 2.5.2.2. Deep sea redfish stock status

Biomass indices from the fall groundfish surveys (SMH) of 2000–2013 are shown in Figure 2.5.2. Biomass was highest in 2001 but declined much by 2003. Although there is variation between years, this index has decreased steadily since 2006. Small fish (less than 30 cm) have also decreased in this period, which suggests poor recruitment into the fishable stock.

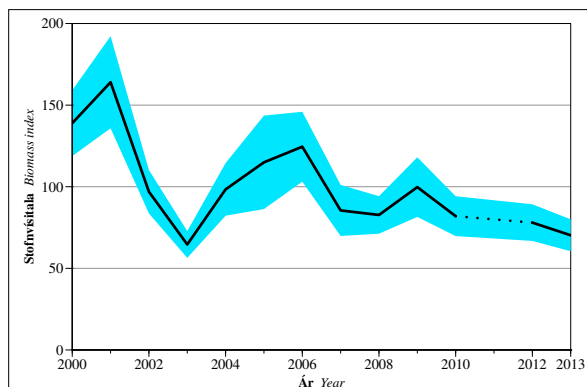
The East Greenland shelf Landgrunnið is thought to be the nursery grounds for deep sea redfish found on the Icelandic shelf and along East Greenland as well as for the pelagic redfish stocks. The proportion of fishable stocks in Icelandic waters composed of these fish from East Greenland is unclear.

German surveys on the East Greenland shelf in



Mynd 2.5.1. DJÚPKARFI. Landaður afli á Íslandsmiðum og afli á tog tíma frá árinu 1978.

Fig. 2.5.1. DEMERSAL DEEP SEA REDFISH. Landings from Icelandic grounds and CPUE since 1978.



Mynd 2.5.2. DJÚPKARFI. Heildarvísitölur (þyngd) samkvæmt stofnmælingu botnfiska að hausti frá árinu 2000, ásamt staðalfrávik. Ekki var farið leiðangur árið 2011.

Fig. 2.5.2. DEMERSAL DEEP SEA REDFISH. Total biomass indices from the Icelandic groundfish survey in October, along with the standard deviation. The survey was not conducted in 2011.

2003–2005 found a high density of small deep sea redfish (20–30 cm). From 2006–2010 fish smaller than 30 cm decreased but larger fish increased in number. Since then, deep sea redfish smaller than 30 cm have been scarce and are currently fewer than any time since measurement began in 1982. Deep sea redfish 30 cm and larger have also decreased. In Greenlandic surveys off East Greenland, which extend deeper than the German surveys, the biomass index increased from 2003–2010 and has been constant since. It is likely that the portion of the stock normally found on the shelf has shifted to deeper waters. This increase in deep sea redfish stock led to a renewal of fishing the species in 2009 after about 15 years of no fishing, and annual landings in 2010–2013 were about 6 600 tonnes.

### 2.5.2.3. Advice

Table 2.5.1 shows TAC recommendations from Iceland's Marine Research Institute (MRI) and ICES for deep sea redfish (based on the East Greenland/Iceland/Faroe Islands region prior to quota year 2010/2011 when focus shifted to Icelandic waters), adopted Icelandic TAC, and total landings from Icelandic waters since quota year 1994/1995.

Deep sea redfish is a long-lived, slow growing species that does not reach maturity until age 12. Such species are especially vulnerable to over-fishing and recover very slowly from such. Furthermore, the fishing mortality that provides maximum sustainable yield ( $F_{msy}$ ) is much lower than it is for shorter-lived species. For these reasons, more caution needs to be taken in exploiting this stock.

Little is known of the potential yield of the stock and its size is uncertain. Since time series are short and little is known about the age distribution of deep sea redfish in the region, stock assessments incorporating age- and length-dependent models are not feasible. Therefore, the advice is based on stock trends in SMH data. According to the SMH, the deep

TAFLA 2.5.1.

DJÚPKARFI. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (þús. tonn).

DEMERSAL DEEP SEA REDFISH. TAC recommended by the Marine Research Institute, national TAC, and landings (thous. tonnes).

Ár Year	Tillaga Rec. TAC	Aflamark National TAC	Afli Íslandinga Landings (Iceland)	Afli annarra Landings (others)	Afli alls Total landings
1994/95 <sup>2)</sup>	40	77 <sup>1)</sup>	52	1	53
1995/96 <sup>2)</sup>	35	65 <sup>1)</sup>	41	1	42
1996/97 <sup>2)</sup>	35	65 <sup>1)</sup>	38	1	39
1997/98 <sup>2)</sup>	30	65 <sup>1)</sup>	33	1	33
1998/99 <sup>2)</sup>	30	65 <sup>1)</sup>	32	1	33
1999/00 <sup>2)</sup>	25	60 <sup>1)</sup>	25	2	27
2000/01 <sup>2)</sup>	22	57 <sup>1)</sup>	22	2	24
2001/02 <sup>2)</sup>	30	65 <sup>1)</sup>	20	1	21
2002/03 <sup>2)</sup>	25	60 <sup>1)</sup>	23	2	25
2003/04 <sup>2)</sup>	22	57 <sup>1)</sup>	20	1	21
2004/05 <sup>2)</sup>	22	57 <sup>1)</sup>	21	1	22
2005/06 <sup>2)</sup>	22	57 <sup>1)</sup>	17	1	18
2006/07 <sup>2)</sup>	22	57 <sup>1)</sup>	18	1	19
2007/08 <sup>2)</sup>	22	57 <sup>1)</sup>	17	-	17
2008/09 <sup>2)</sup>	10	50 <sup>1)</sup>	22	-	22
2009/10	10	50 <sup>1)</sup>	18	-	18
2010/11	10	12.5	12	-	12
2011/12	10	12	12	-	12
2012/13	10	10	10	-	10
2013/14	10	10			
2014/15	10				

<sup>1)</sup> Sameiginlega fyrir gullkarfa og djúpkarfa. Both *Sebastes norvegicus* and demersal *S. mentella*.

<sup>2)</sup> Tillögur um aflahámark fyrir Austur-Grænland/Ísland/Færeyjar. TAC recommendation applied to East Greenland/Iceland/Faroes.

sea redfish fishable stock is small in relation to that in 2000. A decrease in fishing pressure over the last decade has not caused the stock to increase. The MRI and ICES recommend continued limitation of effort so TAC for the quota year 2014/2015 does not exceed 10 kt.

### 2.5.3. Shallow pelagic redfish

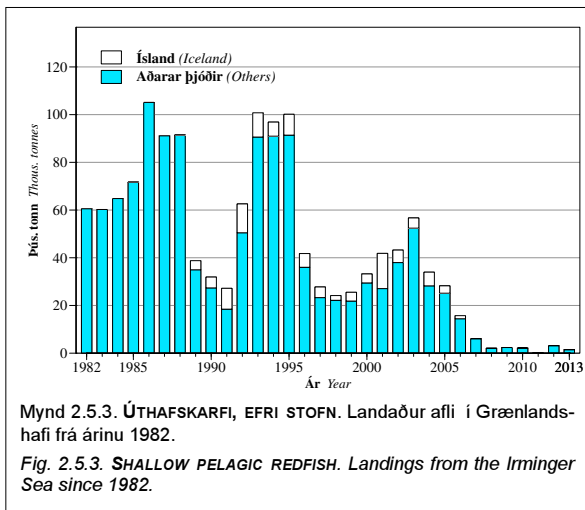
#### 2.5.3.1. Landings and effort

Targeting of the pelagic redfish at less than 500 m depth is conducted mostly in international waters of the Greenland Sea and in the Greenlandic EEZ, mostly from July–October.

Figure 2.5.3 shows total landings since 1982, Table 3.5.2 shows landings by region, and Table 3.5.3 shows landings by nation. Landings in the first five years were 60–105 kt but from 1989–1991 landings decreased due to decreased effort. Annual landings increased again to about 100 kt from 1993 to 1995. In 1996–2005 landings were 25–55 kt and this decreased was mostly due to effort shifting to the deep stock (section 2.5.4). Since 2006, effort has decreased and landings were over 200 tonnes in 2011, which is the lowest they have been since fishing began. In 2012 Russians caught over 3 000 tonnes and in 2013 about 1 500 tonnes of the shallow pelagic redfish stock to the southeast and south of Cape Farewell, Greenland.

Icelandic landings increased from under 4 kt in 1989 to over 12 kt in 1992 (Table 3.5.3; Fig. 2.5.3).

From 1997–2006 Icelandic landings were 1–15 kt. Since then, Icelanders have not been targeting the stock and annual landings have been less than 100 tonnes.



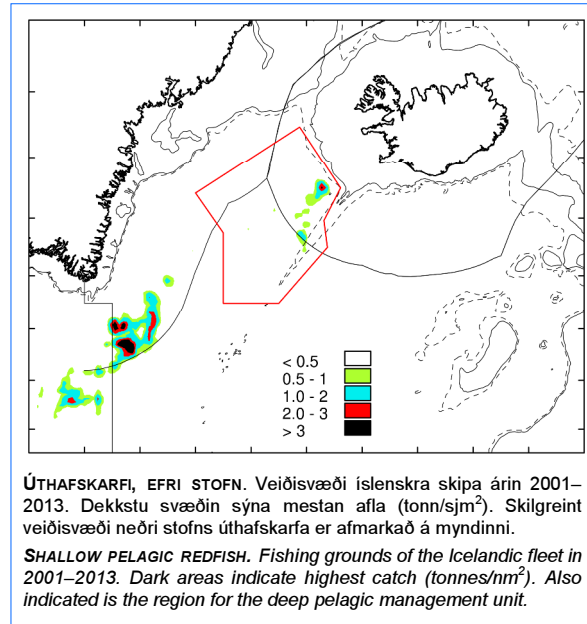
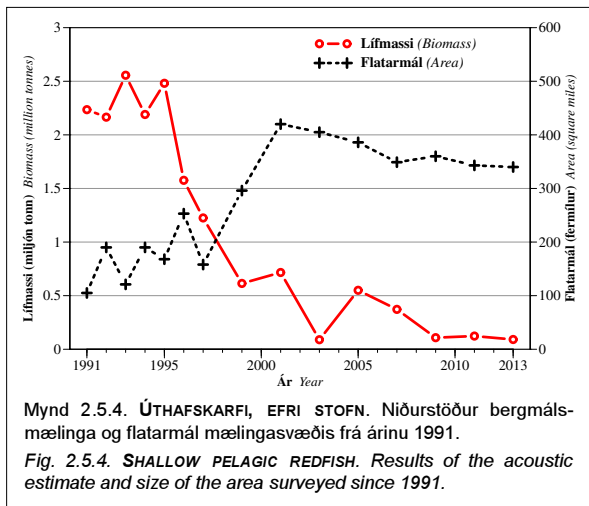
2.5.3.2. Stock status

The shallow pelagic redfish stock in the Greenland Sea was measured in the summer of 2013 through collaboration between Iceland, Germany, and Russia. Results of sonar measurements indicated a decrease from 2,2 million tonnes in 1994 to about 91 kt in 2013, the lowest it's been since measurement began in 1991 (Fig. 2.5.4). The stock was largest south and southwest of Cape Farewell, Greenland, as in previous surveys.

2.5.3.3. Advice

Table 2.5.2 shows ICES TAC recommendations for both pelagic stocks since 1989, adopted TAC for Iceland since 1996, as well as Icelandic and total landings since 1989. Since 2000 Iceland has had separate TAC for the two stocks, in accordance with ICES recommendations.

Due to the serious decline of the shallow stock, ICES has recommended a moratorium on direct targeting since 2010. This still stands for 2015.



In 2011 NEAFC agreed that until 2014 no direct targeting of the shallow stock would be allowed due to its poor status. Russia has protested this agreement and set an independent TAC for both shallow and deep stocks of pelagic redfish.

2.5.4. Pelagic redfish, deep stock

2.5.4.1. Landings and effort

From 1992–1994 fishing trended toward increased targeting of the deep stock, below 500 m depth, west of the Reykjanes Ridge in Icelandic and Greenlandic waters. These are the traditional grounds of the deep stock of pelagic redfish. Fishing mostly occurs from May–July. Mostly, fish of more than 40 cm length are taken, which are larger fish than in the shallow stock. Since 1996 most of the Icelandic landings of pelagic redfish has been from this stock.

Table 3.5.2 and Figure 2.5.5 show total landings since 1991 and Table 3.5.4 shows landings by nation. Landings ranged from 75–140 kt in 1995–2004, climaxing in 1996. Since 2005, landings have decreased and were from 30–67 kt. Landings in 2013 are estimated at 45 kt, an increase of almost 13 kt over the year before and similar to those of 2011.

Icelandic landings increased from 3 kt in 1992 to 57 kt in 1996 (Table 3.5.4; Fig. 2.5.4). From 1997–2004 landings were from 28–47 kt but have decreased in recent years. Landings in 2013 were about 8 500 tonnes.

2.5.4.2. Stock status

Deep pelagic redfish stocks in the Greenland Sea were surveyed in the summer of 2013 by a collaboration between Iceland, Russia, and Germany. Such international surveys have not been conducted eight times since 1999. The trawl method has been used because the sonar method does not work. Surveys from 2005 and 2007 are not comparable to those from other years due to changes in methods in



TAFLA 2.5.2. ÚTHAFSKARFI, EFRI OG NEDRI STOFNAR. Tillögur Alþjóðahafrannsóknaráðsins um aflahámark, heildaraflamark íslenskra skipa samkvæmt ákvörðunum stjórnvalda og afli (þús. tonn). SHALLOW AND DEEP PELAGIC REDFISH. TAC recommended by ICES, national TAC and landings (thous. tonnes).								
			Úthafskarfi, efri stofn <i>Shallow pelagic S. mentella</i>			Úthafskarfi, neðri stofn <i>Deep pelagic S. mentella</i>		
Ár Year	Tillaga Rec. TAC	Aflamark fyrir Ísland National TAC	Afli Íslendinga Landings (Iceland)	Afli annarra þjóða Landings (others)	Afli alls Total landings	Afli Íslendinga Landings (Iceland)	Afli annarra þjóða Landings (others)	Afli alls Total landings
1989	90-100		3.8	35.0	38.8	0.0	0.0	0.0
1990	90-100		4.5	27.4	31.9	0.0	0.0	0.0
1991	66		8.7	18.5	27.2	0.1	0.0	0.1
1992	-		12.1	50.5	62.6	3.4	0.0	3.4
1993	50		10.2	90.6	100.8	12.7	2.3	15.1
1994	100		5.9	91.0	96.9	47.4	4.4	51.8
1995	100		8.7	91.4	100.1	25.9	49.8	75.7
1996	-	45.0	5.8	36.0	41.8	57.1	81.4	138.6
1997	-	45.0	4.4	23.3	27.7	36.8	58.2	95.1
1998	-	45.0	2.0	22.2	24.2	46.5	46.3	92.8
1999	-	45.0	3.7	21.8	25.5	40.3	43.9	84.2
2000	85	45.0 (13.0 <sup>2</sup> )	3.8	29.5	33.2	41.5	51.6	93.1
2001	<85	45.0 (13.0 <sup>2</sup> )	14.7	27.1	41.8	27.7	59.3	87.0
2002	<85	45.0 (10.0 <sup>2</sup> )	5.2	38.0	43.2	39.3	63.9	103.2
2003	119	55.0 (10.0 <sup>2</sup> )	4.3	52.4	56.7	44.6	59.7	104.3
2004	120	55.0 (10.0 <sup>2</sup> )	5.7	28.2	33.9	31.1	60.9	92.0
2005	41	34.5 (6.3 <sup>2</sup> )	3.1	25.1	28.2	12.9	32.6	45.5
2006	41	28.6 (5.2 <sup>2</sup> )	1.3	14.4	15.7	20.9	46.3	67.3
2007	0	21.1 (3.8 <sup>2</sup> )	0.1	6.1	6.1	18.1	40.4	58.5
2008	20	21.1 (7.4 <sup>2</sup> )	0.1	1.9	2.0	6.7	23.3	30.0
2009	20	21.1 (6.3 <sup>2</sup> )	0.0	2.4	2.4	15.1	38.9	54.0
2010	20 (0 <sup>1</sup> )	21.1 (6.3 <sup>2</sup> )	0.0	2.2	2.4	14.8	44.5	59.3
2011	20 (0 <sup>1</sup> )	11.8 (0 <sup>2</sup> )	0.1	0.2	0.3	12.0	35.3	47.3
2012	20 (0 <sup>1</sup> )	9.8 (0 <sup>2</sup> )	0.0	3.2	3.2	5.9	26.9	32.8
2013	20 (0 <sup>1</sup> )	8.1 (0 <sup>2</sup> )	0.0	1.5	1.5	8.5	37.1	45.6
2014	20 (0 <sup>1</sup> )	6.2 (0 <sup>2</sup> )						
2015	< 10 (0 <sup>1</sup> )							

1) Tillaga Alþjóðahafrannsóknaráðsins fyrir efri stofn úthafskarfa. ICES recommendation for shallow pelagic stock.  
2) Úthlutað aflamark fyrir Suðursvæði (efri stofn). TAC for Southern fishing area (shallow pelagic stock).

these two years that could lead to some of the shallow stock biomass being mixed with the deep stock. Most of the biomass was found in Icelandic waters southwest of Reykjanes. In 2013 over 280 kt of redfish were measured, the lowest biomass since 1999. The highest biomass (about one million tonnes) was measured in 2001.

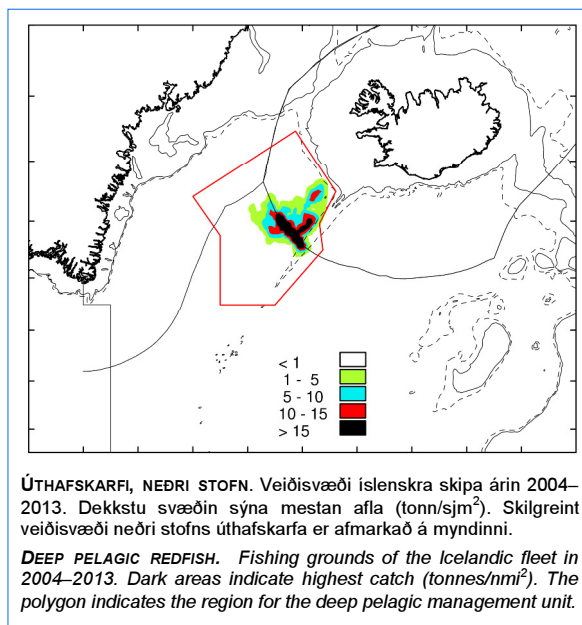
#### 2.5.4.3. Advice

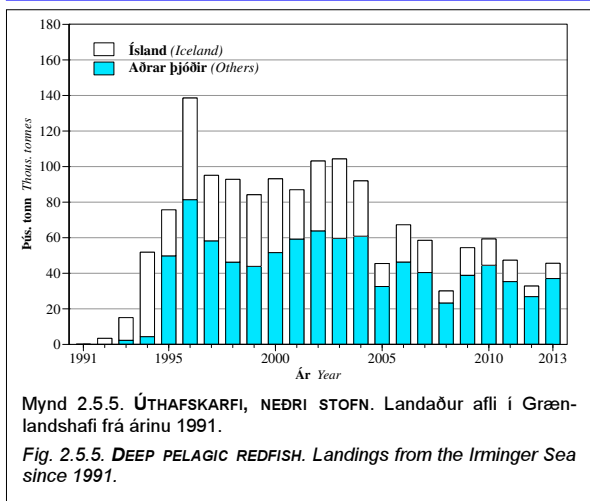
Table 2.5.2 shows ICES TAC recommendations for both shallow and deep stocks of pelagic redfish since 1989, annual Icelandic TAC since 1996, and Icelandic and total landings since 1989.

NEAFC agreed in 2011 to decrease effort and that in 2014 landings should be in accordance with ICES recommendation. TAC for 2014 is 20 kt. In the agreement this total was divided among nations, as opposed to them setting their own unilateral TAC as has always been the case. Thus, Iceland is allotted 31%, which amounts to about 6 200 tonnes in 2014.

Russia has contested the agreement and set its own TAC for quota year 2014 of over 27 kt, which is the same as their TAC for 2013. This TAC applies to both shallow and deep redfish stocks because they consider these to be a single stock. Therefore, the total landings in 2014 is about 42 kt.

The age distribution of the deep pelagic redfish stock remains unclear and time series about the species are short, so age- and length-dependent models are unsuitable. Therefore, annual multi-national surveys have provided the basis of advice since 1999.





The Advisory Committee of ICES recommends that targeting of the deep stock of pelagic redfish be decreased significantly in 2015 and that TAC should not exceed 10 kt. The committee concluded that the significant negative trend in stock biomass indices in recent years demands that fishing effort be decreased, considering that it has been far beyond the potential yield of the stock.

Since the NEAFC agreement expires in 2014, the affected coastal nations (Greenland, Iceland, and Faroe Islands) have requested that ICES review various harvest control rules for the deep stock with consideration of a precautionary approach. None of the reviewed models indicated that the stock, which is currently at an historical minimum, would grow in the next 10 years.

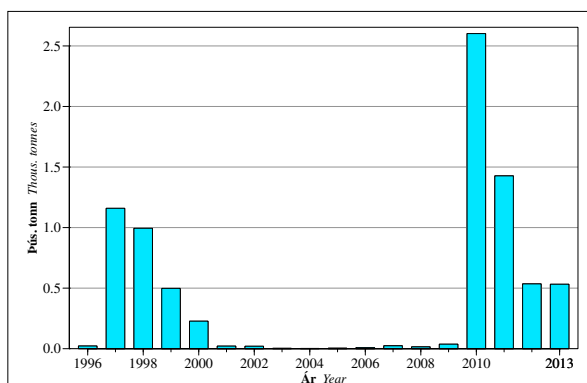
## 2.6. SEBASTES VIVIPARUS *Sebastes viviparus*



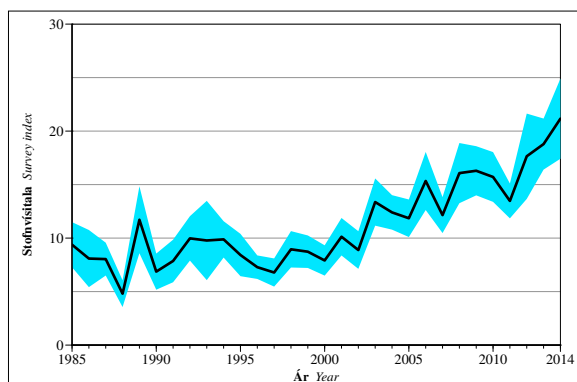
### 2.6.1. Landings and effort

At a maximum length of about 30 cm, *Sebastes viviparus* is the smallest redfish species in Icelandic waters. There, it is only found off the south and southwest coast and is usually caught as bycatch in the golden redfish fishery. Their biology is poorly known except that it is slow-growing and long-lived, like other *Sebastes* species.

From 1997–1999 experimental fishing was conducted off the south coast. Landings were under 1 200 tonnes in 1997 but decreased to over 200 tonnes in 2000 (Fig. 2.6.1). Landings were negligible from 2001–2009 but in 2010 direct targeting recommenced and landings were an historical maximum at 2 600 tonnes. Since then, landings decreased to 1 400 tonnes in 2011 but in the last two years were only 500 tonnes. Most *S. viviparus* caught in 2013 was from 18–30 cm.

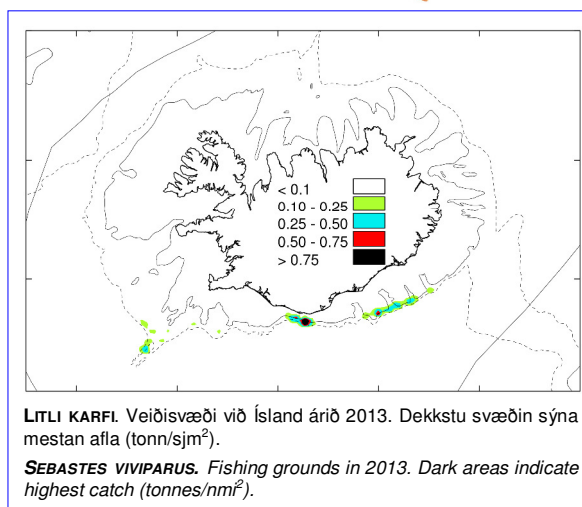


Mynd 2.6.1. LITLI KARFI. Landaður afli frá árinu 1996.  
Fig. 2.6.1. *SEBASTES VIVIPARUS*. Landings since 1996.



Mynd 2.6.2. LITLI KARFI. Heildarvísitölur (þyngd) úr stofnmælingu botnfiska í mars frá árinu 1985, ásamt staðalfrávikum.

Fig. 2.6.2. *SEBASTES VIVIPARUS*. Total biomass indices from the Icelandic groundfish survey in March since 1985, along with the standard deviation.



### 2.6.2. Stock survey

*S. viviparus* is caught in a large portion of the March groundfish survey (SMB), mostly off the south coast. Total biomass indices were rather steady from 1985–2000 but since they have increased (Fig. 2.6.2). The index in 2014 was the highest since measurement began and is currently more than twice what it was in 2000.

### 2.6.3. Advice

Since studies and targeting has been limited until recently, stock size and sustainable catch levels are poorly understood. *S. viviparus*, like other redfish species, is slow-growing and long-lived and for these reasons effort should be limited. Furthermore, nothing is known about recruitment. From a precautionary perspective, the MRI recommends that landings in quota year 2014/2015 be limited to a maximum of 1 500 tonnes.



## 2.7. GREENLAND HALIBUT *Reinhardtius hippoglossoides*

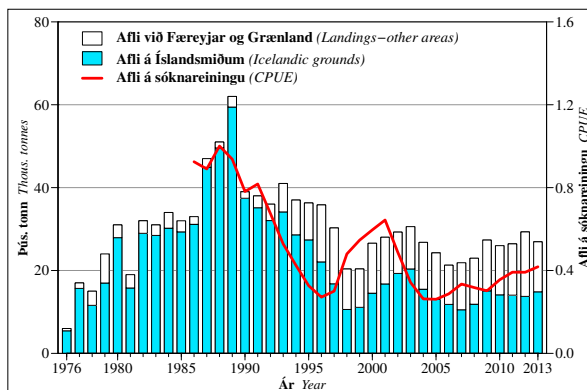


### 2.7.1. Stock structure

Greenland halibut from the East Greenland/Iceland/Faeroe Islands region (GIF) is considered a single stock, so stock assessments and advice from ICES and the MRI have referred to it as such.

### 2.7.2. Landings and effort

Total landings of Greenland halibut in the GIF region were over 27 kt in 2013 (Fig. 2.7.1 and Table 3.7.1), about 15 kt from Icelandic waters. Landings from Icelandic waters were near or above 90% of landings from 1982–1992 but decreased significantly thereafter and have recently been about half of the total. Icelandic TAC in 2012/2013 was 14 700 tonnes and landings were just over 14 kt.



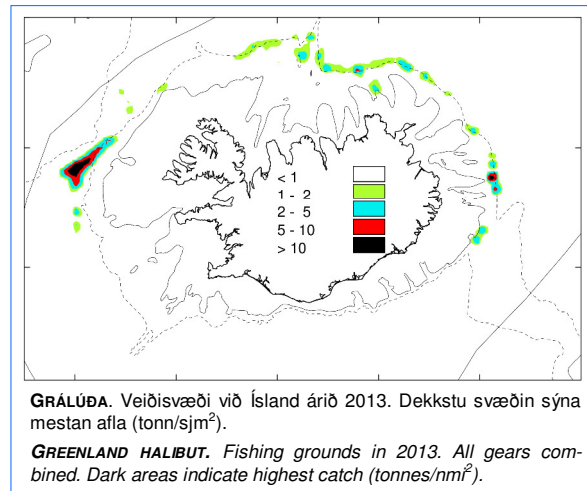
Mynd 2.7.1. GRÁLÚÐA. Landaður afli við Ísland, Austur-Grænland og Færeyjar frá árinu 1976 og afli á sóknareiningu hjá íslenska togaraflothanum frá árinu 1985.

Fig. 2.7.1. GREENLAND HALIBUT. Landings from East Greenland, Icelandic and Faroese waters since 1976 and CPUE of the Icelandic trawler fleet since 1985.

CPUE of the Icelandic trawler fleet has been the basis of advice from ICES in recent years. At last year's benchmark meeting, the serious limitations of this data were discussed, namely, changes in terms of gears used, effort distribution, and management since 1986. Despite this, ICES still places importance on these Icelandic data as the main basis for the advice.

CPUE of the Icelandic trawler fleet was rather even from 1985–1989 but decreased steadily until reaching a minimum in the years 1995–1997 (Fig. 2.7.1). CPUE in these three years was only about 30% of the average from 1986–1989. CPUE has been increasing in recent years but is still only about 40% of the levels from 1986–1989.

According to logbooks from foreign vessels fishing along the East Greenland coast, CPUE has been relatively constant since 2005.



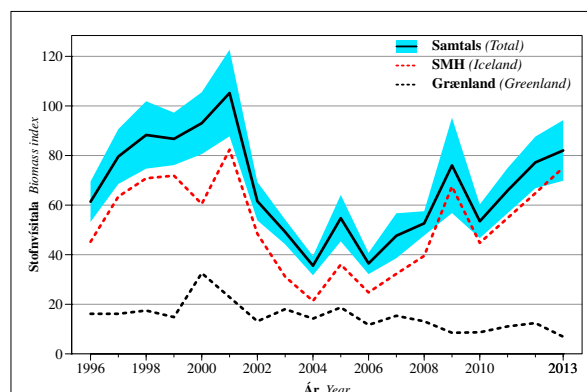
GRÁLÚÐA. Veiðisvæði við Ísland árið 2013. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

GREENLAND HALIBUT. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nm<sup>2</sup>).

### 2.7.3. Stock status

At the ICES benchmark, results were presented from a combined biomass index based on data from the Icelandic fall groundfish survey (SMH) and from Greenlandic survey data. This combined index increased somewhat from 1996–2001 but then rapidly decreased to a minimum in 2004–2007 (Fig. 2.7.2). The index has increased since then and is nearly at the level it was in 1998–2001. The proportion of this combined index that comes from Greenland has decreased from about 40% in 2005 to about 10% in 2013.

The ICES assessment uses a surplus production model based on total landings, the index described above, and Icelandic CPUE. Results indicate that fishing mortality is high and the stock is around the historical minimum, though still above the defined threshold.



Mynd 2.7.2. GRÁLÚÐA. Vísitala veiðistofns (þyngd, fiskar stærri en 40 cm) úr stofnmælingu í október og stofnmælingu grálúðu við A-Grænland frá árinu 1996.

Fig. 2.7.2. GREENLAND HALIBUT. Fishable biomass index (>40cm) from the Icelandic autumn survey and Greenlandic survey since 1996.

#### 2.7.4. Advice

Table 2.7.1 shows recommended TAC, national TAC, and Greenland halibut landings since 1984. For the current quota year the Icelandic government set 12 480 tonnes as the quota for Greenland halibut in Icelandic waters and Greenland set the quota at 9 800 tonnes for 2014. The fishery in the Faroe Islands is managed by fishing days. Last year ICES recommended that total landings of Greenland halibut in the GIF region should not exceed 20 kt, based on the results from the surplus production yield model.

At the end of May 2014, Iceland and Greenland adopted a bilateral five-year management plan for Greenland halibut. The management plan declares their agreement that both nations should fish the stock with consideration of an international precautionary approach to management and using the  $F_{msy}$  provided by ICES. Agreement was reached between the two nations that Iceland should have rights to 56.4% of the recommended TAC and Greenland would have rights to 37.6%. Agreement between these two nations and the Faroe Islands was not reached, so Faroese effort and landings will not be bound by the Icelandic/Greenlandic agreement. The fishing fleet of the Faroe Islands landed over 2 000 tonnes in 2012 and 2013.

ICES and the MRI recommend that TAC for Greenland halibut in the GIF region for the quota year 2014/2015 be 25 kt, based on the effort that leads to maximum sustainable yield from a surplus production model.

TAFLA 2.7.1. GRÁLÚÐA. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (þús. tonn). GREENLAND HALIBUT. TAC recommended by the Marine Research Institute, national TAC, and landings (thous. tonnes).					
Ár	Tillaga	Aflamark fyrir Ísland <sup>3)</sup>	Afli á Íslandsmiðum <sup>3)</sup>	Afli á öðrum miðum <sup>1)</sup>	Afli alls
Year	Rec. TAC	National TAC in Icelandic waters <sup>3)</sup>	Landings from Icelandic waters <sup>3)</sup>	Landings in other areas <sup>1)</sup>	Total landings
1984 <sup>1)</sup>	25	30	30.2	3.9	34.1
1985 <sup>1)</sup>	25	30	29.2	2.9	32.2
1986 <sup>1)</sup>	25	30	31.3	2.0	33.1
1987 <sup>1)</sup>	25	30	44.9	1.9	46.8
1988 <sup>1)</sup>	30	30	49.6	1.7	51.3
1989 <sup>1)</sup>	30	30	59.4	2.1	61.1
1990 <sup>1)</sup>	30	30	37.4	2.0	39.4
1991 <sup>2)</sup>	27	33	31.2	2.5	33.7
1991/92 <sup>3)</sup>	25	25	30.3	3.5	33.8
1992/93 <sup>3)</sup>	30	30	34.5	6.7	41.3
1993/94 <sup>3)</sup>	25	30	29.5	8.4	37.6
1994/95 <sup>3)</sup>	30 <sup>4)</sup>	30	26.4	8.9	35.3
1995/96 <sup>3)</sup>	20 <sup>4)</sup>	20	22.3	13.8	36.1
1996/97 <sup>3)</sup>	15 <sup>4)</sup>	15	17.7	13.3	31.0
1997/98 <sup>3)</sup>	10 <sup>4)</sup>	10	11.0	9.8	20.8
1998/99 <sup>3)</sup>	10 <sup>4)</sup>	10	11.2	9.3	20.5
1999/00 <sup>3)</sup>	10 <sup>4)</sup>	10	11.5	12.0	23.5
2000/01 <sup>3)</sup>	20 <sup>4)</sup>	20	20.0	11.3	31.3
2001/02 <sup>3)</sup>	20 <sup>4)</sup>	20	19.2	9.9	29.1
2002/03 <sup>3)</sup>	23 <sup>4)</sup>	23	20.3	10.2	30.5
2003/04 <sup>3)</sup>	20 <sup>4)</sup>	23	15.8	11.3	27.1
2004/05 <sup>3)</sup>	15 <sup>4)</sup>	15	13.0	11.0	24.0
2005/06 <sup>3)</sup>	15 <sup>4)</sup>	15	12.7	9.5	22.2
2006/07 <sup>3)</sup>	15 <sup>4)</sup>	15	9.6	11.3	20.9
2007/08 <sup>3)</sup>	15 <sup>4)</sup>	15	9.7	11.1	20.8
2008/09 <sup>3)</sup>	5 <sup>4)</sup>	15	15.6	11.6	27.2
2009/10 <sup>3)</sup>	5 <sup>4)</sup>	12	14.1	11.6	25.7
2010/11 <sup>3)</sup>	5 <sup>4)</sup>	13	12.2	13.1	25.3
2011/12 <sup>3)</sup>	12 <sup>4)</sup>	13	13.2	15.6	28.8
2012/13 <sup>3)</sup>	20 <sup>4)</sup>	14.7	14.1	12.0	26.9
2013/14 <sup>3)</sup>	20 <sup>4)</sup>	12.5			
2014/15	25 <sup>4)</sup>				

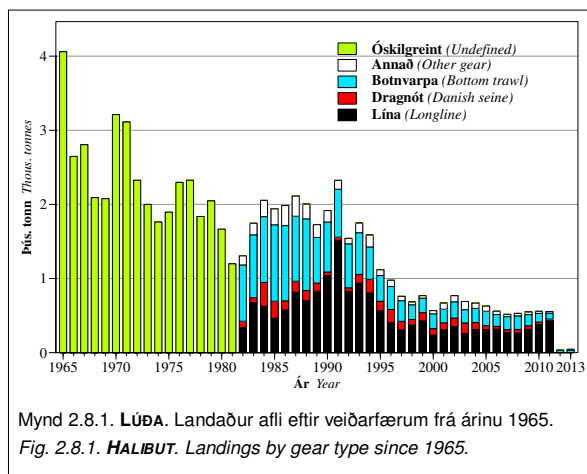
<sup>1)</sup> Almanaksárið. Calendar year.  
<sup>2)</sup> Tímabilið janúar–ágúst 1991. January–August 1991.  
<sup>3)</sup> Fiskveiðiárið september–ágúst. Quota year September–August.  
<sup>4)</sup> Tillögur um aflahámark fyrir Austur-Grænland/Ísland/Færeyjar. TAC recommendation applied to East Greenland/Iceland/Faeroes.

## 2.8. ATLANTIC HALIBUT *Hippoglossus hippoglossus*



### 2.8.1. Landings and effort

On January 1, 2012 the halibut fishery in Icelandic waters was closed and fishermen were ordered to release all halibut bycatch that could survive. Landings decreased dramatically (Fig. 2.8.1). Recorded landings in 2013 were 44 tonnes, of which 31 tonnes were caught by bottom trawl, 3 tonnes were bycatch in the Norway lobster fishery, and 2 tonnes were caught on longline.



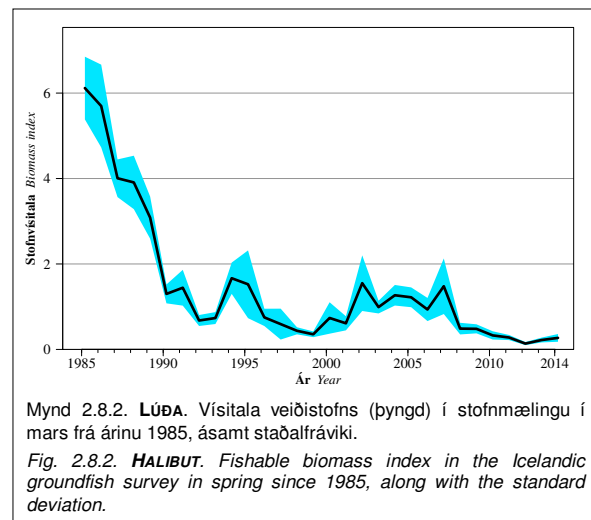
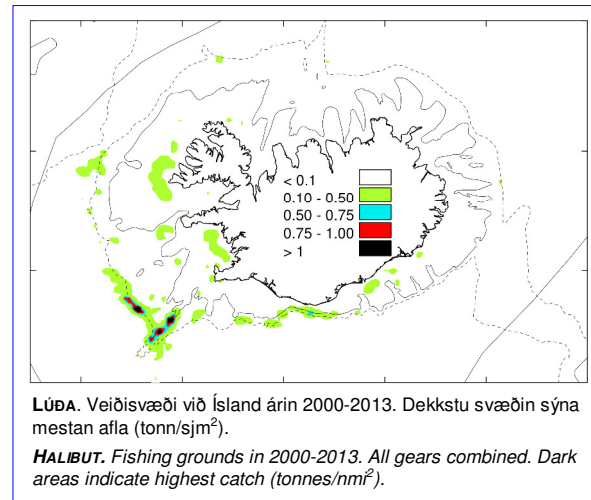
Total halibut landings are shown on Figure 2.8.1 and Table 3.8.1. From 1996–2011 halibut landings were less than 1 000 tonnes. Landings data reaches back to 1905 and, with the exception of the periods of WWI and WWII, landings have never been as low as from 1996–2001.

Annual bottom trawl landings decreased steadily from about 1 000 tonnes in 1985–1986 to about 200 tonnes in 1998. Thereafter, from 110–220 tonnes were landed annually until 2011, when landings totalled only about 80 tonnes. Longline landings were about 1 100 tonnes in 1991 but dropped to about 200 tonnes by 1997. Landings remained at about 200 tonnes until 2008 when they increased because of halibut-directed longlines with larger hooks which landed about 400 tonnes in 2011. In the last years before the closure, about 70–90% of total Icelandic landings were caught with these two gears.

### 2.8.2. Stock status

Halibut biomass indices from spring groundfish surveys (SMB) from 1985–2014 show similar trends as trawl data. The index decreased rapidly in the beginning of this period and has been at an historical minimum since 1992 (Fig. 2.8.2). This confirms that the halibut stock declined rapidly from 1985–1992 and that it is still in a poor state.

The halibut caught in the SMB are predominantly age 3–5 immature fish. This age group has been at a



minimum for two decades, which indicates recruitment failure. This condition is such that no increase in stock is foreseeable.

### 2.8.3. Advice

Due to the poor condition of the halibut stock, the Minister of Fisheries appointed a working group tasked with finding ways to protect the stock. This working group returned the recommendation in January, 2011 that the most effective approach was a closure of the fishery. In continuation of these results, the MRI reviewed all data regarding other ways to conserve the halibut stock. Furthermore, fishermen were consulted to discuss various ways to help the stock recover. It was concluded that any halibut caught as bycatch that survived being brought onboard should be released, since they are hardy fish and likely to survive some handling. Following the recommendation from MRI, the Ministry of Fisheries and Agriculture adopted an

official policy including this requirement. Increasing the halibut stock is a long-term project and change is unlikely to occur until some years have passed because the halibut is a slow-growing species that reaches maturity at a late age.

MRI recommends a continued effort to find other solutions to aid the recovery of halibut stock and that the current regulation remain in place until significant recovery of that stock is observed.

---

## 2.9. PLAICE *Pleuronectes platessa*



### 2.9.1. Landings

Plaice landings in 2013 were under 6 000 tonnes (Fig. 2.9.1; Table 3.9.1). At about 14 500 tonnes, landings in 1985 were largest, they ranged between 10–14 kt from 1986–1997 and between 4 900–7 100 tonnes since then.

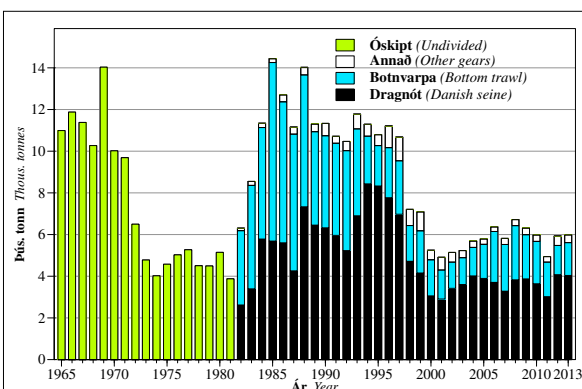


Fig. 2.9.1. PLAICE. Landings by gear type since 1965.

The majority of plaice landings in recent years came from the seine fleet. In 1992 bottom trawlers caught about half of all landings, but that proportion dropped below 20% in 1995. Since 1996 bottom trawl catches of plaice have increased to 24–38%. Landings in other gears, including gillnets, were about 7% of the total landings last year.

### 2.9.2. Age distribution, biomass index and CPUE

Age distribution in 2013 landings shows that the largest proportion of landings—about 44% of landings by number—was plaice of ages 6 and 7 (Fig. 2.9.2).

Biomass indices from the spring groundfish survey (SMB) indicate that the fishable stock of plaice decreased significantly from 1985–2001 (Fig.

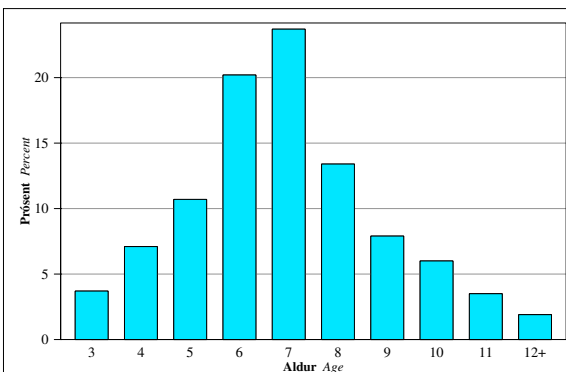
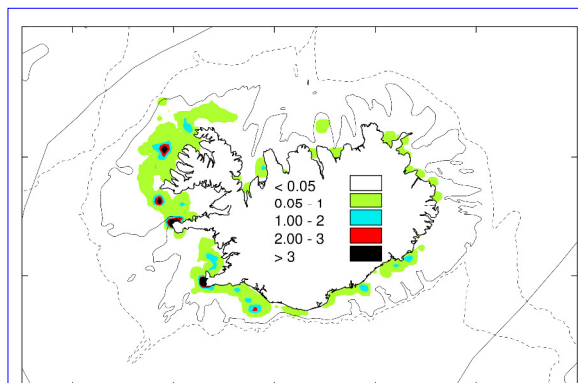


Fig. 2.9.2. PLAICE. Percentage age distribution (% by numbers) of the 2013 landings.



PLAICE. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nm<sup>2</sup>).

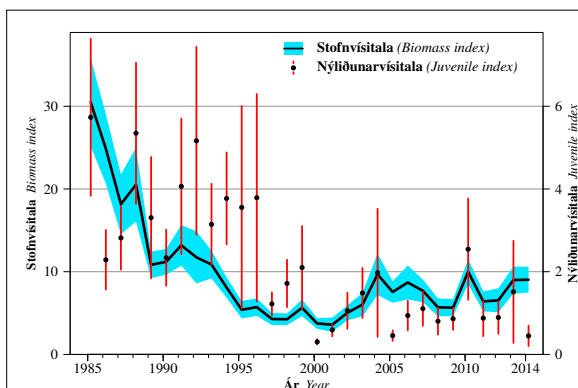
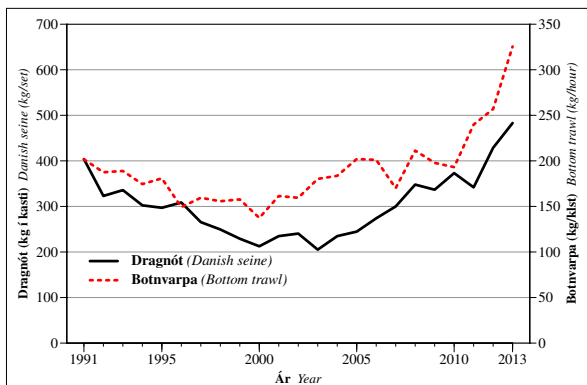


Fig. 2.9.3. PLAICE. Fishable biomass indices (>29 cm) and juvenile abundance indices (<30 cm) from the groundfish survey in spring, along with the standard deviation.

2.9.3). Biomass indices increased somewhat over the following five years and for the past two years have been about 43% of the period average from 1985 through 1989.

CPUE from seiners, on traditional grounds from Stokksnes west and north to Horn, is calculated as bycatch from casts in which plaice was more than 10% of catch. According to landing logs, plaice landings in the described area decreased from about 400 kg in 1991 to about 210 kg in 2000, but has since been increasing and was about 480 kg last year (Fig. 2.9.4).

CPUE in bottom trawl (kg/hr), where plaice were more than 25% of catch, decreased by nearly a third from 1991–2000, going from 200 to 140 kg/hr (Fig. 2.9.4). Since then, landings have increased.

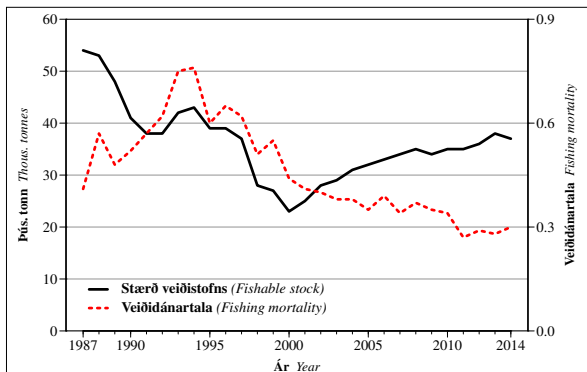


Mynd 2.9.4. SKARKOLI. Afli á sóknareiningu (kg í kasti) hjá dragnotabátum og í botnvarpu (kg/klst) frá árinu 1991.

Fig. 2.9.4. PLAICE. CPUE from seiners (kg/set) and bottom trawl vessels (kg/hour) since 1991.

### 2.9.3. Stock status

Calculations of stock trends, based on age-catch analysis, indicate that the stock decreased by more than half from 1993–2000, reaching an historical low in 2000 due to high fishing pressure and poor recruitment (Fig. 2.9.5). In the last decade recruitment (number of age three fish) has been poor. Fishing mortality decreased by nearly half over this period and is currently at an historical low. Concurrent to this decrease in fishing pressure, the size of the fishable stock has increased since 2000 and is now estimated about 35 kt.



Mynd 2.9.5. SKARKOLI. Stærð veiðistofns (4 ára og eldri) og veiðidánartala frá árinu 1987 samkvæmt aldurs-aflagreiningu.

Fig. 2.9.5. PLAICE. Fishable stock (ages 4+) and fishing mortality since 1987, based on CAGEAN model.

Tafla 2.9.1.

SKARKOLI. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðunum stjórnvalda um aflamark og afli (tonn).

PLAICE. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).

Fiskveiðiár Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli Landings
1991/92	10 000	11 000	10 200
1992/93	10 000	13 000	12 400
1993/94	10 000	13 000	12 300
1994/95	10 000	13 000	11 100
1995/96	10 000	13 000	11 000
1996/97	10 000	12 000	10 300
1997/98	9 000	9 000	8 100
1998/99	7 000	7 000	7 500
1999/00	4 000	4 000	4 900
2000/01	4 000	4 000	4 900
2001/02	4 000	5 000	4 400
2002/03	4 000	5 000	5 400
2003/04	4 000	4 500	5 800
2004/05	4 000	5 000	6 200
2005/06	4 000	5 000	5 700
2006/07	5 000	6 000	6 100
2007/08	5 000	6 500	6 600
2008/09	5 000	6 500	6 400
2009/10	5 000	6 500	6 400
2010/11	6 500	6 500	4 800
2011/12	6 500	6 500	5 800
2012/13	6 500	6 500	5 900
2013/14	6 500	6 500	
2014/15	7 000		

### 2.9.4. Advice

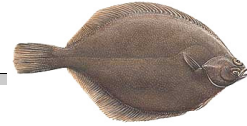
Table 2.9.1 shows MRI TAC recommendations, national TAC, and total landings since quota year 1991/1992.

The MRI recommends that plaice landings in quota year 2014/2015 be limited to 7 000 tonnes. Considering the assumption that recruitment will not improve, this limitation will lower fishing mortality to that which provides maximum sustainable yield.

Furthermore, it is recommended that spawning stocks continue to be protected by area closures during spawning season, as has been done yearly since 2002.

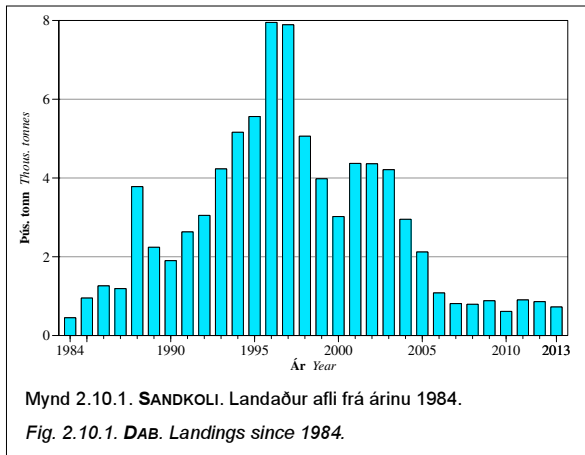


## 2.10. DAB *Limanda limanda*



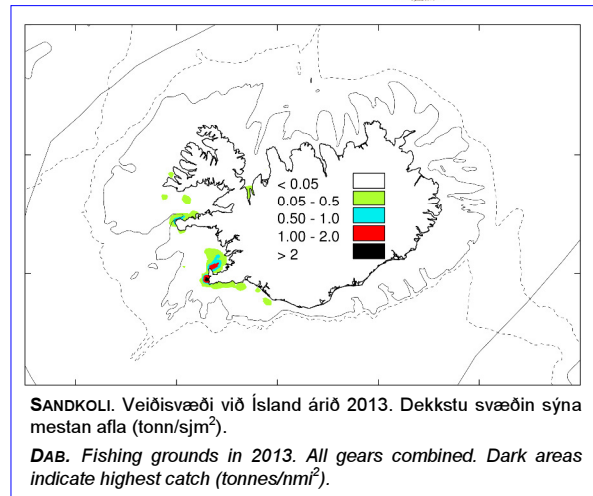
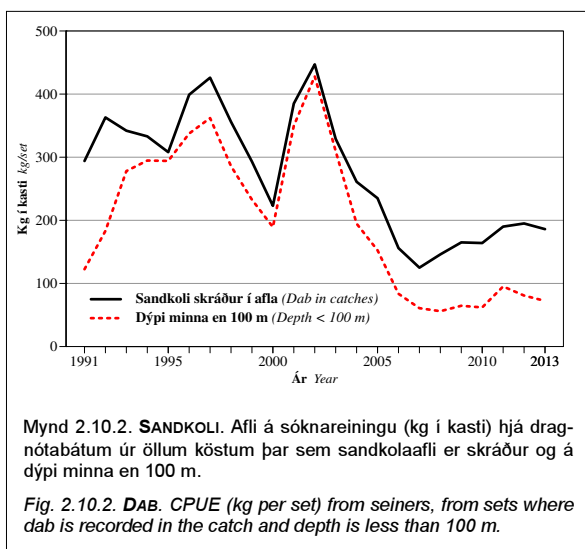
### 2.10.1. Landings and effort

Dab landings in 2013 were about 720 tonnes. Before 1984 dab was mostly bycatch in other fisheries and was most often discarded. Starting in 1984 landings steadily increased to nearly 8 000 tonnes in 1996–1997 (Fig. 2.10.1; Table 3.10.1). In quota year 2012/2013 landings were about 780 tonnes, of which about 590 tonnes were on traditional grounds from Snæfellsnes south to Stokksnes.



The dab fishery is mostly located in Faxaflói, around Reykjanes and along the south coast to Stokksnes. Over 95% landings are caught by seiners.

The proportion of dab as bycatch by seiners in the area from Faxaflói to Stokksnes decreased by half from 1997–2000 (Fig. 2.10.2) but increased again in 2001–2002. Then, it decreased rapidly and has been small since 2006.

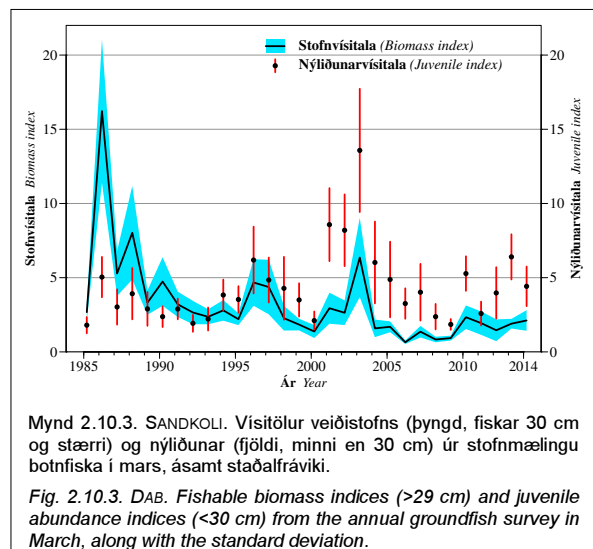


### 2.10.2. Stock status

SMB biomass indices were low from 2006–2009 but are approaching the average from 1990–2014 (Fig. 2.10.3).

Age disaggregated data from dab landings are available from 1993–2013. Estimates based on these data show that cohorts quickly leave the fishable stock and that fishing mortality has been very high in recent years. Landings in 2013 were mainly age 4–6 fish, those from the 2007–2009 cohorts.

Estimates of fishable stock in early 2014 are imprecise due to limited data about the size of cohorts from 2009 and 2010 that are entering the fishable stock. Analysis of samples from landings in 2013 show more age 4 dab than in recent years, which could indicate that the 2009 cohort is larger than those that have entered the fishable stock in recent years.



### 2.10.3. Advice

Table 2.10.1 shows MRI TAC recommendations, national TAC, and dab landings since quota year 1995/1996.

In recent quota years, MRI recommendations have been that dab landings should be limited to that which is brought in as bycatch.

In light of the fact that the SMB biomass index and CPUE have been steady and that recruitment seems to be improving, the MRI recommends that in quota year 2014/2015 dab landings should not exceed 1 000 tonnes in the main grounds from Snæfellsnes, south and east to Stokksnes.

<b>TAFLA 2.10.1.</b> <b>SANDKOLI. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (tonn) á aflamarkssvæðinu.</b> <i>DAB. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes) from the quota area.</i>			
Fiskveiðiar Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli Landings
1995/96	7 000	-	6 800
1996/97	7 000	-	8 200
1997/98	7 000	7 000	6 000
1998/99	7 000	7 000	4 300
1999/00	7 000	7 000	2 700
2000/01	4 000	5 500	2 300
2001/02	4 000	4 000	3 800
2002/03	7 000	7 000	4 300
2003/04	7 000	7 000	3 600
2004/05	5 000	5 000	2 600
2005/06	2 500	4 000	1 200
2006/07	1 000	2 000	800
2007/08	500	1 500	600
2008/09	500 <sup>1)</sup>	1 000	700
2009/10	500 <sup>1)</sup>	1 000	570
2010/11	500 <sup>1)</sup>	900	600
2011/12	500 <sup>1)</sup>	900	700
2012/13	500 <sup>1)</sup>	800	590
2013/14	500 <sup>1)</sup>	500	
2014/15	1 000		

<sup>1)</sup> Engar beinar veiðar. Aflamark sem nemi áætluðum aukaafli við aðrar veiðar. *No directed fishery. TAC set no higher than would result from dab bycatch in other fisheries.*

## 2.11. LONG ROUGH DAB *Hippoglossoides platessoides*



### 2.11.1. Landings and effort

Up until 1987 long rough dab was only bycatch in other fisheries and it was discarded. For the first years after the species was targeted landings were about 2 000 tonnes. In the years 1995–1997 landings were about 6 000 tonnes, but they have decreased since and were only about 80 tonnes in 2013 (Fig. 2.11.1; Table 3.11.1). About 70–90% of historical landings are from an area from Snæfellsnes south and east to Stokksnes, but this proportion has decreased in recent years and was only 10% of landings in 2013.

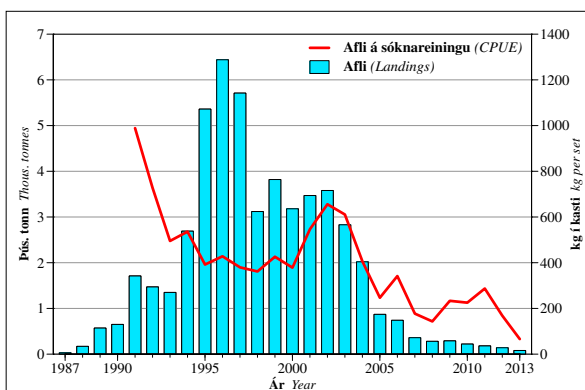
Seine CPUE in this main area, all casts where long rough dab is recorded, decreased from 1991–1997 from 990 kg to 380 kg (Fig. 2.11.1). Following an increase from 2000–2002, CPUE has decreased and was only about 70 kg in 2013.

Long rough dab is distributed around Iceland but the traditional grounds are in known spawning locations. The mainstay of landings is older fish and because of the gender difference in size, the catch is almost entirely females.

In those years when direct targeting was significant, the largest proportion of the catch was roe-filled females off the south and southeast coast, mostly from February–March. Mean length of females in landings was 35–36 cm but there were few fish smaller than 30 cm. In this region about half of all females are mature at 18 cm and all are mature by the time they reach 25 cm. Fishing targets only the largest and oldest fish in the spawning stock.

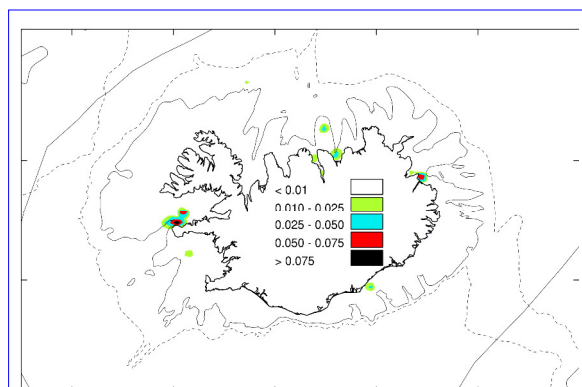
### 2.11.2. Stock status

Effort and landings of long rough dab increased greatly at the end of the last century and CPUE decreased by about half at the same time. In 2002–2003 CPUE was proportionally high. But in recent years, it has been at an historical low. Large landings



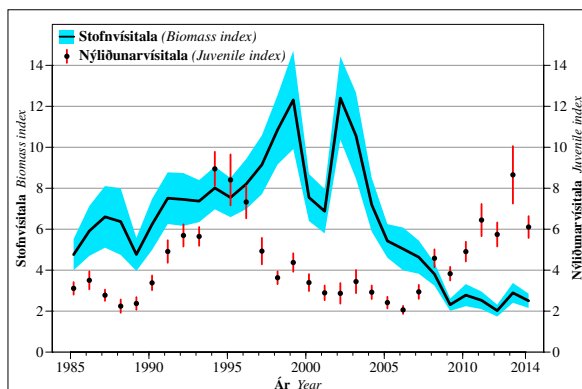
Mynd 2.11.1. SKRÁPFLÚRA. Landaður afli frá árinu 1987 og afli á sóknareiningu (kg í kasti) hjá dragnótabátum frá árinu 1991.

Fig. 2.11.1. LONG ROUGH DAB. Landings since 1987 and CPUE (kg per set) from seiners since 1991.



SKRÁPFLÚRA. Veidisvæði við Ísland árið 2013. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

LONG ROUGH DAB. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nm<sup>2</sup>).



Mynd 2.11.2. SKRÁPFLÚRA. Vísitala veiðistofns (þyngd, fiskar 30 cm og stærr) og nýliðunar (fjöldi, minni en 20 cm) á suðursvæði (Eystrahorn að Látrabjargi) í stofnmælingu botnfiska í mars frá árinu 1985, ásamt staðalfrávikum.

Fig. 2.11.2. LONG ROUGH DAB. Fishable biomass indices (>29 cm) and juvenile abundance indices (<20 cm) on the southern grounds in the groundfish survey in March since 1985, along with the standard deviation.

in the years 1995–2002 seem to have accompanied an increase in stock size, since the biomass index from the spring groundfish survey (SMB) indicates that the stock was large in these years (Fig. 2.11.2). The fishable stock biomass index has decreased considerably since 2003 and has been at an historical minimum for some years.

Biomass of young fish in the SMB increased after 1989 and climaxed in 1994, indicating good recruitment in those years. The recruitment index then decreased until 2006, but has increased since that year and is above the average from 1985–2013.

CPUE and biomass indices indicate that the stock declined from 2003–2008, a period when landings were well below TAC. It is unlikely that fishing caused this decline. However, it is clear that the

stock status has been poor in recent years and though there are indications of increasing recruitment, it will be some time yet before those fish join the fishable stock.

### 2.11.3. Advice

Table 2.11.1 shows MRI TAC recommendations, national TAC, and long rough dab landings in the main grounds from Snæfellsnes south to Stokksnes since quota year 1995/1996.

Long rough dab is distributed widely around Iceland. However, the distribution is so sparse that direct targeting has not been cost effective, except on small areas where the fish aggregate for spawning. The largest proportion of landings in quota year 2012/2013 was caught outside of the traditional grounds and only about 5% of allotted TAC was landed.

Since long rough dab is mainly bycatch and landings are well below TAC, the MRI does not recommend a TAC for quota year 2014/2015. Due to the poor stock status the MRI recommends that known spawning grounds be closed during the next spawning season.

<b>TAFLA 2.11.1.</b> <b>SKRÁPFLÚRA. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (tonn) á aflamarkssvæðinu.</b> <i>LONG ROUGH DAB. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes) from the quota area.</i>			
Fiskveiðiar Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli Landings
1995/96	5 000		5 300
1996/97	5 000		4 400
1997/98	5 000	5 000	3 400
1998/99	5 000	5 000	3 300
1999/00	5 000	5 000	2 800
2000/01	5 000	5 000	2 800
2001/02	5 000	5 000	2 500
2002/03	5 000	5 000	2 100
2003/04	5 000	5 000	1 600
2004/05	5 000	5 000	800
2005/06	2 000	3 500	600
2006/07	500	1 500	260
2007/08	500	1 000	210
2008/09	250 <sup>1)</sup>	1 000	210
2009/10	200 <sup>1)</sup>	1 000	130
2010/11	200 <sup>1)</sup>	200	110
2011/12	200 <sup>1)</sup>	200	80
2012/13	200 <sup>1)</sup>	200	10
2013/14	200 <sup>1)</sup>	200	
2014/15	-		

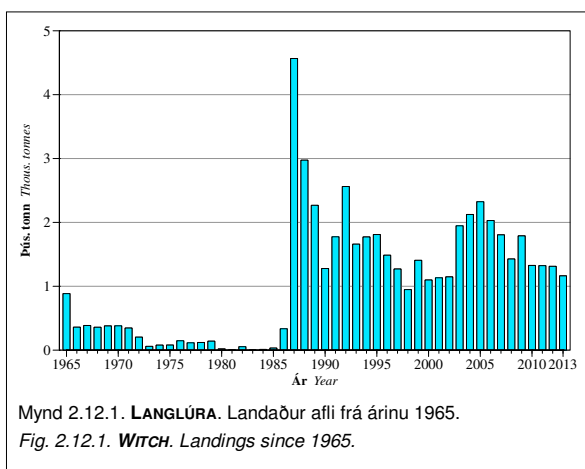
<sup>1)</sup> Engar beinar veiðar. Aflamark sem nemi áætluðum aukaafli við aðrar veiðar. No directed fishery. TAC set no higher than expected long rough dab bycatch in other fisheries.

## 2.12. WITCH *Glyptocephalus cynoglossus*



### 2.12.1. Landings, effort, and age distribution

From 1950–1965 annual landings of witch from Icelandic waters were 600–1 400 tonnes, mostly from foreign vessels (Table 3.12.1). Over the next two decades annual landings were less than 400 tonnes but in 1987 about 10 seiners began targeting witch, landing just under 4 600 tonnes (Fig. 2.12.1; Table 3.12.1). From 1988–1996 annual landings were from 1 300–3 000 tonnes. In quota year 1996/1997 the first TAC was allocated and since then annual landings have been close to TAC. In 2013 witch landings were nearly 1 200 tonnes.

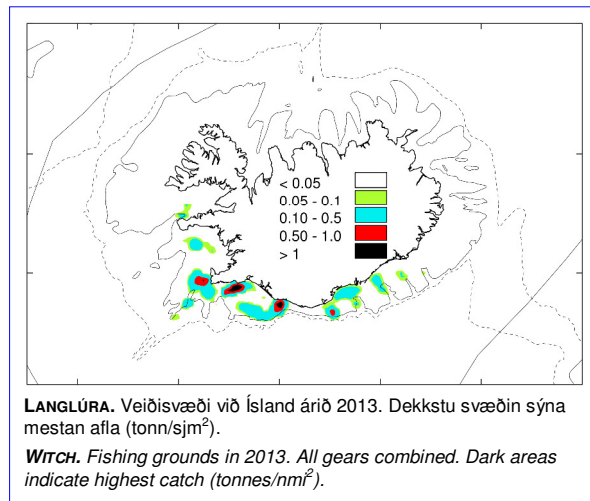


Most of the witch landings come from the seine fleet, but the proportion caught by the Norway lobster (*Nephrops norvegicus*) fleet has increased from under a quarter in 2009 to nearly half of landings in the last three years. Witch is a common bycatch in the *Nephrops* fishery and comparisons of fish size from lobster vessels and the MRI lobster surveys indicates that discard of small witch is probably considerable.

CPUE of seiners (catch per cast where witch is more than half) was nearly 1 000 kg in 1987, but decreased steadily to 330 kg/cast in 1998 (Fig. 2.12.2). From 1998–2006 CPUE doubled but has since steadily decreased to 500–600 kg.

Direct fishing for witch was heavy from 1992–1995 but then decreased until 2000. There has been no significant change in effort in the last decade but it is difficult to estimate total effort because a large proportion of landings are bycatch in the *Nephrops* fishery.

Catch-at-age analysis of witch stock indicates that cohorts from 1998–2001 were large. CPUE was high from 2003–2008 when these cohorts were the majority of the fishable stock. Cohorts from 2004–2007 comprised the majority of landings last year.

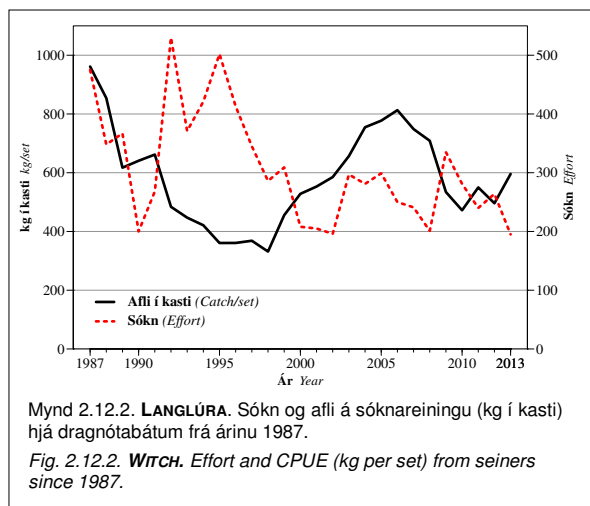


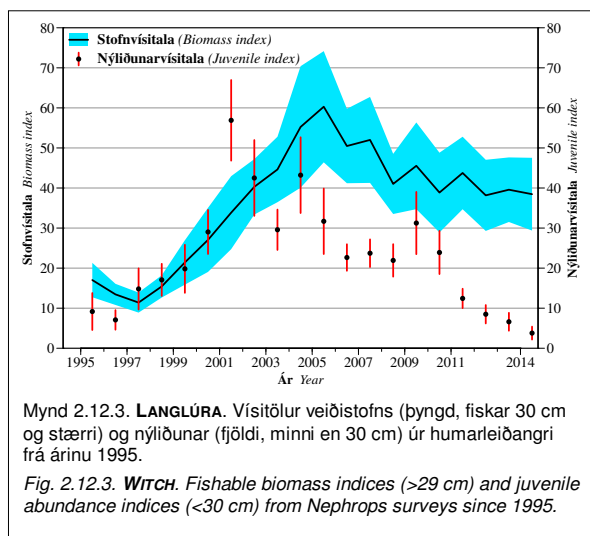
### 2.12.2. Groundfish survey

The fishable stock biomass index from *Nephrops* surveys tripled from 1995–2005 (Fig. 2.12.3) and a similar trend is shown in spring groundfish survey (SMB) data. After 2005 the biomass index from the Norway lobster fishery decreased but hasn't changed much in the last seven years.

The frequency index of young fish in the *Nephrops* fishery increased considerably from 1996–2001 but has been decreasing since (Fig. 2.12.3). This index has been below average for four years and has been at an historical minimum for two years.

Witch enters the fishable stock at age 3–4 and mostly ages 5–8 fish are caught. The results of the *Nephrops* survey in May 2014 confirm that the 2007 and 2008 cohorts are stronger than first thought. Cohorts from 2009–2011 are small, as are preliminary estimates of the 2012 cohort. Thus, poor recruitment is expected in the fishable stock in the coming years.





### 2.12.3. Advice

Table 2.12.1 shows MRI TAC recommendations, national TAC, and total witch landings since quota year 1994/1995.

Measurements in the *Nephrops* survey show a trend of poor recruitment in recent years and that the fishable stock decreased after 2005 and has remained steadily low in recent years. The MRI recommends that witch TAC for quota year 2014/2015 should not exceed 1 100 tonnes. Small cohorts from 2009–2012 will probably cause fishable stock and, therefore TAC, to decrease in coming years.

**TAFLA 2.12.1.**  
**LANGLÚRA. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og landaður afli (tonn).**  
*WITCH. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).*

Fiskeveiðiar Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli Landings
1994/95	1 500		1 760
1995/96	1 400		1 660
1996/97	1 200	1 200	1 260
1997/98	1 100	1 100	960
1998/99	1 100	1 100	1 160
1999/00	1 100	1 100	1 110
2000/01	1 100	1 100	1 160
2001/02	1 350	1 350	1 220
2002/03	1 500	1 500	1 530
2003/04	1 500	1 500	2 000
2004/05	2 000	2 000	2 250
2005/06	2 200	2 400	2 190
2006/07	2 000	2 400	2 200
2007/08	2 000	2 400	1 540
2008/09	1 600	2 200	1 700
2009/10	1 600	2 200	1 300
2010/11	1 300	1 300	1 220
2011/12	1 100	1 300	1 450
2012/13	1 100	1 100	1 180
2013/14	1 100	1 100	
2014/15	1 100		



## 2.13. LEMON SOLE *Microstomus kitt*

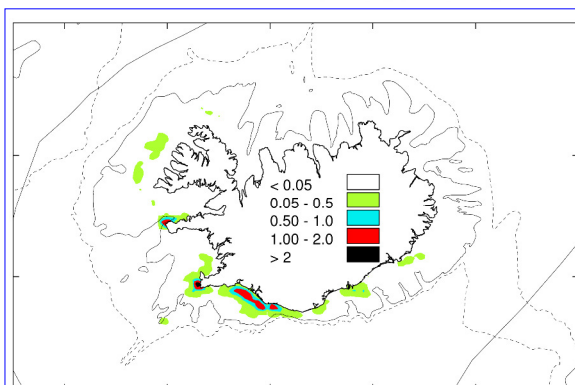


### 2.13.1. Landings, effort, and stock indices

From 1951–1965 lemon sole landings from Icelandic waters were about 1 300–2 900 tonnes, mostly landed by foreign vessels (Table 3.13.1). Landings decreased after 1966 and were insignificant from 1977–1984. In 1985 targeting lemon sole began anew and landings that year were nearly 400 tonnes (Fig. 2.13.1). Since then, landings have increased in stages and reached 2 700 tonnes in 2006, which was the largest lemon sole catch since 1963. Landings in 2013 was nearly 1 800 tonnes.

The majority of lemon sole is caught by bottom trawl and seine, though other gears are used. In the management area south and southwest of Iceland CPUE in seine (casts where lemon sole was  $\geq 25\%$  per cast) decreased from 350–400 kg in 1991–1992 to about 200 kg in 1993–1998. From 1999–2000 CPUE in the area was about 280 kg, it has increased annually and reached 690 kg last year.

According to indices from the spring groundfish survey (SMB) fishable stock decreased by about half



ÞYKKVALÚRA. Veiðisvæði við Ísland árið 2013. Dökkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

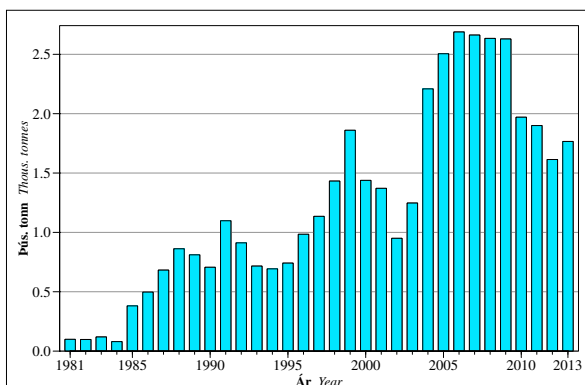
LEMON SOLE. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nmi<sup>2</sup>).

from 1987–2000. The fishable stock index has been high since 2003 despite some decrease from 2011–2014. Furthermore, the recruitment index has been high since 2001 (Fig. 2.13.2).

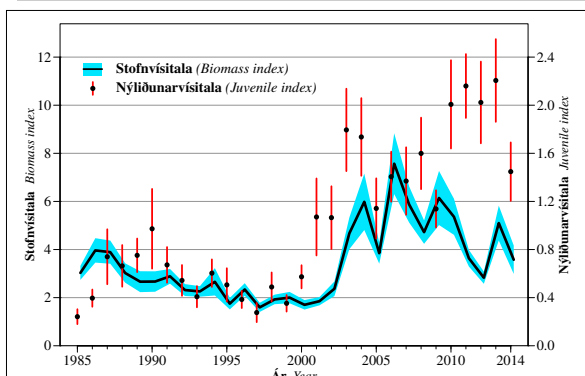
### 2.13.2. Advice

Table 2.13.1 shows MRI TAC recommendations, National TAC, and total lemon sole landings since quota year 1999/2000.

The potential yield of this stock is unknown. For four years the SMB fishable stock indices have been average and CPUE and recruitment have been good. Age-in-catch analysis indicates that fishing mortality is With these considerations in mind, MRI recommends that in the quota year TAC for lemon sole in quota year 2014/2015 should not exceed 1 600 tonnes.



Mynd 2.13.1. ÞYKKVALÚRA. Landaður afli frá árinu 1981.  
Fig. 2.13.1. LEMON SOLE. Landings since 1981.



Mynd 2.13.2. ÞYKKVALÚRA. Vísitalur veiðistofns (þyngd, fiskar 30 cm og stærrir) og nýliðunar (fjöldi, minni en 20 cm) úr stofnmælingu botnfiska í mars, ásamt staðalfrávikum.

Fig. 2.13.2. LEMON SOLE. Fishable biomass indices (>29 cm) and juvenile abundance indices (<20 cm) from the annual groundfish surveys in March, along with the standard deviation.

TAFLA 2.13.1.

ÞYKKVALÚRA. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (tonn).

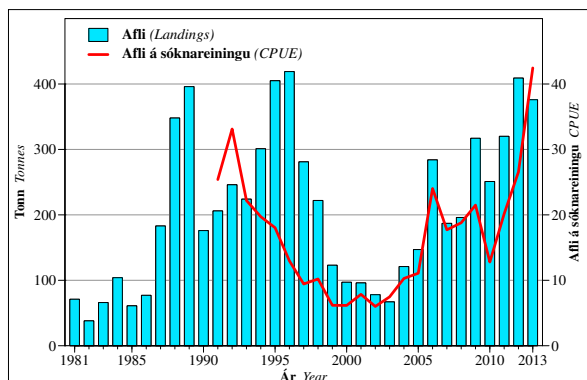
LEMON SOLE. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).

Fiskveiðiár Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli Landings
1999/00	1 400	1 400	1 400
2000/01	1 400	1 400	1 400
2001/02	1 400	1 400	1 000
2002/03	1 600	1 600	1 100
2003/04	1 600	1 600	2 100
2004/05	1 600	1 600	2 600
2005/06	1 600	1 800	2 500
2006/07	1 600	2 000	2 900
2007/08	1 600	2 200	2 600
2008/09	1 600	2 200	2 700
2009/10	1 800	2 200	2 000
2010/11	1 800	1 800	1 740
2011/12	1 800	1 800	1 800
2012/13	1 400	1 400	1 460
2013/14	1 600	1 600	
2014/15	1 600		

## 2.14. MEGRIM *Lepidorhombus whiffiagonis*

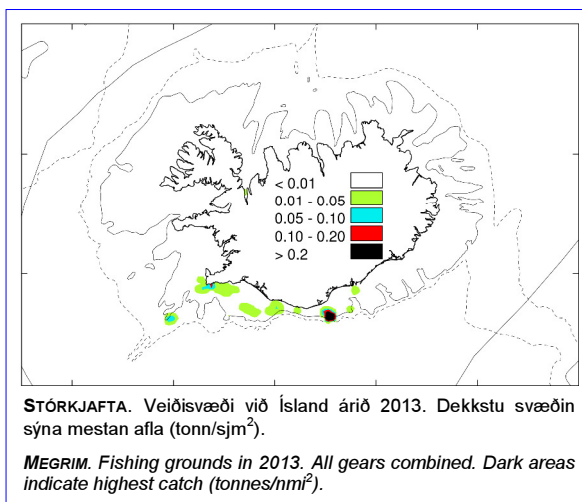


From 1951–1973 annual megrim landings were from 400–700 tonnes, most of which was landed by foreign vessels (Table 3.14.1). Landings decreased from 1974 and were only 40–100 tonnes from 1981–1986 (Fig. 2.14.1; Table 3.14.1). After 1986 landings varied greatly, climaxing at 420 tonnes in 1996 but reaching a low of 67 tonnes in 2003. Landings in 2013 totalled 376 tonnes.



Mynd 2.14.1. STÖRKJAFTA. Landaður afli frá árinu 1981 og afli á sóknareiningu í dragnot (kg í kasti) frá árinu 1991.

Fig. 2.14.1. MEGRIM. Landings since 1981 and CPUE (kg per set) from seiners since 1991.



Megrim is mostly bycatch in seine and *Nephrops* trawl, but some is caught in bottom trawls. CPUE in seines (considering only hauls from deeper than 100 m and all megrim landings in seines from Snæfellsnes south to Stokksnes) decreased from 1992–1999 and was rather low in 2003. Since then, CPUE has increased somewhat (Fig. 2.14.1). Population size, fishing pressure, and potential yield are all unknown for megrim.

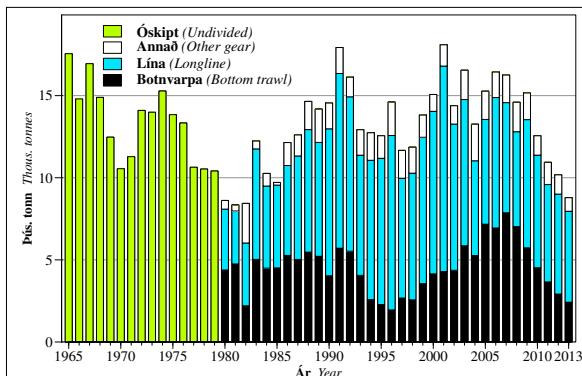
The MRI does not recommend a TAC for megrim for quota year 2014/2015.

## 2.15. ATLANTIC WOLFFISH *Anarhichas lupus*



### 2.15.1. Landings and effort

Atlantic wolffish landings in 2013 were nearly 9 000 tonnes, about 1 400 tones less than in 2012 and the smallest since 1982 (Fig. 2.15.1; Table 3.15.1). Longlines have accounted for more than half of landings and bottom trawl accounts for 20–50%.



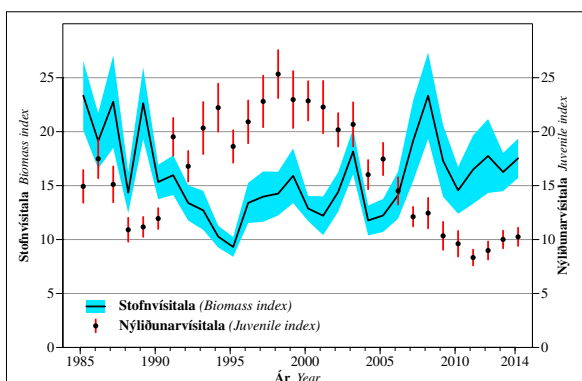
Mynd 2.15.1. STEINBITUR. Landaður afli eftir veiðarfærum frá árinu 1965.

Fig. 2.15.1. ATLANTIC WOLFFISH. Landings since 1965, split by gear.

Targeting of wolffish with longline began in 1998 and climaxed in 2006, but has since decreased. CPUE on longlines has changed little since 2006. Targeting of wolffish with bottom trawl increased after 1998, climaxing in 2008, but has decreased steadily since. CPUE in bottom trawl has been steady in these years with the exception of an increase from 2003–2005.

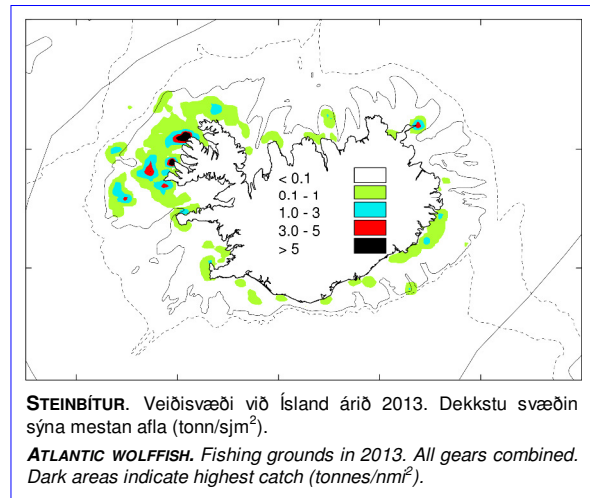
### 2.15.2. Groundfish survey

Wolffish in the spring groundfish survey (SMB) is distributed everywhere in the study are, though most is caught to the south of the West fjords. Wolffish first enter the survey at age 1, seven years



Mynd 2.15.2. STEINBITUR. Vísitölur veiðistofns (þyngd, fiskar 60 cm og stærrí) og nýliðunar (fjöldi, 20–40 cm) úr stofnmælingu botnfiska í mars, ásamt staðalfrávik.

Fig. 2.15.2. ATLANTIC WOLFFISH. Fishable biomass indices (>60 cm) and juvenile abundance indices (20–40 cm) from the annual groundfish survey in March, along with the standard deviation.



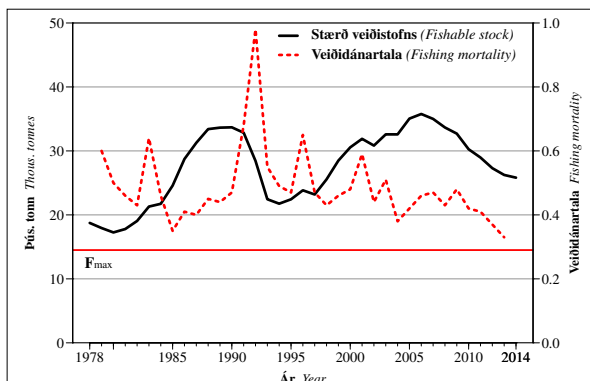
STEINBITUR. Veiðisvæði við Ísland árið 2013. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

ATLANTIC WOLFFISH. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nm<sup>2</sup>).

before it enters fishable stock. Figure 2.15.2 shows SMB fishable stock biomass and recruitment indices. The recruitment index uses the number of 20–40 cm wolffish age 3–8 and the fishable stock biomass index uses the weight of wolffish larger than 60 cm. According to SMB data, the fishable stock biomass index decreased by about more than half from 1985–1995 then increased, with some variation. This year the index was near the average. According to SMB data recruitment was good from 1991–1998, but has decreased steadily since and in 2009–2014 it was at an historical low. The increasing fishable biomass from 1995–2008 reflects the good recruitment of previous years.

### 2.15.3. Stock status

An age-length model is used in estimation of wolffish stock size (Gadget, see Appendix 5.1) and an ADAPT model and time series analysis are used for support. The results of these models are



Mynd 2.15.3. STEINBITUR. Stærð veiðistofns (þús. tonna) 1978–2014 og veiðidánartala 70 cm og stærrí steinbits (F) 1979–2013 samkvæmt Gadget líkani.

Fig. 2.15.3. ATLANTIC WOLFFISH. Fishable stock size (thous. tonnes) 1978–2014 and F of 70 cm and longer Atlantic wolffish 1979–2013 based on the Gadget model.

comparable. Figure 2.15.3 shows trends in fishable stock and fishing mortality of wolffish that have entered the fishable stock. Estimated fishing mortality has been above that which provides maximum yield ( $F_{\max}=0.29$ ) since 1978. In 2013 fishing mortality was 0.33, the lowest since 1979. The fishable stock has decreased by nearly half since 2006 and is now near the historical average. Due to poor recruitment in recent years (Fig. 2.15.2) it is expected that the stock will continue to decrease unless fishing is decreased.

#### 2.15.4. Advice

Wolffish landings have exceeded TAC for years (Table 2.15.1) and fishing mortality has been above  $F_{\text{msy}}$ . The potential yield of the stock will most likely decrease in the next few years as small cohorts enter the fishable stock. The MRI recommends that fishing mortality aim towards that which produces maximum sustainable yield ( $F_{\max} = 0.29$ ) which means not more than 7 500 tonnes landed in quota year 2014/2015. Furthermore, MRI repeats previous recommendations for a closure of the wolffish spawning grounds at Látragrunn during the spawning and rearing season.

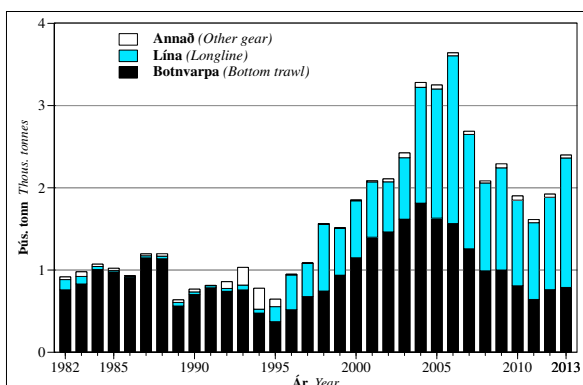
Tafla 2.15.1 STEINBITUR. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (tonn). ATLANTIC WOLFFISH. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).			
Fiskveiðidár Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli Landings
1996/97	13 000	13 000	11 523
1997/98	13 000	13 000	11 689
1998/99	13 000	13 000	13 051
1999/00	13 000	13 000	14 906
2000/01	13 000	13 000	18 094
2001/02	13 000	16 100	13 667
2002/03	15 000	15 000	16 953
2003/04	15 000	16 000	13 253
2004/05	13 000	16 000	14 208
2005/06	13 000	13 000	16 473
2006/07	12 000	13 000	15 796
2007/08	11 000	12 500	15 159
2008/09	12 000	13 000	15 430
2009/10	10 000	12 000	13 128
2010/11	8 500	12 000	12 122
2011/12	7 500	10 500	10 597
2012/13	7 500	8 500	8 957
2013/14	7 500	7 500	
2014/15	7 500		

## 2.16. Spotted wolffish *Anarhichas minor*



### 2.16.1. Landings and effort

Spotted wolffish landings in 2013 were nearly 2 400 tonnes, about 400 tonnes more than in 2012 (Fig. 2.16.1; Table 3.16.1). From 1982–1997 average landings were over 900 tonnes, most of which was caught by trawlers. After that, landings steadily grew to nearly 3 700 tonnes in 2006, then decreased in following years. Since 1995 there has been a proportional increase in the use of longlines in recent years which has produced over half of total landings, whereas bottom trawlers landed under half. Mostly, spotted wolffish is bycatch in these two gears.

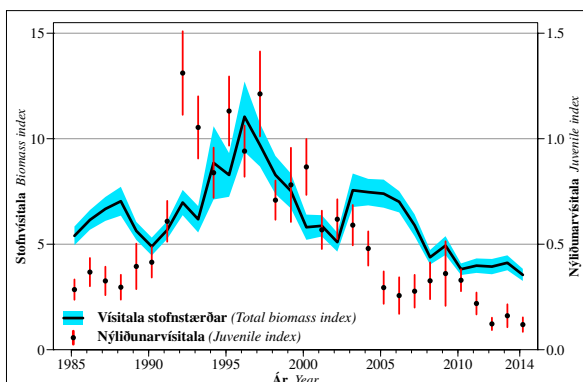


Mynd 2.16.1. HLYRI. Landaður afli eftir veiðarfærum frá árinu 1982.  
Fig. 2.16.1. SPOTTED WOLFFISH. Landings by gear since 1982.

Targeting by the trawler fleet began in 1995, climaxed in 2006, and then remained steady. Targeting by longliners increased from 1995–2006, decreased from then until 2010 and has remained unchanged since. Targeting by longliners in 2013 was an historical maximum.

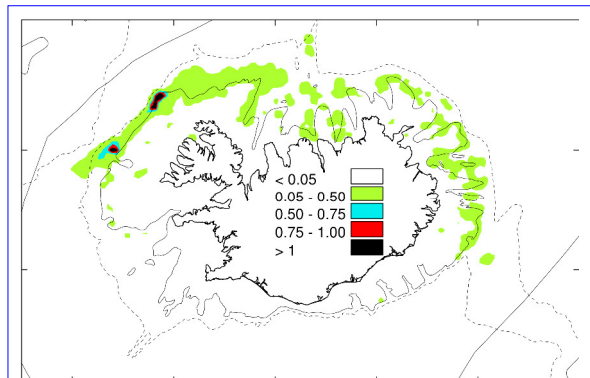
### 2.16.2. Groundfish survey

In the spring groundfish survey (SMB) most spotted wolffish is caught off the West Fjords and



Mynd 2.16.2. HLYRI. Heildarviðisitalur (þyngd) og nýliðunarviðisitalur (fjöldi, fiskar 20–40 cm) úr stofnmælingu botnfiska í mars frá árinu 1985, ásamt staðalfráviki.

Fig. 2.16.2. SPOTTED WOLFFISH. Total biomass indices and juvenile abundance indices (20–40 cm) from the annual groundfish survey in March since 1985, along with the standard deviation.



HLYRI. Veiðisvæði við Ísland árið 2013. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

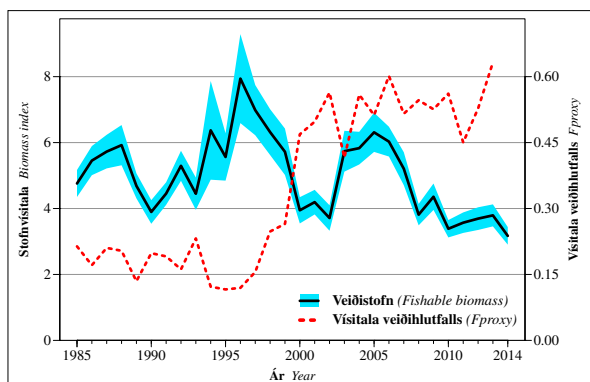
SPOTTED WOLFFISH. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nmi<sup>2</sup>).

East Fjords, but northern waters are also important. Spotted wolffish first appear in the SMB at age 1, four years before entering the fishable stock.

Figure 2.16.2 shows recruitment and biomass indices from SMB data. Recruitment indices (which use the number of 20–40 cm fish, roughly age 2–4) were high from 1992–2000, but have been very low in recent years. The biomass index was high from 1994–1998 but has been decreasing since. Figure 2.16.3 shows stock biomass indices, calculated using the weight of 60 cm fish. The trend in fishable stock biomass is similar to that of total biomass. All three of these indices were at an historical low in 2014.

### 2.16.3. Stock status

According to SMB data, the stock and recruitment are at historical lows. Also, from 1985–1997 landings averaged over 900 tonnes, but stock size was steady and after 1997 it has grown. Landings from 1998–2013 were from 1 500–3 700 tonnes, averaging 2 300 tonnes annually, and the



Mynd 2.16.3. HLYRI. Viðisitalur veiðistofns (þyngd, fiskar 60 cm og stærrir) úr stofnmælingu botnfiska í mars 1985–2014, ásamt staðalfráviki, og viðisitala veiðihlutfalls 1985–2013.

Fig. 2.16.3. SPOTTED WOLFFISH. Fishable biomass indices (>60 cm) from the annual groundfish survey in March 1985–2014, along with the standard deviation, and  $F_{proxy}$  in 1985–2013.

average harvest rate (catch/biomass index SMB) has been high as compared to that from 1985–1997 (Fig. 2.16.3).

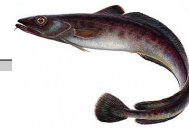
#### **2.16.4. Advice**

The potential yield of spotted wolffish is poorly understood and few studies are ongoing on the species. The MRI asserts that landings have exceeded the yield capacity of the stock since 1998. The MRI recommends that directed effort be decreased significantly and that in quota year 2014/2015 should not exceed 900 tonnes. Such a TAC would lead to a harvest rate of half of the average from 2000.

---

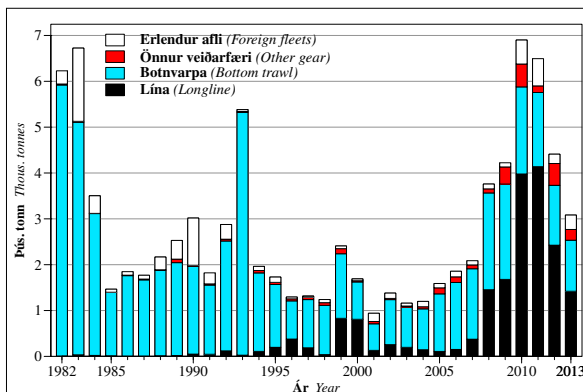


## 2.17. BLUE LING *Molva dypterygia*



### 2.17.1. Landings and effort

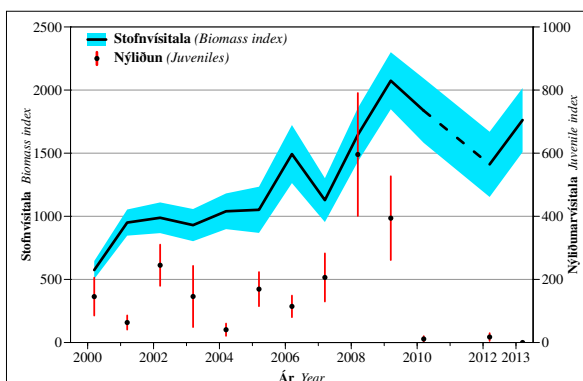
Blue ling landings were from 1 000–3 000 tonnes from 1985–2007, with the exception of 1993. There was a dramatic increase after 2008 (Fig. 2.17.1; Table 3.17.1). Landings in 2010 were 6 900 tonnes, the largest they have been since 1981. Landings have decreased since and in 2013 were about 3 100 tonnes, of which Icelanders landed about 2 800 tonnes, 90%.



Mynd 2.17.1. BLÁLANGA. Landaður afli eftir veiðarfærum frá árinu 1982.

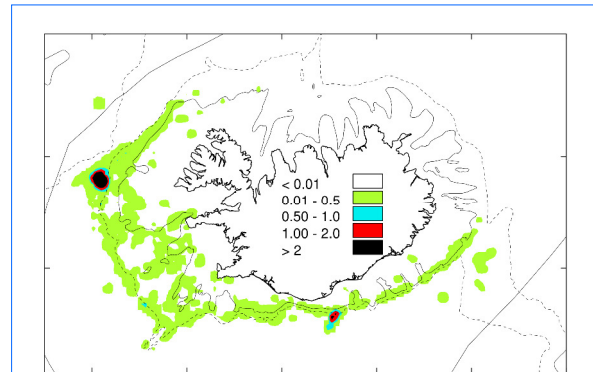
Fig. 2.17.1. BLUE LING. Landings by gear type since 1982.

Targeting of spawning blue ling south of the Westman Islands from 1980–1984 and on Frans Mound to the east of the Reykjanes Ridge in 1993 appears to have been far beyond the potential yield of the stock. From 1993–2007 blue ling was landed mostly as bycatch in bottom trawl fisheries. From 2008–2010 longliner landings of blue ling increased. Longline as a proportion of total landings has remained high: in 2011 they were 70%, in 2012 about 58%, and about 51% in 2013. This dramatic increase



Mynd 2.17.2. BLÁLANGA. Stofnvísitala (þyngd, fiskar 40 cm og stærr), og nýliðunarvísitala (fjöldi, minni en 40 cm) úr stofnmælingu botnfiska að hausti, ásamt staðalfráviki.

Fig. 2.17.2. BLUE LING. Biomass index (40 cm and larger) and juvenile abundance index (<40 cm) from the annual groundfish survey in autumn, along with the standard deviation.



BLÁLANGA. Veiðisvæði við Ísland árið 2013. Öll veiðarfæri. Dökku svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

BLUE LING. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nm<sup>2</sup>).

is due to direct targeting in summer months. Blue ling is increasing in bycatch in the redfish and Greenland halibut fisheries in deep waters off the West Fjords, which coincides with a northerly range extension seen in the groundfish surveys.

### 2.17.2. Groundfish surveys

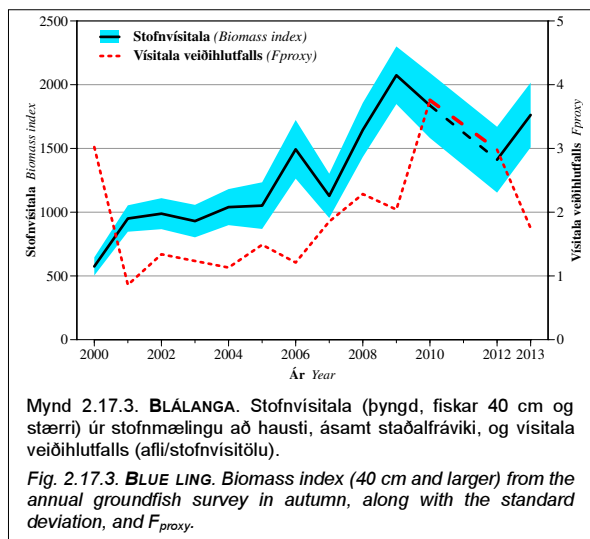
The fall groundfish survey (SMH) is thought to provide a better estimate of the blue ling stock than the spring groundfish survey (SMB) because the former has denser sampling in the range of the species.

According to SMH data, the stock grew after 2006 and climaxed in 2009. Biomass indices from the SMH show a decrease of about a quarter from 2009 to 2012, much of this loss was recovered in 2013. The SMH recruitment index in 2013 is the lowest on record and has been very low since 2010 (Fig. 2.17.2).

### 2.17.3. Stock status

The fishable stock increased considerably from 2006–2010 but effort also increased concurrently. The harvest rate increased rapidly after 2007 (Fig. 2.17.3) because of the jump in longline effort targeting blue ling. However, harvest rate decreased from 2010–2013 and in 2013 was near the period average from 2002–2009 when the stock was growing. Average harvest rate from 2002–2009 is the basis for ICES and MRI recommendations.

If recruitment continues the way it appears to be in this year’s survey, further decline in the stock can be expected in two to three years.



**TAFLA 2.17.1.**  
**BLÁLANGA. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (þús. tonn).**  
**BLUE LING. TAC recommended by the Marine Research Institute, national TAC, and landings (thous. tonnes).**

Fiskveiði- ár Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli Íslendinga Landings (Iceland)	Afli annarra Landings (others)	Afli alls Total landings
2001/02			1 113	179	1 292
2002/03			963	116	1 079
2003/04			1 157	62	1 219
2004/05			1 380	116	1 496
2005/06			1 496	95	1 591
2006/07			2 078	121	2 199
2007/08			2 849	92	2 941
2008/09			4 075	109	4 184
2009/10			6 495	183	6 678
2010/11			6 464	528	6 992
2011/12	4 000		4 238	799	5 037
2012/13	3 100		2 996	203	3 199
2013/14	2 400	2 400			
2014/15	3 100				

#### 2.17.4. Advice

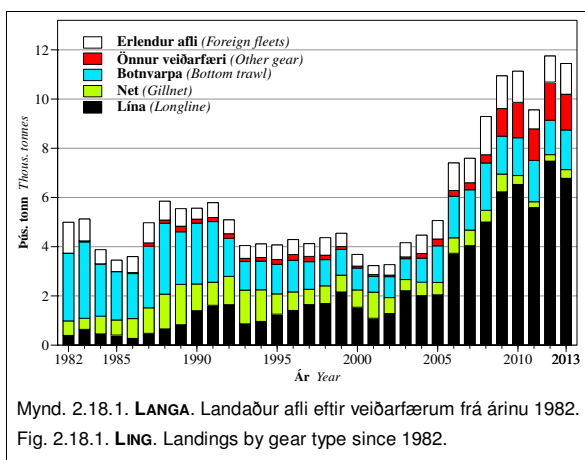
Since fishing resistance of blue ling is poorly understood and the species is not being studied, caution must be taken in exploitation of the species. The MRI believes that the increased landings seen in recent years is above the yield potential of the stock and recommends that in quota year 2014/2015 landings should not exceed 3 100 tonnes. This would lead to a similar harvest rate as incurred in the period from 2002–2009 when the stock was growing. In addition, it is recommended that known spawning grounds south of the Westman Islands and on Frans Mound remain closed during the spawning season from 15. February until 30. April.

## 2.18. LINGA *Molva molva*



### 2.18.1. Landings and effort

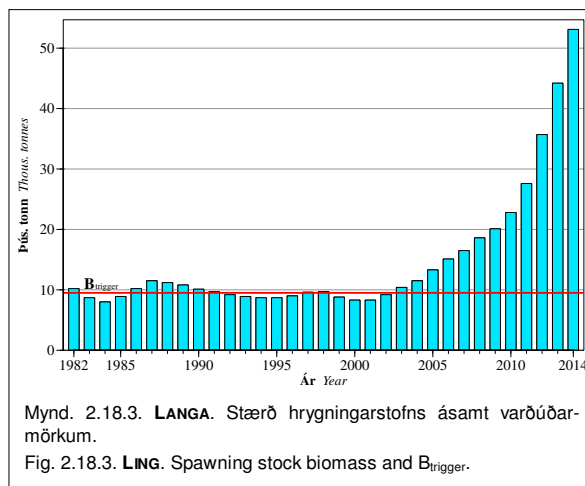
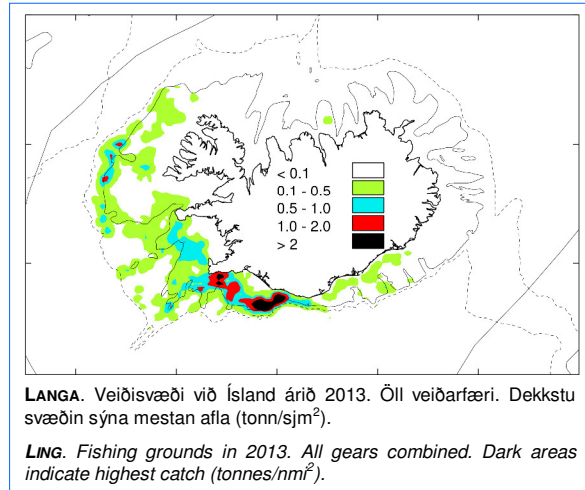
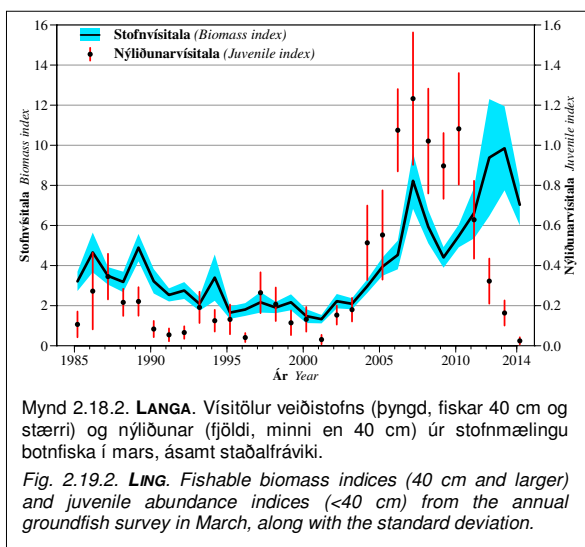
Icelandic ling landings from 1982–2013 are shown in Figure 2.18.1 and since 1950 in Table 3.18.1. Landings were highest in 1971 at about 15 kt. From 1982–2005 they were from 3 200–5 900 tonnes but have increased since and in 2013 totalled 11 kt, of which the Icelandic fleet landed about 10 kt. For 30 years Icelanders have landed about 85–90% of the ling caught in Icelandic waters, but before that foreign vessels were a larger proportion (Table 3.18.1).



The gears used favored by ling fishermen have changed much in recent years and the use of longline went from 11% in 1982–1989 to 66% in 2013. At the same time, the proportion of landings by gillnets and bottom trawl have decreased.

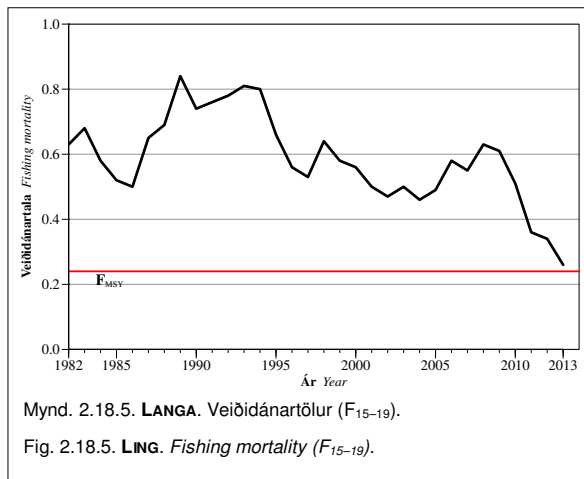
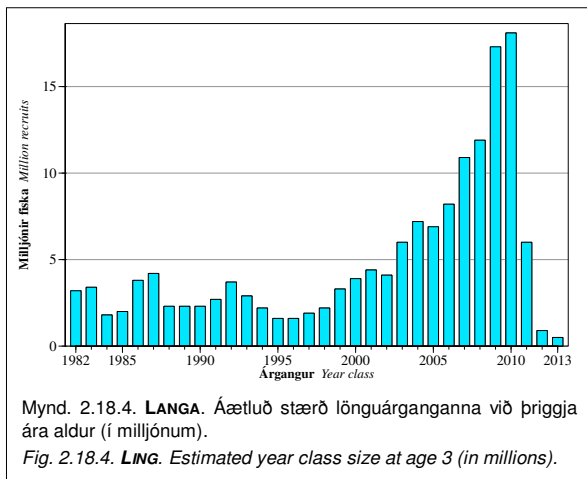
### 2.18.2. Stock status

The SMB-based biomass index for ling decreased by more than half from 1985–2001. Since 2005 this



index has increased dramatically and in 2014 among the highest on record (Fig. 2.18.2). The recruitment index has declined significantly from the high indices in 2004–2010.

In an evaluation conference in February, 2014, ICES agreed to use a Gadget stock model that has been under development for some years in assessment of ling stock in Icelandic waters. The variable  $F_{MSY}$  was defined as 0.24, as was a threshold for the spawning stock ( $B_{Trigger} = 9\,500$  t). According to assessments, the spawning stock has increased in recent years (Fig. 2.18.3). Recruitment increased from 2000–2010 but has been poor since 2012 (Fig. 2.18.4). Fishing mortality was high until 2010, but has decreased since and is now, at  $F=0.26$ , near the optimum level at  $F=0.26$  (Fig. 2.18.5). Projections indicate that the stock will likely decrease considerably in the coming years because of poor recruitment and that landings will decrease to under 10 kt.



### 2.18.3. Advice

Table 2.18.1 shows MRI TAC recommendations and national TAC since 2001/2002, as well as total ling landings since 1999/2000.

The groundfish survey and trends in CPUE indicate that the ling stock has increased rapidly since 2000 and is larger than at any time since measurement began in 1982.

The MRI recommends that in quota year 2014/2015 TAC aim to achieve  $F_{MSY}$ , that is to say that it should not exceed 14 300 tonnes, including landings by foreign vessels which has averaged about 1 100 tonnes over the last four years.

**Tafla 2.18.1.**  
**LAGA. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (tonn).**  
*LING. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).*

Fiskveiðidár <i>Quota year</i>	Tillaga <i>Rec TAC</i>	Aflamark <i>National TAC</i>	Afli Ísland Landings Iceland	Afli annarra Landings others	Heildar- afli <i>Total landings</i>
1999/00			3 496	475	3 961
2000/01			3 182	359	3 451
2001/02	3 000	3 000	2 542	426	2 968
2002/03	3 000	3 000	3 137	578	3 715
2003/04	3 000	3 000	3 864	744	4 608
2004/05	4 000	4 000	4 488	750	5 238
2005/06	4 500	5 000	5 842	1 119	6 961
2006/07	5 000	5 000	6 625	992	7 617
2007/08	6 000	7 000	7 008	1 552	8 560
2008/09	6 000	7 000	9 160	1 329	10 489
2009/10	6 000	7 000	9 450	1 263	10 713
2010/11	7 500	7 500	9 327	768	10 095
2011/12	8 800	9 000	10 074	1 059	11 133
2012/13	12 000	11 500	11 196	1 249	12 445
2013/14	14 000	13 500			
2014/15	14 300				

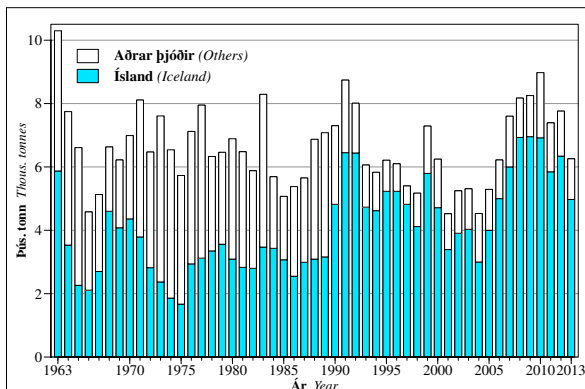
## 2.19. TUSK *Brosme brosme*



### 2.19.1. Afli og sókn

Icelandic tusk landings from 1963–2012 are shown in Figure 2.19.1 and Table 3.19.1. In 1963 landings were over 10 kt, but have since been from 5 000–8 000 tonnes. In 2013 landings were about 6 300 tonnes, nearly 1 500 tonnes less than in 2012. Since 1991 Icelanders have landed 75–80% of the total and Faroese Islands vessels 20–25%. From 2004–2010 landings doubled and were about 7 000 tonnes from 2008–2010 which is an historical record for the Icelandic fleet. Tusk landed by Icelanders in 2013 were nearly 5 000 tonnes.

In recent years the majority of tusk taken has been landed with longline, or over 95% of landings.



Mynd 2.19.1. KEILA. Landaður afli eftir veiðarfærum frá árinu 1963.  
Fig. 2.19.1. TUSK. Landings by gear type since 1963.

### 2.19.2. Groundfish surveys

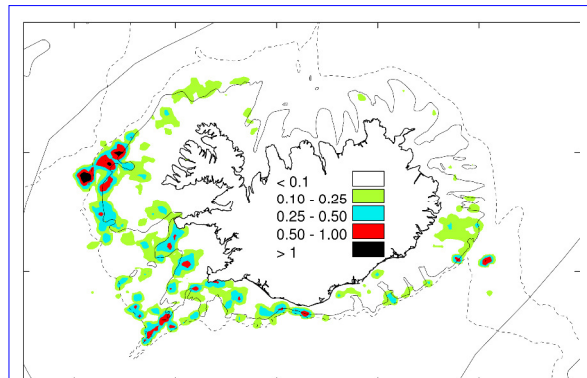
Tusk is usually caught at almost half of the sampling stations of the spring groundfish survey (SMB). Their distribution is even and data are similar from year to year. Also, there is consistency between the SMB and the fall groundfish survey (SMH) although less tusk is caught in the latter. In the SMB tusk has even been found off the West Fjords and southeast of Iceland.

The fishable biomass index from the SMB decreased rapidly from 1989–1995 and remained low until 2001 (Fig. 2.19.2). From 2002–2006 this index grew rapidly and was rather steady until 2010, it increased in 2011 and 2012 but decreased again in 2013 and 2014. The young fish biomass increased from 1996 until climaxing 2006. Since 2007 the young fish biomass index has decreased rapidly and is now as low as it was from 1993–1996.

### 2.19.3. Stock status

ICES and the MRI base their recommendations on an age-length model (Gadget, see Appendix 5.1).

The fishable stock is currently estimated far below what it was in last year's assessment by a



KEILA. Veiðisvæði keilu við Ísland árið 2013. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

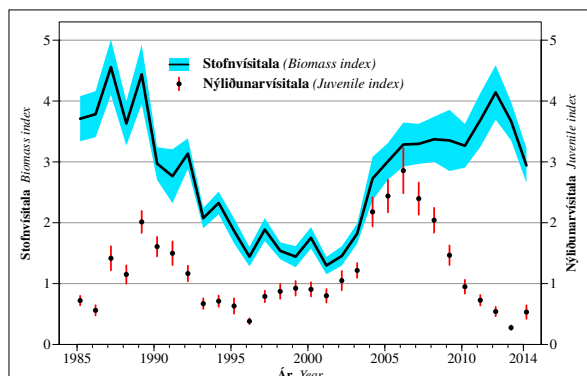
TUSK. Fishing grounds in 2013. All gears combined. Dark areas indicate highest catch (tonnes/nm<sup>2</sup>).

difference of 23%. The main reason for this is the decrease in biomass index in the surveys in 2014.

At a meeting of the deep sea fish committee of ICES last winter assumptions and data used in the Gadget model were reevaluated. Optimum effort was also reevaluated and decreased from 0.24 ( $F_{max}$ ) to 0.20 ( $F_{MSY}$ ), fishing mortality has been above this level since 1982. Figure 2.19.3 shows trends in the fishable stock and fishing mortality of tusk that have entered it. Fishing mortality in 2013 was 0.26.

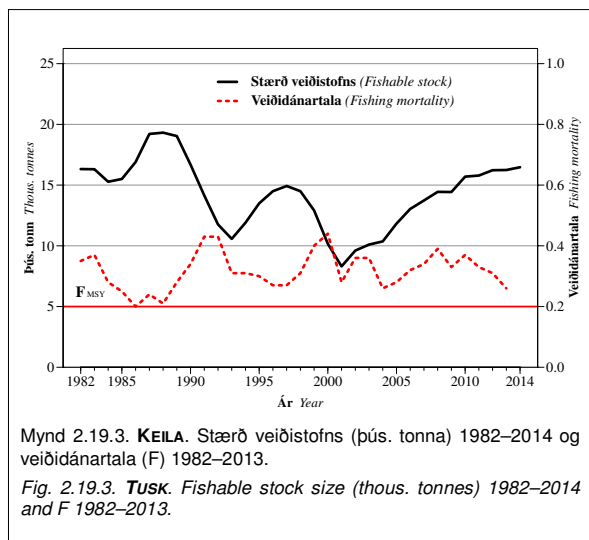
Fishable stock was 15–19 kt from 1980–1988, be declined in the 90s and was about 8 000 tonnes around the turn of the millenium. In the last nine years, the stock has nearly doubled and is now at an historical high of about 16 kt.

Results show that recruitment (age 3 fish) was good from cohorts from 1999–2006 but has since decreased greatly and cohorts from 2008–2010 are the smallest on record (Fig. 2.19.4). This is consistent with the results of the groundfish survey.



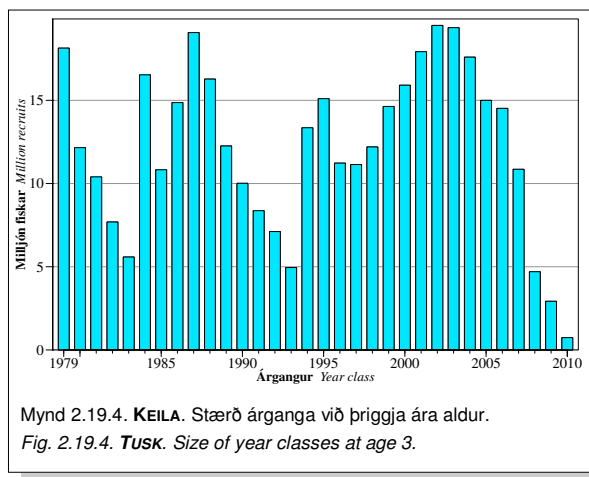
Mynd 2.19.2. KEILA. Vísitölur veiðistofns (þyngd, fiskar 40 cm og stærrí) og nýliðunar (fjöldi, minni en 40 cm) úr stofnmælingu botnfiska í mars, ásamt staðalfrávikum.

Fig. 2.19.2. TUSK. Fishable biomass indices (40 cm and larger) and juvenile abundance indices (<40 cm) from the annual groundfish survey in March, along with the standard deviation.



Thus, it is expected that fishable and spawning stocks will decrease in the coming years.

Tusk has a low growth rate of 3–5 cm annually. Tusk enter the fishable stock at about 40 cm long but do not mature until about 55 cm. So, there are 3–5 years between tusk entering the fishable stock and sexual maturity. For this reason, overfishing can lead to a low proportion of fish being able to spawn.



**Tafla 2.19.1.**  
**KEILA. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (tonn).**  
**Tusk. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).**

Fiskveiðiár Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli íslendinga Landings Iceland	Afli annara Landings others	Heildar- afli Total- landings
2001/02			3 534	1 342	4 876
2002/03	3 500	3 500	3 762	1 284	5 046
2003/04	3 500	3 500	3 428	1 530	4 958
2004/05	3 500	3 500	3 616	1 285	4 901
2005/06	3 500	3 500	4 387	1 541	5 928
2006/07	5 000	5 000	6 336	1 606	7 942
2007/08	5 000	5 500	6 351	1 243	7 594
2008/09	5 000	5 500	6 865	1 297	8 162
2009/10	5 000	5 500	6 325	2 057	8 382
2010/11	6 000	6 000	6 223	1 545	7 777
2011/12	6 900	7 000	5 981	1 420	7 401
2012/13	6 700	6 400	5 549	1 284	6 833
2013/14	6 300	5 900			
2014/15	4 000				

#### 2.19.4. Advice

Table 2.19.1 shows MRI TAC recommendations, national TAC, and total tusk landings since quota year 2001/2002. In most years, total landings are well above TAC because of foreign vessels operating in Icelandic waters and species conversions within the management system.

The MRI recommends that TAC for tusk in quota year 2014/2015 should not exceed 4 000 tonnes, including landings from Icelandic waters by foreign vessels. For the current quota year, the MRI recommended a TAC of 6 300 tonnes. The main reason for the decrease in recommended landings next year are overestimation of the stock last year and the revised definition of optimum effort from 0.24 ( $F_{max}$ ) to 0.20 ( $F_{MSY}$ ). Furthermore, an area closure is again recommended for the tusk rearing grounds off the south and southeast coast.



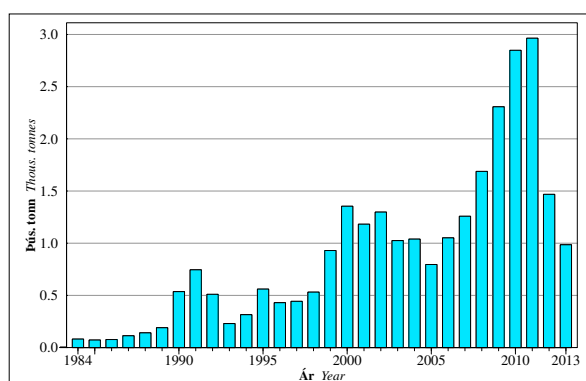
## 2.20. WHITING *Merlangius merlangus*



### 2.20.1. Landings and effort

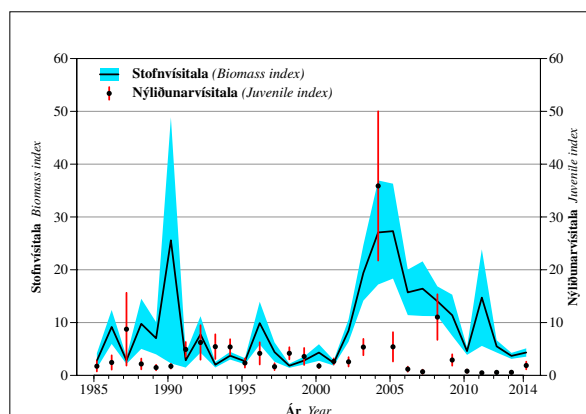
In the years 1984–2013 the landed catch of whiting from Icelandic waters was 100–3 000 tonnes (Fig. 2.20.1 and tafla 3.20.1). The landings in 2013 was just under 1 000 tonnes.

Whiting was not utilized much for a long time, although it was bycatch from other fisheries. The whiting landings increased sharply after 2005 and peaked around 3 000 tonnes in 2011 (Fig. 2.20.1). Whiting is caught widely the south and west off Iceland, especially around Vestmannaeyjar. It is mainly caught in bottom trawl, but also with longline and Danish seine.



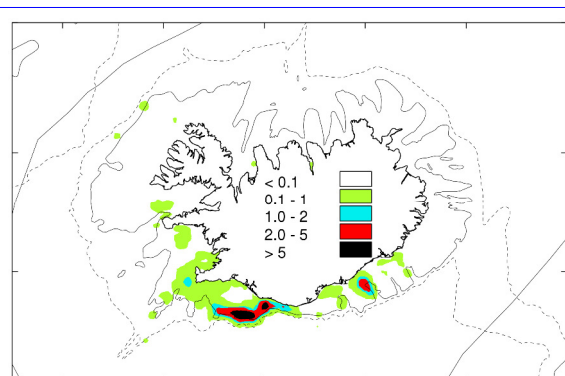
Mynd 2.20.1. LÝSA. Landaður afli frá árinu 1984.

Fig. 2.20.1. WHITING. Landings since 1984.



Mynd 2.20.2. LÝSA. Vísitölur veiðistofns (þyngd, fiskar 40 cm og stærri) og nýliðunar (fjöldi, minni en 20 cm) úr stofnmælingu botnfiska í mars, ásamt staðalfrávikum.

Fig. 2.20.2. WHITING. Fishable biomass indices (>40 cm) and juvenile abundance indices (<20 cm) from the annual groundfish surveys in March, along with the standard deviation.



LÝSA. Veiðisvæði við Ísland árin 2010–2013. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

WHITING. Fishing grounds in 2010–2013. All gears combined. Dark areas indicate highest catch (tonnes/nmi<sup>2</sup>).

A few trawlers have targeted whiting in the spring, and according to registered landings the directed bottom trawl fishery increased in 2009–2011, but has decreased again in the last two years. A similar pattern is seen in the bottom trawl CPUE, indicating that the increased landings in 2009–2011 were primarily due to increased targeting of whiting.

### 2.20.2. Stock status

According to indices from the spring bottom trawl survey (SMB) the trends in whiting recruitment and stock size have in recent years been similar to the haddock stock. A large cohort can be seen from 2003 and another above average from 2007 (Fig. 2.20.2). The fishable biomass index increased rapidly in the years 2002–2005 after a low period of ten years. The index has since declined, except for a temporary increase in 2011, seemingly when the 2007 cohort entered the fishery (Fig. 2.20.2). Over the last three years the fishable biomass index has been low, and the observed recruitment has been low since 2008. The landings declined substantially in the years 2012 and 2013, and in the first months of 2014 the bottom trawl landings are similar to the same period last year.

The stock size and potential yield of the whiting stock is not known. The MRI does not recommend a TAC for whiting at this, but it is clear from the above that the stock is currently declining.

## 2.21. MONKFISH *Lophius piscatorius*



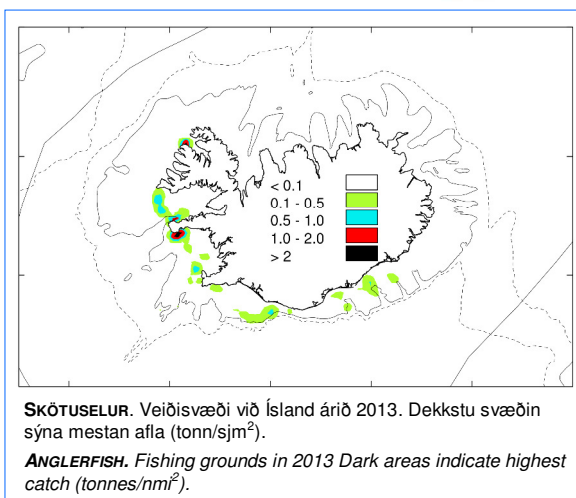
### 2.21.1. Landings, effort and distribution

In 2013 anglerfish landings were about 1 500 tonnes and have decreased since 2009, when it reached a record high of 4 100 tonnes (Table 3.21.1; Fig. 2.21.1). Landings in quota year 2012/2013 were about 2 200 tonnes and landings in the first seven months of 2013/2014 are 40% lower than the same period last quota year. From 2000–2010 about half of landings were caught by gillnet and the rest in seine and bottom trawl, but from 2011–2013 gillnets accounted for 64% of landings.

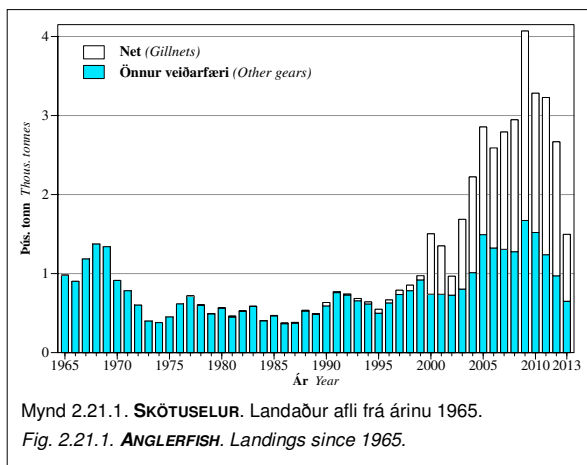
Since 2001 CPUE of anglerfish has increased in most gears. In 2013 CPUE in gillnet remained high while that in seine and bottom trawl decreased. Effort has decreased in all gears.

When recruitment was good, many young fish were present as bycatch in other gears than gillnet, especially in the *Nephrops* fishery. Young fish as a proportion of landings have decreased considerably in recent years.

Traditional fishing grounds were off the centre to eastern edge of the south coast. In recent years

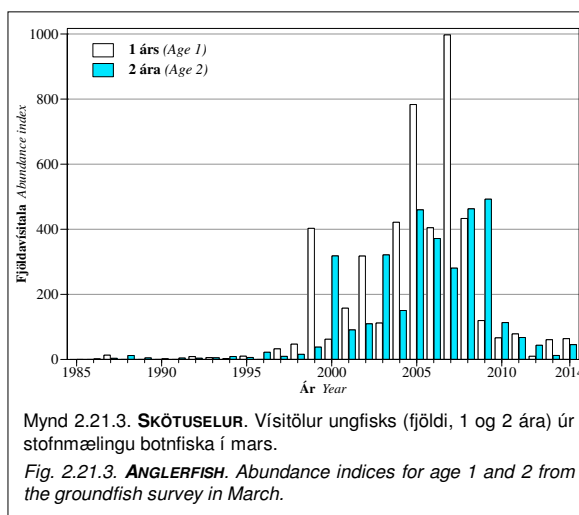
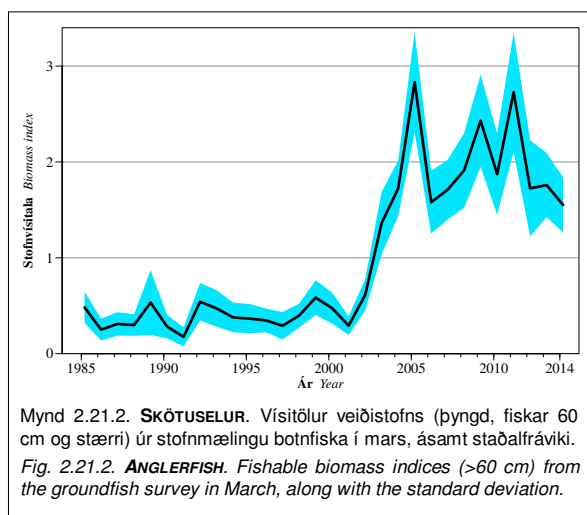


favoured fishing grounds are off the west coast, but about half of landings are now caught by gillnet in a very small area off Snæfellsnes. SMB data show the same trend in distribution. This change in distribution is most likely caused by rising sea temperatures.



### 2.21.2. Stock status

Anglerfish grow rapidly in the first 4–5 years and biomass indices show rapid growth in fishable stock from 2001–2005 (Fig. 2.21.2) due to good recruitment (Fig. 2.21.3). Since then, the fishable stock biomass index has remained high in relation to previous years, but have decreased in the last three years. Recruitment has been poor in recent years. Indices of age 1 and 2 fish (Fig. 2.21.3) suggest that the 2013 is smaller or of similar size as those since 2008. This means the last six cohorts are considered small.



**2.21.3. Advice**

Table 2.21.1 shows MRI TAC recommendations, national TAC, and total anglerfish landings since quota year 2001/2002.

Results from the SMB and CPUE analysis indicate that fishable stock is still rather large but will soon decline rapidly. The biomass index of fish 60 cm and larger decreased in 2014 after remaining steady from 2012–2013. All cohorts from 2008–2013 are considered to be small, so it is predicted that the fishable stock will decline dramatically for some years. Recruitment in the last six years has been about the same as it was before the turn of the century when landings were from 500–700 tonnes.

In light of this, the MRI recommends that TAC for anglerfish in quota year 2014/2015 should be 1 000 tonnes.

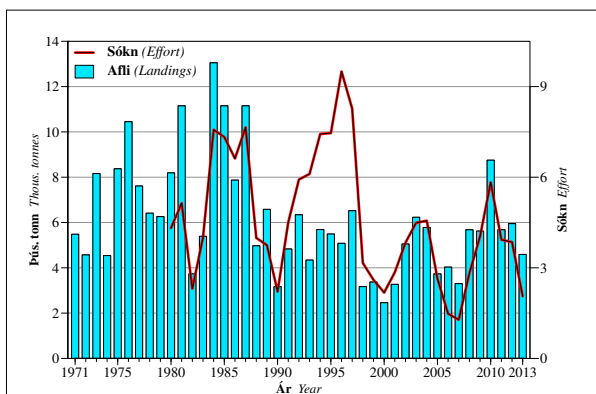
Tafla 2.21.1. SKÖTUSELUR. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðunum stjórnvalda um aflamark og afli (tonn). ANGLERFISH. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).			
Fiskveiðiár Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli Landings
2001/02	-	1 500	1 001
2002/03	Óbreytt sókn	1 500	1 363
2003/04	1 500	2 000	1 903
2004/05	1 500	2 000	2 420
2005/06	2 200	3 000	2 832
2006/07	2 200	3 000	2 672
2007/08	2 200	2 500	2 962
2008/09	2 500	3 000	3 436
2009/10	2 500	3 200	3 598
2010/11	2 500	3 000	3 376
2011/12	2 500	2 850	3 006
2012/13	1 500	1 800	2 175
2013/14	1 500	1 500	
2014/15	1 000		

## 2.22. LUMPFISH *Cyclopterus lumpus*



### 2.22.1. Landings and effort

In 2013 Icelandic lumpfish landings were nearly 4 600 tonnes, the average from 1971–2012 is about 6 100 tonnes. Considerable variation has occurred in lumpfish landings over the last decade (Fig. 2.22.1; Table 3.22.1). Landings climaxed in 1984 at 13 kt, and in 2000 were lowest at about 2 500 tonnes. The prime season is from March–May and effort targets sexually mature female lumpfish.



Mynd 2.22.1. **HROGNKELSI.** Grásleppu afli frá árinu 1971 og sök frá árinu 1980.

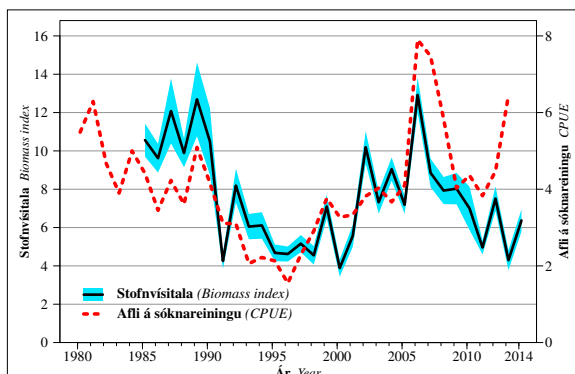
Fig. 2.22.1. **LUMPFISH.** Catches of females since 1971 and effort since 1980.

Fishing is controlled by effort management taking into account the following: number of permits, season length and number and size of nets. In 2011 and 2012 50 consecutive days were allotted, but in 2013 the season was shortened to 32 days. The number of permits given increased from 144 in 2007 to 369 in 2011 but dropped back to 286 in 2013. This type of management means that the weather has a strong effect on fishing success. Furthermore, the state of the roe market can have a strong effect on the effort. Therefore, variation in CPUE can be considerable between years (Table 3.22.2; Fig. 2.22.2) because of changes in stock size and effort.

Data from fishing logs, which along with landing data give insight into effort, date back to 1980. Effort (found by dividing total landings by mean CPUE) reached a peak between 1994 and 1997 but was at a minimum in 2007 (Fig. 2.22.1; Table 3.22.2).

### 2.22.2. Stock survey

Trends in stock biomass is calculated using SMB data. Spawning condition and the results of marking experiments show that lumpfish caught in the SMB are migrating to spawning grounds. Although lumpfish are considered to be pelagic many are caught in bottom trawls. Many more lumpfish are caught during the day than at night. The same general trend is seen in biomass indices and CPUE during the



Mynd 2.22.2. **HROGNKELSI.** Heildarvísitala grásleppu (þyngd), ásamt staðalfrávik, úr stofnmælingu botnfiska í mars 1985–2014 og afli á söknareiningu 1980–2013.

Fig. 2.22.2. **LUMPFISH.** Total biomass indices of females, along with the standard deviation, from the annual groundfish survey in March 1985–2013 and CPUE in female fishery 1980–2013.

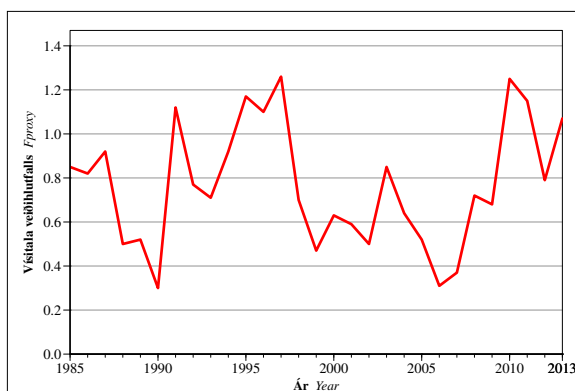
female lumpfish season (Fig. 2.22.2).

### 2.22.3. Stock status

Despite much variation, lumpfish biomass has decreased fairly continuously from 2006–2013 (Fig. 2.22.2). The 2014 index shows some increase since 2013 and is about 85% of the mean from 1985–2013. The harvest rate index (see Appendix 5.1) increased from 2012–2013 and is above historical average (Fig. 2.22.3). Male lumpfish biomass increased slightly from 2012–2013 but is still low (Fig. 2.22.4).

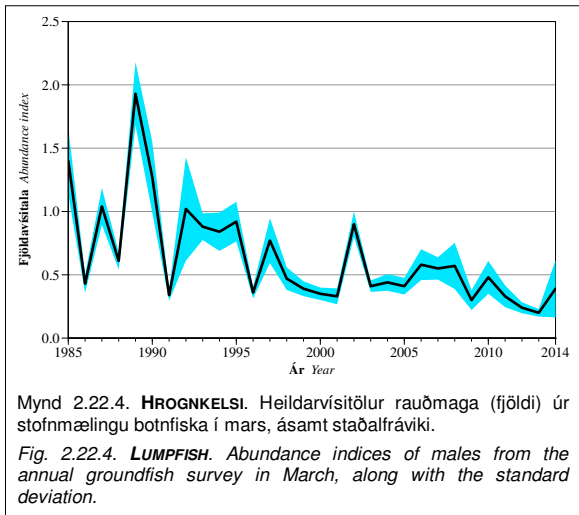
### 2.22.4. Assumptions in recommendations

MRI recommendations aim to make the harvest rate be below 0.75, which is the average from 1985–2012. The lumpfish biomass index has fluctuated much between years, therefore it is important that landings each year are based on the population that



Mynd 2.22.3. **HROGNKELSI.** Vísitala veiðihlutfalls grásleppu (afli/vísitalu) frá árinu 1985.

Fig. 2.22.3. **LUMPFISH.** Relative fishing mortality (landings/biomass index, or  $F_{proxy}$ ) for females since 1985.



year, rather than that of the previous year. With this consideration, the MRI offers a temporary recommendation for next year and the final recommendation will be provided after the next SMB, no later than April 1, 2015. The recommendation will, therefore be given early in the season.

A temporary recommendation for fishing in the next year is calculated as the current year's biomass index multiplied by 0.225. The final recommendation that comes next year will be based on that year's biomass index multiplied by 0.525 which will then be added to the temporary recommendation. The current biomass index is therefore given a value of 30% and that of next year 70% when they are used as a basis for recommendations. From this, one can see that if the biomass index changes little from one year to the next the final recommendation then leads toward  $F_{proxy} = 0.75$ , as is the aim. By incorporating two surveys, there are smaller fluctuations in recommendations due to the uncertainty in the measurements.

These recommendations also aim to keep the female lumpfish biomass above the historical minimum. If this index falls below this low point (that from the year 2000) the MRI will recommend a closure of that lumpfish season.

Considering this rule, MRI recommends a temporary TAC of 970 tonnes for the current quota year. A final TAC recommendation for the current quota year 2013/2014 was provided on March 26, 2014; it was 4 300 tonnes.

### 2.22.5. Advice

Lumpfish harvesting has been managed by limits on the length of the season, the number of nets allowed per boat. The MRI considers this methodology questionable because the variation in the annual number of permits can vary greatly and therefore can have a strong effect on effort and total landings. The institute is also concerned about the decreasing trend in proportion of large female lumpfish (larger than 45 cm) in the SMB.

With these considerations, MRI recommends a preliminary TAC for female lumpfish in quota year 2014/2015 no higher than 1 400 tonnes based on the SMB biomass index in 2014. The MRI will finalize a recommendation in March, 2015 for a TAC for the next quota year, based on the methodology described in chapter 2.22.4.

Furthermore, the MRI recommends again that more emphasis be put on recording and monitoring of male lumpfish catches and lumpfish taken as bycatch in other fisheries.



## 2.23. HERRING *Clupea harengus*



### 2.23.1. Summer-spawning herring

Herring landings from 1978 until quota year 2013/2014 is shown in Figure 2.23.1 and landings since 1951 are in Table 3.23.1. Table 2.23.1 shows MRI TAC recommendations, national TAC, and total annual landings since 1990/1991.

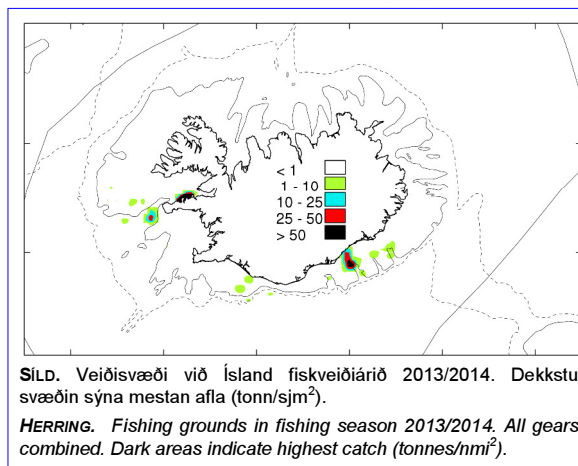
Landings of summer-spawning herring in 2013/2014 combined with bycatch in the mackerel fishery in 2013 was about 72 kt. The MRI TAC recommendation and the national TAC were 87 kt.

Herring fishing began after mid-October in Breiðafjörð, but fishing slowed in mid-November when the herring moved into Kolgrafafjörð, becoming inaccessible to larger ships. In December, fishing moved into Breiðamerkurdjúp, but the herring there were smaller than in Breiðafjörð. This is probably why TAC was not filled. About 43% of landings came from near Kiðeyjarsund and Hofstaðavog in Breiðafjörð, whereas about 19% was from Grundarfjörð and Kolgrafafjörð. Landings from Breiðamerkurdjúp were about 24% of total landings and 4% was caught in Kolluál after a large number of herring were found there in March. The remainder, about 7 200 tonnes, was bycatch in the summer mackerel fishery and Norwegian-Icelandic herring. For the third year in a row since 1986 drift nets were used to catch adult herring. This catch exceeded 770 tonnes, all from Breiðafjörð.

#### 2.23.1.1. Age disaggregation and mean weight

Landings in numbers by age are shown in Table 3.23.2. The 2008 cohort was the largest proportion (13%) of biomass and cohorts from 2004 and 2010 were similar (11% and 12%).

Mean weight at age in landings was high in all ages, as it has been for the last nine seasons except 2007/2008 (Table 3.23.3). Table 3.23.4 shows proportion mature and natural mortality since 1987. Like last year, the high natural mortality index from



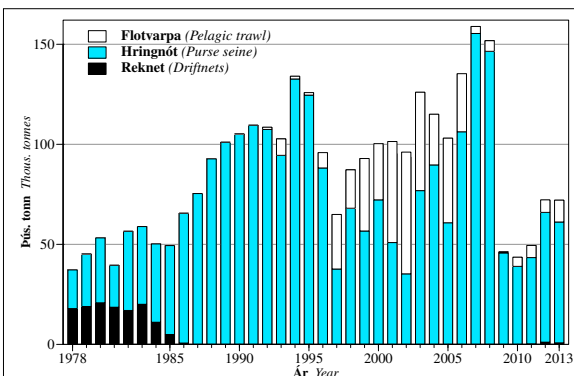
2009–2010 was due to an *Ichthyophonus* epidemic in the stock. In the following years the infection was still prevalent, but as is later described is not thought to have significantly increased natural mortality in those years. In estimation of the spawning stock biomass, the same proportion mature was used for the entire period because the available data were not reliable as a basis for such an estimate.

#### 2.23.1.2. Bergmálmælingar

Since 1973 Icelandic summer-spawning herring stock has been measured with acoustic methods. These measurements have usually been conducted in November–December and/or in January, at the close of the season. In 2013/2014 were conducted in November–December off the south coast and in Breiðafjörð. Later, measurements were conducted in Kolluál near Snæfellsnes in March when reports of herring there came in. In all, there were six measurements of herring in Kolgrafafjörð and the average of these was 67 kt. In Breiðamerkurdjúp about 200 kt were found as in Kolluál. Elsewhere, herring were not found. Therefore, about 470 kt of hadult herring (>26 cm) were found and younger fish were concentrated in Breiðamerkurdjúp and in Fjallasjór. The largest cohort was from 2008, was about 20% of fish by number. The 2010 cohort was about 18% and the 2009 cohort about 13% of the total by number.

Acoustic measurements of young herring were conducted deep in fjords from Breiðafjörð north to Óxarfjörð in November. Results of these measurements indicate that the 2012 cohort, then age 1, is just below average. This cohort was also found in Hvammsfjörð, Ísafjarðardjúp, and Eyjafjörð and no *Ichthyophonus* was found.

The *Ichthyophonus* infection in older fish is slowly disappearing. So the infection proportion is still high in the 2004–2006 cohorts that have had the highest proportion (about 31–34%) in all years.



Mynd 2.23.1. SILD. Landaður afli eftir veiðarfærum frá árinu 1978. (afli fiskveiðis frá 1991).

Fig. 2.23.1. HERRING. Landings by gear type since 1978 (quota year since 1991).



However, herring age five and younger were practically free of infection in the fall of 2013 (<4%) and about 22% age six were infected. The infection has now been in the stock for six years and has been closely monitored. This study shows that the infection has killed less of the stock than previously expected.

**2.23.1.3. Stock status and projections**

Two stock assessment models were used in analysis of the summer-spawning herring. Both have their basis in catch-at-age data and age distribution indices from acoustic surveys from 1987-2014. The results of the NFT-ADAPT analysis were used as a basis for recommendations and projections, as in previous years. The reason for choosing this model is that there is high variation in the fishing pattern (harvest rate by age) but NFT-ADAPT takes into account variable fishing pattern (see Appendix 5.1).

Spawning stock biomass was estimated at 430 kt in 2014 (Fig. 2.23.2; Table 3.23.5). Fishing mortality of the last season (2013/2014) is an estimated 0.16. According to the stock assessment, the total spawning stock biomass consists of: 2008 cohort (27%), 2009 cohort (about 20%), 2010 cohort (14%), and cohorts 2002–2007 (from 2–9% each).

In herring stock assessments there has often been the tendency to overestimate the stock and underestimate the fishing mortality. Due to the cautiousness of the management plan, this overestimation does not seem to have had a negative affect on the stock. According to the current assessment, this tendency seems to have had the opposite effect and fishing mortalities since 2004 have been near or below optimum ( $F_{0.1}$ ).

**2.23.1.4. Advice**

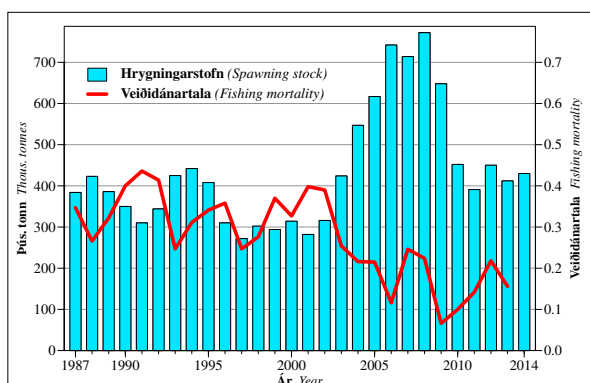
As mentioned earlier, there is some uncertainty about the assessment, which manifested partly as a tendency to overestimate the stock in past years and underestimate it in more recent years. Although the infection rate is still high among older fish, results

**TAFLA 2.23.1.**  
**SILD. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (þús. tonn).**  
*HERRING. TAC recommended by the Marine Research Institute, national TAC, and landings in the quota years (thous. tonnes).*

Ár Year	Tillaga Rec. TAC	Aflamark National TAC	Afli Landings (Iceland)
1990/91	80	110	105
1991/92	80	110	109
1992/93	90	110	107
1993/94	90	100	103
1994/95	120	120	132
1995/96	110	110	126
1996/97	100	100	96
1997/98	100	100	64
1998/99	90	70 <sup>1)</sup>	87
1999/00	100	100	93
2000/01	110	110	100
2001/02	125	125	95
2002/03	105	105	94
2003/04	110	110	126
2004/05	110	110	115
2005/06	110	110	103
2006/07	130	130	135
2007/08	130	150	159
2008/09	131	150	152
2009/10	40	47	46
2010/11	40	40	44
2011/12	40	45	49
2012/13	67	68.5	72
2013/14	87	87	72
2014/15	83		

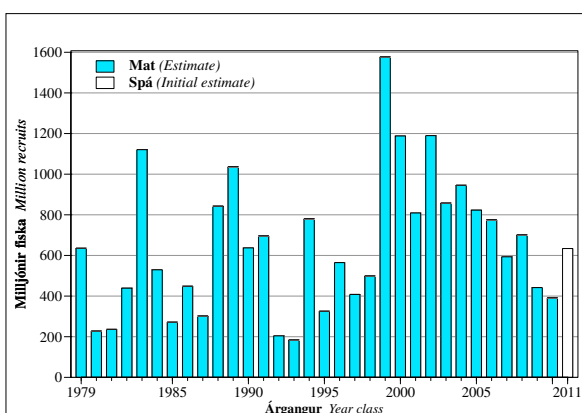
<sup>1)</sup> Sjávarútvegsráðuneytið úthlutaði 70 þús. tonnum en samtals urðu veiðiheilmildir um 90 þús. tonn þar sem 20 þús. tonn voru færð frá vertíðinni 1997/98. Allocated TAC was 70 thous. tonnes but because of transfers from the previous quota year the national TAC became 90 thous. tonnes.

showing little to no infection in younger fish suggest an increase of certainty in the near future. No further infection is included in projections. With these considerations, the MRI recommends that landings aim to achieve optimum fishing mortality ( $F_{0.1}=0.22$ ) and that total landings in 2014/2015 should not exceed 83 kt.



Mynd 2.23.2. SILD. Stærð hrygningarstofs (þús. tonn) á hrygningartíma árin 1987 til 2014 og vegin meðalveiðidánartala (F) 5–10 ára sildar 1987–2013.

Fig. 2.23.2. HERRING. Spawning stock biomass at spawning time during the period 1987 to 2014 (thous. tonnes) and weighted  $F_{5-10}$  1987–2013.



Mynd 2.23.3. SILD. Stærð sildaráganga sem fjöldi við þriggja ára aldur (í milljónum).

Fig. 2.23.3. HERRING. Abundance of year classes at age 3 (numbers in millions).

**TAFLA 2.23.2.**  
**SILD. Áhrif mismunandi aflamarks á áætlaða stærð hrygningarstofns (þús. tonn) árið 2015.**  
**HERRING. Projection of spawning stock biomass (thous. tonnes) in 2015 for different management strategies.**

2014			2015			
$F^{1)}$	Afli Catch	Hrygn. stofn SSB	Aflamark TAC	$F^{1)}$	Hrygn. stofn SSB	Stofn 3+ B3+
0.16	72	430	70	0.18	432	534
			80	0.21	423	524
			83	0.22	420	521
			90	0.24	413	514

<sup>1)</sup>Vegin dánartala (F) fyrir 5–10 ára. F við kjörsókn=0.22.  
 Weighted fishing mortality (F) of age groups 5–10.  $F_{0.1}=0.22$ .

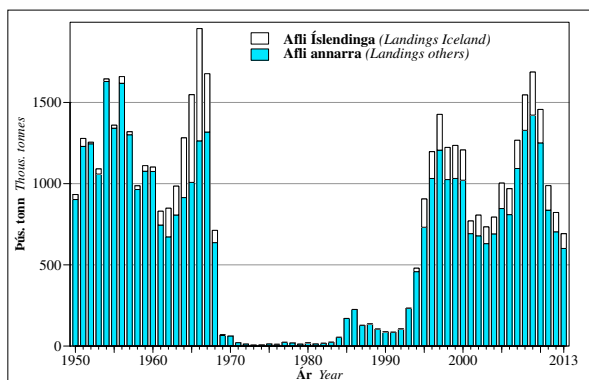
### 2.23.2. Norwegian-Icelandic spring-spawning herring

Total and Icelandic landings from the Norwegian-Icelandic herring stock in the period 1950–2013 is shown in Figure 2.23.4 and Table 3.23.6. Harvesting of the stock starting in 2002 were limited such that fishing mortality would not exceed 0.125 according to a 2001 agreement between Norway, Russia, Iceland, Faroe Islands, and the European Union. According to the agreement from 2007, Iceland's share is 14,51% of the total. For 2013 ICES recommended that total landings no exceed 619 kt, so Icelandic landings would be under 90 kt. Likely total landings in 2013 will however be 692 kt, or 73 kt above the ICES recommendation because the Faroe Islands opted out of the agreement.

Icelandic landings in 2013 were nearly 91 kt. About 64 kt of this were caught in Icelandic waters from July–October. From September–November over 18 kt were caught within the Faroese EEZ and nearly 9 kt were caught in international waters between Iceland and Norway.

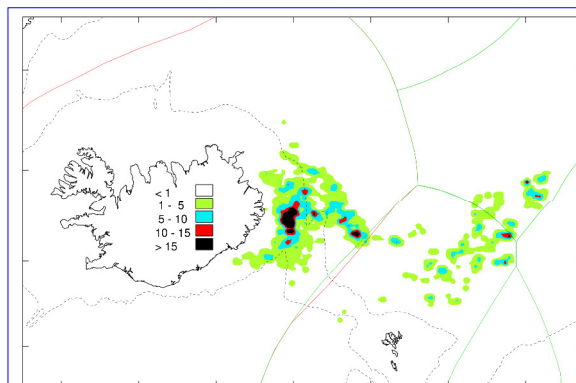
#### 2.23.2.1. Acoustic measurements

Since 1996 biomass of the Norwegian-Icelandic herring stock has been measured using acoustic methods during a multinational survey in May in the region between Iceland, Norway, and the Faroes



Mynd 2.23.4. NORSK-ÍSLENSK VORGOTSSILD. Heildaraffli og affli Íslendinga (þús. tonna) frá árinu 1950.

Fig. 2.23.4. NORWEGIAN SPRING-SPAWNING HERRING. Total landings (thous. tonnes) and Icelandic landings since 1950.

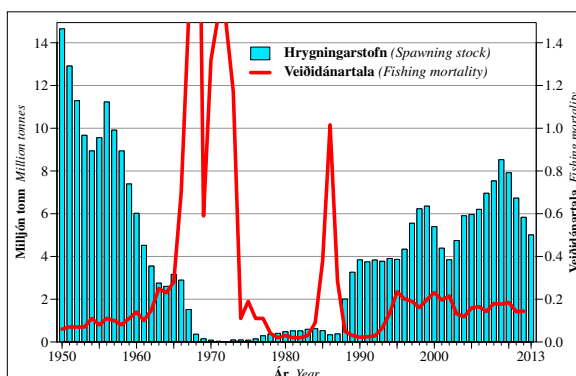


NORSK-ÍSLENSK VORGOTSSILD. Veðiðsvæði íslenskra skipa árið 2013. Dökkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

NORWEGIAN SPRING-SPAWNING HERRING. Fishing grounds of the Icelandic fleet in 2013. Dark areas indicate highest catch (tonnes/nmi<sup>2</sup>).

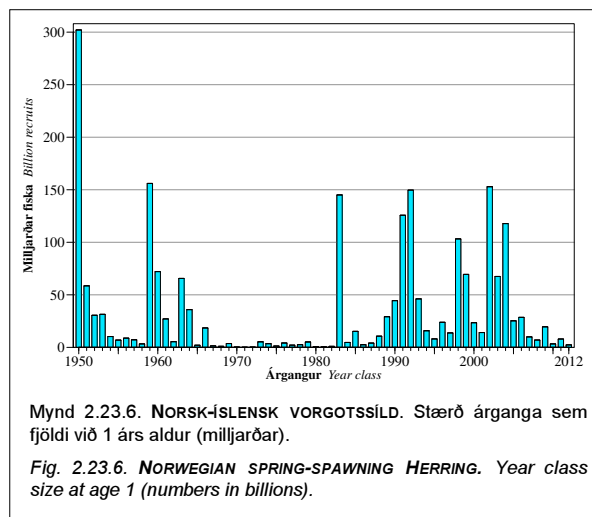
Islands. Indices from this survey have proved of utmost importance for ICES estimates of stock size. The results of the 2013 survey rather consistent with those of recent years. Herring were found in the majority of the region, though its abundance was sparse and most in international waters and in the northernmost section of the Faroese EEZ. Herring were found well within the Icelandic EEZ, where density of herring increased toward the areas where surface temperatures were highest and later in the spring toward summer. This was seen in the acoustic survey conducted to find mackerel in July/August of recent years, as well as in landings by the fleet.

The results of the multinational survey in 2014 will be available at the end of June. According to the Icelandic survey conducted on R/S Árna Friðriksson in May, Norwegian-Icelandic herring were present across a wide region in the Austurdjúp. Highest densities of herring were found in the easternmost portion of the EEZ off the east coast. Westerly distribution was similar to that in previous surveys. Thus, herring was found in the southernmost portion of the cold East Iceland Current to the west of 14° W, but north of 66°N cold water limited westerly



Mynd 2.23.5. NORSK-ÍSLENSK VORGOTSSILD. Stærð hrygningarstofns í milljónum tonna árin 1950–2013 og vegin meðalveðiðánartala (F) 5–14 ára sildir 1950–2012.

Fig. 2.23.5. NORWEGIAN SPRING-SPAWNING HERRING. Spawning stock size (million tonnes) since 1950 and weighted mean  $F_{5-14}$  1950–2012.



distribution. The herring were rather evenly distributed from 200–400 m depth, but were found shallower at night. Although these are incomplete results from the collaborative survey, there is indication that the distribution of herring is more southerly than in previous years at this time.

#### 2.23.2.2. Stock status and projections

According to the 2013 assessment, the spawning stock was about 5 million tonnes in 2013 (Fig. 2.23.5) and about 4,1 million tonnes in 2014, considering 692 kt landed in 2013. Cohorts from 2005–2012 are all small (Fig. 2.23.6) so it is likely that spawning stock will decline despite a cautious

harvest control rule.

The results of a collaborative ecological survey of the Barents Sea by Norway and Russia in September showed a large biomass index for age 0–1 herring. High indices of first year herring have not always led to large cohorts, though and there is still uncertainty about how big the 2013 cohort will be. That will be seen in the coming years, but this cohort will not enter fishable stock until 2017.

#### 2.23.2.3. Advice

According to the current harvest control rule, harvest rate must be lowered if the spawning stock falls below 5 million tonnes. Since the spawning stock in 2014 was estimated at about 4,1 million tonnes, in 2014 ICES recommended a decrease in fishing mortality from  $F=0.125$  to  $F=0.1$  therefore TAC is now 419 kt. Icelandic ships may land about 62 kt according to the coastal nations agreement from 2007. No agreement was reached between coastal nations about division of total herring landings, so it is likely that total landings in 2014 will be larger than recommended by ICES, as they were in 2013.

Since the ICES committee on pelagic fish meets in the fall, a new estimate of the stock size and recommendations for TAC in 2015 will be prepared in October of 2014.

## 2.24. CAPELIN *Mallotus villosus*



### 2.24.1. Landings and effort

In October, 2013, upon completion of the fall capelin survey, a preliminary TAC of 160 kt was adopted. At the end of February, 2014 government, following MRI recommendations based on the winter survey, adopted a TAC of 160 kt for the quota year 2013/2014.

Total landings after the season, which lasts from June–April, and capelin landings in the region of Iceland/Greenland/Jan Mayen are shown in Table 2.24.1 and Figure 2.24.1.

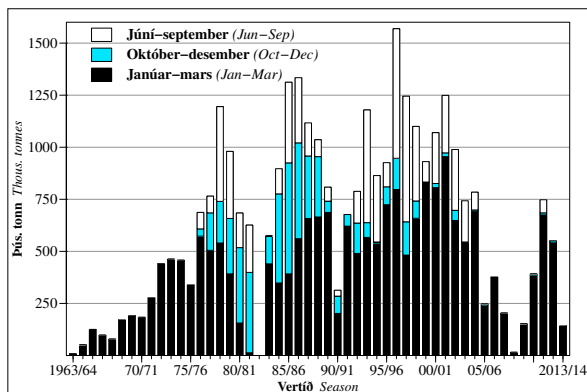
There was neither a summer or fall fishery in 2013. In the last 10 years, there has been little or no fall fishery (Fig. 2.24.1).

The winter season began in the second week of January, 2014. In January effort was focused off the northeast coast, capelin were scarce and only 20 thous. tonnes were landed. In the second week of February capelin migrated into Mýrabug and were in Faxaflói Bay by March. Fishing went well once they were in shallow water and landings were 100 thous. tonnes in February, but fishing closed in mid-March. The quota was not filled and total landings were 142 kt, of which 111 kt were landed by Icelanders (Table 3.24.1).

In the quota year 2013/2014, the 2011 cohort was about 77% of catch by number (Table 3.24.3) and the 2010 cohort was about 21% of catch by number.

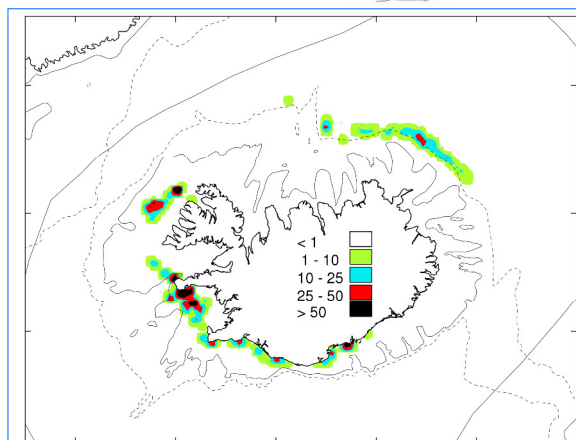
### 2.24.2. Acoustic surveys

Since about 1980 annual acoustic surveys have been conducted to study the distribution and biomass of capelin. Surveys of young capelin are conducted from October–December. Results of these surveys have been used in recommendation of preliminary TAC. Adult capelin surveys (fishable stock) are usually conducted from January–February. These surveys are aimed at determining fishable stock biomass and a final TAC for the current season.



Mynd 2.24.1. LOÐNA. Landaður afli skipt á sumar, haust og vetur, vertiðarnar síðan 1963/1964.

Fig. 2.24.1. CAPELIN. Landings taken in summer, autumn and winter since 1963/1964.



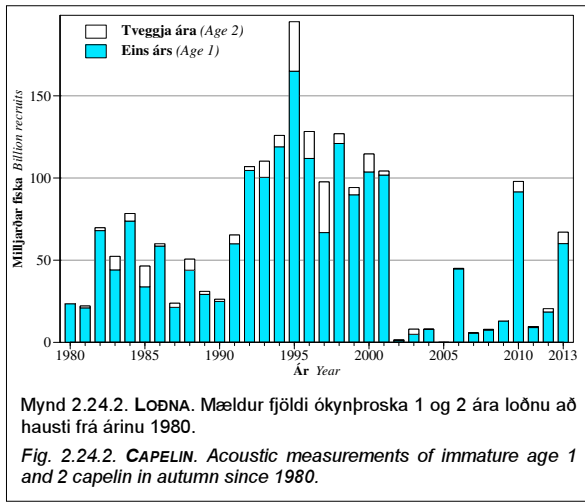
LOÐNA. Veiðisvæði við Ísland vertiðina 2013/2014. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

CAPELIN. Fishing grounds in 2013/2014 fishing season. Dark areas indicate highest catch (tonnes/nm<sup>2</sup>).

The fall acoustic survey in 2013 ran from September 17–October 4. There was no sea ice and conditions were excellent for the survey. The abundance index of young capelin was about 60 billion fish, which is near the historical average

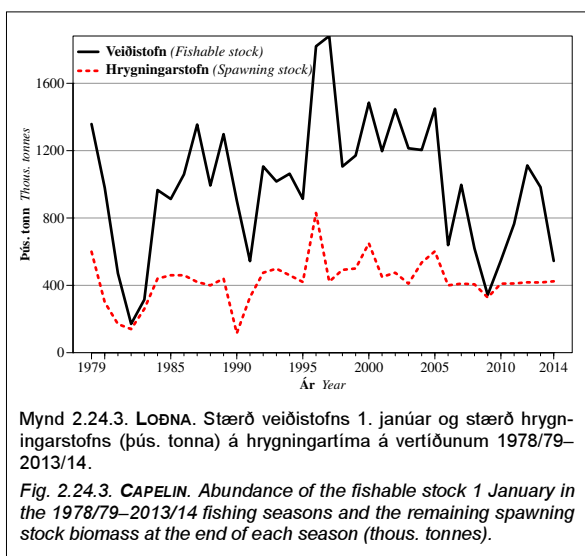
TAFLA 2.24.1.  
LOÐNA. Endanlegar tillögur um aflahámark, ákvörðun stjórnvalda um aflamark og afli (þús. tonn).  
CAPELIN. TAC recommended by the Marine Research Institute, national TAC, and landings (thous. tonnes).

Vertiðir	Tillaga	Aflamark	Afli Íslendinga Landings (Iceland)	Afli annarra Landings (others)	Afli alls Total landings
Seasons	Rec. TAC	TAC			
1984/85	920	920	774	123	897
1985/86	1 280	1 280	987	325	1 312
1986/87	1 290	1 290	1 053	380	1 333
1987/88	1 115	1 115	912	204	1 116
1988/89	1 065	1 065	921	116	1 037
1989/90	900	900	666	142	808
1990/91	250	312	284	27	311
1991/92	740	740	635	47	682
1992/93	900	900	655	95	793
1993/94	1 250	1 250	1 001	178	1 179
1994/95	850	850	750	114	864
1995/96	1 150	1 150	883	46	929
1996/97	1 600	1 600	1 249	322	1 571
1997/98	1 265	1 265	940	260	1 245
1998/99	1 200	1 200	899	201	1 100
1999/00	1 000	1 000	844	90	934
2000/01	1 110	1 110	894	177	1 071
2001/02	1 300	1 300	1 051	198	1 249
2002/03	1 000	1 000	765	223	988
2003/04	875	875	575	167	742
2004/05	985	985	640	144	784
2005/06	215	238	193	45	238
2006/07	370	385	307	70	377
2007/08	207	207	149	54	203
2008/09	0	15	15	0	15
2009/10	150	150	111	40	151
2010/11	390	390	322	68	390
2011/12	765	765	585	162	747
2012/13	570	570	464	87	551
2013/14	160	160	111	31	142



(Fig. 2.24.2 and Table 3.24.6) and the fishable stock was over 600 kt. Based on this and the harvest control rule of leaving 400 kt for spawning, the MRI recommended a TAC for the quota year 2013/2014 of 160 kt.

On 17 January 2014, the research vessel Árni Friðriksson conducted a capelin survey off the east coast. At that time, Icelandic and Norwegian capelin vessels were looking for capelin on traditional migration grounds but found little. Árni Friðriksson searched the shelf margin and the shallows off the East Fjords to Sléttugrunnshorn and from there along the margin to Kolbeinsey Ridge; when little was found the search was concluded. The next search began on February 14 at which time Árni Friðriksson and Bjarni Sæmundsson searched waters off the West Fjords without success. From there, Árni Friðriksson headed south, meeting the capelin migration at Selvog, in following days, the migration was measured in Selvog, around the Westman Islands, and east to Meðallandsbug, which was east of the main migration. Reports of capelin came from many places, such as: off the southwest, Skjálfaflói, and off the West Fjords. In all, an



estimated 340 kt of spawning capelin were measured, but considering that the fishable stock in the fall survey of 2013 was small, the MRI recommended that TAC remain unchanged at 160 kt for the quota year 2013/2014.

Table 3.24.5 shows biomass both by age and maturity. Since the TAC was not completely fished, it is estimated that about 420 kt spawned in the spring of 2014 (Fig. 2.24.3).

### 2.24.3. Advice

The capelin fishery in the quota year 2014/2015 will be composed mostly of the 2012 and 2011 cohorts. About 60 billion immature capelin were measured in the fall of 2013 (Fig. 2.24.2 and Table 3.24.6). The model that the MRI uses to predict a preliminary TAC based on measurements of young capelin in the fall gives a recommended TAC of 450 kt for the quota year 2014/2015 with the aim that 400 kt will be left after fishing in the spring of 2015. This model is not approved by ICES, partly because natural mortality is considered to be too low. For this reason, ICES and the MRI recommend a preliminary TAC for the quota year 2014/2015 of 50% of the predicted TAC, or 225 kt. ICES considers that by commencing fishing after the main growth period of capelin in the fall, the utilization of the stock is improved. For this reason, the MRI recommends that fishing should not begin before October as the capelin rapidly increase in weight and fat content until that time.

The recommended final TAC for the quota year 2014/2015 will be presented upon completion of estimation of fishable stock status in the winter of 2014/2015.

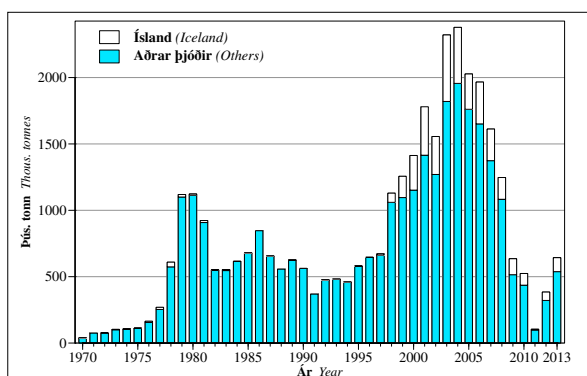


## 2.25. BLUE WHITING *Micromesistius poutassou*



### 2.25.1. Landings and age distribution

Blue whiting landings in the Northeast Atlantic since 1970 are shown in Figure 2.25.1 and Table 3.25.1. From 1970–1981 landings grew from 40 kt to about 1.1 million tonnes, then decreased and stabilized in the period 1982–1997 at between 400 and 700 kt. Landings increased from 1998 and climaxed in 2004 at nearly 2.4 million tonnes. They decreased thereafter until 2011 at 104 kt. Landings in 2012 were 384 kt and in 2013 they are estimated at 640 kt.



Mynd 2.25.1. KOLMUNNI. Landaður afli í NA-Atlantshafi frá árinu 1970.

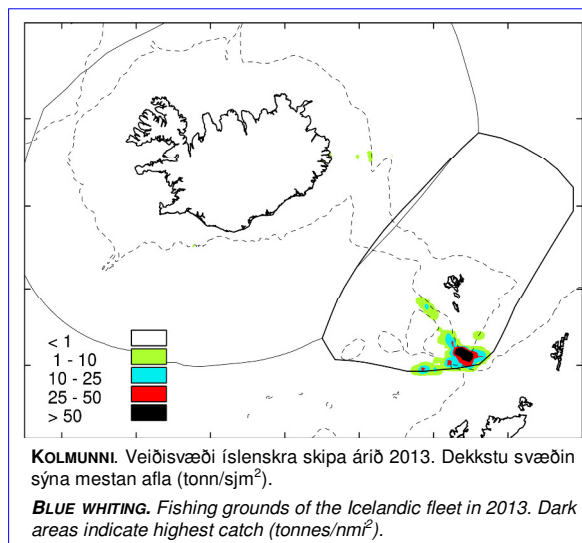
Fig. 2.25.1. BLUE WHITING. Landings since 1970 from the NE Atlantic Ocean.

Icelandic landings grew rapidly from 1997–2003, from about 10 kt to more than 500 kt, then decreased rapidly to 6 kt in 2011. Icelandic landings in 2013 were about 105 kt. From 1997–2005 about 61% of Icelandic landings came from Icelandic waters, but from 2006–2013 only about 12% was from Icelandic waters, the rest from Faroese waters (69%) and international waters west of the British Isles.

Catch-at-age data from 2013 are not available, but in landings from 2012 cohorts from 2004 and 2005 were about 26% of catch by number. The largest proportion of landings was age 2 fish (about 24%) and about 13% of the catch was age 1 fish. The large cohorts from 2002–2003 were combined about 13% of landings.

### 2.25.2. Stock status

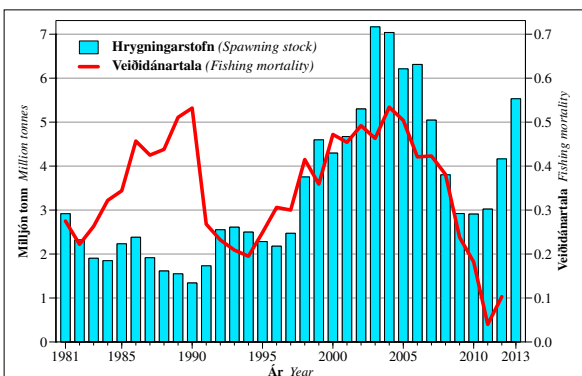
Every October an analysis of the blue whiting stock is conducted by ICES. The newest estimate of stock size is from October, 2013. It states that spawning stock grew from about 2.2 million tonnes in 1996 to about 7.2 million tonnes in 2003 (Fig. 2.25.2) when the large cohorts from 1995–2002 joined the stock. The stock decreased about 60% from 2003–2010 and was estimated at about 2.9 million tonnes in 2010. Spawning stock is estimated in 2013 at about 5.5 million tonnes. This increase in



spawning stock is the result of decreased effort in 2011 and improved recruitment from 2010–2012. Figure 2.25.2 shows mean fishing mortality of age 3–7 blue whiting, which has decreased from 0.53 in 2004 to about 0.10 in 2012 and was only 0.04 in 2011.

The number of age one recruits in 1981–2010 is shown in Figure 2.25.3. Small cohorts from 2005–2008 have led to shrinkage of the spawning stock, but cohorts from 2009–2012 are well above average so the stock will grow again.

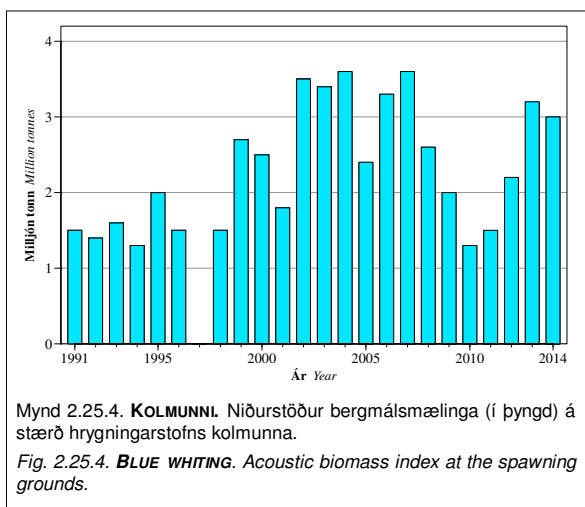
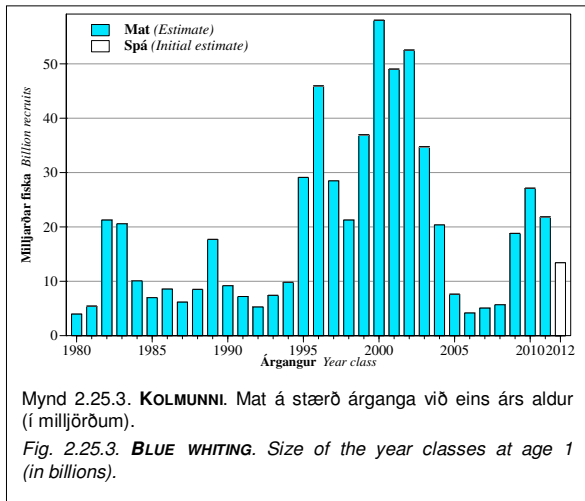
Norway and Russia have measured the spawning stock with acoustic methods on the spawning grounds west of the British Isles and near the Faroe Islands in March–April annually since 1983. Since 2004 international studies have been conducted. Biomass indices are based on the target strength of blue whiting that was reviewed and revised by ICES in 2011. A review of indices dating before 2003 is ongoing. Results show that spawning stock biomass



Mynd 2.25.2. KOLMUNNI. Stærð hrygningarstofns 1981–2013 og meðalveðidánartala (F) 3–7 ára kolmunna 1981–2012.

Fig. 2.25.2. BLUE WHITING. Spawning stock biomass 1981–2013 and mean  $F_{3-7}$  during 1981–2012.





indices have ranged between 1.3–3.6 million tonnes from 2004–2014 (Fig. 2.25.4). Spawning stock biomass indices calculated with the new reflection coefficient are usually about 32% of the old value. Furthermore, the indices so calculated are nearer the annual estimate of spawning stock biomass. The newest acoustic survey from March, 2014 shows 6% decrease from the previous year but the number of fish in the spawning stock is about 8% more because young cohorts are increasingly entering the spawning stock. There are indications that the 2013 cohort is strong.

### 2.25.3. Advice

Due to overfishing until 2008 and poor recruitment from 2005–2008, the spawning stock decreased rapidly. It is improving as a result of good recruitment in recent years and ICES has recommended a TAC of 949 kt of blue whiting in 2014. This would bring the fishing mortality to nearly 0.18 and is in accordance with a precautionary approach and the management plan signed in 2005. No agreement was reached on that basis, though, and nations set their own TAC based on a landings total of 1.2 million tonnes. In accordance with this, Icelandic landings can total 195 kt.

TAC recommendations from ICES for 2015 will become available in October, 2014 following a meeting of the Advisory Committee.

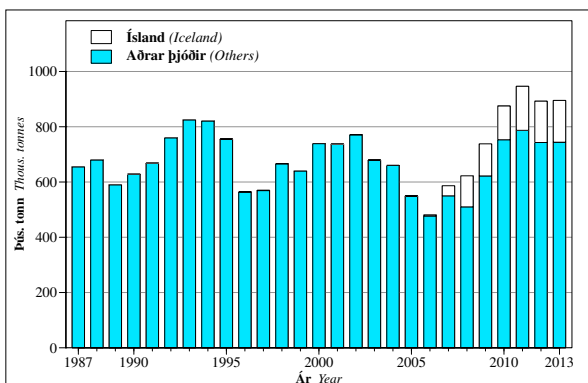
## 2.26. MACKEREL *Scomber scombrus*



### 2.26.1. Landings, effort and age distribution

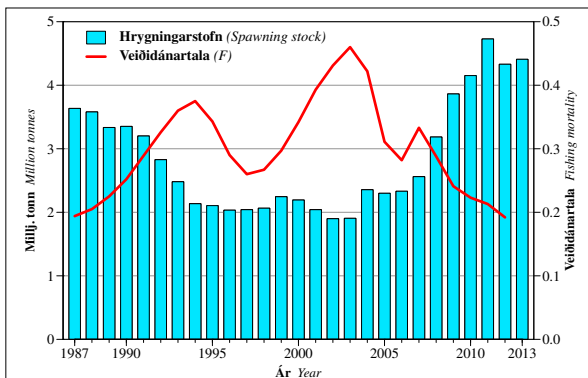
Trends in landings of mackerel from the Northeast Atlantic since 1987 are shown in Figure 2.26.1 and Table 3.26.1. Landings have increased considerably in recent years and are expected to be about 895 kt in 2013.

Traditional fishing grounds for mackerel are in the North Sea and around the British Isles. In this region fishing is mostly from fall to spring.

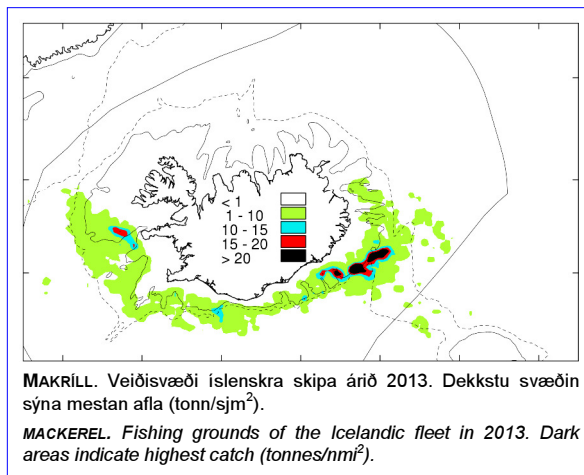


Mynd 2.26.1. MAKRILL. Afli í Norðaustur-Atlantshafi frá árinu 1987. Fig. 2.26.1. MACKEREL. Catches from the NE Atlantic since 1987.

Recently, mackerel stocks have increased in Icelandic and Greenlandic waters from summer into fall. This increase is probably due to ocean warming and a decrease in krill on traditional feeding grounds. In 2006 mackerel entered the bycatch in pelagic trawls targeting herring off the east coast and in that year about 4 000 tonnes were landed. Direct targeting began in 2007 when 37 kt were landed. From 2008–2011 landings increased from 113 to 159 kt, most of which was caught by direct effort. Icelandic landings in 2013 were 151 kt (Fig. 2.26.1 and Table 3.26.1). Mackerel is mainly found off the east and south coasts but the fishery has increased



Mynd 2.26.2. MAKRILL. Stærð hrygningarstofns frá árinu 1987 og veiðidánartala (F) 4–8 ára makrills 1987–2012. Fig. 2.26.2. MACKEREL. Spawning stock biomass since 1987 and mean  $F_{4-8}$  1987–2012.



MAKRILL. Veiðisvæði íslenskra skipa árið 2013. Dökkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>). MACKEREL. Fishing grounds of the Icelandic fleet in 2013. Dark areas indicate highest catch (tonnes/nmi<sup>2</sup>).

off the southwest and west coasts since 2010. An insignificant portion of Icelandic landings comes from outside Icelandic waters.

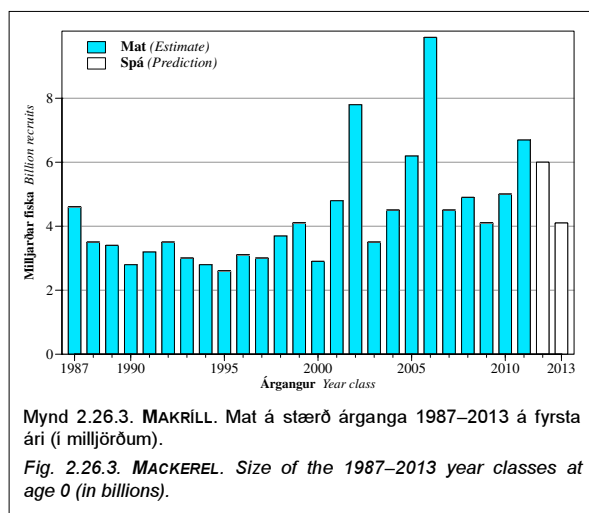
Catch-at-age data from 2013 are not available but in 2012 cohorts from 2005–2008 were 71% of landed fish by number. Cohorts from 2004 and 2009 were each 7% of landed fish by number.

### 2.26.2. Surveys

Since 1977 the amount of mackerel eggs in plankton has been measured every third year during an international survey from January–June. The MRI participated in this survey in 2010 and 2013. The survey results show that while mackerel mainly spawn around the British Isles, spawning is extending farther north than before. In 2013 mackerel eggs were found across a vast region of Icelandic waters off the southeast and south coasts. In the last four survey years (2004, 2007, 2010, and 2013) egg production by the western and southern stocks, therefore the spawning stock, has increased.

In July/August 2013 participated in the fifth consecutive international study of the ecology, distribution, and amount of pelagic fish around Iceland, the Faroe Islands, and in the Norway Sea. Furthermore, the distribution of mackerel was recorded in the Greenland Sea with the cooperation of Greenlanders. The amount and distribution of mackerel has steadily increased since 2010, from 4.8 million tonnes to 8.8 million tonnes in 2013. An additional goal is to monitor the migrations of mackerel in case that information is used in assessment of the stock.

Norway has conducted prolific marking studies for a long time and recently microchip tags have been added to marking programmes. Equipment is being set up in plants that process mackerel so the digital information can be read and sent to the headquarters in Norway where analysis is done. This will doubtless improve the return of data collected



and thereby improve stock assessments using this data.

### 2.26.3. Stock status and recommendations

Assessment of mackerel stocks by ICES is conducted in the fall because it is based on the harvest control rule and results of the assessment model. Last fall a decision was made to reject the stock assessment model due to the unreliable landings data before 2006. TAC recommendations from ICES are based instead on indices from the last two egg surveys in combination with the newest landings data. Recommended TAC for 2014 was 890 kt. Last February, ICES sponsored a special meeting about mackerel stock assessment and a new model was developed to better tackle the limitations in the data. Also, consideration was given to data from international bottom trawl surveys, indices of older cohorts from surveys in the North Seas in July–August, and data from recovered tagged fish. Furthermore, previous recommendations were updated and TAC for 2014 was recommended at 927–1011 kt (Table 2.26.1), which gives a fishing mortality of 0.20–0.22. With this pressure, the spawning stock should be 4.4–4.5 million tonnes in 2015. This conforms to a sustainable approach. According to the assessment, the spawning stock

**TAFLA 2.26.1.**  
**MAKRÍLL. Tillögur Alþjóðahafrannsóknaráðsins um aflahámark, heildaraflamark samkvæmt ákvörðunum stjórnvalda og afli (þús. tonna) frá árinu 1998.**  
**MACKEREL. TAC recommended by ICES, sum of national TAC, and landings (thous. tonnes) since 1998.**

Ár Year	Tillaga Rec. TAC	Aflamark allra þjóða Sum of national TAC	Afli Catches <sup>2)</sup>
1998	498	549	667
1999	437	562	640
2000	642	612	739
2001	665	670	737
2002	694	683	771
2003	542	583	679
2004	545	532	660
2005	320–420	422	549
2006	373–487	444	481
2007	390–509	502	586
2008	349–456	458	622
2009	443–578	749 <sup>1)</sup>	738
2010	527–572	885 <sup>1)</sup>	875
2011	529–672	959 <sup>1)</sup>	947
2012	586–639	927 <sup>1)</sup>	893
2013	497–542	906 <sup>1)</sup>	895
2014	927–1 011		

<sup>1)</sup> Ekkert samkomulag um skiptingu. No agreement on sharing.  
<sup>2)</sup> Með áætluðu brottkasti. Including estimated discards.

grew from 1.9 million tonnes to 4.7 million tonnes from 2003–2011 but has since decreased and is estimated to have been 4.4 million tonnes in 2013 (Fig. 2.26.2). Fishing mortalities from 1987–2013 are shown in Figure 2.26.2. Following rapid increase from 1998–2003 fishing mortality has decreased and in 2010–2012 it was considered near or below the recommended limit ( $F=0.20-0.22$ ). All cohorts from 2001–2011, except those from 2003 and 2009 are above the average for the period 1980–2011 (Fig. 2.26.3).

No agreement has been reached between the nations fishing this stock about the division of landings. Recommendations from ICES for 2015 will be presented in October 2014.

## 2.27. PEARLSIDE *Maurolicus muelleri*



### 2.27.1. Fishing and biology

Experimental fishing of pearlside with pelagic trawl began in December, 2008 resulting in a few tonnes being landed. Landings in 2009 were about 46 kt, but have decreased since, totalling 9 kt in 2011 and only 9 tonnes in 2012. None were landed in 2013.

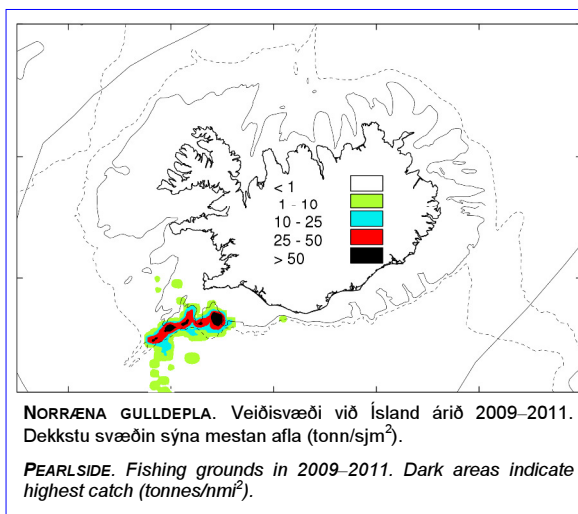
Pearlside is a very small fish of the family Sternoptychidae. It reaches maturity at age 1, then about 2.5 cm long, and can live to be 5 years old and reach a length of 9 cm. Pearlside are found in Icelandic waters from the west coast to the southeast coast. They spawn in the spring and summer in the northern part of their range, such as Icelandic waters, but they spawn all year farther south.

Little is known about the distribution and biomass of pearlside, as is the case with other mesopelagic fish, but the northern limit is thought to be marked by the reach of warm seawater. The northern limits in the Atlantic Ocean are Iceland and northern Norway. In the North Atlantic pearlside are found in the open ocean along with other mesopelagic fish like Myctophidae. Pearlside appears to mix with other mesopelagic fish in the Greenland Sea and in the Suðurdjúp in the summer. But little is known about the distribution of the species during the winter. Ocean currents likely have a strong effect on pearlside in the winter because of the small size of the fish.

### 2.27.2. Stock status

Pearlside have not been studied since 2010, when the MRI conducted a cruise with the intention of mapping the distribution and biomass of pearlside with acoustic methods. The MRI assumed that estimating biomass would be difficult because the reflection coefficient of pearlside is unknown.

The results of the cruise showed that pearlside is distributed from the west coast around the south coast to the eastern fjords. The highest biomass was found in the area where pearlside fishing boats were, operating in and around Grindavíkurdjúp. In order to



estimate the biomass of pearlside with desirable accuracy more research needs to be done to determine the reflection coefficient of the species; such studies have not been conducted in the Atlantic Ocean. Studies of the reflection coefficient of a related species in the Pacific Ocean have been completed. When that reflection coefficient is used to estimate the biomass of pearlside observed in the 2010 research cruise the calculated biomass is less than 250 thousand tonnes, thereof 140 tonnes in the fishing grounds. Length distributions in landings indicate that the majority of the stock is made up of two cohorts, the older found on the fishing grounds and the younger of the west coast. MRI has not, as yet, conducted further studies on the amount and distribution of pearlside in Icelandic waters.

### 2.27.3. Advice

Since the stock biomass and yield capacity of pearlside are little known, as well as the species' importance as a food source for other fished stocks, the MRI recommends a precautionary exploitation of the stock in that landings not exceed the average from 2009–2010 which is 30 thousand tonnes.

## 2.28. GREATER SILVER SMELT *Argentina silus*



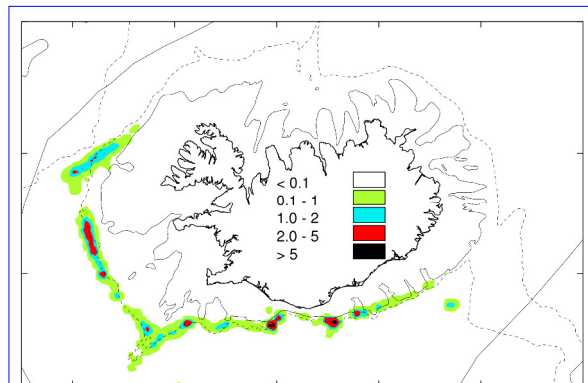
### 2.28.1. Landings and effort

Greater silver smelt has been caught in bottom trawl in Icelandic waters for many years, especially as bycatch in the redfish fishery. In 1997 direct targeting of the species began and landings increased from 800 tonnes in 1996 to over 13 kt in 1998 (Fig. 2.28.1; Table 3.28.1). From 2000–2007 landings were from 2 500–4 800 tonnes. A large increase occurred from 2008–2010 and landings were more than 16 kt in 2010. From 2011–2013 landings decreased partly due to improved management and in 2013 about 7 200 tonnes.

### 2.28.2. Stock survey

Greater silver smelt is a slow-growing species and the potential yield is thought to be low. Data about the biomass and stock status are scarce as is understanding of the relationship between the Icelandic stock and those of surrounding waters.

Greater silver smelt is widely observed in the autumn groundfish survey (SMH), though mostly



**GULLLAX.** Veidisvæði við Ísland árið 2013. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

**GREATER SILVER SMELT.** Fishing grounds 2013. Dark areas indicate highest catch (tonnes/nm<sup>2</sup>).

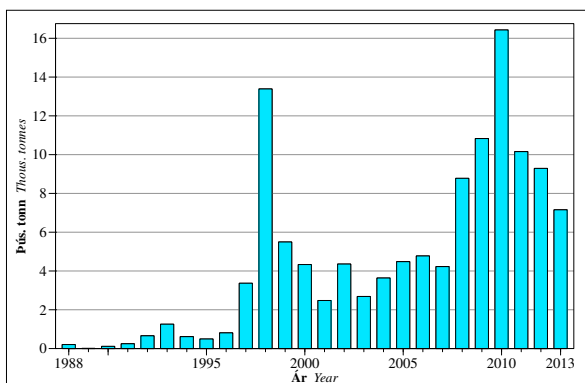
from the warm seas off the southeast coast to the Westfjords. The behaviour of these fish causes uncertainty in indices, as they are often caught in large numbers in few hauls and they swim into upper layers so they are difficult to measure with bottom trawls. Since 2010 biomass indices from more than 400 m depth have been used as a basis for the advice. Fishable stock indices—fish at more than 400 m depth—more than doubled from 2008–2009 but decreased again in 2010 to the level of 2008. The biomass index decreased from 2012–2013 but due to the aforementioned uncertainty in the index, the decrease is not significant. For the last three years, the recruitment index has been well above historical mean.

### 2.28.3. Stock status

There has been considerable change in the age distribution in recent years. In 1998 the mean age in the catch was about 16 years, whereas in the last six years it has been under 10 years.

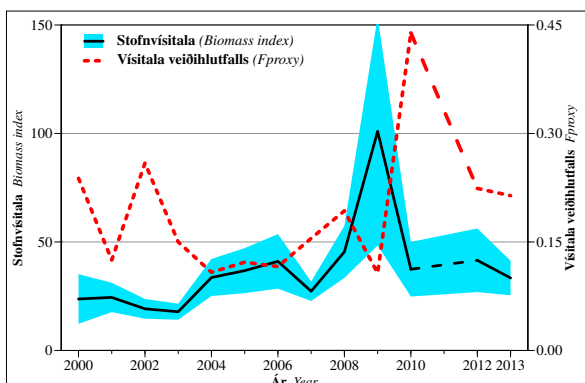
The harvest rate index increased in 2010 but decreased in 2012 and 2013 (Fig. 2.28.2). ICES recommends, as a basis for advice, that harvest rate should be the average from 2002–2007 but due to uncertainty in the stock survey should be lowered about 20%. That is, the aim should be to get the harvest rate near to 0.12.

In 2012 and 2013 the MRI advice was mostly based on a Gadget model. The main problem with this model is the high variability in survey indices between years. However, the model does follow the changes in age distribution; therefore it seems the model accurately describes stock trends in Icelandic waters. According to the model, the stock grew until 1998, but then decreased rapidly because of heavy fishing. After 2000 it grew again but is still somewhat below the biomass of 1998. The fishing mortality and has fluctuated greatly along with the



Mynd 2.28.1. **GULLLAX.** Landaður afli frá árinu 1988.

Fig. 2.28.1. **GREATER SILVER SMELT.** Landings since 1988.



Mynd 2.28.2. **GULLLAX.** Vísitölur veiðistofns (þyngd, fiskar >30 cm og dýpi >400 m) úr stofnmælingu botnfiska í október ásamt staðalfrávik og vísitala veiðihlutfalls frá árinu 2000.

Fig. 2.28.2. **GREATER SILVER SMELT.** Fishable biomass index (>30 cm and depth >400 m) from the groundfish survey in October along with the standard deviation and Fproxy (yield/index).

catches, but has been higher than  $F_{\max}$  since 2007.

#### 2.28.4. Advice

ICES considers the significant increase in greater silver smelt fishing in recent years is well beyond the limits of a precautionary approach to stock management. For this reason, ICES recommends that greater silver smelt landings in quota year 2014/2015 should not exceed 4 100 tonnes. This recommendation is assuming a harvest rate that is the average from 2002–2007, decreased 20% because of uncertainty in the survey indices.

The MRI recommends that greater silver smelt landings in quota year 2014/2015 should not exceed 8 000 tonnes. This is based on the fact that variation is little both in the fishable stock biomass index between years and in the average age of greater silver smelt in landings from 2010–2013, but also because that recommendation is near  $F_{\max}$  according to the Gadget model.

Tafla 2.28.1. GULLLAX. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðunum stjórnvalda um aflamark og afli (tonn). GREATER SILVER SMELT. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).			
Fiskveiðiar Quota year	Tillaga Rec. TAC	Aflamark National TAC	Afli Landings
2001/02	12 000		5 257
2002/03	12 000		2 427
2003/04	12 000		3 708
2004/05	12 000		4 210
2005/06	12 000		4 787
2006/07	Varúð		5 052
2007/08	Varúð		5 064
2008/09	Varúð		8 797
2009/10	8 000		15 960
2010/11	8 000		12 091
2011/12	6 000		8 497
2012/13	8 000		11 217
2013/14	8 000	8 000	
2014/15	8 000		



## 2.29. NEPHROPS *Nephrops norvegicus*



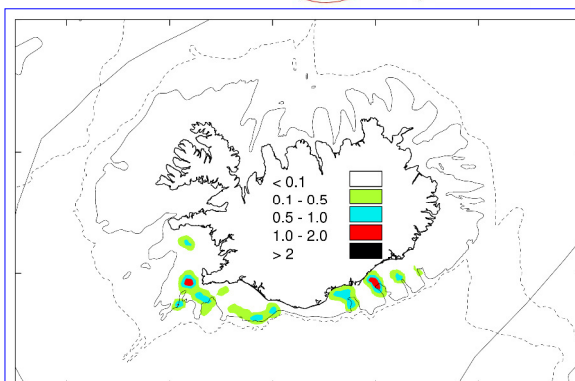
### 2.29.1. Landings and effort

*Nephrops* landings were 1 724 tonnes in 2013 which is 190 tonnes less than in 2012 (Fig. 2.29.1; Table 3.29.1). In the southwest landings were 647 tonnes, around the Westman Islands they were 341 tonnes and in the southeast 736 tonnes. Landings in the southeast were larger than in 2012, but decreased in the Westman Islands and in the southwest. Another 70 tonnes were caught in the newly discovered grounds in Grindavíkurdjúp in 2013.

CPUE (from May–August, standardised with one trawl) was 61 kg in 2013, as compared to 63 kg in 2012 and 71 kg in 2011 (Table 3.29.2). Overall, CPUE was rather high, but has been decreasing since the record years of 2007–2008 (Fig. 2.29.2).

### 2.29.2. Stock survey

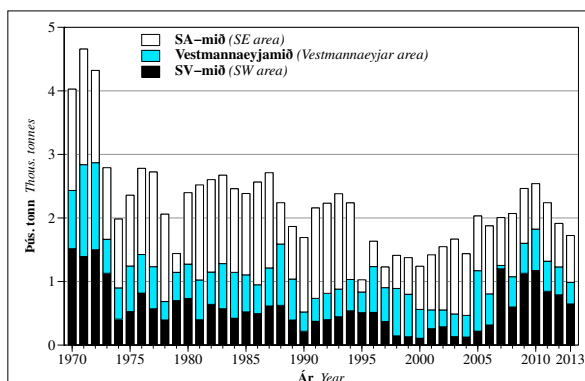
The *Nephrops* biomass index in May has decreased since 2008 (Fig. 2.29.2) and is now lower than the 25-year average. The index has reflected CPUE rather well, but has been lower than CPUE



**HUMAR.** Veðiðsvæði við Ísland árið 2013. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

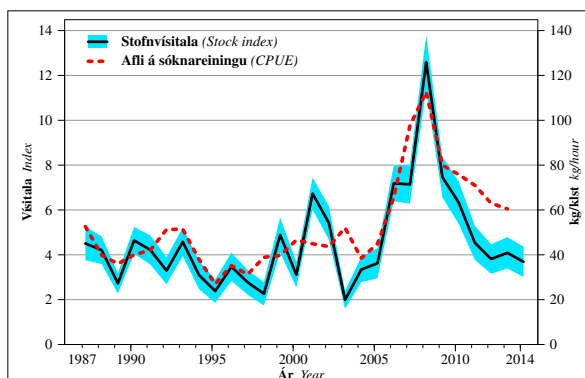
**NEPHROPS.** Fishing grounds in 2013. Dark areas indicate highest catch (tonnes/nmi<sup>2</sup>).

since 2011. In part, this can be explained by poor fishability in some areas of the survey, such as around the Westman Islands, in Breiðamerkurdjúp, and Hornafjarðardjúp this year. In the stock survey there is high variability in the fishability because of variable amounts of algae blooming. When visibility



Mynd 2.29.1. **HUMAR.** Landaður afli eftir veiðisvæðum frá árinu 1970.

Fig. 2.29.1. **NEPHROPS.** Landings by fishing grounds since 1970.



Mynd 2.29.2. **HUMAR.** Heildarvisitala humars (þyngd) úr humarleiðöngurum 1987–2014 og staðlaður afli á sóknareiningu 1987–2013.

Fig. 2.29.2. **NEPHROPS.** Total biomass indices from the *Nephrops* survey 1987–2014 and standardized CPUE 1987–2013.

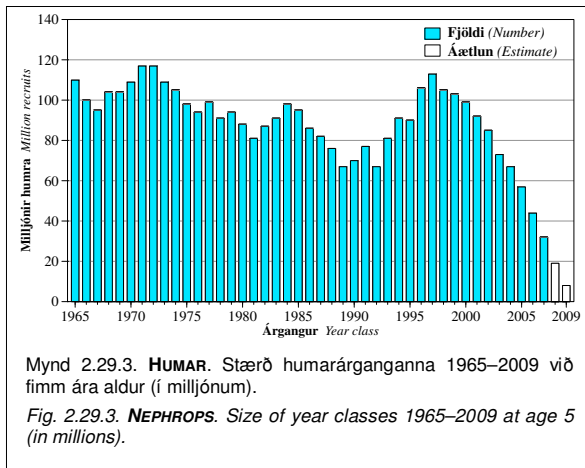
**TAFLA 2.29.1.**

**HUMAR.** Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda og afli (tonn).

**NEPHROPS.** TAC recommended by the Marine Research Institute, national TAC and landings (tonnes).

Ár Year	Tillaga Rec. TAC	Aflamark National TAC	Afli alls Total landings
1984	2 400	2 600	2 500
1985	2 300	2 400	2 400
1986	2 500	2 500	2 600
1987	2 700	2 800	2 700
1988	2 600	2 600	2 200
1989	2 100	2 100	1 900
1990	2 100	2 000	1 700
1991	2 100	2 100	2 200
1991/92 <sup>1)</sup>	2 100	2 100	2 200
1992/93 <sup>1)</sup>	2 200	2 400	2 400
1993/94 <sup>1)</sup>	2 200	2 400	2 200
1994/95 <sup>1)</sup>	2 200	2 200	1 000
1995/96 <sup>1)</sup>	1 500	1 500	1 600
1996/97 <sup>1)</sup>	1 500	1 500	1 200
1997/98 <sup>1)</sup>	1 500	1 200	1 400
1998/99 <sup>1)</sup>	1 200	1 200	1 400
1999/00 <sup>1)</sup>	1 200	1 200	1 300
2000/01 <sup>1)</sup>	1 400	1 400	1 400
2001/02 <sup>1)</sup>	1 500	1 500	1 577
2002/03 <sup>1)</sup>	1 600	1 600	1 687
2003/04 <sup>1)</sup>	1 600	1 600	1 437
2004/05 <sup>1)</sup>	1 500	1 500	2 035
2005/06 <sup>1)</sup>	1 600	1 800	1 946
2006/07 <sup>1)</sup>	1 700	1 800	1 946
2007/08 <sup>1)</sup>	1 900	1 900	2 000
2008/09 <sup>1)</sup>	2 200	2 200	1 999
2009/10 <sup>1)</sup>	2 200	2 200	2 456
2010/11 <sup>1)</sup>	2 100	2 100	2 259
2011/12 <sup>1)</sup>	2 000	2 100	2 130
2012/13 <sup>1)</sup>	1 900	1 900	1 965
2013/14 <sup>1)</sup>	1 750	1 750	
2014/15 <sup>1)</sup>	1 650		

<sup>1)</sup> Fiskveiðarárið september–ágúst. Quota year September–August.



is poor, the animals do not venture far from their burrows and are therefore difficult to catch.

According to the survey in May, 2014 a carapace length of 50–57 mm (age 10–12) is most common by number. The proportion of age 14 and older *Nephrops* (60 mm and larger) was high, but never have *Nephrops* less than 40 mm been so few in a survey. As in the last two years, near Eldey and in Skerjadjúp no recruitment was observed.

### 2.29.3. Stock assessment and projections

According to stock estimates from catch-at-age analysis, cohorts from 1996–2000 are large (Fig. 2.29.3). Around 1995 stocks were at a minimum and fishing was poor, but after fishing decreased and recruitment improved the stock grew again. From 2007–2010 CPUE was at an historical high, as was the stock biomass. However, the 2005–2009 cohorts are at an historical low, as was the case in the survey.

According to the stock assessment fishable stock is now about 11 300 tonnes and is decreasing rapidly (Fig. 2.29.4). Large lobsters (age 10 and older) have also decreased in abundance but are still above the long-term mean. CPUE has reflected this decrease.

Fishing mortalities since 1972 are shown on

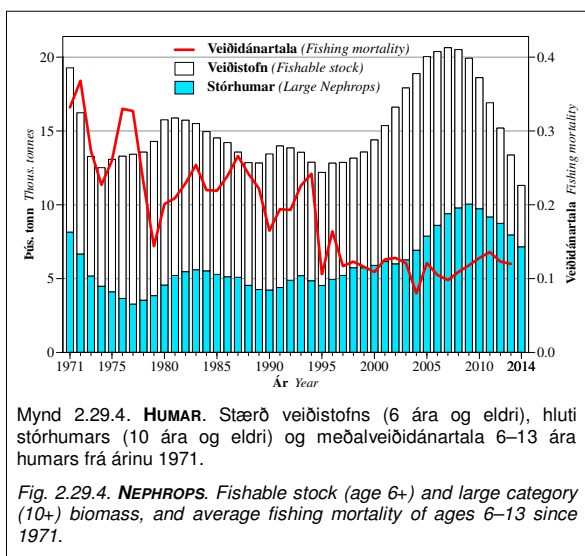


Figure 2.29.4. Since 1995 the goal has been to reach optimum fishing mortality ( $F=0.15$ ). While this has usually been reached, fluctuations in the stock size and/or differing conditions by area have sometimes produced temporary conditions of overfishing on some fishing grounds.

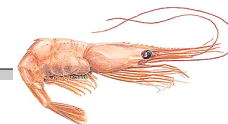
In projection of stock biomass until 2015 it is expected that landings in 2014 will be 1 850 tonnes and the fishable stock biomass in the beginning of 2015 will be about 9 150 tonnes.

Recently a Gadget model for *Nephrops* has been in development (See Appendix 5.1). The Gadget model shows similar trends in stock size as does the catch-by-age analysis.

### 2.29.4. Advice

Table 2.29.1 shows MRI TAC recommendations, national TAC, and *Nephrops* landings since 1984. The stock grew quickly following a stock decrease from 1995–2005. This increase was caused by improved recruitment and less fishing effort. Poor recruitment has caused stock decrease in recent years. MRI recommends, as before, that effort aim at the optimum level ( $F=0.15$ ) and that in 2014/2015 TAC should not exceed 1 650 tonnes.

## 2.30. RÆKJA *Pandalus borealis*



### 2.30.1. Landings and effort

Northern prawn has been harvested in Icelandic waters since the 1940s, although for many years only a small area of inshore waters was fished. The offshore prawn fishery began around the middle of the 1970s and quickly surpassed the inshore fishery in scale (Fig. 2.30.1; Table 3.30.1).

The prawn fishery in Icelandic waters climaxed from 1994–1997 when annual landings were over 70 kt. After 1997 harvesting decreased rapidly until 2006 when landings were only 860 tonnes. Since then there has been a slow increase in landings and they were 10 400 tonnes in 2013.

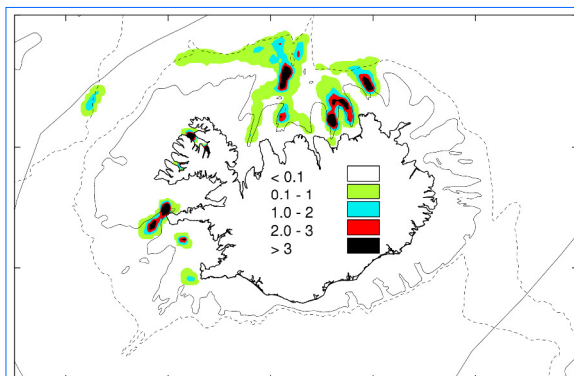
### 2.30.2. Inshore northern prawn

#### 2.30.2.1. Stock status and advice

Table 3.30.2 shows landings by area since 1990/91. In recent years, the only active prawn fishery is around Snæfellsnes and in Arnarfjörður. In quota year 2012/2013 fishing was also allowed in Skjálfandi. Total inshore landings in 2012/2013 were 3 000 tonnes. Figure 2.30.2 shows landings by area, but also that the northern stock of prawns collapsed from 1997–2000 as seen in both biomass index and landings. This also happened in Ísafjarðardjúp from 2002–2004 and in Arnarfjörður from 2005–2007. In all of these areas predation by cod and haddock is said to have played a significant role in the collapse.

Table 2.30.1 shows MRI TAC recommendations, national TAC, and inshore landings since 1990/1991 and Table 3.30.3 shows recommendations by area.

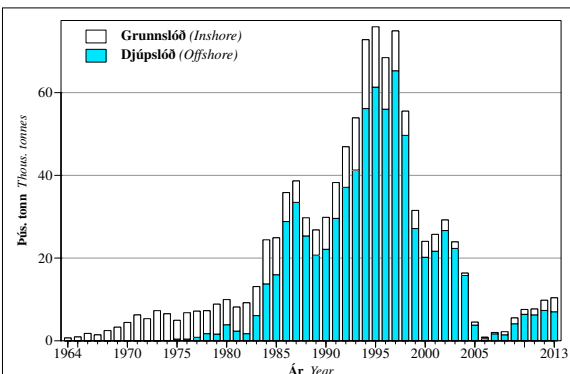
Stock assessments are based on the results of surveys in April (near Snæfellsnes) and September/October (on the north and northwest coast). The MRI only recommends TAC for the grounds near Snæfellsnes and Eldey but other areas will be assessed upon completion of surveys in the fall of 2014.



**RÆKJA.** Veðiðsvæði úthafsækju við Ísland árið 2013. Dekkstu svæðin sýna mestan afla (tonn á sjm<sup>2</sup>).

**NORTHERN SHRIMP.** Fishing grounds in 2013. Dark areas indicate highest catch (tonnes nm<sup>2</sup>).

Near **Snæfellsnes** landings have increased steadily in recent years. In 2012 landings were 143 tonnes and 174 tonnes in 2013 in Breiðafjörð. At Kolluáll the catch was 1 479 tonnes in 2012 and 1 366 tonnes in 2013. In Jökuldjúp landings have been insignificant except in 2000 when they were 1 100 tonnes (Figure 2.30.2). In 2013 Jökuldjúp landings were 174 tonnes. Recommended TAC for



Mynd 2.30.1. **RÆKJA.** Landaður afli á grunnslóð og djúpslóð frá árinu 1964.

Fig. 2.30.1. **NORTHERN SHRIMP.** Landings from inshore and offshore areas since 1964.

Tafla 2.30.1.

**RÆKJA Á GRUNNSLÓÐ. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (tonn).**

**NORTHERN SHRIMP, INSHORE.** TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).

Ár Year	Grunnslóðasvæði fyrir utan Snæfellsnes Inshore areas except Snæfellsnes area		Snæfellsnes Snæfellsnes area		Öll grunnslóð All inshore areas
	Tillaga Rec. TAC	Aflamark TAC	Tillaga Rec. TAC	Aflamark TAC	
1990/91	6 880	6 880	-	-	8 400
1991/92	7 200	7 200	-	-	9 200
1992/93	7 100	7 100	-	-	12 400
1993/94	8 050	8 050	-	-	13 000
1994/95	9 500	9 500	-	-	15 850
1995/96	11 370	11 370	-	-	14 300
1996/97	9 900	9 900	-	-	10 350
1997/98	6 870	6 870	-	-	6 950
1998/99	4 930	4 930	-	-	4 950
1999/00	3 310	3 310	-	-	3 300
2000/01	2 130	2 130	-	-	4 400
2001/02	2 450	2 450	-	-	2 900
2002/03	1 650	1 650	300	-	1 700
2003/04	750	750	200	-	950
2004/05	450	450	200	-	700
2005/06	0	0	200	-	250
2006/07	0	0	200	-	300
2007/08	150	150	400	-	700
2008/09	500	500	400	-	1 300
2009/10	300	300	900	-	1 150
2010/11	400	400	450	-	750
2011/12	1 200	1 200	850	-	2 900
2012/13	1 600	1 600	1 000	-	3 000
2013/14	1 500	1 500	950	-	



Mynd 2.30.2. **RÆKJA**. Landaður afli (súlur) og vísitala stofnstærðar (línur) á grunnslóð frá árinu 1978.

Fig. 2.30.2. **NORTHERN SHRIMP**. Inshore landings (bars) and biomass indices (lines) since 1978.

Snæfellsnes is 600 tonnes in 2014/2015. Though the area is included in the offshore fishery, it seems that the prawns on Kolluáll and Jökuldjúp are not offshore prawns but are of the same population as the prawns of southern Breiðafjörður. For two years,

landings near Snæfellsnes has been above TAC. MRI therefore recommends that the area around Snæfellsnes (Kolluáll, Jökuldjúp and Breiðafjörður) be closed when the TAC is reached.

No fishery has been allowed at **Eldey** from the

collapse in 1997 until 2013 (Fig. 2.30.2). According to the spring survey in 2013 the stock has increased considerably since 2010 and biomass is close to the long-term mean. Fishing resumed in the area with 179 tonnes landed in 2013. Prawn stock was below average in 2014 and MRI recommended a TAC of 200 tonnes for 2014.

According to the winter survey in 2013/2014 the prawn stock in **Arnarfjörð** is below average (Figure 2.30.2). Prawns were found in mostly in Borgarfjörð so distribution has been similar since 2004. More cod and less haddock were observed than in fall 2012. Recommended TAC was 200 tonnes in Arnarfjörð in quota year 2013/2014.

According to the September survey northern prawn stock in **Ísafjarðardjúp** was above average. As in most inshore waters, cod were abundant from 2003–2005. The abundance of fish is considered the main reason for prawn stock decrease in 2004. In the fall of 2013 cod and haddock were abundant in the area, though the haddock is decreasing. In October 2013 recommended TAC was 900 tonnes in Ísafjarðardjúp in 2013/2014. Following a survey in February the TAC recommendation was increased to 1 100 tonnes.

In **Skjálfandi** the biomass index was very low in the fall survey of 2013, whereas in 2011 this index had increased considerably from the previous year. The fishery closed in Skjálfandi from quota year 1998/1999–2011/2012. A TAC recommendation of 400 tonnes was given for Skjálfandi in quota year 2012/2013 but only 85 tonnes were caught. Cod was abundant in fall 2012 and 2013 but haddock had decreased since 2012. A recommendation of closure was given for quota year 2013/2014.

In the September survey of 2013 little change in biomass was detected in the stocks in **Húnaflói**, **Öxarfjörð** and **Skagafjörð** (Fig. 2.30.2). Stocks in these three areas have been at a low and fishing has not been conducted for the last 14 seasons. The collapse of the prawn stock was caused by increased migrations of fish. There was much less haddock in Öxarfjörð and Skagafjörð in 2013 but higher abundance of haddock in Húnaflói than the last two years. Cod was more abundant in Öxarfjörð and Húnaflói than last year, but a lower abundance of cod has not been observed in Skagafjörð since fall 2007.

Mean size of prawns (number/kg) by area is shown in Table 3.30.4. Prawns were smallest in 2013 in Skagafjörð (449 indiv/kg) and in Skjálfandi (442 indiv/kg); the largest prawns were in Breiðafjörður (184 indiv/kg).

### 2.30.3. Offshore northern prawn

#### 2.30.3.1. Trends in effort and landings

Offshore northern prawn fishing to the north of Iceland began in the 1980s and was rather limited until 1984. Then it increased substantially, climaxing

in 1997 at over 65 kt. From 1998–1999 landings decreased from 49 kt to 27 kt and remained around 20–27 kt until 2003. From 2004–2005 landings decreased further and were about 600 tonnes in 2006 (Table 3.30.5). After 2006 landings increased to over 7 000 tonnes in 2012 and 2013. Offshore landings from certain areas are shown in Table 3.30.5.

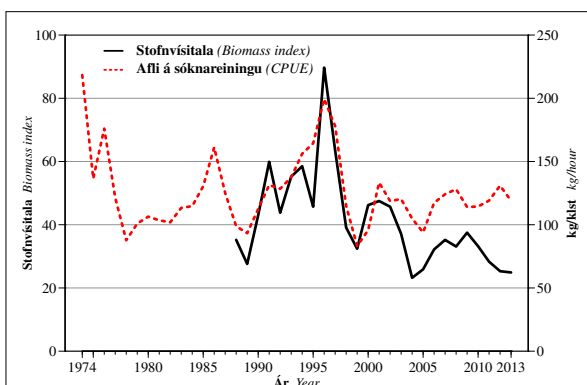
CPUE (standardized for 1600 mesh trawl) have been variable since fishing began, reached a maximum in 1996 of 200 kg/h, then fell to 83 kg/h in 1999. From 2001–2003 CPUE increased then it decreased from 2004–2005 to about 100 kg/h (Figure 2.30.3). Since, it has increased and in 2013 was near the long-term mean from 1988–2013.

Mean size of prawns from 1997–2013 by region is shown in Table 3.30.6. In 2013 the smallest prawns were in Bakkaflói and Héraðsflói (309 indiv/kg) and the biggest on Norðurkantur (149 indiv/kg). Variation in mean size is correlated to cohort strength in each region.

**Rauða Torgið (Red Square)** and **Hali** are outside traditional survey areas. At Rauða Torgið prawn landings have gotten up to 1 400 tonnes and 2 000 tonnes at Hali. Almost no prawn fishing has been conducted in these areas since 2005. Effort has increased at Hali; caught were 128 tonnes there in 2012 and 455 tonnes in 2013 (Table 3.30.5).

#### 2.30.3.2. Relationship of fish and prawns

Predation by cod on prawns is considered to have a significant effect on stock size but in order to estimate such predation it is necessary to have an estimate of the abundance of cod in the prawn grounds. Figure 2.30.4 shows three indices of the abundance of cod on the northern prawn grounds. They are: indices from the spring groundfish survey (SMB 1985–2013), indices of cod in northern prawn surveys from July–August (SMR 1987–2013) and cod indices from the fall groundfish survey (SMH 1996–2013). Indices from the SMB and SMH give indication of the abundance of cod across all of the



Mynd 2.30.3. **RÆKJA**. Afli á sóknareiningu (kg/klst) árin 1974–2013 á helstu úthafs-rækjувæðum og stofnvísitala úthafs-rækju árin 1988–2013.

Fig. 2.30.3. **NORTHERN SHRIMP**. CPUE during 1974–2013 and biomass indices during 1988–2013 in main offshore fishing grounds.



northern and eastern waters (from Norðurkantur to Berufjordur) in fall and winter. SMR indices show cod abundance in the deep water to the north and east where the prawns remain over the summer.

Indices from SMR and SMB provide very different descriptions of the abundance of cod in the distribution range of northern shrimp. According to the SMR there was much more cod from 1996–2013 than in 1987–1995. From 1989–1995 hardly any cod was caught but at that time the offshore northern prawn stock climaxed. A great abundance of cod has been measured in the SMR and SMH in the last ten years.

Greenland halibut is also considered to affect prawn stock. Abundances of these fish in the SMR were much higher from 1987–1994 than from 1995–2008, but since 2009 Greenland halibut has declined considerably.

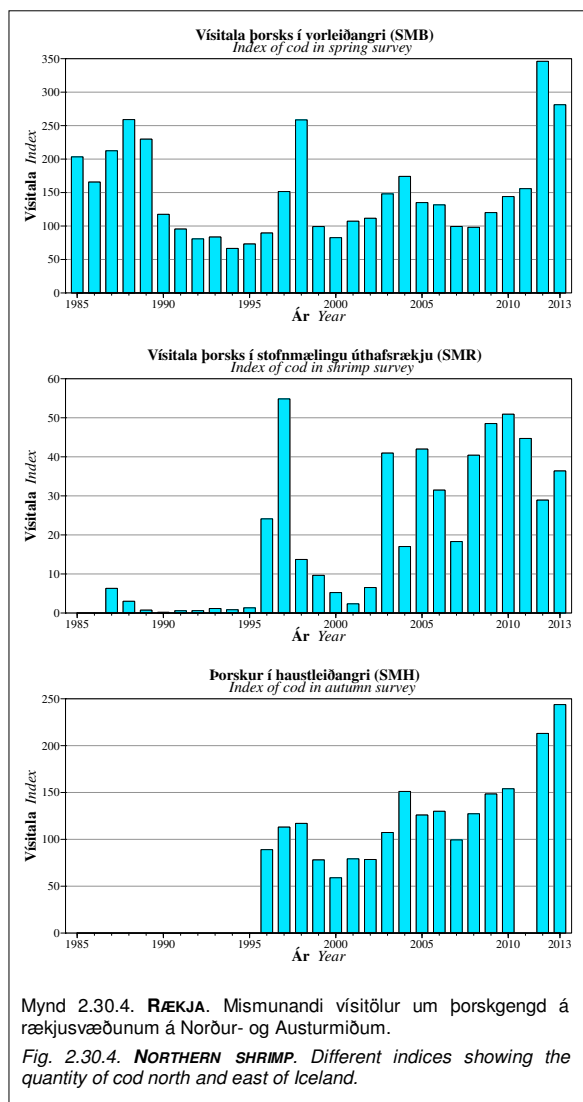
### 2.30.3.3. Stock status

The biomass index of offshore prawns in 2013 was similar to that in 2011 and 2012 and is near historical low (Fig. 2.30.3). The biomass index of females is stable but the spawning stock is below the long-term mean from 1998–2012.

Since 2004 the recruitment index for prawns (age

Tafla 2.30.2. ÚTHAFSRÆKJA. Tillögur Hafrannsóknastofnunar um aflahámark, ákvörðun stjórnvalda um aflamark og afli (tonn). NORTHERN SHRIMP, OFFSHORE. TAC recommended by the Marine Research Institute, national TAC, and landings (tonnes).			
Ár Year	Tillaga Rec. TAC	Aflamark TAC	Afli Catch
1987	30 000	30 000	33 400
1988	30 000	30 000	24 500
1989	20 000	20 900	20 900
1990	22 000	24 600	24 400
1991	28 000	-	30 700
1991/92	35 000	40 000	34 200
1992/93	35 000	40 000	41 800
1993/94	40 000	52 000	53 200
1994/95	60 000	62 000	61 200
1995/96	40 000	63 000	65 000
1996/97	55 000	60 000	57 300
1997/98	70 000	75 000	60 900
1998/99	40 000	40 000	30 700
1999/00	20 000	20 000	20 700
2000/01	25 000	25 000	22 100
2001/02	35 000	35 000	27 400
2002/03	30 000	30 000	24 300
2003/04	20 000	20 000	18 000
2004/05	15 000 <sup>1)</sup>	10 000	5 100
2005/06	10 000	10 000	800
2006/07	7 000	7 000	1 600
2007/08	7 000	7 000	1 300
2008/09	7 000	7 000	3 200
2009/10	7 000	7 000	6 300
2010/11	7 000	-	6 300
2011/12	7 000	-	7 300
2012/13	5 000	-	7 400
2013/14	5 000	-	
2014/15	5 000		

<sup>1)</sup> Engin tillaga um hámarksafna en sagt að óbreytt sókn leiði af sér 15 þús. tonna afla. No rec. TAC but unchanged effort gives 15 thous. tonnes.



2 prawns) has been far below average and all year classes from 2002–2010 are expected to be very small (Fig. 2.30.5). Recruitment has been increasing since 2010.

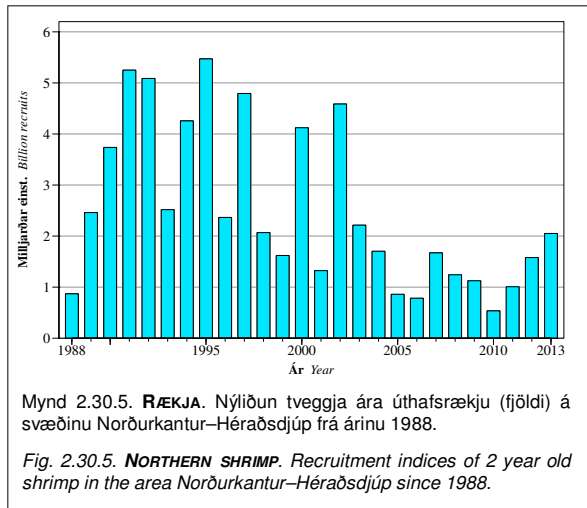
### 2.30.3.4. Advice

Table 2.30.2 shows MRI TAC recommendations, national TAC, and prawn landings since 1987. Effort has increased in recent years, but despite the fact that the fishery was opened in 2010 TAC was not filled until 2012. Landings from Norðurkantur have been small in recent years, but the largest prawns are caught there and it was the best prawn fishing grounds. From 2011–2013 largest prawn landings were from Grímsey, where prawns are much smaller.

The results of the SMR in 2013 indicate the stock is still weak, predation by cod is high and recruitment seems to be poor as in recent years. Increased abundance of Greenland halibut in the region contributes to predation on prawns.

In light of this information MRI recommends that effort be limited and that TAC in quota year 2014/2015 be 5 000 tonnes.





#### 2.30.4. Other northern prawn fisheries

The majority of the northern prawn stock on the **Dohrn Bank** and off East Greenland is said to stay west of the mid-line between Greenland and Iceland, which lies across the northernmost grounds of the Dohrn Bank. There are no international management agreements and catch division of this stock. Total landings from East Greenland were about 2 000 tonnes in 2012 and 2013, as compared to an average of 12 kt from 1994–2003. Icelandic landings from the Dohrn Bank have long been variable (Table 3.30.1) because of sea ice in the area. At most,

landings were 2 900 tonnes in 1997. From 2006–2012 the Icelandic fleet rarely entered Dohrn Bank but in 2013 landings were 350 tonnes. Prawn biomass indices have decreased considerably since 2009. The Northwest Atlantic Fisheries Organization (NAFO) recommends that landings from East Greenland should not exceed 2 000 tonnes in 2014.

In 1993 fishing began on **Flemish Cap**, in international waters east of Canada. The Icelandic fleet has not fished the area since 2006. The Flemish Cap is now closed due to poor stock status.

Northern prawn fishing began on the **Grand Banks** in 1993 and the Icelandic fleet commenced operations there in 2000. Icelandic landings from the area have been from 55–226 tonnes (Table 3.30.1). In 2012 no landings were recorded, but in 2013 landings were 92 tonnes. The stock has been in decline since 2007 and due to poor recruitment and high fishing mortality it is expected to continue to decline.

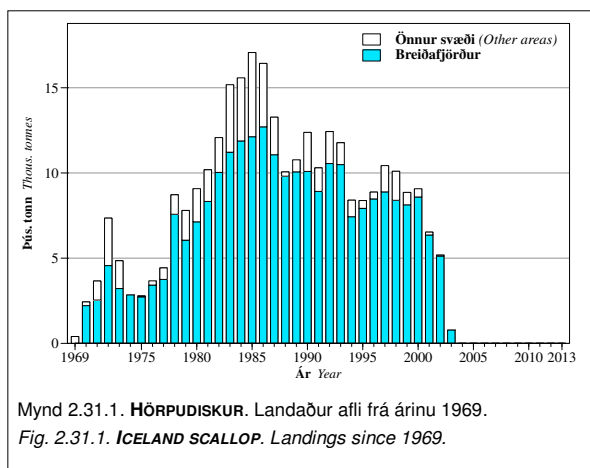
Northern prawn fishing began in the **Barents Sea** in 1970. Part of the region is international waters and Icelandic vessels began fishing there in 1997. The largest Icelandic landings were just over 2 000 tonnes in 1998. From 2001–2010 Icelandic landings were negligible and since 2011 landings have been from 160–730 tonnes. In the last decade total landings by all nations has been from 25–43 kt, which is below the TAC of 60 kt.

## 2.31. ICELAND SCALLOP *Chlamys islandica*



### 2.31.1. Landings and effort

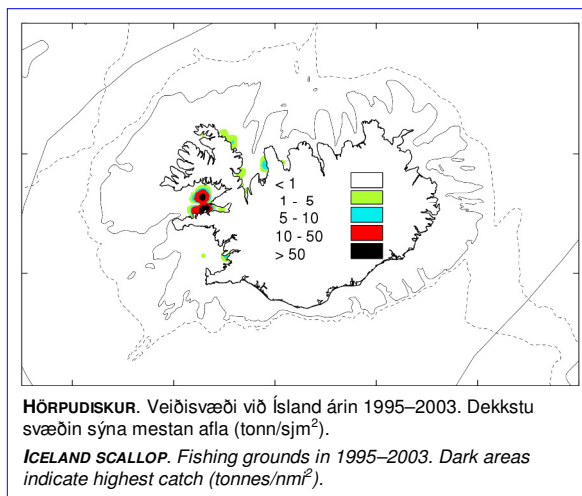
The scallop fishery was closed in 2013/2014, for the eleventh consecutive year. Total landings were around 9 500 tonnes from 1996–2000, thereof 8 500 tonnes in Breiðafjörður (Fig. 2.31.1 and Table 3.31.1). From 1996–1999 mean CPUE (catch per haul-hour with a single dredge) in Breiðafjörður was about 1 600 kg but fell to 709 kg in 2003, the last season when scallops were harvested.



### 2.31.2. Stock status

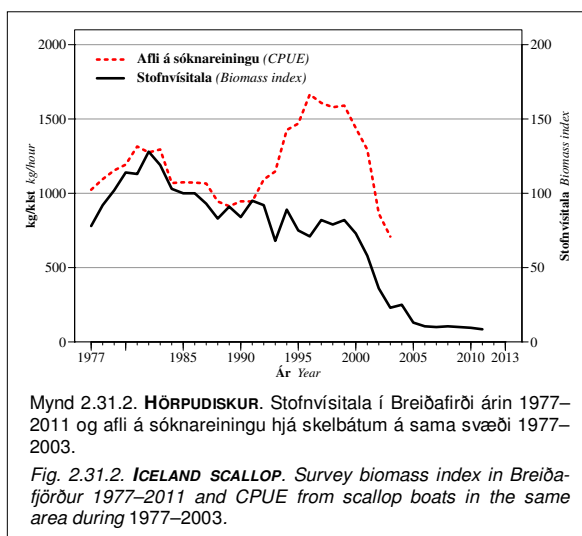
According to a stock survey in northern Breiðafjörður in fall 2013 fishable stock biomass was still very low. Southern Breiðafjörður was not surveyed in 2013. A survey was conducted in cooperation with local fishermen in April, 2014 outside of traditional fishing grounds. Iceland scallops were found near the mouth of Hvammsfjörður, in Axlardjúp west of Sauðeyjar, and south of Skálmarnes. These areas are outside traditionally assessed grounds so the first stock assessment will be presented in fall 2014. Also surveyed was Skelmið in Breiðasund, where exploratory fishing will be conducted next fall in an effort to judge the effects of limited fishing.

Significant biomass decline was first observed in Breiðafjörður in April, 2001 when it was about 27% lower than it had been from 1993–2000 (Fig. 2.31.2). The decline continued until 2006 and biomass has remained low since. The main change in recent years is that the proportion of shells 65 mm and larger has increased and now 80 mm and larger shells are becoming common. Younger shells continue to decrease in the stock and all cohorts from 2004–2009 are at an historical low. According to the results of liver sampling from southern Breiðafjörður in fall 2010 a significant increase was expected in age two shells and they were found in some locations in 2012. Many young scallops were found in fall 2013 in northern Breiðafjörður. Most of these were



estimated as age one scallops and this cohort may join the fishable stock in 2018–2019.

When the stock declined, distribution shrank and natural mortality increased. Studies have shown a correlation between stock decline and increased mortality other than fishing mortality. The most likely explanation for the decline is a protist infection that caused reductions in the adductor muscle tissue. The infection also retarded development of reproductive organs which, in combination with a small spawning stock, inhibited recruitment. Mortality increased with scallop size/age and was worst among those scallops that comprised the majority of the fishable stock (>60 mm). The increase in large shells from 2007–2013 seems to indicate lower infection rate and mortality in the stock. Muscle mass in the shells has also increased in recent years.



**2.31.3. Advice**

Scallop stocks decreased rapidly after 2000 and remains at an historical low. Cohorts from 2004–2009 are small so there is no expectation that the fishable stock will improve much in the coming years. The MRI recommends that the Iceland scallop fishery on traditional fishing grounds remain closed in quota year 2014/2015.

---

## 2.32. OCEAN QUAHOG *Arctica islandica*

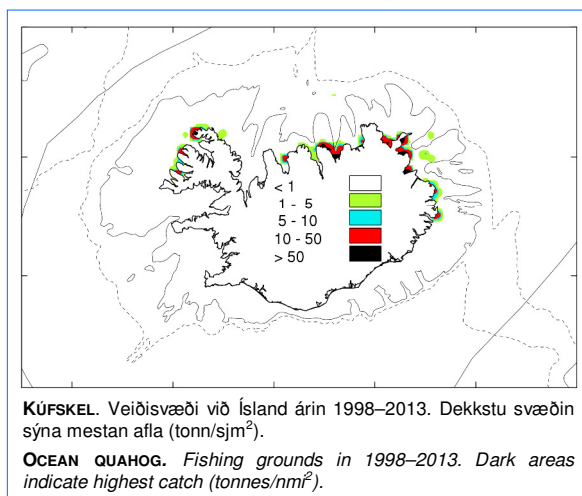
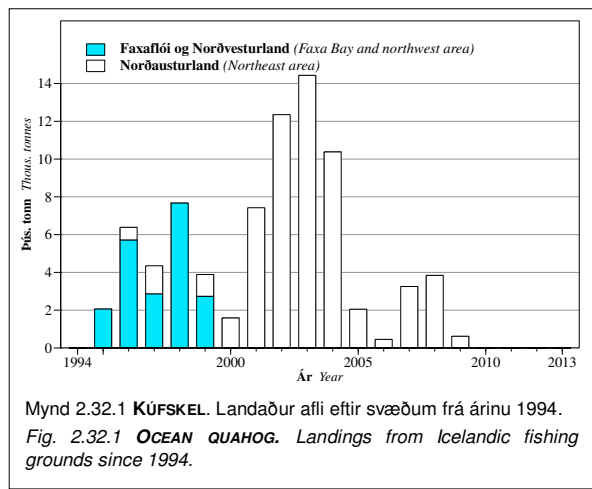


### 2.32.1. Catch and effort

Harvesting of ocean quahogs for human consumption was conducted off and on from 1988–1999, mainly from Breiðafjörður to Skagatá. Landings were from 1 100–7 700 tonnes (Table 3.32.1). Harvesting from Skagatá east to Ingólfshöfði began in 1996 and from that year until 2005 landings were from 700–14 400 tonnes (Fig. 2.32.1; Table 3.32.1). Harvesting has been insignificant since 2005 due to poor marketability and landings in 2013 were 20 tonnes (Table 3.32.1). According to fishing logs, CPUE was constant at 7–10 tonnes/hr from 2001–2008, but effort was variable. In 2009 all fishing with hydraulic dredge ceased and all fishing was conducted with dry dredge.

### 2.32.2. Stock status

Studies show the ocean quahogs are long-lived and slow-growing. The mainstay of the fishable stock is large old quahogs. Density of quahogs at 5–50 m depth has been studied from Garðskagi clockwise to Ingólfshöfði and the stock in the region is estimated at 1.3 million tonnes.



### 2.32.3. Advice

TAC has so far not been regionally restricted but as a precaution it has been proposed that for every 4–7 year period the landings not exceed 2.5% of the estimated biomass in each area. With these considerations in mind, the MRI recommends that total landings of quahog in quota year 2014/2015 should not exceed 32 500 tonnes for the region from Garðskagi clockwise to Ingólfshöfði.

## 2.33. COMMON WHELK *Buccinum undatum*



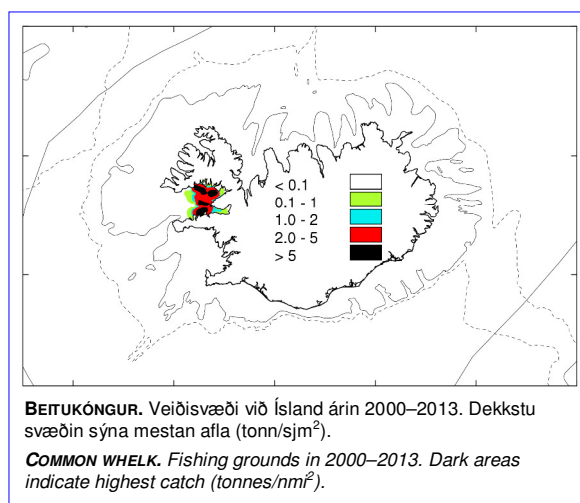
### 2.33.1. Catch and effort

Exploratory harvesting of common whelk began in Breiðarfjörður in 1996 when landings totalled 500 tonnes. Since then, landings have been variable due to market conditions. Landings were largest (1 300 tonnes) in 1997 and negligible in 1998 and 2002 (Table 3.33.1). In 2003 effort increased again because of a very good market and landings went up to almost 1 000 tonnes in 2005. After that landings dropped off again and were only about 140 tonnes in 2010. Effort increased again in 2011 and landings exceeded 500 tonnes, but fishing decreased in the following years before ceasing early in 2013 when only 89 tonnes were landed.

In 2013 CPUE was 1.1 kg, where it was 1.7 kg in 2012. This is below the average from 1996–2005, which is 3.6 kg in towed traps. Since fishing began, CPUE has been from 1.7–4.8 kg (Table 3.33.1). Data show that CPUE is highly variable by season and area and that from year to year when and where effort is focused varies. In 2013 all effort was early in the year, and this could be the reason for the low CPUE of that year in relation to years when effort was distributed over the entire year.

### 2.33.2. Stock status

According to a fall survey of Breiðarfjörður in 2012, common whelk biomass was lower than that in a similar survey conducted in the first two years of fishing the stock (1997–1998), or 23.7 as compared to 26.9. However, the index decreased most south of Brjánslækur where very little fishing has been conducted. When fishing grounds are compared there is little variation in the index, though there is skew in the measurements. Fishing in Breiðarfjörður over the last 15 years does not seem to have had a strong effect on the stock biomass.



### 2.33.3. Advice

that fishing be similar to the average of the last decade in southern Breiðarfjörður so landings would not exceed 450 tonnes and total landings from Breiðarfjörður would not exceed 750 tonnes. The southern section is demarcated at 65°15' N and west of 22°30' W. In light of the survey results from 2012 and the low effort targeting the stock, the MRI recommends the same TAC for the fishing grounds in Breiðarfjörður in the quota year 2014/2015.

## 2.34. SEA CUCUMBER *Cucumaria frondosa*



### 2.34.1. Landings and effort

Fishing of sea cucumbers in Breiðafjörður began in 2003 and landings were small until 2008, when they reached 1 000 tonnes (Fig. 2.34.1). Landings then increased to a climax in 2011 (almost 2 700 tonnes) before decreasing to about 1 400 tonnes in 2013. Main fishing grounds in 2013 were in Faxaflói (677 tonnes) and on the east coast (747 tonnes). CPUE in 2013 averaged about 867 kg/hr, which is less than the previous year (Table 3.34.1).

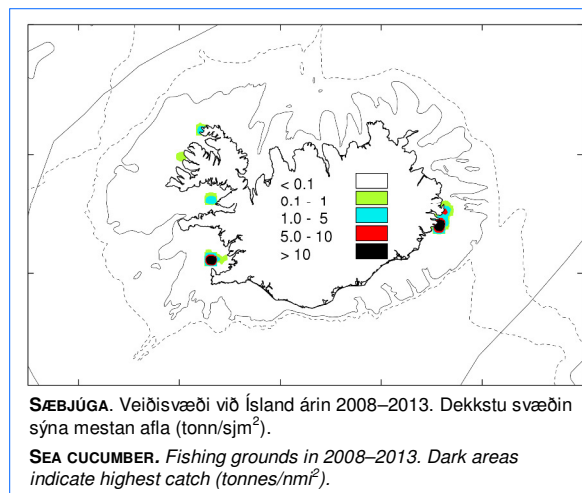
There were three areas defined:

1. Western area: Reykjanes Lighthouse–Skagatá
2. Northern area: Skagatá–Glettinganes
3. Southern area: Glettinganes–Reykjanes Lighthouse

Three vessels have permits in each area. The fishery is closed during the June–July spawning season.

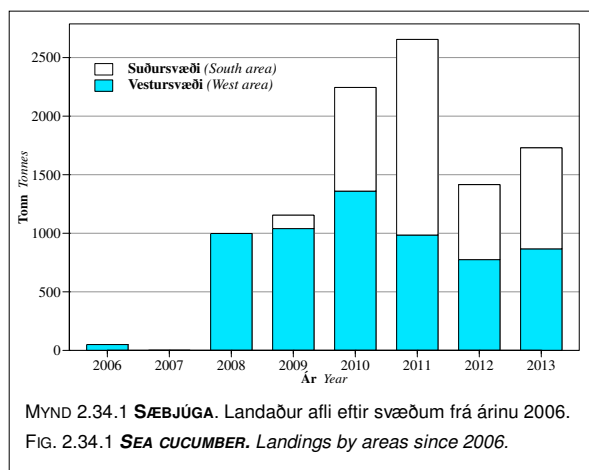
### 2.34.2. Stock status

Little is known about the distribution and biomass of sea cucumbers in Icelandic waters but it is thought to be patchy. Biomass surveys have been conducted on three fishing grounds within two of the three areas: at the mouth of Aðalvík (1 700 tonnes), in Faxaflói (10 300 tonnes), and off the East Iceland coast (14 000 tonnes). The efficiency of the dredges used in harvesting is not fully understood but in the stock survey it is assumed to be 100% efficient.



### 2.34.3. Advice

The MRI recommends that TAC for 2014/2015 not exceed 10% of the estimated biomass of each area, therefore, TAC would be as follows: Faxaflói 1 000 tonnes, East Iceland 1 400 tonnes, and in Aðalvík 170 tonnes. In addition, the number of permits should also remain limited. New grounds continue to be found within each area and the MRI will continue to work with fishers to estimate stock biomass in these new locations.



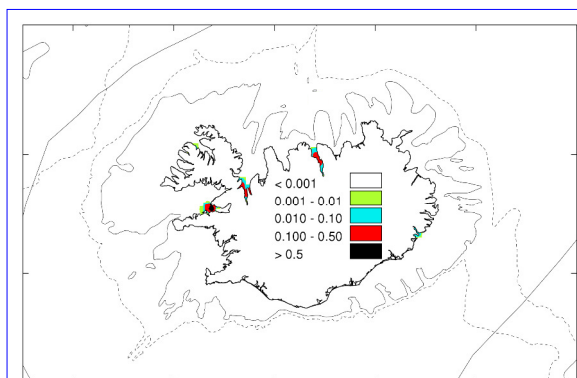


### 2.35. GREEN SEA URCHIN *Strongylocentrotus droebachiensis*



Green sea urchin harvesting began in Iceland in 1993. Fishing climaxed in 1994, with 1 500 tonnes landed. Landings in 1995 were nearly 1 000 tonnes and about 500 tonnes in 1996. The majority of landings were from Breiðafjörður: about 800 tonnes in 1994 and 1995 and nearly 350 tonnes in 1996. From 1997–2003 harvesting mostly ceased. Although the decrease was mostly due to a poor market, many of the best harvest grounds were damaged by the harvesting process in the first years.

Harvesting began anew in Breiðafjörður in 2004 when landings totalled 40 tonnes. In 2007 landings were 134 tonnes and have remained at that level, in 2013 totalling 129 tonnes (Table 3.33.1). CPUE in Breiðafjörður was 374 kg in 2013 but has ranged from 365–483 kg since 2006. In harvesting this stock, it is important to keep in mind that the places with marketable quality sea urchins are limited in size so it is easy to overfish them. Very little is known about the yield capacity of the green sea urchin in Icelandic waters and for this reason harvesting needs to be conducted and managed with caution.



ÍGULKER. Veiðisvæði við Ísland árin 1995–2013. Dekkstu svæðin sýna mestan afla (tonn/sjm<sup>2</sup>).

SEA URCHIN. Fishing grounds in 1995–2013. All gears combined. Dark areas indicate highest catch (tonnes/nmi<sup>2</sup>).

## 2.36. WHALES *Cetacea*



### 2.36.1. Whaling in Icelandic waters

Whaling has been conducted in Icelandic waters since 1883. After 1947, it was limited to the operation of a single whaling station in Hvalfjörður which supported four vessels each whaling season (June–September). From 1948–1985 annual kills averaged 234 fin whales and 68 sei whales. In addition, 82 sperm whales were taken annually from 1948–1982 (sperm whales were protected in 1983).

During the last century, the minke whales were hunted mostly by small motor boats. Mainly, the harvest was a small scale operation taking a few dozen whales per year. From 1977–1985 the International Whaling Commission (IWC) set the annual TAC for East Greenland/Iceland/Jan Mayen. The Icelandic TAC was usually about 200 whales (Table 3.36.1).

In 1986 the IWC declared a temporary moratorium on commercial whaling. In accordance with the International Whaling Convention, a limited number of fin and sei whales were caught for research purposes from 1986–1989. Also, a total of 200 minke whales were caught for research purposes from 2003–2007.

In 2006 commercial whaling of minke and fin whales resumed in Icelandic waters. In December 2013 Iceland adopted a management plan that sets the annual TAC of minke and fin whales until 2018 in accordance with Marine Research Institute (MRI) recommendations.

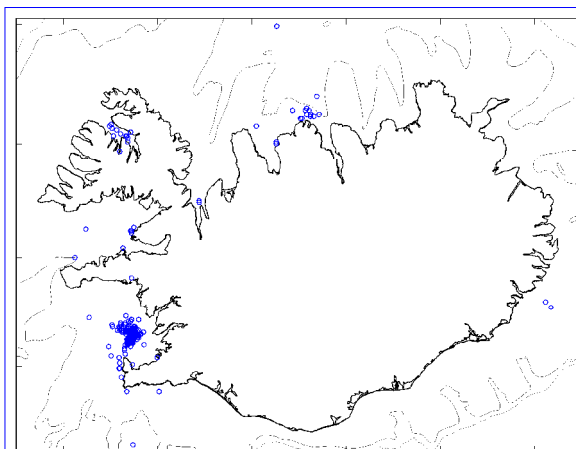
### 2.36.2. Cetacean surveys

In cooperation with neighbouring countries in the North Atlantic, the MRI conducted cetacean surveys in 1987, 1989, 1995, 2001, and 2007. Planning of these surveys and analysis of their results were overseen by the North Atlantic Marine Mammal Commission (NAMMCO) and reviewed by the scientific committee of the IWC. These surveys are the basis for stock assessments of minke and fin whales in Icelandic waters under the auspices of NAMMCO and IWC. Fin whales have increased considerably in number since 1987, especially west of Iceland. A significant increase in the abundance of humpback whales was observed. While minkes have dropped in abundance over recent years. The next whale survey is planned for 2015.

### 2.36.3. Stock status and recommendations

#### 2.36.3.1. Minke (*Balaenoptera acutorostrata*)

Available data indicate that there are at least three minke populations in the North Atlantic with summer distributions along West Greenland and Canada, East Greenland/Iceland/Jan Mayen (Central North Atlantic population), and Norway (Northeast

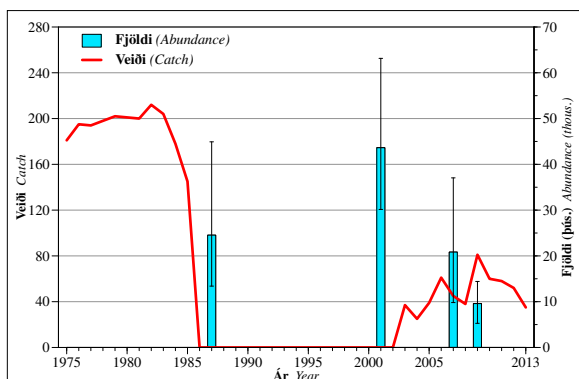


HREFNA. Veiðisvæði við Ísland 2006–2013.

MINKE WHALE. Hunting grounds in 2006–2013.

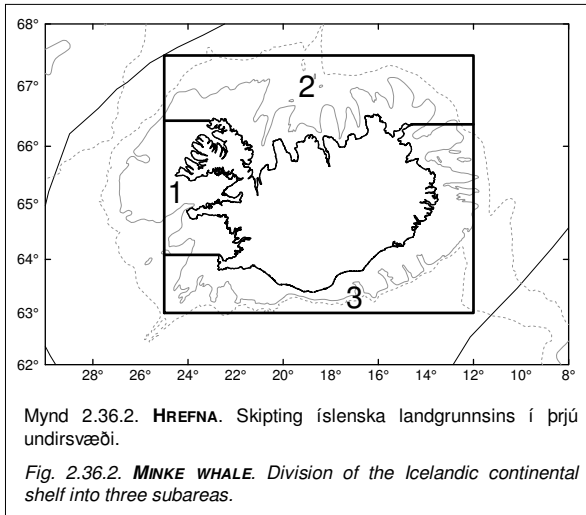
Atlantic population). According to previous NAMMCO assessments of the status of the Mid-Atlantic population of minke whales, the stock size is close to pre-exploitation level (the stock size before whaling began). Therefore, commercial whaling in the last century the seems to have had little effect on stock sizes.

There has been significant fluctuation in the number of minke whales observed in aerial surveys on the Icelandic shelf since 1987, when regular aerial surveys began (Fig. 2.36.1). According to the last count in 2009, minke whales number 9 600 (95% confidence interval: 5 300–14 400). This is the lowest estimate on record, but it is important to note that aerial counts represent a small portion of the total stock. The NAMMCO science committee discussed these findings in their annual meetings in 2008–2010 and concluded that this was a temporary change in the distribution of minkes caused by changes in food availability rather than a massive



Mynd 2.36.1. HREFNA. Hrefnuveiðar og fjöldi hrefna á landgrunnssvæði Íslands, ásamt 95% öryggismörkum.

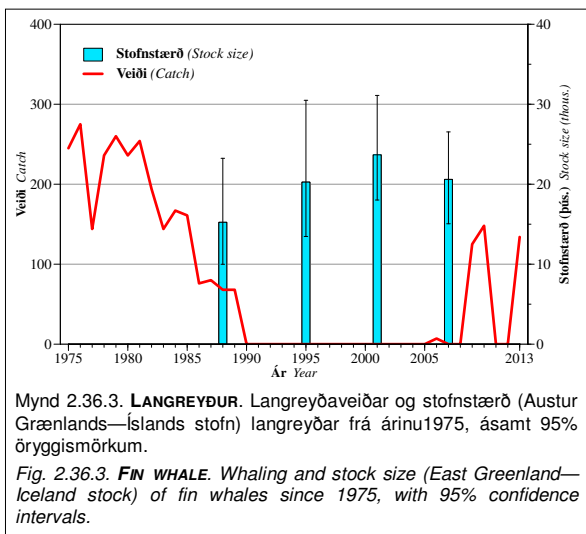
Fig. 2.36.1. MINKE WHALE. Whaling and abundance of minke whales in the Icelandic continental shelf area, with 95% confidence intervals.



decline in the stock. Furthermore, it was concluded that the limited whaling practiced in Iceland could not account for such a dramatic change in the population.

From 2010–2011 NAMMCO investigated the status and potential yield of minke stocks in Icelandic waters. The assessment was based on the Revised Management Procedure (RMP) developed by the IWC, and incorporated, among other data, the results of the surveys from 1987, 2001, 2007 and 2009. According to this assessment, annual catches of 229 minke whales are sustainable and consistent with a precautionary approach. Also sustainable is an annual catch of 121 minke whales in the subarea around Jan Mayen (CM), partly within the Icelandic EEZ. If whaling is conducted in that subarea, whaling activities of all nations will have to be taken into account. This recommendation is consistent with that of the NAMMCO scientific committee.

Minke whaling has, in recent years, led to catches of less than one third of the recommended TAC. Based these assessments the MRI recommends that annual catches for 2014 and 2015 not exceed 229 minkes in the Icelandic shelf region (CIC) and 121 minkes in the CM area.



Due to the uncertainty about minke whale stock size and the likelihood of mixing between areas, it is desirable to spread whaling effort within the Icelandic shelf area based on previous knowledge of minke distribution from whale surveys. For this reason, the MRI recommends dividing the Icelandic shelf region into three areas (Fig. 2.36.2), each with a percentage of national TAC as follows:

1. Western area from a line drawn directly west of Garðskagi to a line directly west of Straumnes (up to 45%)
2. Northern area from the line at Straumnes to a line drawn directly eastward from Fontur on Langanes (up to 45%)
3. Eastern/southern area between the line at Fontur to Garðskagi (up to 60%).

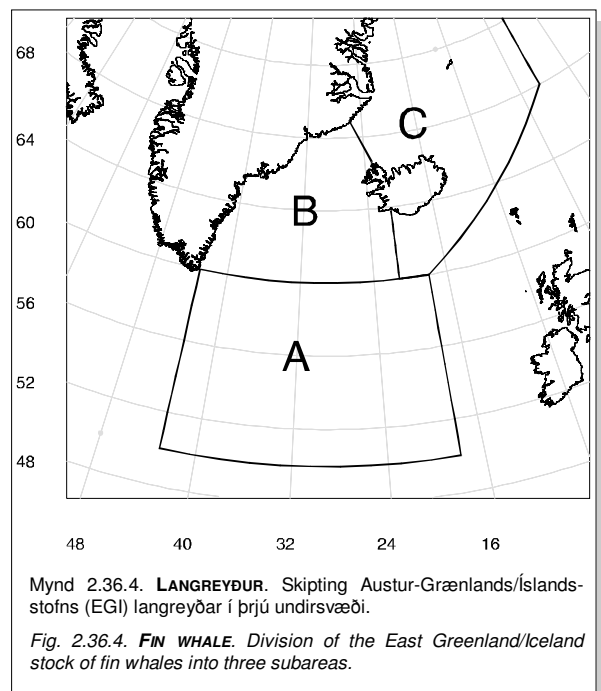
Formal assessment of the North Atlantic minke stock is scheduled for the annual IWC Scientific Committee meeting in the summer of 2014.

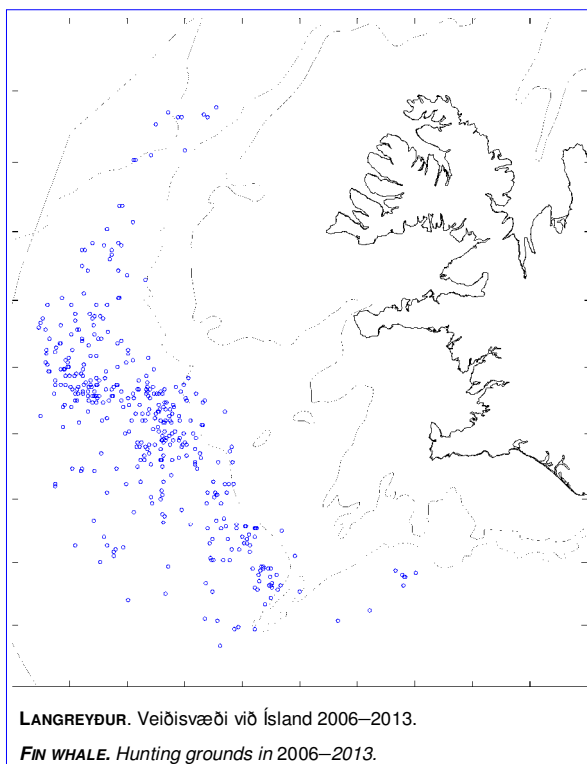
2.36.3.2. Fin whale (*Balaenoptera physalus*)

The management of fin whaling in the North Atlantic has traditionally been based on seven management areas: 1) Nova Scotia, 2) Newfoundland/Labrador, 3) West Greenland, 4) East Greenland/Iceland (EGI), 5) Northern Norway, 6) Western Norway/Faroe Islands, and 7) British Isles/Spain/Portugal.

Since the commencement of regular Icelandic whale surveys in 1987 the fin whale population has increased, especially in the western area (Fig. 2.36.3). From 1987–2001 stocks grew by 4% each year in the EGI area, and 10% between Iceland and Greenland.

The 2007 survey indicated the presence of 20 600 fin whales (95% confidence interval: 15 100–26 500) in





the EGI area. This estimate is not significantly different than that of 2001. From 2007–2009 the science committee of the IWC developed a conducted a formal assessment of the fin whale populations in the North Atlantic according to the RMP. Due to uncertainty about the population structure the committee opted for a precautionary approach and based their recommendation on the theory that a subpopulation was present on the traditional whaling grounds west of Iceland (area B in Fig. 2.36.4). The results of this assessment agree with older assessments, that the EGI population is near the size it was before whaling began in the region. A special working group within the IWC discussed the status and potential yield of the fin

whale population in Icelandic waters in 2010 and the Scientific Committee of NAMMCO performed an assessment of the population in April, 2010. The estimate of potential yield is based on the RMP and takes into account the surveys from 1987, 1989, 1995, 2001 and 2007. According to the assessment, annual whaling of up to 154 fin whales is sustainable and in accordance with a precautionary approach on the traditional whaling grounds west of Iceland (area B in Fig. 2.36.4).

In accordance with management advice of NAMMCO, the MRI recommended that annual whaling in this area be limited to a maximum of 154 fin whales in 2011 and 2012. No new data have become available that give reason to change the above advice and the MRI recommends that whaling in 2014 and 2015 not exceed 154 fin whales.

### 2.36.3.3. Sei whale (*Balaenoptera borealis*)

According to the 1995 survey there were about 9 200 sei whales in the survey area in the North Atlantic, thereof, about 8 800 in the Icelandic EEZ. Due to the southerly distribution of the species the 1989 survey is thought to have covered a larger proportion of the population, or about 10 500 sei whales to the west and southwest of Iceland.

For many decades until 1988 sei whales of the Central North Atlantic population were caught only from Iceland. It is likely that the population sustained this harvest, consisting of only 0.6% of the estimated population. The potential yield of the population has not been formally estimated nor have harvest rules been developed fully enough to allocate a TAC. The IWC scientific committee intends to conduct this assessment.

## 2.37. SEALS *Phocidae*



### 2.37.1. Seal hunting

Only harbour seals and grey seals are permanent inhabitants of Icelandic waters. In addition, there are a few migratory species that come regularly into Icelandic waters.

Seals are hunted around the country, in addition to a good number that are caught accidentally in fishing nets (Table 3.37.1). Historically, hunting was mostly limited to spring pups (harbour seals) and fall pups (grey seals) for their skins, but older seals and migratory seals were sometimes hunted. The seal hunt decreased sharply in the late 1970s following a crash in the foreign market for seal skins. After the formation of the Ring Worm Committee in 1982, which paid a bounty for seals, hunting increased again and targeted older seals directly. After 1989 the bounty was only paid for grey seals. This led to sharp decline in hunted harbour seals dropped off except in 1992 and 1993 when some were taken for scientific sampling. Since 1986 the decline in seal hunting has been steady and since 2002 the recorded seal harvest (including bycatch in fishing boats) has been under 1 000 animals. As in previous years, Norwegian seal hunters have been permitted to hunt harp seals in Icelandic waters in 2012. The hunt was conducted far to the north of Iceland and the number killed is reported in Norwegian data.

There is a lack of data describing the trends in number of seals as bycatch. In seal hunt data from previous years no distinction was made between purposefully hunted seals and numbers killed as bycatch. In addition, usually only seals that were sold or traded for bounty were recorded. Therefore, numbers of animals killed for personal use and bycatch that was not turned in for bounty were not recorded.

There is no available data describing the trends of seals as bycatch because in previous years no distinction was made between purposefully hunted seals and those killed as bycatch. In addition, the majority of reported seals were those that were sold or traded for bounty. Therefore, animals killed for personal use and in bycatch that was not turned in for bounty were not recorded.

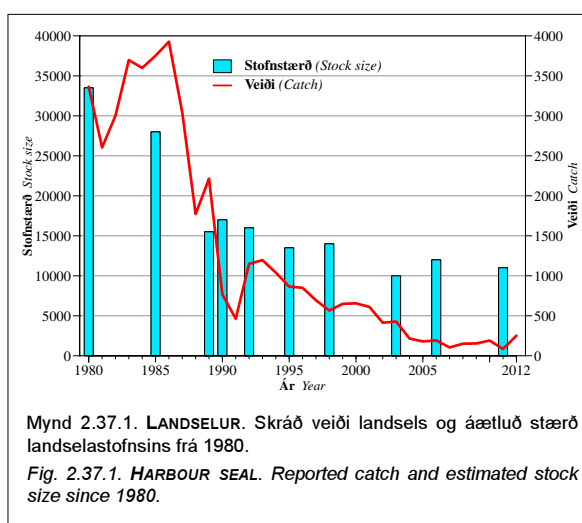
Seal research in Iceland is conducted by the Icelandic Seal Centre under the auspices of the Marine Research Institute. In 2012 about 632 seals were reported (Table 3.37.1), of which 250 were listed as bycatch. Harbour seal hunting has decreased since the mid 1980s when kills were more than 6 000 animals per year. The MRI has not received data about seals in 2013. Reporting methods must be improved in order to better estimate hunting mortality, status, and trends in the populations.

### 2.37.2. Status and yield capacity of Icelandic seals

#### 2.37.2.1. Harbour seal (*Phoca vitulina*)

Harbour seals were last counted in July–September of 2011 with an improved method in which the researcher flies over large haul-outs three times and small haul-outs twice. This method is thought to give a more accurate count of harbour seals. The population was estimated at 11 000 animals (95% confidence interval 8 000–16 000), which is unchanged from the summers of 2003 and 2006 (Figure 2.37.1). The population was an estimated at 34 000 animals in the 1980 survey and decreased annually by about 4% on average until 2003. The most rapid decline in the harbour seal population occurred in the 1980s when it decreased by about 10 000 animals. In the 1990s the decline slowed at the same time as hunting decreased. On the other hand, the lack of reports of mortality due to unintentional kills greatly increases uncertainty of population trends.

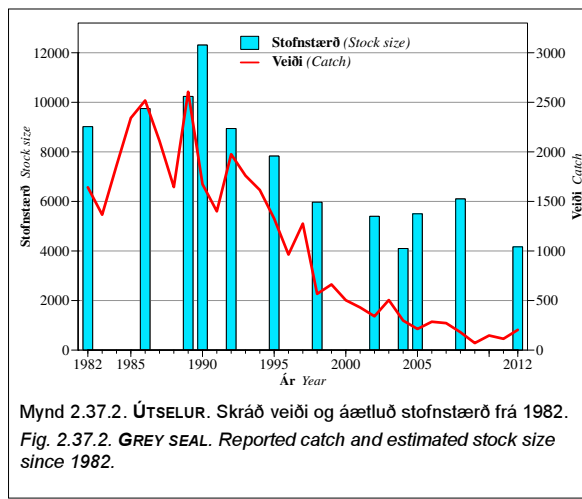
In 2010 a management plan was drafted for the harbour seal population in Iceland at the behest of the Ministry of Fisheries. The decision was made to keep the population at or above the size it was in 2006 when it was estimated at 12 000 animals. If the population drops below this level measures will be immediately taken to reverse the decline if possible. In the coming years the population must be monitored, in part by surveys every 2–3 years, in order to follow management goals. A seal count was planned for the summer of 2013 but funding was not available.



### 2.37.2.2. Grey seal (*Halichoerus grypus*)

Grey seal pups were surveyed by aerial count in 2012 and estimated to be 990 (95% confidence limit 900–1 070), which means a population of 4 200 (95% confidence limit 3 400–5 000). In the 2008/2009 season the pups numbered 1 540 (95% confidence limit 1 480–1 580) and estimated population was 6 100 (95% confidence limit 4 600–7 600). The population has decreased considerably since 2008/2009 and even more since 1990 when it was an estimated 12 000 animals (Fig. 2.37.2). The survey method was improved in 2005 by counting rookeries more than once and correlating results with development stage of pups. This change needs to be kept in mind during data analysis. While it is clear that hunting pressure in the 1990s exceeded the yield capacity of the species, it has decreased significantly in recent years (Fig. 2.37.2). The population in 2012 was the smallest since 2004, though the change since 2000 is not statistically significant. It is not clear what caused this decrease but poaching by fishing vessels is likely and reporting of such kills needs to be improved.

In 2005 the government set a harvest rule for the grey seal in Icelandic waters that aims to maintain the population size of about 4 100 animals from 2004. If the population decreases significantly measures will be taken to reverse the trend. The population is approaching the threshold where extra measures of control will have to be taken and close monitoring of the population is necessary. A survey of grey seal pups is planned for fall 2014, if funding is available.





## 3. TÖFLUR Tables

TAFLA 3.1.1

**Porskur.** Afli (í tonnum) á Íslandsmiðum 1905–2013.  
*Cod. Landings (in tonnes) from Icelandic waters 1905–2013.*

Ár Year	Ísland Iceland	Aðrar þjóðir Other nations	Samtals Total	Ár Year	Ísland Iceland	Aðrar þjóðir Other nations	Samtals Total
1905	44 775	47 355	92 130	1960	295 668	169 355	465 023
1906	48 302	58 441	106 743	1961	233 874	141 042	374 916
1907	53 868	62 838	116 706	1962	221 820	165 056	386 876
1908	58 259	66 704	124 963	1963	232 839	177 211	410 050
1909	56 670	58 831	115 501	1964	273 584	160 021	433 605
1910	71 007	62 595	133 602	1965	233 483	160 153	393 636
1911	75 114	77 762	152 876	1966	223 974	132 781	356 755
1912	75 499	79 477	154 976	1967	193 449	151 573	345 022
1913	79 870	95 110	174 980	1968	227 594	153 476	381 070
1914	53 473	135 025	188 498	1969	281 680	124 731	406 411
1915	66 030	70 069	136 099	1970	302 875	167 882	470 757
1916	68 848	43 975	112 823	1971	250 324	202 728	453 052
1917	61 413	23 305	84 718	1972	225 354	173 174	398 528
1918	62 093	41 073	103 156	1973	238 898	144 548	383 446
1919	76 766	79 967	156 733	1974	238 066	136 704	374 770
1920	82 766	127 972	210 738	1975	264 975	106 016	370 991
1921	90 632	128 735	219 367	1976	280 831	67 018	347 849
1922	103 436	175 568	279 004	1977	329 676	10 374	340 050
1923	127 320	116 328	243 648	1978	319 648	10 742	330 390
1924	161 797	158 004	319 801	1979	360 080	7 984	368 064
1925	166 538	165 698	332 236	1980	428 344	6 000	434 344
1926	126 890	174 304	301 194	1981	460 579	8 080	468 659
1927	164 783	178 295	343 078	1982	382 297	6 090	388 387
1928	177 328	186 943	364 271	1983	293 890	6 166	300 056
1929	201 074	197 738	398 812	1984	281 481	2 341	283 822
1930	261 278	237 157	498 435	1985	322 810	2 457	325 267
1931	224 504	258 898	483 402	1986	365 852	2 781	368 633
1932	208 081	277 207	485 288	1987	389 808	2 445	392 257
1933	247 329	270 946	518 275	1988	375 741	2 335	378 076
1934	223 729	214 840	438 569	1989	353 630	2 324	355 954
1935	182 926	218 965	401 891	1990	333 348	2 042	335 390
1936	102 354	181 232	283 586	1991	306 689	1 871	308 560
1937	111 285	186 531	297 816	1992	266 662	1 105	267 767
1938	131 965	179 351	311 316	1993	251 170	809	251 979
1939	136 782	61 569	198 351	1994	177 919	890	178 809
1940	147 347	-	147 347	1995	168 685	739	169 424
1941	156 242	-	156 242	1996	181 052	606	181 658
1942	173 146	-	173 146	1997	202 745	408	203 153
1943	186 017	-	186 017	1998	241 545	1 087	242 632
1944	216 677	-	216 677	1999	258 658	1 394	260 052
1945	211 849	4 098	215 947	2000	234 362	1 325	235 687
1946	199 165	38 772	237 937	2001	234 085	1 289	235 374
1947	200 242	45 955	246 197	2002	207 466	1 311	208 777
1948	213 177	80 157	293 334	2003	200 443	7 108	207 551
1949	221 419	93 135	314 554	2004	220 057	7 532	227 589
1950	197 433	152 922	350 355	2005	207 972	5 612	213 584
1951	183 252	165 230	348 482	2006	193 413	2 863	196 276
1952	237 314	162 629	399 943	2007	166 912	3 710	170 622
1953	263 516	262 545	526 061	2008	143 785	2 794	146 579
1954	306 191	241 339	547 530	2009	181 309	1 112	182 421
1955	315 438	222 692	538 130	2010	167 632	1 521	169 153
1956	292 586	188 123	480 709	2011	169 638	2 062	171 700
1957	247 087	204 822	451 909	2012	193 846	1 980	195 826
1958	284 407	224 276	508 683	2013	221 569	1 705	223 274
1959	284 259	168 245	452 504				

TAFLA 3.1.2

Porskur. Skipting aflans í fjölda eftir aldri (í milljónum) á árunum 1955–2013.  
Cod. Landings in numbers by age (millions) in the years 1955–2013.

Ár Year	Aldur Age											
	3	4	5	6	7	8	9	10	11	12	13	14
1955	4.790	25.164	46.566	28.287	10.541	5.224	2.467	25.182	2.101	1.202	1.668	0.665
1956	6.709	17.265	31.030	27.793	14.389	4.261	3.429	2.128	16.820	1.552	1.522	1.545
1957	13.240	21.278	17.515	24.569	17.634	12.296	3.568	2.169	1.171	6.822	0.512	1.089
1958	25.237	30.742	14.298	10.859	15.997	15.822	12.021	2.003	2.125	0.771	3.508	0.723
1959	18.394	37.650	23.901	7.682	5.883	8.791	13.003	7.683	0.914	0.990	0.218	1.287
1960	14.830	28.642	27.968	14.120	8.387	6.089	6.393	11.600	3.526	0.692	0.183	0.510
1961	16.507	21.808	19.488	15.034	7.900	6.925	3.969	3.211	6.756	1.202	0.089	0.425
1962	13.514	28.526	18.924	14.650	12.045	4.276	8.809	2.664	1.883	2.988	0.405	0.324
1963	18.507	28.466	19.664	11.314	15.682	7.704	2.724	6.508	1.657	1.030	1.372	0.246
1964	19.287	28.845	18.712	11.620	7.936	18.032	5.040	1.437	2.670	0.655	0.370	1.025
1965	21.658	29.586	24.783	11.706	9.334	6.394	11.122	1.477	0.823	0.489	0.118	0.489
1966	17.910	30.649	20.006	13.872	5.942	7.586	2.320	5.583	0.407	0.363	0.299	0.311
1967	25.945	27.941	24.322	11.320	8.751	2.595	5.490	1.392	1.998	0.109	0.030	0.106
1968	11.933	47.311	22.344	16.277	15.590	7.059	1.571	2.506	0.512	0.659	0.047	0.098
1969	11.149	23.925	45.445	17.397	12.559	14.811	1.590	0.475	0.340	0.064	0.024	0.021
1970	9.876	47.210	23.607	25.451	15.196	12.261	14.469	0.567	0.207	0.147	0.035	0.050
1971	13.060	35.856	45.577	21.135	17.340	10.924	6.001	4.210	0.237	0.069	0.038	0.020
1972	8.973	29.574	30.918	22.855	11.097	9.784	10.538	3.938	1.242	0.119	0.031	0.001
1973	36.538	25.542	27.391	17.045	12.721	3.685	4.718	5.809	1.134	0.282	0.007	0.001
1974	14.846	61.826	21.824	14.413	8.974	6.216	1.647	2.530	1.765	0.334	0.062	0.028
1975	29.301	29.489	44.138	12.088	9.628	3.691	2.051	0.752	0.891	0.416	0.060	0.046
1976	23.578	39.790	21.092	24.395	5.803	5.343	1.297	0.633	0.205	0.155	0.065	0.029
1977	2.614	42.659	32.465	12.162	13.017	2.809	1.773	0.421	0.086	0.024	0.006	0.002
1978	5.999	16.287	43.931	17.626	8.729	4.119	0.978	0.348	0.119	0.048	0.015	0.027
1979	7.186	28.427	13.772	34.443	14.130	4.426	1.432	0.350	0.168	0.043	0.024	0.004
1980	4.348	28.530	32.500	15.119	27.090	7.847	2.228	0.646	0.246	0.099	0.025	0.004
1981	2.118	13.297	39.195	23.247	12.710	26.455	4.804	1.677	0.582	0.228	0.053	0.068
1982	3.285	20.812	24.462	28.351	14.012	7.666	11.517	1.912	0.327	0.094	0.043	0.011
1983	3.554	10.910	24.305	18.944	17.382	8.381	2.054	2.733	0.514	0.215	0.064	0.037
1984	6.750	31.553	19.420	15.326	8.082	7.336	2.680	0.512	0.538	0.195	0.090	0.036
1985	6.457	24.552	35.392	18.267	8.711	4.201	2.264	1.063	0.217	0.233	0.102	0.038
1986	20.642	20.330	26.644	30.839	11.413	4.441	1.771	0.805	0.392	0.103	0.076	0.044
1987	11.002	62.130	27.192	15.127	15.695	4.159	1.463	0.592	0.253	0.142	0.046	0.058
1988	6.713	39.323	55.895	18.663	6.399	5.877	1.345	0.455	0.305	0.157	0.114	0.025
1989	2.605	27.983	50.059	31.455	6.010	1.915	0.881	0.225	0.107	0.086	0.038	0.005
1990	5.785	12.313	27.179	44.534	17.037	2.573	0.609	0.322	0.118	0.050	0.015	0.020
1991	8.554	25.131	15.491	21.514	25.038	6.364	0.903	0.243	0.125	0.063	0.011	0.012
1992	12.217	21.708	26.524	11.413	10.073	8.304	2.006	0.257	0.046	0.032	0.009	0.008
1993	20.500	33.078	15.195	13.281	3.583	2.785	2.707	1.181	0.180	0.034	0.011	0.013
1994	6.160	24.142	19.666	6.968	4.393	1.257	0.599	0.508	0.283	0.049	0.018	0.006
1995	10.770	9.103	16.829	13.066	4.115	1.596	0.313	0.184	0.156	0.141	0.029	0.008
1996	5.356	14.886	7.372	12.307	9.429	2.157	0.837	0.208	0.076	0.065	0.055	0.005
1997	1.722	16.442	17.298	6.711	7.379	5.958	1.147	0.493	0.126	0.028	0.037	0.021
1998	3.458	7.707	25.394	20.167	5.893	3.856	2.951	0.500	0.196	0.055	0.033	0.013
1999	2.525	19.554	15.226	24.622	12.966	2.795	1.489	0.748	0.140	0.046	0.010	0.005
2000	10.493	6.581	29.080	11.227	11.390	5.714	1.104	0.567	0.314	0.074	0.022	0.006
2001	11.338	25.040	9.311	19.471	5.620	3.929	2.017	0.452	0.202	0.118	0.013	0.009
2002	5.934	18.482	24.297	6.874	8.943	2.227	1.353	0.689	0.123	0.040	0.041	0.002
2003	3.950	16.160	21.874	18.145	5.063	4.419	1.124	0.401	0.172	0.034	0.020	0.015
2004	1.778	19.184	25.003	17.384	9.926	2.734	2.023	0.481	0.126	0.062	0.014	0.005
2005	5.102	5.125	26.749	16.980	8.339	4.682	1.292	0.913	0.203	0.089	0.025	0.002
2006	3.258	12.884	8.438	22.041	10.418	4.523	2.194	0.497	0.336	0.067	0.027	0.002
2007	2.074	11.961	15.948	8.280	9.593	5.428	2.205	1.229	0.366	0.198	0.053	0.010
2008	2.616	4.850	12.585	11.973	5.238	4.582	2.040	0.831	0.308	0.053	0.037	0.004
2009	3.660	8.150	9.480	17.330	10.060	3.910	2.290	0.770	0.310	0.090	0.020	0.010
2010	3.174	7.219	9.385	8.692	10.695	5.588	1.599	1.095	0.337	0.197	0.071	0.016
2011	4.780	7.257	9.284	10.735	6.032	6.152	2.361	0.666	0.459	0.151	0.041	0.010
2012	3.839	10.010	10.400	9.435	8.866	4.834	3.206	1.269	0.369	0.218	0.101	0.030
2013	5.206	12.328	14.846	11.194	7.357	5.636	2.694	1.937	0.676	0.290	0.157	0.052

TAFLA 3.1.3

**Porskur.** Meðalþyngd í afla eftir aldri (g) á árunum 1955–2014.  
*Cod. Weight at age from commercial catches (g) in the years 1955–2014.*

Ár Year	Aldur Age											
	3	4	5	6	7	8	9	10	11	12	13	14
1955	827	1307	2157	3617	4638	5657	6635	6168	8746	8829	10086	14584
1956	1080	1600	2190	3280	4650	5630	6180	6970	6830	9290	10965	12954
1957	1140	1710	2520	3200	4560	5960	7170	7260	8300	8290	10350	13174
1958	1210	1810	3120	4510	5000	5940	6640	8290	8510	8840	9360	13097
1959	1110	1950	2930	4520	5520	6170	6610	7130	8510	8670	9980	11276
1960	1060	1720	2920	4640	5660	6550	6910	7140	7970	10240	10100	12871
1961	1020	1670	2700	4330	5530	6310	6930	7310	7500	8510	9840	14550
1962	990	1610	2610	3900	5720	6660	6750	7060	7540	8280	10900	12826
1963	1250	1650	2640	3800	5110	6920	7840	7610	8230	9100	9920	11553
1964	1210	1750	2640	4020	5450	6460	8000	9940	9210	10940	12670	15900
1965	1020	1530	2570	4090	5410	6400	7120	8600	12310	10460	10190	17220
1966	1170	1680	2590	4180	5730	6900	7830	8580	9090	14230	14090	17924
1967	1120	1820	2660	4067	5560	7790	7840	8430	9090	10090	14240	16412
1968	1170	1590	2680	3930	5040	5910	7510	8480	10750	11580	14640	16011
1969	1100	1810	2480	3770	5040	5860	7000	8350	8720	10080	11430	13144
1970	990	1450	2440	3770	4860	5590	6260	8370	10490	12310	14590	21777
1971	1090	1570	2310	2980	4930	5150	5580	6300	8530	11240	14740	17130
1972	980	1460	2210	3250	4330	5610	6040	6100	6870	8950	11720	16000
1973	1030	1420	2470	3600	4900	6110	6670	6750	7430	7950	10170	17000
1974	1050	1710	2430	3820	5240	6660	7150	7760	8190	9780	12380	14700
1975	1100	1770	2780	3760	5450	6690	7570	8580	8810	9780	10090	11000
1976	1350	1780	2650	4100	5070	6730	8250	9610	11540	11430	14060	16180
1977	1259	1911	2856	4069	5777	6636	7685	9730	11703	14394	17456	24116
1978	1289	1833	2929	3955	5726	6806	9041	10865	13068	11982	19062	21284
1979	1408	1956	2642	3999	5548	6754	8299	9312	13130	13418	13540	20072
1980	1392	1862	2733	3768	5259	6981	8037	10731	12301	17281	14893	19069
1981	1180	1651	2260	3293	4483	5821	7739	9422	11374	12784	12514	19069
1982	1006	1550	2246	3104	4258	5386	6682	9141	11963	14226	17287	16590
1983	1095	1599	2275	3021	4096	5481	7049	8128	11009	13972	15882	18498
1984	1288	1725	2596	3581	4371	5798	7456	9851	11052	14338	15273	16660
1985	1407	1971	2576	3650	4976	6372	8207	10320	12197	14683	16175	19050
1986	1459	1961	2844	3593	4635	6155	7503	9084	10356	15283	14540	15017
1987	1316	1956	2686	3894	4716	6257	7368	9243	10697	10622	15894	12592
1988	1438	1805	2576	3519	4930	6001	7144	8822	9977	11732	14156	13042
1989	1186	1813	2590	3915	5210	6892	8035	9831	11986	10003	12611	16045
1990	1290	1704	2383	3034	4624	6521	8888	10592	10993	14570	15732	17290
1991	1309	1899	2475	3159	3792	5680	7242	9804	9754	14344	14172	20200
1992	1289	1768	2469	3292	4394	5582	6830	8127	12679	13410	15715	11267
1993	1392	1887	2772	3762	4930	6054	7450	8641	10901	12517	14742	16874
1994	1443	2063	2562	3659	5117	6262	7719	8896	10847	12874	14742	17470
1995	1348	1959	2920	3625	5176	6416	7916	10273	11022	11407	13098	15182
1996	1457	1930	3132	4141	4922	6009	7406	9772	10539	13503	13689	16194
1997	1484	1877	2878	4028	5402	6386	7344	8537	10797	11533	10428	12788
1998	1230	1750	2458	3559	5213	7737	7837	9304	10759	14903	16651	18666
1999	1241	1716	2426	3443	4720	6352	8730	9946	11088	12535	14995	15151
2000	1308	1782	2330	3252	4690	5894	7809	9203	10240	11172	13172	17442
2001	1499	2050	2649	3413	4766	6508	7520	9055	8769	9526	11210	13874
2002	1294	1926	2656	3680	4720	6369	7808	9002	10422	13402	9008	16893
2003	1265	1790	2424	3505	4455	5037	5980	7819	8802	10712	12152	13797
2004	1257	1771	2323	3312	4269	5394	5872	7397	10808	11569	13767	12955
2005	1194	1712	2374	3435	4392	5201	6200	5495	7211	9909	12944	18151
2006	1070	1614	2185	3052	4347	5177	5382	5769	6258	5688	7301	15412
2007	1083	1556	2144	2754	3920	5255	6272	6481	7142	6530	9724	10143
2008	1162	1627	2318	3120	3846	5367	6771	7648	8282	11181	14266	17320
2009	1109	1680	2204	3206	4098	4884	6744	8505	10126	12108	12471	15264
2010	1131	1769	2334	3161	4422	5498	6552	7945	8913	10090	10417	13489
2011	1163	1795	2615	3471	4469	5992	6863	7850	8810	9797	13534	13033
2012	1256	1667	2448	3728	4713	5894	7616	8358	9543	10916	10884	11758
2013	1248	1722	2478	3559	4931	6165	7522	8415	9336	9926	11195	12691
2014 <sup>1)</sup>	1226	1820	2344	3108	4222	5998	7558	8415	9336	9926	11195	12691

<sup>1)</sup> Áætlað. *Estimated.*

TAFLA 3.1.4

**Þorskur.** Meðalþyngd kynþroska þorsks eftir aldri (g) í stofni 1955–2014. Mat á meðalþyngd kynþroska þorsks 4–7 ára er byggð á stofnmælingu botnfiska í mars en fyrir 8 ára og eldri er stuðst við gögn úr afla.

*Cod.* Weight at age of mature cod (g) in the stock 1955–2014. For ages 4–7, the estimate is based on data from the groundfish survey in March but age 8 and older are based on commercial catch data.

Ár Year	Aldur Age										
	4	5	6	7	8	9	10	11	12	13	14
1955	1019	1833	3183	4128	5657	6635	6168	8746	8829	10086	14584
1956	1248	1862	2886	4138	5630	6180	6970	6830	9290	10965	12954
1957	1334	2142	2816	4058	5960	7170	7260	8300	8290	10350	13174
1958	1412	2652	3969	4450	5940	6640	8290	8510	8840	9360	13097
1959	1521	2490	3978	4913	6170	6610	7130	8510	8670	9980	11276
1960	1342	2482	4083	5037	6550	6910	7140	7970	1020	10100	12871
1961	1303	2295	3810	4922	6310	6930	7310	10750	8510	9840	14550
1962	1256	2218	3432	5091	6660	6750	7060	7540	8280	10900	12826
1963	1287	2244	3344	4548	6920	7840	7610	8230	9100	9920	11553
1964	1365	2244	3538	4850	6460	8000	9940	9210	10940	12670	15900
1965	1193	2184	3599	4815	6400	7120	8600	12310	10460	10190	17220
1966	1310	2202	3678	5100	6900	7830	8580	9090	14230	14090	17924
1967	1420	2261	3579	4948	7790	7840	8430	9090	10090	14240	16412
1968	1240	2278	3458	4486	5910	7510	8480	10750	11580	14640	16011
1969	1412	2108	3318	4486	5860	7000	8350	8720	10080	11430	13144
1970	1131	2074	3318	4325	5590	6260	8370	10490	12310	14590	21777
1971	1225	1964	2622	4388	5150	5580	6300	8530	11240	14740	17130
1972	1139	1878	2860	3854	5610	6040	6100	6870	8950	11720	16000
1973	1108	2100	3168	4361	6110	6670	6750	7430	7950	10170	17000
1974	1334	2066	3362	4664	6660	7150	7760	8190	9780	12380	14700
1975	1381	2363	3309	4850	6690	7570	8580	8810	9780	10090	11000
1976	1388	2252	3608	4512	6730	8250	9610	11540	11430	14060	16180
1977	1491	2428	3581	5142	6636	7685	9730	11703	14394	17456	24116
1978	1430	2490	3480	5096	6806	9041	10860	13068	11982	19062	21284
1979	1526	2246	3519	4938	6754	8299	9312	13130	13418	13540	20072
1980	1452	2323	3316	4681	6981	8037	10731	12301	17281	14893	19069
1981	1288	1921	2898	3990	5821	7739	9422	11374	12784	12514	19069
1982	1209	1909	2732	3790	5386	6682	9141	11963	14226	17287	16590
1983	1247	1934	2658	3645	5481	7049	8128	11009	13972	15882	18498
1984	1346	2207	3151	3890	5798	7456	9851	11052	14338	15273	16660
1985	1375	1750	2709	3454	6372	8207	10320	12197	14683	16175	19050
1986	1597	2882	3246	4581	6155	7503	9084	10356	15283	14540	15017
1987	1584	2423	3522	4905	6257	7368	9243	10697	10622	15894	12592
1988	1475	2261	3277	4398	6001	7144	8822	9977	11732	14156	13042
1989	1494	2338	3429	4686	6892	8035	9831	11986	10003	12611	16045
1990	1035	2170	2798	4422	6521	8888	10592	10993	14570	15732	17290
1991	1283	2039	2747	3397	5680	7242	9804	9754	14344	14172	20200
1992	1336	2094	3029	3753	5582	6830	8127	12679	13410	15715	11267
1993	1363	2309	3235	4109	6054	7450	8641	10901	12517	14742	16874
1994	1728	2254	3340	4514	6262	7719	8896	10847	12874	14742	17470
1995	1635	2345	3186	4489	6416	7916	10273	11022	11407	13098	15182
1996	1753	2490	3531	4273	6009	7406	9772	10539	13503	13689	16194
1997	1347	2267	3746	5245	6386	7344	8537	10797	11533	10428	12788
1998	1516	2261	3263	4474	7737	7837	9304	10759	14903	16651	18666
1999	1467	1932	2996	3961	6352	8730	9946	11088	12535	14995	15151
2000	1355	1915	2881	4319	5894	7809	9203	10240	11172	13172	17442
2001	1550	2071	2694	4131	6508	7520	9055	8769	9526	11210	13874
2002	1590	2259	3120	3984	6369	7808	9002	10422	13402	9008	16893
2003	1338	2215	2988	4169	5037	5980	7819	8802	10712	12152	13797
2004	1453	2099	3057	3757	5394	5872	7397	10808	11569	13767	12955
2005	1119	1897	2963	3874	5201	6200	5495	7211	9909	12944	18151
2006	1383	1998	2905	4385	5177	5382	5769	6258	5688	7301	15412
2007	1264	2022	2580	4078	5255	6272	6481	7142	6530	9724	10143
2008	1841	2227	2924	3920	5367	6771	7648	8282	11181	14266	17320
2009	1440	2027	2871	3909	4884	6744	8505	10126	12108	12471	15264
2010	1586	2153	3150	4207	5498	6552	7945	8913	10090	10417	13489
2011	2466	2665	3215	4548	5995	6866	8222	9279	11447	10291	18822
2012	1700	2604	3713	4513	6020	8061	8850	10786	11773	15557	11739
2013	2323	2989	3833	5209	6165	7522	8415	9336	9926	11195	12691
2014 <sup>1)</sup>	1333	2539	3307	4460	6424	8225	8415	9336	9926	11195	12691

<sup>1)</sup> Áætlað. Estimated.

**TAFLA 3.1.5**  
**Þorskur.** Hlutfall kynþroska eftir aldri í stofnmælingu að vorlagi 1985–2014.  
*Cod. Sexual maturity at age in the spring survey in the years 1985–2014.*

Ár Year	Aldur Age											
	3	4	5	6	7	8	9	10	11	12	13	14
1985	0.00	0.02	0.19	0.41	0.50	0.74	0.57	1.00	1.00	1.00	1.00	1.00
1986	0.00	0.02	0.15	0.40	0.68	0.73	0.94	0.96	0.99	1.00	1.00	1.00
1987	0.00	0.03	0.09	0.36	0.49	0.89	0.78	1.00	0.98	1.00	1.00	1.00
1988	0.01	0.03	0.23	0.51	0.45	0.68	0.94	0.95	0.97	0.82	1.00	1.00
1989	0.01	0.03	0.14	0.37	0.65	0.65	0.63	0.99	1.00	0.90	0.86	1.00
1990	0.01	0.01	0.16	0.44	0.58	0.80	0.81	0.99	1.00	1.00	1.00	1.00
1991	0.00	0.06	0.15	0.37	0.64	0.79	0.68	0.84	1.00	1.00	1.00	1.00
1992	0.00	0.06	0.27	0.40	0.81	0.92	0.89	1.00	1.00	1.00	1.00	1.00
1993	0.01	0.09	0.27	0.46	0.69	0.80	0.84	0.97	1.00	1.00	1.00	1.00
1994	0.01	0.11	0.34	0.59	0.70	0.92	0.70	0.85	0.99	1.00	1.00	1.00
1995	0.01	0.11	0.38	0.53	0.75	0.79	0.86	1.00	1.00	1.00	1.00	1.00
1996	0.00	0.03	0.19	0.50	0.65	0.73	0.81	1.00	1.00	0.99	0.97	1.00
1997	0.01	0.04	0.25	0.42	0.69	0.79	0.80	0.93	1.00	0.91	1.00	1.00
1998	0.00	0.06	0.21	0.49	0.78	0.81	0.81	0.93	1.00	1.00	1.00	1.00
1999	0.01	0.04	0.24	0.52	0.65	0.84	0.69	0.99	1.00	1.00	1.00	1.00
2000	0.00	0.07	0.25	0.51	0.61	0.87	1.00	0.98	1.00	1.00	1.00	1.00
2001	0.00	0.04	0.26	0.59	0.75	0.74	0.86	0.99	1.00	1.00	1.00	1.00
2002	0.01	0.09	0.32	0.66	0.76	0.92	0.55	0.98	1.00	1.00	1.00	1.00
2003	0.01	0.05	0.22	0.52	0.87	0.80	0.86	1.00	1.00	1.00	1.00	1.00
2004	0.00	0.04	0.25	0.55	0.63	0.84	0.82	0.99	1.00	1.00	1.00	1.00
2005	0.01	0.11	0.28	0.50	0.79	0.81	0.95	0.99	1.00	1.00	1.00	1.00
2006	0.00	0.02	0.29	0.45	0.75	0.87	0.74	1.00	1.00	1.00	1.00	1.00
2007	0.01	0.03	0.16	0.50	0.69	0.80	0.86	0.96	0.92	1.00	1.00	1.00
2008	0.00	0.04	0.28	0.55	0.73	0.83	0.85	0.95	0.74	1.00	1.00	1.00
2009	0.00	0.02	0.13	0.46	0.69	0.88	0.74	0.63	0.89	1.00	1.00	1.00
2010	0.00	0.02	0.06	0.38	0.82	0.87	0.93	0.82	0.58	1.00	1.00	1.00
2011	0.00	0.01	0.14	0.43	0.73	0.92	0.94	0.96	1.00	1.00	1.00	1.00
2012	0.00	0.03	0.13	0.41	0.73	0.89	0.96	0.85	1.00	1.00	1.00	1.00
2013	0.03	0.01	0.06	0.34	0.74	0.92	0.96	1.00	1.00	1.00	1.00	1.00
2014	0.00	0.03	0.07	0.24	0.61	0.89	0.97	0.96	1.00	1.00	1.00	1.00

TAFLA 3.1.6.

**Þorskur.** Aldurskiptar vísitölur (í fjölda) úr stofnmælingum botnfiska.  
*Cod.* Age disaggregated indices (in numbers) from groundfish trawl surveys.

Stofnmæling í mars. *March survey.*

Ár Year	Aldur Age								
	1	2	3	4	5	6	7	8	9
1985	16.54	110.48	35.41	48.25	64.59	22.95	15.26	5.04	3.39
1986	15.07	60.58	95.95	22.46	21.51	27.44	7.17	2.80	0.93
1987	3.65	28.29	104.44	82.67	21.41	12.76	12.94	2.79	0.98
1988	3.45	7.06	72.51	103.56	69.54	8.39	6.41	7.23	0.67
1989	4.04	16.40	22.06	79.90	74.16	39.11	4.85	1.71	1.42
1990	5.56	11.79	26.10	14.18	27.91	35.22	16.74	1.75	0.58
1991	3.95	16.02	18.20	30.24	15.49	18.94	22.45	4.91	0.94
1992	0.71	16.91	33.60	18.95	16.66	6.87	6.35	5.78	1.49
1993	3.57	4.77	30.87	36.79	13.53	10.61	2.42	2.03	1.40
1994	14.40	14.96	9.04	26.91	22.43	6.09	3.96	0.80	0.53
1995	1.08	29.31	24.80	9.06	24.53	18.44	4.02	1.91	0.38
1996	3.72	5.46	42.72	29.71	13.22	15.35	15.10	4.20	1.14
1997	1.18	22.26	13.59	56.82	29.85	9.96	9.47	7.31	0.61
1998	8.07	5.38	30.00	16.19	63.32	29.98	7.00	5.77	3.32
1999	7.40	33.10	7.03	42.64	13.33	24.82	11.99	2.60	1.47
2000	18.89	27.71	55.16	7.00	30.79	8.69	8.82	4.57	0.56
2001	12.29	23.54	36.56	38.39	5.08	15.85	3.55	2.16	0.89
2002	0.91	38.63	41.48	40.67	37.25	7.45	8.98	1.66	0.81
2003	11.18	4.22	46.62	36.91	29.17	17.73	4.11	4.78	1.13
2004	7.01	26.45	8.11	64.57	38.41	27.81	15.92	3.03	3.21
2005	2.69	17.80	41.72	9.97	46.43	25.01	12.12	6.47	1.01
2006	9.10	7.43	25.07	40.55	11.72	31.56	11.62	4.10	1.62
2007	5.67	19.01	9.07	22.87	30.04	10.10	11.39	6.11	2.45
2008	6.75	12.41	23.03	9.86	22.38	22.95	9.44	8.02	3.05
2009	21.97	12.63	16.58	22.80	15.68	26.01	16.69	4.85	3.14
2010	18.69	21.54	18.92	18.12	24.64	14.13	18.35	9.91	3.26
2011	3.58	23.00	27.58	20.14	23.06	26.56	14.66	13.33	5.02
2012	20.37	11.02	39.31	56.94	42.02	31.24	28.36	10.79	7.06
2013	10.93	33.86	18.18	44.44	47.22	25.96	17.22	14.53	7.28
2014	3.31	23.97	38.00	23.48	47.17	37.60	17.31	8.18	4.26

Stofnmæling í október. *October survey.*

Ár Year	Aldur Age										
	0	1	2	3	4	5	6	7	8	9	10
1996	0.32	6.69	3.57	20.00	13.98	5.40	7.44	6.26	1.60	0.31	0.09
1997	2.13	0.67	16.89	6.83	29.57	15.76	4.09	3.62	2.36	0.25	0.17
1998	6.75	5.92	2.63	15.62	7.36	16.01	16.03	5.20	2.24	1.27	0.20
1999	12.00	8.61	14.54	5.68	23.38	7.42	9.94	4.05	0.59	0.34	0.36
2000	3.91	4.60	13.17	15.25	3.71	11.15	3.49	2.61	1.11	0.34	0.28
2001	0.31	7.11	11.51	19.53	21.13	3.30	6.73	1.60	0.76	0.17	0.03
2002	1.04	0.92	13.72	16.11	23.39	15.94	5.41	4.77	1.11	0.61	0.08
2003	1.89	5.16	2.68	25.66	16.98	13.22	8.99	1.89	2.55	0.38	0.10
2004	0.37	3.67	16.28	6.92	29.86	18.85	11.73	7.38	1.88	1.65	0.23
2005	0.58	2.15	9.03	20.37	6.82	25.62	10.88	3.86	1.91	0.29	0.31
2006	0.33	4.51	4.52	16.28	23.04	7.67	13.93	6.12	2.05	1.02	0.16
2007	0.29	3.73	9.82	4.93	11.73	15.68	6.34	5.91	3.14	0.76	0.50
2008	2.44	5.30	11.88	15.19	7.66	17.57	18.51	5.67	5.61	1.50	0.79
2009	0.93	7.04	8.30	13.14	18.11	12.39	16.46	10.22	3.15	2.75	0.84
2010	0.59	10.78	18.82	16.18	15.52	17.96	9.81	11.21	6.81	2.29	1.20
2011											
2012	1.12	7.43	9.43	23.38	20.66	12.72	10.82	9.53	5.31	3.33	1.55
2013	0.33	6.25	19.28	13.41	27.13	21.99	12.60	7.72	5.94	2.93	1.87



TAFLA 3.1.7

**Porskur.** Fjöldi þriggja ára nýliða í milljónum, hrygningar- og viðmiðunarstofn í þús. tonna, afli í þús. tonna, veiðihlutfall (afli/viðmiðunarstofn) og fiskveiðidánartala (meðaltal fyrir 5–10 ára). Nýliðun telur einnig þann hluta árgangans sem ólst upp við Grænland og gekk síðar á Íslandsmið. Hrygningarstofn táknar hrygningarstofn á Íslandsmiðum á hverjum tíma.

**Cod.** Recruitment as 3-year-olds in millions, spawning stock and reference biomass in thous. tonnes, landings in thous. tonnes, harvest rate (landings/reference biomass), and fishing mortality (average for ages 5–10). Recruitment includes young fish of Icelandic origin at Greenland that migrated back to Icelandic grounds. Spawning stock refers to Icelandic waters.

Ár Year	Nýliðun Recruitment	Hrygningarstofn <sup>1)</sup> SSB	Viðmiðunarstofn <sup>2)</sup> Biomass 4+	Afli Landings	Veiðihlutfall Harvest rate	Fiskveiðidánartala Fishing mortality
1955	152	929	2346	545	0.23	0.29
1956	153	785	2072	487	0.24	0.29
1957	171	765	1870	455	0.24	0.31
1958	221	867	1858	517	0.28	0.36
1959	289	846	1821	459	0.25	0.32
1960	154	706	1751	470	0.27	0.37
1961	193	564	1495	377	0.25	0.36
1962	129	567	1491	389	0.26	0.38
1963	177	507	1314	409	0.31	0.46
1964	204	450	1217	437	0.36	0.55
1965	216	317	1022	387	0.38	0.58
1966	229	277	1031	353	0.34	0.59
1967	320	256	1102	336	0.30	0.56
1968	172	221	1222	382	0.31	0.72
1969	248	314	1326	403	0.30	0.56
1970	181	331	1337	475	0.36	0.61
1971	189	242	1098	444	0.40	0.68
1972	139	222	997	395	0.40	0.69
1973	273	245	844	369	0.44	0.70
1974	179	187	918	368	0.40	0.76
1975	261	168	896	365	0.41	0.81
1976	368	139	956	346	0.36	0.75
1977	143	199	1290	340	0.26	0.59
1978	228	212	1298	330	0.25	0.48
1979	243	304	1398	366	0.26	0.45
1980	140	357	1490	432	0.29	0.49
1981	140	264	1242	465	0.37	0.66
1982	132	167	971	380	0.39	0.73
1983	233	130	791	298	0.38	0.71
1984	139	141	914	282	0.31	0.64
1985	140	173	928	323	0.35	0.67
1986	329	198	854	365	0.43	0.77
1987	260	150	1029	390	0.38	0.86
1988	175	172	1030	378	0.37	0.89
1989	89	171	1001	363	0.36	0.72
1990	131	214	841	335	0.40	0.70
1991	107	161	698	308	0.44	0.80
1992	174	153	551	265	0.48	0.84
1993	135	125	595	251	0.42	0.87
1994	78	154	576	178	0.31	0.62
1995	151	179	557	169	0.30	0.51
1996	165	160	671	181	0.27	0.50
1997	88	190	783	203	0.26	0.54
1998	161	212	721	244	0.34	0.65
1999	71	185	731	260	0.36	0.74
2000	172	167	590	235	0.40	0.76
2001	161	162	688	234	0.34	0.74
2002	159	197	729	208	0.29	0.63
2003	178	187	740	208	0.28	0.58
2004	80	203	800	227	0.28	0.58
2005	155	231	724	213	0.29	0.55
2006	135	221	701	196	0.28	0.54
2007	96	204	681	170	0.25	0.51
2008	133	270	704	146	0.21	0.39
2009	120	256	799	181	0.23	0.38
2010	128	300	843	169	0.20	0.32
2011	170	365	932	170	0.18	0.28
2012	175	406	1047	195	0.19	0.28
2013	123	437	1161	224	0.19	0.30
2014	181	411	1106			
2015	160					
2016	109					

<sup>1)</sup> Hrygningarstofn á hrygningartíma, reiknaður út frá meðalþyngdum og kynþroskahlutfalli fengnum úr stofnmælingu í mars. Spawning stock biomass at the time of spawning, calculated using mean weights and maturity from spring survey.

<sup>2)</sup> Stofn 4 ára og eldri í upphafi árs, reiknaður út frá meðalþyngdum í afla.

Biomass of ages 4+ in the beginning of the year, calculated using mean weights from catch data.

TAFLA 3.1.8.

**Þorskur.** Stofnstærð í fjölda eftir aldri (í milljónum) 1955–2014. Feitlettraðar tölur sýna fjölda að meðtalinni áætlaðri Grænlandsgöngu.  
*Cod.* Stock abundance in numbers by age (millions) 1955–2014. Numbers in boldface include estimated immigration from Greenland.

Ár Year	Aldur Age													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1955	255	187	152	218	212	115	36	24	13	86	9.1	7.7	8.0	2.6
1956	329	208	153	120	150	135	72	22	15	8	50.8	5.4	4.6	4.7
1957	431	269	171	119	82	96	85	44	13	9	4.6	29.0	3.1	2.7
1958	230	353	221	129	79	51	60	51	<b>35</b>	8	5.1	2.6	16.9	1.9
1959	287	188	289	161	82	48	31	35	<b>51</b>	19	4.1	2.7	1.4	9.9
1960	192	235	154	216	104	51	30	19	21	<b>37</b>	10.5	2.3	1.6	0.9
1961	265	157	193	114	140	64	31	18	10	11	19.0	5.3	1.2	1.0
1962	304	217	129	144	75	89	40	18	<b>24</b>	6	5.7	10.0	3.1	0.8
1963	323	249	177	94	92	46	56	23	10	12	2.7	2.8	5.6	2.0
1964	342	264	204	128	58	54	28	31	12	<b>4</b>	5.2	1.2	1.5	3.4
1965	478	280	216	147	78	33	31	15	14	5	1.6	1.8	0.5	0.8
1966	257	391	229	157	91	44	18	16	7	6	1.6	0.5	0.8	0.3
1967	369	210	320	171	100	53	24	9	7	2	1.8	0.5	0.2	0.4
1968	269	302	172	243	111	60	31	12	4	3	0.8	0.6	0.2	0.1
1969	282	221	248	130	155	65	33	<b>41</b>	5	1	0.7	0.2	0.2	0.1
1970	208	231	181	192	85	92	37	<b>33</b>	18	2	0.4	0.2	0.1	0.1
1971	408	170	189	138	120	47	49	18	14	7	0.6	0.1	0.1	0.0
1972	267	334	139	141	83	61	23	22	<b>23</b>	5	2.2	0.2	0.0	0.0
1973	389	219	273	105	86	42	29	10	9	9	1.6	0.6	0.1	0.0
1974	549	319	179	199	62	43	20	12	4	3	2.7	0.5	0.2	0.0
1975	214	449	261	131	118	31	20	8	4	1	0.9	0.7	0.1	0.1
1976	340	175	368	192	79	58	14	8	3	1	0.3	0.2	0.2	0.1
1977	363	278	143	282	121	42	27	6	3	1	0.4	0.1	0.1	0.1
1978	209	297	228	114	190	71	22	12	2	1	0.3	0.2	0.0	0.0
1979	209	171	243	181	78	117	41	11	5	1	0.5	0.2	0.1	0.0
1980	196	172	140	194	125	49	<b>72</b>	20	5	3	0.5	0.3	0.1	0.1
1981	348	161	140	111	133	76	27	<b>47</b>	9	2	1.3	0.3	0.1	0.1
1982	207	285	132	112	77	77	38	12	17	3	0.9	0.5	0.1	0.1
1983	209	170	233	105	76	42	36	15	4	5	1.1	0.3	0.2	0.1
1984	491	171	139	186	72	43	20	15	5	1	1.9	0.4	0.1	0.1
1985	388	402	140	110	125	40	21	8	5	2	0.5	0.8	0.2	0.1
1986	262	317	329	109	71	67	19	8	3	2	0.8	0.2	0.4	0.1
1987	133	214	260	253	69	35	27	7	3	1	0.8	0.4	0.1	0.2
1988	195	109	175	201	158	32	13	9	2	1	0.4	0.3	0.1	0.0
1989	159	159	89	137	127	77	12	4	2	1	0.3	0.1	0.1	0.1
1990	260	131	131	70	88	<b>100</b>	33	4	1	1	0.2	0.1	0.1	0.1
1991	202	213	107	102	45	45	42	12	2	1	0.4	0.1	0.1	0.0
1992	116	165	174	80	62	21	16	14	4	1	0.2	0.2	0.0	0.0
1993	225	95	135	129	48	28	7	5	4	1	0.2	0.1	0.1	0.0
1994	247	184	78	97	77	22	10	2	2	1	0.4	0.1	0.0	0.0
1995	132	202	151	58	62	43	11	4	1	1	0.5	0.2	0.0	0.0
1996	241	108	165	116	39	37	23	5	2	0	0.3	0.3	0.1	0.0
1997	106	197	88	131	81	24	20	11	2	1	0.2	0.1	0.1	0.0
1998	256	87	161	70	93	50	13	9	5	1	0.4	0.1	0.1	0.1
1999	241	210	71	128	49	54	24	5	3	2	0.3	0.1	0.0	0.0
2000	237	197	172	55	88	27	23	9	2	1	0.6	0.1	0.0	0.0
2001	266	194	161	132	38	49	12	9	3	1	0.4	0.2	0.0	0.0
2002	120	218	159	124	90	21	22	5	3	1	0.2	0.1	0.1	0.0
2003	231	98	178	125	86	53	11	10	2	1	0.3	0.1	0.0	0.0
2004	201	189	80	142	88	51	26	5	4	1	0.5	0.1	0.0	0.0
2005	143	165	155	64	100	52	24	12	2	2	0.3	0.2	0.1	0.0
2006	199	117	135	123	46	61	26	12	5	1	0.7	0.1	0.1	0.0
2007	178	163	96	107	89	29	32	13	5	2	0.4	0.3	0.1	0.0
2008	191	146	133	77	79	58	16	16	6	2	0.9	0.1	0.1	0.0
2009	253	156	120	107	57	<b>64</b>	36	9	8	3	1.1	0.5	0.1	0.1
2010	261	207	128	95	80	39	39	20	5	4	1.5	0.6	0.3	0.0
2011	183	214	170	102	71	56	25	22	11	3	2.4	0.9	0.3	0.2
2012	271	150	175	135	77	50	36	15	13	6	1.5	1.5	0.6	0.2
2013	239	222	123	139	102	54	32	21	8	8	3.8	1.0	1.0	0.4
2014	163	195	181	96	103	70	34	19	12	5	4.4	2.4	0.6	0.7

**TAFLA 3.1.9**  
**Þorskur.** Veiðidánartala eftir aldri á árunum 1955–2013.  
*Cod. Fishing mortality by age in the years 1955–2013.*

Ár Year	Aldur Age											
	3	4	5	6	7	8	9	10	11	12	13	14
1955	0.04	0.17	0.25	0.28	0.30	0.31	0.29	0.33	0.33	0.31	0.33	0.33
1956	0.05	0.18	0.25	0.26	0.29	0.31	0.30	0.35	0.36	0.34	0.34	0.34
1957	0.08	0.21	0.27	0.27	0.30	0.33	0.33	0.37	0.37	0.34	0.31	0.31
1958	0.11	0.25	0.30	0.29	0.32	0.37	0.40	0.44	0.45	0.39	0.33	0.33
1959	0.09	0.23	0.28	0.26	0.30	0.34	0.35	0.40	0.39	0.33	0.24	0.24
1960	0.10	0.23	0.29	0.29	0.34	0.40	0.43	0.48	0.48	0.39	0.28	0.28
1961	0.09	0.23	0.26	0.26	0.33	0.40	0.42	0.46	0.44	0.35	0.23	0.23
1962	0.11	0.25	0.28	0.26	0.35	0.42	0.47	0.51	0.49	0.38	0.24	0.24
1963	0.13	0.28	0.33	0.31	0.38	0.49	0.59	0.65	0.63	0.47	0.29	0.29
1964	0.13	0.29	0.37	0.36	0.43	0.57	0.74	0.81	0.84	0.61	0.39	0.39
1965	0.12	0.28	0.38	0.40	0.47	0.60	0.74	0.85	0.88	0.66	0.43	0.43
1966	0.09	0.25	0.34	0.38	0.49	0.62	0.78	0.92	1.01	0.79	0.54	0.54
1967	0.08	0.23	0.30	0.34	0.48	0.61	0.75	0.88	0.93	0.73	0.46	0.46
1968	0.08	0.25	0.34	0.41	0.58	0.77	1.04	1.20	1.36	1.09	0.74	0.74
1969	0.06	0.23	0.32	0.35	0.50	0.61	0.72	0.84	0.87	0.72	0.45	0.45
1970	0.07	0.27	0.39	0.43	0.55	0.65	0.76	0.89	0.95	0.80	0.52	0.52
1971	0.09	0.31	0.48	0.53	0.62	0.72	0.80	0.96	1.03	0.88	0.58	0.58
1972	0.09	0.30	0.48	0.55	0.65	0.73	0.79	0.96	1.06	0.91	0.60	0.60
1973	0.12	0.32	0.49	0.56	0.67	0.75	0.80	0.95	1.04	0.90	0.59	0.59
1974	0.11	0.32	0.50	0.58	0.70	0.83	0.92	1.06	1.18	1.03	0.70	0.70
1975	0.11	0.31	0.50	0.60	0.72	0.88	1.02	1.13	1.25	1.10	0.77	0.77
1976	0.07	0.26	0.43	0.55	0.69	0.85	0.95	1.01	1.06	0.94	0.65	0.65
1977	0.03	0.20	0.33	0.43	0.61	0.72	0.73	0.74	0.70	0.62	0.40	0.40
1978	0.03	0.17	0.28	0.35	0.52	0.60	0.55	0.55	0.48	0.44	0.28	0.28
1979	0.03	0.17	0.27	0.34	0.50	0.57	0.50	0.49	0.42	0.39	0.24	0.24
1980	0.03	0.17	0.31	0.39	0.54	0.62	0.56	0.54	0.47	0.44	0.29	0.29
1981	0.02	0.18	0.35	0.49	0.65	0.82	0.85	0.82	0.75	0.69	0.51	0.51
1982	0.03	0.19	0.39	0.56	0.70	0.90	0.96	0.87	0.74	0.67	0.50	0.50
1983	0.02	0.18	0.38	0.55	0.71	0.88	0.91	0.85	0.73	0.66	0.51	0.51
1984	0.04	0.20	0.38	0.53	0.67	0.80	0.75	0.70	0.59	0.55	0.42	0.42
1985	0.05	0.23	0.42	0.58	0.71	0.83	0.76	0.70	0.59	0.55	0.42	0.42
1986	0.06	0.26	0.52	0.71	0.82	0.95	0.87	0.76	0.65	0.61	0.47	0.47
1987	0.06	0.27	0.55	0.82	0.90	1.06	0.99	0.84	0.74	0.68	0.55	0.55
1988	0.05	0.26	0.52	0.79	0.92	1.10	1.08	0.93	0.86	0.81	0.69	0.69
1989	0.04	0.24	0.46	0.65	0.79	0.89	0.79	0.71	0.64	0.61	0.49	0.49
1990	0.05	0.25	0.47	0.66	0.79	0.86	0.74	0.68	0.61	0.58	0.46	0.46
1991	0.09	0.30	0.57	0.81	0.88	0.94	0.84	0.76	0.70	0.67	0.54	0.54
1992	0.10	0.32	0.60	0.87	0.92	1.00	0.88	0.79	0.72	0.69	0.57	0.57
1993	0.14	0.31	0.55	0.80	0.89	1.03	1.01	0.92	0.88	0.83	0.72	0.72
1994	0.09	0.24	0.38	0.53	0.68	0.76	0.71	0.68	0.63	0.62	0.51	0.51
1995	0.06	0.20	0.32	0.42	0.57	0.62	0.55	0.56	0.51	0.51	0.41	0.41
1996	0.04	0.16	0.28	0.41	0.56	0.62	0.57	0.58	0.54	0.53	0.43	0.43
1997	0.03	0.15	0.28	0.42	0.58	0.67	0.65	0.66	0.62	0.60	0.51	0.51
1998	0.03	0.15	0.33	0.52	0.66	0.78	0.80	0.80	0.78	0.75	0.66	0.66
1999	0.04	0.18	0.39	0.65	0.75	0.87	0.91	0.88	0.86	0.82	0.74	0.74
2000	0.06	0.18	0.39	0.63	0.75	0.89	0.96	0.94	0.93	0.89	0.82	0.82
2001	0.07	0.19	0.38	0.58	0.70	0.85	0.98	0.98	1.00	0.95	0.89	0.89
2002	0.04	0.16	0.34	0.48	0.59	0.70	0.80	0.84	0.84	0.81	0.74	0.74
2003	0.03	0.15	0.33	0.49	0.57	0.64	0.69	0.73	0.71	0.70	0.63	0.63
2004	0.03	0.14	0.33	0.53	0.58	0.65	0.68	0.71	0.69	0.68	0.61	0.61
2005	0.03	0.13	0.29	0.48	0.54	0.62	0.66	0.69	0.67	0.67	0.60	0.60
2006	0.03	0.12	0.26	0.46	0.53	0.62	0.67	0.69	0.69	0.68	0.61	0.61
2007	0.03	0.11	0.23	0.38	0.48	0.59	0.66	0.69	0.70	0.70	0.64	0.64
2008	0.02	0.09	0.18	0.29	0.40	0.47	0.48	0.50	0.46	0.46	0.39	0.39
2009	0.03	0.09	0.18	0.30	0.39	0.46	0.46	0.46	0.41	0.40	0.33	0.33
2010	0.03	0.09	0.16	0.26	0.35	0.41	0.39	0.38	0.32	0.33	0.25	0.25
2011	0.03	0.08	0.15	0.23	0.32	0.36	0.32	0.31	0.25	0.25	0.18	0.18
2012	0.03	0.09	0.16	0.24	0.32	0.36	0.33	0.31	0.24	0.24	0.18	0.18
2013	0.04	0.10	0.17	0.26	0.32	0.37	0.35	0.33	0.26	0.27	0.20	0.20

TAFLA 3.1.10

**Þorskur.** Forsendur í framreikningum á þróun stofnsins árin 2014–2015.  
Náttúrulegur dánarstuðull,  $M=0.2$ .

*Cod. Input parameters for catch and stock projection for the years 2014–2015.  
Natural mortality coefficient,  $M=0.2$ .*

Aldur	Stofnstærð	Veiðimynstur	Meðalþyngd (kg) í afla	Meðalþyngd (kg) í hrygningarstofni	Hlutfall kynþroska
Age	Stock size	Selectivity	Mean weight (kg) in catch	Mean weight (kg) in spawning stock	Maturity at age
	2014	2014–2015	2014–2015	2014–2015	2014–2015
3	181.370	0.114	1.226	0.944	0.000
4	96.479	0.311	1.820	1.333	0.026
5	103.353	0.558	2.344	2.539	0.068
6	69.916	0.842	3.108	3.307	0.236
7	33.977	1.105	4.222	4.450	0.614
8	19.093	1.258	5.998	6.424	0.893
9	12.132	1.146	7.558	8.225	0.967
10	4.885	1.090	8.414	8.415	0.957
11	4.431	0.757	9.335	9.336	1.000
12	2.416	0.757	9.925	9.926	1.000
13	0.617	0.757	11.193	11.195	1.000
14	0.653	0.757	12.689	12.691	1.000

Stofnstærð: Stofnstærð í milljónum fiska í ársbyrjun 2014.

Veiðimynstur: Hlutfallsleg veiðidánartala hvers aldursflokks. Meðaltal árunna 2011–2013.

Hlutfall kynþroska: Kynþroskahlutföll árið 2014.

Meðalþyngd: Meðalþyngd eftir aldri í afla er byggð á spáðum gildum út frá SMB mælingum frá 2014.

Stock size: Stock size in millions in 2014.

Selectivity: Relative fishing mortality on each age group. Average for the years 2011–2013.

Maturity at age: Maturity at age in 2014.

Mean weight: Mean weight at age in the catches are estimated from survey weights in 2014.

TAFLA 3.1.11.

**Þorskur.** Mat á stærð árganga við þriggja ára aldur og árlegt endurmat.  
*Cod. Retrospective pattern of recruitment estimates at age 3 (in millions).*

Úttektarár Year of assessment	Stærð árganga við þriggja ára aldur (í milljónum). Year class at age 3 (in millions).																			
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1995	130																			
1996	85	150																		
1997	90	157	110																	
1998	100	165	90	170																
1999	101	173	83	206	170															
2000	88	170	72	212	195	204														
2001	81	158	46	185	170	185	175													
2002	83	155	54	181	165	175	210	80												
2003	82	156	58	185	166	167	207	69	196											
2004	84	156	63	183	166	162	198	68	171	153										
2005	85	161	67	180	170	168	193	69	168	133	110									
2006	85	162	68	177	161	161	190	61	164	127	88	166								
2007	86	162	68	176	160	161	185	64	155	123	81	145	135							
2008	86	163	70	177	160	162	178	66	147	122	79	137	116	139						
2009	86	162	70	176	160	163	179	72	154	135	82	133	115	121	218					
2010	88	161	70	172	162	160	180	79	156	132	87	133	127	126	171	177				
2011	88	161	71	172	161	159	179	80	156	134	91	133	123	129	168	178	107			
2012	88	162	71	172	162	159	179	80	156	134	92	135	125	131	171	174	108	182		
2013	88	161	71	172	162	159	178	80	155	135	95	135	122	129	169	174	119	183	151	
2014	88	161	71	172	161	159	178	80	155	135	96	133	120	128	170	175	123	181	160	109

TAFLA 3.1.12.

**Þorskur.** Mat á stærð viðmiðunarstofns (þús. tonn) á líðandi stund (feitletrað), spá og árlegt endurmat.  
*Cod. Retrospective pattern of reference biomass estimates (ages 4+, thous. tonnes).*

Úttektarár Year of assessment	Ár Year																			
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
1995	830																			
1996	792	850																		
1997	851	909	897																	
1998	<b>975</b>	1028	956	999																
1999	952	<b>1031</b>	945	1046	1150															
2000	806	843	<b>756</b>	866	1007	1140														
2001	710	709	527	<b>577</b>	638	745	880													
2002	722	717	547	640	<b>680</b>	756	941	909												
2003	720	730	559	663	704	<b>765</b>	914	868												
2004	715	717	570	680	727	737	<b>854</b>	785	861											
2005	719	729	583	694	746	767	854	<b>760</b>	823	833										
2006	718	730	587	694	731	741	818	715	<b>753</b>	745	709									
2007	717	730	588	693	729	740	807	703	675	<b>649</b>	570	574								
2008	718	731	591	698	735	748	805	705	668	629	<b>590</b>	647	703							
2009	718	731	591	696	732	746	805	714	687	663	663	<b>702</b>	722	762						
2010	720	730	589	686	728	739	801	723	701	679	685	793	<b>846</b>	904	1025					
2011	720	730	589	687	728	739	799	722	701	680	695	794	840	<b>969</b>	1081	1219				
2012	720	731	590	687	728	739	799	722	700	680	697	798	849	944	<b>1070</b>	1192	1211			
2013	720	731	590	688	729	740	800	723	700	680	701	798	847	938	1054	<b>1173</b>	1211	1317		
2014	721	731	590	688	729	740	800	724	701	681	704	799	843	932	1047	1161	<b>1106</b>	1172	1220	

Ýsa. Afli (í tonnum) á Íslandsmiðum 1950–2013.  
*Haddock. Landings (in tonnes) from Icelandic waters 1950–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1950	27 099	39 650	66 749
1951	22 173	33 856	56 029
1952	15 166	31 321	46 487
1953	14 954	39 874	54 828
1954	21 322	41 330	62 652
1955	21 704	43 241	64 945
1956	22 054	40 235	62 289
1957	31 302	45 424	76 726
1958	28 624	41 874	70 498
1959	26 534	38 044	64 578
1960	41 988	45 505	87 493
1961	51 300	50 756	102 056
1962	54 288	65 327	119 615
1963	51 834	50 610	102 444
1964	56 586	42 461	99 047
1965	53 506	45 527	99 033
1966	36 028	24 072	60 100
1967	37 977	22 248	60 225
1968	34 014	17 178	51 192
1969	35 036	11 577	46 613
1970	31 833	12 655	44 488
1971	32 376	13 731	46 107
1972	29 252	10 018	39 270
1973	34 390	11 115	45 505
1974	34 401	8 225	42 626
1975	36 658	9 045	45 703
1976	34 870	7 497	42 367
1977	35 428	4 230	39 658
1978	40 552	2 936	43 488
1979	52 152	3 182	55 334
1980	47 915	3 196	51 111
1981	61 033	2 527	63 560
1982	67 038	2 387	69 425
1983	63 889	2 054	65 943
1984	47 276	1 069	48 285
1985	49 553	1 380	51 099
1986	47 317	1 546	48 863
1987	39 479	1 282	40 761
1988	53 085	1 117	54 202
1989	61 794	1 089	62 883
1990	66 004	1 196	67 200
1991	53 473	1 218	54 691
1992	46 005	1 114	47 119
1993	46 916	1 212	48 128
1994	58 354	1 159	59 504
1995	60 125	759	60 884
1996	56 228	664	56 892
1997	43 214	552	43 766
1998	40 711	482	41 193
1999	44 487	924	45 411
2000	41 135	968	42 103
2001	39 042	609	39 651
2002	49 591	878	50 496
2003	59 984	914	60 884
2004	83 791	1 035	84 826
2005	95 859	1 372	97 231
2006	96 115	1 499	97 614
2007	108 175	1 790	109 965
2008	101 651	839	102 490
2009	81 388	625	82 013
2010	63 868	311	64 179
2011	49 231	207	49 438
2012	45 708	303	46 011
2013 <sup>1)</sup>	43 500	600	44 100

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*



TAFLA 3.2.2

Ýsa. Skipting aflans í fjölda eftir aldri (í milljónum) á árunum 1979–2013.

Haddock. Landings in numbers by age (millions) in the years 1979–2013.

Ár Year	Aldur Age							
	2	3	4	5	6	7	8	9+
1979	0.149	1.908	3.762	6.057	9.022	1.743	0.438	0.168
1980	0.595	1.385	11.481	4.298	3.798	3.732	0.544	0.128
1981	0.010	0.514	4.911	16.900	5.999	2.825	1.803	0.225
1982	0.107	0.245	3.149	10.851	14.049	2.068	1.000	0.926
1983	0.034	1.010	1.589	4.596	9.850	8.839	0.766	0.487
1984	0.241	1.069	4.946	1.341	4.772	3.742	4.076	0.318
1985	1.320	1.728	4.562	6.796	0.855	1.682	1.914	2.199
1986	1.012	4.223	4.068	4.686	5.139	0.494	0.796	1.297
1987	1.939	8.308	6.965	2.728	2.042	1.094	0.132	0.504
1988	0.237	9.831	15.164	5.824	1.304	1.084	0.609	0.279
1989	0.188	2.474	22.560	9.571	3.196	0.513	0.556	0.285
1990	1.857	2.415	8.628	23.611	6.331	0.816	0.150	0.141
1991	8.617	2.145	5.397	7.342	14.103	2.648	0.338	0.067
1992	5.405	10.693	5.721	4.610	3.691	5.209	0.999	0.136
1993	0.769	12.333	12.815	2.968	1.722	1.425	2.239	0.381
1994	3.198	3.343	28.258	10.682	1.469	0.726	0.358	0.755
1995	4.015	7.323	5.744	23.927	5.769	0.615	0.290	0.518
1996	3.090	10.552	7.639	4.468	12.896	2.346	0.208	0.204
1997	1.364	3.939	10.915	4.895	2.610	5.035	0.719	0.133
1998	0.279	8.257	5.667	7.856	2.418	1.422	1.897	0.306
1999	1.434	1.550	17.243	4.516	4.837	0.915	0.620	0.545
2000	2.659	6.317	2.352	13.615	1.945	1.706	0.324	0.414
2001	2.515	11.098	6.954	1.446	6.262	0.675	0.478	0.199
2002	1.082	10.434	15.998	5.099	1.131	3.149	0.262	0.269
2003	0.401	6.352	16.265	12.548	2.968	0.748	1.236	0.161
2004	1.597	4.063	17.652	19.358	8.871	1.940	0.471	0.644
2005	2.405	9.450	6.929	25.421	13.778	4.584	0.809	0.488
2006	0.241	10.038	21.246	6.646	18.840	7.600	2.180	0.525
2007	0.782	3.884	42.224	22.239	3.354	9.952	2.740	0.700
2008	2.316	4.508	9.706	53.022	11.014	1.717	3.033	1.007
2009	1.066	3.185	4.886	8.892	35.011	5.733	0.726	1.890
2010	0.121	6.032	7.061	4.806	6.766	17.503	1.874	0.882
2011	0.253	1.584	11.797	5.080	2.853	3.983	6.220	0.677
2012	0.196	1.322	3.421	13.107	2.223	1.231	2.480	3.032
2013 <sup>1)</sup>	0.250	1.042	2.865	4.008	9.222	1.206	0.668	2.847

TAFLA 3.2.3

Ýsa. Meðalþyngd eftir aldri (g) í stofni á árunum 1979–2014.  
*Haddock. Mean weight at age (g) in the stock in the years 1979–2014.*

Ár Year	Aldur Age							
	2	3	4	5	6	7	8	9
1979 <sup>1)</sup>	185	481	910	1409	1968	2496	3077	3300
1980 <sup>1)</sup>	185	481	910	1409	1968	2496	3077	3300
1981 <sup>1)</sup>	185	481	910	1409	1968	2496	3077	3300
1982 <sup>1)</sup>	185	481	910	1409	1968	2496	3077	3300
1983 <sup>1)</sup>	185	481	910	1409	1968	2496	3077	3300
1984 <sup>1)</sup>	185	481	910	1409	1968	2496	3077	3300
1985	244	568	1187	1673	2371	2766	3197	3331
1986	239	671	1134	1943	2399	3190	3293	3728
1987	162	550	1216	1825	2605	3030	3642	3837
1988	176	457	974	1830	2695	3102	3481	3318
1989	182	441	887	1510	2380	3009	3499	3195
1990	184	457	840	1234	1965	2675	3052	3267
1991	176	501	1003	1406	1884	2496	3755	3653
1992	157	503	894	1365	1891	2325	2936	3682
1993	168	384	878	1492	1785	2562	2573	3266
1994	181	392	680	1235	1766	1717	2977	2131
1995	167	440	755	1065	1857	2689	5377	1306
1996	174	453	813	1076	1477	2171	2426	4847
1997	174	424	817	1221	1425	1915	2390	3692
1998	203	415	753	1241	1747	1996	2342	3076
1999	206	480	715	1189	1956	2366	2782	2922
2000	179	552	889	1159	1767	2612	2917	3132
2001	190	490	1056	1437	1509	2169	2765	3300
2002	172	475	889	1460	1949	2137	1990	3709
2003	230	412	801	1268	1873	3139	2343	3301
2004	176	556	807	1282	1690	2454	3236	2942
2005	153	448	920	1188	1564	2128	2808	2550
2006	127	333	736	1145	1512	1944	2232	3272
2007	170	350	615	1053	1514	1786	2073	2198
2008	179	382	595	868	1295	1828	2201	2340
2009	139	442	687	882	1141	1495	1920	2574
2010	150	392	773	942	1190	1468	1829	2086
2011	175	442	757	1129	1304	1583	1865	2107
2012	202	481	801	1145	1481	1910	2074	2356
2013	201	589	967	1312	1710	1999	2265	2764
2014	222	570	1005	1372	1751	2141	2298	2653

<sup>1)</sup> Meðaltal árána 1985–2002. *Average 1985–2002.*

TAFLA 3.2.4

Ýsa. Meðalþyngd í afla eftir aldri (g) á árunum 1979–2014.

*Haddock. Weight at age from commercial catches (g) in the years 1979–2014.*

Ár Year	Aldur Age							
	2	3	4	5	6	7	8	9+
1979	620	960	1410	2030	2910	3800	4560	5544
1980	837	831	1306	2207	2738	3188	3843	4644
1981	584	693	1081	1656	2283	3214	3409	4354
1982	289	959	1455	1674	2351	3031	3481	3928
1983	320	1006	1496	1921	2371	2873	3678	4401
1984	691	1007	1544	2120	2514	3027	2940	3938
1985	652	1125	1811	2260	2924	3547	3733	4122
1986	336	1227	1780	2431	2771	3689	3820	4319
1987	452	1064	1692	2408	3000	3565	4215	4181
1988	362	780	1474	2217	2931	3529	3781	4430
1989	323	857	1185	1996	2893	4066	3866	4860
1990	269	700	1054	1562	2364	3414	4134	4686
1991	288	699	979	1412	1887	2674	3135	4589
1992	313	806	1167	1524	1950	2357	3075	4130
1993	303	705	1333	1875	2386	2996	3059	3467
1994	337	668	1019	1717	2391	2717	3280	3173
1995	351	746	1096	1318	2044	2893	3049	3331
1996	311	787	1187	1560	1849	2670	3510	3668
1997	379	764	1163	1649	1943	2342	3020	3285
1998	445	724	1147	1683	2250	2475	2834	3372
1999	555	908	1101	1658	2216	2659	2928	3245
2000	495	978	1333	1481	2119	2696	3307	3671
2001	541	945	1456	1731	1832	2243	3020	3757
2002	564	928	1253	1737	2219	2230	2911	3745
2003	498	922	1283	1704	2274	2744	2635	3220
2004	559	1006	1258	1579	2044	2809	3123	3141
2005	339	886	1265	1506	1916	2323	3028	3055
2006	402	749	1093	1495	1758	2163	2555	3260
2007	510	748	988	1346	1840	2062	2350	2685
2008	383	636	857	1125	1575	2149	2417	2764
2009	452	841	960	1131	1352	1757	2364	2652
2010	447	756	1092	1294	1448	1685	2188	2534
2011	588	905	1122	1455	1688	1914	2094	2599
2012	668	978	1222	1492	1903	2164	2366	2704
2013	678	1084	1358	1675	2036	2400	2554	3097
2014 <sup>1)</sup>	508	966	1420	1755	2072	2376	2493	3000

<sup>1)</sup> Áætlað. *Estimated.*

TAFLA 3.2.5

Ýsa. Hlutfall kynþroska eftir aldri á árunum 1979–2014.  
*Haddock. Proportion mature by age in the years 1979–2014.*

Ár Year	Aldur Age							
	2	3	4	5	6	7	8	9
1979 <sup>1)</sup>	0.08	0.30	0.54	0.72	0.82	0.87	0.90	0.96
1980 <sup>1)</sup>	0.08	0.30	0.54	0.72	0.82	0.87	0.90	0.96
1981 <sup>1)</sup>	0.08	0.30	0.54	0.72	0.82	0.87	0.90	0.96
1982 <sup>1)</sup>	0.08	0.30	0.54	0.72	0.82	0.87	0.90	0.96
1983 <sup>1)</sup>	0.08	0.30	0.54	0.72	0.82	0.87	0.90	0.96
1984 <sup>1)</sup>	0.08	0.30	0.54	0.72	0.82	0.87	0.90	0.96
1985	0.02	0.14	0.54	0.58	0.76	0.77	0.96	0.93
1986	0.02	0.20	0.41	0.67	0.84	0.88	0.95	0.99
1987	0.02	0.14	0.43	0.54	0.78	0.78	1.00	0.97
1988	0.01	0.22	0.39	0.77	0.79	0.93	0.91	1.00
1989	0.04	0.20	0.53	0.73	0.82	1.00	1.00	1.00
1990	0.11	0.33	0.63	0.81	0.84	0.92	0.88	1.00
1991	0.06	0.22	0.59	0.74	0.82	0.89	0.50	1.00
1992	0.05	0.23	0.42	0.80	0.90	0.90	0.86	1.00
1993	0.12	0.36	0.48	0.67	0.90	0.98	0.91	0.87
1994	0.25	0.31	0.57	0.76	0.85	1.00	0.91	1.00
1995	0.12	0.48	0.38	0.75	0.75	0.61	0.98	1.00
1996	0.19	0.36	0.59	0.65	0.79	0.74	0.95	0.91
1997	0.09	0.44	0.59	0.68	0.75	0.78	0.88	1.00
1998	0.03	0.45	0.67	0.77	0.73	0.85	0.90	1.00
1999	0.05	0.40	0.68	0.72	0.75	0.89	0.76	0.92
2000	0.11	0.26	0.63	0.81	0.87	0.87	1.00	0.78
2001	0.09	0.38	0.52	0.75	0.90	0.92	0.92	1.00
2002	0.05	0.29	0.63	0.80	0.93	0.93	1.00	1.00
2003	0.06	0.35	0.68	0.87	0.92	0.95	1.00	1.00
2004	0.04	0.36	0.57	0.83	0.91	1.00	1.00	1.00
2005	0.02	0.23	0.56	0.75	0.93	0.94	0.97	1.00
2006	0.03	0.12	0.46	0.62	0.74	0.92	1.00	1.00
2007	0.08	0.21	0.42	0.68	0.77	0.88	0.96	1.00
2008	0.03	0.26	0.42	0.62	0.83	0.87	0.90	0.98
2009	0.02	0.30	0.47	0.58	0.85	0.89	1.00	0.97
2010	0.03	0.19	0.62	0.78	0.79	0.89	0.93	1.00
2011	0.04	0.18	0.43	0.82	0.82	0.84	0.90	0.97
2012	0.11	0.17	0.44	0.63	0.82	0.90	0.85	0.91
2013	0.05	0.22	0.38	0.71	0.79	0.92	0.99	0.97
2014	0.10	0.19	0.39	0.57	0.67	0.73	0.92	0.91

<sup>1)</sup> Meðaltal árunna 1985–2002. Average 1985–2002.

TAFLA 3.2.6

Ýsa. Aldursskiptar vísitölur (í fjölda) úr stofnmælingu botnfiska í mars.  
*Haddock. Age disaggregated indices (in numbers) from the groundfish survey in March.*

Ár Year	Aldur Age									
	1	2	3	4	5	6	7	8	9	10
1985	28.1	32.7	18.3	23.6	26.4	3.7	10.9	4.8	5.5	0.5
1986	123.9	108.5	59.0	12.8	16.3	13.1	1.0	2.7	1.2	2.3
1987	21.8	338.3	147.5	44.1	7.7	7.5	4.7	0.4	0.6	0.4
1988	15.8	40.7	184.8	88.9	22.9	1.3	2.2	1.8	0.2	0.2
1989	10.6	23.3	41.2	146.6	45.1	12.9	0.8	0.8	0.4	0.3
1990	70.5	31.8	26.7	38.8	92.8	30.9	3.4	0.9	0.2	0.0
1991	89.7	145.9	41.4	17.7	20.2	32.9	7.6	0.3	0.1	0.1
1992	18.1	211.4	137.8	35.4	16.9	13.8	16.3	2.2	0.2	0.1
1993	30.0	37.8	245.0	87.2	11.2	3.8	1.7	4.5	0.9	0.0
1994	58.5	61.3	39.8	142.3	42.2	6.9	2.9	1.4	4.4	0.2
1995	35.9	82.5	47.0	19.8	69.5	7.7	1.3	0.1	0.3	0.0
1996	95.3	66.3	120.0	36.8	19.6	40.7	5.8	0.6	0.1	0.1
1997	8.6	119.3	50.8	53.3	10.9	7.4	10.9	1.4	0.1	0.0
1998	23.1	18.0	107.9	28.2	23.5	4.9	3.5	4.6	0.3	0.0
1999	80.7	85.5	25.5	98.7	13.0	9.8	1.4	1.8	1.0	0.1
2000	60.6	90.1	44.6	8.4	25.2	3.1	1.6	0.4	0.2	0.5
2001	81.3	147.7	115.4	22.1	4.1	10.6	0.9	0.6	0.0	0.1
2002	20.8	298.7	200.7	112.5	23.2	3.5	7.5	0.3	0.3	0.1
2003	111.6	97.5	282.5	244.9	113.5	18.0	2.6	4.5	0.5	0.8
2004	325.9	291.6	70.8	208.7	109.3	34	6.8	1.2	0.8	0.0
2005	57.9	698.3	289.4	44.6	157.2	57.5	15.7	3.4	0.3	0.2
2006	39.3	88.7	575.9	179.1	19.1	62.9	16.4	6.7	0.7	0.3
2007	34.0	65.6	88.6	436.4	85.7	7.9	21.6	4.7	2.1	0.1
2008	88.5	68.0	71.7	75.6	222.8	30.0	3.5	7.5	1.6	0.3
2009	10.5	111.2	53.8	41.5	41.9	105.6	12.9	2.2	3.1	0.4
2010	15.2	27.7	138.2	29.9	18.3	20.6	31.6	2.9	0.5	0.7
2011	8.8	27.6	24.8	77.4	14.0	5.9	9.4	14.9	1.2	0.3
2012	12.5	14.9	31.3	27.2	58.3	5.2	2.9	5.3	6.9	0.8
2013	13.9	23.3	19.7	22.9	22.5	41.9	4.8	2.5	3.9	4.5
2014	14.0	24.8	30.3	17.7	16.4	14.8	16.4	1.3	1.1	1.7

TAFLA 3.2.7

Ýsa. Aldursskiptar vísitölur úr stofnmælingu botnfiska að hausti.  
*Haddock. Age disaggregated indices from the groundfish survey in autumn.*

Ár Year	Aldur Age									
	0	1	2	3	4	5	6	7	8	9
1996	16.1	460.9	109.8	85.8	18.5	7.8	18.3	1.6	0.0	0.0
1997	52.9	32.4	212.9	54.5	38.7	7.0	5.7	6.1	0.3	0.0
1998	209.1	81.1	32.5	133.4	19.8	15.8	5.3	5.4	1.9	0.0
1999	178.6	397.4	66.9	28.6	97.1	11.9	10.4	0.5	2.1	0.3
2000	56.2	162.3	260.1	45.8	8.2	28.7	2.0	3.2	0.1	0.3
2001	47.0	387	282.1	170.2	35.7	4.1	13.9	0.7	1.0	0.0
2002	150.6	85.2	237.8	197.5	98.5	19.3	3.0	2.3	1.0	0.1
2003	316.5	343.8	147.8	252.4	169.2	56.7	9.5	2.4	0.7	0.0
2004	189.4	713	348.5	51.2	160.3	70.6	17.0	4.0	0.8	0.5
2005	91.1	74.2	560.4	182.1	27.3	96.5	26.7	10.4	1.9	0.0
2006	85.9	124.1	117.6	510.4	108.5	13.8	40.4	9.8	3.9	1.5
2007	203.4	93.8	78.5	92.8	340.6	58.7	8.5	12.4	3.8	0.6
2008	95.3	201.8	93.9	68.4	87.9	198.9	16.8	2.9	3.5	0.2
2009	52.8	47.5	269.5	68.2	31.0	48.5	96.8	9.5	1.5	2.2
2010	37.2	43.3	56.6	143.4	30.6	14.4	23.7	37.2	4.8	0.9
2011										
2012	26.8	53.8	29.1	34.3	37.7	70.5	9.3	3.6	10.0	10.5
2013	27.1	91.9	131.4	37.3	38.6	39.4	45.1	6.3	2.3	5.9

TAFLA 3.2.8

Ýsa. Fjöldi tveggja ára nýliða í milljónum, stofn þriggja ára og eldri, hrygningar- og viðmiðunarstofn í þús. tonna, afli í þús. tonna, veiðihlutfall (afli/viðmiðunarstofn) og fiskveiðidánartala (meðaltal fyrir 4–7 ára).

**Haddock.** Recruitment as 2-year-olds in millions, biomass of ages 3+, spawning stock and reference biomass in thous. tonnes, landings in thous. tonnes, harvest rate (landings/reference biomass), and fishing mortality (average for ages 4–7).

Ár Year	Nýliðun Recruitment	Stofn 3+ <sup>1)</sup> Biomass 3+	Hrygn.stofn <sup>2)</sup> SSB	Viðm.stofn <sup>3)</sup> Ref. biomass	Afli Landings	Veiðihlutfall <sup>4)</sup> Harvest rate	Fiskveiðidánartala Fishing mortality
1979	81	162	96	102	55	54%	0.52
1980	37	192	117	138	51	37%	0.40
1981	10	207	142	177	64	36%	0.54
1982	43	180	137	168	69	41%	0.44
1983	29	148	113	130	66	51%	0.51
1984	21	113	83	95	48	51%	0.52
1985	43	102	67	92	51	55%	0.54
1986	87	96	60	80	49	61%	0.74
1987	164	105	46	70	41	58%	0.58
1988	49	154	69	86	54	63%	0.68
1989	30	168	100	123	63	51%	0.68
1990	27	146	111	120	67	56%	0.61
1991	92	123	90	109	55	50%	0.66
1992	175	106	66	71	47	66%	0.73
1993	38	130	71	66	48	73%	0.67
1994	47	128	83	69	60	86%	0.64
1995	73	124	85	92	61	66%	0.66
1996	36	108	70	74	57	77%	0.68
1997	103	87	59	63	44	70%	0.62
1998	18	97	64	55	41	75%	0.63
1999	50	91	64	58	45	78%	0.68
2000	117	91	64	65	42	64%	0.64
2001	157	115	70	68	40	58%	0.46
2002	187	168	99	94	50	53%	0.46
2003	50	220	147	124	61	49%	0.40
2004	152	252	181	188	85	45%	0.49
2005	385	259	177	190	97	51%	0.52
2006	89	299	143	155	98	63%	0.58
2007	42	297	162	147	110	75%	0.56
2008	44	249	158	161	103	64%	0.49
2009	119	192	142	146	82	56%	0.50
2010	35	167	113	113	64	57%	0.47
2011	26	149	96	106	49	47%	0.41
2012	18	136	91	113	46	41%	0.35
2013	27	125	92	113	44	39%	0.36
2014 <sup>5)</sup>	27	104	67	91	35	39%	0.37
2015 <sup>5)</sup>	25	89	70	76			

<sup>1)</sup> Stofn 3 ára og eldri í upphafi árs, reiknaður út frá meðalþyngdum úr stofnmælingu í mars.

*Biomass of ages 3+ in the beginning of the year, calculated using mean weights from spring survey.*

<sup>2)</sup> Hrygningarstofn á hrygningartíma, reiknaður út frá meðalþyngdum og kynþroskahlutfalli úr stofnmælingu í mars.

*Spawning stock biomass at the time of spawning, calculated using mean weights and maturity from spring survey.*

<sup>3)</sup> Viðmiðunarstofn 45 cm og stærrí ýsu, reiknaður út frá meðalþyngdum úr stofnmælingu í mars.

*Reference biomass of 45 cm and larger haddock, calculated using mean weights from spring survey.*

<sup>4)</sup> Afli sem hlutfall af viðmiðunarstofni í upphafi árs.

*Landings divided by the reference biomass in the beginning of the year.*

<sup>5)</sup> Miðað við veiðar samkvæmt aflareglu.

*According to adopted harvest control rule.*



TAFLA 3.2.9

Ýsa. Stofnstærð í fjölda eftir aldri (í milljónum) og stærð hrygningarstofns og stofns 3 ára og eldri (þús. tonna) á árunum 1979–2014.

*Haddock. Stock abundance in numbers by age (millions), spawning biomass and biomass of age 3 and older (thous. tonnes) in the years 1979–2014.*

Ár Year	Aldur Age									Hrygningar- stofn Spawning stock	Stofn 3+ Stock 3+
	2	3	4	5	6	7	8	9+			
1979	80.9	117.3	27.7	19.6	20.4	3.4	0.8	0.4	96	162	
1980	37.4	66.1	94.3	19.3	10.5	8.6	1.2	0.4	117	192	
1981	10.4	30.1	52.9	66.8	11.9	5.2	3.6	0.7	142	207	
1982	42.8	8.5	24.2	38.9	39.4	4.3	1.7	1.7	137	180	
1983	29.3	34.9	6.8	16.9	22.0	19.6	1.7	1.0	113	148	
1984	20.6	24.0	27.7	4.1	9.7	9.1	8.0	1.1	83	113	
1985	42.8	16.6	18.7	18.2	2.1	3.6	4.1	3.5	67	102	
1986	86.5	33.8	12.0	11.1	8.7	1.0	1.4	2.4	60	96	
1987	164.0	69.9	23.9	6.2	4.9	2.5	0.4	1.3	46	105	
1988	48.7	132.5	49.7	13.3	2.6	2.2	1.1	0.7	69	154	
1989	29.8	39.7	99.6	27.0	5.6	0.9	0.8	0.7	100	168	
1990	27.1	24.2	30.3	61.2	13.4	1.7	0.3	0.4	111	146	
1991	92.3	20.5	17.6	17	28.7	5.3	0.6	0.3	90	123	
1992	175.1	67.8	14.8	9.6	7.2	10.7	1.9	0.4	66	106	
1993	38.4	138.5	45.8	7.0	3.7	2.6	4.1	0.8	71	130	
1994	46.8	30.8	102.2	25.9	3.0	1.4	0.8	1.7	83	128	
1995	72.9	35.5	22.2	58.1	11.5	1.1	0.5	1.0	85	124	
1996	36.3	56.0	22.4	13.0	25.9	4.2	0.4	0.5	70	108	
1997	102.5	27.0	36.3	11.4	6.6	9.6	1.3	0.4	59	87	
1998	18.0	82.7	18.5	19.9	4.9	3.0	3.3	0.6	64	97	
1999	50.2	14.5	60.2	10.0	9.1	1.8	1.2	1.2	64	91	
2000	117.4	39.8	10.4	33.7	4.1	3.1	0.7	0.8	64	91	
2001	156.5	93.7	26.8	6.4	15.3	1.6	1.0	0.6	70	115	
2002	187.0	125.9	66.7	15.7	3.9	6.8	0.7	0.7	99	168	
2003	49.8	152.1	93.6	40.1	8.2	2.2	2.8	0.6	147	220	
2004	151.6	40.4	118.8	61.9	21.5	4.1	1.1	1.5	181	252	
2005	384.9	122.7	29.4	81.3	33.2	9.6	1.6	1.1	177	259	
2006	89.3	313.0	91.9	17.8	43.6	14.7	3.7	1.0	143	299	
2007	42.3	72.9	247.2	56.0	8.6	18.6	5.2	1.4	162	297	
2008	44.4	33.9	56.1	164.2	25.7	4.0	6.2	2.3	158	249	
2009	119.2	34.2	23.7	37.2	86.4	11.1	1.7	3.3	142	192	
2010	34.6	96.6	25.1	15.0	22.4	39.1	3.9	1.7	113	167	
2011	26.4	28.2	73.6	14.2	7.9	12.2	16.2	2.1	96	149	
2012	18.5	21.4	21.7	49.6	7.0	3.9	6.4	8.7	91	136	
2013	27.1	14.9	16.3	14.6	28.8	3.7	2.1	7.4	92	125	
2014	27.0	22.0	11.3	10.8	8.4	15.2	2.0	4.5	67	104	

**TAFLA 3.2.10**  
**Ýsa.** Veiddánartala eftir aldri á árunum 1979–2013.  
**Haddock.** *Fishing mortality by age in the years 1979–2013.*

Ár Year	Aldur Age								Meðaltal 4–7 Mean 4–7
	2	3	4	5	6	7	8	9	
1979	0.002	0.018	0.162	0.419	0.669	0.833	0.990	0.553	0.521
1980	0.018	0.023	0.144	0.282	0.508	0.657	0.685	0.561	0.398
1981	0.001	0.019	0.108	0.328	0.813	0.920	0.793	0.463	0.542
1982	0.003	0.032	0.156	0.369	0.501	0.751	1.056	0.903	0.444
1983	0.001	0.032	0.301	0.357	0.683	0.692	0.706	0.643	0.508
1984	0.013	0.051	0.220	0.449	0.784	0.607	0.825	0.493	0.515
1985	0.035	0.122	0.315	0.532	0.582	0.719	0.737	1.314	0.537
1986	0.013	0.148	0.467	0.625	1.048	0.816	0.937	0.976	0.739
1987	0.013	0.141	0.389	0.669	0.62	0.657	0.530	0.500	0.584
1988	0.005	0.086	0.411	0.665	0.811	0.815	0.998	0.557	0.675
1989	0.007	0.071	0.288	0.498	1.003	0.917	1.552	0.682	0.676
1990	0.079	0.117	0.379	0.556	0.736	0.772	0.769	0.794	0.611
1991	0.109	0.123	0.413	0.651	0.783	0.811	0.890	0.473	0.664
1992	0.035	0.192	0.555	0.762	0.827	0.768	0.858	0.973	0.728
1993	0.022	0.104	0.370	0.635	0.736	0.934	0.933	0.842	0.669
1994	0.078	0.128	0.365	0.608	0.769	0.821	0.643	0.786	0.641
1995	0.063	0.259	0.337	0.607	0.804	0.895	0.971	0.856	0.661
1996	0.099	0.233	0.473	0.480	0.798	0.950	0.912	0.790	0.675
1997	0.015	0.176	0.404	0.641	0.579	0.873	0.900	0.819	0.624
1998	0.017	0.117	0.413	0.575	0.781	0.738	1.025	1.041	0.627
1999	0.032	0.126	0.380	0.689	0.878	0.792	0.870	0.806	0.685
2000	0.025	0.193	0.286	0.591	0.737	0.930	0.740	0.933	0.636
2001	0.018	0.140	0.337	0.286	0.603	0.620	0.745	0.568	0.462
2002	0.006	0.096	0.308	0.445	0.381	0.710	0.523	0.650	0.461
2003	0.009	0.047	0.213	0.424	0.508	0.469	0.685	0.345	0.404
2004	0.012	0.118	0.179	0.424	0.609	0.753	0.616	0.645	0.491
2005	0.007	0.089	0.302	0.424	0.614	0.753	0.849	0.809	0.523
2006	0.003	0.036	0.295	0.532	0.650	0.846	1.056	1.057	0.581
2007	0.021	0.061	0.209	0.578	0.567	0.894	0.882	0.787	0.562
2008	0.059	0.159	0.212	0.442	0.640	0.649	0.771	0.723	0.486
2009	0.010	0.109	0.259	0.307	0.594	0.844	0.639	1.041	0.501
2010	0.004	0.071	0.372	0.438	0.406	0.683	0.754	0.761	0.475
2011	0.011	0.064	0.195	0.503	0.508	0.447	0.554	0.450	0.413
2012	0.012	0.071	0.192	0.345	0.430	0.429	0.559	0.490	0.349
2013	0.010	0.080	0.216	0.360	0.437	0.440	0.438	0.617	0.363

TAFLA 3.2.11

Ýsa. Forsendur í framreikningum á þróun stofnsins árin 2014–2016.

Náttúrulegur dánarstuðull  $M=0.2$ .

*Haddock. Input parameters for catch and stock projection for the years 2014–2016.*

*Natural mortality coefficient,  $M=0.2$ .*

Aldur Age	Stofnstærð Stock size	Veiðimynstur Selectivity			Kynþroskahlutfall Proportion mature		Meðalþyngd (g) Mean weight (g)	
		2014	2015	2016	2015	2016	2015	2016
2	26.98	0.036	0.013	0.012	0.072	0.070	193	190
3	21.97	0.311	0.268	0.227	0.356	0.313	528	478
4	11.29	0.683	0.668	0.620	0.662	0.638	1013	961
5	10.76	0.941	0.977	0.973	0.807	0.809	1500	1508
6	8.37	1.119	1.121	1.151	0.864	0.878	1860	1978
7	15.21	1.257	1.235	1.256	0.898	0.905	2201	2295
8	1.97	1.310	1.332	1.322	0.920	0.923	2530	2579
9	1.10	1.378	1.332	1.322	0.927	0.935	2656	2839
10	1.32	1.378	1.332	1.322	1.000	1.000	2934	2936

Stofnstærð: Stofnstærð í milljónum fiska í ársbyrjun 2014.

Veiðimynstur: Hlutfallsleg veiðidánartala hvers aldursflokks, áætlað út frá meðalþyngd í stofni.

Hlutfall kynþroska: Hlutfall kynþroska eftir aldri, áætlað út frá meðalþyngd í stofni.

Meðalþyngd: Meðalþyngd í stofni, spáð út frá meðalþyngdum í stofnmælingu í mars 2014 og miðað við áætlaðan vöxt árið 2014.

Stock size: Stock size in millions in 2014.

Selectivity: Relative fishing mortality on each age group predicted from mean weight at age in stock.

Maturity at age: Maturity at age predicted from mean weight at age in the stock.

Mean weight: Mean weight at age in the stock predicted from mean weight at age in the groundfish survey in March 2014 and predicted growth in the year 2014.

TAFLA 3.3.1

Ufsi. Afli (í tonnum) á Íslandsmiðum 1955–2013.  
*Saithe. Landings (in tonnes) in Icelandic waters 1955–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1955	12 298	35 545	47 843
1956	25 250	42 611	67 861
1957	19 055	43 007	62 062
1958	14 961	38 219	53 180
1959	14 975	33 504	48 479
1960	12 703	35 343	48 046
1961	13 675	36 155	49 830
1962	13 469	36 940	50 409
1963	14 758	33 691	48 449
1964	21 665	38 752	60 417
1965	24 866	35 242	60 108
1966	21 022	31 154	52 176
1967	29 021	47 249	76 270
1968	38 027	39 919	77 946
1969	53 988	62 359	116 347
1970	63 882	49 433	113 315
1971	60 080	73 811	133 891
1972	59 945	47 928	107 873
1973	56 567	54 546	111 113
1974	65 220	32 348	97 568
1975	61 430	26 494	87 924
1976	56 811	25 134	81 945
1977	46 973	15 053	62 026
1978	44 327	5 345	49 672
1979	57 066	6 438	63 504
1980	52 436	5 911	58 347
1981	54 921	4 080	59 001
1982	65 124	3 786	68 910
1983	55 904	2 362	58 266
1984	60 406	2 313	62 719
1985	55 135	1 937	57 072
1986	63 867	1 001	64 868
1987	78 175	2 356	80 531
1988	74 383	2 864	77 247
1989	79 810	2 615	82 425
1990	95 032	3 095	98 127
1991	99 390	2 926	102 316
1992	77 832	1 765	79 597
1993	69 982	1 666	71 648
1994	63 333	1 006	64 339
1995	47 466	1 163	48 629
1996	39 297	804	40 101
1997	36 548	716	37 264
1998	30 531	1 000	31 531
1999	30 583	710	31 293
2000	32 914	232	33 146
2001	31 854	209	32 063
2002	41 687	384	42 071
2003	51 855	398	52 253
2004	64 314	477	64 791
2005	68 283	860	69 143
2006	75 197	466	75 663
2007	64 005	425	64 430
2008	69 991	198	70 189
2009	61 119	272	61 391
2010	53 772	500	54 272
2011	50 386	737	51 123
2012	50 843	940	51 783
2013	57 077	925	58 002

**TAFLA 3.3.2**  
**Ufsi.** Skipting aflans í fjölda eftir aldri (í milljónum) á árunum 1980–2013.  
*Saithe.* Catch in numbers at age (millions) in the years 1980–2013.

Ár Year	Aldur Age											
	3	4	5	6	7	8	9	10	11	12	13	14
1980	0.275	2.540	5.214	2.596	2.169	1.341	0.387	0.262	0.155	0.112	0.064	0.033
1981	0.203	1.325	3.503	5.404	1.457	1.415	0.578	0.242	0.061	0.154	0.135	0.128
1982	0.508	1.092	2.804	4.845	4.293	1.215	0.975	0.306	0.059	0.035	0.048	0.046
1983	0.107	1.750	1.065	2.455	4.454	2.311	0.501	0.251	0.038	0.012	0.002	0.004
1984	0.053	0.657	0.800	1.825	2.184	3.610	0.844	0.376	0.291	0.135	0.185	0.226
1985	0.376	4.014	3.366	1.958	1.536	1.172	0.747	0.479	0.074	0.023	0.072	0.071
1986	3.108	1.400	4.170	2.665	1.550	1.116	0.628	1.549	0.216	0.051	0.030	0.014
1987	0.956	5.135	4.428	5.409	2.915	1.348	0.661	0.496	0.498	0.058	0.027	0.048
1988	1.318	5.067	6.619	3.678	2.859	1.775	0.845	0.226	0.270	0.107	0.024	0.001
1989	0.315	4.313	8.471	7.309	1.794	1.928	0.848	0.270	0.191	0.135	0.076	0.010
1990	0.143	1.692	5.471	10.112	6.174	1.816	1.087	0.380	0.151	0.055	0.076	0.037
1991	0.198	0.874	3.613	6.844	10.772	3.223	0.858	0.838	0.228	0.040	0.006	0.005
1992	0.242	2.928	3.844	4.355	3.884	4.046	1.290	0.350	0.196	0.056	0.054	0.015
1993	0.657	1.083	2.841	2.252	2.247	2.314	3.671	0.830	0.223	0.188	0.081	0.012
1994	0.702	2.955	1.770	2.603	1.377	1.243	1.263	2.009	0.454	0.158	0.188	0.082
1995	1.573	1.853	2.661	1.807	2.370	0.905	0.574	0.482	0.521	0.106	0.035	0.013
1996	1.102	2.608	1.868	1.649	0.835	1.233	0.385	0.267	0.210	0.232	0.141	0.074
1997	0.603	2.960	2.766	1.651	1.178	0.599	0.454	0.125	0.095	0.114	0.077	0.043
1998	0.183	1.289	1.767	1.545	1.114	0.658	0.351	0.265	0.120	0.081	0.085	0.085
1999	0.989	0.732	1.564	2.176	1.934	0.669	0.324	0.140	0.072	0.025	0.028	0.022
2000	0.850	2.383	0.896	1.511	1.612	1.806	0.335	0.173	0.057	0.033	0.017	0.007
2001	1.223	2.619	2.184	0.591	0.977	0.943	0.819	0.186	0.094	0.028	0.028	0.013
2002	1.187	4.190	3.147	2.970	0.519	0.820	0.570	0.309	0.101	0.027	0.015	0.011
2003	2.284	4.363	6.031	2.472	1.942	0.285	0.438	0.289	0.196	0.028	0.029	0.015
2004	0.952	7.841	7.195	5.363	1.563	1.057	0.211	0.224	0.157	0.074	0.039	0.011
2005	2.607	3.089	7.333	6.876	3.592	0.978	0.642	0.119	0.149	0.089	0.046	0.012
2006	1.380	10.051	2.616	5.840	4.514	1.989	0.667	0.485	0.118	0.112	0.086	0.031
2007	1.244	6.552	8.751	2.124	2.935	1.817	0.964	0.395	0.190	0.043	0.036	0.020
2008	1.432	3.602	5.874	6.706	1.155	1.894	1.248	0.803	0.262	0.176	0.087	0.044
2009	2.820	5.166	2.084	2.734	2.883	0.777	1.101	0.847	0.555	0.203	0.134	0.036
2010	2.146	6.284	3.058	0.997	1.644	1.571	0.514	0.656	0.522	0.231	0.114	0.064
2011	2.004	4.850	4.006	1.502	0.677	1.065	1.145	0.323	0.433	0.244	0.150	0.075
2012	1.183	4.816	3.514	2.417	0.903	0.432	0.883	1.015	0.354	0.277	0.173	0.099
2013	1.163	5.538	6.366	2.963	1.610	0.664	0.375	0.537	0.460	0.124	0.118	0.078

**TAFLA 3.3.3**  
**Ufsi.** Meðalþyngd eftir aldri (g) í afla á árunum 1980–2014.  
*Saithe.* Weight at age (g) in catches in the years 1980–2014.

Ár Year	Aldur Age											
	3	4	5	6	7	8	9	10	11	12	13	14
1980	1428	1983	2667	3689	5409	6321	7213	8565	9147	9617	10066	11041
1981	1585	2037	2696	3525	4541	6247	6991	8202	9537	9089	9351	10225
1982	1547	2194	3015	3183	5114	6202	7256	7922	8924	10134	9447	10535
1983	1530	2221	3171	4270	4107	5984	7565	8673	8801	9039	11138	9818
1984	1653	2432	3330	4681	5466	4973	7407	8179	8770	8831	11010	11127
1985	1609	2172	3169	3922	4697	6411	6492	8346	9401	10335	11027	10644
1986	1450	2190	2959	4402	5488	6406	7570	6487	9616	10462	11747	11902
1987	1516	1715	2670	3839	5081	6185	7330	8025	7974	9615	12246	11656
1988	1261	2017	2513	3476	4719	5932	7523	8439	8748	9559	10824	14099
1989	1403	2021	2194	3047	4505	5889	7172	8852	10170	10392	12522	11923
1990	1647	1983	2566	3021	4077	5744	7038	7564	8854	10645	11674	11431
1991	1224	1939	2432	3160	3634	4967	6629	7704	9061	9117	10922	11342
1992	1269	1909	2578	3288	4150	4865	6168	7926	8349	9029	11574	9466
1993	1381	2143	2742	3636	4398	5421	5319	7006	8070	10048	9106	11591
1994	1444	1836	2649	3512	4906	5539	6818	6374	8341	9770	10528	11257
1995	1370	1977	2769	3722	4621	5854	6416	7356	6815	8312	9119	11910
1996	1229	1755	2670	3802	4902	5681	7182	7734	9256	8322	10501	11894
1997	1325	1936	2409	3906	5032	6171	7202	7883	8856	9649	9621	10877
1998	1347	1972	2943	3419	4850	5962	6933	7781	8695	9564	10164	10379
1999	1279	2106	2752	3497	3831	5819	7072	8078	8865	10550	10823	11300
2000	1367	1929	2751	3274	4171	4447	6790	8216	9369	9817	10932	12204
2001	1280	1882	2599	3697	4420	5538	5639	7985	9059	9942	10632	10988
2002	1308	1946	2569	3266	4872	5365	6830	7067	9240	9659	10088	11632
2003	1310	1908	2545	3336	4069	5792	7156	8131	8051	10186	10948	11780
2004	1467	1847	2181	2918	4017	5135	7125	7732	8420	8927	10420	10622
2005	1287	1888	2307	2619	3516	5080	6060	8052	8292	8342	8567	10256
2006	1164	1722	2369	2808	3235	4361	6007	7166	8459	9324	9902	9636
2007	1140	1578	2122	2719	3495	4114	5402	6995	7792	9331	9970	10738
2008	1306	1805	2295	2749	3515	4530	5132	6394	7694	9170	9594	11258
2009	1412	1862	2561	3023	3676	4596	5651	6074	7356	8608	9812	10639
2010	1287	1787	2579	3469	4135	4850	5558	6289	6750	7997	9429	10481
2011	1175	1801	2526	3680	4613	5367	5685	6466	6851	7039	8268	8958
2012	1160	1668	2369	3347	4430	5486	6161	6448	7220	8054	8147	8901
2013	1056	1675	2219	3244	4529	5628	6397	7055	7378	7955	8400	8870
2014 <sup>1)</sup>	1130	1525	2319	3042	4163	5568	6913	6656	7150	7683	8272	8910

<sup>1)</sup> Áætlað. Estimated.



TAFLA 3.3.4

Ufsi. Meðalþyngd eftir aldri (g) í stofnmælingu í mars á árunum 1985–2014.  
*Saithe. Mean weight at age (g) in spring survey in the years 1985–2014.*

Ár Year	Aldur Age						
	3	4	5	6	7	8	9
1985	958	1675	2149	3138	4086	5190	4567
1986	837	1406	2271	3322	4776	6029	7316
1987	864	1153	1725	3430	4254	6061	6922
1988	775	1430	2012	2789	4351	5407	7491
1989	640	1398	1786	2814	3697	5100	6329
1990	740	1252	2137	2616	4447	6043	6891
1991	787	1356	1865	2667	2947	4761	4728
1992	874	1382	2009	2980	3827	4296	6174
1993	759	1459	2062	2947	3764	4879	4393
1994	853	1607	2770	3387	4721	6201	7428
1995	742	1230	2324	3641	4270	6139	5659
1996	899	1327	1972	2740	5264	5107	4072
1997	741	1303	1781	2731	4228	5754	7632
1998	841	1155	1799	2530	3934	5382	5489
1999	774	1465	2131	2873	3548	5539	8033
2000	821	1352	2227	2712	3617	3877	5920
2001	767	1517	2124	3392	4225	5138	5523
2002	739	1264	2196	3366	4594	5394	6563
2003	603	1183	1888	2678	3677	5317	8937
2004	822	1219	1808	2690	4075	5445	8208
2005	671	1376	1833	2341	3469	5522	6558
2006	650	1170	2035	2537	3120	4090	6027
2007	600	1155	1755	2480	3251	3591	4965
2008	692	1206	1796	2323	3587	4519	5514
2009	689	1427	2042	2563	3256	4962	5381
2010	777	1307	2183	2921	3706	4647	6959
2011	609	1212	2202	3078	3856	4788	5695
2012	699	1063	1719	2734	4179	5470	6770
2013	470	1108	1904	3073	3911	4890	6331
2014	667	1066	1844	2764	3777	5314	7488

TAFLA 3.3.5

Ufsi. Hlutfall kynþroska eftir aldri í stofnmælingu í mars á árunum 1985–2014. Aldurshópar yngri en 4 ára taldir ókynþroska og eldri en 9 ára að fullu kynþroska.

Saíthe. Proportion mature at age in spring survey in the years 1985–2014. Age groups younger than 4 considered immature and more than 9 years old fully mature.

a) Mæld gildi í stofnmælingu. Observations in survey.

Ár Year	Aldur Age					
	4	5	6	7	8	9
1985	0.05	0.13	0.40	0.58	0.74	0.62
1986	0.02	0.18	0.50	0.75	0.84	0.90
1987	0.04	0.13	0.61	0.69	0.89	0.95
1988	0.01	0.08	0.31	0.62	0.65	0.87
1989	0.03	0.11	0.44	0.40	0.60	0.60
1990	0.02	0.20	0.29	0.71	0.89	0.88
1991	0.01	0.08	0.24	0.21	0.43	0.50
1992	0.02	0.18	0.48	0.62	0.66	0.73
1993	0.06	0.12	0.35	0.51	0.70	0.56
1994	0.09	0.49	0.65	0.81	0.83	0.84
1995	0.02	0.10	0.42	0.70	0.79	0.50
1996	0.02	0.12	0.42	0.71	0.54	1.00
1997	0.11	0.10	0.45	0.66	0.76	0.95
1998	0.00	0.15	0.36	0.67	0.64	0.81
1999	0.22	0.27	0.38	0.44	0.77	1.00
2000	0.14	0.51	0.54	0.76	0.90	0.83
2001	0.17	0.51	0.62	0.91	0.84	1.00
2002	0.05	0.52	0.85	0.90	0.95	0.96
2003	0.03	0.25	0.48	0.64	1.00	1.00
2004	0.03	0.35	0.58	0.84	0.94	1.00
2005	0.13	0.28	0.58	0.71	0.95	0.95
2006	0.05	0.33	0.59	0.61	0.76	0.88
2007	0.05	0.30	0.54	0.78	0.81	0.83
2008	0.07	0.29	0.49	0.73	0.90	0.96
2009	0.03	0.29	0.48	0.77	0.78	0.85
2010	0.06	0.47	0.79	0.93	1.00	1.00
2011	0.02	0.23	0.42	0.79	0.76	0.91
2012	0.01	0.12	0.36	0.66	0.87	0.94
2013	0.04	0.15	0.40	0.62	1.00	1.00
2014	0.02	0.20	0.44	0.61	0.93	1.00

b) Spáð gildi með kynþroskalíkani. Prediction from maturity model.

Ár Year	Aldur Age					
	4	5	6	7	8	9
1985	0.09	0.20	0.39	0.61	0.79	0.90
1986	0.08	0.18	0.35	0.58	0.77	0.89
1987	0.07	0.16	0.33	0.54	0.75	0.88
1988	0.07	0.15	0.30	0.52	0.73	0.87
1989	0.06	0.14	0.28	0.49	0.71	0.86
1990	0.06	0.13	0.27	0.48	0.70	0.85
1991	0.06	0.13	0.27	0.47	0.69	0.85
1992	0.06	0.13	0.27	0.48	0.69	0.85
1993	0.06	0.14	0.28	0.49	0.70	0.85
1994	0.07	0.15	0.30	0.51	0.72	0.87
1995	0.07	0.16	0.33	0.54	0.75	0.88
1996	0.09	0.19	0.36	0.58	0.78	0.90
1997	0.10	0.22	0.40	0.63	0.81	0.91
1998	0.12	0.25	0.45	0.67	0.83	0.92
1999	0.14	0.28	0.49	0.70	0.85	0.94
2000	0.15	0.31	0.52	0.73	0.87	0.94
2001	0.16	0.32	0.54	0.75	0.88	0.95
2002	0.17	0.34	0.56	0.76	0.88	0.95
2003	0.17	0.34	0.56	0.76	0.89	0.95
2004	0.17	0.34	0.56	0.76	0.89	0.95
2005	0.17	0.33	0.55	0.75	0.88	0.95
2006	0.16	0.32	0.54	0.74	0.88	0.95
2007	0.15	0.31	0.52	0.73	0.87	0.94
2008	0.14	0.29	0.51	0.72	0.86	0.94
2009	0.14	0.28	0.49	0.70	0.85	0.94
2010	0.13	0.27	0.47	0.69	0.85	0.93
2011	0.12	0.26	0.46	0.68	0.84	0.93
2012	0.12	0.25	0.45	0.67	0.83	0.93
2013	0.11	0.24	0.44	0.66	0.83	0.92
2014	0.11	0.24	0.43	0.65	0.82	0.92

TAFLA 3.3.6

Ufsi. Aldursskiptar vísitölur úr stofnmælingu botnfiska í mars 1985–2014.

*Saithé.* Age disaggregated indices from the groundfish survey in March 1985–2014.

Ár Year	Aldur Age								
	2	3	4	5	6	7	8	9	10
1985	0.61	0.58	2.99	5.11	1.74	1.06	0.50	1.37	0.16
1986	2.33	2.40	2.06	2.09	1.42	0.62	0.28	0.19	0.32
1987	0.39	11.52	12.93	6.42	3.95	3.07	0.79	0.36	0.26
1988	0.31	0.49	2.72	2.81	1.71	0.95	0.40	0.07	0.08
1989	1.43	3.96	5.05	6.57	2.49	1.77	0.91	0.40	0.00
1990	0.35	1.69	4.86	6.37	12.33	3.30	1.21	0.64	0.12
1991	0.22	1.40	1.72	2.22	1.13	2.50	0.30	0.02	0.03
1992	0.15	0.91	5.73	5.52	2.79	2.68	1.91	0.28	0.06
1993	1.27	11.04	2.00	6.80	2.41	2.25	1.02	4.02	0.64
1994	0.82	0.73	1.89	1.74	1.95	0.53	0.84	1.00	3.62
1995	0.48	1.98	1.12	0.51	0.28	0.34	0.10	0.15	0.15
1996	0.13	0.51	3.76	1.12	0.99	0.58	1.00	0.05	0.09
1997	0.32	0.90	4.72	3.96	0.94	0.40	0.16	0.10	0.05
1998	0.11	1.64	2.33	2.53	1.23	0.71	0.31	0.08	0.07
1999	0.75	3.71	0.93	1.25	1.64	0.57	0.17	0.02	0.02
2000	0.38	2.02	2.54	0.61	0.84	0.53	0.47	0.07	0.03
2001	0.89	1.90	2.64	1.60	0.20	0.23	0.40	0.13	0.07
2002	1.05	2.23	2.97	3.08	2.15	0.42	0.49	0.32	0.22
2003	0.05	9.62	5.06	2.94	1.34	0.77	0.21	0.05	0.10
2004	0.91	1.38	9.39	6.04	4.35	1.48	0.81	0.17	0.16
2005	0.26	4.32	2.39	7.42	4.66	2.31	0.86	0.44	0.12
2006	0.00	2.18	6.69	1.98	8.91	3.52	1.21	0.29	0.25
2007	0.06	0.31	1.73	3.22	0.81	1.62	0.70	0.29	0.16
2008	0.08	2.25	1.79	2.85	4.01	0.61	0.78	0.34	0.15
2009	0.21	2.43	1.80	0.68	0.91	0.84	0.12	0.26	0.15
2010	0.07	1.23	4.99	2.49	0.63	0.60	0.48	0.07	0.13
2011	0.15	3.83	4.20	3.06	1.15	0.41	0.39	0.44	0.17
2012	0.02	1.75	12.04	6.86	2.75	0.62	0.17	0.38	0.50
2013	0.12	4.27	7.43	6.78	4.65	2.57	1.12	0.30	0.44
2014	0.03	0.39	3.84	3.78	2.04	0.86	0.42	0.15	0.11

TAFLA 3.3.7

**Ufsi.** Fjöldi þriggja ára nýliða í milljónum, hrygningar- og viðmiðunarstofn í upphafi árs í þús. tonna, afli í þús. tonna og veiðihlutfall (afli/viðmiðunarstofn).

**Sæthe.** *Recruitment as 3-year-olds in millions, spawning stock and reference biomass in thous. tonnes, landings in thous. tonnes, and harvest rate (landings/reference biomass).*

Ár Year	Nýliðun Recruitment	Hrygningarstofn SSB	Viðmiðunarstofn Biomass 4+	Afli Landings	Veiðihlutfall Harvest rate
1980	28	122	312	58	19%
1981	20	130	304	59	19%
1982	22	149	294	69	23%
1983	32	147	270	58	22%
1984	42	149	287	63	22%
1985	35	140	299	57	19%
1986	67	137	318	65	20%
1987	92	128	335	81	24%
1988	50	124	416	77	19%
1989	32	127	398	82	21%
1990	21	134	378	98	26%
1991	29	143	336	102	30%
1992	15	135	288	80	28%
1993	20	113	230	72	31%
1994	18	94	187	64	34%
1995	30	70	152	49	32%
1996	25	61	148	40	27%
1997	17	62	155	37	24%
1998	9	67	152	32	21%
1999	30	71	130	31	24%
2000	31	72	140	33	24%
2001	53	78	159	32	20%
2002	62	94	215	42	20%
2003	72	118	274	52	19%
2004	26	139	315	65	21%
2005	73	149	280	69	25%
2006	42	157	307	76	25%
2007	19	152	278	64	23%
2008	28	149	249	70	28%
2009	44	137	228	61	27%
2010	45	129	237	54	23%
2011	57	127	256	51	20%
2012	45	131	281	52	18%
2013	42	143	298	58	19%
2014	18	150	296		
2015	32				

TAFLA 3.3.8

Ufsi. Stofnstærð í fjölda eftir aldri (í milljónum) á árunum 1980–2014.  
*Saithe. Stock abundance in numbers at age (millions) in the years 1980–2014.*

Ár Year	Aldur Age											
	3	4	5	6	7	8	9	10	11	12	13	14
1980	28.223	46.810	30.893	10.285	8.144	3.699	1.298	0.721	0.661	0.506	0.335	0.123
1981	20.151	22.732	35.193	21.177	6.268	4.638	1.954	0.707	0.381	0.378	0.289	0.192
1982	21.592	16.258	17.245	24.583	13.316	3.710	2.567	1.111	0.391	0.226	0.225	0.172
1983	32.184	17.382	12.191	11.756	14.844	7.498	1.933	1.380	0.579	0.221	0.128	0.127
1984	41.850	25.996	13.264	8.619	7.542	9.005	4.275	1.130	0.787	0.353	0.135	0.078
1985	35.418	33.826	19.904	9.444	5.595	4.642	5.225	2.540	0.656	0.486	0.218	0.083
1986	66.856	28.604	25.794	14.053	6.045	3.385	2.638	3.045	1.443	0.398	0.295	0.132
1987	91.843	53.884	21.580	17.810	8.668	3.494	1.820	1.461	1.638	0.838	0.231	0.171
1988	50.456	73.739	39.848	14.293	10.252	4.601	1.696	0.916	0.709	0.874	0.447	0.123
1989	31.911	40.574	54.984	26.851	8.466	5.637	2.330	0.888	0.464	0.392	0.483	0.247
1990	20.776	25.685	30.396	37.410	16.162	4.748	2.924	1.247	0.461	0.261	0.221	0.272
1991	29.469	16.683	19.004	20.153	31.371	8.598	2.310	1.475	0.607	0.246	0.140	0.118
1992	14.769	23.629	12.254	12.410	11.331	16.179	4.030	1.126	0.691	0.315	0.128	0.072
1993	19.772	11.847	17.394	8.038	7.030	5.898	7.669	1.984	0.534	0.362	0.165	0.067
1994	17.570	15.832	8.641	11.193	4.410	3.518	2.666	3.612	0.897	0.269	0.182	0.083
1995	29.664	14.027	11.367	5.381	5.816	2.064	1.467	1.165	1.506	0.423	0.127	0.086
1996	25.404	23.667	10.039	7.033	2.766	2.686	0.847	0.631	0.478	0.700	0.197	0.059
1997	16.694	20.333	17.220	6.427	3.826	1.370	1.199	0.394	0.282	0.238	0.349	0.098
1998	8.539	13.194	14.406	11.183	3.841	2.060	0.661	0.552	0.185	0.130	0.110	0.161
1999	29.882	6.793	9.600	9.764	7.083	2.235	1.096	0.339	0.287	0.095	0.067	0.056
2000	30.757	23.738	4.915	6.448	6.109	4.054	1.165	0.549	0.172	0.144	0.048	0.034
2001	53.172	24.389	17.048	3.262	3.970	3.422	2.057	0.567	0.271	0.084	0.070	0.023
2002	62.372	42.372	17.876	11.690	2.099	2.359	1.870	1.085	0.303	0.143	0.044	0.037
2003	71.739	49.574	30.727	12.050	7.350	1.209	1.240	0.945	0.556	0.153	0.073	0.022
2004	25.515	57.064	36.066	20.821	7.630	4.275	0.643	0.635	0.490	0.285	0.079	0.037
2005	72.929	19.955	37.920	22.897	12.884	4.751	2.655	0.385	0.355	0.253	0.147	0.041
2006	42.010	56.802	13.013	23.527	13.815	7.827	2.878	1.545	0.208	0.176	0.125	0.073
2007	19.066	32.619	36.522	7.936	13.929	8.239	4.654	1.639	0.814	0.100	0.084	0.060
2008	28.414	14.870	21.404	22.831	4.828	8.531	5.032	2.733	0.897	0.409	0.050	0.042
2009	44.404	22.015	9.468	12.898	13.341	2.843	5.007	2.824	1.415	0.421	0.192	0.024
2010	45.071	34.567	14.321	5.857	7.757	8.078	1.716	2.902	1.521	0.697	0.207	0.095
2011	56.806	35.326	23.199	9.202	3.673	4.893	5.084	1.043	1.654	0.802	0.368	0.109
2012	44.947	44.760	24.286	15.350	5.960	2.391	3.179	3.202	0.621	0.920	0.446	0.205
2013	41.503	35.514	31.162	16.318	10.111	3.945	1.580	2.040	1.951	0.355	0.527	0.255
2014	17.840	32.723	24.485	20.692	10.610	6.608	2.573	0.999	1.221	1.092	0.199	0.295

**TAFLA 3.3.9**  
**Ufsi.** Veðiðánartala eftir aldri á árunum 1980–2013.  
*Saithe.* Fishing mortality by age in the years 1980–2013.

Ár Year	Aldur Age											
	3	4	5	6	7	8	9	10	11	12	13	14
1980	0.016	0.085	0.178	0.295	0.363	0.438	0.408	0.438	0.359	0.359	0.359	0.359
1981	0.015	0.076	0.159	0.264	0.325	0.392	0.364	0.392	0.321	0.321	0.321	0.321
1982	0.017	0.088	0.183	0.304	0.374	0.452	0.420	0.452	0.370	0.370	0.370	0.370
1983	0.014	0.070	0.147	0.244	0.300	0.362	0.337	0.362	0.296	0.296	0.296	0.296
1984	0.013	0.067	0.140	0.232	0.285	0.344	0.320	0.344	0.282	0.282	0.282	0.282
1985	0.014	0.071	0.148	0.246	0.303	0.365	0.340	0.365	0.299	0.299	0.299	0.299
1986	0.016	0.082	0.170	0.283	0.348	0.420	0.391	0.420	0.344	0.344	0.344	0.344
1987	0.020	0.102	0.212	0.352	0.433	0.523	0.487	0.523	0.428	0.428	0.428	0.428
1988	0.018	0.093	0.195	0.324	0.398	0.480	0.447	0.480	0.393	0.393	0.393	0.393
1989	0.017	0.089	0.185	0.308	0.378	0.457	0.425	0.457	0.374	0.374	0.374	0.374
1990	0.019	0.101	0.211	0.351	0.431	0.520	0.484	0.520	0.426	0.426	0.426	0.426
1991	0.021	0.109	0.226	0.376	0.462	0.558	0.519	0.558	0.457	0.457	0.457	0.457
1992	0.020	0.106	0.222	0.368	0.453	0.547	0.509	0.547	0.448	0.448	0.448	0.448
1993	0.022	0.116	0.241	0.400	0.492	0.594	0.553	0.594	0.486	0.486	0.486	0.486
1994	0.025	0.131	0.274	0.455	0.559	0.675	0.628	0.675	0.553	0.553	0.553	0.553
1995	0.026	0.134	0.280	0.466	0.573	0.691	0.643	0.691	0.566	0.566	0.566	0.566
1996	0.023	0.118	0.246	0.409	0.503	0.607	0.565	0.607	0.497	0.497	0.497	0.497
1997	0.035	0.145	0.232	0.315	0.419	0.528	0.575	0.559	0.572	0.572	0.572	0.572
1998	0.029	0.118	0.189	0.257	0.342	0.431	0.469	0.456	0.467	0.467	0.467	0.467
1999	0.030	0.124	0.198	0.269	0.358	0.451	0.491	0.478	0.489	0.489	0.489	0.489
2000	0.032	0.131	0.210	0.285	0.379	0.479	0.521	0.506	0.518	0.518	0.518	0.518
2001	0.027	0.111	0.177	0.241	0.320	0.404	0.440	0.428	0.438	0.438	0.438	0.438
2002	0.030	0.121	0.194	0.264	0.351	0.443	0.482	0.469	0.480	0.480	0.480	0.480
2003	0.029	0.118	0.189	0.257	0.342	0.431	0.469	0.456	0.467	0.467	0.467	0.467
2004	0.046	0.209	0.254	0.280	0.274	0.276	0.313	0.380	0.461	0.461	0.461	0.461
2005	0.050	0.228	0.277	0.305	0.298	0.301	0.342	0.415	0.503	0.503	0.503	0.503
2006	0.053	0.242	0.295	0.324	0.317	0.320	0.363	0.440	0.534	0.534	0.534	0.534
2007	0.049	0.221	0.270	0.297	0.290	0.293	0.332	0.403	0.489	0.489	0.489	0.489
2008	0.055	0.251	0.306	0.337	0.330	0.333	0.378	0.458	0.556	0.556	0.556	0.556
2009	0.050	0.230	0.280	0.309	0.302	0.304	0.345	0.419	0.508	0.508	0.508	0.508
2010	0.044	0.199	0.242	0.267	0.261	0.263	0.298	0.362	0.439	0.439	0.439	0.439
2011	0.038	0.175	0.213	0.234	0.229	0.231	0.262	0.318	0.386	0.386	0.386	0.386
2012	0.036	0.162	0.198	0.217	0.213	0.215	0.243	0.295	0.358	0.358	0.358	0.358
2013	0.038	0.172	0.209	0.231	0.225	0.227	0.258	0.313	0.380	0.380	0.380	0.380



TAFLA 3.3.10

Ufsi. Forsendur í framreikningum á þróun stofnsins árin 2015–2016.  
Náttúrulegur dánarstuðull  $M=0.2$ .

*Saithé.* Input parameters for catch and stock projection for the years 2015–2016.  
Natural mortality coefficient,  $M=0.2$ .

Aldur	Stofnstærð	Veiðimynstur	Meðalþyngd (kg) í afla og stofni	Kynþroskahlutfall
Age	Stock size	Selectivity	Mean weight (kg) in catch and stock	Maturity at age
	2014	2014–2015	2014–2016	2014–2016
3	17.840	0.10	1.130	0.00
4	32.723	0.45	1.525	0.11
5	24.485	0.55	2.319	0.24
6	20.692	0.61	3.042	0.43
7	10.610	0.59	4.163	0.65
8	6.608	0.60	5.568	0.82
9	2.573	0.68	6.913	0.92
10	0.999	0.82	6.656	1.00
11	1.221	1.00	7.150	1.00
12	1.092	1.00	7.683	1.00
13	0.199	1.00	8.272	1.00
14	0.295	1.00	8.910	1.00

Stofnstærð:	Stofnstærð í milljónum fiska í ársbyrjun 2014.
Veiðimynstur:	Hlutfallsleg fiskveiðidánartala hvers aldursflokks. Valferill metinn í stofnlíkani fyrir árin 2004–2013.
Meðalþyngd í afla og stofni:	Meðalþyngd 4–9 ára spáð út frá meðalþyngd sama aldursflokks í afla 2013 og meðalþyngd í stofnmælingu 2014. Meðalþyngd annarra aldurs hópa spáð út frá meðaltali í afla síðustu þriggja ára. Spágildi fyrir 2014 einnig notuð 2015–2016.
Hlutfall kynþroska:	Jafnaður meðalkynþroski eftir aldri í stofnmælingu 2014.
<i>Stock size:</i>	<i>Stock size in millions in 2014.</i>
<i>Selectivity:</i>	<i>Relative fishing mortality on each age group. Selectivity estimated in separable stock model for the period 2004–2013.</i>
<i>Mean weight at age in catch:</i>	<i>Mean weight of ages 4–9 predicted from weight at age in landings of same year class in 2013 and weight at age in spring survey 2014. Mean weight of other ages predicted from the average of last three years of catch weights. Predicted values for 2014 also used for 2015–2016.</i>
<i>Maturity at age:</i>	<i>Smoothed maturity at age from the spring survey 2014.</i>

TAFLA 3.4.1

**Gullkarfi.** Afli (í tonnum) á Íslandsmiðum ásamt heildarafla (Ísland, Grænland, Færeyjar) 1978–2013.  
**Golden redfish.** Landings (in tonnes) of *Sebastes norvegicus* from Icelandic waters and total landings (Iceland, Greenland, Faroes) 1978–2013.

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals Íslandsmið <i>Total Iceland</i>	Önnur svæði <i>Other areas</i>	Samtals <i>Total</i>
1978	29 625	1 675	31 300	17 829	49 129
1979	54 805	1 811	56 616	20 598	77 214
1980	59 931	2 121	62 052	27 125	89 177
1981	74 107	1 721	75 828	26 149	101 977
1982	96 772	1 127	97 899	32 530	130 429
1983	86 164	1 248	87 412	19 090	106 502
1984	83 999	767	84 766	11 354	96 120
1985	66 801	511	67 312	11 556	78 868
1986	67 242	530	67 772	9 576	77 348
1987	68 636	576	69 212	7 915	77 127
1988	79 834	638	80 472	9 517	89 989
1989	51 523	329	51 852	5 198	57 050
1990	62 677	479	63 156	3 476	66 632
1991	49 392	285	49 677	6 687	56 364
1992	50 968	496	51 464	4 246	55 710
1993	45 356	534	45 890	4 460	50 350
1994	38 417	252	38 669	3 846	42 515
1995	40 995	521	41 516	3 249	44 765
1996	33 249	309	33 558	3 039	36 597
1997	36 100	242	36 342	3 419	39 761
1998	36 481	290	36 771	3 054	39 825
1999	39 461	363	39 824	2 216	42 040
2000	40 758	429	41 187	2 363	43 550
2001	34 634	433	35 067	2 259	37 326
2002	48 454	116	48 570	2 522	51 092
2003	36 461	116	36 577	2 643	39 220
2004	31 421	265	31 686	1 765	33 451
2005	42 404	189	42 593	2 736	45 329
2006	41 363	158	41 521	690	42 211
2007	38 276	88	38 364	772	39 136
2008	45 416	122	45 538	713	46 251
2009	38 294	148	38 442	736	39 177
2010	36 031	128	36 159	2 508	38 648
2011	43 630	143	43 773	2 252	46 025
2012	42 937	166	43 103	2 175	45 278
2013 <sup>1)</sup>	51 162	168	51 330	2 127	53 457

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

**TAFLA 3.5.1**  
**Djúpkarfi.** Afli (í tonnum) á Íslandsmiðum 1978–2013.  
*Demersal deep sea redfish. Landings (in tonnes) of *Sebastes mentella* from Icelandic waters 1978–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1978	3 693	209	3 902
1979	7 448	246	7 694
1980	9 849	348	10 197
1981	19 242	447	19 689
1982	18 279	213	18 492
1983	36 585	530	37 115
1984	24 271	222	24 493
1985	24 580	188	24 768
1986	18 750	148	18 898
1987	19 132	161	19 293
1988	14 177	113	14 290
1989	40 013	256	40 269
1990	28 214	215	28 429
1991	47 378	273	47 651
1992	43 414	-	43 414
1993	51 221	-	51 221
1994	56 674	46	56 720
1995	48 479	229	48 708
1996	34 508	233	34 741
1997	37 876	-	37 876
1998	32 841	284	33 125
1999	27 475	1 115	28 590
2000	30 185	1 208	31 393
2001	15 415	1 815	17 230
2002	17 870	1 175	19 045
2003	26 295	2 183	28 478
2004	16 226	1 338	17 564
2005	19 109	1 454	20 563
2006	16 339	869	17 208
2007	17 091	282	17 373
2008	24 123	-	24 123
2009	19 430	-	19 430
2010	17 642	-	17 642
2011	11 738	-	11 738
2012	11 965	-	11 965
2013 <sup>1)</sup>	8 761	-	8 761

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.5.2

Úthafskarfi – efri og neðri stofnar. Afli (í tonnum) á Íslandsmiðum ásamt heildarafla (Grænlandshaf og aðliggjandi hafsvæði) 1982–2013 samkvæmt gögnum Alþjóðahafrannsóknaráðsins.  
*Pelagic deep sea redfish – shallow and deep stocks. Landings (in tonnes) of *S. mentella* from Icelandic waters and total catches (Irminger Sea and adjacent waters) 1982–2013 according to ICES data.*

Ár Year	Úthafskarfi – efri stofn <i>Shallow pelagic <i>S. mentella</i></i>			Úthafskarfi – neðri stofn <i>Deep pelagic <i>S. mentella</i></i>		
	Íslandsmið Iceland	Önnur mið Other areas	Samtals Total	Íslandsmið Iceland	Önnur mið Other areas	Samtals Total
1982	-	60 581	60 581	-	-	-
1983	-	60 234	60 234	-	-	-
1984	-	64 832	64 832	-	-	-
1985	-	71 671	71 671	-	-	-
1986	-	105 107	105 107	-	-	-
1987	-	91 169	91 169	-	-	-
1988	-	91 419	91 419	-	-	-
1989	-	38 784	38 784	-	-	-
1990	-	31 901	31 901	-	-	-
1991	-	27 179	27 179	-	59	59
1992	106	62 457	62 564	1 862	1 536	3 398
1993	-	100 771	100 771	2 603	12 461	15 064
1994	665	96 204	96 869	14 807	37 013	51 820
1995	77	100 058	100 136	1 466	74 241	75 707
1996	16	41 753	41 770	4 728	133 825	138 552
1997	321	27 425	27 746	14 980	80 099	95 079
1998	284	23 866	24 150	40 328	52 490	92 818
1999	165	25 347	25 512	36 359	47 793	84 153
2000	3 375	29 841	33 216	41 302	51 811	93 113
2001	228	41 597	41 825	27 920	59 073	86 993
2002	10	43 205	43 216	37 269	65 860	103 128
2003	49	56 639	56 688	46 627	57 669	104 296
2004	10	33 941	33 951	14 446	77 508	91 954
2005	-	28 229	28 229	11 726	33 759	45 485
2006	-	15 734	15 734	16 452	50 836	67 288
2007	71	6 054	6 126	17 769	40 748	58 516
2008	32	2 027	2 059	4 602	25 443	30 045
2009	-	2 380	2 380	16 828	37 578	54 406
2010	15	2 183	2 198	8 552	50 736	59 288
2011	-	234	234	-	47 333	47 333
2012	28	3 145	3 173	5 530	27 276	32 806
2013	32	1 495	1 527	5 274	40 320	45 594

**TAFLA 3.5.3**  
**Úthafskarfi – efri stofn.** Afli (í tonnum) eftir þjóðum 1982–2013.  
*Pelagic deep sea redfish – shallow stock. Landings (in tonnes) of *S. mentella* by nations 1982–2013.*

Ár Year	Ísland Iceland	Rússland Russia	Þýskaland Germany	Færeyjar Faroes	Grænland Greenland	Noregur Norway	Spánn Spain	Portúgal Portugal	Litháen Lithuania	Eistland Estonia	Lettland Latvia	Aðrar þjóðir <sup>1)</sup> Other nations	Samtals Total
1982	-	60 000	-	-	-	-	-	-	-	-	-	581	60 581
1983	-	60 079	155	-	-	-	-	-	-	-	-	-	60 234
1984	-	60 643	989	-	-	-	-	-	-	-	-	3 200	64 832
1985	-	60 273	5 438	-	-	-	-	-	-	-	-	5 960	71 671
1986	-	84 994	8 574	5	-	-	-	-	-	-	-	11 534	105 107
1987	-	71 469	7 023	382	-	-	-	-	-	-	-	12 295	91 169
1988	-	65 026	16 848	1 090	-	-	-	-	-	-	-	8 455	91 419
1989	3 816	22 720	6 797	226	567	-	-	-	-	-	-	4 658	38 784
1990	4 537	9 632	7 957	-	-	7 085	-	-	-	-	-	2 690	31 901
1991	8 724	9 747	201	115	-	6 197	-	-	-	2 195	-	-	27 179
1992	12 080	15 733	6 447	3 765	9	14 654	-	-	6 656	1 810	780	630	62 564
1993	10 167	25 229	16 677	6 812	710	14 112	-	-	7 899	6 365	6 803	5 998	100 771
1994	5 897	16 349	15 133	2 896	-	6 834	-	1 510	7 404	17 875	13 205	9 767	96 869
1995	8 733	28 314	10 714	3 667	277	4 288	4 327	2 170	16 025	11 798	3 502	6 319	100 136
1996	5 760	9 348	5 696	2 523	1 866	1 681	1 671	476	5 618	3 741	572	2 819	41 770
1997	4 446	3 693	9 276	3 510	-	330	1 812	367	-	3 405	-	906	27 746
1998	1 983	89	9 679	2 990	1 161	701	1 819	60	1 734	3 892	-	42	24 150
1999	3 662	6 538	8 271	1 190	998	2 098	447	62	-	2 055	-	189	25 512
2000	3 766	14 373	5 672	486	956	2 124	1 154	37	430	4 218	-	-	33 216
2001	14 745	5 964	4 755	4 364	1 083	947	1 433	256	8 269	9	-	-	41 825
2002	5 229	13 958	5 354	719	657	1 094	1 005	878	12 052	-	1 841	428	43 216
2003	4 274	15 418	3 579	1 955	1 047	3 214	1 461	1 926	21 629	-	1 269	917	56 688
2004	5 728	13 208	1 126	777	750	2 721	1 679	2 133	3 698	-	1 114	1 018	33 951
2005	3 086	15 562	1 152	210	-	624	1 557	2 780	1 169	-	919	1 170	28 229
2006	1 293	4 953	994	334	-	280	3 576	1 372	466	-	1 803	663	15 734
2007	71	4 037	-	98	-	-	339	529	467	209	186	189	6 126
2008	63	1 597	-	319	-	-	36	-	8	-	-	-	2 059
2009	5	649	-	87	-	-	1 438	-	138	-	-	-	2 380
2010	22	567	-	653	-	12	16	377	551	-	-	-	2 198
2011	72	-	-	162	-	-	-	-	-	-	-	-	234
2012	28	3 145	-	-	-	-	-	-	-	-	-	-	3 173
2013	72	1 455	-	-	-	-	-	-	-	-	-	-	1 527

<sup>1)</sup> Búlgaríá, Kanada, Frakkland, Japan, Holland, Pólland, Bretland, Úkraína.  
*Bulgaria, Canada, France, Japan, Netherlands, Poland, United Kingdom, Ukraine.*

**TAFLA 3.5.4**  
**Úthafskarfi – neðri stofn.** Afli (í tonnum) eftir þjóðum 1982–2013.  
*Pelagic deep sea redfish – deep stock. Landings (in tonnes) of *S. mentella* by nations 1982–2013.*

Ár Year	Ísland Iceland	Rússland Russia	Þýskaland Germany	Færeyjar Faroes	Grænland Greenland	Noregur Norway	Spánn Spain	Portúgal Portugal	Litháen Lithuania	Eistland Estonia	Lettland Latvia	Aðrar þjóðir <sup>1)</sup> Other nations	Samtals Total
1990	-	-	-	-	-	-	-	-	-	-	-	-	-
1991	59	-	-	-	-	-	-	-	-	-	-	-	59
1992	3 398	-	-	-	-	-	-	-	-	-	-	-	3 398
1993	12 741	-	1 135	310	-	878	-	-	-	-	-	-	15 064
1994	47 435	1 465	2 019	-	-	523	-	377	-	-	-	-	51 820
1995	25 898	15 868	8 271	1 572	1 579	3 169	227	2 955	6 868	5 056	1 501	2 744	75 707
1996	57 143	36 400	15 549	3 748	1 671	5 161	5 558	1 903	5 031	3 351	512	2 524	138 552
1997	36 830	33 237	11 200	435	-	2 849	6 895	3 307	-	315	-	12	95 079
1998	46 537	25 748	8 368	4 484	302	438	2 758	4 073	34	76	-	1	92 818
1999	40 261	11 419	8 218	3 466	3 271	3 337	9 885	4 240	-	53	-	5	84 153
2000	41 466	14 851	6 827	2 367	3 327	3 108	9 740	3 694	-	7 733	-	-	93 113
2001	27 727	23 810	5 914	3 377	2 360	4 275	8 649	2 488	7 515	878	-	-	86 993
2002	39 263	25 309	7 858	3 664	3 442	4 197	7 402	2 208	9 771	15	-	-	103 128
2003	44 620	28 638	7 028	3 938	3 403	5 185	9 374	2 109	-	-	-	-	104 296
2004	31 098	31 067	2 251	4 670	2 419	6 277	9 996	2 286	-	-	-	1 889	91 954
2005	12 919	16 323	1 836	1 800	1 431	3 950	3 871	1 088	1 027	-	-	1 240	45 485
2006	20 948	23 670	1 830	3 498	744	5 968	6 673	1 313	1 294	-	-	1 356	67 288
2007	18 097	21 337	1 110	2 902	1 961	4 628	3 810	2 067	1 394	-	575	636	58 516
2008	6 722	15 106	-	2 632	1 170	571	1 179	1 733	749	-	-	219	30 045
2009	15 524	25 309	-	3 403	1 519	-	2 907	1 596	2 613	-	1 355	178	54 406
2010	14 772	22 803	-	3 195	1 932	2 388	7 801	2 203	2 228	-	1 963	3	59 288
2011	11 994	22 364	1 787	2 028	-	1 066	4 361	1 540	1 348	-	845	-	47 333
2012	5 912	18 377	1 523	1 438	-	3 362	632	250	588	-	724	-	32 806
2013	8 545	26 452	1 176	1 719	-	2 680	2 662	-	1 163	-	1 197	-	45 594

<sup>1)</sup> Búlgaría, Kanada, Frakkland, Japan, Holland, Pólland, Bretland, Úkraína.  
*Bulgaria, Canada, France, Japan, Netherlands, Poland, United Kingdom, Ukraine.*

**TAFLA 3.6.1**  
**Litli karfi.** Afli (í tonnum) á Íslandsmiðum 1996–2013.  
*Norway haddock. Landings (in tonnes) from Icelandic waters 1996–2013.*

Ár Year	Ísland Iceland
1996	22
1997	1 159
1998	994
1999	498
2000	227
2001	21
2002	20
2003	3
2004	2
2005	4
2006	9
2007	24
2008	15
2009	37
2010	2 602
2011	1 427
2012	535
2013 <sup>1)</sup>	532

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*



**TAFLA 3.7.1**  
**Grálúða.** Afli (í tonnum) árin 1961–2013.  
*Greenland halibut. Landings (in tonnes) 1961–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1961	-	2 513	2 513
1962	-	2 730	2 730
1963	-	3 901	3 901
1964	-	4 740	4 740
1965	-	6 755	6 755
1966	6	8 046	8 052
1967	1	30 698	30 699
1968	1	21 871	21 872
1969	5 856	18 465	24 321
1970	7 343	26 480	33 823
1971	5 020	23 953	28 973
1972	4 640	21 832	26 472
1973	2 115	18 348	20 463
1974	2 842	33 438	36 280
1975	1 212	22 282	23 494

Ár <i>Year</i>	Íslandsmið (Svæði Va) <sup>2)</sup> <i>Icelandic waters (Va)<sup>2)</sup></i>		Önnur svæði (XII, XIV,Vb,VI) <sup>2)</sup> <i>Other areas (XII, XIV,Vb, VI)<sup>2)</sup></i>			Samtals <i>Total</i>
	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Færeyjar <i>Faeroes</i>	Austur-Grænland <i>East Greenland</i>	Önnur svæði <sup>3)</sup> <i>Other areas<sup>3)</sup></i>	
1976	1 686	3 761	324	273	-	6 044
1977	10 090	5 589	658	306	-	16 643
1978	11 319	269	595	2 176	-	14 359
1979	16 934	42	409	6 231	-	23 616
1980	27 836	91	1 177	2 148	-	31 252
1981	15 455	325	566	2 893	-	19 239
1982	28 300	669	1 032	2 440	-	32 441
1983	28 429	33	1 436	1 060	-	30 958
1984	30 163	46	3 065	835	-	34 109
1985	29 319	2	2 126	753	-	32 200
1986	31 142	-	940	1 017	-	33 099
1987	44 889	15	1 043	820	-	46 767
1988	49 189	379	969	770	-	51 307
1989	58 497	942	1 606	518	-	61 563
1990	36 679	751	1 282	736	-	39 448
1991	34 875	273	1 662	875	-	37 685
1992	32 026	23	2 269	1 240	-	35 558
1993	33 972	166	4 470	2 275	-	40 883
1994	27 696	912	5 224	3 180	-	37 012
1995	27 391	15	3 832	5 077	-	36 300
1996	22 072	18	6 469	6 914	369	35 826
1997	16 766	26	4 917	6 688	1 870	30 267
1998	10 580	15	3 825	5 940	-	20 360
1999	11 085	23	4 265	4 998	-	20 371
2000	14 492	27	5 092	6 758	-	26 569
2001	16 590	118	3 951	6 588	-	27 291
2002	19 229	466	2 694	6 750	102	29 258
2003	20 353	44	2 194	8 017	-	30 587
2004	15 478	21	1 717	9 590	-	26 785
2005	13 023	218	892	10 185	-	24 318
2006	11 798	19	873	8 589	184	21 463
2007	9 580	945	1 060	10 261	27	21 873
2008	11 672	187	1 759	9 102	1 195	24 481
2009	15 089	693	1 739	9 805	15	27 341
2010	13 294	834	1 413	10 402	52	25 995
2011	13 216	856	1 489	10 761	124	26 446
2012	13 505	628	2 163	12 475	634	29 405
2013 <sup>1)</sup>	14 858	73	2 582	8 694	716	26 923

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

<sup>2)</sup> Svæðaskipting Alþjóðahafrannsóknaráðsins. *ICES statistical areas.*

<sup>3)</sup> Afli á svæði XII og VI. *ICES statistical areas XII and VI.*

**TAFLA 3.8.1**  
**Lúða.** Afli (í tonnum) á Íslandsmiðum 1950–2013.  
*Halibut. Landings (in tonnes) from Icelandic waters 1950–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1950	1 323	4 577	5 900
1951	2 364	4 220	6 585
1952	1 823	3 698	5 521
1953	1 073	3 701	4 774
1954	754	2 728	3 482
1955	410	2 202	2 612
1956	710	1 908	2 618
1957	1 498	2 894	4 392
1958	1 121	4 397	5 518
1959	1 126	3 971	5 097
1960	1 701	3 771	5 472
1961	1 618	2 397	4 015
1962	1 517	3 407	4 924
1963	1 202	3 451	4 653
1964	1 089	2 670	3 759
1965	946	3 114	4 060
1966	898	1 749	2 647
1967	1 018	1 787	2 805
1968	940	1 151	2 091
1969	842	1 235	2 077
1970	1 103	2 109	3 212
1971	1 284	1 828	3 112
1972	1 088	1 237	2 325
1973	1 032	968	2 000
1974	977	785	1 762
1975	1 168	726	1 894
1976	1 632	665	2 297
1977	1 717	609	2 326
1978	1 462	375	1 837
1979	1 587	460	2 047
1980	1 215	450	1 665
1981	1 012	186	1 198
1982	1 174	133	1 307
1983	1 309	436	1 745
1984	1 700	354	2 054
1985	1 695	246	1 941
1986	1 623	362	1 985
1987	1 537	577	2 114
1988	1 544	460	2 004
1989	1 259	468	1 727
1990	1 639	278	1 917
1991	1 895	429	2 324
1992	1 155	386	1 541
1993	1 363	385	1 748
1994	1 195	391	1 586
1995	887	232	1 119
1996	837	139	976
1997	646	113	759
1998	501	181	682
1999	567	202	769
2000	493	74	567
2001	589	79	668
2002	683	86	769
2003	637	54	691
2004	556	114	670
2005	516	114	630
2006	447	112	559
2007	419	97	516
2008	472	57	529
2009	498	50	548
2010	528	29	557
2011	532	23	555
2012	35	1	36
2013 <sup>1)</sup>	44	-	44

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

**TAFLA 3.9.1**  
**Skarkoli.** Afli (í tonnum) á Íslandsmiðum 1950–2013.  
*Plaice. Landings (in tonnes) from Icelandic waters 1950–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1950	3 834	5 338	9 172
1951	4 183	4 256	8 439
1952	1 457	3 121	4 578
1953	350	4 343	4 693
1954	289	5 374	5 663
1955	259	7 474	7 733
1956	515	7 373	7 888
1957	1 622	7 981	9 603
1958	648	7 515	8 163
1959	921	7 507	8 428
1960	3 405	4 654	8 059
1961	4 226	6 775	11 001
1962	5 010	6 401	11 411
1963	3 325	6 333	9 658
1964	5 336	4 032	9 368
1965	7 286	3 704	10 990
1966	7 354	4 521	11 875
1967	5 644	5 736	11 380
1968	6 144	4 126	10 270
1969	10 764	3 267	14 031
1970	8 117	1 901	10 018
1971	7 179	2 509	9 688
1972	5 129	1 367	6 496
1973	4 137	641	4 778
1974	3 936	85	4 021
1975	4 399	176	4 575
1976	4 993	32	5 025
1977	5 267	3	5 270
1978	4 499	5	4 504
1979	4 491	1	4 492
1980	5 145	-	5 145
1981	3 840	35	3 875
1982	6 303	28	6 331
1983	8 552	-	8 552
1984	11 334	1	11 335
1985	14 508	2	14 510
1986	12 738	-	12 738
1987	11 192	-	11 192
1988	14 078	9	14 087
1989	11 330	-	11 330
1990	11 400	-	11 400
1991	10 792	-	10 792
1992	10 494	-	10 494
1993	12 522	-	12 522
1994	11 854	-	11 854
1995	10 649	-	10 649
1996	11 063	-	11 063
1997	10 540	-	10 540
1998	7 106	-	7 106
1999	7 064	-	7 064
2000	5 218	-	5 218
2001	4 905	-	4 905
2002	5 126	-	5 126
2003	5 236	-	5 236
2004	5 693	-	5 693
2005	5 794	-	5 794
2006	6 369	-	6 369
2007	5 816	-	5 816
2008	6 718	-	6 718
2009	6 316	-	6 316
2010	5 983	-	5 983
2011	4 943	-	4 943
2012	5 930	-	5 930
2013 <sup>1)</sup>	5 985	-	5 985

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

**TAFLA 3.10.1**

**Sandkoli.** Afli (í tonnum) á Íslandsmiðum árin 1984–2013.  
**Dab.** Landings (in tonnes) from Icelandic waters 1984–2013.

Ár <i>Year</i>	Afli <i>Catch</i>
1984	447
1985	950
1986	1 258
1987	1 186
1988	3 780
1989	2 238
1990	1 898
1991	2 632
1992	3 045
1993	4 233
1994	5 159
1995	5 557
1996	7 954
1997	7 891
1998	5 061
1999	3 981
2000	3 015
2001	4 373
2002	4 358
2003	4 212
2004	2 953
2005	2 115
2006	1 080
2007	810
2008	792
2009	882
2010	612
2011	903
2012	859
2013 <sup>1)</sup>	724

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

**TAFLA 3.11.1**

**Skrápflúra.** Afli (í tonnum) á Íslandsmiðum 1987–2013.  
**Long rough dab.** Landings (in tonnes) from Icelandic waters 1987–2013.

Ár <i>Year</i>	Afli <i>Catch</i>
1987	32
1988	166
1989	565
1990	653
1991	1 710
1992	1 468
1993	1 350
1994	2 694
1995	5 356
1996	6 435
1997	5 709
1998	3 118
1999	3 823
2000	3 176
2001	3 469
2002	3 579
2003	2 830
2004	2 018
2005	874
2006	744
2007	358
2008	275
2009	290
2010	219
2011	178
2012	140
2013 <sup>1)</sup>	79

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.12.1

**Langlúra.** Afli (í tonnum) á Íslandsmiðum 1950–2013.  
*Witch.* Landings (in tonnes) from Icelandic waters 1950–2013.

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1950	88	1 018	1 106
1951	81	1 083	1 164
1952	30	720	750
1953	138	456	594
1954	112	666	778
1955	34	741	775
1956	167	715	882
1957	200	892	1 092
1958	372	814	1 186
1959	646	653	1 299
1960	931	486	1 417
1961	725	570	1 295
1962	559	644	1 203
1963	431	614	1 045
1964	469	355	824
1965	412	473	885
1966	122	237	359
1967	162	224	386
1968	132	226	358
1969	166	213	379
1970	169	212	381
1971	125	221	346
1972	138	65	203
1973	22	37	59
1974	52	26	78
1975	69	10	79
1976	143	4	147
1977	115	-	115
1978	120	-	120
1979	140	-	140
1980	19	-	19
1981	3	-	3
1982	54	-	54
1983	10	-	10
1984	11	-	11
1985	32	-	32
1986	335	-	335
1987	4 566	-	4 566
1988	2 974	-	2 974
1989	2 267	-	2 267
1990	1 278	-	1 278
1991	1 775	-	1 775
1992	2 562	-	2 562
1993	1 659	-	1 659
1994	1 772	-	1 772
1995	1 812	-	1 812
1996	1 490	-	1 490
1997	1 271	-	1 271
1998	948	-	948
1999	1 406	-	1 406
2000	1 098	-	1 098
2001	1 132	-	1 132
2002	1 147	-	1 147
2003	1 947	-	1 947
2004	2 123	-	2 123
2005	2 324	-	2 324
2006	2 030	-	2 030
2007	1 805	-	1 805
2008	1 426	-	1 426
2009	1 789	-	1 789
2010	1 326	-	1 326
2011	1 324	-	1 324
2012	1 313	-	1 313
2013 <sup>1)</sup>	1 163	-	1 163

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.13.1

**Þykkvalúra.** Afli (í tonnum) á Íslandsmiðum árin 1951–2013.  
*Lemon sole. Landings (in tonnes) from Icelandic waters 1951–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1951	634	1 389	2 023
1952	347	1 347	1 694
1953	128	1 500	1 628
1954	66	1 539	1 605
1955	30	1 299	1 329
1956	336	1 148	1 484
1957	1 230	1 348	2 578
1958	159	1 453	1 612
1959	224	1 400	1 624
1960	646	1 569	2 215
1961	1 314	1 346	2 660
1962	1 183	1 384	2 567
1963	1 077	1 802	2 879
1964	660	1 692	2 352
1965	774	1 786	2 560
1966	564	978	1 542
1967	347	1 071	1 418
1968	497	873	1 370
1969	453	639	1 092
1970	328	563	891
1971	283	530	813
1972	255	526	781
1973	175	300	475
1974	84	248	332
1975	67	259	326
1976	63	139	202
1977	11	27	38
1978	24	7	31
1979	47	7	54
1980	63	16	79
1981	77	22	99
1982	86	12	98
1983	112	7	119
1984	73	7	80
1985	368	13	381
1986	489	8	497
1987	677	5	682
1988	857	5	862
1989	805	6	811
1990	704	2	706
1991	1 095	3	1 098
1992	912	-	912
1993	716	-	716
1994	693	-	693
1995	741	-	741
1996	984	-	984
1997	1 135	-	1 135
1998	1 432	-	1 432
1999	1 860	-	1 860
2000	1 438	-	1 438
2001	1 371	-	1 371
2002	950	-	950
2003	1 246	1	1 247
2004	2 209	-	2 209
2005	2 505	-	2 505
2006	2 688	-	2 688
2007	2 662	-	2 662
2008	2 634	-	2 634
2009	2 629	-	2 629
2010	1 970	-	1 970
2011	1 900	-	1 900
2012	1 614	-	1 614
2013 <sup>1)</sup>	1 766	-	1 766

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.14.1

**Stórkjafra.** Afli (í tonnum) á Íslandsmiðum árin 1951–2013.  
**Megrím.** Landings (in tonnes) from Icelandic waters 1951–2013.

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1951	76	562	638
1952	69	434	503
1953	139	534	673
1954	166	532	698
1955	35	562	597
1956	89	470	559
1957	104	606	710
1958	170	531	701
1959	148	452	600
1960	133	415	548
1961	39	458	497
1962	111	398	509
1963	66	405	471
1964	69	371	440
1965	254	467	721
1966	102	280	382
1967	46	368	414
1968	41	454	495
1969	172	488	660
1970	117	521	638
1971	61	523	584
1972	64	371	435
1973	81	324	405
1974	27	283	310
1975	7	228	235
1976	17	151	168
1977	3	165	168
1978	11	125	136
1979	10	101	111
1980	104	114	218
1981	1	70	71
1982	3	35	38
1983	4	62	66
1984	9	95	104
1985	17	44	61
1986	42	35	77
1987	162	21	183
1988	283	65	348
1989	345	51	396
1990	154	22	176
1991	186	20	206
1992	246	-	246
1993	224	-	224
1994	301	2	303
1995	405	-	405
1996	419	-	419
1997	281	-	281
1998	221	-	221
1999	123	-	123
2000	97	-	97
2001	96	-	96
2002	78	-	78
2003	67	-	67
2004	121	-	121
2005	147	-	147
2006	284	-	284
2007	187	-	187
2008	196	-	196
2009	317	-	317
2010	251	-	251
2011	320	-	320
2012	409	-	409
2013 <sup>1)</sup>	376	-	376

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*



TAFLA 3.15.1

**Steinbítur.** Afli (í tonnum) á Íslandsmiðum 1950–2013.  
*Atlantic wolffish. Landings (in tonnes) from Icelandic waters in 1950–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1950	6 611	6 203	12 814
1951	8 259	9 014	17 273
1952	11 628	13 424	25 052
1953	12 331	11 710	24 041
1954	6 354	9 568	15 922
1955	4 562	10 119	14 681
1956	6 509	11 419	17 928
1957	11 172	11 165	22 337
1958	10 811	13 179	23 990
1959	9 677	9 215	18 892
1960	9 429	9 135	18 564
1961	12 600	7 855	20 455
1962	13 192	10 039	23 231
1963	17 304	12 150	29 454
1964	8 183	9 009	17 192
1965	7 491	10 064	17 555
1966	7 891	6 908	14 799
1967	10 268	6 679	16 947
1968	8 972	5 920	14 892
1969	7 674	4 796	12 470
1970	5 706	4 846	10 552
1971	5 286	5 998	11 284
1972	9 036	5 063	14 099
1973	10 578	3 409	13 987
1974	11 977	3 304	15 281
1975	11 042	2 800	13 842
1976	11 485	1 849	13 334
1977	10 363	320	10 683
1978	10 452	78	10 530
1979	10 334	76	10 410
1980	8 527	90	8 617
1981	8 237	104	8 341
1982	8 341	96	8 437
1983	12 138	109	12 247
1984	10 203	60	10 263
1985	9 602	111	9 713
1986	12 120	24	12 144
1987	12 601	15	12 616
1988	14 583	64	14 647
1989	14 127	52	14 179
1990	14 425	136	14 561
1991	17 818	111	17 929
1992	16 059	82	16 141
1993	12 862	70	12 932
1994	12 692	53	12 745
1995	12 525	36	12 561
1996	14 578	30	14 608
1997	11 635	19	11 654
1998	11 834	42	11 876
1999	13 713	107	13 820
2000	15 038	25	15 063
2001	17 950	150	18 100
2002	14 292	93	14 385
2003	16 440	105	16 545
2004	13 165	76	13 241
2005	15 176	75	15 251
2006	16 407	43	16 450
2007	16 134	76	16 210
2008	14 531	45	14 576
2009	15 115	43	15 158
2010	12 559	28	12 587
2011	10 895	13	10 908
2012	10 167	66	10 233
2013 <sup>1)</sup>	8 781	34	8 815

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.16.1

Hlýri. Afli (í tonnum) á Íslandsmiðum 1965–2013.

*Spotted wolffish. Landings (in tonnes) from Icelandic waters in 1965–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1965	7	-	7
1966	20	-	20
1967	28	-	28
1968	14	-	14
1969	43	-	43
1970	12	-	12
1971	29	-	29
1972	9	-	9
1973	17	9	26
1974	43	12	55
1975	29	-	29
1976	354	-	354
1977	758	-	758
1978	857	21	878
1979	843	23	866
1980	826	19	845
1981	869	13	882
1982	893	23	916
1983	929	49	978
1984	1 060	11	1 071
1985	1 018	3	1 021
1986	931	-	931
1987	1 196	-	1 196
1988	1 198	-	1 198
1989	637	-	637
1990	767	-	767
1991	813	-	813
1992	858	-	858
1993	1 032	-	1 032
1994	778	-	778
1995	645	-	645
1996	949	-	949
1997	1 086	-	1 086
1998	1 565	-	1 565
1999	1 515	-	1 515
2000	1 850	2	1 852
2001	2 086	1	2 087
2002	2 093	15	2 108
2003	2 388	36	2 424
2004	3 260	21	3 281
2005	3 234	16	3 250
2006	3 626	11	3 637
2007	2 686	1	2 687
2008	2 084	-	2 084
2009	2 291	1	2 292
2010	1 901	1	1 902
2011	1 606	-	1 606
2012	1 950	-	1 950
2013 <sup>1)</sup>	2 398	-	2 398

<sup>1)</sup>Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.17.1

**Blálanga.** Afli (í tonnum) á Íslandsmiðum 1966–2013.  
*Blue ling.* Landings (in tonnes) from Icelandic waters in 1966–2013.

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1966	134	3 411	3 545
1967	191	2 651	2 842
1968	199	2 531	2 730
1969	339	2 099	2 438
1970	394	2 163	2 557
1971	705	3 073	3 778
1972	586	2 330	2 916
1973	548	1 819	2 367
1974	331	2 165	2 496
1975	434	1 942	2 376
1976	624	1 414	2 038
1977	700	1 617	2 317
1978	1 237	194	1 431
1979	2 019	183	2 202
1980	8 133	412	8 545
1981	7 952	284	8 236
1982	5 945	626	6 571
1983	5 117	1 597	6 714
1984	3 122	384	3 506
1985	1 407	66	1 473
1986	1 771	251	2 022
1987	1 687	83	1 770
1988	1 889	278	2 167
1989	2 121	408	2 529
1990	1 989	1 029	3 018
1991	1 582	242	1 824
1992	2 558	322	2 880
1993	5 317	40	5 357
1994	1 831	90	1 921
1995	1 576	52	1 628
1996	1 284	52	1 336
1997	1 319	25	1 344
1998	1 086	25	1 111
1999	2 027	50	2 077
2000	1 560	54	1 736
2001	763	54	817
2002	1 274	50	1 324
2003	1 095	53	1 148
2004	1 085	91	1 176
2005	1 495	70	1 565
2006	1 736	71	1 807
2007	1 999	92	2 091
2008	3 653	105	3 758
2009	4 132	91	4 223
2010	6 372	523	6 895
2011	5 876	594	6 470
2012	4 118	203	4 321
2013 <sup>1)</sup>	2 768	314	3 082

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.18.1

Langa. Afli (í tonnum) á Íslandsmiðum 1950–2013.  
 Ling. Landings (in tonnes) from Icelandic waters 1950–2013.

Ár Year	Ísland Iceland	Aðrar þjóðir Other nations	Samtals Total
1950	3 551	6 947	10 497
1951	3 278	7 651	10 929
1952	4 420	7 034	11 454
1953	3 325	8 145	11 470
1954	3 442	9 653	13 095
1955	3 972	7 721	11 693
1956	3 823	7 702	11 525
1957	3 591	6 096	9 687
1958	4 195	7 468	11 663
1959	2 681	6 019	8 700
1960	6 774	6 996	13 770
1961	6 032	4 034	10 066
1962	7 073	5 044	12 117
1963	5 607	4 885	10 492
1964	4 976	5 398	10 374
1965	4 811	5 847	10 658
1966	4 559	5 473	10 032
1967	7 531	5 621	13 152
1968	8 697	5 829	14 526
1969	8 677	5 461	14 138
1970	8 345	6 017	14 362
1971	8 867	6 524	15 391
1972	6 085	4 092	10 177
1973	3 564	3 897	7 461
1974	3 868	2 907	6 775
1975	3 748	2 950	6 698
1976	4 538	2 103	6 641
1977	3 433	1 815	5 248
1978	3 439	1 559	4 998
1979	3 759	1 443	5 202
1980	3 149	1 475	4 624
1981	3 348	1 100	4 448
1982	3 733	1 252	4 985
1983	4 256	887	5 143
1984	3 304	574	3 878
1985	2 980	460	3 440
1986	2 948	648	3 596
1987	4 154	820	4 974
1988	5 083	763	5 846
1989	4 833	714	5 547
1990	5 115	441	5 556
1991	5 182	600	5 782
1992	4 546	560	5 106
1993	4 319	521	4 840
1994	4 053	551	4 604
1995	3 729	589	4 318
1996	3 670	607	4 277
1997	3 626	518	4 146
1998	3 603	713	4 316
1999	3 973	536	4 509
2000	3 221	475	3 696
2001	2 863	359	3 222
2002	2 830	426	3 256
2003	3 584	578	4 162
2004	3 718	744	4 462
2005	4 307	750	5 066
2006	6 287	1 119	7 406
2007	6 592	992	7 584
2008	7 736	1 552	9 288
2009	9 613	1 329	10 942
2010	9 867	1 263	11 130
2011	8 797	768	9 565
2012	10 712	1 059	11 771
2013 <sup>1)</sup>	10 196	1 249	11 445

<sup>1)</sup> Bráðabirgðatölur. Provisional figures.

TAFLA 3.19.1

**Keila.** Afli (í tonnum) á Íslandsmiðum 1963–2013.  
*Tusk. Landings (in tonnes) from Icelandic waters 1963–2013.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1963	5 872	4 425	10 297
1964	3 532	4 214	7 746
1965	2 263	4 347	6 610
1966	2 107	2 468	4 575
1967	2 699	2 433	5 132
1968	4 604	2 028	6 632
1969	4 075	2 143	6 218
1970	4 357	2 630	6 987
1971	3 793	4 319	8 112
1972	2 815	3 645	6 460
1973	2 366	5 241	7 607
1974	1 857	4 679	6 536
1975	1 673	4 058	5 731
1976	2 935	4 177	7 112
1977	3 122	4 826	7 948
1978	3 352	2 980	6 332
1979	3 558	2 895	6 453
1980	3 089	3 801	6 890
1981	2 827	3 649	6 476
1982	2 804	3 076	5 880
1983	3 469	4 818	8 287
1984	3 430	2 262	5 692
1985	3 068	1 996	5 064
1986	2 548	2 832	5 380
1987	2 987	2 657	5 644
1988	3 087	3 777	6 864
1989	3 158	3 918	7 076
1990	4 816	2 475	7 291
1991	6 446	2 286	8 732
1992	6 442	1 567	8 009
1993	4 729	1 329	6 058
1994	4 615	1 212	5 827
1995	5 245	985	6 230
1996	5 226	1 014	6 240
1997	4 814	944	5 758
1998	4 118	1 027	5 145
1999	5 795	1 494	7 289
2000	4 711	1 528	6 239
2001	3 392	1 133	4 525
2002	3 906	1 342	5 248
2003	4 030	1 284	5 314
2004	3 124	1 530	4 654
2005	3 534	1 285	4 819
2006	5 060	1 541	6 601
2007	5 987	1 606	7 593
2008	6 932	1 243	8 175
2009	6 955	1 297	8 252
2010	6 919	2 057	8 976
2011	5 845	1 545	7 390
2012	6 341	1 420	7 761
2013 <sup>1)</sup>	4 973	1 284	6 257

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.20.1

Lýsa. Landaður afli (í tonnum) árin 1984–2013.

*Whiting. Landings (in tonnes) since 1984.*

Ár	Afli
<i>Year</i>	<i>Landings</i>
1984	81
1985	72
1986	77
1987	113
1988	141
1989	190
1990	536
1991	745
1992	510
1993	230
1994	315
1995	560
1996	430
1997	443
1998	531
1999	930
2000	1 354
2001	1 182
2002	1 298
2003	1 025
2004	1 039
2005	796
2006	1 051
2007	1 258
2008	1 688
2009	2 307
2010	2 848
2011	2 964
2012	1 468
2013 <sup>1)</sup>	985

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.21.1

**Skötuselur.** Afli (í tonnum) á Íslandsmiðum 1965–2013.  
**Anglerfish.** Landings (in tonnes) from Icelandic waters 1965–2013.

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1965	510	469	979
1966	519	382	901
1967	796	391	1 187
1968	926	450	1 376
1969	957	384	1 341
1970	602	311	913
1971	606	178	784
1972	496	107	603
1973	329	72	401
1974	286	94	380
1975	386	67	453
1976	565	53	618
1977	727	43	770
1978	566	37	603
1979	438	56	494
1980	530	37	567
1981	441	21	462
1982	515	13	528
1983	544	42	586
1984	356	49	405
1985	455	15	470
1986	366	9	375
1987	362	20	382
1988	481	54	535
1989	494	-	494
1990	634	-	634
1991	772	-	772
1992	743	-	743
1993	685	-	685
1994	641	-	641
1995	548	-	548
1996	666	-	666
1997	789	-	789
1998	853	-	853
1999	973	-	973
2000	1 570	-	1 570
2001	1 353	-	1 353
2002	965	-	965
2003	1 677	1	1 678
2004	2 223	-	2 223
2005	2 855	-	2 855
2006	2 590	-	2 590
2007	2 791	-	2 791
2008	2 946	-	2 946
2009	4 069	-	4 069
2010	3 282	-	3 282
2011	3 208	-	3 208
2012	2 650	-	2 650
2013 <sup>1)</sup>	1 496	-	1 496

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*



TAFLA 3.22.1

**Grásleppa.** Heildarafli og framleiðsla grásleppuhroga árin 1971–2013 (í tunnum).  
**Lumpfish.** Landings (tonnes) of females and production of roe (barrels) during 1971–2013.

Ár <i>Year</i>	Grásleppuafli <i>Female catch</i>	Hrognafurframleiðsla <i>Roe production</i>
1971	5 481	11 249
1972	4 573	9 381
1973	8 163	16 746
1974	4 539	9 311
1975	8 365	17 160
1976	10 447	21 431
1977	7 613	15 618
1978	6 410	13 150
1979	6 260	12 842
1980	8 186	16 793
1981	11 152	22 878
1982	3 733	7 658
1983	5 385	11 047
1984	13 051	26 773
1985	11 152	22 878
1986	7 874	16 153
1987	11 152	22 878
1988	4 973	10 202
1989	6 581	13 500
1990	3 169	6 501
1991	4 826	9 900
1992	6 338	13 002
1993	4 338	8 899
1994	5 685	11 662
1995	5 489	11 260
1996	5 083	10 427
1997	6 520	13 375
1998	3 165	6 493
1999	3 373	6 919
2000	2 458	5 042
2001	3 271	6 710
2002	5 047	10 354
2003	6 230	12 780
2004	5 782	11 861
2005	3 731	7 654
2006	4 026	8 259
2007	3 301	6 772
2008	5 684	11 660
2009	5 615	11 519
2010	8 750	17 950
2011	5 196	10 657
2012	6 199	12 204
2013 <sup>1)</sup>	4 591	8 600

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.22.2

**Hrognkelsi.** Afli á sóknareiningu (CPUE) og sókn árin 1980–2013 og stofnvísitala grásleppu og fjöldavísitala rauðmaga árin 1985–2014.  
**Lumpfish.** *Catch per unit effort (CPUE) and derived effort 1980–2013 and female biomass and male abundance indices 1985–2014.*

Ár <i>Year</i>	Afli á sóknareiningu <i>CPUE</i>	Sókn <i>Effort</i>	Vísitala grásleppu <i>Female index</i>	Vísitala rauðmaga <i>Male index</i>
1980	5.5	4.3		
1981	6.3	5.1		
1982	4.7	2.3		
1983	3.9	4.0		
1984	5.0	7.6		
1985	4.4	7.3	10.56	1.40
1986	3.5	6.6	9.62	0.43
1987	4.2	7.7	12.08	1.05
1988	3.6	4.0	9.89	0.61
1989	5.1	3.7	12.69	1.93
1990	4.2	2.2	10.49	1.27
1991	3.1	4.5	4.26	0.34
1992	3.1	5.9	8.19	1.02
1993	2.1	6.1	6.05	0.88
1994	2.2	7.4	6.11	0.84
1995	2.1	7.5	4.68	0.92
1996	1.6	9.5	4.62	0.36
1997	2.3	8.3	5.16	0.77
1998	2.9	3.2	4.55	0.47
1999	3.8	2.6	7.10	0.39
2000	3.3	2.2	3.89	0.35
2001	3.3	2.8	5.56	0.33
2002	3.8	3.8	10.19	0.90
2003	4.0	4.5	7.32	0.44
2004	3.7	4.6	9.05	0.44
2005	4.1	2.6	7.19	0.41
2006	7.9	1.5	12.92	0.58
2007	7.5	1.3	8.85	0.55
2008	5.8	2.8	7.93	0.57
2009	4.0	4.0	8.03	0.30
2010	4.4	5.8	7.00	0.48
2011	3.8	3.9	4.96	0.33
2012	4.5	3.8	7.51	0.24
2013	6.5	4.0	4.30	0.20
2014 <sup>1)</sup>			6.37	0.40

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.23.1

Íslensk sumar- og vorgotssíld. Afli (í tonnum) á Íslandsmiðum 1951–2013/2014.  
*Icelandic summer- and spring-spawning herring. Landings (in tonnes) in Icelandic waters 1951–2013/2014.*

Ár Year	Íslensk sumargotssíld <i>Icelandic summer-spawning herring</i>		Íslensk vorgotssíld <i>Icelandic spring-spawning herring</i>
	Afli Catch	Metið brottkast Estimated discard	Afli Catch
1951	15 800		20 200
1952	10 500		12 300
1953	17 600		20 400
1954	11 000		21 100
1955	20 500		21 400
1956	20 400		40 500
1957	22 800		82 500
1958	33 500		83 700
1959	35 000		149 900
1960	28 500		117 800
1961	74 000		211 500
1962	92 900		274 200
1963	130 300		104 300
1964	86 500		101 500
1965	122 900		68 900
1966	58 400		25 000
1967	67 700		15 300
1968	16 800		4 300
1969	19 400		3 600
1970	15 900		400
1971	11 500		200
1972	310		-
1973	254		-
1974	1 274		-
1975	13 280		-
1976	17 168		-
1977	28 925		-
1978	37 333		-
1979	45 072		-
1980	53 268		-
1981	39 544		-
1982	56 528		-
1983	58 867		-
1984	50 304		-
1985	49 368		-
1986	65 500		-
1987	75 439		-
1988	92 828		-
1989	97 270	3 730	-
1990/91 <sup>1)</sup>	101 632	3 465	-
1991/92	98 538	10 951	-
1992/93	106 653	1 851	-
1993/94	101 496	1 245	-
1994/95	131 994	2 009	-
1995/96	124 963	888	-
1996/97	95 882	-	-
1997/98	64 931	-	-
1998/99	87 238	-	-
1999/00	92 896	-	-
2000/01	100 332	-	-
2001/02	95 278	-	-
2002/03	93 601	-	-
2003/04	125 719	-	-
2004/05	114 237	-	-
2005/06	103 043	-	-
2006/07	135 303	-	-
2007/08	158 917	-	-
2008/09	151 780	-	-
2009/10 <sup>2)</sup>	46 332	-	-
2010/11 <sup>2)</sup>	43 533	-	-
2011/12 <sup>2)</sup>	49 446	-	-
2012/13 <sup>2)</sup>	72 011	-	-
2013/14 <sup>2)</sup>	72 058	-	-

<sup>1)</sup> Frá 1990/1991 fiskiveiðarárið september–ágúst. *From 1990/1991 quota year September–August.*

<sup>2)</sup> Meðafli við makrílveiðar í júní–ágúst fyrra fiskiveiðárs meðtalinn.

*Bycatch in the mackerel fishery in June–August in previous fishing season included.*

TAFLA 3.23.2

Sumargotssíld. Skipting aflans í fjölda eftir aldri (í milljónum) á vertíðunum 1987/88–2013/2014.  
*Summer-spawning herring. Landings in numbers by age (millions) in the fishing seasons 1987/88–2013/2014.*

Ár Year	Aldur Age													
	2	3	4	5	6	7	8	9	10	11	12	13	14	15+
1987/88	0.029	3.144	44.590	60.285	20.622	19.751	46.240	15.232	13.963	10.179	13.216	6.224	4.723	2.280
1988/89	0.879	4.757	41.331	99.366	69.331	22.955	20.131	32.201	12.349	10.250	7.378	7.284	4.807	1.957
1989/90	3.974	22.628	26.649	77.824	188.654	43.114	8.116	5.897	7.292	4.780	3.449	1.410	0.844	0.348
1990/91	12.567	14.884	56.995	35.593	79.757	157.225	30.248	8.187	4.372	3.379	1.786	0.715	0.446	0.565
1991/92	37.085	88.683	49.081	86.292	34.793	55.228	110.132	10.079	4.155	2.735	2.003	0.519	0.339	0.416
1992/93	16.144	94.86	122.626	38.381	58.605	27.921	38.420	53.114	11.592	1.727	1.757	0.153	0.376	0.001
1993/94	2.467	51.153	177.780	92.680	20.791	28.560	13.313	19.617	15.266	4.254	0.797	0.254	0.001	0.001
1994/95	5.738	134.616	113.290	142.876	87.207	24.913	20.303	16.301	15.695	14.680	2.936	1.435	0.244	0.195
1995/96	4.555	20.991	137.232	86.864	109.140	76.780	21.361	15.225	8.541	9.617	7.034	2.291	0.621	0.235
1996/97	0.717	15.969	40.311	86.187	68.927	84.660	39.664	14.746	8.419	5.836	3.152	5.180	1.996	0.574
1997/98	2.008	39.240	30.141	26.307	36.738	33.705	31.022	22.277	8.531	3.383	1.141	10.296	0.947	2.524
1998/99	23.655	45.390	175.529	22.691	8.613	40.898	25.944	32.046	14.647	2.122	2.754	2.150	1.070	1.011
1999/00	5.306	56.315	54.779	140.913	16.093	13.506	31.467	19.845	22.031	12.609	2.673	2.746	1.416	2.514
2000/01	17.286	57.282	136.278	49.289	76.614	11.546	8.294	16.367	9.874	11.332	6.744	2.975	1.539	1.104
2001/02	27.486	42.304	86.422	93.597	30.336	54.491	10.375	8.762	12.244	9.907	8.259	6.088	1.491	1.259
2002/03	11.698	80.863	70.801	45.607	54.202	21.211	42.199	9.888	4.707	6.520	9.108	9.355	3.994	5.697
2003/04	24.477	211.495	286.017	58.120	27.979	25.592	14.203	10.944	2.230	3.424	4.225	2.562	1.575	1.370
2004/05	23.144	63.355	139.543	182.45	40.489	13.727	9.342	5.769	7.021	3.136	1.861	3.871	0.994	1.855
2005/06	6.088	26.091	42.116	117.910	133.437	27.565	12.074	9.203	5.172	5.116	1.045	1.706	2.110	0.757
2006/07	52.567	118.526	217.672	54.800	48.312	57.241	13.603	5.994	4.299	0.898	1.626	1.213	0.849	0.933
2007/08	10.817	94.250	83.631	163.294	61.207	87.541	92.126	23.238	11.728	7.319	2.593	4.961	2.302	1.420
2008/09	10.427	38.830	90.932	79.745	107.644	59.656	62.194	54.345	18.130	8.240	5.157	2.680	2.630	1.178
2009/10	5.431	21.856	35.221	31.914	18.826	22.725	10.425	9.213	9.549	2.238	1.033	0.768	0.406	0.298
2010/11	1.476	8.843	22.674	29.492	24.293	14.419	17.407	10.045	7.576	8.896	1.764	1.105	0.672	0.555
2011/12	0.521	9.357	24.621	20.046	22.869	23.706	13.749	16.967	10.039	7.623	7.745	1.441	0.618	0.785
2012/13	0.403	10.927	52.832	30.157	25.279	29.724	23.946	19.453	15.115	13.646	8.373	7.323	1.373	0.127
2013/14	6.888	46.848	24.833	35.070	17.250	18.550	19.032	21.821	15.952	15.804	10.081	9.775	6.722	2.486

TAFLA 3.23.3

Sumargotssíld. Meðalþyngd eftir aldri (g) á vertíðunum 1987/88–2013/2014.  
*Summer-spawning herring. Mean weight at age (g) in the fishing seasons 1987/88–2013/2014.*

Ár Year	Aldur Age													
	2	3	4	5	6	7	8	9	10	11	12	13	14	15+
1987/88	60	168	200	240	278	304	325	339	356	378	400	404	424	430
1988/89	75	157	221	239	271	298	319	334	354	352	371	390	408	437
1989/90	63	130	206	246	261	290	331	338	352	369	389	380	434	409
1990/91	80	127	197	245	272	285	305	324	336	362	370	382	375	378
1991/92	74	135	188	232	267	289	304	323	340	352	369	402	406	388
1992/93	68	148	190	235	273	312	329	339	355	382	405	377	398	398
1993/94	66	145	211	246	292	324	350	362	376	386	419	389	389	389
1994/95	66	134	201	247	272	303	333	366	378	389	390	412	418	383
1995/96	68	130	183	240	277	298	325	358	378	397	409	431	430	467
1996/97	75	139	168	212	258	289	308	325	353	353	377	404	395	410
1997/98	63	131	191	233	269	300	324	341	355	362	367	393	398	411
1998/99	52	134	185	238	264	288	324	340	348	375	406	391	426	456
1999/00	74	137	204	233	268	294	311	339	353	362	378	385	411	422
2000/01	62	159	217	268	289	325	342	363	378	393	407	425	436	430
2001/02	74	139	214	244	286	296	324	347	354	385	403	421	421	433
2002/03	85	161	211	258	280	319	332	354	405	396	416	433	463	460
2003/04	72	156	189	229	260	283	309	336	336	369	394	378	412	423
2004/05	84	149	213	248	280	315	331	349	355	379	388	412	419	425
2005/06	106	170	224	262	275	298	324	335	335	356	372	394	405	413
2006/07	107	189	234	263	290	304	339	349	369	416	402	413	413	467
2007/08	93	158	221	245	261	277	287	311	339	334	346	356	384	390
2008/09	105	174	232	275	292	307	315	327	345	366	377	372	403	434
2009/10	113	190	237	274	304	318	326	335	342	360	372	394	409	421
2010/11	87	204	243	271	297	315	329	335	341	351	367	366	405	416
2011/12	97	187	245	283	309	328	343	352	356	364	375	386	378	432
2012/13	65	206	244	282	301	320	333	344	350	359	364	367	373	391
2013/14	95	182	238	271	300	322	337	349	360	365	362	375	377	394

TAFLA 3.23.4

**Sumargotssild.** Hlutfall kynþroska og náttúrulegur dánarstuðull eftir aldri fyrir árin 1987–2013.  
*Summer-spawning herring. Proportion mature and natural mortality by age for the years 1987–2013.*

	Aldur Age											
	2	3	4	5	6	7	8	9	10	11	12	13+
Hlutfall kynþroska <i>Proportion mature</i>	0	0.20	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Náttúrulegur dauði <i>Natural mortality</i> 1987–2008; 2011–2013	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Náttúrulegur dauði <i>Natural mortality</i> 2009	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Náttúrulegur dauði <i>Natural mortality</i> 2010	0.74	0.74	0.74	0.69	0.63	0.60	0.58	0.57	0.56	0.54	0.53	0.54

TAFLA 3.23.5

**Sumargotssild.** Stofnstærð í fjölda eftir aldri (í milljónum) og stærð hrygningarstofns í upphafi árs (í þús. tonna) árin 1987–2014 og vegin meðalveiðidánartala fyrir 5–10 ára árunum 1987–2013.  
*Summer-spawning herring. Stock abundance in numbers at age (millions) and spawning stock biomass in the beginning of the year (thous. tonnes) 1987–2014 and weighted mean fishing mortality of ages 5–10 in the years 1987–2013.*

Ár <i>Year</i>	Aldur Age											Hrygningarstofn	Veiðidánartala
	3	4	5	6	7	8	9	10	11	12	13+	SSB	Fishing mortality
1987	530	989	301	85	69	107	43	38	26	34	34	384	0.35
1988	271	477	853	215	57	44	53	24	21	14	37	423	0.27
1989	448	241	392	677	129	30	21	18	10	9	26	386	0.32
1990	301	384	193	281	434	76	19	13	9	5	26	350	0.40
1991	842	258	293	140	178	244	40	10	8	5	25	310	0.44
1992	1035	678	187	183	94	109	116	26	5	4	24	344	0.41
1993	638	847	497	133	110	59	62	55	13	3	24	425	0.25
1994	695	529	597	362	101	73	40	38	35	8	23	442	0.31
1995	205	501	371	405	245	67	47	21	19	18	23	408	0.34
1996	183	165	323	253	263	149	41	28	11	8	28	310	0.36
1997	779	150	111	210	164	158	97	23	17	5	22	272	0.25
1998	325	668	107	76	156	116	113	67	13	12	10	302	0.28
1999	565	251	438	76	60	102	81	72	46	9	14	294	0.37
2000	408	458	175	262	53	42	62	54	44	30	12	314	0.33
2001	498	315	285	112	165	37	30	41	40	29	26	282	0.40
2002	1576	411	203	169	72	98	24	19	25	26	34	316	0.39
2003	1189	1350	304	141	102	45	48	12	12	17	28	424	0.25
2004	810	875	950	220	101	68	28	33	9	8	32	547	0.22
2005	1190	673	659	686	161	78	53	20	23	5	28	617	0.22
2006	857	1052	569	485	494	119	59	39	13	16	24	742	0.12
2007	945	663	745	463	393	393	95	48	31	11	33	714	0.25
2008	824	766	522	523	358	270	267	64	32	21	28	772	0.22
2009	774	709	607	396	371	267	186	190	41	21	34	648	0.07
2010	594	457	407	347	228	210	156	107	109	23	32	452	0.10
2011	700	278	203	184	168	115	105	81	55	57	29	391	0.14
2012	449	625	228	165	145	129	91	78	63	43	68	450	0.22
2013	390	390	480	158	108	82	77	49	45	34	70	412	0.16
2014	634	309	329	401	126	80	56	49	30	26	66	430	

TAFLA 3.23.6

Norsk-íslensk vorgotssíld. Afli Íslendinga og annara þjóða (í tonnum) frá 1950 –2013.  
*Norwegian spring-spawning herring. Icelandic landings (tonnes) and total catch of other nations since 1950.*

Ár <i>Year</i>	Ísland <i>Iceland</i>	Aðrar þjóðir <i>Other nations</i>	Samtals <i>Total</i>
1950	30 700	902 300	933 000
1951	48 900	1 228 900	1 277 800
1952	9 200	1 245 600	1 254 800
1953	31 500	1 042 900	1 074 400
1954	15 200	1 629 300	1 644 500
1955	18 100	1 341 700	1 359 800
1956	41 200	1 618 200	1 659 400
1957	18 200	1 300 300	1 318 500
1958	22 600	963 700	986 300
1959	34 500	1 076 600	1 111 100
1960	26 700	1 075 100	1 101 800
1961	85 000	745 100	830 100
1962	176 200	672 400	848 600
1963	177 500	807 000	984 500
1964	367 400	914 400	1281 800
1965	540 000	1 007 700	1 547 700
1966	691 400	1 263 600	1 955 000
1967	359 300	1 317 900	1 677 200
1968	75 200	637 000	712 200
1969	600	67 200	67 800
1970	-	62 300	62 300
1971	-	21 100	21 100
1972	-	13 161	13 161
1973	-	7 017	7 017
1974	-	7 619	7 619
1975	-	13 713	13 713
1976	-	10 436	10 436
1977	-	22 706	22 706
1978	-	19 824	19 824
1979	-	12 864	12 864
1980	-	18 577	18 577
1981	-	13 736	13 736
1982	-	16 655	16 655
1983	-	23 054	23 054
1984	-	53 532	53 532
1985	-	169 872	169 872
1986	-	225 256	225 256
1987	-	127 306	127 306
1988	-	135 301	135 301
1989	-	103 830	103 830
1990	-	86 411	86 411
1991	-	84 683	84 683
1992	-	104 448	104 448
1993	-	232 457	232 457
1994	21 146	458 082	479 228
1995	174 109	731 392	905 501
1996	164 957	1 055 326	1 220 283
1997	220 040	1 206 467	1 426 507
1998	197 789	1 025 342	1 223 131
1999	203 381	1 032 052	1 235 433
2000	186 035	1 021 166	1 207 201
2001	77 693	688 443	766 136
2002	127 197	680 598	807 795
2003	117 910	632 167	750 077
2004	102 787	690 879	793 666
2005	156 466	846 777	1 003 243
2006	159 545	809 413	968 958
2007	173 621	1 093 372	1 266 993
2008	217 602	1 328 054	1 545 656
2009	265 480	1 421 891	1 687 371
2010	205 862	1 251 153	1 457 015
2011	152 140	840 857	992 997
2012	120 956	705 044	826 000
2013 <sup>1)</sup>	90 729	601 271	692 000

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

**TAFLA 3.24.1**  
**Loðna.** Aflinn (þús. tonna) 1963–2014.  
*Capelin. Landings (thous. tonnes) 1963–2014.*

Ár Year	Vetur (jan–mar) Winter (Jan–Mar)					Sumar og haust (jún–des) Summer and autumn (Jun–Dec)						Samtals Total
	Ísland Iceland	Noregur Norway	Færeyjar Faroes	Græn- land Green- land	Samtals vertíð Season total	Ísland Iceland	Noregur Norway	Færeyjar Faroes	Græn- land Green- land	ESB EU	Samtals vertíð Season total	
1963	1	-	-	-	1	-	-	-	-	-	-	1
1964	9	-	-	-	9	-	-	-	-	-	-	9
1965	50	-	-	-	50	-	-	-	-	-	-	50
1966	125	-	-	-	125	-	-	-	-	-	-	125
1967	97	-	-	-	97	-	-	-	-	-	-	97
1968	78	-	-	-	78	-	-	-	-	-	-	78
1969	171	-	-	-	171	-	-	-	-	-	-	171
1970	191	-	-	-	191	-	-	-	-	-	-	191
1971	183	-	-	-	183	-	-	-	-	-	-	183
1972	277	-	-	-	277	-	-	-	-	-	-	277
1973	441	-	-	-	441	-	-	-	-	-	-	441
1974	462	-	-	-	462	-	-	-	-	-	-	462
1975	457	-	-	-	457	3	-	-	-	-	3	460
1976	339	-	-	-	339	114	-	-	-	-	114	453
1977	549	-	24	-	573	260	-	-	-	-	260	833
1978	469	-	36	-	505	498	154	3	-	-	655	1 160
1979	522	-	18	-	540	442	124	22	-	-	588	1 128
1980	392	-	-	-	392	368	119	24	-	17	528	920
1981	156	-	-	-	156	485	91	16	-	21	613	769
1982	13	-	-	-	13	-	-	-	-	-	-	13
1983	-	-	-	-	-	133	-	-	-	-	133	133
1984	440	-	-	-	440	425	105	10	-	8	548	988
1985	348	-	-	-	348	645	193	66	-	16	920	1 268
1986	342	50	-	-	392	553	150	65	-	5	773	1 165
1987	501	60	-	-	561	311	82	65	-	-	458	1 019
1988	601	57	-	-	658	311	12	48	-	-	371	1 029
1989	609	56	-	-	665	54	53	14	-	-	121	786
1990	612	62	12	-	686	84	22	6	-	-	111	798
1991	202	-	-	-	202	56	-	-	-	-	56	258
1992	573	48	-	-	621	213	65	19	1	-	298	919
1993	489	-	-	1	490	450	127	24	10	-	611	1 101
1994	550	15	-	2	567	211	99	12	2	-	324	891
1995	539	-	-	1	540	176	28	-	2	-	206	746
1996	708	-	10	6	724	474	206	32	15	61	773	1 497
1997	775	-	16	6	797	536	154	27	6	47	764	1 561
1998	457	-	15	10	482	291	73	27	8	42	441	923
1999	608	15	14	22	659	83	11	6	2	-	102	761
2000	761	15	32	22	830	127	80	30	7	21	265	1 095
2001	767	-	10	29	806	150	106	12	9	17	294	1 061
2002	901	-	28	26	955	180	119	-	13	28	340	1 295
2003	585	-	40	23	648	96	78	4	3	18	199	847
2004	479	16	31	17	543	46	34	-	12	-	92	635
2005	594	69	19	10	692	9	-	-	-	-	9	701
2006	193	8	30	7	238	-	-	-	-	-	-	238
2007	307	38	19	13	377	-	-	-	-	-	-	377
2008	149	38	10	6	203	-	-	-	-	-	-	203
2009	15	-	-	-	15	-	-	-	-	-	-	15
2010	111	28	8	5	151	5	-	-	-	-	5	5
2011	322	31	20	13	386	8	59	-	5	-	72	457
2012	577	46	30	22	675	9	-	-	1	-	10	685
2013	454	40	30	17	541	-	-	-	-	-	-	541
2014 <sup>1)</sup>	111	6	8	16	142	-	-	-	-	-	-	-

<sup>1)</sup> Bráðabirgðatölur. Provisional figures.



TAFLA 3.24.2

**Loðna.** Skipting aflans í fjölda eftir aldri (í milljörðum) og heildaraflinn í fjölda og þyngd (þús. tonna) um sumar og haust (jún–des) á árunum 1978–2013.  
**Capelin.** Landings in numbers by age (billions) and nominal landings by number and weight (thous. tonnes) in summer and autumn (Jun–Dec) 1978–2013.

Ár Year	Aldur Age				Samtals fjöldi Total number	Samtals þyngd Total weight
	1	2	3	4		
1978	-	21.4	12.2	-	33.6	655.0
1979	0.6	29.4	6.1	-	36.1	588.0
1980	4.9	17.2	5.4	-	27.5	527.6
1981	0.6	27.9	2.0	-	30.5	613.0
1982	-	-	-	-	0.0	0.0
1983	0.6	7.2	0.8	-	8.6	133.4
1984	0.5	9.8	7.8	0.1	18.2	548.5
1985	0.8	25.6	15.4	0.2	42.0	919.7
1986	-	10.0	23.3	0.5	33.8	772.9
1987	-	27.7	6.7	-	34.4	458.6
1988	0.3	13.6	5.4	-	19.3	371.4
1989	1.7	6.0	1.5	-	9.2	121.0
1990	0.8	5.9	1.0	-	7.7	111.2
1991	0.3	2.7	0.4	-	3.4	56.0
1992	1.7	14	2.1	-	17.8	298.1
1993	0.2	24.9	5.4	0.2	30.7	611.6
1994	0.6	15.0	2.8	-	18.4	324.1
1995	1.5	9.7	1.1	-	12.3	205.7
1996	0.2	25.2	12.7	0.2	38.3	773.8
1997	1.8	33.4	10.2	0.4	45.8	763.7
1998	0.9	25.1	2.9	-	28.9	440.5
1999	0.3	4.7	0.7	-	5.7	102.4
2000	0.2	12.9	3.3	0.1	16.5	265.1
2001	-	17.6	1.2	-	18.8	294.0
2002	-	18.3	2.5	-	20.8	339.7
2003	0.3	11.8	1.0	-	13.1	198.5
2004	-	5.3	0.5	-	5.8	92.0
2005	-	0.4	-	-	0.4	9.0
2006	-	-	-	-	0.0	0.0
2007	-	-	-	-	0.0	0.0
2008	-	-	-	-	0.0	0.0
2009	-	-	-	-	0.0	0.0
2010	+	0.2	+	-	0.3	5.4
2011	-	2.5	1.6	-	4.1	72.1
2012	+	0.2	0.2	-	0.4	10.4
2013	-	-	-	-	0.0	0.0

TAFLA 3.24.3

**Loðna.** Skipting aflans í fjölda eftir aldri (í milljörðum) og heildaraflinn í fjölda og þyngd (þús. tonna) jan–mar á árunum 1979–2014.

**Capelin.** Landings in numbers by age (billions) and nominal landings by number and weight (thous. tonnes) in winter (Jan–Mar) 1979–2014.

Ár Year	Aldur Age				Samtals fjöldi Total number	Samtals þyngd Total weight
	2	3	4	5		
1979	1.0	20.8	4.8	0.1	26.7	539.9
1980	1.3	17.6	3.5	-	22.4	392.1
1981	1.7	7.1	1.9	-	10.7	156.0
1982	-	0.8	0.1	-	0.9	13.2
1983	-	-	-	-	0.0	0.0
1984	2.1	18.1	3.4	-	23.6	439.6
1985	0.4	9.1	5.4	-	14.9	348.5
1986	0.1	9.8	6.9	0.2	17.0	391.8
1987	-	6.9	15.5	-	22.4	560.5
1988	-	23.4	7.2	0.3	30.9	657.2
1989	0.1	22.9	7.8	-	30.8	665.1
1990	1.4	24.8	9.6	0.1	35.9	686.8
1991	0.5	7.4	1.5	-	9.4	202.4
1992	2.7	29.4	2.8	-	34.9	621.1
1993	0.2	20.1	2.5	-	22.8	489.6
1994	0.6	22.7	3.9	-	27.2	567.1
1995	1.3	17.6	5.9	-	24.8	539.8
1996	0.6	27.4	7.7	-	35.7	723.6
1997	0.9	29.1	11.00	-	41.0	797.1
1998	0.3	20.4	5.4	-	26.1	481.3
1999	0.5	31.2	7.5	-	39.2	658.9
2000	0.3	36.3	5.4	-	42.0	830.3
2001	0.4	27.9	6.7	-	35.0	806.2
2002	0.1	33.1	4.2	-	37.4	955.0
2003	0.1	32.2	1.9	-	34.2	648.0
2004	0.6	24.6	3.0	-	28.2	542.9
2005	0.1	31.5	3.1	-	34.7	692.1
2006	0.1	10.4	0.3	-	10.8	238.0
2007	0.3	19.5	0.5	-	20.3	376.8
2008	0.5	10.6	0.4	-	11.5	202.4
2009	0.1	0.6	0.1	-	0.8	15.1
2010	0.7	5.3	0.9	+	6.9	150.7
2011	0.1	16.2	0.6	-	17.0	385.2
2012	0.6	25.0	6.1	+	31.8	674.4
2013	0.3	12.1	9.7	0.2	22.3	541.0
2014	0.1	4.8	1.3	+	6.1	141.8

TAFLA 3.24.4

**Loðna.** Meðalþyngd (g) kynþroska loðnu að hausti af árgöngum 1978–2011.  
*Capelin.* Mean weight (g) in autumn of mature capelin of the 1978–2011 year classes.

Árgangur <i>Year class</i>	2 ára <i>Age 2</i>	3 ára <i>Age 3</i>
1978	-	24.0
1979	19.2	24.1
1980	16.5	22.5
1981	16.1	25.7
1982	15.8	23.8
1983	15.5	24.1
1984	18.1	25.8
1985	17.9	23.4
1986	15.5	25.5
1987	18.0	25.5
1988	18.1	25.4
1989	16.3	22.6
1990	16.5	23.3
1991	16.2	23.6
1992	16.0	20.5
1993	15.3	20.6
1994	15.8	20.3
1995	14.3	18.8
1996	14.1	20.6
1997	16.8	24.7
1998	17.1	23.9
1999	16.3	22.0
2000	15.9	24.0
2001	16.9	21.6
2002	16.1	24.2
2003	21.3	19.4
2004	15.9	-
2005	15.1	22.4
2006	18.6	23.8
2007	20.0	24.0
2008	19.0	24.4
2009	18.7	28.0
2010	22.0	20.9
2011	18.0	
Meðaltal <i>Average</i>	17.1	23.2

TAFLA 3.24.5

**Loðna.** Stofnstærð í fjölda eftir aldri og kynþroska (í milljörðum) miðað við 1. janúar 1979–2014. Taflan sýnir einnig þyngd kynþroska og ókynþroska loðnu (þús. tonna) og stærð hrygningarstofns í lok vertíðar.

**Capelin.** Stock abundance in numbers by age and maturity groups (billions) on 1 January 1979–2014. Also shown is biomass (thous. tonnes) of the immature and maturing stock components and the spawning stock size at the end of the fishing season.

Ár Year	Fjöldi ókynþroska Number immature			Fjöldi kynþroska Number mature				Samtals þyngd Total weight		Hrygningarstofn Spawning stock	
	Aldur 2 Age 2	Aldur 3 Age 3	Alls Total	Aldur 3 Age 3	Aldur 4 Age 4	Aldur 5 Age 5	Alls Total	Ókynþroska Immature	Kynþroska mature	Fjöldi Number	Þyngd Weight
1979	137.6	12.8	150.4	51.8	14.8	0.3	66.9	1028	1358	29.0	600
1980	50.6	13.8	64.4	53.4	3.6	0.2	57.2	502	980	17.5	300
1981	55.3	3.5	58.8	16.3	4.9	-	21.2	527	471	7.7	170
1982	41.2	3.0	44.2	8.0	0.5	-	8.5	292	171	6.8	140
1983	123.7	12.6	136.3	14.3	2.0	-	16.3	685	315	13.5	260
1984	105.0	35.7	140.7	39.8	7.6	0.1	47.5	984	966	21.6	440
1985	211.6	34.3	245.9	25.2	15.6	0.3	41.1	1467	913	20.7	460
1986	83.2	83.9	167.1	34.5	10.5	0.2	45.2	1414	1059	19.6	460
1987	131.9	25.6	157.5	22.1	37.0	0.2	59.1	1003	1355	18.3	420
1988	120.5	31.2	151.3	34.1	11.7	-	45.8	1083	993	18.5	400
1989	67.8	20.1	87.9	48.8	16.0	0.3	64.8	434	1298	22.0	440
1990	53.9	8.6	62.5	31.2	12.1	-	43.3	291	904	5.5	115
1991	98.9	8.6	107.5	22.3	4.5	-	26.8	501	544	16.3	330
1992	111.6	8.1	119.7	54.8	5.3	-	60.1	487	1106	25.8	475
1993	124.6	13.9	138.5	46.5	3.5	-	50.0	622	1017	23.6	499
1994	121.3	16.9	138.2	50.5	4.6	-	55.1	573	1063	24.8	460
1995	188.1	29.5	217.6	35.1	8.7	-	43.8	696	914	19.2	420
1996	165.2	37.9	203.1	75.5	20.1	-	95.6	800	1820	42.8	830
1997	160.0	24.1	184.1	72.4	24.8	-	97.2	672	1881	21.8	430
1998	138.8	29.5	168.3	50.1	7.9	-	58.0	621	1106	27.6	492
1999	140.9	16.1	157.0	53.2	16.0	-	69.3	585	1171	29.5	500
2000	115.8	20.5	136.3	68.2	10.0	-	78.2	535	1485	34.2	650
2001	122.2	21.0	161.2	46.3	10.5	-	56.8	655	1197	21.3	450
2002	117.3	7.6	126.6	59.3	10.5	-	69.8	510	1445	22.9	475
2003	109.4	9.4	105.1	58.4	2.9	-	61.3	487	1214	20.7	410
2004	134.6	11.4	143.5	54.2	6.2	-	60.4	597	1204	28.2	535
2005	48.6	2.9	51.5	86.6	7.5	-	72.5	570	1450	36.3	602
2006	81.7	2.1	83.8	29.4	1.9	-	31.3	761	639	18.8	400
2007	55.8	1.1	56.9	52.5	1.4	-	53.9	515	997	19.1	410
2008	32.4	4.0	36.4	32.5	0.7	-	33.2	339	619	22.2	406
2009	37.3	6.4	43.7	14.5	2.6	+	17.1	413	343	17.3	328
2010	77.0	2.9	79.9	21.5	4.2	+	25.7	728	548	21.5	410
2011	117.7	13.6	131.3	36.2	1.9	-	38.1	1235	765	22.3	411
2012	49.1	28.8	77.9	46.4	7.9	+	54.4	678	1112	20.7	418
2013	44.1 <sup>1)</sup>	9.6 <sup>1)</sup>	53.6 <sup>1)</sup>	22.0	18.8	0.4	41.2	457 <sup>1)</sup>	983	17.9	417
2014	54.1 <sup>1)</sup>	6.2 <sup>1)</sup>	60.3 <sup>1)</sup>	22.5	6.3	0.1	29.4	381 <sup>1)</sup>	545	21.1	424

<sup>1)</sup> Bráðabirgðatölur. Provisional figures.

TAFLA 3.24.6

**Loðna.** Mældur fjöldi (í milljörðum) ókynþroska 1 og 2 ára loðnu í haustleiðöngrum (sept–des).  
**Capelin.** Abundance (numbers in billions) of immature ages 1 and 2 from acoustic autumn surveys (Sept–Dec).

Ár Year	Aldur 1 Age 1 - Acoustics	Aldur 2 Age 2 - Acoustics
1980	23.5	-
1981	21.0	1.1
1982	68.0	1.7
1983	44.1	8.2
1984	73.8	4.6
1985	33.8	12.6
1986	58.6	1.4
1987	21.3	2.5
1988	43.9	6.7
1989	29.2	1.8
1990	24.9	1.3
1991	60.0	5.3
1992	104.6	2.3
1993	100.4	9.8
1994	119.0	6.9
1995	165.0	30.1
1996	111.9	16.4
1997	66.8	30.8
1998	121.0	5.9
1999	89.8	4.4
2000	103.7	10.9
2001	101.8	2.4
2002	1.0	0.5
2003	4.9	3.1
2004	7.9	0.1
2005	-	-
2006	44.7	0.3
2007	5.7	0.1
2008	7.5	0.4
2009	13.0	-
2010	91.6	6.3
2011	9.0	0.6
2012	18.5	2.0
2013	60.1	6.9

TAFLA 3.25.1

**Kolmunni.** Afli Íslendinga og annarra þjóða (í tonnum)  
í Norðaustur-Atlantshafi 1970–2013.

**Blue whiting.** Icelandic landings (tonnes) and total catch of other nations  
in the Northeast Atlantic during the years 1970–2013.

Ár Year	Ísland Iceland	Aðrar þjóðir Other nations	Samtals Total
1970	-	37 949	37 949
1971	-	75 599	75 599
1972	634	76 861	77 495
1973	3 212	99 804	103 016
1974	4 349	103 164	107 513
1975	1 297	110 748	112 045
1976	8 789	155 188	163 977
1977	15 778	252 958	268 736
1978	34 777	573 933	608 710
1979	19 096	1 099 802	1 118 898
1980	9 934	1 112 630	1 122 564
1981	15 021	907 959	922 980
1982	1 689	548 954	550 643
1983	7 077	546 267	553 344
1984	105	615 464	615 569
1985	-	678 214	678 214
1986	-	847 145	847 145
1987	-	654 718	654 718
1988	-	557 847	557 847
1989	4 977	622 470	627 447
1990	-	561 610	561 610
1991	-	369 524	369 524
1992	-	475 089	475 089
1993	-	480 679	480 679
1994	-	459 414	459 414
1995	369	578 536	578 905
1996	501	645 481	645 982
1997	10 464	661 973	672 437
1998	68 681	1 060 288	1 128 969
1999	160 425	1 095 803	1 256 228
2000	260 938	1 151 990	1 412 928
2001	365 099	1 415 071	1 780 170
2002	286 430	1 270 362	1 556 792
2003	501 496	1 819 910	2 321 406
2004	422 078	1 955 491	2 377 569
2005	265 515	1 761 438	2 026 953
2006	314 768	1 651 372	1 966 140
2007	237 854	1 374 476	1 612 330
2008	163 793	1 082 672	1 246 465
2009	120 202	515 437	635 639
2010	87 908	435 924	523 832
2011	5 882	97 710	103 592
2012	63 056	320 960	384 016
2013 <sup>1)</sup>	104 918	538 082	643 000

<sup>1)</sup> Bráðabirgðatölur. Provisional figures.

TAFLA 3.26.1

**Makríll.** Afli Íslendinga og annarra þjóða (í tonnum) í Norðaustur-Atlantshafi 1987–2013.

*Mackerel. Icelandic landings (tonnes) and total catch of other nations in the Northeast Atlantic during the years 1987–2013.*

Ár Year	Ísland Iceland	Aðrar þjóðir Other nations	Samtals Total
1987	-	654 805	654 805
1988	-	680 492	680 492
1989	-	584 509	589 509
1990	-	627 511	627 511
1991	-	667 883	667 883
1992	-	760 351	760 351
1993	-	825 036	825 036
1994	-	821 395	821 395
1995	-	755 800	755 800
1996	1	563 610	563 611
1997	931	568 682	569 613
1998	288	666 376	666 664
1999	144	640 167	640 311
2000	1	738 607	738 608
2001	1	736 599	736 600
2002	53	771 368	771 421
2003	122	679 166	679 288
2004	1	660 490	660 491
2005	363	548 746	549 109
2006	4 222	476 958	481 180
2007	36 489	549 717	586 206
2008	112 353	510 135	622 488
2009	116 160	621 568	737 728
2010	122 034	753 249	875 283
2011	159 263	787 399	946 662
2012	149 366	743 396	892 762
2013 <sup>1)</sup>	151 234	743 766	895 000

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*

TAFLA 3.28.1

**Gullax.** Afli (í tonnum) á Íslandsmiðum 1985–2013.

*Greater silver smelt. Landings (in tonnes) from Icelandic waters 1985–2013.*

Ár Year	Ísland Iceland
1985	5
1986	53
1987	42
1988	206
1989	8
1990	112
1991	246
1992	657
1993	1 255
1994	613
1995	492
1996	808
1997	3 367
1998	13 387
1999	5 495
2000	4 332
2001	2 478
2002	4 357
2003	2 686
2004	3 637
2005	4 481
2006	4 775
2007	4 246
2008	8 778
2009	10 829
2010	16 428
2011	10 515
2012	9 289
2013 <sup>1)</sup>	7 154

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*



TAFLA 3.29.1

**Humar.** Afli (í tonnum) á Íslandsmiðum árin 1951–2013.  
**Nephrops.** Landings (in tonnes) from Icelandic waters 1951–2013.

Ár Year	Ísland Iceland	Aðrar þjóðir Other nations	Samtals Total
1951	-	26	26
1952	-	53	53
1953	-	144	144
1954	-	236	236
1955	-	203	203
1956	-	138	138
1957	-	312	312
1958	728	593	1 321
1959	1 404	602	2 006
1960	2 081	451	2 532
1961	1 490	322	1 812
1962	2 662	154	2 816
1963	5 550	512	6 062
1964	3 487	586	4 073
1965	3 706	409	4 115
1966	3 465	546	4 011
1967	2 731	208	2 939
1968	2 489	157	2 646
1969	3 512	189	3 701
1970	4 026	119	4 145
1971	4 657	155	4 812
1972	4 321	260	4 581
1973	2 791	5	2 796
1974	1 983	6	1 989
1975	2 357	-	2 357
1976	2 780	-	2 780
1977	2 723	-	2 723
1978	2 059	-	2 059
1979	1 440	-	1 440
1980	2 398	-	2 398
1981	2 520	-	2 520
1982	2 603	-	2 603
1983	2 672	-	2 672
1984	2 459	-	2 459
1985	2 385	-	2 385
1986	2 564	-	2 564
1987	2 712	-	2 712
1988	2 240	-	2 240
1989	1 866	-	1 866
1990	1 692	-	1 692
1991	2 157	-	2 157
1992	2 230	-	2 230
1993	2 381	-	2 381
1994	2 238	-	2 238
1995	1 027	-	1 027
1996	1 633	-	1 633
1997	1 228	-	1 228
1998	1 411	-	1 411
1999	1 376	-	1 376
2000	1 239	-	1 239
2001	1 420	-	1 420
2002	1 548	-	1 548
2003	1 666	-	1 666
2004	1 437	-	1 437
2005	2 030	-	2 030
2006	1 875	-	1 875
2007	2 006	-	2 006
2008	2 070	-	2 070
2009	2 464	-	2 464
2010	2 540	-	2 540
2011	2 240	-	2 240
2012	1 914	-	1 914
2013 <sup>1)</sup>	1 724	-	1 724

<sup>1)</sup> Bráðabirgðatölur. Provisional figures.

TAFLA 3.29.2

Humar. Afli og afli á togtíma eftir svæðum árin 1970–2013.

*Nephrops. Landings and catch per hour by area and total during 1970–2013.*

Ár Year	SV-mið Jökuldjúp–Selvogsleir		Vestmannaeyjamið Selvogsbanki–Háfadjúp		SA-mið Skaftárdjúp–Lónsdjúp		Alls Total	
	Tonn Tonnes	kg/klst kg/hour	Tonn Tonnes	kg/klst kg/hour	Tonn Tonnes	kg/klst kg/hour	Tonn Tonnes	kg/klst kg/hour
1970	1 517	35.9	916	34.7	1 593	51.1	4 026	40.2
1971	1 393	46.9	1 446	43.0	1 818	55.5	4 657	48.4
1972	1 500	36.8	1 370	35.9	1 451	40.8	4 321	37.7
1973	1 130	30.9	535	31.7	1 126	31.9	2 791	31.3
1974	408	32.0	492	32.2	1 083	48.5	1 983	39.4
1975	527	33.6	717	35.6	1 113	43.9	2 357	38.5
1976	817	32.4	608	31.5	1 355	42.1	2 780	36.2
1977	571	27.5	663	32.8	1 489	42.5	2 723	35.7
1978	395	31.2	290	28.6	1 374	47.9	2 059	40.0
1979	700	33.9	445	32.8	295	34.2	1 440	33.6
1980	734	43.8	540	34.4	1 124	55.5	2 398	45.5
1981	398	44.0	627	44.1	1 495	58.8	2 520	51.8
1982	640	44.0	509	42.8	1 454	60.2	2 603	51.5
1983	572	42.5	710	45.8	1 390	51.6	2 672	47.8
1984	422	36.1	722	47.9	1 315	48.5	2 459	45.6
1985	522	46.9	583	57.1	1 280	60.8	2 385	56.4
1986	495	49.0	454	56.2	1 615	68.2	2 564	61.3
1987	615	43.5	599	57.4	1 498	55.6	2 712	52.6
1988	625	39.3	965	42.7	650	36.8	2 240	39.9
1989	394	32.8	645	35.7	827	38.0	1 866	36.0
1990	217	29.3	304	29.0	1 171	48.1	1 692	40.0
1991	374	35.0	361	29.0	1 422	51.0	2 157	42.1
1992	400	40.8	414	40.0	1 417	60.5	2 230	51.3
1993	446	42.1	435	38.3	1 500	61.6	2 381	51.4
1994	539	30.8	493	35.4	1 205	43.8	2 238	38.0
1995	510	26.0	325	28.0	192	26.0	1 027	27.0
1996	514	30.0	721	37.8	398	39.2	1 633	35.2
1997	371	25.2	533	30.5	324	46.2	1 228	31.3
1998	145	22.2	746	39.1	520	49.0	1 411	38.9
1999	131	25.5	669	38.2	576	47.9	1 376	39.7
2000	107	25.8	454	38.2	678	64.3	1 239	46.6
2001	258	26.6	296	29.2	866	73.5	1 420	44.9
2002	288	25.6	265	29.9	995	64.8	1 548	43.7
2003	133	30.5	357	32.9	1 176	69.9	1 666	52.0
2004	126	16.8	341	25.9	970	58.4	1 437	38.5
2005	218	30.6	953	48.2	860	46.9	2 030	44.9
2006	316	47.6	490	46.4	1 069	93.7	1 875	65.5
2007	1 200	93.0	53	59.1	753	111.5	2 006	97.6
2008	599	87.5	477	102.8	994	144.5	2 070	112.7
2009	1 130	70.0	472	99.8	862	86.9	2 464	80.0
2010	1 173	76.8	652	71.6	715	82.1	2 540	75.8
2011	846	65.7	474	65.9	920	89.1	2 240	71.0
2012	791	62.9	439	57.2	684	75.7	1 914	63.0
2013 <sup>1)</sup>	647	59.7	341	46.3	736	73.5	1 724	60.5

<sup>1)</sup> Bráðabirgðatölur. Provisional figures.

TAFLA 3.29.3

**Humar.** Skipting aflans í fjölda eftir aldri (í milljónum) á árunum 1982–2013.  
**Nephrops.** Landings in numbers by age (millions) in the years 1982–2013.

Ár Year	Aldur Age													
	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1982	0.08	0.98	5.41	6.21	7.34	8.03	5.79	4.62	3.51	1.28	0.96	0.32	0.16	0.10
1983	0.11	0.73	4.49	6.81	6.64	6.65	4.74	5.01	3.79	1.77	1.16	0.63	0.34	0.21
1984	0.26	1.45	4.74	5.97	6.86	6.18	4.01	3.41	3.20	1.53	1.27	0.80	0.47	0.55
1985	0.05	0.89	3.70	5.22	5.78	6.59	5.15	4.02	3.26	1.33	1.00	0.57	0.33	0.22
1986	0.01	0.44	3.25	6.39	8.61	7.51	5.25	4.13	3.30	1.20	0.96	0.52	0.23	0.11
1987	0.05	0.42	2.44	5.29	7.34	8.31	5.43	4.45	3.33	1.62	1.06	0.61	0.38	0.36
1988	0.09	0.73	2.70	4.53	6.04	6.18	5.25	3.99	2.53	1.19	0.89	0.47	0.37	0.25
1989	0.07	0.75	3.37	3.81	4.59	5.06	3.52	2.99	2.59	1.22	0.82	0.53	0.34	0.23
1990	0.09	1.09	5.44	7.15	5.93	4.42	2.78	2.13	1.57	0.83	0.63	0.42	0.33	0.31
1991	0.04	0.87	4.88	7.98	9.07	6.99	3.83	2.86	1.91	0.84	0.61	0.37	0.26	0.21
1992	0.01	0.45	3.13	6.33	8.38	8.32	4.91	3.13	2.02	0.91	0.55	0.30	0.19	0.13
1993	0.05	0.35	2.49	4.65	6.35	6.94	5.16	3.90	3.11	1.41	0.90	0.52	0.31	0.27
1994	0.12	0.90	2.27	4.05	5.45	6.09	4.47	3.79	3.13	1.64	1.01	0.49	0.34	0.19
1995	0.06	0.53	1.71	2.07	2.26	2.58	1.89	1.78	1.37	0.71	0.44	0.38	0.24	0.14
1996	0.07	0.73	3.10	4.23	4.19	4.13	2.81	2.28	1.99	1.01	0.83	0.63	0.38	0.28
1997	0.03	0.51	2.48	3.57	3.59	2.88	1.81	1.58	1.46	0.80	0.64	0.47	0.29	0.27
1998	0.00	0.19	1.40	2.54	3.49	3.32	2.24	1.88	1.71	0.96	0.79	0.62	0.43	0.42
1999	0.03	0.18	1.26	2.65	3.63	4.01	2.83	2.10	1.65	0.78	0.54	0.37	0.28	0.26
2000	0.03	0.19	1.18	1.61	2.21	2.75	2.23	2.22	1.87	0.94	0.66	0.45	0.29	0.26
2001	0.02	0.22	0.87	1.55	2.35	2.85	2.23	2.35	2.14	1.23	0.90	0.63	0.40	0.38
2002	0.01	0.17	1.77	2.21	2.23	2.52	1.98	2.10	1.98	1.22	1.06	0.93	0.71	0.79
2003	0.07	0.26	1.04	3.31	3.61	3.02	2.14	1.90	1.77	1.13	1.04	0.88	0.78	0.94
2004	0.03	0.56	1.99	2.60	4.65	4.53	2.32	1.74	1.25	0.67	0.52	0.43	0.39	0.71
2005	0.03	0.22	1.76	3.45	3.94	5.16	4.61	3.54	2.65	1.38	0.77	0.56	0.45	0.41
2006	0.01	0.22	1.19	2.83	4.14	4.29	3.59	3.31	2.60	1.29	0.88	0.58	0.42	0.43
2007	0.02	0.13	0.82	1.85	2.96	3.90	2.82	2.58	2.48	1.61	1.14	0.99	0.84	1.33
2008	0.02	0.24	1.21	2.42	3.50	4.00	3.65	3.43	2.69	1.57	1.02	0.95	0.73	0.84
2009	0.04	0.26	1.29	2.38	3.36	4.28	3.72	3.43	2.96	1.82	1.21	1.22	1.16	1.81
2010	0.02	0.24	1.39	2.55	3.55	4.34	3.55	3.56	2.86	1.89	1.22	1.37	1.14	1.99
2011	0.02	0.25	1.50	2.85	3.27	4.17	3.42	3.19	2.93	1.83	1.08	0.99	0.90	1.33
2012	0.00	0.09	0.70	1.54	2.11	2.89	2.82	2.56	2.41	1.70	1.08	1.02	1.02	1.50
2013	0.00	0.03	0.29	0.88	1.62	2.41	2.21	2.18	2.30	1.45	1.13	1.01	0.97	1.53

TAFLA 3.29.4

**Humar.** Stofnstærð í fjölda eftir aldri (í milljónum) og stærð veiðistofnsins í þúsundum tonna á árunum 1982–2014.  
**Nephrops.** Stock abundance in numbers by age (millions) and fishable stock in thousand tonnes in the years 1982–2014.

Ár Year	Aldur Age														Veiðistofn 6+ Fishable stock
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1982	141.11	111.90	99.20	74.29	58.99	45.88	30.36	20.53	13.90	6.04	4.50	4.39	1.12	0.45	15.73
1983	132.83	115.46	90.73	76.33	55.22	41.68	30.34	19.64	12.65	8.22	3.79	2.82	3.31	0.77	15.51
1984	122.75	108.65	93.87	70.23	56.35	39.23	28.14	20.57	11.58	6.96	5.14	2.06	1.74	2.40	14.96
1985	131.26	100.27	87.65	72.57	52.12	39.95	26.56	19.43	13.77	6.61	4.32	3.06	0.98	1.00	14.53
1986	136.51	107.42	81.29	68.42	54.71	37.46	26.78	17.11	12.30	8.34	4.22	2.64	2.00	0.50	14.22
1987	147.62	111.76	87.55	63.62	50.26	37.04	23.91	17.20	10.30	7.11	5.75	2.59	1.69	1.43	13.57
1988	142.99	120.81	91.12	69.48	47.32	34.54	22.86	14.70	10.08	5.45	4.36	3.75	1.57	1.04	12.87
1989	130.55	116.99	98.25	72.17	52.80	33.30	22.71	13.99	8.45	5.98	3.39	2.77	2.64	0.95	12.84
1990	124.05	106.82	95.11	77.41	55.65	39.09	22.70	15.42	8.77	4.59	3.80	2.04	1.80	1.85	13.46
1991	113.85	101.49	86.47	72.96	56.93	40.22	28.02	16.09	10.71	5.76	3.01	2.54	1.29	1.17	14.00
1992	100.64	93.18	82.31	66.39	52.55	38.45	26.64	19.49	10.60	7.05	3.96	1.92	1.75	0.82	13.86
1993	105.51	82.38	75.88	64.57	48.65	35.48	24.00	17.39	13.13	6.86	4.95	2.75	1.30	1.27	13.56
1994	116.26	86.34	67.14	59.88	48.67	34.11	22.80	15.01	10.73	7.96	4.35	3.25	1.79	0.78	12.88
1995	100.47	95.08	69.88	52.92	45.37	34.93	22.45	14.65	8.88	5.98	5.04	2.65	2.22	1.15	12.19
1996	121.71	82.21	77.36	55.67	41.46	35.11	26.27	16.68	10.39	6.04	4.26	3.73	1.83	1.60	12.82
1997	136.41	99.58	66.65	60.54	41.76	30.16	25.02	18.98	11.60	6.71	4.03	2.74	2.49	1.16	12.87
1998	133.93	111.66	81.07	52.33	46.35	30.96	22.10	18.85	14.11	8.19	4.78	2.72	1.82	1.78	13.16
1999	159.89	109.65	91.25	65.11	40.55	34.79	22.35	16.07	13.74	10.01	5.84	3.20	1.67	1.11	13.57
2000	169.37	130.88	89.62	73.57	50.92	29.93	24.87	15.75	11.26	9.76	7.50	4.30	2.29	1.11	14.39
2001	157.57	138.64	106.9	72.31	58.79	39.69	22.03	18.35	10.90	7.54	7.14	5.54	3.11	1.61	15.36
2002	155.33	129.00	113.3	86.80	57.80	46.01	29.93	16.02	12.91	6.99	5.06	5.03	3.97	2.19	16.61
2003	147.88	127.17	105.5	91.17	69.07	45.31	35.40	22.72	11.23	8.79	4.62	3.19	3.28	2.61	17.91
2004	137.91	121.02	103.9	85.40	71.66	53.29	34.37	27.05	16.89	7.60	6.17	2.85	1.82	1.99	18.89
2005	126.58	112.88	98.58	83.25	67.58	54.48	39.55	26.05	20.58	12.70	5.62	4.59	1.95	1.14	20.04
2006	108.72	103.61	92.22	79.12	65.05	51.78	39.95	28.22	18.14	14.46	9.15	3.90	3.25	1.20	20.38
2007	99.82	89.00	84.63	74.43	62.23	49.53	38.52	29.47	20.12	12.51	10.7	6.70	2.68	2.29	20.64
2008	85.78	81.71	72.76	68.57	59.29	48.30	37.05	29.00	21.80	14.23	8.78	7.72	4.59	1.44	20.51
2009	66.18	70.21	66.69	58.47	53.95	45.39	35.94	27.04	20.64	15.43	10.23	6.28	5.46	3.10	19.92
2010	47.94	54.14	57.26	53.43	45.72	41.15	33.30	26.08	19.05	14.24	10.99	7.29	4.04	3.43	18.61
2011	28.83	39.23	44.11	45.62	41.44	34.24	29.77	24.07	18.15	13.02	9.95	7.90	4.74	2.28	16.91
2012	11.25	23.60	31.89	34.77	34.78	30.98	24.27	21.30	16.83	12.22	9.01	7.18	5.58	3.07	15.19
2013	130.00	9.21	19.24	25.48	27.07	26.58	22.76	17.33	15.13	11.61	8.47	6.41	4.96	3.65	13.37
2014	130.00	106.42	7.52	15.48	20.07	20.71	19.59	16.64	12.23	10.31	8.20	5.92	4.33	3.19	11.31

TAFLA 3.29.5

**Humar.** Veiðidánartala eftir aldri á árunum 1982–2013.  
*Nephrops.* Fishing mortality by age in the years 1982–2013.

Ár Year	Aldur Age														Meðaltal 6–13 Average 6–13
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1982	0.00	0.01	0.06	0.10	0.15	0.21	0.24	0.28	0.33	0.27	0.27	0.08	0.17	0.29	0.23
1983	0.00	0.01	0.06	0.10	0.14	0.19	0.19	0.33	0.40	0.27	0.41	0.28	0.12	0.35	0.25
1984	0.00	0.02	0.06	0.10	0.14	0.19	0.17	0.20	0.36	0.28	0.32	0.55	0.35	0.29	0.22
1985	0.00	0.01	0.05	0.08	0.13	0.20	0.24	0.26	0.30	0.25	0.29	0.23	0.47	0.28	0.22
1986	0.00	0.01	0.05	0.11	0.19	0.25	0.24	0.31	0.35	0.17	0.29	0.25	0.13	0.28	0.24
1987	0.00	0.00	0.03	0.10	0.18	0.28	0.29	0.33	0.44	0.29	0.23	0.30	0.28	0.32	0.27
1988	0.00	0.01	0.03	0.08	0.15	0.22	0.29	0.35	0.32	0.28	0.25	0.15	0.30	0.30	0.24
1989	0.00	0.01	0.04	0.06	0.10	0.18	0.19	0.27	0.41	0.25	0.31	0.23	0.16	0.31	0.22
1990	0.00	0.01	0.07	0.11	0.13	0.13	0.15	0.17	0.22	0.22	0.20	0.26	0.23	0.20	0.17
1991	0.00	0.01	0.06	0.13	0.19	0.21	0.16	0.22	0.22	0.17	0.25	0.17	0.25	0.22	0.19
1992	0.00	0.01	0.04	0.11	0.19	0.27	0.23	0.19	0.24	0.15	0.17	0.19	0.12	0.19	0.19
1993	0.00	0.01	0.04	0.08	0.16	0.24	0.27	0.28	0.30	0.26	0.22	0.23	0.30	0.27	0.23
1994	0.00	0.01	0.04	0.08	0.13	0.22	0.24	0.33	0.39	0.26	0.30	0.18	0.24	0.32	0.24
1995	0.00	0.01	0.03	0.04	0.06	0.09	0.10	0.14	0.19	0.14	0.10	0.17	0.13	0.14	0.11
1996	0.00	0.01	0.05	0.09	0.12	0.14	0.13	0.16	0.24	0.20	0.24	0.21	0.26	0.21	0.16
1997	0.00	0.01	0.04	0.07	0.10	0.11	0.08	0.10	0.15	0.14	0.19	0.21	0.14	0.30	0.12
1998	0.00	0.00	0.02	0.06	0.09	0.13	0.12	0.12	0.14	0.14	0.20	0.29	0.30	0.30	0.12
1999	0.00	0.00	0.02	0.05	0.10	0.14	0.15	0.16	0.14	0.09	0.11	0.14	0.21	0.30	0.12
2000	0.00	0.00	0.02	0.02	0.05	0.11	0.10	0.17	0.20	0.11	0.10	0.12	0.15	0.30	0.11
2001	0.00	0.00	0.01	0.02	0.05	0.08	0.12	0.15	0.24	0.20	0.15	0.14	0.15	0.30	0.13
2002	0.00	0.00	0.02	0.03	0.04	0.06	0.08	0.16	0.19	0.21	0.26	0.23	0.22	0.50	0.13
2003	0.00	0.00	0.01	0.04	0.06	0.08	0.07	0.10	0.19	0.15	0.28	0.36	0.30	0.50	0.12
2004	0.00	0.01	0.02	0.03	0.07	0.10	0.08	0.07	0.09	0.10	0.10	0.18	0.27	0.50	0.08
2005	0.00	0.00	0.02	0.05	0.07	0.11	0.14	0.16	0.15	0.13	0.16	0.14	0.29	0.50	0.12
2006	0.00	0.00	0.01	0.04	0.07	0.10	0.10	0.14	0.17	0.10	0.11	0.18	0.15	0.50	0.11
2007	0.00	0.00	0.01	0.03	0.05	0.09	0.08	0.10	0.15	0.15	0.13	0.18	0.42	1.00	0.10
2008	0.00	0.00	0.02	0.04	0.07	0.10	0.12	0.14	0.15	0.13	0.14	0.15	0.19	1.00	0.11
2009	0.00	0.00	0.02	0.05	0.07	0.11	0.12	0.15	0.17	0.14	0.14	0.24	0.27	1.00	0.12
2010	0.00	0.01	0.03	0.05	0.09	0.12	0.13	0.16	0.18	0.16	0.13	0.23	0.37	1.00	0.13
2011	0.00	0.01	0.04	0.07	0.09	0.14	0.14	0.16	0.20	0.17	0.13	0.15	0.24	1.00	0.14
2012	0.00	0.00	0.02	0.05	0.07	0.11	0.14	0.14	0.17	0.17	0.14	0.17	0.22	0.76	0.12
2013	0.00	0.00	0.02	0.04	0.07	0.10	0.11	0.15	0.18	0.15	0.16	0.19	0.24	0.61	0.12

TAFLA 3.29.6

**Humar.** Forsendur í framreikningum á þróun stofnsins til ársins 2015.  
Náttúrulegur dánarstuðull  $M=0.2$ .

**Nephrops.** *Input parameters for stock projection to 2015.*  
*Natural mortality coefficient,  $M=0.2$ .*

Aldur <i>Age</i>	Stofnstærð <i>Stock size</i>	Veiðimynstur <i>Selectivity</i>	Meðalþyngd (g) <i>Mean weight (g)</i>
5	7.52	0.05	23
6	15.48	0.12	34
7	20.07	0.22	46
8	20.71	0.35	60
9	19.59	0.42	75
10	16.64	0.60	89
11	12.23	0.80	104
12	10.31	0.85	119
13	8.20	1.00	131
14	5.92	1.00	145
15	4.33	1.00	159
16	3.19	1.00	175

Stofnstærð: Stofnstærð í milljónum 2014.

Veiðimynstur: Hlutfallsleg veiðidánartala hvers aldursflokks 2013.

Meðalþyngd: Út frá sambandi lengdar og þyngdar.

*Stock size:* *Stock size in millions in 2014.*

*Selectivity:* *Relative fishing mortality on each age group in 2013.*

*Mean weight:* *From length-weight regression.*

TAFLA 3.30.1

Rækja. Afli (í tonnum) íslenskra skipa eftir svæðum árin 1955–2013.  
*Northern shrimp. Landings (in tonnes) of the Icelandic fleet by area in 1955–2013.*

Ár Year	Íslandsmið <i>Icelandic waters</i>				Önnur veiðisvæði <i>Other areas</i>			Samtals Total
	Djúpslóð <i>Offshore</i>	Dohrnbanki <i>Dohrn Bank</i>	Grunnslóð <i>Inshore</i>	Samtals <i>Total</i>	Flæmingjagrunn <i>Flemish Cap</i>	Miklibanki <i>Grand Banks</i>	Barentshaf <i>Barents Sea</i>	
1955	-	-	390	390	-	-	-	390
1956	-	-	772	772	-	-	-	772
1957	-	-	500	500	-	-	-	500
1958	-	-	768	768	-	-	-	768
1959	-	-	1 068	1 068	-	-	-	1 068
1960	-	-	1 396	1 396	-	-	-	1 396
1961	-	-	1 207	1 207	-	-	-	1 207
1962	-	-	541	541	-	-	-	541
1963	-	-	733	733	-	-	-	733
1964	-	-	675	675	-	-	-	675
1965	-	-	926	926	-	-	-	926
1966	-	-	1 776	1 776	-	-	-	1 776
1967	-	-	1 428	1 428	-	-	-	1 428
1968	-	-	2 469	2 469	-	-	-	2 469
1969	-	-	3 281	3 281	-	-	-	3 281
1970	-	-	4 431	4 431	-	-	-	4 431
1971	-	-	6 248	6 248	-	-	-	6 248
1972	10	-	5 334	5 344	-	-	-	5 344
1973	-	-	7 286	7 286	-	-	-	7 286
1974	74	-	6 442	6 516	-	-	-	6 516
1975	415	-	4 526	4 941	-	-	-	4 941
1976	415	-	6 366	6 781	-	-	-	6 781
1977	839	-	6 310	7 149	-	-	-	7 149
1978	1 726	-	5 537	7 263	-	-	-	7 263
1979	1 621	-	7 222	8 843	-	-	-	8 843
1980	3 886	-	6 074	9 960	-	-	-	9 960
1981	2 344	-	5 803	8 147	-	-	-	8 147
1982	1 729	-	7 451	9 180	-	-	-	9 180
1983	6 055	42	7 005	13 102	-	-	-	13 102
1984	13 019	742	10 655	24 416	-	-	-	24 416
1985	14 189	1 794	8 911	24 894	-	-	-	24 894
1986	27 687	1 150	6 994	35 831	-	-	-	35 831
1987	32 137	1 329	5 170	38 636	-	-	-	38 636
1988	23 929	1 424	4 393	29 746	-	-	-	29 746
1989	19 373	1 326	6 086	26 785	-	-	-	26 785
1990	21 844	281	7 709	29 834	-	-	-	29 834
1991	29 131	469	8 657	38 257	-	-	-	38 257
1992	35 351	1 751	9 800	46 902	-	-	-	46 902
1993	38 730	2 553	12 598	53 881	2 243	-	-	56 124
1994	54 724	1 426	16 642	72 792	2 300	-	-	75 097
1995	60 184	1 150	14 589	75 923	7 622	-	-	83 545
1996	55 430	566	12 465	68 461	20 681	-	-	89 142
1997	62 442	2 856	9 617	74 915	6 381	-	514	81 810
1998	48 246	1 421	5 847	55 514	6 572	-	642	62 728
1999	26 373	769	4 374	31 516	9 277	-	2 295	43 088
2000	20 064	132	3 839	24 035	8 912	97	705	33 749
2001	21 644	9	4 072	25 725	5 265	55	-	31 045
2002	25 425	1 231	2 548	29 204	5 741	55	-	35 000
2003	21 629	703	1 576	23 908	4 715	133	-	28 756
2004	15 388	411	560	16 359	3 567	105	-	20 026
2005	3 763	29	705	4 497	4 014	140	-	8 651
2006	608	-	250	858	1 958	226	-	3 042
2007	1 681	-	330	2 011	-	-	10	2 021
2008	1 450	-	744	2 194	-	-	-	2 194
2009	4 122	-	1 393	5 515	-	-	-	5 515
2010	6 403	4	1 170	7 577	-	185	-	7 758
2011	6 270	68	1 407	7 745	-	124	574	8 375
2012	7 339	-	2 453	9 793	-	-	731	10 524
2013 <sup>1)</sup>	7 019	345	3 363	10 727	-	92	157	10 631

<sup>1)</sup> Bráðabirgðatölur. *Provisional figures.*



TAFLA 3.30.2

Rækja. Afli rækju á grunnslóð í tonnum eftir svæðum fiskveiðiárin 1990/1991–2012/2013.  
*Northern shrimp. Inshore landings by area (tonnes) in the quota years 1990/1991–2012/2013.*

Ár Year	Breiðafjörður												Samtals Total
	Arnar- fjörður	Ísafj- djúp	Húna- flói	Skaga- fjörður	Eyja- fjörður	Skjálf- andi	Öxar- fjörður	Við Eldey	Norður- firðir	Sunnan- verður <sup>1)</sup>	Kollu- áll <sup>1)</sup>	Jökul- djúp <sup>1)</sup>	
1990/91	720	3 099	2 004	502	-	125	151	212	5	335	1 242	20	8 415
1991/92	605	2 554	2 107	500	-	310	500	514	-	138	1 962	11	9 201
1992/93	751	2 501	1 500	451	-	603	697	852	-	402	4 619	14	12 390
1993/94	853	2 511	1 044	501	-	801	905	1 352	-	258	4 497	54	12 976
1994/95	699	1 955	2 305	708	-	797	1 445	1 115	47	294	5 074	1 397	15 836
1995/96	708	2 756	2 670	1 528	47	1 023	1 308	1 756	71	68	1 784	580	14 299
1996/97	720	2 254	2 084	1 570	-	1 009	1 762	632	28	1	258	24	10 342
1997/98	546	1 435	1 432	1 224	-	682	1 509	-	93	-	10	1	6 932
1998/99	551	1 025	536	1 010	-	213	1 504	-	82	-	7	1	4 929
1999/00	548	1 722	3	399	-	-	527	-	60	34	30	1	3 324
2000/01	639	1 287	-	-	-	-	121	-	80	397	696	1 164	4 384
2001/02	752	1 497	-	-	-	2	92	-	49	-	506	0	2 898
2002/03	637	989	-	-	-	4	5	-	-	38	49	2	1 724
2003/04	748	-	-	-	-	2	2	-	-	42	166	1	961
2004/05	440	-	-	-	-	-	-	-	-	27	238	-	705
2005/06	9	3	-	-	-	-	-	-	-	29	209	-	250
2006/07	3	3	-	-	-	-	-	-	-	13	301	2	321
2007/08	158	9	-	-	-	-	-	-	-	51	472	7	697
2008/09	508	2	-	-	-	-	-	-	-	194	580	5	1 289
2009/10	314	1	-	-	-	-	-	1	-	25	787	18	1 144
2010/11	337	-	-	-	-	-	-	1	-	103	311	-	752
2011/12	224	1 040	-	-	-	2	-	-	-	143	1 479	10	2 895
2012/13	475	527	-	-	-	85	2	179	-	174	1 366	215	3 023

<sup>1)</sup> Veiðisvæðið við Snæfellsnes. *Referred to as Snæfellsnes area.*

TAFLA 3.30.3

**Rækja.** Tillögur um aflahámark á grunnslóð eftir svæðum fiskveiðiárin 1990/1991–2014/2015.  
*Northern shrimp. Tac recommended for inshore areas in the quota years 1990/1991–2014/2015.*

Ár Year	Arnar- fjörður	Ísafj.- djúp	Húna- flói	Skaga- fjörður	Skjálf- andi	Öxar- fjörður	Við Eldey <sup>1)</sup>	Norður- firðir	Snæfells- nes <sup>2,3)</sup>	Samtals Total
1990/91	700	3 000	2 000	500	125	150	400	5	-	6 880
1991/92	600	2 500	2 000	500	300	500	800	0	-	7 200
1992/93	750	2 500	1 500	450	600	700	600	0	-	7 100
1993/94	850	2 500	1 000	500	800	900	1 500	-	-	8 050
1994/95	700	2 100	2 300	700	700	1 450	1 500	50	-	9 500
1995/96	700	2 700	2 500	1 500	1 000	1 300	1 600	70	-	11 370
1996/97	700	2 300	2 100	1 500	1 000	1 750	500	50	-	9 900
1997/98	550	1 450	1 400	1 200	700	1 500	0	70	-	6 870
1998/99	550	1 000	500	1 000	300	1 500	0	80	-	4 930
1999/00	550	1 800	0	400	0	500	0	60	-	3 310
2000/01	650	1 200	0	0	0	200	0	80	-	2 130
2001/02	750	1 500	0	0	0	140	0	60	-	2 450
2002/03	650	1 000	0	0	0	0	-	0	300	1 950
2003/04	750	0	0	0	0	0	0	0	200	950
2004/05	450	0	-	-	-	-	-	-	200	650
2005/06	0	0	0	0	0	0	-	-	200	200
2006/07	0	0	0	-	-	0	-	-	200	200
2007/08	150	0	0	0	0	0	-	-	400	550
2008/09	500	0	0	0	0	0	-	-	400	900
2009/10	300	0	0	0	0	0	0	0	900	1 200
2010/11	400	0	0	0	0	0	-	-	450	850
2011/12	200	1 000	0	0	0	0	-	-	850	2 050
2012/13	450	500	0	0	400	0	250	-	1 000	2 600
2013/14	200	1 100	0	0	0	0	200	-	950	2 450
2014/15									600	600

<sup>1)</sup> Tillögur eru gefnar fyrir almanaksár. *Recommendations for calendar years.*

<sup>2)</sup> Veiðisvæðið við Snæfellsnes; Kolluáll, Jökuldjúp og sunnanverður Breiðafjörður. *Snæfellsnes area; Kolluáll, Jökuldjúp and southern Breiðafjörður.*

<sup>3)</sup> Fram til 2002 var ekki gefið út aflamark fyrir svæðið. *Until 2002, there was no recommended TAC.*

TAFLA 3.30.4

Rækja. Meðalfjöldi í kg á rækjувæðunum á grunnslóð árin 1990–2013.  
Northern shrimp. Mean number per kg for inshore areas in the period 1990–2013.

Ár Year	Arnar- fjörður	Ísafj.- djúp	Húna- flói	Skaga- fjörður	Skjálf- andi	Öxar- fjörður	Við Eldey	Breiðafjörður			Jökul- djúp <sup>1)</sup>
								Norður- firðir	Sunnan- verður <sup>1)</sup>	Kollu- áll <sup>1)</sup>	
1990	256	349	380	311	562	484	202	590	189	219	-
1991	383	393	382	322	341	277	260	-	216	302	-
1992	390	370	409	302	399	314	214	-	186	215	(227)
1993	319	378	481	319	391	342	233	660	203	254	-
1994	308	429	400	391	366	304	271	-	212	318	-
1995	272	394	387	356	394	306	232	505	206	309	(281)
1996	307	363	331	340	299	248	205	464	191	294	269
1997	312	357	362	333	264	255	243	411	212	247	364
1998	364	465	483	382	347	232	292	397	218	264	261
1999	367	348	536	383	457	217	246	(494)	217	262	324
2000	462	447	470	(397)	363	338	240	(337)	191	187	-
2001	395	389	590	534	472	585	254	336	234	237	263
2002	394	426	(525)	347	272	687	207	370	188	235	249
2003	314	428	403	(351)	283	497	-	419	193	213	(261)
2004	353	263	305	-	-	-	184	(346)	160	183	(171)
2005	361	381	(305)	(370)	303	292	-	-	186	184	-
2006	297	355	(349)	-	-	306	-	-	170	205	-
2007	246	283	(339)	(587)	393	315	-	-	157	-	-
2008	368	279	(313)	525	288	395	-	-	200	175	228
2009	308	324	433	(478)	332	303	-	(726)	185	194	235
2010	307	404	466	(485)	395	308	200	-	184	224	-
2011	387	294	373	445	410	395	-	-	197	258	(219)
2012	310	353	421	(493)	329	388	-	-	180	195	208
2013	366	365	411	(449)	442	365	186	-	184	211	193

<sup>1)</sup> Veðisvæðið við Snæfellsnes. Referred to as Snæfellsnes area.

Fjöldi er byggður á stofnmælingu innfjarðarækju. Tölur innan sviga merkja að sýni voru færri en 5.  
Numbers from the inshore areas are survey data. Numbers in parentheses indicate samples of less than 5.

TAFLA 3.30.5

Rækja. Afli úthafsrækju Íslandsmiðum í tonnum eftir svæðum árin 1991–2013.  
Northern shrimp. Offshore landings in Icelandic waters by area (tonnes) during the period 1991–2013.

Ár Year	Hali	Norðurkantur	Við Sporðagrunn	Skagafjarðardjúp	Við Kolbeinsey	Eyjafjarðaráll	Við Grímsey	Við Slétugrunn	Langanesdjúp	Bakkafloadjúp	Héraðsdjúp	Brattikantur	Eilífðarkantur	Rauða torgið	Önnur svæði Other areas	Samt. Total
1992	899	8 649	3 036	1 263	6 837	1 270	5 882	762	90	2 071	4 260	65	5	154	108	35 351
1993	975	10 875	1 894	2 720	5 113	2 573	7 726	1 581	664	1 074	2 962	55	24	280	214	38 730
1994	2 052	13 152	3 121	5 305	10 437	3 042	7 687	2 868	1 615	1 264	3 534	212	35	330	70	54 724
1995	248	17 684	3 007	5 854	12 208	4 358	6 531	1 494	1 314	1 989	4 612	266	58	487	74	60 184
1996	175	14 140	2 570	2 809	16 808	2 395	6 329	1 541	1 059	1 373	5 368	159	35	663	6	55 430
1997	880	14 902	1 395	2 395	11 541	2 201	9 243	3 327	4 751	1 513	8 584	305	28	1 372	5	62 442
1998	502	12 878	561	1 747	7 697	920	5 768	5 762	2 802	1 425	6 692	600	127	765	-	48 246
1999	17	5 214	1 523	2 562	4 756	1 881	4 957	1 858	179	712	1 214	44	25	1 419	12	26 373
2000	6	3 477	4 223	1 603	2 499	745	2 230	1 622	188	486	1 868	57	37	1 021	2	20 064
2001	2	2 119	893	1 825	2 255	1 207	3 854	4 656	979	866	2 586	98	4	299	1	21 644
2002	357	9 909	2 040	3 028	3 905	1 074	2 172	1 855	154	50	338	1	11	531	-	25 425
2003	15	7 321	510	1 671	3 950	504	4 120	2 307	177	6	779	20	2	247	-	21 629
2004	178	5 030	494	1 970	3 438	682	1 961	1 498	82	-	2	-	-	53	-	15 388
2005	2	863	11	387	938	97	943	518	-	1	-	4	-	-	-	3 763
2006	-	26	1	20	88	1	280	193	-	-	-	-	-	-	-	608
2007	1	568	37	117	458	8	287	205	-	-	-	-	-	-	-	1 681
2008	-	259	162	158	722	6	67	76	-	-	-	-	-	-	-	1 450
2009	99	1 276	67	185	1 744	37	503	211	-	-	-	-	-	-	-	4 122
2010	3	1 351	10	107	2 354	83	1 448	1 032	10	-	-	-	5	1	-	6 404
2011	-	955	37	110	1 110	230	2 772	1 050	-	-	-	3	-	3	-	6 270
2012	128	1 323	760	425	699	127	2 775	1 096	1	-	-	-	5	-	-	7 339
2013 <sup>1)</sup>	455	531	240	824	1 614	122	1 945	1 284	-	2	1	-	-	1	-	7 019

<sup>1)</sup> Bráðabirgðatölur. Provisional figures.

TAFLA 3.30.6

**Rækja.** Meðalfjöldi í kg á úthafsrækjusræðunum árin 1990–2013.  
*Northern shrimp.* Mean number per kg by offshore areas in the period 1990–2013.

Ár Year	Hali	Norðurkantur	Við Sporðagrunn	Skagafjarðardjúp	Við Kolbeinsey	Eyjafjarðaráll	Við Grímsey	Við Sléttugrunn	Langanesdjúp	Bakkafloðdjúp	Héraðsdjúp	Rauða torgið
1990		181	224	241	181	225	272	231	215	218	242	162
1991		162	198	258	184	186	305	242	201	234	280	164
1992	150	161	250	333	182	301	375	268	240	378	311	130
1993	160	178	226	280	192	247	395	261	228	284	240	112
1994	161	193	238	319	168	167	423	281	218	337	348	179
1995	179	193	259	360	203	261	390	366	263	360	349	152
1996	148	176	216	258	190	198	289	283	282	243	244	158
1997	171	195	190	244	222	197	329	304	295	314	282	153
1998	190	196	220	233	201	184	289	281	316	335	279	194
1999	165	185	213	260	193	193	292	296	282	267	294	169
2000	178	170	253	335	197	225	327	357	293	293	299	169
2001	162	158	237	322	168	196	433	355	282	242	251	136
2002	143	171	241	307	188	187	315	392	326	253	282	171
2003	181	178	208	246	225	210	274	356	352	271	279	199
2004	150	193	213	245	198	221	264	322	328	270	286	192
2005	159	188	198	229	197	197	244	290	328	285	286	222
2006		172	206	190	192	168	238	263	259	311	309	199
2007		177	210	223	174	192	262	287	291	352	232	180
2008		169	191	224	174	172	260	272	308	353	233	153
2009		160	172	185	156	151	220	241	268	280	245	146
2010		149	177	196	163	160	236	225	288	288	255	146
2011		160	191	216	151	162	249	236	287	270	236	146
2012		155	188	223	160	175	276	255	256	330	289	149
2013		149	208	198	177	200	304	293	280	309	309	172

Fjöldi er byggður á stofnmælingu úthafsrækju á svæðunum Norðurkantur–Héraðsdjúp.  
*Numbers from the offshore areas Norðurkantur–Héraðsdjúp are survey data.*



TAFLA 3.32.1

**Kúfskel.** Afli (í tonnum) eftir svæðum á árunum 1987–2013.  
**Ocean quahog.** Landings (in tonnes) by area in 1987–2013.

Ár Year	Faxaflói Faxa Bay	Norðvesturland Northwest area	Norðausturland Northeast area	Afli alls Total landings
1987	-	1 085	-	1 085
1988	-	4 724	-	4 724
-	-	-	-	-
1994	-	-	3	3
1995	10	2 060	-	2 070
1996	-	5 720	664	6 384
1997	-	2 867	1 483	4 350
1998	-	7 680	-	7 680
1999	-	2 736	1 151	3 887
2000	-	-	1 584	1 584
2001	-	-	7 424	7 424
2002	-	-	12 353	12 353
2003	-	-	14 431	14 431
2004	-	-	10 376	10 376
2005	-	-	2 045	2 045
2006	-	-	451	451
2007	-	-	3 253	3 253
2008	-	-	3 840	3 840
2009	-	-	615	615
2010	-	-	1	1
2011	-	-	5	5
2012	-	-	16	16
2013	-	-	20	20

TAFLA 3.33.1

**Beitukóngur.** Afli ásamt afla á sóknareiningu (kg í gildru) í Breiðafirði árin 1996–2013.  
**Common whelk.** Landings (in tonnes) and CPUE (kg per hauled pot) in Breiðafjörður 1996–2013.

Ár Year	Afli Landings	Afli á sóknareiningu CPUE
1996	500	4.3
1997	1 284	2.7
1998	10	3.5
1999	417	3.3
2000	825	3.7
2001	709	3.6
2002	-	-
2003	248	4.8
2004	863	3.1
2005	991	3.8
2006	839	2.9
2007	554	2.9
2008	398	1.9
2009	116	2.6
2010	142	3.3
2011	512	2.6
2012	375	1.7
2013	89	1.1

TAFLA 3.34.1

**Sæbjúga.** Afli (í tonnum) ásamt afla á togtíma (kg) á eftir svæðum 2006–2013.  
**Sea cucumber.** Landings (in tonnes) and CPUE (kg/hour) by area 2006–2013.

Ár Year	Svæði Area				Svæði Area			
	Vestur West	Norður North	Suður South	Heildarafli Total landings	Vestur West	Norður North	Suður South	Meðalafli á sóknareiningu Mean CPUE
2006	50	-	-	50	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	998	-	-	998	-	-	-	687
2009	1 040	-	114	1 154	863	-	1 712	916
2010	1 360	-	885	2 246	904	-	1 080	938
2011	985	-	1 670	2 655	808	-	1 363	1 098
2012	775	-	640	1 415	1 103	-	1 187	1 140
2013	677	-	747	1 424	876	-	862	867

TAFLA 3.35.1

**Ígulker.** Afli (í tonnum) og afli á togtíma (kg/klst.) árin 1993–2013.  
**Sea urchin.** Landings (in tonnes) and CPUE (kg/hour) in 1993–2013.

Ár Year	Afli Landings	Afli á sóknareiningu CPUE
1993	694	-
1994	1 493	-
1995	981	-
1996	492	-
1997	20	-
1998	1	-
1999	10	-
2000	2	-
2001	0	-
2002	0	-
2003	0	-
2004	40	-
2005	29	-
2006	35	461
2007	134	381
2008	126	373
2009	140	483
2010	146	401
2011	144	381
2012	135	365
2013	129	374



TAFLA 3.36.1

Hvalir. Veiðar við Ísland (fjöldi) 1948–2013.

*Whales. Number of whales caught by the Icelandic whaling fleet 1948–2013.*

Ár <i>Year</i>	Steypireyður <i>Blue</i>	Langreyður <i>Fin</i>	Sandreyður <i>Sei</i>	Búrhvalur <i>Sperm</i>	Hnúfubakur <i>Humpback</i>	Hrefna <sup>3)</sup> <i>Minke</i>
1948	24	195	5	15	-	
1949	33	249	12	28	2	
1950	28	226	-	11	-	
1951	11	312	2	13	1	
1952	14	224	25	2	-	
1953	5	207	70	48	2	
1954	9	177	93	54	1	
1955	10	236	134	20	-	
1956	8	265	72	95	-	
1957	10	348	78	81	-	
1958	5	289	91	123	-	
1959	6	178	67	120	-	
1960	-	160	42	177	-	
1961	-	142	58	150	-	
1962	-	303	44	136	-	
1963	-	283	20	136	-	
1964	-	217	89	138	-	
1965	-	289	74	69	-	
1966	-	310	41	86	-	
1967	-	239	48	119	-	
1968	-	202	3	75	-	
1969	-	251	69	103	-	
1970	-	272	44	61	-	
1971	-	208	240	106	-	
1972	-	238	132	76	-	
1973	-	267	138	47	-	
1974	-	285	9	71	-	90
1975	-	245	138	37	-	181
1976	-	275	3	111	-	195
1977	-	144	131	110	-	194
1978	-	236	14	140	-	198
1979	-	260	84	96	-	202
1980	-	236	100	101	-	201
1981	-	254	100	43	-	200
1982	-	194	71	87	-	212
1983	-	144	100	-	-	204
1984	-	167	95	-	-	178
1985	-	161	38	-	-	145
1986 <sup>1)</sup>	-	76	40	-	-	-
1987 <sup>1)</sup>	-	80	20	-	-	-
1988 <sup>1)</sup>	-	68	10	-	-	-
1989 <sup>1)</sup>	-	68	-	-	-	-
1990 <sup>2)</sup>	-	-	-	-	-	-
1991 <sup>2)</sup>	-	-	-	-	-	-
1992 <sup>2)</sup>	-	-	-	-	-	-
1993 <sup>2)</sup>	-	-	-	-	-	-
1994 <sup>2)</sup>	-	-	-	-	-	-
1995 <sup>2)</sup>	-	-	-	-	-	-
1996 <sup>2)</sup>	-	-	-	-	-	-
1997 <sup>2)</sup>	-	-	-	-	-	-
1998 <sup>2)</sup>	-	-	-	-	-	-
1999 <sup>2)</sup>	-	-	-	-	-	-
2000 <sup>2)</sup>	-	-	-	-	-	-
2001 <sup>2)</sup>	-	-	-	-	-	-
2002 <sup>2)</sup>	-	-	-	-	-	-
2003 <sup>1)</sup>	-	-	-	-	-	37
2004 <sup>1)</sup>	-	-	-	-	-	25
2005 <sup>1)</sup>	-	-	-	-	-	39
2006	-	7	-	-	-	60 <sup>1)</sup> + 1
2007	-	-	-	-	-	39 <sup>1)</sup> + 6
2008	-	-	-	-	-	38
2009	-	125	-	-	-	81
2010	-	148	-	-	-	60
2011	-	-	-	-	-	58
2012	-	-	-	-	-	52
2013	-	134	-	-	-	35

<sup>1)</sup> Skv. sérstöku leyfi Sjávarútvegsráðuneytisins. *In accordance with special permit issued by the Government of Iceland.*

<sup>2)</sup> Engar hvalveiðar í atvinnuskyni leyfðar árin 1986–2005. *No permits issued for commercial whaling in the period 1986–2005.*

<sup>3)</sup> Engar opinberar skýrslur um veiðar fyrir árin 1948–1973. *No official statistics available for the period 1948–1973.*

TAFLA 3.37.1

Selir. Selveiði við Ísland (fjöldi) 1962–2013 og fjöldi veiðimanna frá 1982.  
 Seals. Number of seals caught in Iceland 1962–2013 and sealers from 1982.

Ár Year	Heildar- veiði Total catch	Landsels- kópar Harbour pups	Útsels- kópar Grey seal pups	Eldri landselur Older harbour	Eldri útselur Older grey	Annað Other	Eldri land-/útselur Older harbour/grey	Ógreint Unspeci- fied
1962 <sup>1)</sup>	5 786	5 101	293	-	-	-	392	-
1963 <sup>1)</sup>	6 573	5 795	568	-	-	-	210	-
1964 <sup>1)</sup>	7 063	6 176	593	-	-	-	294	-
1965 <sup>1)</sup>	6 581	5 598	767	-	-	-	216	-
1966 <sup>1)</sup>	6 148	5 578	404	-	-	-	166	-
1967 <sup>1)</sup>	4 977	4 481	449	-	-	-	47	-
1968 <sup>1)</sup>	5 726	5 049	524	-	-	-	153	-
1969 <sup>1)</sup>	6 666	5 831	579	-	-	-	256	-
1970 <sup>1)</sup>	6 740	5 942	404	-	-	-	394	-
1971 <sup>1)</sup>	6 894	6 126	557	-	-	-	211	-
1972 <sup>2)</sup>	6 930	6 237	415	-	-	-	278	-
1973 <sup>2)</sup>	6 803	5 996	483	-	-	-	324	-
1974 <sup>2)</sup>	6 240	5 534	406	-	-	-	300	-
1975 <sup>2)</sup>	6 673	6 111	122	-	-	-	440	-
1976 <sup>2)</sup>	6 470	5 895	274	-	-	-	301	-
1977 <sup>2)</sup>	6 601	5 705	96	-	-	-	267	533
1978 <sup>2)</sup>	4 623	4 030	93	168	53	18	87	174
1979 <sup>2)</sup>	4 978	4 278	201	253	143	3	100	-
1980 <sup>2)</sup>	3 648	3 357	54	7	31	8	-	191
1981 <sup>2)</sup>	2 974	2 510	3	94	25	8	219	115

Ár Year	Heildar- veiði Total catch	Landsels- kópar Harbour pups	Útsels- kópar Grey pups	Eldri landselur Older harbour	Eldri útselur Older grey	Annað Others	Landselur aldur óþekktur Harbour age unknown	Útselur aldur óþekktur Grey age unknown	Fjöldi veiðimanna <sup>5)</sup> Sealers
1982 <sup>3)</sup>	4 656	2 367	1 154	634	488	13	-	-	249
1983 <sup>3)</sup>	5 110	2 025	803	1 672	563	47	-	-	314
1984 <sup>3)</sup>	5 512	2 485	1 079	1 114	782	52	-	-	348
1985 <sup>3)</sup>	6 094	2 254	1 245	1 498	1 097	-	-	-	335
1986 <sup>3)</sup>	6 450	2 481	1 187	1 446	1 331	5	-	-	349
1987 <sup>3)</sup>	5 166	1 664	982	1 376	1 128	16	-	-	311
1988 <sup>3)</sup>	3 422	867	659	905	986	5	-	-	191
1989 <sup>3)</sup>	4 863	982	1 169	1 232	1 437	43	-	-	223
1990 <sup>3)</sup>	2 462	546	1 088	221	586	21	-	-	358
1991 <sup>3)</sup>	1 866	454	1 007	9	393	3	-	-	374
1992 <sup>3)</sup>	3 181	624	1 148	525	828	56	-	-	400
1993 <sup>3)</sup>	3 068	971	973	225	787	112	-	-	144
1994 <sup>3)</sup>	2 814	1 032	960	7	655	160	-	-	135
1995 <sup>3)</sup>	2 216	860	943	5	384	24	-	-	59
1996 <sup>3)</sup>	1 825	848	543	2	421	11	-	-	49
1997 <sup>3)</sup>	1 979	676	356	18	920	9	-	-	58
1998 <sup>3)</sup>	1 197	545	143	21	424	64	-	-	50
1999 <sup>3)</sup>	1 409	638	255	11	407	98	-	-	54
2000 <sup>3)</sup>	1 188	595	105	61	398	29	-	-	59
2001 <sup>3)</sup>	1 062	571	152	40	278	21	-	-	52
2002 <sup>4)</sup>	773	364	162	7	179	13	42	6	34 (10)
2003 <sup>4)</sup>	938	405	253	11	252	5	12	-	46 (5)
2004 <sup>4)</sup>	524	140	96	6	202	6	70	4	32 (17)
2005 <sup>4)</sup>	395	120	85	1	128	1	58	2	25 (17)
2006 <sup>4)</sup>	482	100	99	-	112	4	92	75	18 (11)
2007 <sup>4)</sup>	384	72	84	-	185	6	32	5	16 (12)
2008 <sup>4)</sup>	342	33	57	1	123	11	117	-	24 (4)
2009 <sup>4)</sup>	318	57	-	-	-	93	97	71	-
2010 <sup>4)</sup>	451	66	98	1	-	114	123	49	24(45)
2011 <sup>4)</sup>	432	50	107	18	-	197	38	22	-
2012 <sup>4)</sup>	632	100	88	5	18	177	146	98	69(38)
2013 <sup>6)</sup>									

<sup>1)</sup> Byggt á gögnum um verslun og útlutning selskinna. Heimild: Teitur Arnlauðsson, Rannsóknastofnun fiskiðnaðarins 1973.

<sup>2)</sup> Based on trade and export statistics on seal skin.

<sup>3)</sup> Uppruni upplýsinga óþekktur. Unknown sources.

<sup>4)</sup> Byggt á veiðigögnum og meðafla við hrognkelsaveiðar frá Hringormanevnd og Félagi selabænda.

<sup>5)</sup> Based on catch statistics on hunting and bycatch in lumpsucker fisheries.

<sup>6)</sup> Byggt á veiðigögnum, meðafla við hrognkelsaveiðar og almennar netaveiðar frá Hringormanevnd, Félagi selabænda og afladagbókum netabáta.

<sup>7)</sup> Based on catch statistics on direct hunting and bycatch in gillnet fisheries.

<sup>8)</sup> Fjöldi sem stundar veiðar og hrognkelsveiðimenn sem tilkynna netaveidda seli. Fjöldi netabáta sem skráð hafa seli sem meðafla í sviga.

<sup>9)</sup> Number of seal hunters and lumpsucker fishermen who report seal bycatch. Number of gillnet vessels reporting seal bycatch in parentheses

<sup>10)</sup> Veiðigögn fyrir árið 2013 liggja ekki fyrir.

<sup>11)</sup> Catch data for 2013 not available.

## 4. English summary of the State of Marine Stocks in Icelandic Waters 2013/2014 – Prospects for the Quota Year 2014/2015

### 2.1. Cod

Total landings of Atlantic cod (*Gadus morhua*) in 2013 were 223 thousand t, compared to 196 thousand t in 2012. The TAC for cod in the quota year 2013/2014 was set according to the harvest control rule (HCR) at 215 thousand t.

Biomass indices in the spring survey have more than doubled in the last seven years, mostly due to increased abundance of older cod. Abundance indices of fish older than 6 years are over the long-term mean, with indices of fish 8 years and older being record high. Mean weights at age in the landings and spring survey have increased in recent years and are presently around the long-term average.

The reference biomass (age 4 and older) in 2014 is estimated 1106 thousand t and the spawning stock is estimated 411 thousand t, compared to  $B_{lim} = 125$  and  $B_{trigger} = 220$  thousand t. The reference biomass has increased in recent years and is now larger than observed in the last three decades. The spawning stock has not been larger since the early 1960s. During the last decade, the harvest rate has declined from 34–40% to around 20% and the fishing mortality from above 0.70 in 2000 to 0.30 in 2013. Recruitment during this period has been around two thirds of the long-term average. The decrease in harvest rate, imposed by management action, has hence been the main reason for the increase in stock size.

Based on the present assessment, the TAC in 2014/2015 should be set at 218 thousand t according to the management plan. It is expected that catches in the next few years will remain around that level. The Marine Research Institute (MRI) iterates the importance that catches are constrained within that specified in the HCR.

### 2.2. Haddock

In 2013, 44 000 t of haddock (*Melanogrammus aeglefinus*) were landed, compared to 46 000 t in 2012. The national TAC in the quota year 2013/2014 was set according to the harvest control rule (HCR) at 38 000 t. In March 2013, ICES evaluated the HCR to be precautionary and in conformity with the MSY approach. The rule was adopted by the Icelandic government in April 2013 and used for the first time to set TAC for the quota year 2013/14.

The spawning stock at the beginning of 2014 is estimated 67 000 tonnes and the harvest rate in 2013 as 40%. Recruitment from year classes 2008–2013 is estimated to be poor, or 27 million age 2 individuals

on average. Growth was very poor in 2004–2009 but increased considerably in 2010–2012, when it was estimated to be above average. Growth in 2013 is estimated close to average. Mean weight of 6 years and older haddock is close to average, but above average for the small 2008–2013 year classes.

According to the HCR, the TAC for the next quota year is 40% of the predicted reference biomass (45 cm and larger) in the beginning of the next calendar year. Harvest rate will be reduced below 40% if the spawning stock is estimated to be below 45 000 t ( $B_{trigger}$ ). The reference biomass is on average close to the spawning stock, but not sensitive to fluctuations in maturity at age, so unnecessary variability in TAC is avoided. Based on the present assessment and the HCR, the TAC for the quota year 2014/2015 should be set at 30 400 t. The TAC is expected to decrease further in coming years when the 2007 year class and older cohorts disappear from the stock.

### 2.3. Saithe

In 2013, landings of saithe (*Pollachius virens*) were 58 000 t, compared to 52 000 t in 2012. The TAC for the quota year 2013/2014 was set according to the 20% harvest control rule (HCR) at 57 000 t.

The catch weights have increased for ages 6–9 but are below average for other ages. Biomass indices from the spring trawl survey were high in 2012–2013 but declined in 2014.

The reference biomass of age 4 and older is estimated as 296 000 t at the beginning of 2014, with a harvest rate of 19% in 2013. The 1998–2000 and 2002 year classes were large but recruitment has been around average since then. Short-term projections indicate that the reference biomass will be around 272 000 t, based on the HCR.

According to the HCR, the saithe TAC for the quota year 2014/2015 will be 58 000 t.

### 2.4. Golden redfish

In 2013, approximately 53 000 t of golden redfish (*Sebastes norvegicus*) were landed in Iceland, about 8 000 t more than in 2012.

According to an age-length based model (Gadget) the spawning stock has increased since 2005 after a considerable reduction in 1985–1995. Fishing mortality has decreased in recent years and is now close to  $F_{MSY}$ . There are indications from surveys conducted in Icelandic and East-Greenland waters that recruitment in recent years has been poor.

This spring, the Icelandic government adopted a formal management plan for the golden redfish fish-

ery in East-Greenland/Iceland/Faroe Islands area. ICES has evaluated this management plan but Greenland and the Faroe Islands have not yet adopted it. The management plan is based on a HCR of  $F_{MSY,9-19} = 0.097$ , reducing linearly if the spawning stock is estimated below 220 000 t ( $B_{trigger}$ ). According to the HCR, the golden redfish TAC for the quota year 2014/2015 will be 48 000 t for the East-Greenland/Iceland/Faroe Islands area.

## 2.5. Deep sea redfish

In 2013, about 8 800 t of **Icelandic demersal deep sea redfish** were landed, about 3 000 t less than in 2012. The lack of long-term indices of abundance prevent analytical assessment, but survey indices from the autumn survey since 2000 are used as basis for the advice. The index of fishable biomass decreased in 2000–2013. ICES and MRI recommend that effort should be kept low and the TAC in Icelandic waters should not exceed 10 000 t for the quota year 2014/2015.

In 2013, about 1 500 t of **shallow pelagic redfish** were caught by Russia on the main fishing grounds south and southeast of Greenland. Annual landings peaked at about 100 000 t in 1993–1995. Given the poor state of the stock, ICES has advised since 2010 that no directed fishery should take place.

In 2013, the estimated landings of **deep pelagic redfish** were about 46 000 t, compared to 33 000 t in 2012 and 47 000 t in 2011. Annual landings were between 75 000 and 140 000 t in 1995–2004. The Icelandic fleet caught about 8 500 t in 2013, compared to 6 000 t in 2012. ICES advises that the total catch in 2015 be significantly reduced and should not exceed 10 000 t since indices from surveys and the fishery suggest that the stock has declined dramatically over the last decades.

## 2.6. *Sebastes viviparus*

Exploratory fishery for *Sebastes viviparus* started in 1997 with a catch of 1 200 t. The catches declined rapidly until 2000, and between 2001 and 2009 only a few tonnes were landed. In 2010 a directed fishery started again with total landings of 2 600 t, followed by 1 400 t in 2011 and annual landings of 530 t in 2012 and 2013. Very little is known about the stock size and sustainable yield. Therefore, MRI recommends that the precautionary approach is adopted in the management of *Sebastes viviparus* fishery in order to ensure sustainability of the resource and recommends a TAC of no more than 1 500 t for the quota year 2014/2015.

## 2.7. Greenland halibut

In 2013, approximately 27 000 t of Greenland halibut (*Reinhardtius hippoglossoides*) were landed from the East Greenland, Iceland, and Faroese waters, of which the Icelandic fleet caught 15 000 t. CPUE of the Icelandic trawler fleet has been slowly increasing from a historical low in 2005. Biomass

indices from combined surveys in Icelandic and Greenlandic waters have been increasing in recent years and are close to the high levels observed in 1998–2001. ICES and MRI recommend that effort should be reduced to a level corresponding to the long-term maximum sustainable yield. Such effort corresponds to a total catch of no more than 25 000 t for the East Greenland, Icelandic and Faroese waters in the 2014/2015 quota year.

## 2.8. Halibut

In 2012 a regulation was issued to ban all directed fishery for halibut (*Hippoglossus hippoglossus*) and that all viable halibut must be released in other fisheries. The landings of halibut dropped to 36 and 44 t in 2012 and 2013, respectively, compared to 555 t in 2011. Historically, halibut has mainly been taken as bycatch in the bottom trawl and longline fisheries. In the last years before the regulations, a longline fishery directed at halibut was developing, coinciding with a sharp decline in the survey biomass index. In recent years, the biomass indices from the groundfish survey have declined to a very low level. Currently, the halibut stock seems to be severely depleted, with very little recruitment into the spawning stock in recent years.

The MRI recommends that these regulations should be maintained until clear indications of improvement in the stock are evident.

## 2.9. Plaice

In 2013, about 6 000 t of plaice (*Pleuronectes platessa*) were landed. Survey biomass indices have increased somewhat in recent years, and recruitment measurements from the groundfish survey suggest some improvement in the last few years. Stock assessment indicates an increase in biomass since 2000 and fishing mortality has been decreasing since then. The MRI recommends that the catch should not exceed 7 000 t in the quota year 2014/2015, and that regulations regarding area closures on spawning grounds remain in effect.

## 2.10. Dab

In 2013, 720 t of dab (*Limanda limanda*) were landed. Between 1987 and 1997, landings of dab increased from 1 200 to 8 000 t, but have since decreased considerably. Both CPUE and survey biomass indices have improved in recent years. The MRI recommends a TAC no higher than 1 000 t for the quota year 2014/2015 in the defined management area.

## 2.11. Long rough dab

In 2013, only 80 t of long rough dab (*Hippoglossoides platessoides*) were landed, compared to the record high of 6 400 t in 1996. Survey indices and CPUE have been near a historical low in recent years. The MRI does not recommend a TAC for the quota year 2014/2015. However, the MRI recom-

mends closure of main spawning areas during the spawning season.

### 2.12. Witch

Since 1988, landings of witch (*Glyptocephalus cynoglossus*) have been between 900 and 3 000 t, with landings in 2013 amounting to about 1 200 t.

The abundance index for the fishable stock reached a maximum in 2005, but has since been declining and CPUE shows a similar trend. Survey data indicate that both the fishable stock and recruitment have declined in recent years. The MRI recommends a TAC of no more than 1 100 t for the quota year 2014/2015.

### 2.13. Lemon sole

In 2013, about 1 800 t of lemon sole (*Microstomus kitt*) were landed. Survey indices of the fishable stock were high in 2003–2010, but somewhat lower in 2011 to 2014. Recruitment indices have also been high since the early 2000s. CPUE in the Danish seine fishery off Southwest Iceland has doubled from the period 1993–1998 to the present. Preliminary stock assessment indicates high fishing mortality rate. The MRI recommends a TAC of no more than 1 600 t for the quota year 2014/2015.

### 2.14. Megrím

Megrím (*Lepidorhombus whiffiagonis*) is caught as bycatch in the Danish seine and *Nephrops* fisheries off South Iceland. In 2013, 376 t of megrím were landed. The MRI does not recommend a TAC for the quota year 2014/2015.

### 2.15. Atlantic wolffish

Landings of Atlantic wolffish (*Anarhichas lupus*) in 2013 were around 9 000 t, the lowest landings since 1982. The index of fishable biomass is close to average but recruitment indices are at historically low levels. The fishable part of the stock has been decreasing since 2006 and further decline is expected, as recruitment to the fishable stock will be low in the coming years. MRI recommends a TAC of no more than 7 500 t for the quota year 2014/2015, based on  $F_{\max} = 0.29$ . In addition, the MRI recommends a continued closure of the major spawning area off West Iceland during the spawning and incubation season in autumn and winter.

### 2.16. Spotted wolffish

Landings of spotted wolffish (*Anarhichas minor*) in 2013 were about 2 400 t. The average annual landings were about 900 t in 1982–1997, but have increased to 2 300 t since 1997. Survey indices of recruitment, total biomass and fishable biomass are all at a historical low, while the harvest rate is about three times higher than in 1985–1997. The basis of the MRI advice is to reduce the harvest rate to half of what it has been on the average since 2000. The MRI recommends that the TAC for the quota year 2014/2015 should not exceed 900 t.

### 2.17. Blue ling

In 2013, 3 100 t of blue ling (*Molva dypterygia*) were landed. Indices from the autumn survey indicated an increase in biomass and recruitment between 2005 and 2010, but indices from 2012 and 2013 indicate a decrease in stock size which is projected to continue due to very low levels of the juvenile index since 2010.

MRI recommends that landings be constrained to no more than 3 100 t in the quota year 2014/2015. The basis of the advice is to bring the exploitation level down to similar levels as observed in 2002–2009 when the stock size was increasing. Furthermore, a continued closure of known spawning grounds from 15 February to 30 April should be maintained.

### 2.18. Ling

Landings of ling (*Molva molva*) in 2013 were 11 400 t, having increased steadily since 2001. Survey indices of harvestable biomass have remained high since 2007, however the juvenile index has been at low levels for the last two years. Estimates from an analytical stock assessment indicate that SSB has increased in recent years and at the same time fishing mortality has decreased and was close to  $F_{\text{MSY}}$  in 2013. SSB and catches are projected to decline in coming years due to the low estimates of recent recruitment.

MRI recommends a TAC of no more than 14 300 t on the basis of  $F_{\text{MSY}}$  in the quota year 2014/2015, including catches of foreign fleets which have been about 1 100 t in recent years.

### 2.19. Tusk

Landings of tusk (*Brosme brosme*) from Icelandic waters were 6 300 t in 2013. Indices of fishable biomass in the spring survey increased considerably in 2001–2012, but have declined in the last two years. Recruitment indices peaked in 2006 but have decreased since then, and have in recent years been close to the lowest observed value. The tusk stock assessment is based on the Gadget model as recommended by ICES.

The MRI recommends that the catches be no more than 4 000 t in the quota year 2014/2015, including catches of foreign fleets. This advice is based on  $F_{\text{MSY}}=0.20$ . It is furthermore recommended that the closure of nursery areas off the southeast and south coast is continued.

### 2.20. Whiting

In 2013, about 1 000 t of whiting (*Merlangius merlangus*) were landed. The landings have declined over the last two years, after a peak of 3 000 t in 2011. Whiting was mostly a bycatch in the Icelandic bottom trawl fishery, but the record catches in 2009–2011 were due to a rise in the fishable stock as well as a directed fishery which still is conducted on the



spawning grounds off the south coast in spring. Survey indices of the fishable stock were high in 2004–2005, due to the recruitment of a strong 2003 year class but declined rapidly in the following years. Recruitment indices have been low in the last five years. The MRI does not recommend a TAC for whiting for the quota year 2014/2015. However, low indices of the fishable stock and poor recruitment in recent years indicate that the stock is declining.

### 2.21. Anglerfish

In 2013, about 1 500 t of anglerfish (*Lophius piscatorius*) were landed from Icelandic waters. The catches have been declining since 2009 when they reached a maximum of 4 100 t. Recent surveys and CPUE indicate large fishable stock, due to very good recruitment in 1998–2007, but the 2014 survey shows a slightly declining trend. Furthermore, survey indices show poor recruitment for year classes 2008–2013. Due to the decreasing recruitment, the fishable stock is expected to decline considerably in the coming years. The MRI recommends that the catches be no more than 1 000 t in the quota year 2014/2015.

### 2.22. Lumpfish

In 2013, about 4 600 t of female lumpfish (*Cyclopterus lumpus*) were landed in Iceland, below the annual average landings of 6 100 t in 1971–2012. Decreasing female biomass and increasing fishing mortalities since 2006 indicate a need for a more precautionary management approach.

MRI recommends an initial TAC of 1 400 t for the 2014/2015 quota year. MRI will recommend a final TAC after the 2015 spring survey. Furthermore, it is recommended that data collection and monitoring of the male fishery and lumpfish bycatch in other fisheries be improved.

### 2.23. Herring

Landings of **Icelandic summer-spawning herring** (*Clupea harengus*) during the fishing season 2013/2014 amounted to 72 000 t but the TAC was set at 87 000 t. The prevalence of *Ichthyophonus* infection is still high in the stock but analysis from last year indicated that mortality in the stock related to the infection has been insignificant since 2010. These results were incorporated in this year's assessment and the estimates of herring that died in the mass mortalities in Kolgrafafjörður in the winter 2012/2013. The spawning stock is estimated 430 000 t in the beginning of the 2014/2015 fishing season. The MRI recommends a TAC for 2014/2015 of 83 000 t based on  $F_{0.1}=0.22$ .

In 2013, around 91 000 t of **Norwegian spring-spawning herring** were landed by Icelandic vessels, with estimated total international landings of 692 000 t. The total catch is 73 000 t above the recommended TAC set by ICES as the coastal states have not agreed on the allocation of the quota. As the spawning stock biomass in 2014 is estimated to be

below  $B_{pa}$ , the fishing mortality rate shall be reduced. Therefore, ICES has recommended a TAC of 419 000 t for 2014, corresponding to  $F=0.1$ . Iceland has issued a quota of 62 000 t in 2014, based on an international agreement reached in 2007. It is expected that the catches will exceed the advised TAC, as in 2013, due to lack of agreement among the coastal states. ICES will recommend a TAC for 2015 in autumn 2014.

### 2.24. Capelin

The total landings of capelin for the fishing season 2013/2014 were 142 000 t, of which Icelandic vessels landed 111 000 t but the TAC was 160 000 t

The fishing season 2014/2015 will be based on the year classes from 2012 and 2011. The indices of immature capelin in the annual autumn survey 2013 were close to long-term average or 60 billion fish. Based on these results, ICES and MRI, advises that an initial quota of 225 000 t (50% of a predicted TAC) be set for the season 2014/2015. This advice will be revised after autumn/winter surveys in 2014/2015. Further, the MRI advises that summer/autumn fishery should not open until October.

### 2.25. Blue whiting

International landings of blue whiting (*Micromesistius poutassou*) in the Northeast Atlantic in 2013 are estimated around 640 000 t, of which Icelandic landings were 105 000 t.

The analytical assessment in 2013 indicates a decrease in the spawning stock of about 60% between 2003 and 2010 but is estimated to have increased from 2.9 million t in 2010 to 5.5 million t in 2013 with improved recruitment in 2010–2012. ICES recommended a catch quota not exceeding 949 000 t in 2014 but the coastal states agreed a TAC of 1 200 thous. tonnes. ICES will release its advice for 2015 in October 2014.

### 2.26. Mackerel

International landings of mackerel (*Scomber scombrus*) in the Northeast Atlantic in 2013 are estimated at 895 000 t. Since the mid 2000s mackerel has been observed in the Icelandic EEZ in increasing numbers. This has led to a directed fishery since 2007. In 2013 the Icelandic landings were 151 000 t. According to a stock assessment from February 2014, the spawning stock increased from 1.9 million t in 2003 to 4.7 million t in 2013. ICES recommended a catch quota of 927 000 to 1 011 000 t in 2014 and will assess the stock in autumn 2014 and release its advice for 2015 in October.

### 2.27. Pearlside

Experimental pelagic trawl fishery for pearlside (*Maurolicus muelleri*) started in 2008 and the landings peaked in 2009 at around 46 000 t. Since then, landings have decreased and no landings were reported in 2013. Very little is known about the biology and stock size of pearlside. The MRI recom-

mends that the catch should not exceed 30 000 t in the quota year 2014/2015.

### 2.28. Greater silver smelt

In 2013 about 7 200 t of greater silver smelt (*Argentina silus*) were landed, compared to the historical maximum of 16 400 t in 2010. The fishable biomass index decreased in 2013, but recent groundfish surveys suggest improved recruitment. The stock is assessed with limited data and must therefore be harvested with caution. MRI recommends a TAC of 8 000 t for the quota year 2014/2015.

### 2.29. Nephrops

In 2013, a total of 1 724 t of *Nephrops norvegicus* were landed, compared to 1 914 t in 2012. The survey biomass index has decreased since 2008 and is now below the long-term average. According to the current assessment, the fishable stock biomass (age 6 and older) in 2014 is estimated 11 300 t. The stock biomass increased in 1997–2007, as a result of large year classes and a sustainable  $F_{opt}$  management strategy. New year classes are measured small and the fishable stock has decreased sharply, and is currently estimated at a historical low level. However, the stock of large *Nephrops* (age 10 and older) is currently above long term average. MRI recommends a TAC of no more than 1 650 t in the quota year 2014/2015.

### 2.30. Northern shrimp

In the quota year 2013/2014, the fishery for inshore northern shrimp (*Pandalus borealis*) was open in the Snæfellsnes and Eldey areas, in Arnarfjörður and Ísafjarðardjúp. MRI recommends a TAC of 600 t for the Snæfellsnes area in the quota year 2014/2015 and 200 t for Eldey area. MRI will recommend TACs for other inshore areas on the basis of stock assessment surveys in autumn 2014.

In 2013, the offshore catch of northern shrimp was 7 000 t, compared to its highest level of 65 000 t in 1997. MRI recommends a TAC of 5 000 t for northern shrimp in the offshore areas (excluding the Dohrn Bank area) for the quota year 2014/2015.

### 2.31. Iceland scallop

The Iceland scallop (*Chlamys islandica*) fishery remained closed during the 2013/2014 fishing season. Survey indices declined drastically between 2001–2006, to a historical minimum. The downward trend in stock abundance was mainly due to increased natural mortality, probably caused by protozoan infestation in adult scallops. Recruitment has been poor but year classes from 2010 and especially 2012 are emerging. MRI recommends a continued closure of the conventional scallop fishery in the quota year 2014/2015.

### 2.32. Ocean quahog

In 2013 only 20 t of ocean quahog was landed, compared to the maximum of 14 400 t in 2003. Since 1987 a fishery for human consumption has been developing, but annual landings have been variable due to variable effort related to the market. MRI recommends a harvest rate of 2.5% of the estimated stock size corresponding to no more than 32 500 t in the quota year 2014/2015.

### 2.33. Common whelk

Pot fishing for common whelk (*Buccinum undatum*) started in Breiðafjörður in 1996. In 2013 the total catch amounted to 89 t, compared to 375 t in 2012. According to a survey conducted in 2012, 15 years of fishing has had a negligible effect on the abundance index. MRI recommends a TAC not exceeding 750 t in Breiðafjörður in the quota year 2014/2015.

### 2.34. Sea cucumber

In 2013, about 1 400 t of sea cucumber (*Cucumaria frondosa*) were landed. Since 2003, the fishery has been developing, but annual landings were minimal until 2008. A maximum of nine fishing licenses are issued in this fishery, three within each of the three defined areas off Iceland. MRI recommends a harvest rate of 10% of the estimated stock size in each surveyed subarea.

### 2.35. Sea urchin

In 2013, 129 t of sea urchin (*Strongylocentrotus droebachiensis*) were landed. Harvesting of sea urchin started in 1993 and total landings reached a maximum of 1 500 t in 1994, but declined rapidly and were negligible 1997–2006. Since 2007 the catches have been between 125 and 145 t. Areas with good quality sea urchins are limited in size, which requires a precautionary management approach.

### 2.36. Whales

In 1986, the International Whaling Commission's (IWC) resolution on a temporary closure of commercial whaling came into effect. In 2006, Iceland resumed commercial whaling on fin whales (*Balaenoptera physalus*) and common minke whales (*Balaenoptera acutorostrata*). In 2013, 35 common minke whales and 134 fin whales were caught in Icelandic waters.

The common minke whale stock around Iceland (the Central North Atlantic stock) is considered to be in a healthy condition, and historic catches are not thought to have affected the stock appreciably. Decreased abundance in Icelandic coastal waters in recent years most probably reflects a shift in the distribution within the stock area.

Based on stock assessments conducted by the Scientific Committees of NAMMCO and the IWC, the MRI recommends that annual catches of com-

mon minke whales from the Central North Atlantic stock do not exceed 229 animals in the Icelandic continental shelf area (CIC) and 121 animals in the Jan Mayen area (CM). This advice applies for the calendar years 2014 and 2015.

Results from a fin whale sightings survey in 2007 indicate a total population size of 20 600 animals in the East Greenland/Iceland/Jan Mayen area (EGI), which is similar to the 1995 and 2001 surveys.

On the basis of a recent assessment conducted within the Scientific Committees of the IWC and NAMMCO, the MRI recommends annual catches of up to 154 fin whales as sustainable and precautionary for the calendar years 2014 and 2015.

### 2.37. Seals

In 2012, the reported seal catch and bycatch in Iceland was 204 grey seals (*Halichoerus grypus*), 251 harbour seals (*Phoca vitulina*), 6 harp seals (*Phoca groenlandica*), and 171 seals of unidentified species. The MRI has not yet received catch data for 2013.

According to a survey conducted in 2011, the stock of **harbour seals** was around 11 thousand animals. The stock was estimated as 34 thousand seals in 1980 and has remained stable since 2003. The adopted management plan is to maintain the harbour seal population at around 12 thousand animals.

A **grey seal** survey was conducted in 2012, where 4 200 animals were estimated along the Icelandic coast. The stock was estimated as 12 thousand animals in 1990. The adopted management plan is to maintain the grey seal population at around 4 100 animals.



## 5. VIÐAUKAR *Appendices*

### 5.1. Methods for estimation of fish stock size

As reported in previous reports on stock status and catch recommendations, the working group that reviewed data and methods used in stock assessment of cod in Icelandic waters in 2000 concluded that a variety of methods must be used in such an assessment, and preferably by independent experts. These results should be compared. No definitive means was proposed to choose the “final result” beyond the suggestion that the best method would be the one representing the middle range of likely results. For this reason, all methods tried could be said to contribute to the final conclusion.

In the estimation of stock size and analysis of survey results various models are used. Most of them are based on commercial and survey catch-at-age. The difference is often whether or not the model considers the skew in age disaggregated landings, whether or not an effort is made to estimate catchability of surveys or fleets, whether they calculate forward or backward in time, how models weight various data. There are three types of catch-at-age models:

1. Models that calculate backward in time and do not consider observation error in catch-at-age data. These models (VPA, ADAPT, XSA) have long been used in the management of stocks in the North Atlantic.
2. Models that calculate forward in time and do not follow the catch-at-age exactly, rather they minimize the objective function which is a measurement of consistency between data (commercial and survey catch-at-age) and predictions of the model that are based on the data. Often this model is considered a statistical catch-at-age model.
3. Time series analysis (TSA) in which continuous changes in fishing patterns are evaluated alongside observational error in data.

The models that the Marine Research Institute (MRI) used in estimation of fish stocks in 2014 are:

1. ADAPT. An assessment method in which variation in catch-at-age data is explained by changes in fishing patterns.
2. TSA. Time series analysis with a Kalman filter which has been used on the Icelandic saithe and cod stocks for years and has recently been applied to herring, haddock, redfish, and many other stocks in other regions.
3. EXCAM. A statistical catch-at-age model developed by the MRI. This model returns stock estimates, recruitment estimates and projections.

4. ADCAM. A statistical catch-at-age model developed by the MRI to examine catch rules. The model can be used for stock assessments, recruitment estimates, and projections. Also used is the simpler form, ADSEP, in which fishing patterns do not change continuously.
6. Gadget. A multispecies model that was originally developed by the MRI. In this model length and age are considered, which is helpful in examining the effect of size-dependent predation on mean weight-at-age and estimating growth, migrations, cannibalism, and more; but it aids in estimating population size when there is little or no age data but a good deal of length measurements. Here, catch-at-age is not used directly rather the length and age measurements from fishing are part of the objective function, which is minimized.

So, there are many varied models that are used. When there is a choice to be made about which model to use as a basis for stock assessment there is a review of whether there has been much discussion of a particular model in the literature and whether the discussion is positive. When so many models are calculated there is also the question of where the results of a particular one lie in relation to the others. If there is a significant difference between models, the ones whose results lie on the outer edges of the range of results is only used when there is a very strong argument for doing so.

Above, it is clear that many of the available models return estimates of uncertainty in stock estimates and projections. This uncertainty is often underestimated because not all factors are taken into account, such as variation in natural mortality, variable growth rates, and false assumptions. Recently, a strong emphasis has been placed on review of these uncertainty factors. In estimation of unknown quantities, understanding the uncertainty in the data provides more accuracy. Though the uncertainty is often underestimated, those estimates can be used to compare methods and data sets.

Often, traditional assessment methods like those above are not possible. In such situations, changes in harvest rate can be approximated with the use of  $F_{\text{proxy}}$ . The ratio between total landings and biomass indices is used to calculate  $F_{\text{proxy}}$ . If the ratio remains unchanged from one year to the next the fishing mortality has not changed. The main assumption behind calculations of  $F_{\text{proxy}}$  is that the biomass index is descriptive of the stock size of the given species.

## 5.2. Fishing and distribution of landings in Icelandic waters in 2013

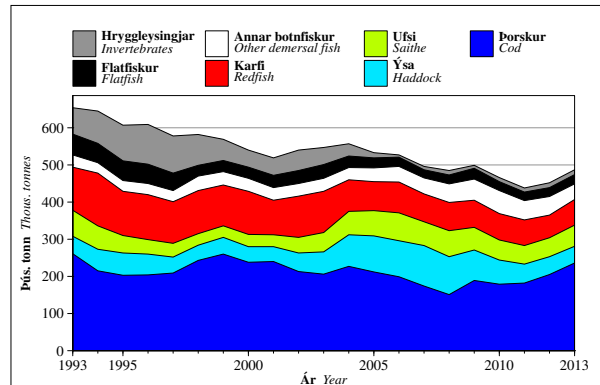
The Icelandic fishing fleet is diverse, ranging from small one-man fishing boats to huge factory ships with dozens of crew. Nearly 1 700 vessels fished in Icelandic waters in 2013 and landings were nearly 1,4 million tonnes, which is about 100 kt less than the total in 2012 (Figs. 5.2.1 and 5.2.2). Of this total about 850 kt was pelagic fish (capelin, herring, blue whiting, and mackerel) which is about 120 kt less than in 2012.

A variety of gears are used but a few account for the majority of landings. In fishing of groundfish the main gears are: bottom trawl, longline, handline, gillnets, and seine. For pelagic fishing the most common gears are seine and pelagic trawl and for pelagic redfish only the pelagic trawl is used. Figures 5.2.3–5.2.5 show the distribution of landings of cod, haddock and saithe by gear for 2013 along with length distribution of catches from the same gears. Furthermore, the total landings from each gear are shown as it has been recorded in landing reports. Figure 5.2.6 shows Icelandic fishing effort by gear in Icelandic waters.

Figure 5.2.3 shows that fishing grounds for cod are vary by gear used. Longline and handline are most common in coastal areas and inshore but bottom trawls are used offshore. Furthermore, the length distribution of cod varies by gear. The largest cod are caught in gillnets while the smallest cod are caught by longline and handline. Bottom trawls tend to catch larger fish than longline and handline.

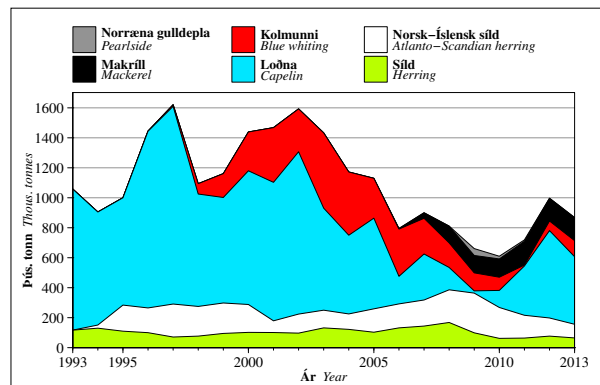
The fishing fleet has changed a lot in recent decades because of technological advancements and vessel renewals, so it is difficult to analyse changes in landings over long periods. For this reason, landing reports have, in recent years, become less important in stock assessments than stock surveys. However, landing reports are always taken into account and if there is inconsistency between the two

types of data, landing reports help to explain the discrepancy.



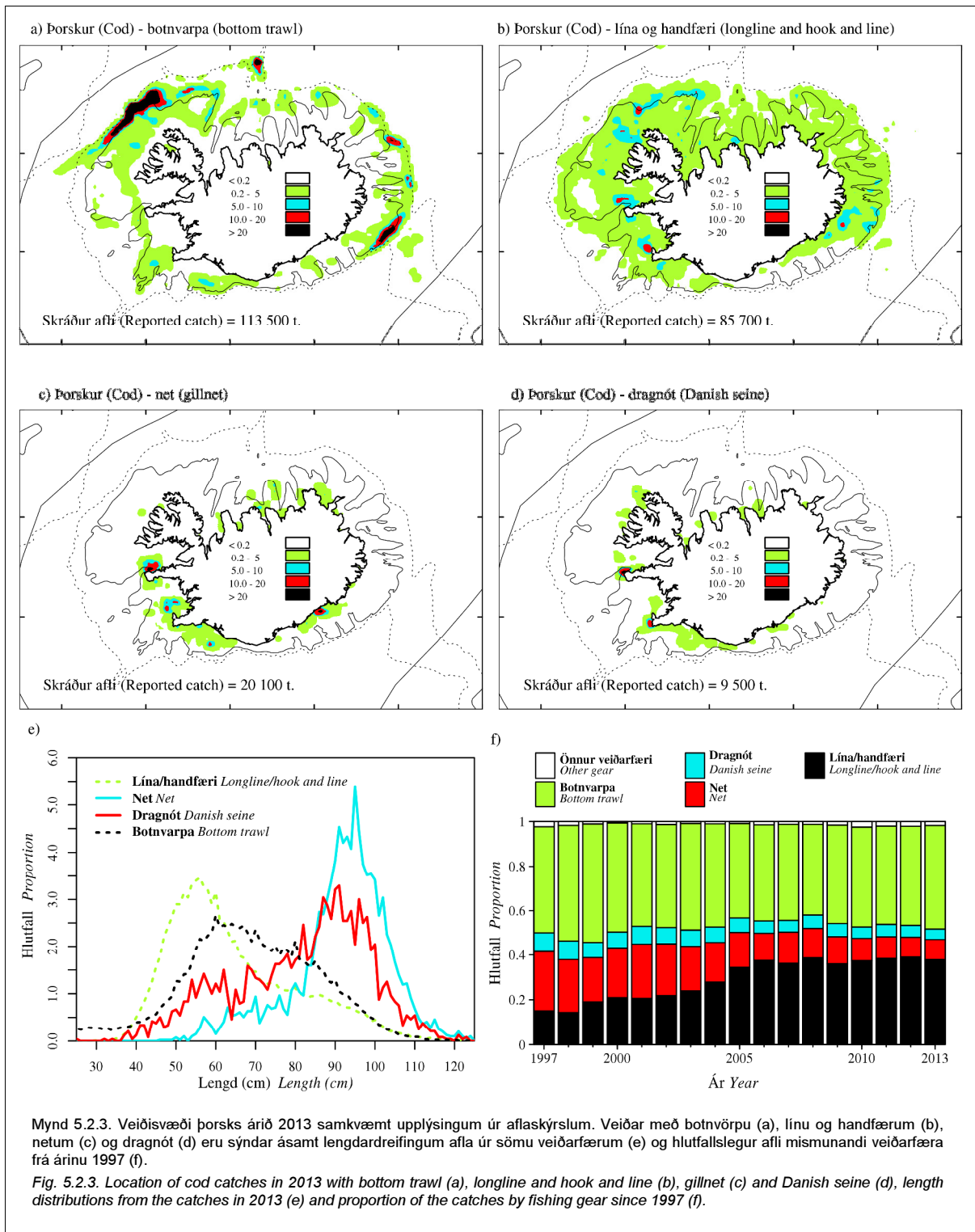
Mynd 5.2.1. Afli íslenska fiskveiðiflotans á landsmiðum frá árinu 1993, skipt eftir helstu tegundum og tegundahópum botnfisks og hryggleysingja.

Fig. 5.2.1. Landings of the Icelandic fisheries since 1993 divided by main taxonomic groups of demersal fish and invertebrates.



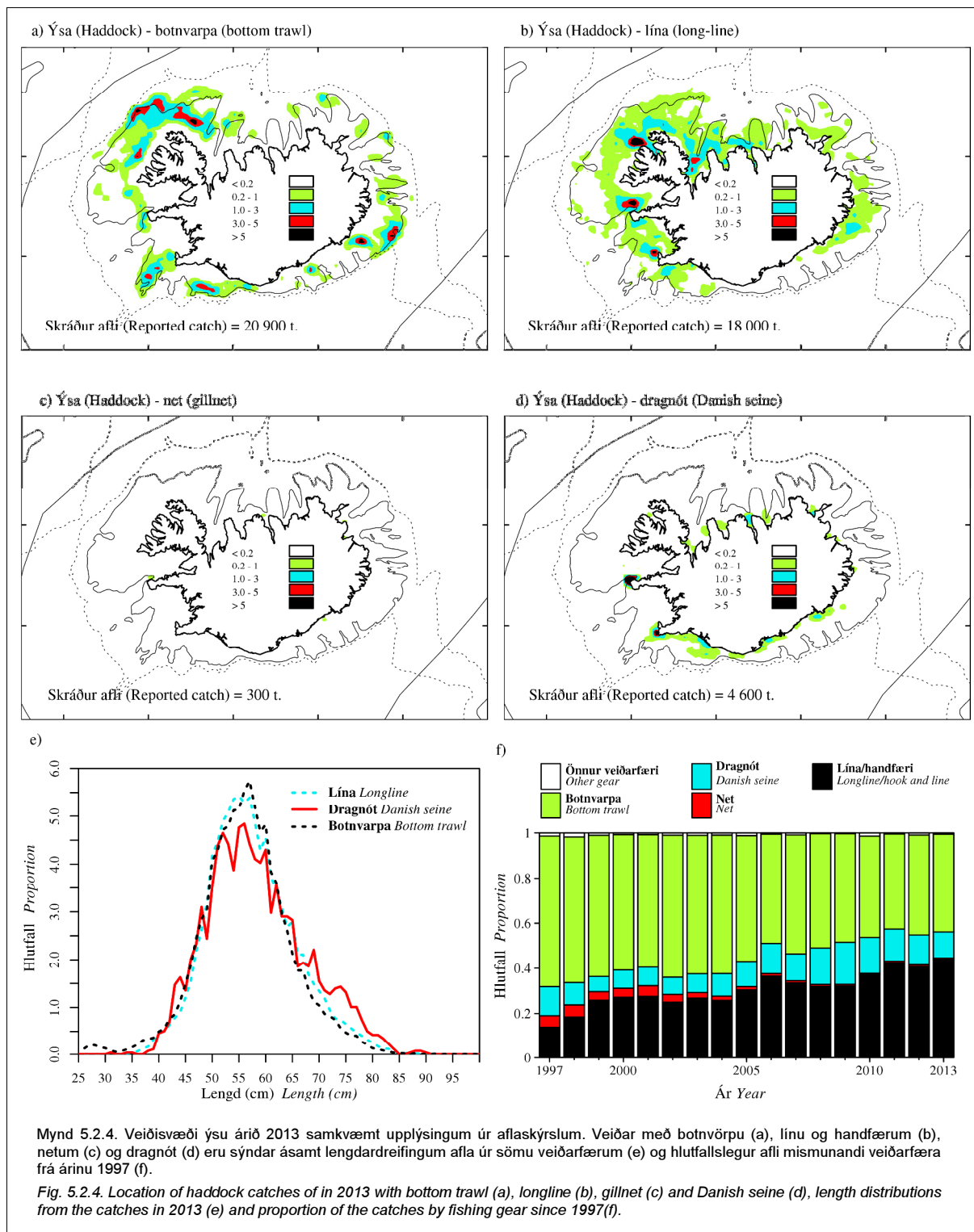
Mynd 5.2.2. Afli íslenska fiskveiðiflotans á landsmiðum frá árinu 1993, skipt eftir helstu tegundum uppsjávafisks.

Fig. 5.2.2. Landings of the Icelandic fisheries since 1993 divided by main species of pelagic fish.



Mynd 5.2.3. Veiðisvæði þorsks árið 2013 samkvæmt upplýsingum úr aflaskýrslum. Veiðar með botnvrpu (a), línu og handfærum (b), netum (c) og dragnót (d) eru sýndar ásamt lengdardreifingum afla úr sömu veiðarfærum (e) og hlutfallslegur afli mismunandi veiðarfæra frá árinu 1997 (f).

Fig. 5.2.3. Location of cod catches in 2013 with bottom trawl (a), longline and hook and line (b), gillnet (c) and Danish seine (d), length distributions from the catches in 2013 (e) and proportion of the catches by fishing gear since 1997 (f).



# **Hafrannsóknir – var Fjölrit**

## *Marine Research in Iceland*

**Pessi listi ásamt öllum texta fjölritanna er aðgengilegur á netinu:**  
*This list with full text of all the reports is available on the Internet:*

<http://www.hafro.is/Bokasafn/Timarit/fjoler.htm>

1. **Kjartan Thors, Þórdís Ólafsdóttir:** Skýrsla um leit að byggingarefnum í sjó við Austfirði sumarið 1975. Reykjavík 1975. 62 s. (Ófánlegt – *Out of print*).
2. **Kjartan Thors:** Skýrsla um rannsóknir hafsbotsins í sunnanverðum Faxaflóa sumarið 1975. Reykjavík 1977. 24 s.
3. **Karl Gunnarsson, Konráð Þórisson:** Áhrif skolpmengunar á fjörupörunga í nágrenni Reykjavíkur. Reykjavík 1977. 19 s. (Ófánlegt – *Out of print*).
4. **Einar Jónsson:** Mengunarrannsóknir í Skerjafirði. Áhrif frárennslis á botndýralíf. Reykjavík 1976. 26 s. (Ófánlegt – *Out of print*).
5. **Karl Gunnarsson, Konráð Þórisson:** Stórþari á Breiðafirði. Reykjavík 1979. 53 s.
6. **Karl Gunnarsson:** Rannsóknir á hrossapara (*Laminaria digitata*) á Breiðafirði. 1. Hrossapari við Fagurey. Reykjavík 1980. 17 s. (Ófánlegt – *Out of print*).
7. **Einar Jónsson:** Líffræðiathuganir á beitusmökk haustið 1979. Áfangaskýrsla. Reykjavík 1980. 22 s. (Ófánlegt – *Out of print*).
8. **Kjartan Thors:** Botngerð á nokkrum hrygningarstöðvum síldarinnar. Reykjavík 1981. 25 s. (Ófánlegt – *Out of print*).
9. **Stefán S. Kristmannsson:** Hitastig, selta og vatns- og seltubúskapur í Hvalfirði 1947–1978. Reykjavík 1983. 27 s.
10. **Jón Ólafsson:** Þungmálmur í kræklingi við Suðvesturland. Reykjavík 1983. 50 s.
11. Nyttjastofnar sjávar og umhverfisþættir 1987. Aflahorfur 1988. *State of Marine Stocks and Environmental Conditions in Icelandic Waters 1987. Fishing Prospects 1988.* Reykjavík 1987. 68 s. (Ófánlegt – *Out of print*).
12. Haf- og fiskirannsóknir 1988–1992. Reykjavík 1988. 17 s. (Ófánlegt – *Out of print*).
13. **Ólafur K. Pálsson, Björn Æ. Steinarsson, Einar Jónsson, Gunnar Jónsson, Gunnar Stefánsson, Sigfús A. Schopka:** Stofnmæling botnfiska á Íslandsmiðum. Reykjavík 1988. 76 s. (Ófánlegt – *Out of print*).
14. Nyttjastofnar sjávar og umhverfisþættir 1988. Aflahorfur 1989. *State of Marine Stocks and Environmental Conditions in Icelandic Waters 1988. Fishing Prospects 1989.* Reykjavík 1988. 126 s.
15. Ástand humar- og rækjustofna 1988. Aflahorfur 1989. Reykjavík 1988. 16 s.
16. **Kjartan Thors, Jóhann Helgason:** Jarðlög við Vestmannaeyjar. Áfangaskýrsla um jarðlagagreiningu og könnun neðansjávareldvarpa með endurvarpsmælingum. Reykjavík 1988. 41 s.
17. **Stefán S. Kristmannsson:** Sjávarhitamælingar við strendur Íslands 1987–1988. Reykjavík 1989. 102 s.
18. **Stefán S. Kristmannsson, Svend-Aage Malmberg, Jóhannes Briem:** *Western Iceland Sea. Greenland Sea Project. CTD Data Report. Joint Danish-Icelandic Cruise R/V Bjarni Sæmundsson, September 1987.* Reykjavík 1989. 181 s.
19. Nyttjastofnar sjávar og umhverfisþættir 1989. Aflahorfur 1990. *State of Marine Stocks and Environmental Conditions in Icelandic Waters 1989. Fishing Prospects 1990.* Reykjavík 1989. 128 s. (Ófánlegt – *Out of print*).
20. **Sigfús A. Schopka, Björn Æ. Steinarsson, Einar Jónsson, Gunnar Jónsson, Gunnar Stefánsson, Ólafur K. Pálsson:** Stofnmæling botnfiska á Íslandsmiðum 1989. Rannsóknaskýrsla. Reykjavík 1989. 54 s.
21. Nyttjastofnar sjávar og umhverfisþættir 1990. Aflahorfur 1991. *State of Marine Stocks and Environmental Conditions in Icelandic Waters 1990. Fishing Prospects 1991.* Reykjavík 1990. 145 s.
22. **Gunnar Jónsson, Björn Æ. Steinarsson, Einar Jónsson, Gunnar Stefánsson, Ólafur K. Pálsson, Sigfús A. Schopka:** Stofnmæling botnfiska á Íslandsmiðum 1990. Reykjavík 1990. 53 s. (Ófánlegt – *Out of print*).
23. **Stefán S. Kristmannsson, Svend-Aage Malmberg, Jóhannes Briem, Erik Buch:** *Western Iceland Sea Greenland Sea Project – CTD Data Report. Joint Danish Icelandic Cruise R/V Bjarni Sæmundsson, September 1988.* Reykjavík 1991. 84 s. (Ófánlegt – *Out of print*).
24. **Stefán S. Kristmannsson:** Sjávarhitamælingar við strendur Íslands 1989–1990. Reykjavík 1991. 105 s. (Ófánlegt – *Out of print*).
25. Nyttjastofnar sjávar og umhverfisþættir 1991. Aflahorfur fiskveiðiárið 1991/92. *State of Marine Stocks and Environmental Conditions in Icelandic Waters 1991. Prospects for the Quota Year 1991/92.* Reykjavík 1991. 153 s. (Ófánlegt – *Out of print*).
26. **Páll Reynisson, Hjálmar Vilhjálmsson:** Mælingar á stærð loðnustofnsins 1978–1991. Aðferðir og niðurstöður. Reykjavík 1991. 108 s.
27. **Stefán S. Kristmannsson, Svend-Aage Malmberg, Jóhannes Briem, Erik Buch:** *Western Iceland Sea Greenland Sea Project – CTD Data Report. Joint Danish Icelandic Cruise R/V Bjarni Sæmundsson, September 1989.* Reykjavík 1991. 93 s.
28. **Gunnar Stefánsson, Björn Æ. Steinarsson, Einar Jónsson, Gunnar Jónsson, Ólafur K. Pálsson, Sigfús A. Schopka:** Stofnmæling botnfiska á Íslandsmiðum 1991. Rannsóknaskýrsla. Reykjavík 1991. 60 s.
29. Nyttjastofnar sjávar og umhverfisþættir 1992. Aflahorfur fiskveiðiárið 1992/93. *State of Marine Stocks and Environmental Conditions in Icelandic Waters 1992. Prospects for the Quota Year 1992/93.* Reykjavík 1992. 147 s. (Ófánlegt – *Out of print*).

30. **Van Aken, Hendrik, Jóhannes Briem, Erik Buch, Stefán S. Kristmannsson, Svend-Aage Malmberg, Sven Ober:** *Western Iceland Sea–Greenland Sea Project: Moored Current Meter Data. Greenland–Jan Mayen and Denmark Strait September 1988–September 1989.* Reykjavík 1992. 177 s.
31. **Björn Æ. Steinarsson, Einar Jónsson, Gunnar Jónsson, Gunnar Stefánsson, Ólafur K. Pálsson, Sigfús A. Schopka:** Stofnmæling botnfiska á Íslandsmiðum 1992. Reykjavík 1993. 71 s. (Ófánlegt – *Out of print*).
32. **Guðrún Marteinsdóttir, Gunnar Jónsson, Ólafur V. Einarsson:** Útbreiðsla grálúðu við Vestur- og Norðvesturland 1992. Reykjavík 1993. 42 s. (Ófánlegt – *Out of print*).
33. **Ingvar Hallgrímsson:** Rækjuleit á djúpslóð við Ísland. Reykjavík 1993. 63 s.
34. Nytjastofnar sjávar 1992/93. Aflahorfur fiskveiðiárið 1993/94. *State of Marine Stocks in Icelandic Waters 1992/93. Prospects for the Quota Year 1993/94.* Reykjavík 1993. 140 s.
35. **Ólafur K. Pálsson, Björn Æ. Steinarsson, Einar Jónsson, Gunnar Jónsson, Gunnar Stefánsson, Sigfús A. Schopka:** Stofnmæling botnfiska á Íslandsmiðum 1993. Reykjavík 1994. 89 s.
36. **Jónbjörn Pálsson, Guðrún Marteinsdóttir, Gunnar Jónsson:** Könnun á útbreiðslu grálúðu fyrir Austfjörðum 1993. Reykjavík 1994. 37 s.
37. Nytjastofnar sjávar 1993/94. Aflahorfur fiskveiðiárið 1994/95. *State of Marine Stocks in Icelandic Waters 1993/94. Prospects for the Quota Year 1994/95.* Reykjavík 1994. 150 s.
38. **Stefán S. Kristmannsson, Svend-Aage Malmberg, Jóhannes Briem, Erik Buch:** *Western Iceland Sea Greenland Sea Project – CTD Data Report. Joint Danish Icelandic Cruise R/V Bjarni Semundsson, September 1990.* Reykjavík 1994. 99 s.
39. **Stefán S. Kristmannsson, Svend-Aage Malmberg, Jóhannes Briem, Erik Buch:** *Western Iceland Sea Greenland Sea Project – CTD Data Report. Joint Danish Icelandic Cruise R/V Bjarni Semundsson, September 1991.* Reykjavík 1994. 94 s.
40. Þættir úr vistfræði sjávar 1994. Reykjavík 1994. 50 s.
41. **John Mortensen, Jóhannes Briem, Erik Buch, Svend-Aage Malmberg:** *Western Iceland Sea–Greenland Sea Project: Moored Current Meter Data Greenland–Jan Mayen, Denmark Strait and Kolbeinsey Ridge September 1990 to September 1991.* Reykjavík 1995. 73 s.
42. **Einar Jónsson, Björn Æ. Steinarsson, Gunnar Jónsson, Gunnar Stefánsson, Ólafur K. Pálsson, Sigfús A. Schopka:** Stofnmæling botnfiska á Íslandsmiðum 1994. Rannsóknaskýrsla. Reykjavík 1995. 107 s.
43. Nytjastofnar sjávar 1994/95. Aflahorfur fiskveiðiárið 1995/96. *State of Marine Stocks in Icelandic Waters 1994/95. Prospects for the Quota Year 1995/96.* Reykjavík 1995. 163 s.
44. Þættir úr vistfræði sjávar 1995. *Environmental Conditions in Icelandic Waters 1995.* Reykjavík 1995. 34 s.
45. **Sigfús A. Schopka, Björn Æ. Steinarsson, Einar Jónsson, Gunnar Jónsson, Gunnar Stefánsson, Höskuldur Björnsson, Ólafur K. Pálsson:** Stofnmæling botnfiska á Íslandsmiðum 1995. Rannsóknaskýrsla. *Icelandic Groundfish Survey 1995. Survey Report.* Reykjavík 1996. 46 s.
46. Nytjastofnar sjávar 1995/96. Aflahorfur fiskveiðiárið 1996/97. *State of Marine Stocks in Icelandic Waters 1995/96. Prospects for the Quota Year 1996/97.* Reykjavík 1996. 175 s.
47. **Björn Æ. Steinarsson, Gunnar Jónsson, Hörður Andrésson, Jónbjörn Pálsson:** Könnun á flatfiski í Faxaflóa með dragnót sumarið 1995: Rannsóknaskýrsla. *Flatfish Survey in Faxaflói with Danish Seine in Summer 1995: Survey Report.* Reykjavík 1996. 38 s.
48. **Steingrímur Jónsson:** *Ecology of Eyjafjörður Project. Physical Parameters Measured in Eyjafjörður in the Period April 1992–August 1993.* Reykjavík 1996. 144 s.
49. **Guðni Þorsteinsson:** Tilraunir með þorskgildrur við Ísland. Rannsóknaskýrsla. Reykjavík 1996. 28 s.
50. **Jón Ólafsson, Magnús Danielsen, Sólveig Ólafsdóttir, Þórarinn Arnarson:** Næringarefni í sjó undan Ánanaustum í nóvember 1995. Unnið fyrir Gatnamálastjórnann í Reykjavík. Reykjavík 1996. 50 s.
51. **Þórunn Þórðardóttir, Agnes Eydal:** *Phytoplankton at the Ocean Quahog Harvesting Areas Off the Southwest Coast of Iceland 1994.* Svifþörungur á kúfiskmiðum út af norðvesturströnd Íslands 1994. Reykjavík 1996. 28 s.
52. **Gunnar Jónsson, Björn Æ. Steinarsson, Einar Jónsson, Gunnar Stefánsson, Höskuldur Björnsson, Ólafur K. Pálsson, Sigfús A. Schopka:** Stofnmæling botnfiska á Íslandsmiðum 1996. Rannsóknaskýrsla. *Icelandic Groundfish Survey 1996. Survey Report.* Reykjavík 1997. 46 s.
53. Þættir úr vistfræði sjávar 1996. *Environmental Conditions in Icelandic Waters 1996.* Reykjavík 1997. 29 s.
54. **Vilhjálmur Þorsteinsson, Ásta Guðmundsdóttir, Guðrún Marteinsdóttir, Guðni Þorsteinsson og Ólafur K. Pálsson:** Stofnmæling hrygningarþorsks með þorskanetum 1996. *Gillnet Survey to Establish Indices of Abundance for the Spawning Stock of Icelandic Cod in 1996.* Reykjavík 1997. 22 s.
55. Hafrannsóknastofnunin: Rannsókn- og starfsáætlun árin 1997–2001. Reykjavík 1997. 59 s. (Ófánlegt – *Out of print*).
56. Nytjastofnar sjávar 1996/97. Aflahorfur fiskveiðiárið 1997/98. *State of Marine Stocks in Icelandic Waters 1996/97. Prospects for the Quota Year 1997/98.* Reykjavík 1997. 167 s.
57. Fjölstofnarannsóknir 1992–1995. Reykjavík 1997. 410 s.
58. **Gunnar Stefánsson, Ólafur K. Pálsson (ritstj.):** *BORMICON. A Boreal Migration and Consumption Model.* Reykjavík 1997. 223 s. (Ófánlegt – *Out of print*).
59. **Haldór Narfi Stefánsson, Hersir Sigurgeirsson, Höskuldur Björnsson:** *BORMICON. User's Manual.* Reykjavík 1997. 61 s. (Ófánlegt – *Out of print*).
60. **Haldór Narfi Stefánsson, Hersir Sigurgeirsson, Höskuldur Björnsson:** *BORMICON. Programmer's Manual.* Reykjavík 1997. 215 s. (Ófánlegt – *Out of print*).
61. **Þorsteinn Sigurðsson, Einar Hjörleifsson, Höskuldur Björnsson, Ólafur Karvel Pálsson:** Stofnmæling botnfiska á Íslandsmiðum haustið 1996. Reykjavík 1997. 34 s.
62. **Guðrún Helgadóttir:** *Paleoclimate (0 to >14 ka) of W and NW Iceland: An Iceland/USA Contribution to P.A.L.E. Cruise Report B9-97, R/V Bjarni Semundsson RE 30, 17th–30th July 1997.* Reykjavík 1997. 29 s.
63. **Haldóra Skarphéðinsdóttir, Karl Gunnarsson:** Lífríki sjávar í Breiðafirði: Yfirlit rannsókna. *A Review of Literature on Marine Biology in Breiðafjörður.* Reykjavík 1997. 57 s.



64. **Valdimar Ingi Gunnarsson og Anette Jarl Jörgensen:** Þorskrannsóknir við Ísland með tilliti til hafbeitar. Reykjavík 1998. 55 s.
65. **Jakob Magnússon, Vilhelmina Vilhelmsdóttir, Klara B. Jakobsdóttir:** Djúpslóð á Reykjaneshrýgg: Könnunarleiðangrar 1993 og 1997. *Deep Water Area of the Reykjanes Ridge: Research Surveys in 1993 and 1997*. Reykjavík 1998. 50 s.
66. **Vilhjalmur Þorsteinsson, Ásta Guðmundsdóttir, Guðrún Marteinsdóttir:** Stofnmæling hrygningarþorsks með þorskanetum 1997. *Gill-net Survey of Spawning Cod in Icelandic Waters in 1997. Survey Report*. Reykjavík 1998. 19 s.
67. Nýttastofnar sjávar 1997/98. Aflahorfur fiskveiðiárið 1998/99. *State of Marine Stocks in Icelandic Waters 1997/98. Prospects for the Quota Year 1998/99*. Reykjavík 1998. 168 s.
68. **Einar Jónsson, Hafsteinn Guðfinnsson:** Ýsurannsóknir á grunnslóð fyrir Suðurlandi 1989–1995. Reykjavík 1998. 75 s.
69. **Jónbjörn Pálsson, Björn Æ. Steinarsson, Einar Hjörleifsson, Gunnar Jónsson, Hörður Andrésson, Kristján Kristinnsson:** Könnun á flatfiski í Faxaflóa með dragnót sumrin 1996 og 1997: Rannsóknaskýrsla. *Flatfish Survey in Faxaflói with Danish Seine in Summers 1996 and 1997: Survey Report*. Reykjavík 1998. 38 s.
70. **Kristinn Guðmundsson, Agnes Eydal:** Svifþörungur sem geta valdið skelfiskeitrun. Niðurstöður tegundagreininga og umhverfisathugana. *Phytoplankton, a Potential Risk for Shellfish Poisoning. Species Identification and Environmental Conditions*. Reykjavík 1998. 33 s.
71. **Ásta Guðmundsdóttir, Vilhjalmur Þorsteinsson, Guðrún Marteinsdóttir:** Stofnmæling hrygningarþorsks með þorskanetum 1998. *Gill-net survey of spawning cod in Icelandic waters in 1998*. Reykjavík 1998. 19 s.
72. Nýttastofnar sjávar 1998/1999. Aflahorfur fiskveiðiárið 1999/2000. *State of Marine Stocks in Icelandic Waters 1998/1999. Prospects for the Quota Year 1999/2000*. Reykjavík 1999. 172 s. (Ófáanlegt – Out of print).
73. Þættir úr vistfræði sjávar 1997 og 1998. *Environmental Conditions in Icelandic Waters 1997 and 1998*. Reykjavík 1999. 48 s.
74. **Matthías Oddgeirsson, Agnar Steinarsson og Björn Björnsson:** Mat á arðsemi sandhverfueidis á Íslandi. Grindavík 2000. 21 s.
75. Nýttastofnar sjávar 1999/2000. Aflahorfur fiskveiðiárið 2000/2001. *State of Marine Stocks in Icelandic Waters 1999/2000. Prospects for the Quota Year 2000/2001*. Reykjavík 2000. 176 s.
76. **Jakob Magnússon, Jútta V. Magnússon, Klara B. Jakobsdóttir:** Djúpfiskarannsóknir. Framlag Íslands til rannsóknaverkefnisins EC FAIR PROJECT CT 95-0655 1996–1999. *Deep-Sea Fishes. Icelandic Contributions to the Deep Water Research Project. EC FAIR PROJECT CT 950655 1996–1999*. Reykjavík 2000. 164 s. (Ófáanlegt – Out of print).
77. Þættir úr vistfræði sjávar 1999. *Environmental Conditions in Icelandic Waters 1999*. Reykjavík 2000. 31 s.
78. *dst2 Development of Structurally Detailed Statistically Testable Models of Marine Populations. QLK5-CT199901609. Progress Report for 1 January to 31 December 2000*. Reykjavík 2001. 341 s. (Ófáanlegt – Out of print).
79. *Tagging Methods for Stock Assessment and Research in Fisheries*. Co-ordinator: Vilhjalmur Þorsteinsson. Reykjavík 2001. 179 s.
80. Nýttastofnar sjávar 2000/2001. Aflahorfur fiskveiðiárið 2001/2002. *State of Marine Stocks in Icelandic Waters 2000/2001. Prospects for the Quota Year 2001/2002*. Reykjavík 2001. 186 s.
81. **Jón Ólafsson, Sólveig R. Ólafsdóttir:** Ástand sjávar á losunarsvæði skolps undan Ánanaustum í febrúar 2000. Reykjavík 2001. 49 s.
82. **Hafsteinn G. Guðfinnsson, Karl Gunnarsson:** Sjór og sjávarnytjar í Héraðsflóa. Reykjavík 2001. 20 s.
83. Þættir úr vistfræði sjávar 2000. *Environmental Conditions in Icelandic Waters 2000*. Reykjavík 2001. 37 s.
84. **Guðrún G. Þórarinsdóttir, Hafsteinn G. Guðfinnsson, Karl Gunnarsson:** Sjávarnytjar í Hvalfirði. Reykjavík 2001. 14 s.
85. Rannsóknir á straumum, umhverfisþáttum og lífríki sjávar í Reyðarfirði frá júlí til október 2000. *Current Measurements, Environmental Factors and Biology of Reyðarfjörður in the Period Late July to the Beginning of October 2000*. Hafsteinn Guðfinnsson (verkefnisstjóri). Reykjavík 2001. 135 s.
86. **Jón Ólafsson, Magnús Danielsen, Sólveig R. Ólafsdóttir, Jóhannes Briem:** Ferskvatnsáhrif í sjó við Norðausturland að vorlagi. Reykjavík 2002. 42 s.
87. *dst2 Development of Structurally Detailed Statistically Testable Models of Marine Populations. QLK5-CT199901609. Progress Report for 1 January to 31 December 2001*. Reykjavík 2002. 300 s.
88. Nýttastofnar sjávar 2001/2002. Aflahorfur fiskveiðiárið 2002/2003. *State of Marine Stocks in Icelandic Waters 2001/2002. Prospects for the Quota Year 2002/2003*. Reykjavík 2002. 198 s.
89. **Kristinn Guðmundsson, Ástþór Gíslason, Jón Ólafsson, Konráð Þórisson, Rannveig Björnsdóttir, Sigmar A. Steingrímsson, Sólveig R. Ólafsdóttir, Óivind Kaasa:** *Ecology of Eyjafjörður project. Chemical and biological parameters measured in Eyjafjörður in the period April 1992–August 1993*. Reykjavík 2002. 129 s.
90. **Ólafur K. Pálsson, Guðmundur Karlsson, Ari Arason, Gísli R. Gíslason, Guðmundur Jóhannesson, Sigurjón Aðalsteinsson:** Mælingar á brottkasti þorsks og ýsu árið 2001. Reykjavík 2002. 17 s.
91. **Jenný Brynjarsdóttir:** *Statistical Analysis of Cod Catch Data from Icelandic Groundfish Surveys. M.Sc. Thesis*. Reykjavík 2002. 81 s.
92. **Karl Gunnarsson (ritstj.):** Umhverfisaðstæður, svifþörungur og kræklingur í Mjóafirði. Reykjavík 2003. 81 s.
93. **Guðrún Marteinsdóttir o.fl.:** *METACOD: The role of sub-stock structure in the maintenance of cod metapopulations*. METACOD: Stofngerð þorsks, hlutverk undirstofna í viðkomu þorskstofna við Ísland og Skotland. Reykjavík 2003. 110 s.
94. **Ólafur K. Pálsson, Guðmundur Karlsson, Ari Arason, Gísli R. Gíslason, Guðmundur Jóhannesson og Sigurjón Aðalsteinsson:** Mælingar á brottkasti botnfiska 2002. Reykjavík 2003. 29 s.
95. **Kristján Kristinnsson:** Lúðan (*Hippoglossus hippoglossus*) við Ísland og hugmyndir um aðgerðir til verndunar hennar. Reykjavík 2003. 33 s.
96. Þættir úr vistfræði sjávar 2001 og 2002. *Environmental Conditions in Icelandic Waters 2001 and 2002*. Reykjavík 2003. 37 s.



97. Nytjastofnar sjávar 2002/2003. Aflahorfur fiskveiðiárið 2003/2004. *State of Marine Stocks in Icelandic Waters 2002/2003. Prospects for the Quota Year 2003/2004.* Reykjavík 2003. 186 s.
98. *dst2 Development of Structurally Detailed Statistically Testable Models of Marine Populations. QLK5-CT199901609. Progress Report for 1 January to 31 December 2002.* Reykjavík 2003. 346 s.
99. **Agnes Eydal:** Áhrif næringarefna á tegundasamsetningu og fjölda svifþörungna í Hvalfirði. Reykjavík 2003. 44 s.
100. **Valdimar Ingi Gunnarsson o.fl.:** Þorskeldiskvóti: Yfirlit yfir föngun og áframeldi þorsks á árinu 2002. Reykjavík 2004. 26 s.
101. Þættir úr vistfræði sjávar 2003. *Environmental Conditions in Icelandic Waters 2003.* Reykjavík 2004. 43 s.
102. Nytjastofnar sjávar 2003/2004. Aflahorfur fiskveiðiárið 2004/2005. *State of Marine Stocks in Icelandic Waters 2003/2004. Prospects for the Quota Year 2004/2005.* Reykjavík 2004. 175 s.
103. **Ólafur K. Pálsson o.fl.:** Mælingar á brottkasti 2003 og Meðafli í kolmunnaveiðum 2003. Reykjavík 2004. 37 s.
104. **Ásta Guðmundsdóttir, Þorsteinn Sigurðsson:** Veidar og útbreiðsla íslensku sumargotssíldarinnar að haust- og vetrarlagi 1978–2003. Reykjavík 2004. 42 s.
105. **Einar Jónsson, Hafsteinn Guðfinnsson:** Ýsa á grunnslóð fyrir Suðurlandi 1994–1998. Reykjavík 2004. 44 s.
106. **Kristinn Guðmundsson, Þórunn Þórðardóttir, Gunnar Pétursson:** *Computation of Daily Primary Production in Icelandic Waters: A Comparison of Two Different Approaches.* Reykjavík 2004. 23 s.
107. **Kristinn Guðmundsson, Kristín J. Valsdóttir:** Frumframleiðnimælingar á Hafrannsóknastofnuninni árin 1958/1999: Umfang, aðferðir og úrvinnsla. Reykjavík 2004. 56 s.
108. **John Mortensen:** *Satellite Altimetry and Circulation in the Denmark Strait and Adjacent Seas.* Reykjavík 2004. 84 s.
109. **Svend-Aage Malmberg:** *The Iceland Basin. Topography and Oceanographic Features.* Reykjavík 2004. 41 s.
110. **Sigmar Arnar Steingrímsson, Sólmundur Tr. Einarsson:** Kóralsvæði á Íslandsmiðum: Mat á ástandi og tillaga um aðgerðir til verndar þeim. Reykjavík 2004. 39 s.
111. **Björn Björnsson, Valdimar Ingi Gunnarsson (ritstj.):** Þorskeldi á Íslandi. Reykjavík 2004. 182 s.
112. **Jónbjörn Pálsson, Kristján Kristinsson:** Flatfiskar í humarleiddangri 1995–2003. Reykjavík 2005. 90 s.
113. **Valdimar I. Gunnarsson o.fl.:** Þorskeldiskvóti: Yfirlit yfir föngun og áframeldi þorsks á árinu 2003. Reykjavík 2005. 58 s.
114. **Kristján Kristinsson, Björn Ævarr Steinarrson, Sigfús Schopka:** Skyndilokanir á þorskveiðar í botnvörpu á Vestfjarðamiðum. Reykjavík 2005. 29 s.
115. **Erlingur Hauksson (ritstj.):** Sníkjuormar og fæða fisks, skarfs og sels. Reykjavík 2005. 45 s.
116. Þættir úr vistfræði sjávar 2004. *Environmental Conditions in Icelandic Waters 2004.* Reykjavík 2005. 46 s.
117. **Ólafur K. Pálsson o.fl.:** Mælingar á brottkasti 2004 og Meðafli í kolmunnaveiðum 2004. Reykjavík 2005. 37 s.
118. *dst2 Development of Structurally Detailed Statistically Testable Models of Marine Populations. QLK5-CT199901609. Final report: 1 January 2000 to 31 August 2004. Volume 1.* Reykjavík 2005. 324 s.
119. *dst2 Development of Structurally Detailed Statistically Testable Models of Marine Populations. QLK5-CT199901609. Final report: 1 January 2000 to 31 August 2004. Volume 2.* Reykjavík 2005. 194 s.
120. **James Begley:** *Gadget User Guide.* Reykjavík 2005. 90 s.
121. Nytjastofnar sjávar 2004/2005. Aflahorfur fiskveiðiárið 2005/2006. *State of Marine Stocks in Icelandic Waters 2004/2005. Prospects for the Quota Year 2005/2006.* Reykjavík 2005. 182 s.
122. **Sólveig Ólafsdóttir:** Styrkur næringarefna í hafinu umhverfis Ísland. *Nutrient Concentrations in Icelandic Waters.* Reykjavík 2006. 24 s.
123. **Sigfús A. Schopka, Jón Sólmundsson, Vilhjálmur Þorsteinsson:** Áhrif svæðafriðunar á vöxt og viðgang þorsks. Niðurstöður úr þorskmerkingum út af norðanverðum Vestfjörðum og Húnaflóa sumurin 1994 og 1995. **Guðmundur J. Óskarsson:** Samanburður á íslensku sumargotssíldinni sem veiddist fyrir austan og vestan land árin 1997–2003. Reykjavík 2006. 42. s.
124. **Valdimar I. Gunnarsson o.fl.:** Þorskeldiskvóti: Yfirlit yfir föngun og áframeldi þorsks á árinu 2004. Reykjavík 2006. 72 s.
125. Þættir úr vistfræði sjávar 2005. *Environmental Conditions in Icelandic Waters 2005.* Reykjavík 2006. 34 s.
126. Nytjastofnar sjávar 2005/2006. Aflahorfur fiskveiðiárið 2006/2007. *State of Marine Stocks in Icelandic Waters 2005/2006. Prospects for the Quota Year 2006/2007.* Reykjavík 2006. 190 s.
127. **Ólafur K. Pálsson o.fl.:** Mælingar á brottkasti botnfiska og meðafli í kolmunnaveiðum 2005. Reykjavík 2006. 27 s.
128. **Agnes Eydal o.fl.:** Vöktun eiturbörunga í tengslum við nýtingu skelfisks árið 2005. Reykjavík 2007. 19 s.
129. Nytjastofnar sjávar 2006/2007. Aflahorfur fiskveiðiárið 2007/2008. *State of Marine Stocks in Icelandic Waters 2006/2007. Prospects for the Quota Year 2007/2008.* Reykjavík 2007. 180 s.
130. Þættir úr vistfræði sjávar 2006. *Environmental Conditions in Icelandic Waters 2006.* Reykjavík 2007. 39 s.
131. **Höskuldur Björnsson o.fl.:** Stofnmæling botnfiska á Íslandsmiðum (SMB) 1985–2006 og stofnmæling botnfiska að haustlagi (SMH) 1996–2006. Reykjavík 2007. 220 s. (With English summary)
132. **Valdimar I. Gunnarsson o.fl.:** Þorskeldiskvóti: Yfirlit yfir föngun og áframeldi þorsks á árinu 2005. Reykjavík 2007. 42 s.
133. **Sigfús A. Schopka:** Friðun svæða og skyndilokanir á Íslandsmiðum: Sögulegt yfirlit. Reykjavík 2007. 86 s.
134. **Ólafur K. Pálsson o.fl.:** Mælingar á brottkasti botnfiska 2006. Reykjavík 2007. 17 s.
135. **Gunnar Karlsson:** Afli og sjósókn Íslendinga frá 17 öld til 20. aldar. Reykjavík 2007. 64 s.
136. **Valdimar Ingi Gunnarsson:** Reynsla af sjókvíeldi á Íslandi. Reykjavík 2008. 46 s.
137. **Valdimar Ingi Gunnarsson o.fl.:** Þorskeldiskvóti: Yfirlit yfir föngun og áframeldi þorsks á árinu 2006. Reykjavík 2008. 40 s.
138. Nytjastofnar sjávar 2007/2008. Aflahorfur fiskveiðiárið 2008/2009. *State of Marine Stocks in Icelandic Waters 2007/2008. Prospects for the Quota Year 2008/2009.* Reykjavík 2008. 180 s.

139. Þættir úr vistfræði sjávar 2007. *Environmental Conditions in Icelandic Waters 2007*. Reykjavík 2008. 40 s.
140. **Hrafnkell Eiríksson:** Dragnót og dragnótaveiðar við Ísland. Reykjavík 2008. 19 s.
141. **Steinunn Hilma Ólafsdóttir, Sigmar Arnar Steingrímsson:** Botndýralíf í Héraðsflóa: grunnástand fyrir virkjun Jökulsár á Dal og Jökulsár í Fljótsdal (Kárahnjúkavirkjun). Reykjavík 2008. 34 s.
142. **Ólafur K. Pálsson o.fl.:** Mælingar á brottkasti botnfiska 2007 og Göngur þorsks á Íslandsmiðum kannaðar með GPS staðsetningu, bergmálstækni og rafeindamerkjum. Reykjavík 2008. 30 s.
143. Sjór og sjávarlífverur, Ráðstefna Hafrannsóknastofnunarinnar á Hótel Loftleiðum, Reykjavík 20. og 21. febrúar 2009. *Ocean and Marine Biota, Marine Research Institute Conference at Loftleiðir Hótel, Reykjavík, February 20 and 21, 2009*. Reykjavík 2009. 79 s.
144. **Valdimar I. Gunnarsson o.fl.:** Þorskeldiskvóti: Yfirlit yfir föngun og áframeldi þorsks á árinu 2007. Reykjavík 2009. 35 s.
145. Þættir úr vistfræði sjávar 2008. *Environmental Conditions in Icelandic Waters 2008*. Reykjavík 2009. 74 s.
146. Nytjastofnar sjávar 2008/2009. Aflahorfur fiskveiðiárið 2009/2010. *State of Marine Stocks in Icelandic Waters 2008/2009. Prospects for the Quota Year 2009/2010*. Reykjavík 2009. 174 s.
147. **Ólafur K. Pálsson o.fl. og Sigmar Arnar Steingrímsson:** Mælingar á brottkasti botnfiska 2008 og Botndýralíf í Seyðisfirði: Rannsókn gerð í tengslum við undirbúning á laxeldi í sjó. Reykjavík 2009. 34 s.
148. **Valdimar Ingi Gunnarsson, Björn Björnsson, Einar Hreinsson:** Föngun á þorski. *Capture of Cod*. Reykjavík 2009. 122 s.
149. **Svend-Aage Malmberg, Jóhannes Briem:** Hita, seltu og straummælingar í Botnsvogi, Hvalfirði 1973. Reykjavík 2010. 47 s.
150. **Valdimar I. Gunnarsson o.fl.:** Þorskeldiskvóti: Yfirlit yfir föngun og áframeldi þorsks á árinu 2008. *Cod Quota for On-growing: Results for the Year 2008*. Reykjavík 2010. 35 s.
151. **Guðrún G. Þórarinsdóttir o.fl.:** Áhrif dragnótaveiða á lífríki botns í innanverðum Skagafirði. Reykjavík 2010. 19 s.
152. Þættir úr vistfræði sjávar 2009. *Environmental Conditions in Icelandic Waters 2009*. Reykjavík 2010. 53 s.
153. Nytjastofnar sjávar 2009/2010. Aflahorfur fiskveiðiárið 2010/2011. *State of Marine Stocks in Icelandic Waters 2009/2010. Prospects for the Quota Year 2010/2011*. Reykjavík 2010. 178 s.
154. **Ólafur K. Pálsson o.fl.:** Mælingar á brottkasti botnfiska 2009. Reykjavík 2010. 16 s.
155. **Ingibjörg G. Jónsdóttir o.fl.:** Stofmæling hrygningarþorsks með þorskanetum 1996–2009. *Gill-net Survey of Spawning Cod in Icelandic Waters 1996–2009*. Reykjavík 2010. 53 s.
156. *Manuals for the Icelandic Bottom Trawl Surveys in Spring and Autumn* (Enskar útgáfur handbóka stofnmælinga með botnvörpu að vori og hausti.) Reykjavík 2010. 125 s.
157. **Valdimar Ingi Gunnarsson, Björn Björnsson o.fl.:** Þorskeldiskvótaverkefnið 2010. Reykjavík 2011. 87 s.
158. Þættir úr vistfræði sjávar 2010. *Environmental Conditions in Icelandic Waters 2010*. Reykjavík 2011. 80 s.
159. Nytjastofnar sjávar 2010/2011. Aflahorfur fiskveiðiárið 2011/2012. *State of Marine Stocks in Icelandic Waters 2010/2011. Prospects for the Quota Year 2011/2012*. Reykjavík 2011. 180 s.
160. **Ólafur K. Pálsson o.fl.:** Mælingar á brottkasti þorsks og ýsu 2001–2010, Göngur þorsks til og frá friðunarsvæðum norðan Íslands og Lífríki fjörunnar við útfall Reykjanesvirkjunar. Reykjavík 2012. 41 s.
161. **Valdimar Ingi Gunnarsson, Björn Björnsson o.fl.:** Þorskeldiskvótaverkefnið 2011. Reykjavík 2012. 79 s.
162. Þættir úr vistfræði sjávar 2011. *Environmental Conditions in Icelandic Waters 2011*. Reykjavík 2012. 46 s.
163. Nytjastofnar sjávar 2011/2012. Aflahorfur fiskveiðiárið 2012/2013. *State of Marine Stocks in Icelandic Waters 2011/2012. Prospects for the Quota Year 2012/2013*. Reykjavík 2012. 186 s.
164. Vistkerfi Íslandshafs. *The Iceland Sea Ecosystem Project*. Reykjavík 2012. 151 s.
165. **Hlynur Ármannsson og Hreiðar Þór Valtýsson:** Eyjafjörður, sjór og sjávarlíf. Reykjavík 2012. 57 s.
166. **Hlynur Ármannsson, Tómas Árnason:** Aflabrögð á sjóstangaveiðimótum við Ísland. *Catches in Sea Angling Tournaments around Iceland*. Reykjavík 2013. 59 s.
167. **Ólafur K. Pálsson o.fl.:** Mælingar á brottkasti þorsks og ýsu 2011. Reykjavík 2013. 12 s.
168. **Valdimar Ingi Gunnarsson, Björn Björnsson o.fl.:** Þorskeldiskvótaverkefnið 2012. Reykjavík 2013. 43 s.
169. Nytjastofnar sjávar 2012/2013. Aflahorfur fiskveiðiárið 2013/2014. *State of Marine Stocks in Icelandic Waters 2012/2013. Prospects for the Quota Year 2013/2014*. Reykjavík 2013. 186 s.
170. Þættir úr vistfræði sjávar 2012. *Environmental Conditions in Icelandic Waters 2012*. Reykjavík 2013. 38 s.
171. **Ólafur K. Pálsson o.fl.:** Mælingar á brottkasti þorsks og ýsu 2012. Reykjavík 2013. 12 s. (With English summary)
172. **Philipp Laeseke, Inga Kjersti Sjøtun:** *Mapping and Description of a Population of the Introduced Seaweed Fucus serratus in the Hvalfjörður, Iceland*. Reykjavík 2014. 24 s.
173. **Valdimar I. Gunnarsson o.fl.:** Þorskeldiskvótaverkefnið 2013, Þorskeldiskvóti: Yfirlit yfir föngun og áframeldi þorsks á árinu 2012. *Cod Quota for On-growing: Results for the Year 2012*. Reykjavík 2014. 12 s.
174. **Guðrún G. Þórarinsdóttir:** *Capture Efficiency and Size Selectivity of a Dry Clam Dredge Used in Fishing for Ocean Quahog (Arctica islandica)*. Reykjavík 2014. 14 s.
175. Þættir úr vistfræði sjávar 2013. *Environmental Conditions in Icelandic Waters 2013*. Reykjavík 2014. 94 s. (With English summary).
176. Nytjastofnar sjávar 2013/2014. Aflahorfur fiskveiðiárið 2014/2015. *State of Marine Stocks in Icelandic Waters 2013/2014. Prospects for the Quota Year 2014/2015*. Reykjavík 2014. 188 s.