

Information on Deep Sea redfish in Division Va.

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Catch and sampling

Table 1. Total catch of redfish in Va. The dividing between *S. marinus* and *S. mentella* is based on samples and reported catches in the log-books.

	Total	<i>S. marinus</i>		<i>S. mentella</i>		Source of information
	Catch (t)	%	Catch	%	Catch	
Freezing vessels	18,407	54.3%	9,995	45.7%	8,412	Landings reports
Fresh landings	26,257	81.2%	21,318	18.8%	4,939	split.catch
Landings in Germany, UK and containers	5,451	62.0%	3,380	38.0%	2,071	Based on rep from Germany
Germany/UK	2,315	10.0%	232	90.0%	2,084	Information from various laboratories
Faero Island	124	50.0%	62	50.0%	62	
Total catch	52,554	66.57%	34,986	33.43%	17,568	
<i>S. viviparus</i>		21 t				

Table 2. Results of catch in division Va by country.

	<i>A. fi</i>	<i>Prop ment</i>	<i>C. mar</i>	<i>C. ment</i>
Icelandic vessels	50,115	69.2%	34,693	15,422
UK and		10.0%	-	-
Germany	2,315	10.0%	232	2,084
Norway			-	-
Faro Island	124	50.0%	62	62
SAMTALS	52,554	67%	34,986	17,568

Table 3. Sampling from the catch by nation and gear type in 2001.

Area	Gear	Landings	Nos. samples	Nos. fish measured
Va	Pelagic trawl	465	8	988
Va	Bottom trawl	17.103	91	18.796
Vb	Bottom trawl			
XIVb	Bottom trawl			

Table 4. Proportion of *S.marinus* and *S.mentella* in division Va since 1992.

Year	<i>S.marinus</i>	<i>S.mentella</i>
1991		
1992	54%	46%
1993	47%	53%
1994	40%	60%
1995	46%	54%
1996	49%	51%
1997	49%	51%
1998	53%	47%
1999	60%	40%
2000	60%	40%
2001	67%	33%
Average	52%	48%

Table 5. Total catch of shelf *S.mentella* in Va.

Year	Area	
	Va	Total
1978	3,902	17,090
1979	7,694	21,513
1980	10,197	26,831
1981	19,689	44,695
1982	18,492	38,889
1983	37,115	58,708
1984	24,493	41,932
1985	24,768	44,951
1986	18,898	46,454
1987	19,293	37,573
1988	14,290	31,433
1989	40,269	53,905
1990	28,429	44,204
1991	47,651	67,879
1992	43,414	63,103
1993	51,221	74,196
1994	56,720	83,566
1995	48,708	55,737
1996	34,741	41,856
1997	37,876	43,050
1998	33,125	38,890
1999	28,588	34,991
2000	31,557	38,223
2001	17,568	

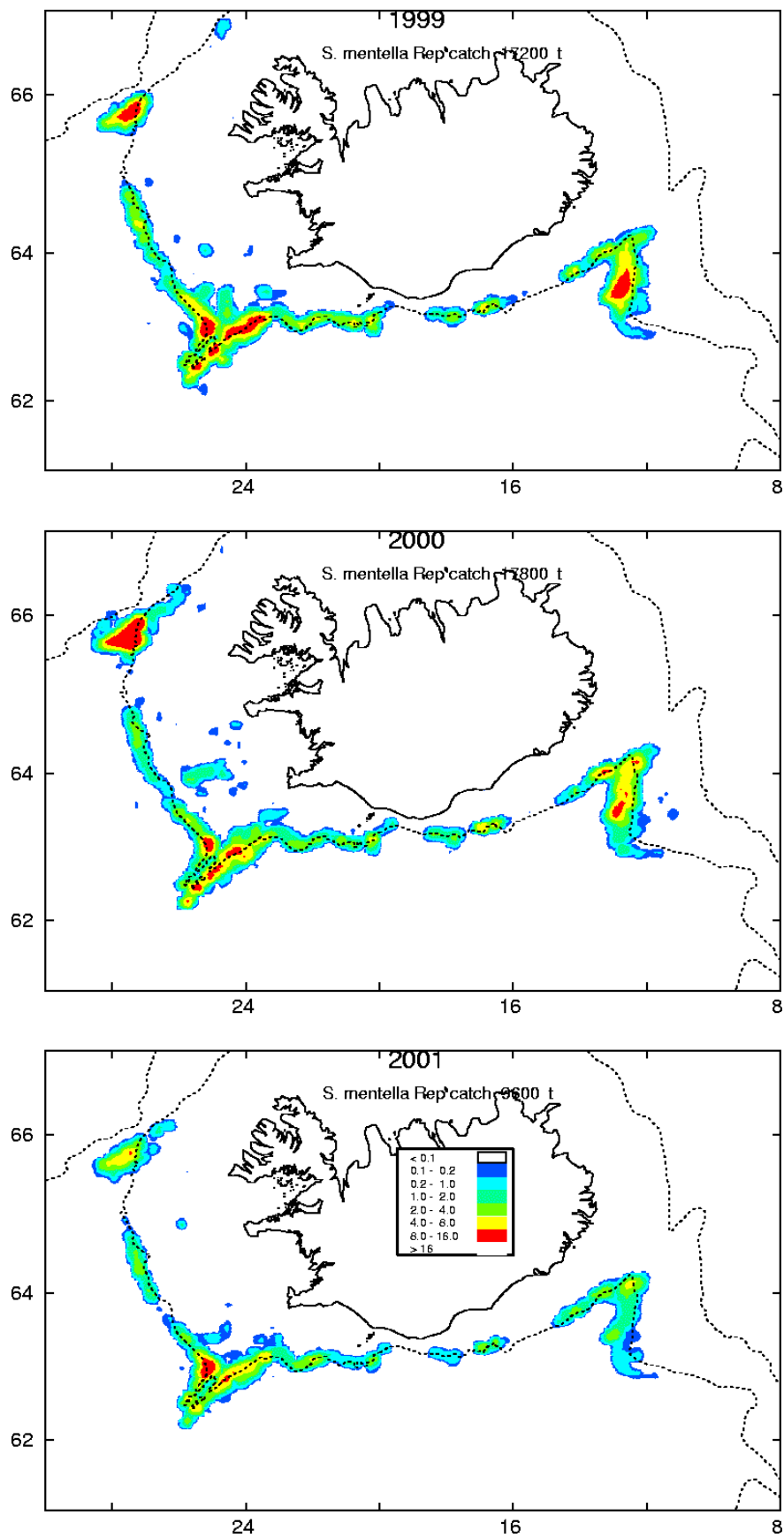


Figure 1. *S.mentella* fishing grounds in 1999-2001, as reported in Icelandic log-books.

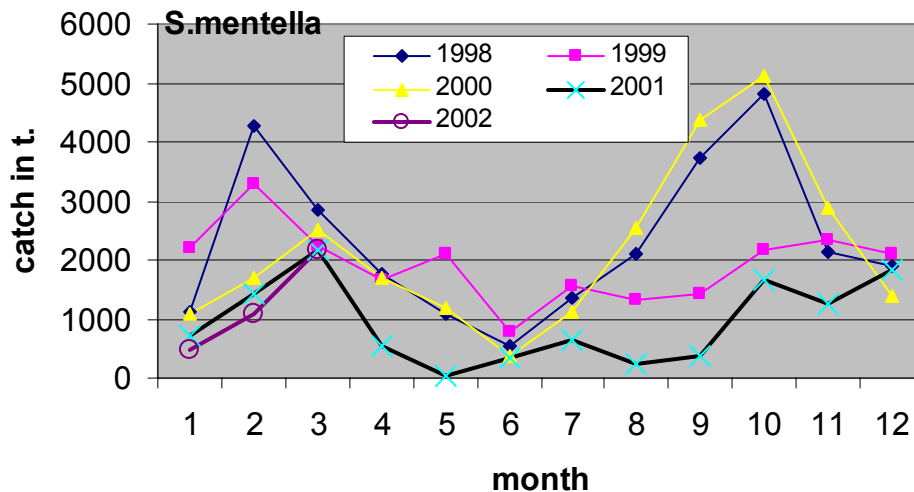


Figure 2. Catch of s.mentella by month since 1998.

CPUE

Table 4. CPUE for S.mentella caught in bottom trawl since 1986.

	50%_raw	CPUE 10% raw	Same_as_2001	SPALY	50% Corrected
1986	966	943	1.00	1.00	1.00
1987	1000	977	1.06	1.06	1.09
1988	919	877	0.96	0.96	0.99
1989	1006	974	0.93	0.93	0.95
1990	856	806	0.99	0.99	0.90
1991	863	771	0.97	0.98	0.91
1992	673	611	0.76	0.76	0.70
1993	629	549	0.68	0.69	0.64
1994	543	488	0.62	0.62	0.57
1995	589	515	0.64	0.64	0.58
1996	583	489	0.63	0.63	0.59
1997	654	565	0.66	0.66	0.62
1998	651	545	0.54	0.53	0.62
1999	706	620	0.65	0.65	0.66
2000	732	636	0.70	0.70	0.70
2001	659	571		0.70	0.68

Table 6. Raw CPUE for “shelf” S.mentella caught in pelagic trawl.

Year	Catch (kg)	Effort	Cpue
1991	3643750	2423	1.829061
1992	1198600	1419	1.027706
1993	5668700	6718	1.02623
1994	9650196	11737	1
1995	9386689	13399	0.852054
1996	3451880	4738	0.886032
1997	2187300	3098	0.85864
1998	1451936	1547	1.141563
1999	1244356	1625	0.931393
2000	844400	930	1.104147
2001	14000	17	823.5294

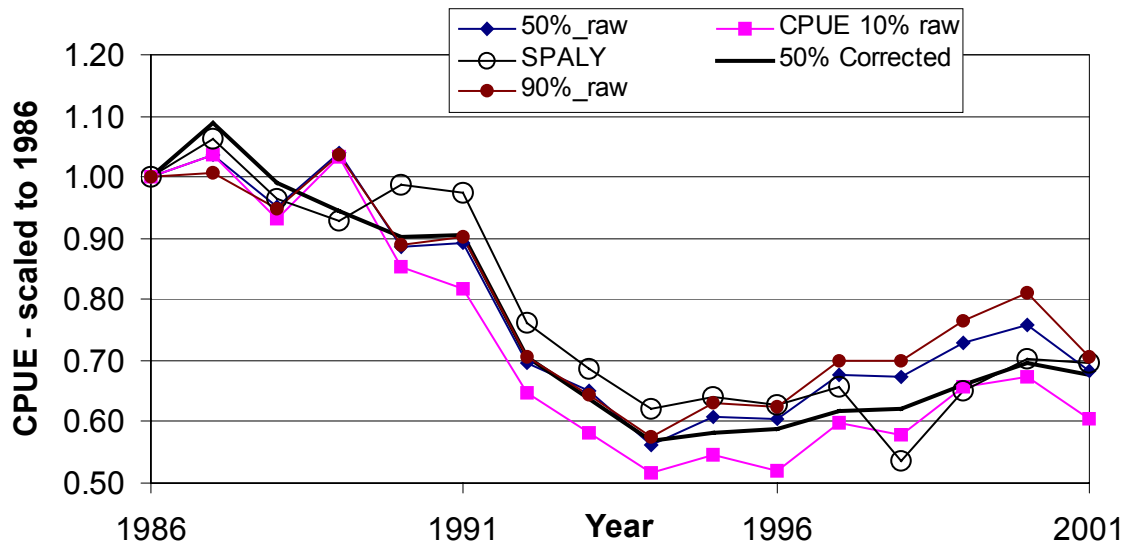


Figure 3. CPUE in *S.mentella* using different criteria for selecting tows. The number indicates CPUE calculated on hauls where redfish is that percentage or more of the total catch in each haul.

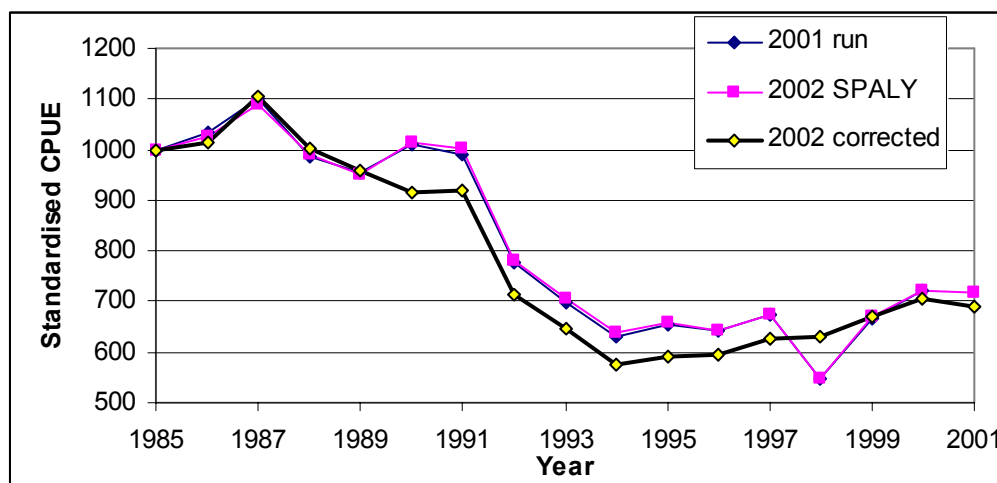


Figure 4. Comparison between GLM results in 2001 and 2002. The reason for the difference is due to changes in the database. Ling, blue ling, tusk and greater silver smelt were added to the database and consequently the total catch in each haul changed. the most striking feature are the changes in 1998. The trawler fleet started to fish greater silver smelt in 1997 in significant but the catches were not included in the database and hence affected the selection of hauls for the CPUE calculations. The effort that is used is therefore higher than real effort and hence, the CPUE is underestimated in some years. While targeting the Greater silver smelt, *S.mentella* is the main by-catch. The difference is highest in 1998, but in that year the fleet fished almost 14,000 t. of Greater silver smelt.

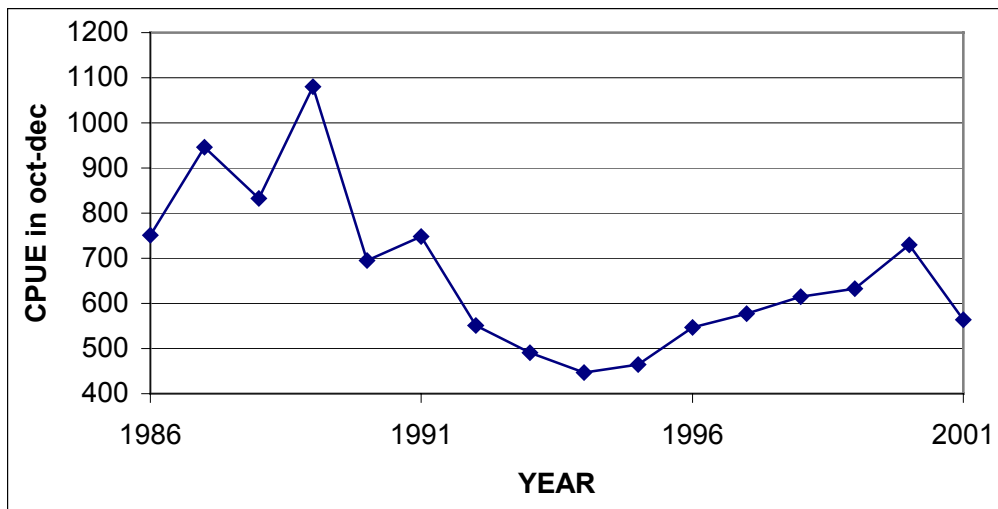
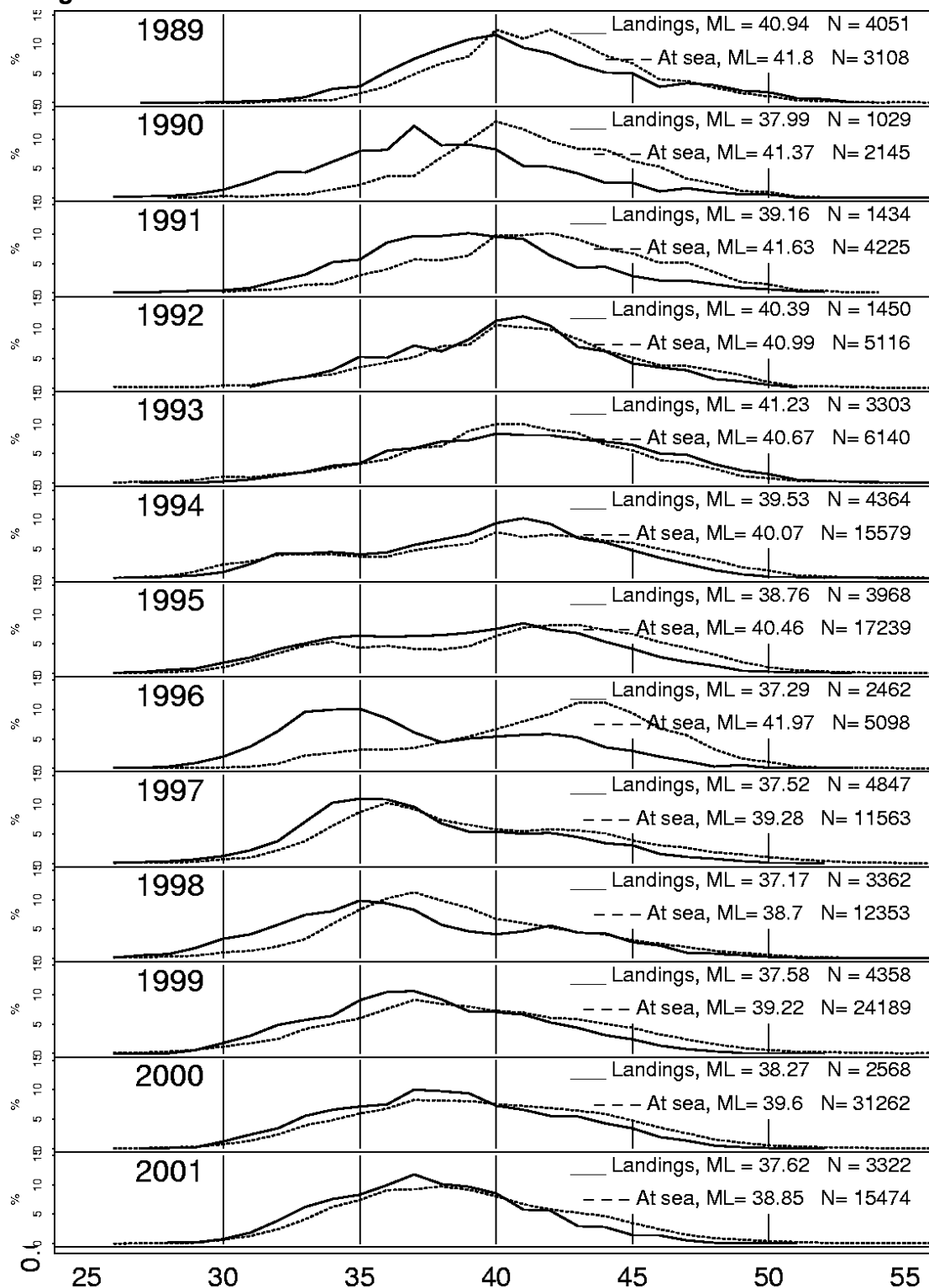


Figure 5. Raw CPUE (50%) from the bottom trawl fleet in october – december.

Length distribution from catch



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Figure 6. Length distribution from the bottom trawl fishery. The peak in the length distribution that has moved to right since 1996 (33 cm) to 2000 (about 37 cm) does not show a growth of about 1 cm but are still at around 37 cm in 2002.

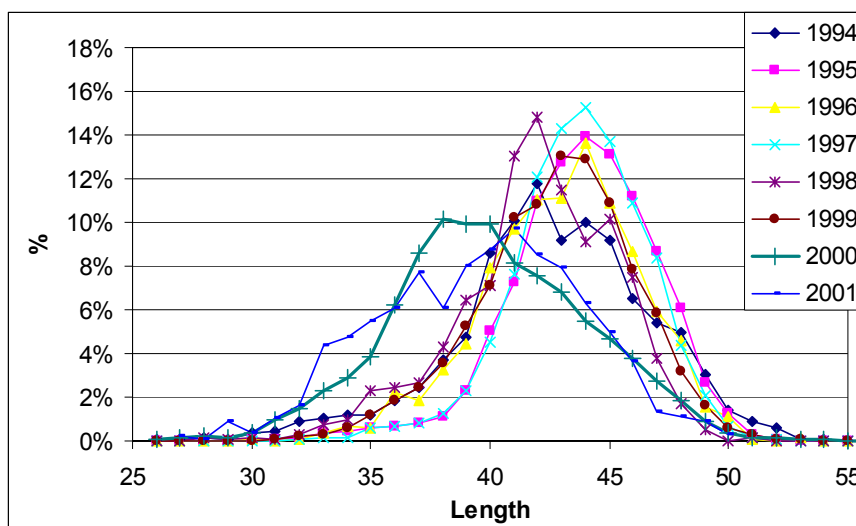


Figure 7. Length distribution form the pelagic fishery for “shelf” *S.mentella*.

Survey results

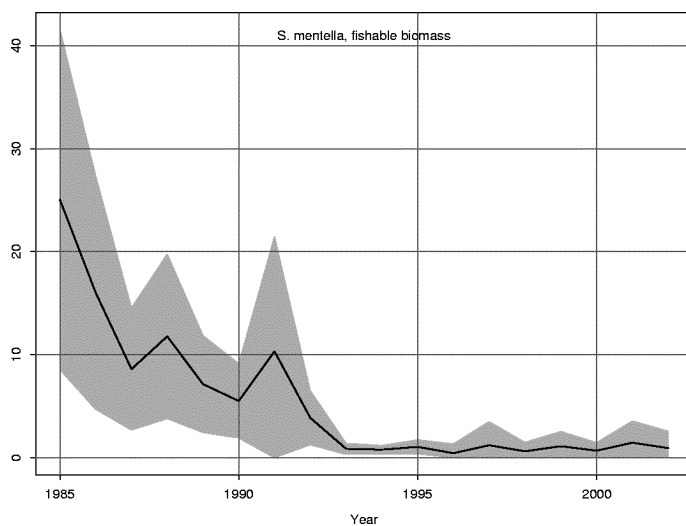


Figure 8. Total fishable biomass as calculated from the Icelandic groundfish survey.

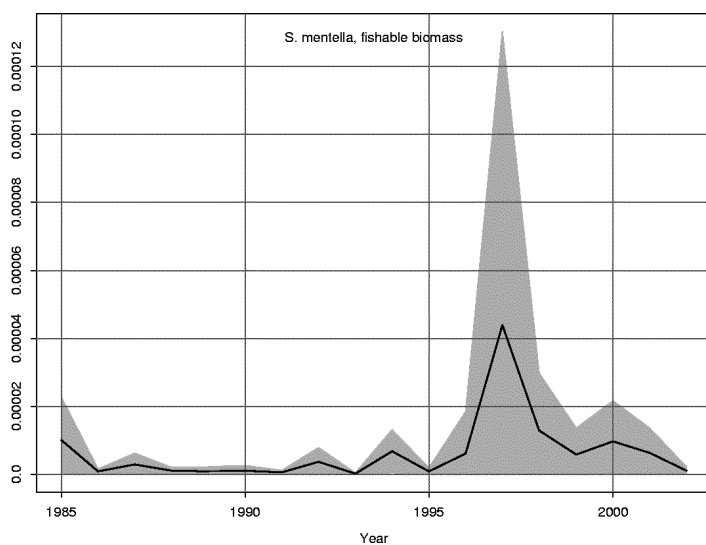
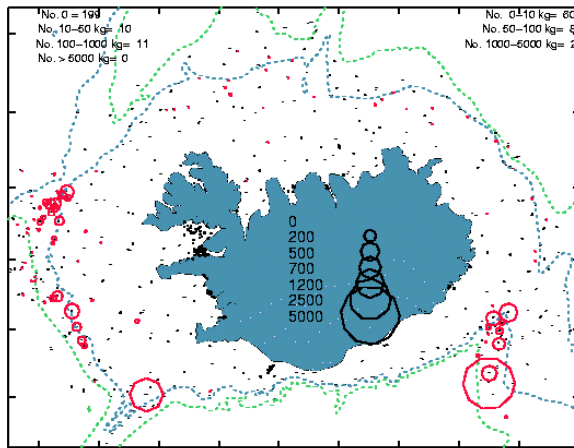
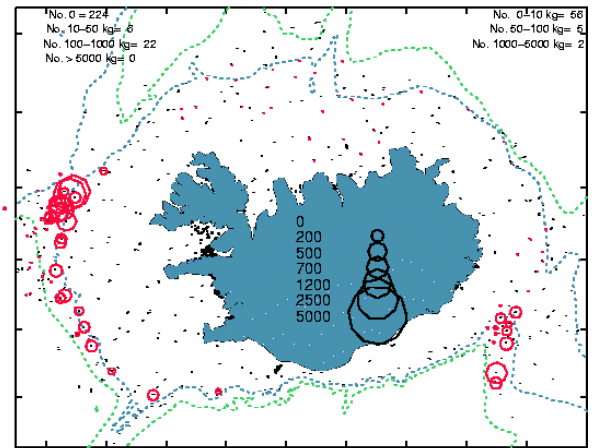


Figure 9. Index of *S.mentella* between 25 and 33 cm in the groundfish survey.

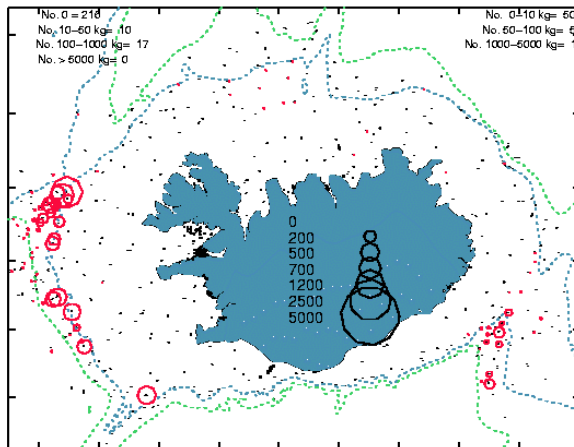
Djúpkarfi Allar stöðvar, 1996



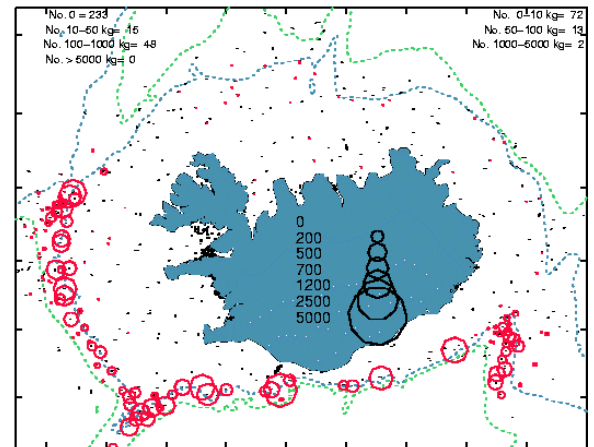
Djúpkarfi Allar stöðvar, 1999



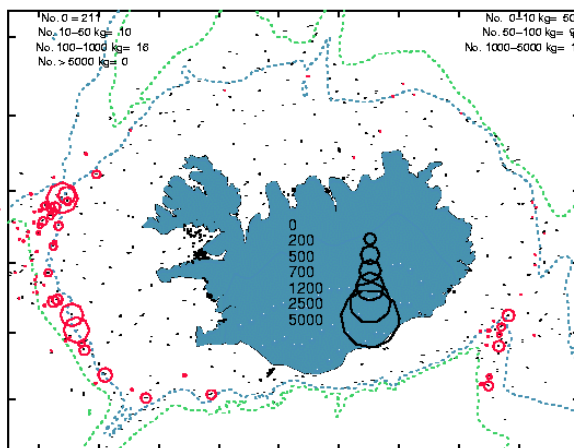
Djúpkarfi Allar stöðvar, 1997



Djúpkarfi Allar stöðvar, 2000



Djúpkarfi Allar stöðvar, 1998



Djúpkarfi Allar stöðvar, 2001

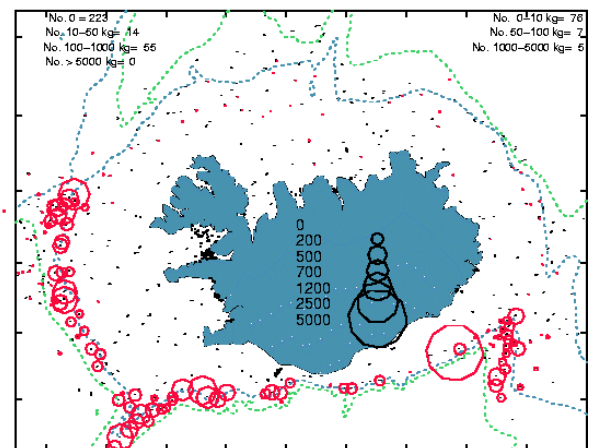


Figure 10. Catch of *S.mentella* in the autumn survey. 2000 and 2001 are not comparable as the number of stations in those years were increased to cover the main distribution area of *S.mentella* at the shelf.

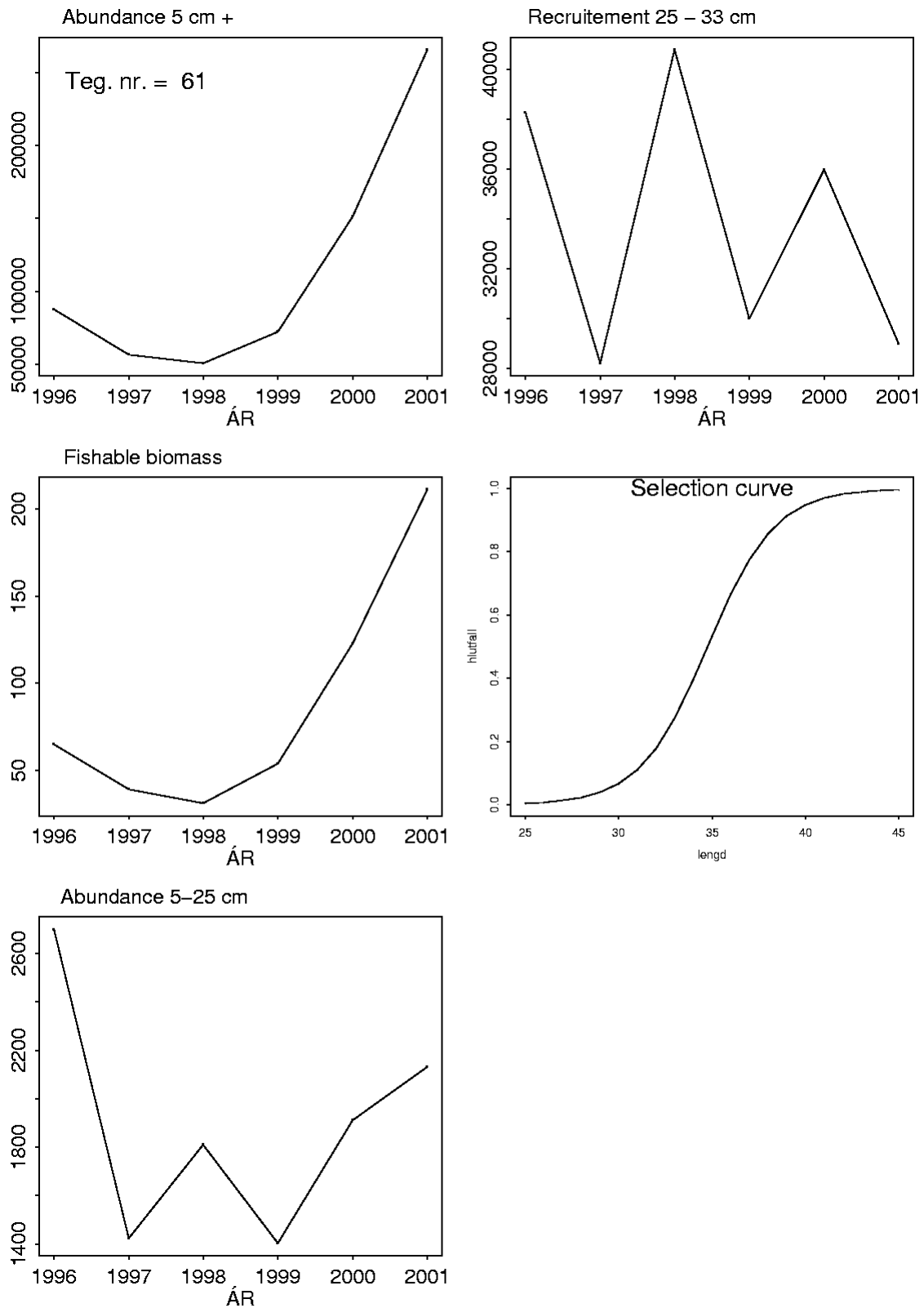


Figure 11. *S.mentella* in the autumn survey. 2000 and 2001 are not comparable as the number of stations in those years were increased to cover the main distribution area of *S.mentella* at the shelf.

Aspic

Table 7. Results of few different ASPIC runs.

Assessment year						
	2001	2002	2002	2001	2002	
Comment	Default	Default	Corrected cpu	Corrected cpu	Raw 10% cpu	Chnge start
Comment2	Bootstrap	not bootstr	bootstrap	Fit	bot	penalty B1 > k: 1
comment3	GLM cpue	GLM cpue	GLM cpue	GLM cpue	Raw - 4% incr. Catchab.	
B1R	1.609	1.549	1.88	1.842	2.573	2.17
MSY	46330	46060	49280	50083	40088	41990
r	0.3862	0.3709	0.4633	0.5364	0.3659	0.3967
q1	0.002734	0.002823	0.002819	0.003212	0	0.003481
Management parameters						
	1985-2000	1985-2001	1985-2001	1985-2000	1986-2001	
MSY	46330	46060	49280	50083	40088	41990
K	482300	496700	425400	379000	447000	423400
BMSY	241200	248300	212700	189500	2235000	211700
FMSY	0.1931	0.1855	0.231	0.2682	0.1829	0.1983
F(0.1)	0.1738	0.1669	0.2085	0.2414	0.1646	0.1785
Y(0.1)	45870	45600	48790	50320	40480	41570
B-ratio	1.043	1.105	1.277	1.21	0.9956	0.9304
F-ratio	0.7797	0.5104	0.4132	0.6243	0.6364	0.6675
Fpa	0.129	0.124	0.154	0.1788	0.1219	0.1322
TAC Fpa-2003	36140		44000	45010		
TAC Fpa-2004	37270		44000	45021		
F2001			0.096		0.116	0.132
F2000				0.167		
			1.604	1.071	1.051	1.002

