LONG ROUGH DAB – SKRÁPFLÚRA
Hippoglossoides platessoides

GENERAL INFORMATION

Long rough dab is common around Iceland. It is a demersal species on a sandy or muddy substrate, occurring at depths ranging from 10-400 m, but has been caught down to 1200 m. Growth is relatively slow and females grow considerably larger than males. Only a small proportion of males become longer than 30 cm, while about the same proportion of females grow larger than 45 cm. Size at sexual maturity differs between the sexes. At the length of 11.5 cm about half the males have reached maturity at the south coast, females reach that level at 17.5 cm. Because of this difference in size, the fishery for long rough dab is largely based on "old" females.

THE FISHERY

The geographical distribution of the long rough dab fisheries according to logbooks has changed significantly since 1994, where the distribution of the catch was mostly in relatively shallow areas in the southern part of the shelf (Figure 1). Since 2005, the reported catch has decreased substantially and remained below 400 t since 2007 (Figure 1).

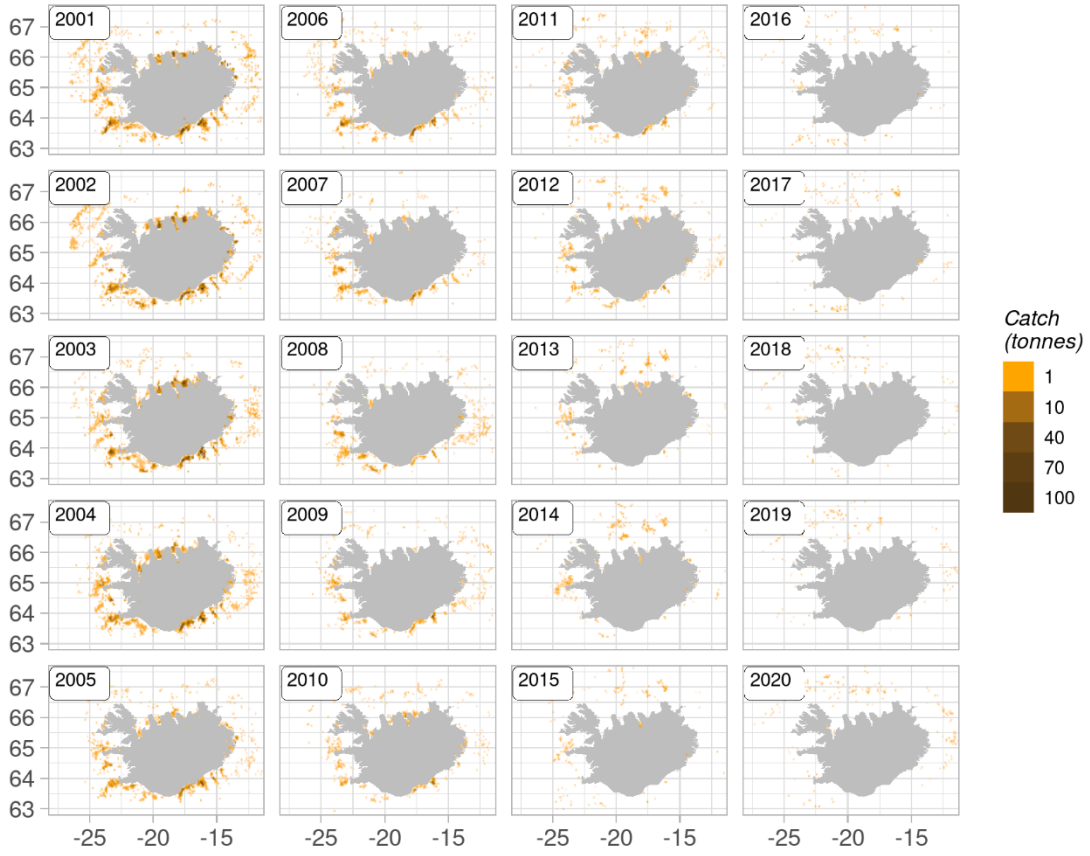

Figure 1. Long rough dab. Geographical distribution of the Icelandic fishery since 1994. Reported catch from logbooks.

Mynd 1. Skrápflúra. Útbreiðsla veiða á Íslandsmiðum frá 1994 samkvæmt afladagbókum.

In 1994-2004, when catches were high, about 50-70% of the catches were taken in the southeast (Figure 2). Since 2004 the catches have decreased significantly in all areas and annual catches have been less than 35 t since 2015 (Figure 1).

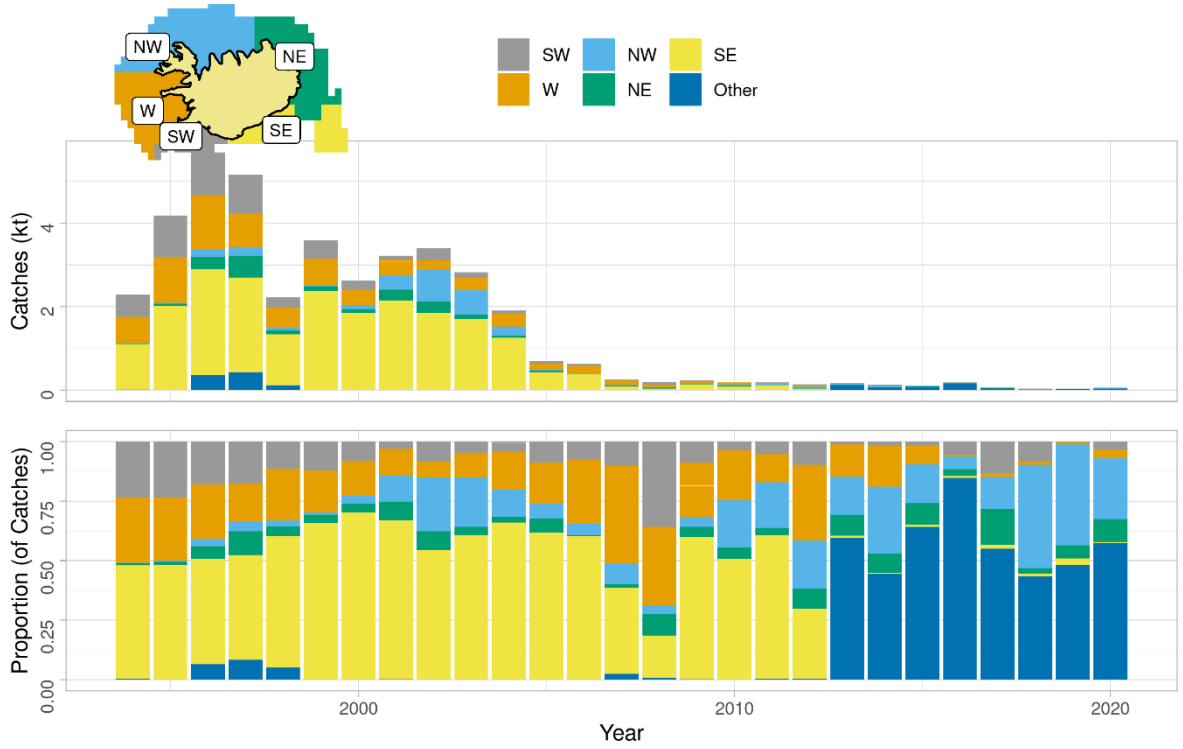

Figure 2. Long rough dab. Spatial distribution of the Icelandic fishery by fishing area since 1994 according to logbooks. All gears combined.

Mynd 2. Skrápflúra. Útbreiðsla veiða við Ísland frá árinu 1994 samkvæmt afladagbókum. Öll veiðarfæri samanlagt.

Historically, most of the long rough dab was caught at less than 200 m depth, but since 2013 larger proportion of the catch has been caught in waters deeper than 200 m (Figure 3).

In Icelandic fishing grounds, long rough dab is mainly caught in demersal seine and bottom trawl, or approximately 95% of total landings (Figure 4, Table 1). Since 2000, 1-48 trawlers and 0-57 seiners have reported annual catches over a tonne of long rough dab. The number of trawlers and demersal seiners have decreased in the last 17 years and in years 2019-2020 only 5 trawlers landed over a tonne of long rough dab.

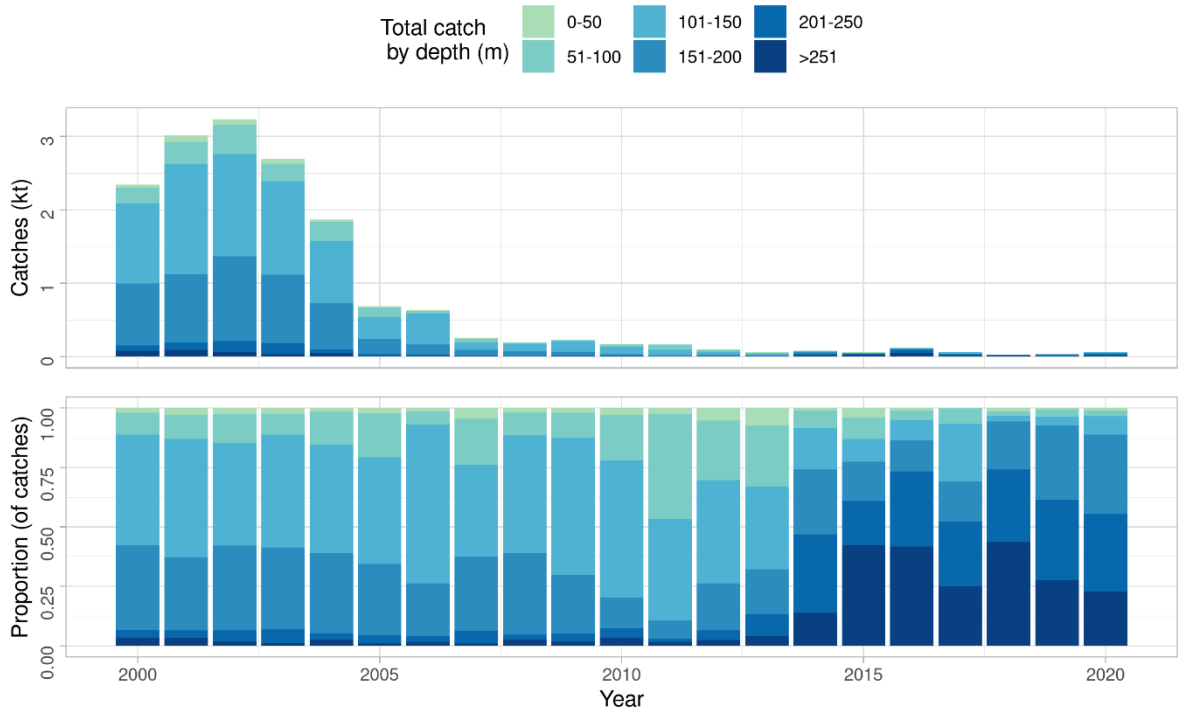

Figure 3. Long rough dab. Depth distribution catches since 2000, according to logbooks.

Mynd 3. Skrápflúra. Afli 2000-2020 samkvæmt afladagbókum, skipt eftir dýpi.

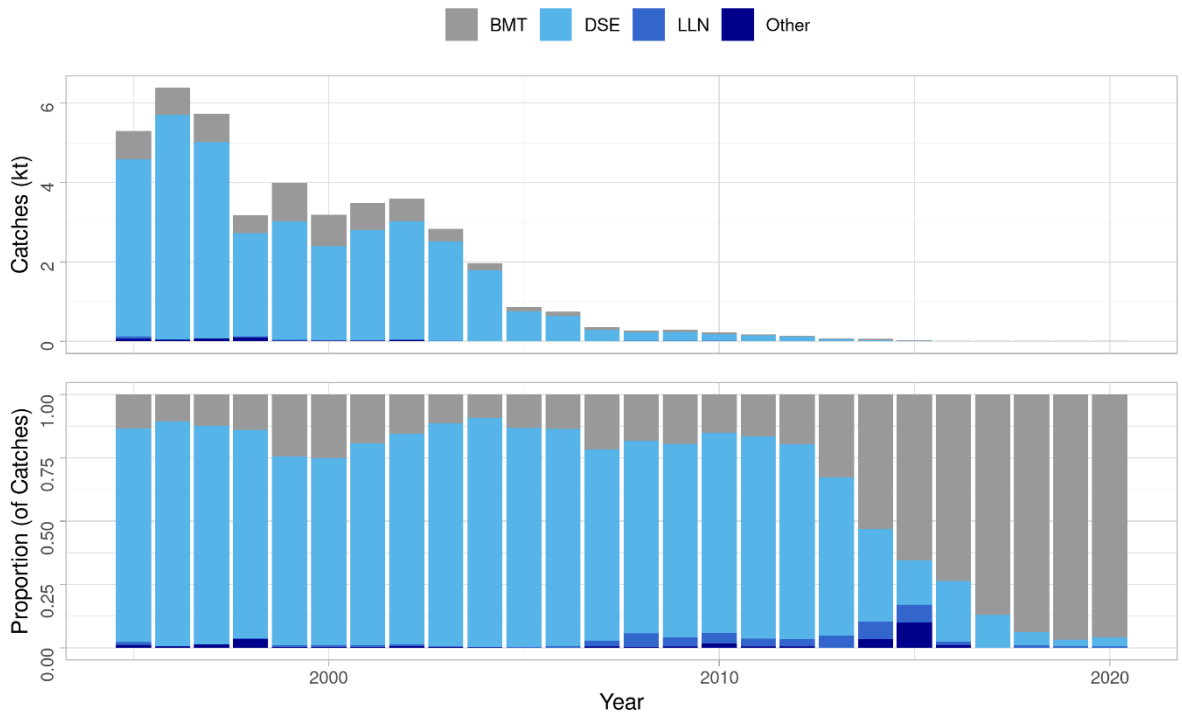

Figure 4. Long rough dab. Total catch (landings) by fishing gear since 1994, according to statistics from the Directorate of Fisheries.

Mynd 4. Skrápflúra. Landaður afli eftir veiðarfærum frá 1994, samkvæmt aflaskráningarkerfi Fiskistofu.

Table 1. Long rough dab. Number of Icelandic vessels landing 1000 kg or more of long rough dab, and all landed catch divided by gear type.

Tafla 1. Skrápflúra. Fjöldi íslenskra skipa sem landað hafa 1000 kg eða meira af skrápflúru og allur landaður afli eftir veiðarfærum.

	NUMBER OF VESSELS			CATCHES (TONNES)			
YEAR	*Seiners*	*Trawlers*	*Other*	*Demersal seine*	*Demersal trawl*	*Other*	*Sum*
2000	57	48	22	2344	484	355	3183
2001	47	41	15	2772	410	288	3470
2002	46	43	21	2981	378	226	3585
2003	47	28	9	2493	199	139	2831
2004	51	23	5	1822	144	4	1970
2005	34	14	2	753	102	16	871
2006	28	15	1	639	100	6	745
2007	27	11	4	265	83	10	358
2008	25	9	5	208	49	19	276
2009	15	6	2	222	56	12	290
2010	21	4	3	171	31	15	217
2011	12	2	3	139	17	22	178
2012	16	5	3	104	10	22	136
2013	11	0	2	49	4	25	78
2014	9	2	4	22	4	40	66
2015	3	1	5	6	4	21	31
2016	1	1	1	4	6	6	16
2017	1	3	1	2	8	8	18
2018	0	3	1	1	14	2	17
2019	0	5	0	0	15	1	16
2020	0	5	0	1	21	0	22

In 1995-1997, when annual catches of long rough dab were about 5000-6000 tonnes, around 80 vessels accounted for 95% of the catch (Figure 5). Since then, the number of vessels has dropped proportionally to reduced catches.

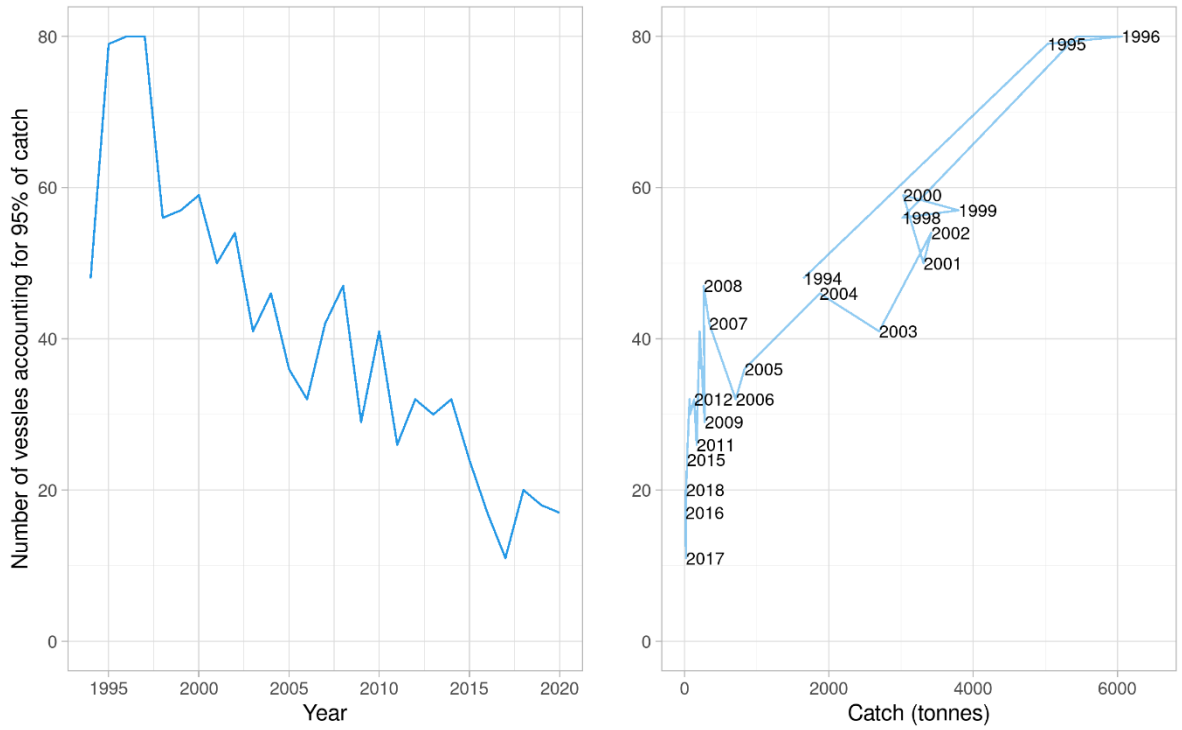

Figure 5. Long rough dab. Number of vessels (all gear types) accounting for 95% of the total catch annually 1994-2020. Left: Plotted against year. Right: Plotted against total catch. Data from the Directorate of Fisheries.

Mynd 5. Skrápflúra. Fjöldi skipa og báta (öll veiðarfæri) sem veiddu 95% heildaraflans hvert ár 1994-2020. Vinstri: Sýnt eftir árum. Hægri: Sýnt í samanburði við heildarafla. Gögn frá aflaskráningarkerfi Fiskistofu.

SAMPLING OF LANDED LONG ROUGH DAB

As landings of long rough dab have been low and sporadic over the last ten years, it has been difficult to get biological samples. Otoliths have not been collected since 2014 (Table 2).

Table 2. Long rough dab. Number of samples and aged otoliths from landed catch.

Tafla 2. Skrápflúra. Fjöldi sýna og aldursgreindra fiska úr lönduðum afla.

Year	*Demersal seine*	
	Samples	Otoliths
2010	2	50
2011	3	125
2012	4	200
2013	1	50
2014	1	25
2015-20	0	0

LENGTH DISTRIBUTION OF LANDED LONG ROUGH DAB

During 1994-2004 period, when the main fishing for long rough dab occurred, the length distribution of landings changed little from one year to another (Figure 6). The average length was 35-36 cm over the entire period. Since 2014, no length data has been collected from the landed catch.

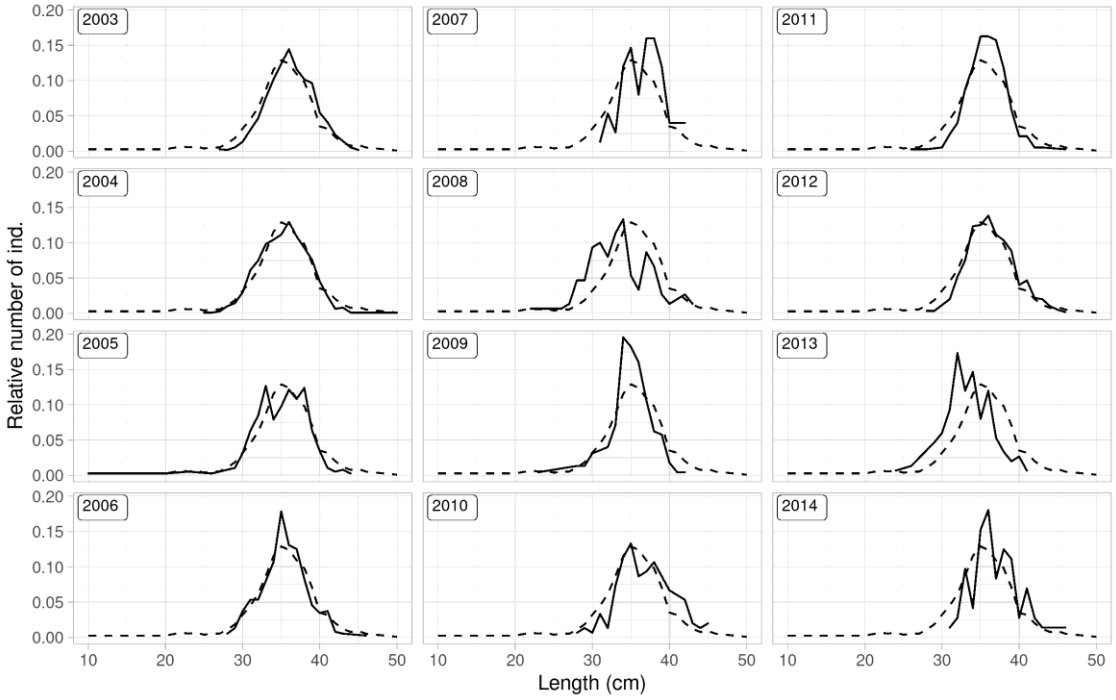

Figure 6. Long rough dab. Length distribution of long rough dab sampled from landed catch in 2003-2014. The dotted line represents the mean length distribution for all years.

Mynd 6. Skrápflúra. Lengdardreifing aflasýna árin 2003-2014 með meðallengdardreifingu fyrir öll árin (punktalína).

SURVEY DATA

The Icelandic spring groundfish survey (hereafter spring survey), which has been conducted annually in March 1985-2020, covers the most important distribution area of the long rough dab fishery. In addition, data from the Icelandic autumn groundfish survey (hereafter autumn survey) 1996-2019. The autumn survey was not conducted in 2011. The spring survey is considered to measure changes in abundance/biomass better than the autumn survey.

Figure 7 shows various biomass indices and a recruitment index based on abundance of long rough dab. Survey length disaggregated abundance indices are shown in Figures 8-9, and spatial distribution in Figures 10-13.

Total biomass and the harvestable biomass (≥30 cm) indices for long rough dab in the spring survey decreased from 2003 to the lowest level in the time series in 2018. Biomass index of larger fish (>37 cm) has decreased since 2001 and reached an all-time low in 2018. In years 2019-2021, the indices increased slightly and are considered stable. The recruitment index was high in 1991-1996 and 2011-2015, and all time highest in 2020-2021 (Figure 7).

Length distribution of long rough dab in the spring survey is characterised by three periods of increased number of small fish (<10 cm). The first period was from 1991-1996, the second from 2010-2015 and the third, with highest recruitment peak, starts in 2019 (Figure 8). In the years that followed the first period there was an increase in long rough dab larger than 30 cm which was not seen after the second period. Although there is more variance in the length distributions from the autumn survey, these two first periods of recruitment are also seen there (Figure 9).

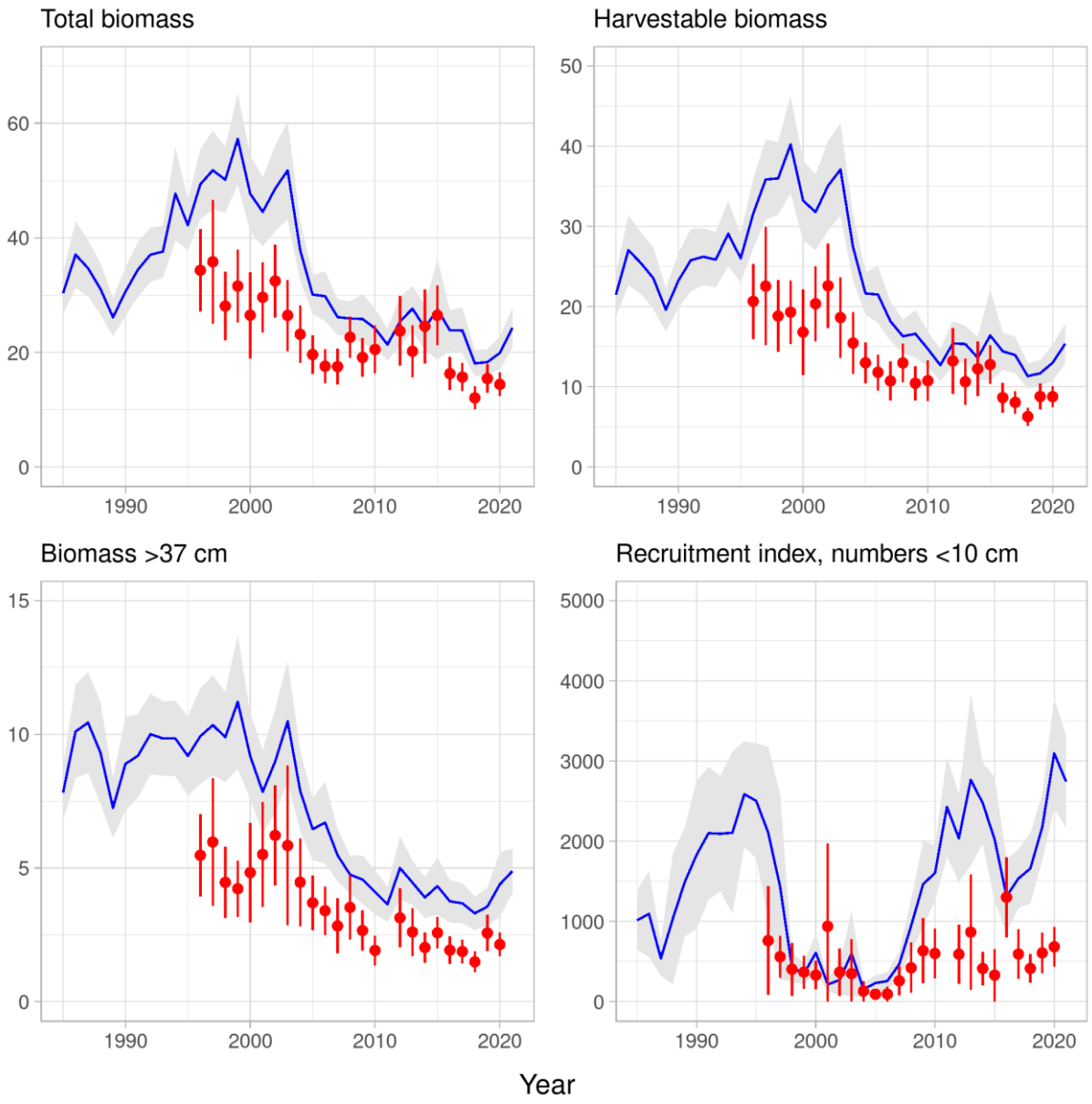

Figure 7. Long rough dab. Total biomass indices (upper left), harvestable biomass indices (≥30 cm) (upper, right) and biomass index of larger ind. (>37 cm) (lower left), juvenile abundance indices (≤10 cm) (lower right), from the spring survey (blue) since 1985 and the autumn survey (red) since 1996, along with 95% CI.

Mynd 7 Skrápflúra. Stofnvísitala (efri til vinstri), vísitala veiðistofns (30 cm og stærri, efri til hægri), vísitala stærri einstaklinga (37 cm og stærri, neðri til vinstri) og nýliðunarvísitala (≤10 cm, neðri til hægri) úr stofnmælingu botnfiska að vori (blátt) frá árinu 1985 og hausti (rautt) frá árinu 1996, ásamt 95% öryggismörkum.

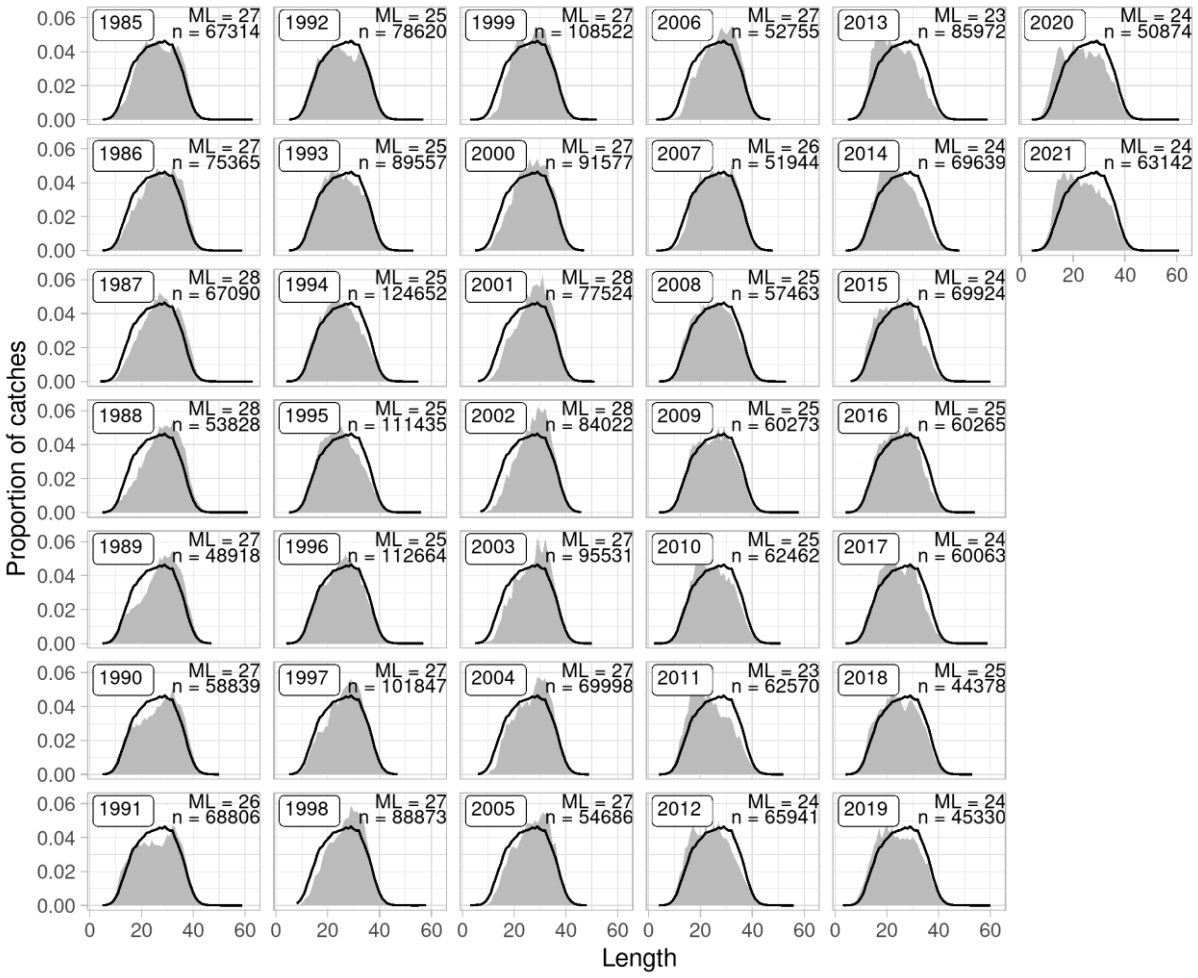

Figure 8. Long rough dab. Length disaggregated abundance indices from the spring survey since 1985. The black line shows the mean for all years.

Mynd 8. Skrápflúra. Lengdarskiptar vísitölur úr stofnmælingu botnfiska að vori frá árinu 1985 ásamt meðaltali allra ára (svört lína).

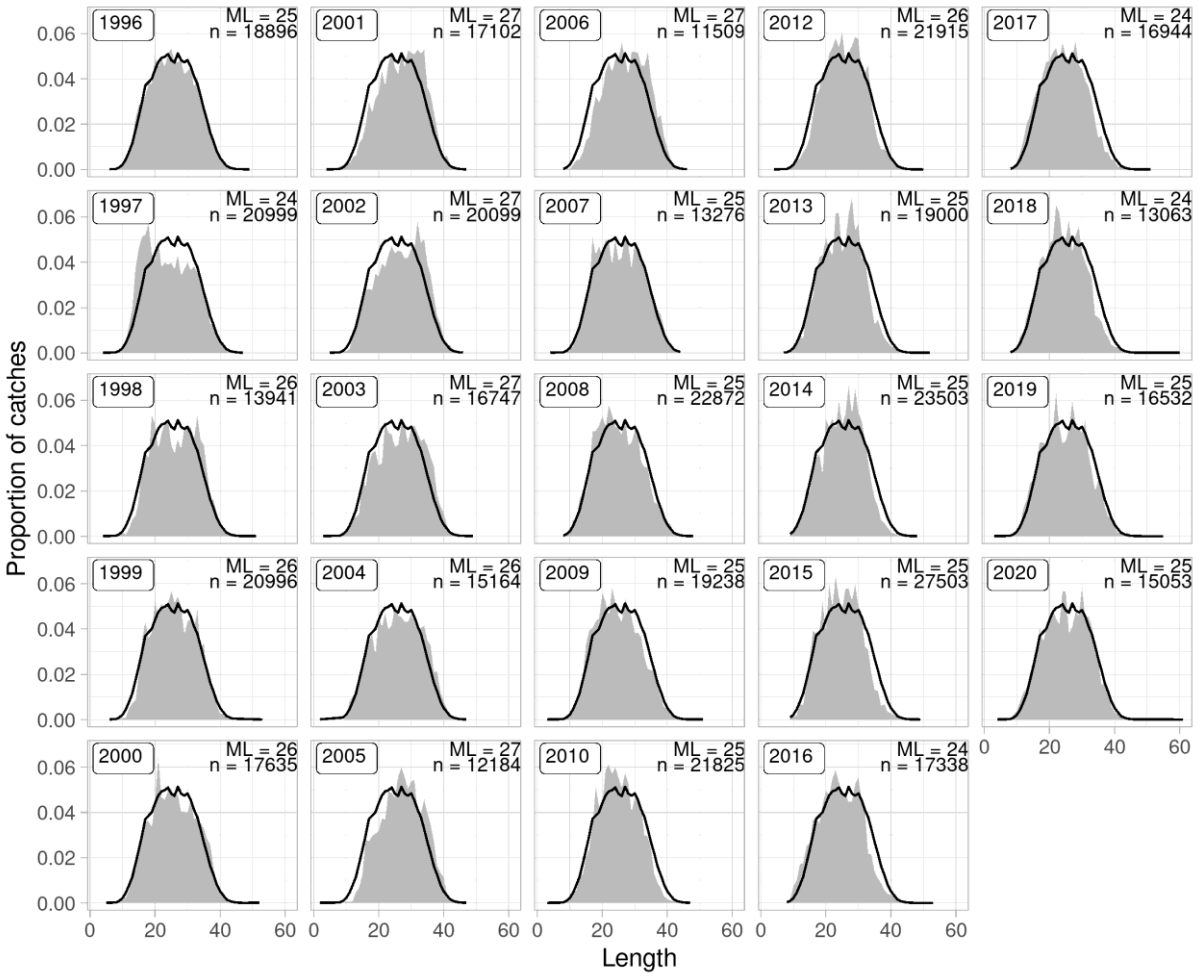

Figure 9. Long rough dab. Length disaggregated abundance indices from the autumn survey since 1996. The survey was not conducted in 2011. The black line shows the mean for all years.

Mynd 9. Skrápflúra. Lengdarskiptar vísitölur úr stofnmælingu botnfiska að hausti frá árinu 1996 ásamt meðaltali allra ára (svört lína). Ekki var farið í leiðangur árið 2011.

Distribution of long rough dab in the spring survey shows that the species is found all around Iceland (Figures 10 and 11). Most of the biomass is measured in the northern areas. This also applies to the autumn survey (Figures 12 and 13). This is worth noticing, as most of the commercial catch during the main fishing years of 1994-2004 was taken in the SE area (Figure 2).

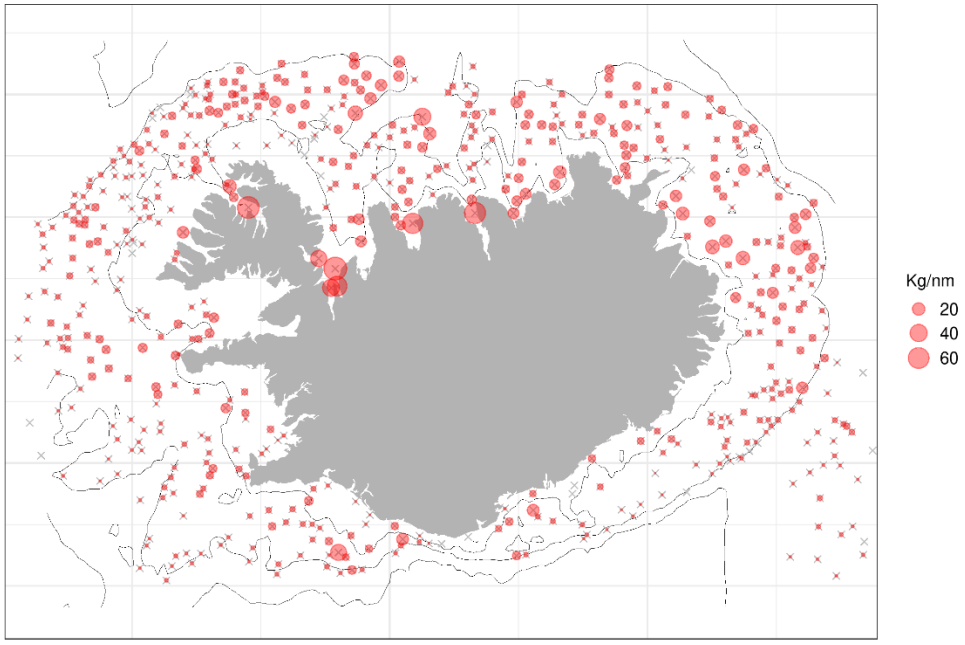

Figure 10. Long rough dab. Spatial distribution in the spring survey in 2021.

Mynd 10. Skrápflúra. Útbreiðsla í stofnmælingu botnfiska að vori 2021.

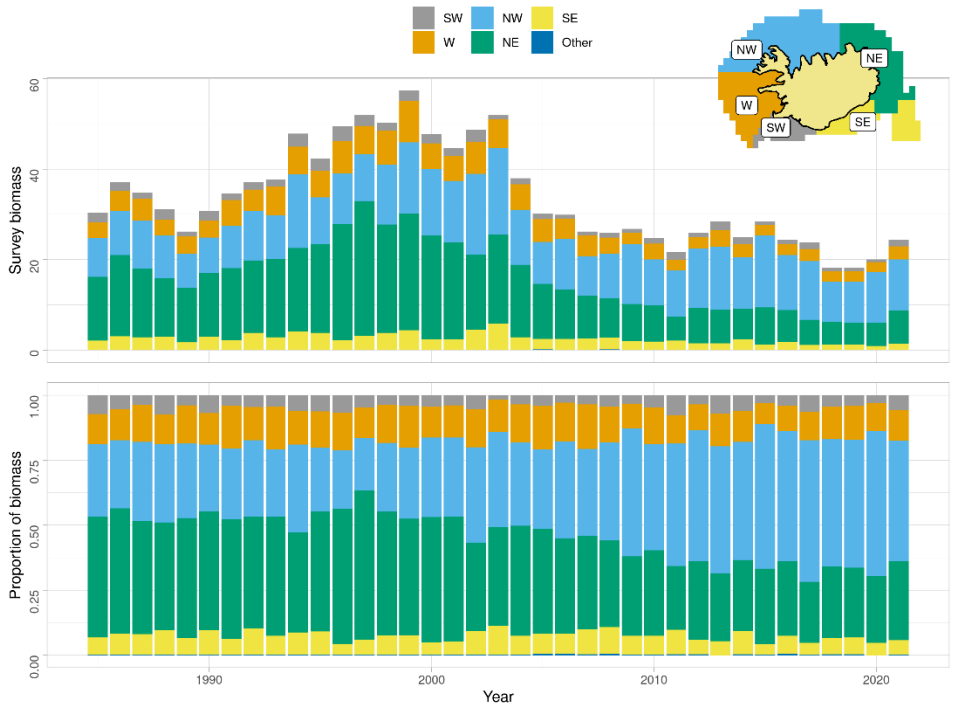

Figure 11. Long rough dab. Spatial distribution of biomass index from the spring survey since 1985.

Mynd 11. Skrápflúra. Dreifing lífmassavísitölu í stofnmælingu botnfiska að vori frá árinu 1985.

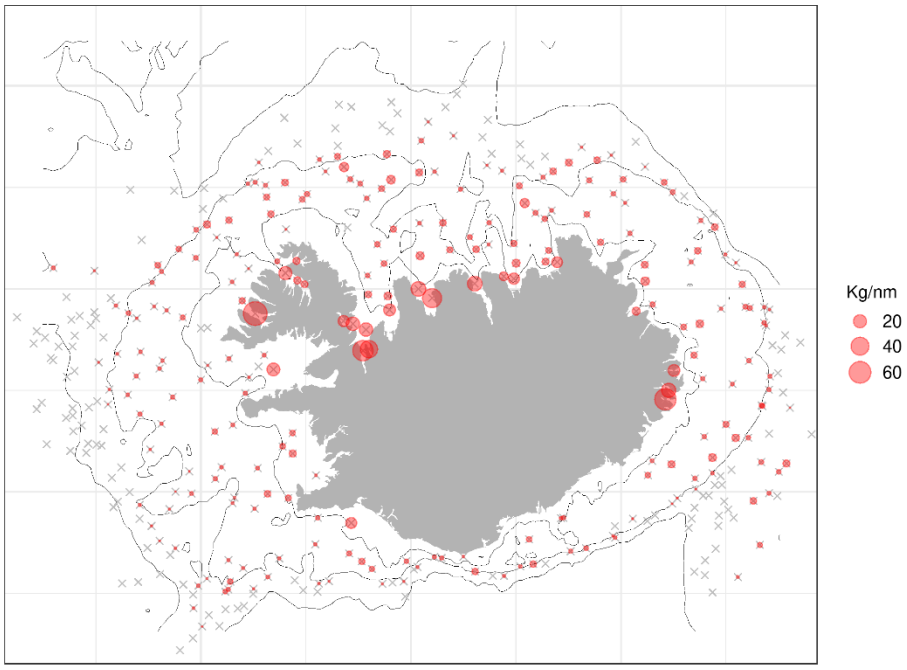

Figure 12. Long rough dab. Spatial distribution of long rough dab in the autumn survey in 2020.

Mynd 12. Skrápflúra. Útbreiðsla í stofnmælingu botnfiska að hausti árið 2020.

Figure 13. Long rough dab. Spatial distribution of biomass index from the autumn survey since 1996.

Mynd 13. Skrápflúra. Dreifing lífmassavísitölu í stofnmælingu botnfiska að hausti frá árinu 1996.

MANAGEMENT

The Ministry of Industries and Innovation is responsible for management of the Icelandic fisheries and implementation of legislation. Long rough dab was included in the ITQ system in the 1997/1998 quota year, and as such subjected to TAC limitations, but only in a designated quota area (from Snæfellsnes south and south-east to Stokksnes), the main fishing grounds (Table 3). After considerable decrease in CPUE, direct fishing for long rough dab was no longer commercially viable and the only landings were an incidental catch in other fisheries. In view of the changed situation, the Marine Research Institute (MRI) recommended that the long rough dab caught in the designated quota area should no longer be subjected to TAC limitations after the 2013/2014 quota year.

Table 3. Long rough dab. Recommended TAC, national TAC set by the Ministry, and landings (tonnes) within the quota area and total landings.

Tafla 3. Skrápflúra. Tillögur Hafrannsóknastofnunar um hámarksafla, ákvörðun stjórnvalda um aflamark og landaður afli (tonn) innan skilgreinds kvótasvæðis (Frá Snæfellsnesi suður um að Stokksnesi) og heildarlöndun.

FISHING YEAR	REC. TAC	NATIONAL TAC	LANDINGS FROM QUOTA AREA	TOTAL LANDINGS
1995/96	5000			6164
1996/97	5000			5470
1997/98	5000	5000	3413	3793
1998/99	5000	5000	3259	3522
1999/00	5000	5000	2783	3148
2000/01	5000	5000	2817	3658
2001/02	5000	5000	2512	3631
2002/03	5000	5000	2064	3064
2003/04	5000	5000	1636	2021
2004/05	5000	5000	772	1026
2005/06	2000	3500	638	764
2006/07	500	1500	259	359
2007/08	500	1000	210	303
2008/09	250	1000	210	290
2009/10	200	1000	129	213
2010/11	200	200	107	193
2011/12	200	200	77	148
2012/13	200	200	11	71
2013/14	200	200	9	89
2014/15	-	-	-	50
2015/16	-	-	-	14
2016/17	-	-	-	17
2017/18	-	-	-	22
2018/19	-	-	-	29
2019/20	-	-	-	24
2020/21	-	-	-	