

# 2021 Scallop Survey Short Report

Prepared by:

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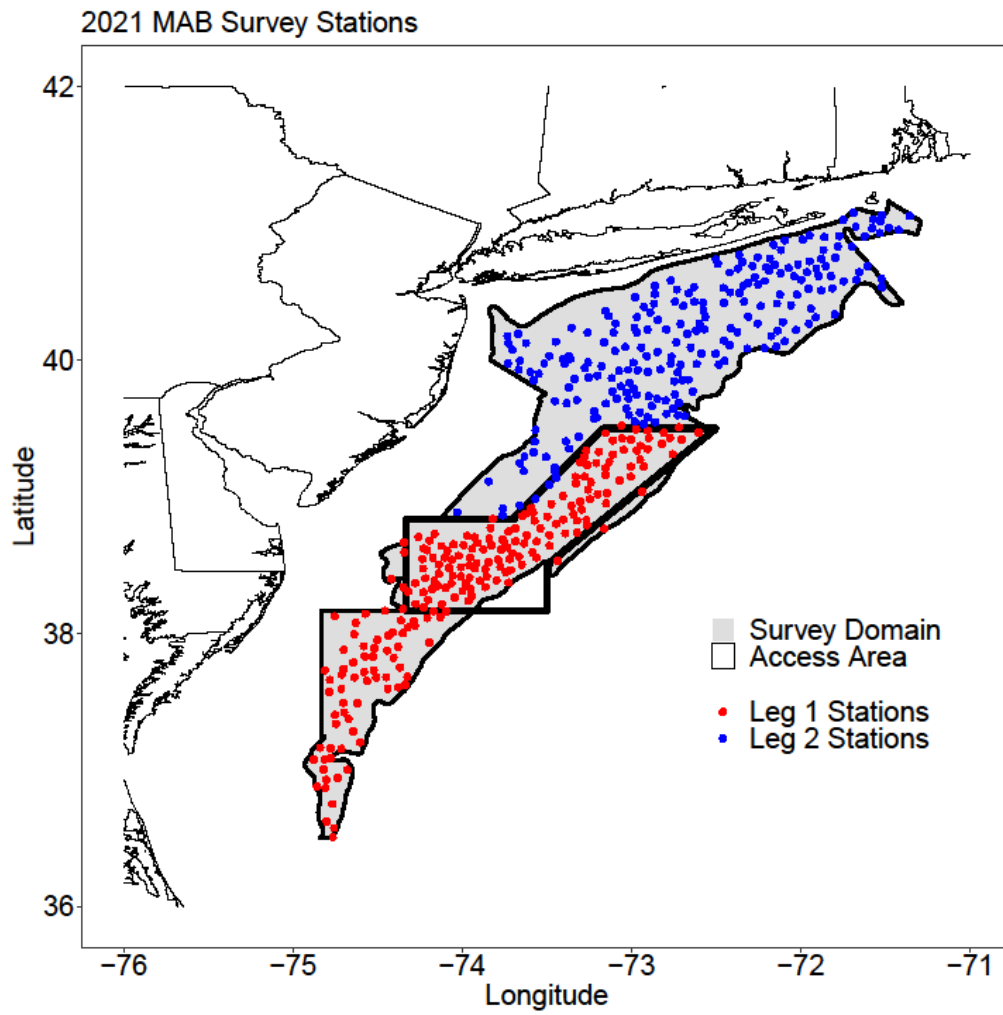
August 28, 2021

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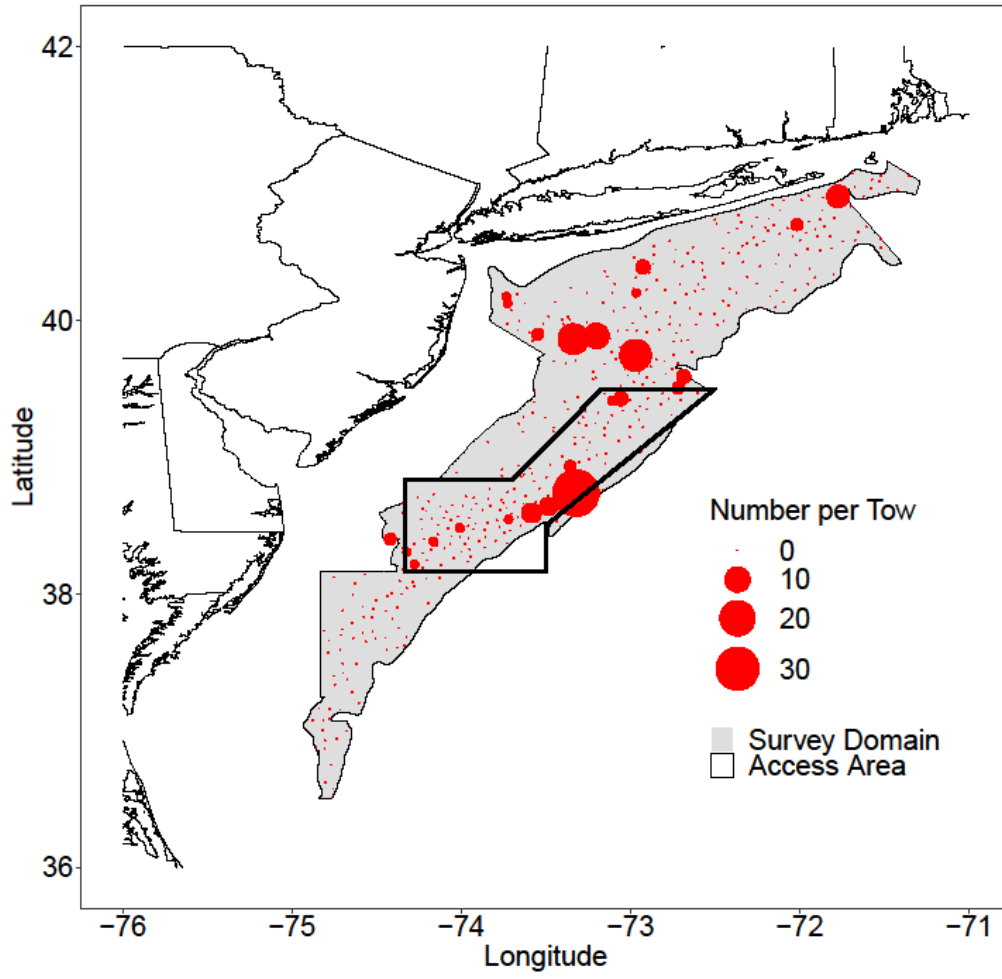
## 1.0 2021 SURVEY BIOMASS ESTIMATES

[Survey Dredge]							
<u>Size cutoff for estimates is 40mm, all estimates should use SARC 65 equation</u>							
<u>Note: NLS-South = NLS-South-Deep (same area)</u>							
GB	NumMil	BmsMT	SE	MeanWt	Avg. Size	Scallop density	# Tows/Drops, HabCam images annotated
CL1-Sliver	37,838,724	792	55	19.99	90.53	0.05	20
CL2-Southeast	353,733,178	5,942	409	16.74	87.54	0.15	46
CL2-Southwest	452,368,169	11,852	1,684	26.34	103.94	0.39	19
CL2-Ext	767,774,685	13,602	1,581	17.96	90.3	0.37	22
NLS-North	27,907,754	886	85	30.84	102.72	0.02	61
NLS-South	802,244,531	9,863	2,235	12.18	91.85	1.28	32
NLS-West	8,142,377	228	50	28.02	102.83	0.01	32
GSC	<i>See Additional Analyses in Section 4.0</i>						
SF	644,784,839	11,581	1,504	17.96	93.92	0.36	18
<b>MidAtlantic</b>							
BI	92,957,827	1,564	274	17.09	91.83	0.14	12
LI	436,496,306	8,302	367	19.25	95.22	0.04	142
NYB	414,752,525	6,043	446	14.37	85.75	0.11	65
MAB-Nearshore	33,964,176	513	44	15.2	79.38	0.01	21
HCS	89,350,604	2,019	94	22.83	108.35	0.03	60
ET Open	80,967,964	1,814	71	22.73	104.72	0.04	53
ET Flex	33,096,750	812	58	27.07	113.36	0.02	29
DMV	17,544,959	115	15	7.16	64.3	0	51
VIR	3,564,875	16	2	4.59	59.5	0	17

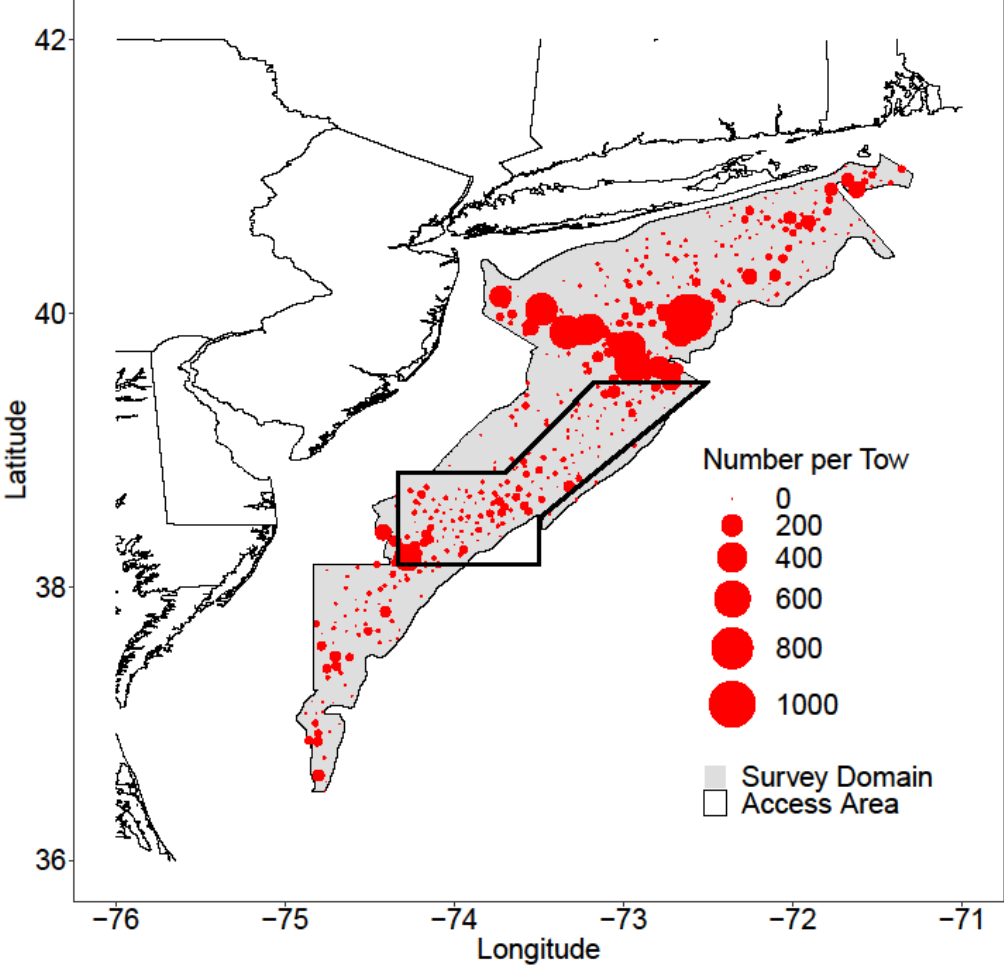
## 2.0 FIGURES OF SURVEY COVERAGE



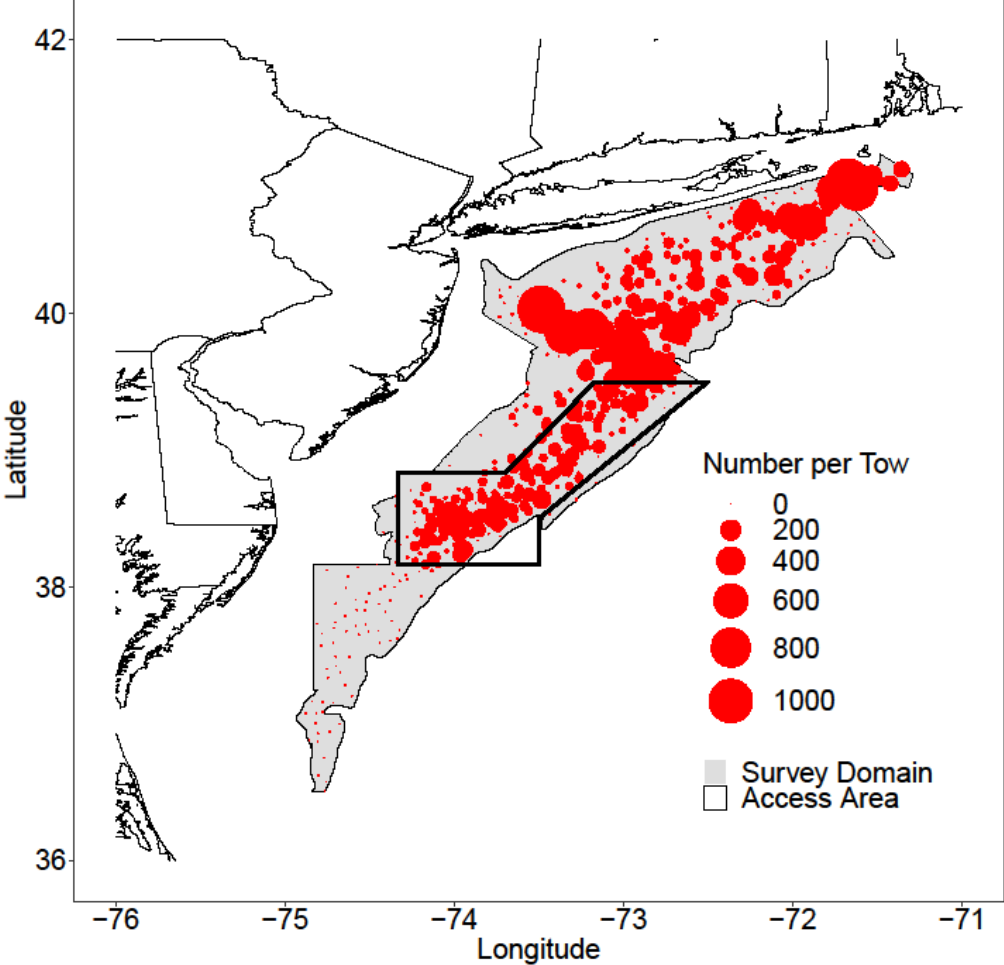
MAB Survey Pre-Recruits (< 35 mm)



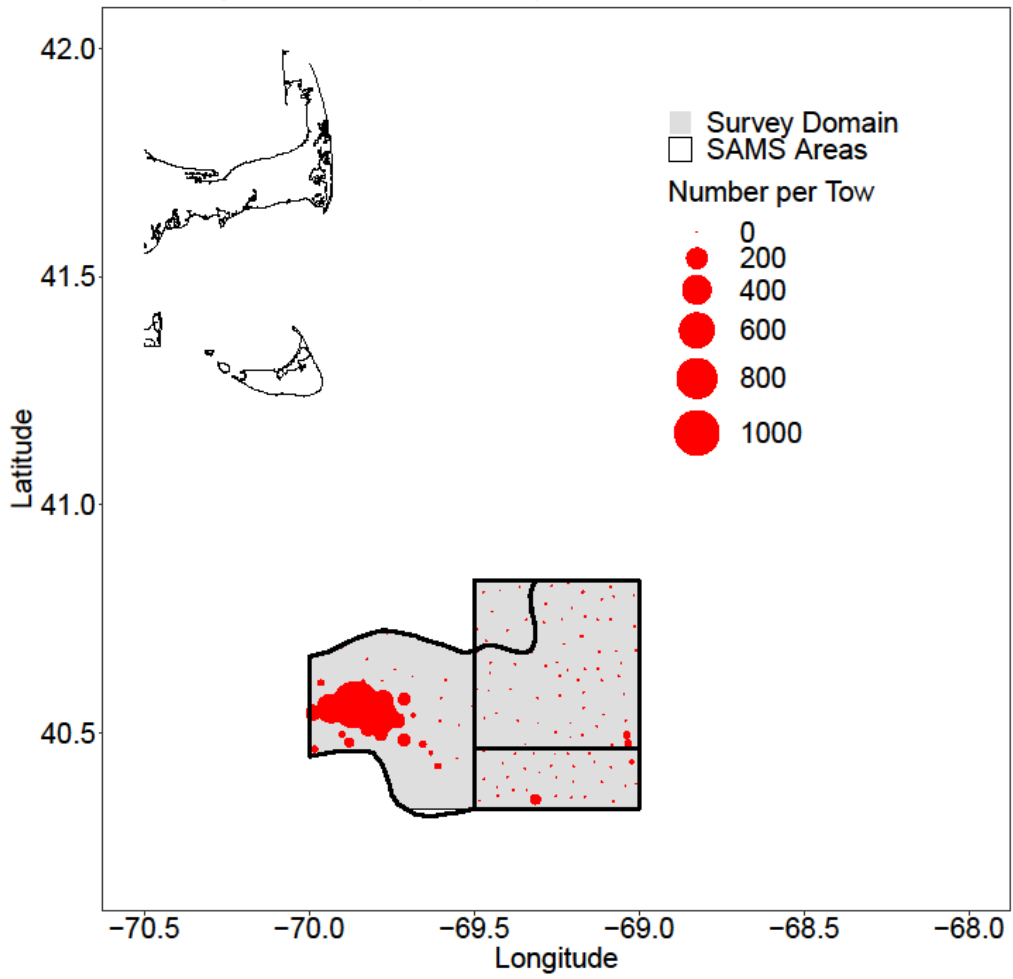
MAB Survey Recruits (35 - 75 mm)



MAB Survey Recruits (> 75 mm)

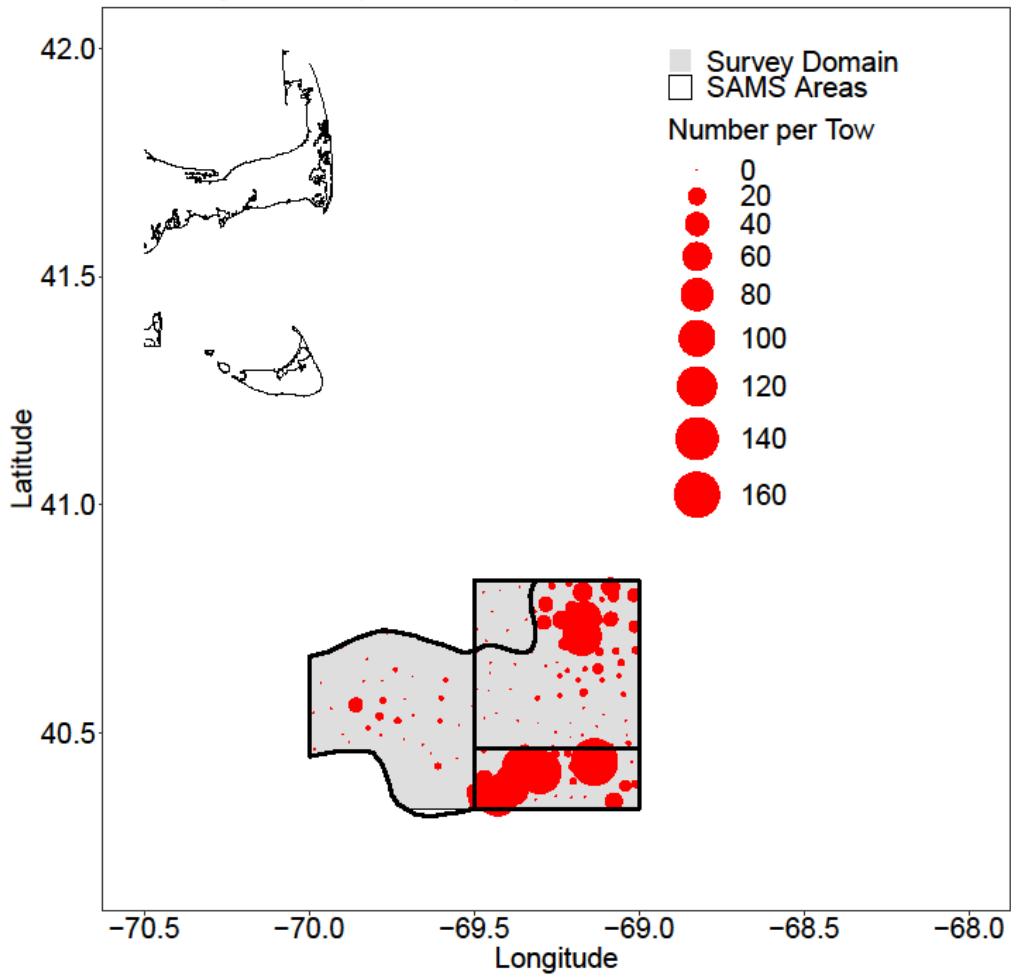


NL Survey Pre-Recruits (< 35 mm)

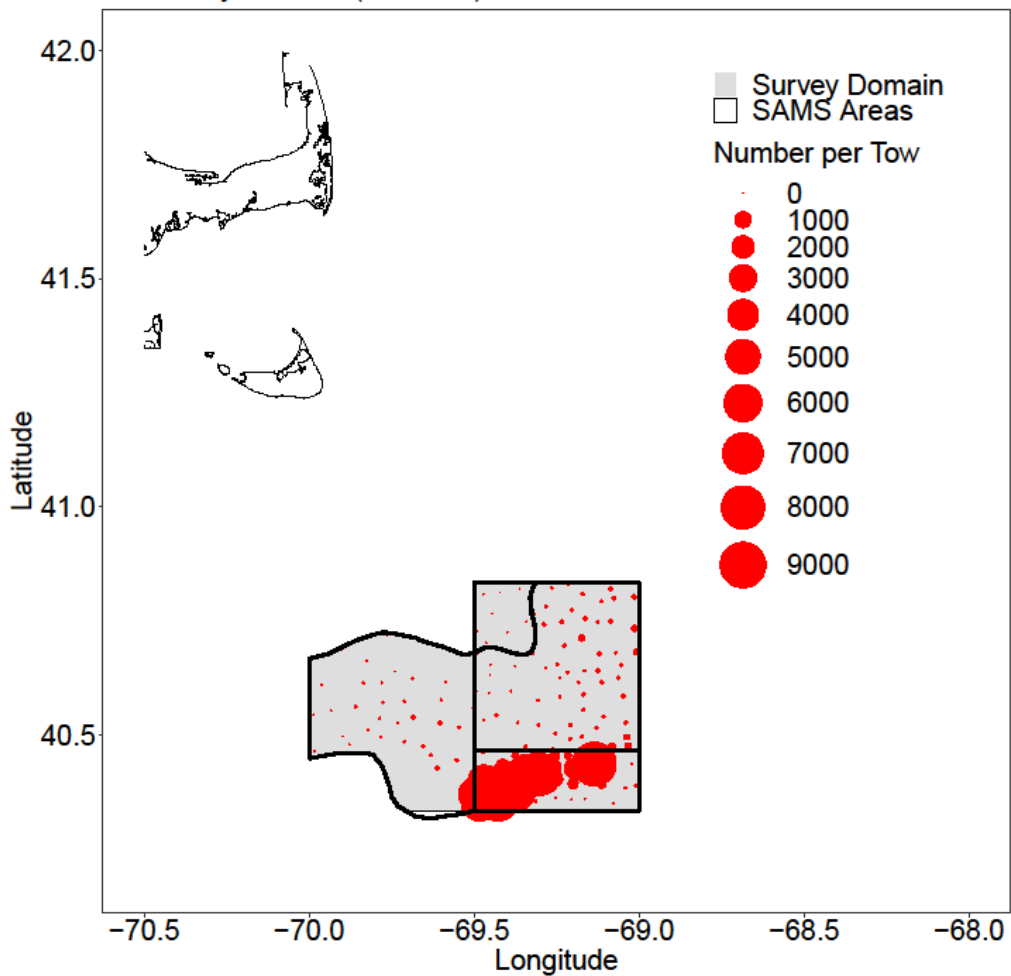




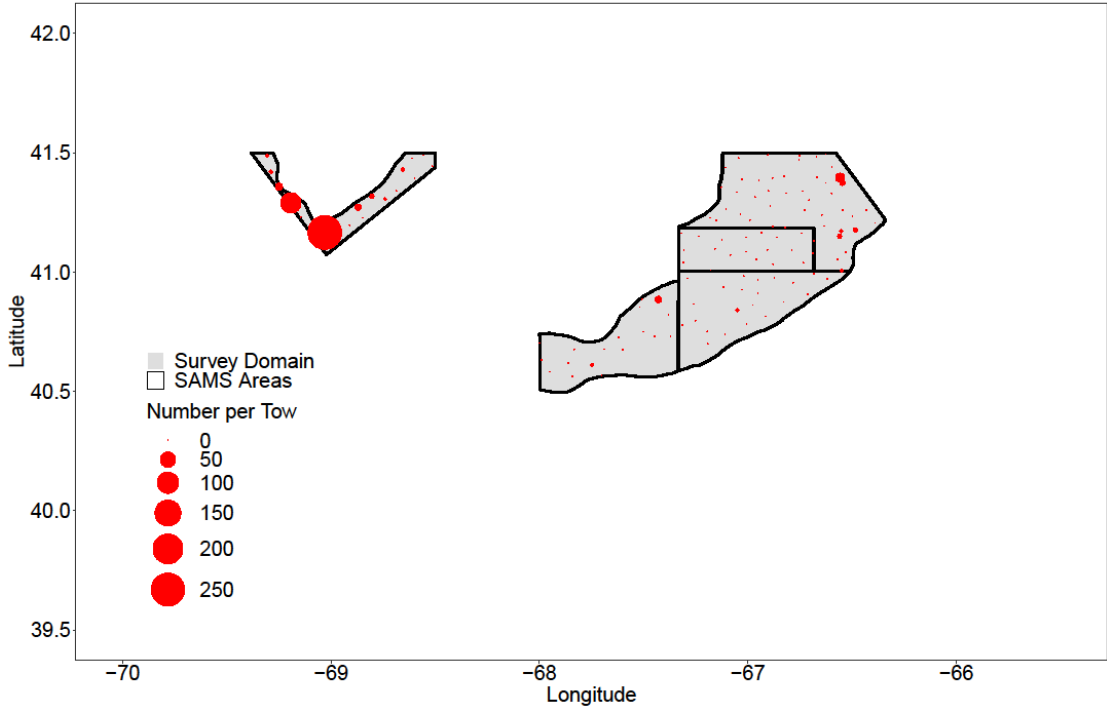
NL Survey Recruits (35 – 75 mm)



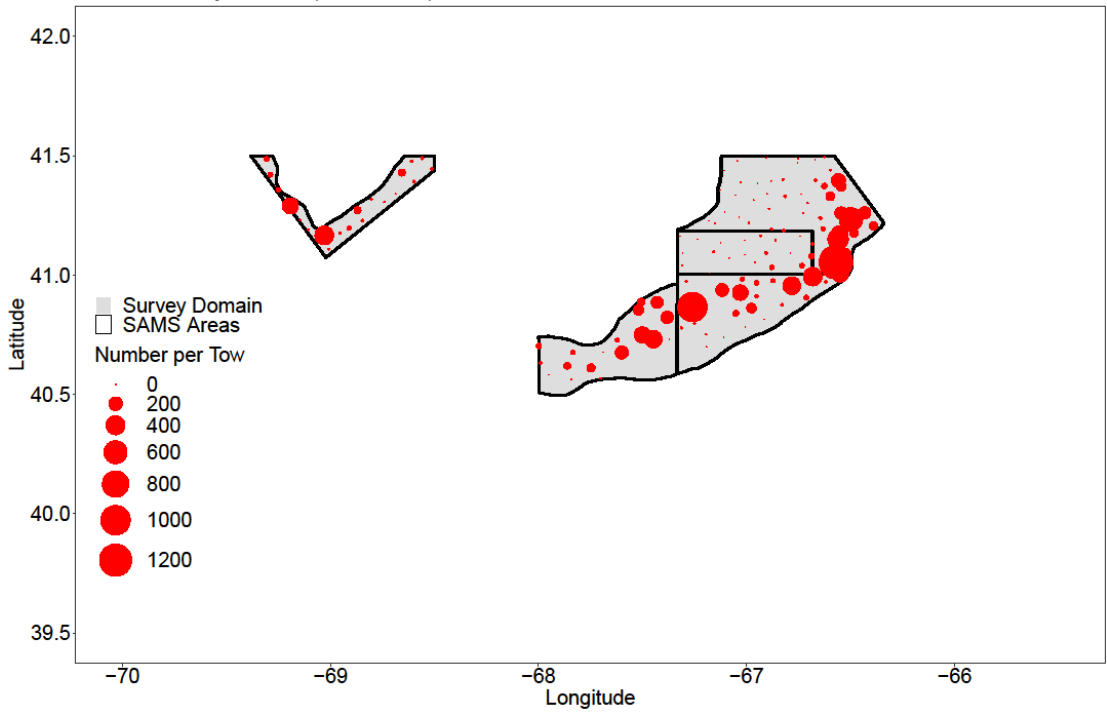
NL Survey Recruits (> 75 mm)

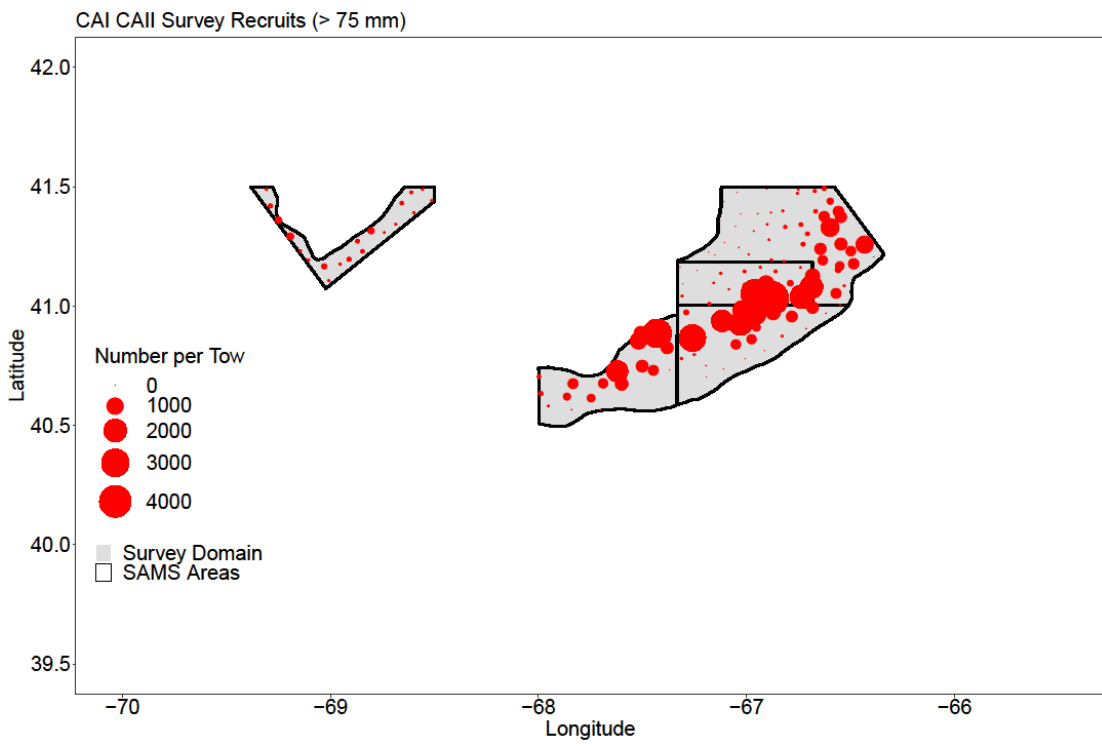


CAI CAII Survey Pre-Recruits (< 35 mm)



CAI CAII Survey Recruits (35 - 75 mm)





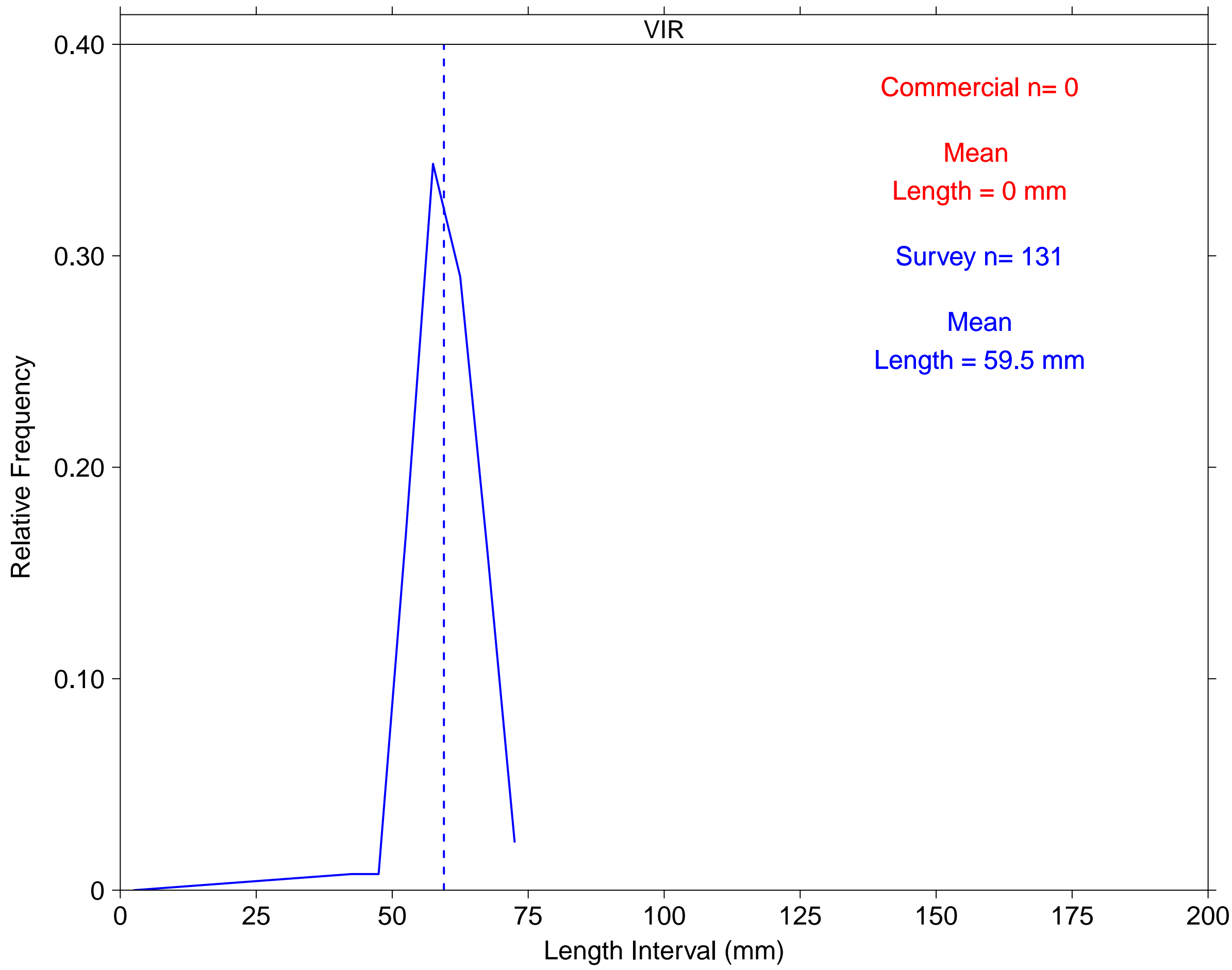
3.0 LENGTH FREQUENCY PLOTS BY SAMS AREA

2021 MAB Survey

Number Caught at Length by Gear

Left – Relative Length Frequency Graph

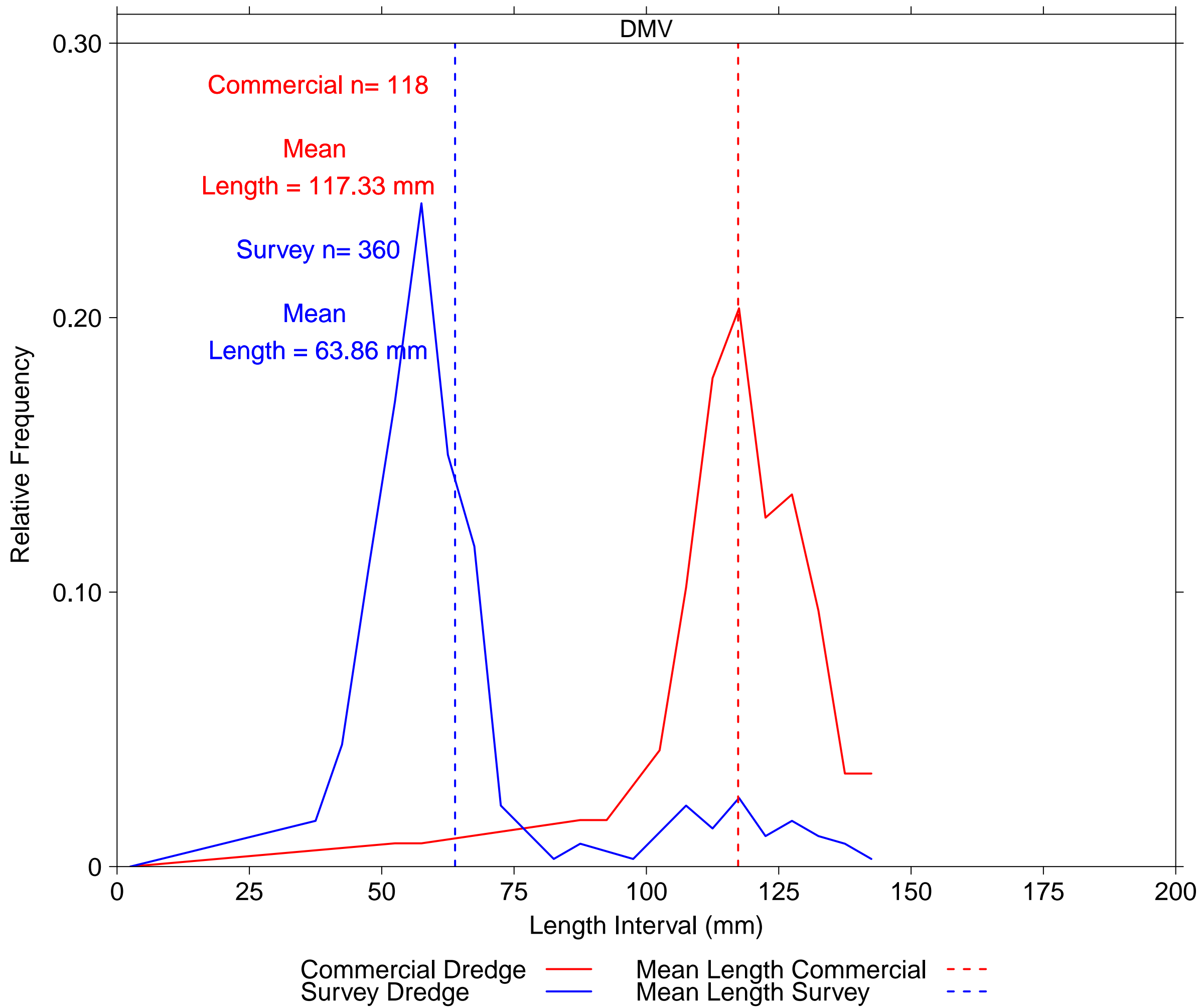
Right – Expanded Number of Scallops Caught at Length Table



Commercial Dredge ——— Mean Length Commercial - - -  
 Survey Dredge ——— Mean Length Survey - - -

SAMS_Area	Length	Commercial	Survey
VIR	42.5	0	1
VIR	47.5	0	1
VIR	52.5	0	22
VIR	57.5	0	45
VIR	62.5	0	38
VIR	67.5	0	21
VIR	72.5	0	3

Number Caught at Length by Gear  
 Left – Relative Length Frequency Graph  
 Right – Expanded Number of Scallops Caught at Length Table

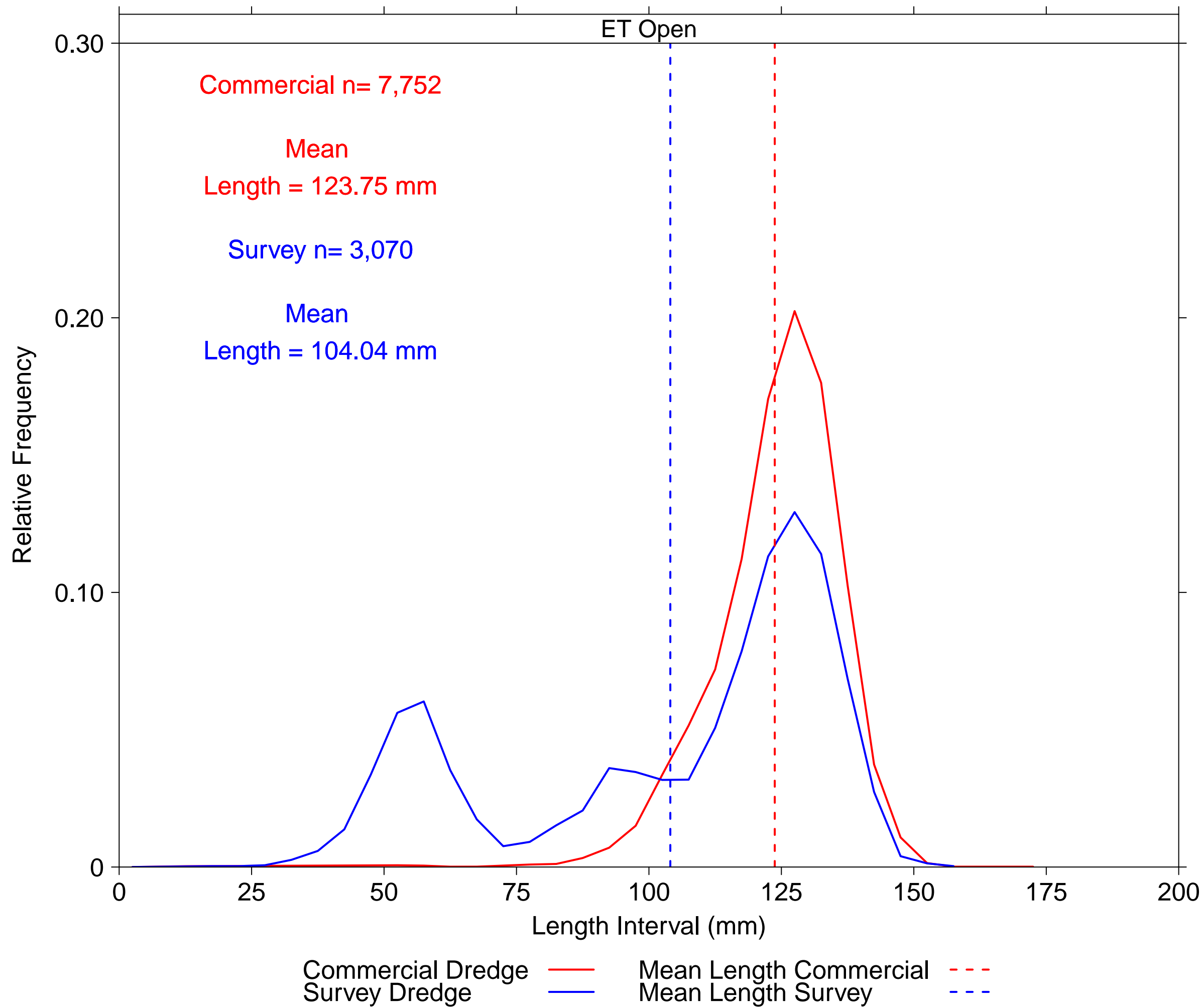


SAMS_Area	Length	Commercial	Survey
DMV	37.5	0	6
DMV	42.5	0	16
DMV	47.5	0	39
DMV	52.5	1	61
DMV	57.5	1	87
DMV	62.5	0	54
DMV	67.5	0	42
DMV	72.5	0	8
DMV	82.5	0	1
DMV	87.5	2	3
DMV	92.5	2	2
DMV	97.5	0	1
DMV	102.5	5	0
DMV	107.5	12	8
DMV	112.5	21	5
DMV	117.5	24	9
DMV	122.5	15	4
DMV	127.5	16	6
DMV	132.5	11	4
DMV	137.5	4	3
DMV	142.5	4	1

# Number Caught at Length by Gear

## Left – Relative Length Frequency Graph

## Right – Expanded Number of Scallops Caught at Length Table

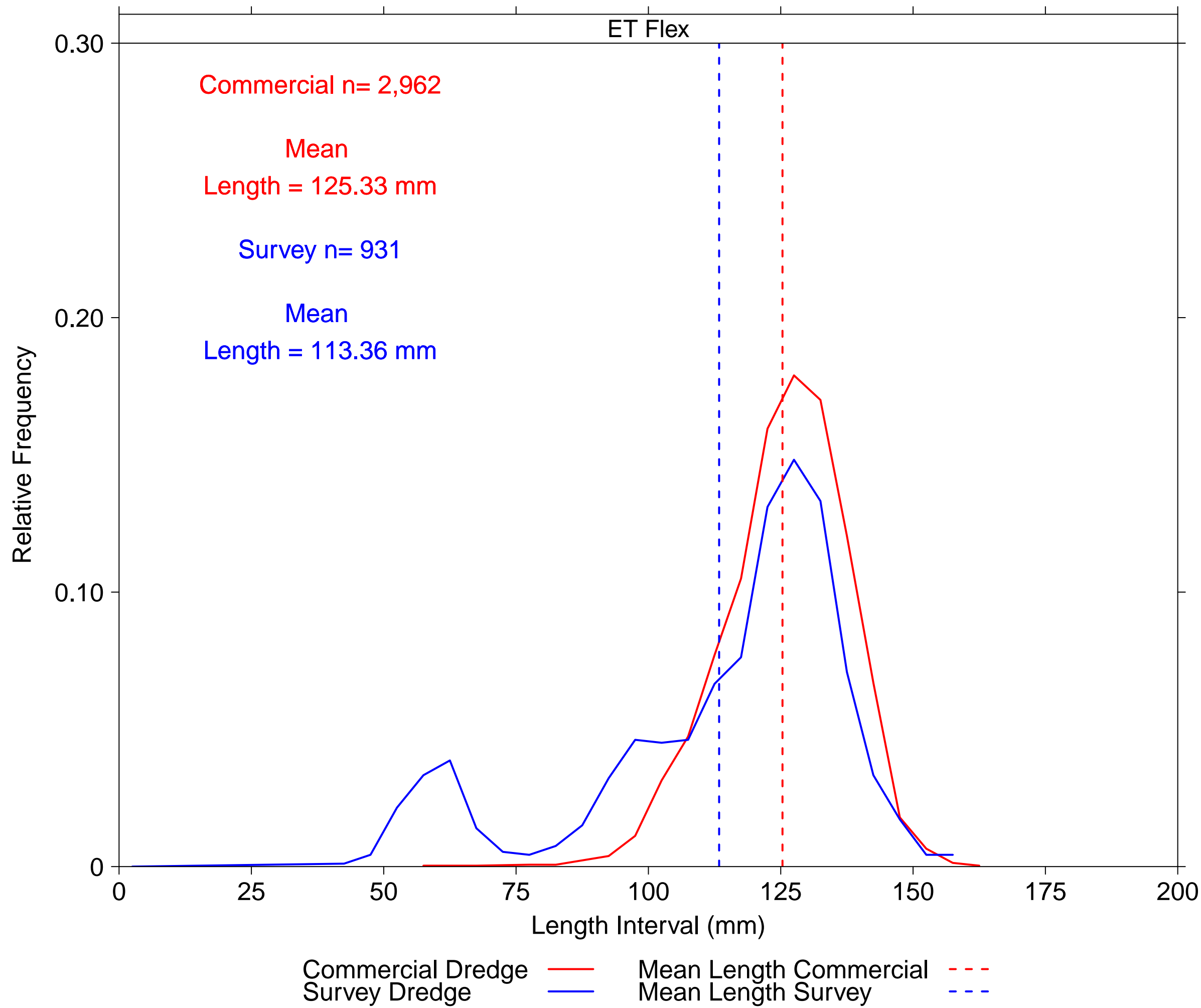


SAMS_Area	Length	Commercial	Survey
ET_Open	12.5	2	0
ET_Open	17.5	0	1
ET_Open	22.5	0	1
ET_Open	27.5	0	2
ET_Open	32.5	0	8
ET_Open	37.5	0	18
ET_Open	42.5	0	42
ET_Open	47.5	0	103
ET_Open	52.5	5	172
ET_Open	57.5	4	185
ET_Open	62.5	1	108
ET_Open	67.5	1	53
ET_Open	72.5	0	23
ET_Open	77.5	7	28
ET_Open	82.5	9	47
ET_Open	87.5	25	63
ET_Open	92.5	55	111
ET_Open	97.5	117	106
ET_Open	102.5	260	97
ET_Open	107.5	400	98
ET_Open	112.5	558	156
ET_Open	117.5	869	241
ET_Open	122.5	1,321	347
ET_Open	127.5	1,569	397
ET_Open	132.5	1,367	350
ET_Open	137.5	795	211
ET_Open	142.5	289	84
ET_Open	147.5	84	12
ET_Open	152.5	11	4
ET_Open	157.5	1	1
ET_Open	172.5	1	0

# Number Caught at Length by Gear

Left – Relative Length Frequency Graph

Right – Expanded Number of Scallops Caught at Length Table



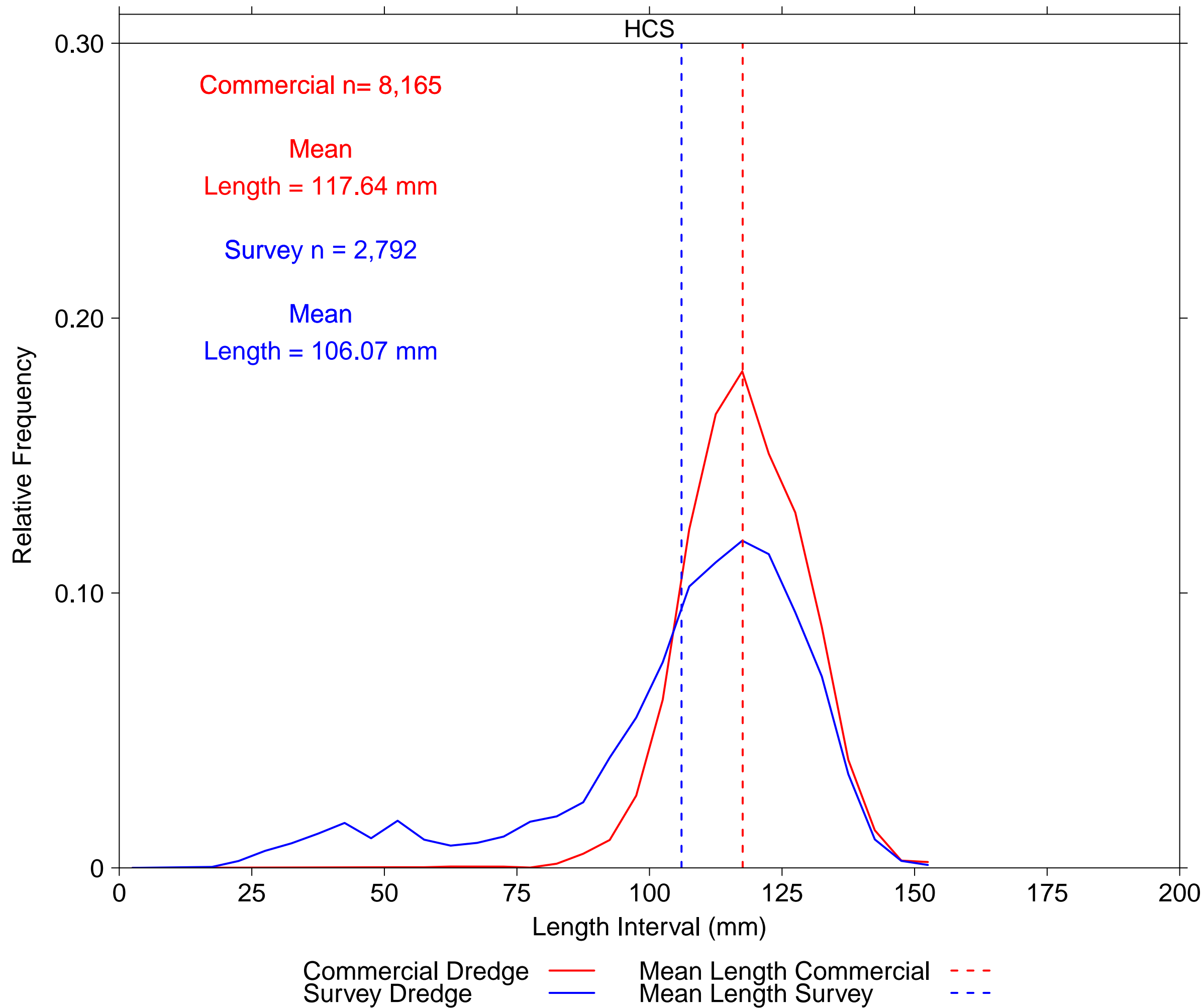
SAMS_Area	Length	Commercial	Survey
ET_Flex	42.5	0	1
ET_Flex	47.5	0	4
ET_Flex	52.5	0	20
ET_Flex	57.5	1	31
ET_Flex	62.5	0	36
ET_Flex	67.5	1	13
ET_Flex	72.5	0	5
ET_Flex	77.5	2	4
ET_Flex	82.5	2	7
ET_Flex	87.5	0	14
ET_Flex	92.5	11	30
ET_Flex	97.5	33	43
ET_Flex	102.5	93	42
ET_Flex	107.5	140	43
ET_Flex	112.5	228	62
ET_Flex	117.5	311	71
ET_Flex	122.5	472	122
ET_Flex	127.5	530	138
ET_Flex	132.5	504	124
ET_Flex	137.5	357	66
ET_Flex	142.5	198	31
ET_Flex	147.5	53	16
ET_Flex	152.5	19	4
ET_Flex	157.5	4	4
ET_Flex	162.5	1	0



# Number Caught at Length by Gear

## Left – Relative Length Frequency Graph

## Right – Expanded Number of Scallops Caught at Length Table

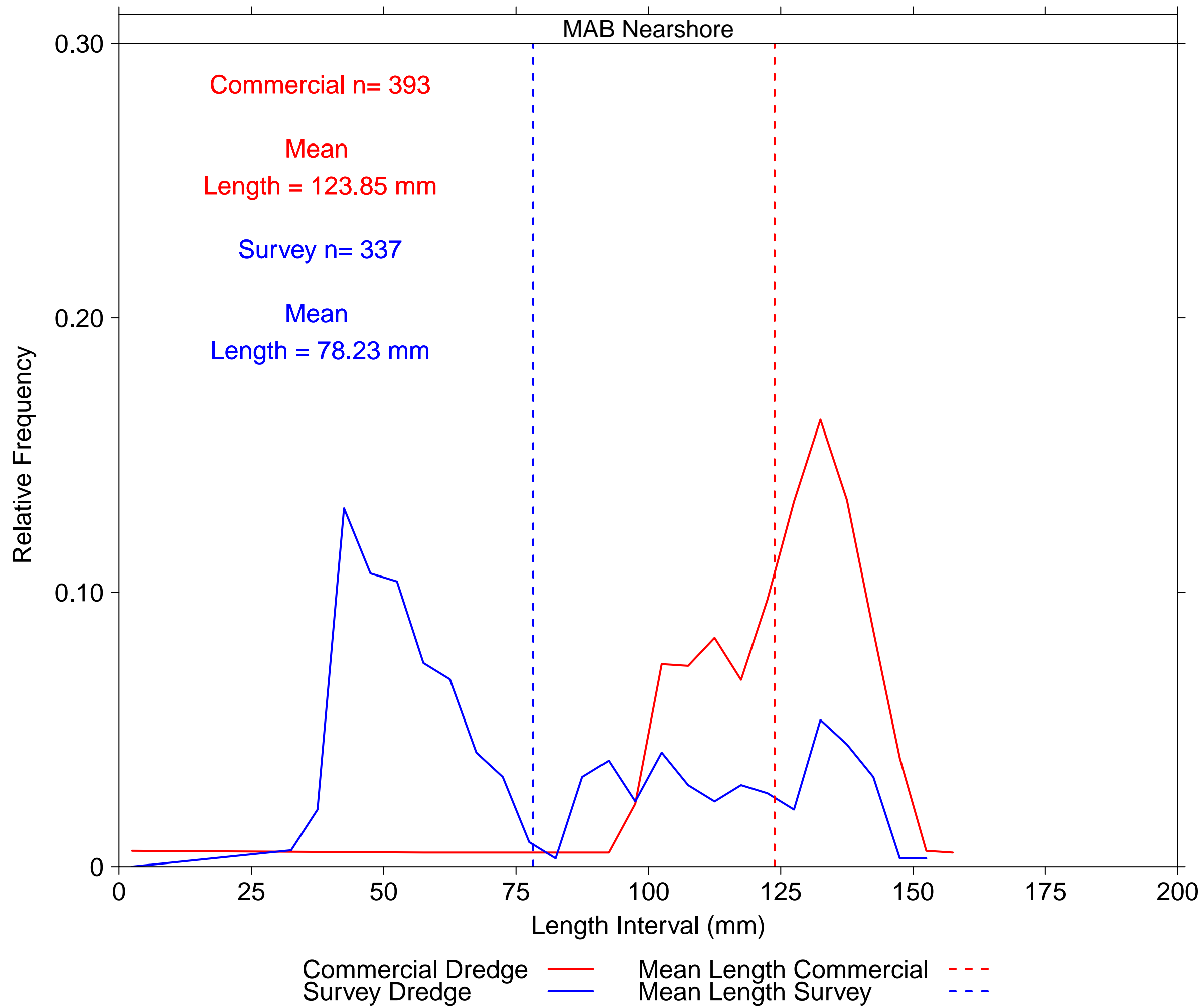


SAMS_Area	Length	Commercial	Survey
HCS	17.5	0	1
HCS	22.5	0	7
HCS	27.5	0	17
HCS	32.5	0	25
HCS	37.5	0	35
HCS	42.5	0	46
HCS	47.5	0	30
HCS	52.5	2	48
HCS	57.5	2	29
HCS	62.5	4	23
HCS	67.5	0	25
HCS	72.5	4	32
HCS	77.5	1	47
HCS	82.5	12	52
HCS	87.5	42	67
HCS	92.5	83	112
HCS	97.5	215	153
HCS	102.5	499	209
HCS	107.5	1,006	286
HCS	112.5	1,348	310
HCS	117.5	1,475	332
HCS	122.5	1,230	319
HCS	127.5	1,055	259
HCS	132.5	716	194
HCS	137.5	321	95
HCS	142.5	112	29
HCS	147.5	22	7
HCS	152.5	16	3

# Number Caught at Length by Gear

Left – Relative Length Frequency Graph

Right – Expanded Number of Scallops Caught at Length Table

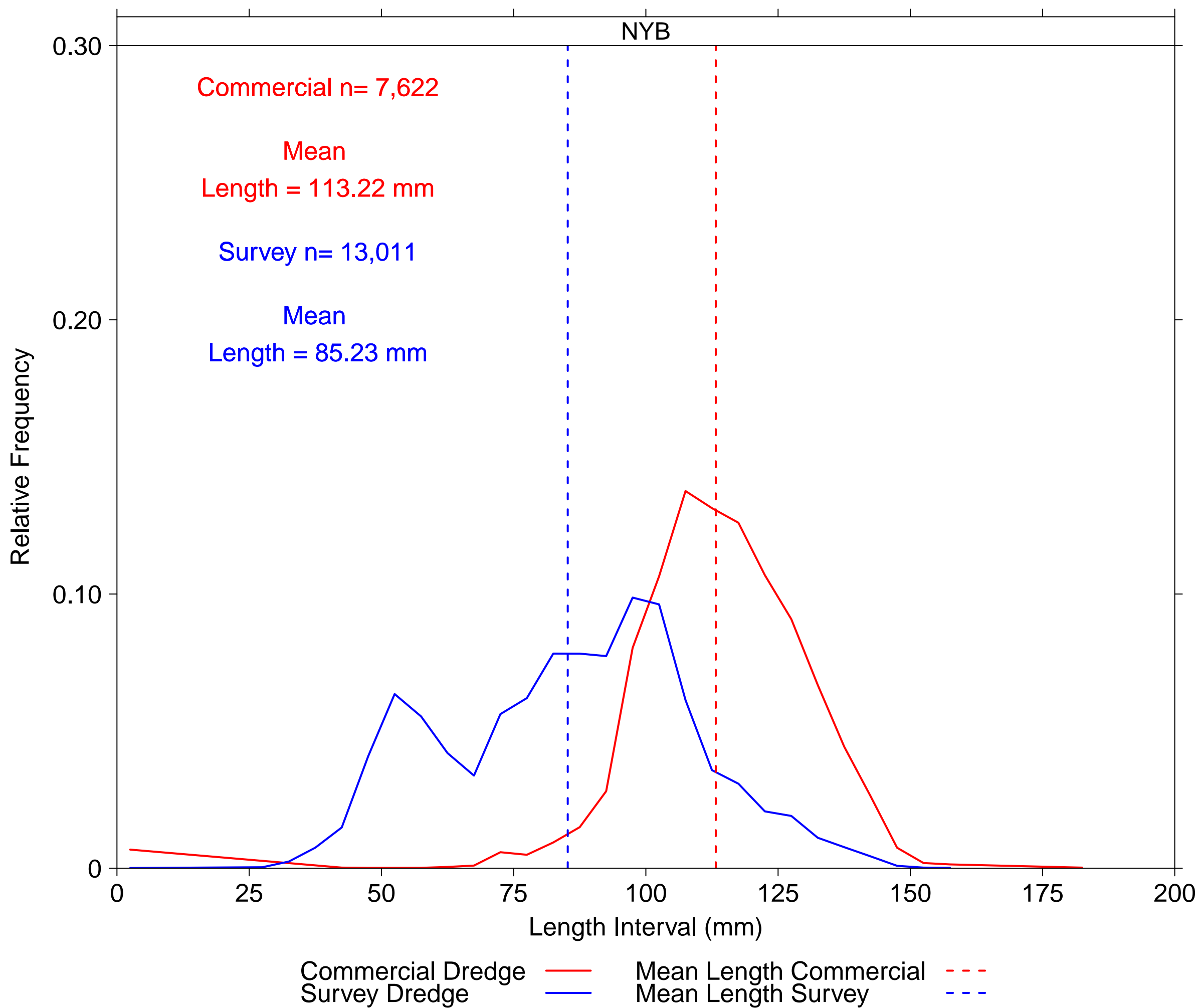


SAMS_Area	Length	Commercial	Survey
MAB_Nearshore	2.5	2	0
MAB_Nearshore	32.5	0	2
MAB_Nearshore	37.5	0	7
MAB_Nearshore	42.5	0	44
MAB_Nearshore	47.5	0	36
MAB_Nearshore	52.5	0	35
MAB_Nearshore	57.5	2	25
MAB_Nearshore	62.5	0	23
MAB_Nearshore	67.5	0	14
MAB_Nearshore	72.5	0	11
MAB_Nearshore	77.5	0	3
MAB_Nearshore	82.5	0	1
MAB_Nearshore	87.5	0	11
MAB_Nearshore	92.5	2	13
MAB_Nearshore	97.5	9	8
MAB_Nearshore	102.5	29	14
MAB_Nearshore	107.5	29	10
MAB_Nearshore	112.5	33	8
MAB_Nearshore	117.5	27	10
MAB_Nearshore	122.5	38	9
MAB_Nearshore	127.5	52	7
MAB_Nearshore	132.5	64	18
MAB_Nearshore	137.5	52	15
MAB_Nearshore	142.5	34	11
MAB_Nearshore	147.5	16	1
MAB_Nearshore	152.5	2	1
MAB_Nearshore	157.5	2	0

# Number Caught at Length by Gear

Left – Relative Length Frequency Graph

Right – Expanded Number of Scallops Caught at Length Table

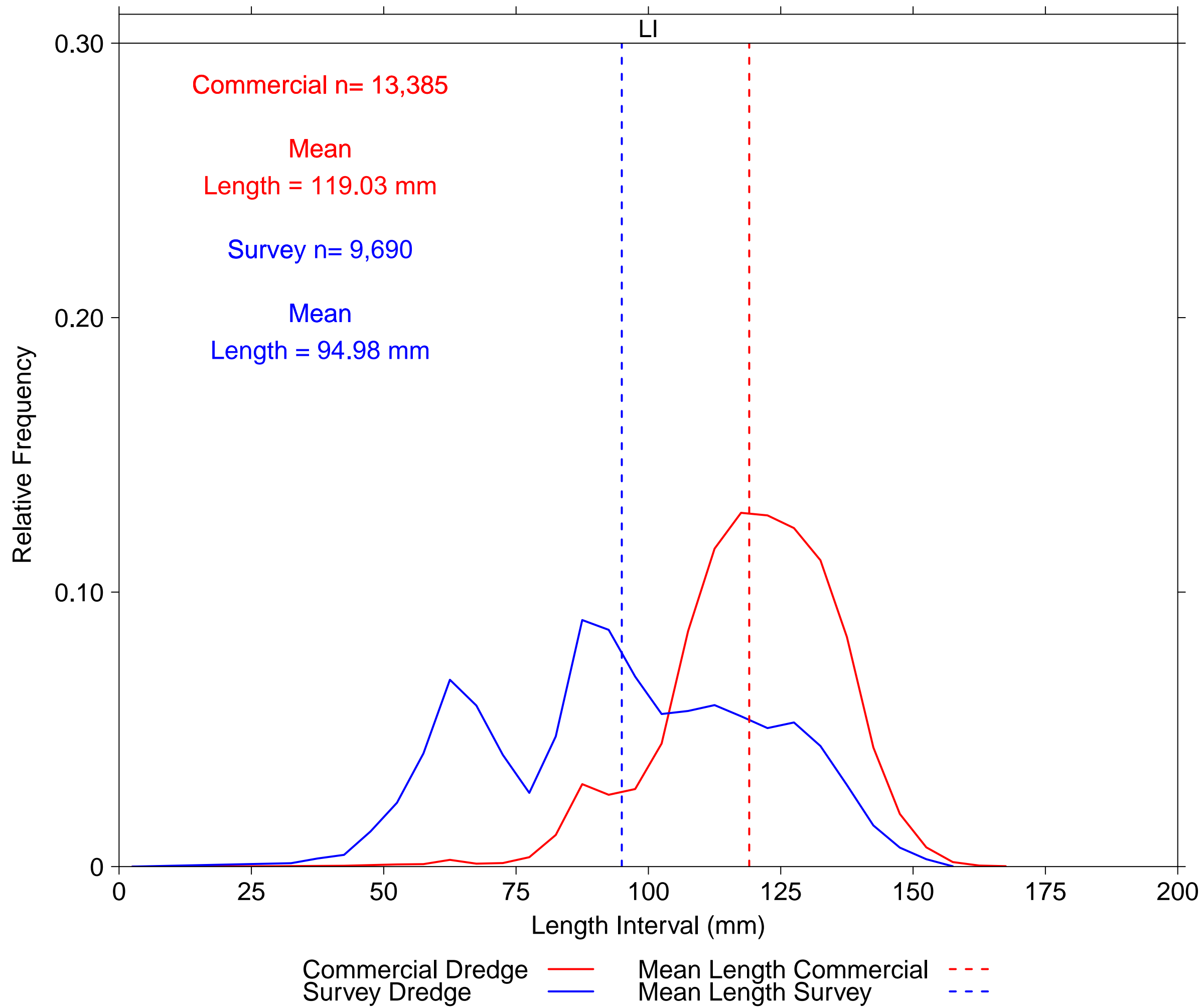


SAMS_Area	Length	Commercial	Survey
NYB	2.5	52	1
NYB	27.5	0	5
NYB	32.5	0	32
NYB	37.5	0	98
NYB	42.5	2	193
NYB	47.5	1	531
NYB	52.5	1	826
NYB	57.5	1	720
NYB	62.5	4	546
NYB	67.5	7	440
NYB	72.5	45	731
NYB	77.5	37	807
NYB	82.5	72	1,018
NYB	87.5	114	1,018
NYB	92.5	214	1,007
NYB	97.5	613	1,284
NYB	102.5	812	1,252
NYB	107.5	1,049	798
NYB	112.5	1,001	465
NYB	117.5	960	401
NYB	122.5	815	270
NYB	127.5	692	248
NYB	132.5	509	145
NYB	137.5	338	100
NYB	142.5	200	56
NYB	147.5	57	12
NYB	152.5	14	3
NYB	157.5	11	2
NYB	182.5	2	0

# Number Caught at Length by Gear

Left – Relative Length Frequency Graph

Right – Expanded Number of Scallops Caught at Length Table

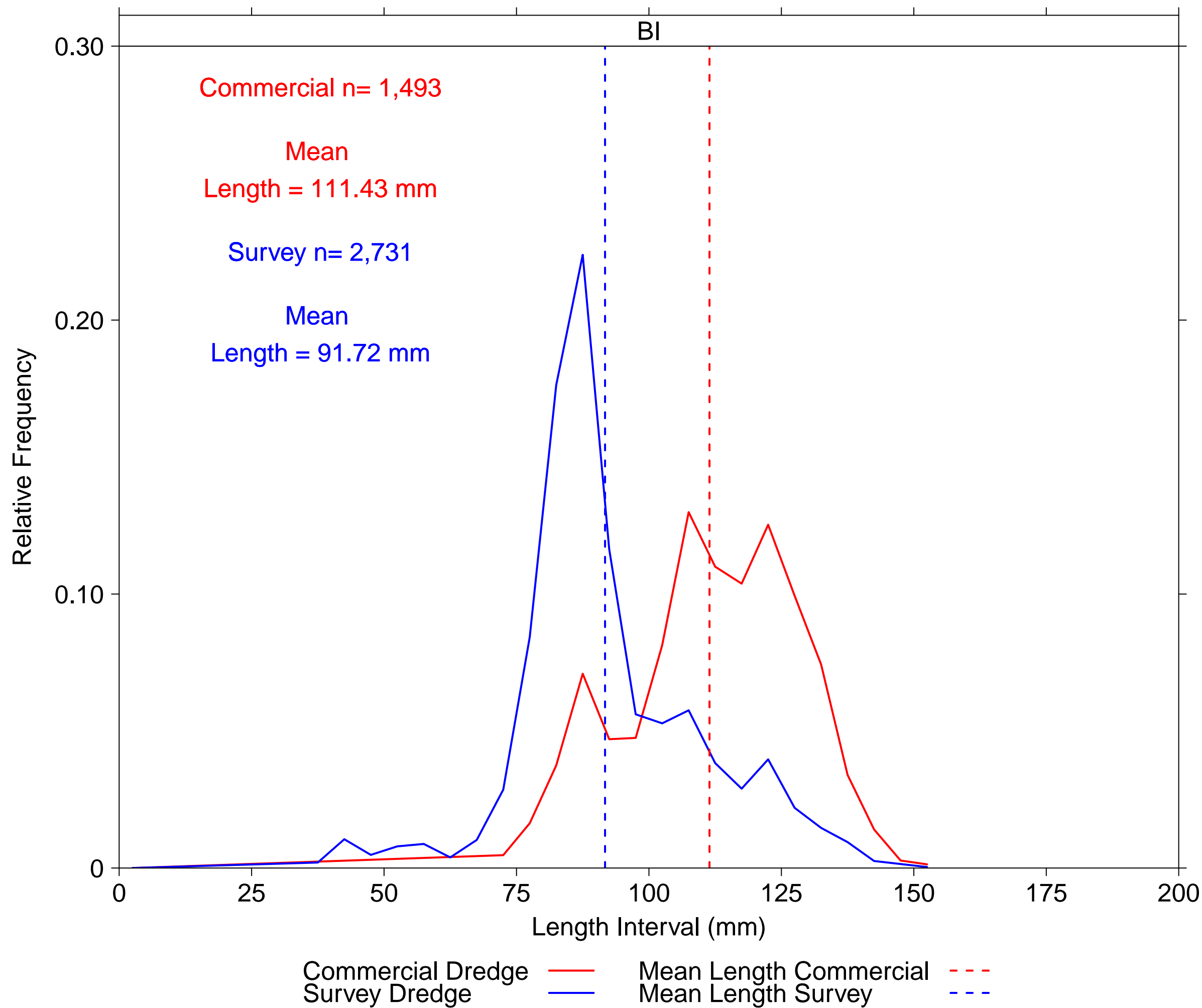


SAMS_Area	Length	Commercial	Survey
LI	27.5	2	0
LI	32.5	0	12
LI	37.5	0	29
LI	42.5	4	41
LI	47.5	0	124
LI	52.5	11	225
LI	57.5	12	398
LI	62.5	33	658
LI	67.5	14	567
LI	72.5	17	394
LI	77.5	46	260
LI	82.5	154	459
LI	87.5	402	868
LI	92.5	350	834
LI	97.5	378	669
LI	102.5	600	537
LI	107.5	1,148	548
LI	112.5	1,550	569
LI	117.5	1,725	529
LI	122.5	1,713	488
LI	127.5	1,651	508
LI	132.5	1,494	425
LI	137.5	1,120	287
LI	142.5	581	145
LI	147.5	257	67
LI	152.5	94	26
LI	157.5	22	1
LI	162.5	5	0
LI	167.5	2	0

# Number Caught at Length by Gear

Left – Relative Length Frequency Graph

Right – Expanded Number of Scallops Caught at Length Table



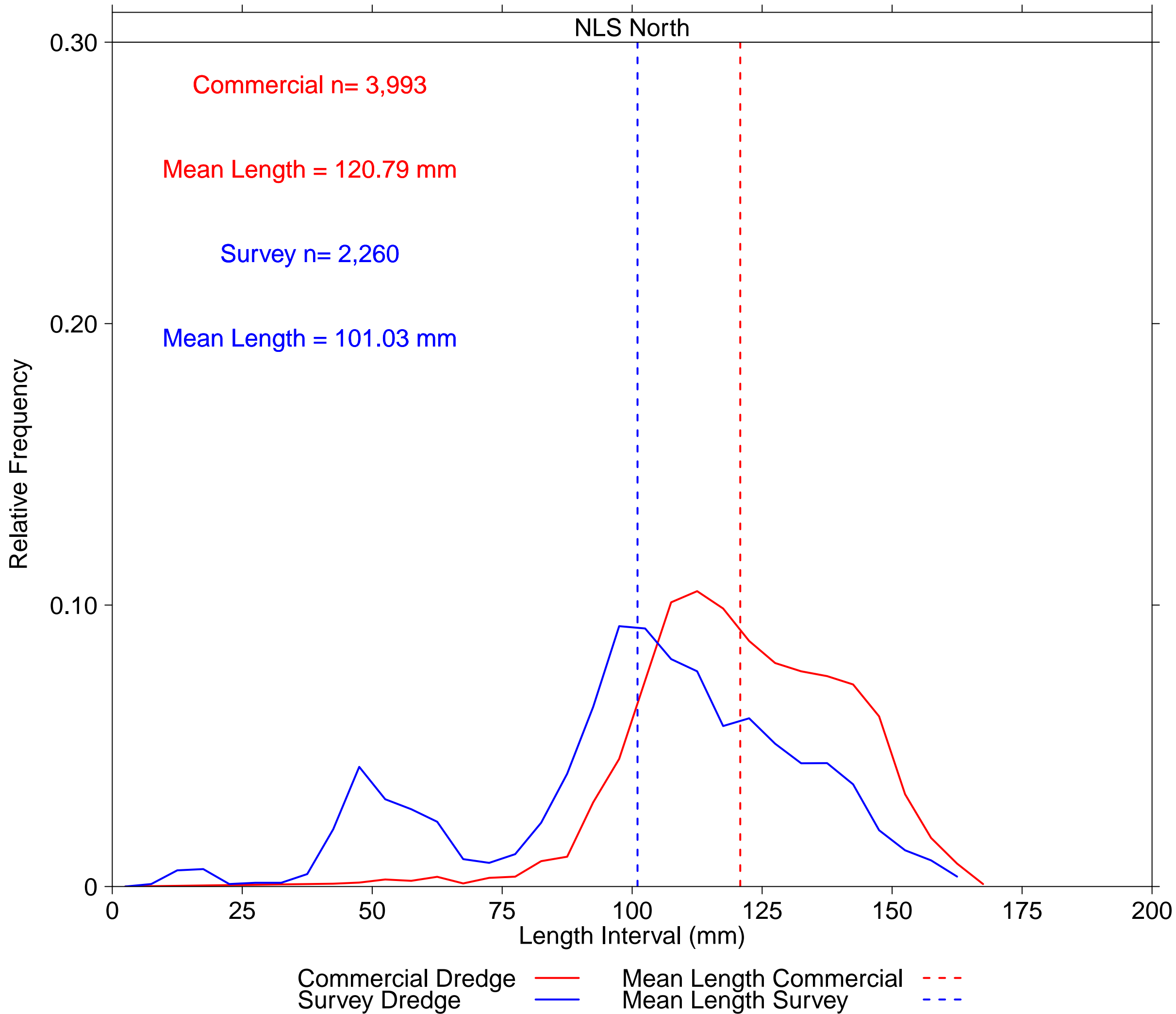
SAMS_Area	Length	Commercial	Survey
BI	37.5	0	6
BI	42.5	0	29
BI	47.5	0	13
BI	52.5	0	22
BI	57.5	0	24
BI	62.5	0	11
BI	67.5	0	28
BI	72.5	7	78
BI	77.5	24	230
BI	82.5	56	481
BI	87.5	106	611
BI	92.5	70	318
BI	97.5	71	153
BI	102.5	121	144
BI	107.5	194	157
BI	112.5	164	105
BI	117.5	155	79
BI	122.5	187	108
BI	127.5	148	60
BI	132.5	111	40
BI	137.5	51	26
BI	142.5	21	7
BI	147.5	4	0
BI	152.5	2	1

# Number Caught at Length by Gear

## Left – Relative Length Frequency Graph

## Right – Expanded Number of Scallops Caught at Length Table

2021 NL Survey

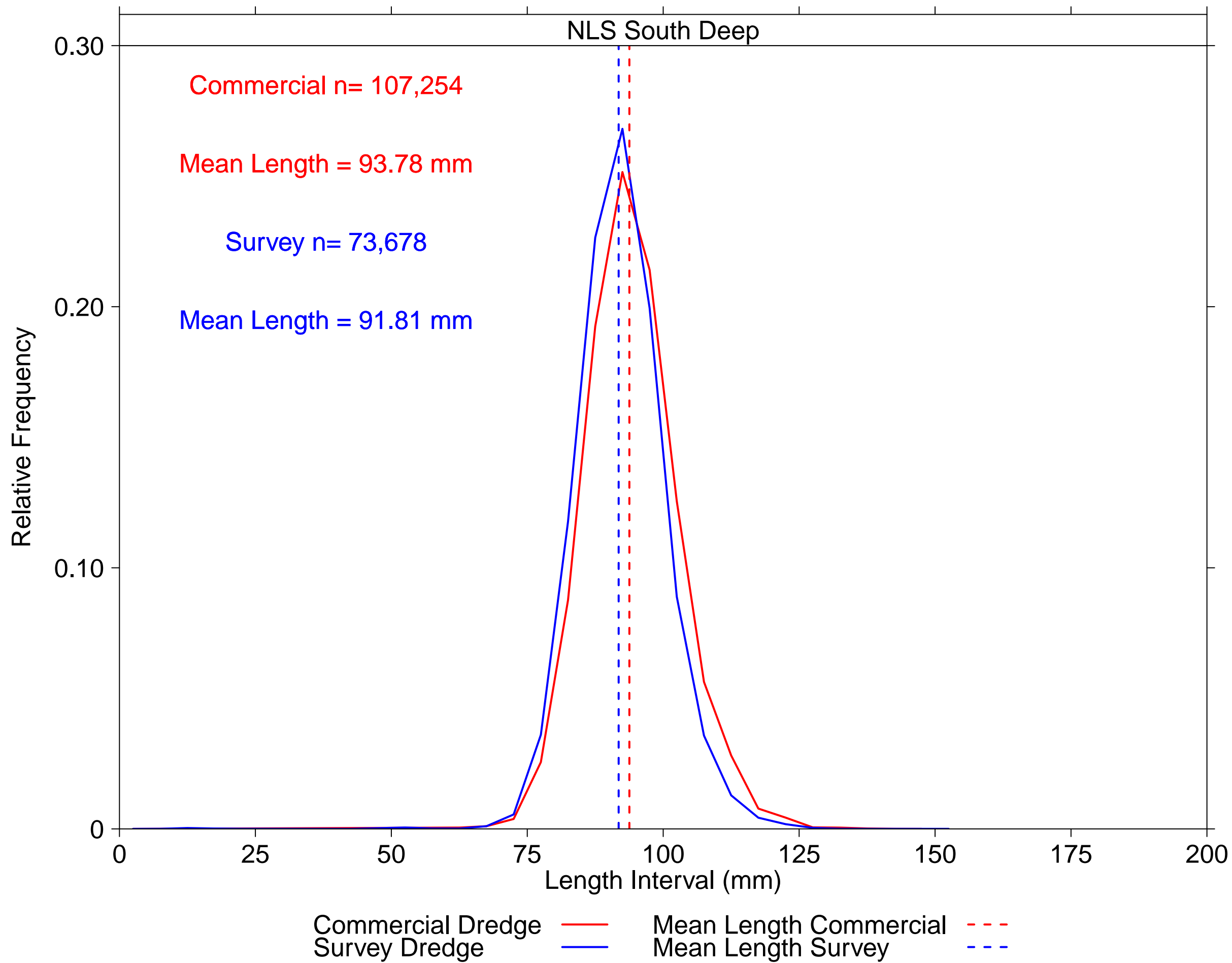


SAMS_Area	Length	Commercial	Survey
NLS_North	7.5	0	2
NLS_North	12.5	0	13
NLS_North	17.5	0	14
NLS_North	22.5	0	2
NLS_North	27.5	0	3
NLS_North	32.5	0	3
NLS_North	37.5	0	10
NLS_North	42.5	4	46
NLS_North	47.5	6	96
NLS_North	52.5	10	70
NLS_North	57.5	8	62
NLS_North	62.5	14	52
NLS_North	67.5	4	22
NLS_North	72.5	12	19
NLS_North	77.5	14	26
NLS_North	82.5	36	51
NLS_North	87.5	42	91
NLS_North	92.5	119	144
NLS_North	97.5	181	209
NLS_North	102.5	292	207
NLS_North	107.5	403	183
NLS_North	112.5	419	173
NLS_North	117.5	394	129
NLS_North	122.5	348	135
NLS_North	127.5	317	115
NLS_North	132.5	305	99
NLS_North	137.5	298	99
NLS_North	142.5	287	82
NLS_North	147.5	241	45
NLS_North	152.5	131	29
NLS_North	157.5	69	21
NLS_North	162.5	32	8
NLS_North	167.5	4	0

# Number Caught at Length by Gear

## Left – Relative Length Frequency Graph

## Right – Expanded Number of Scallops Caught at Length Table

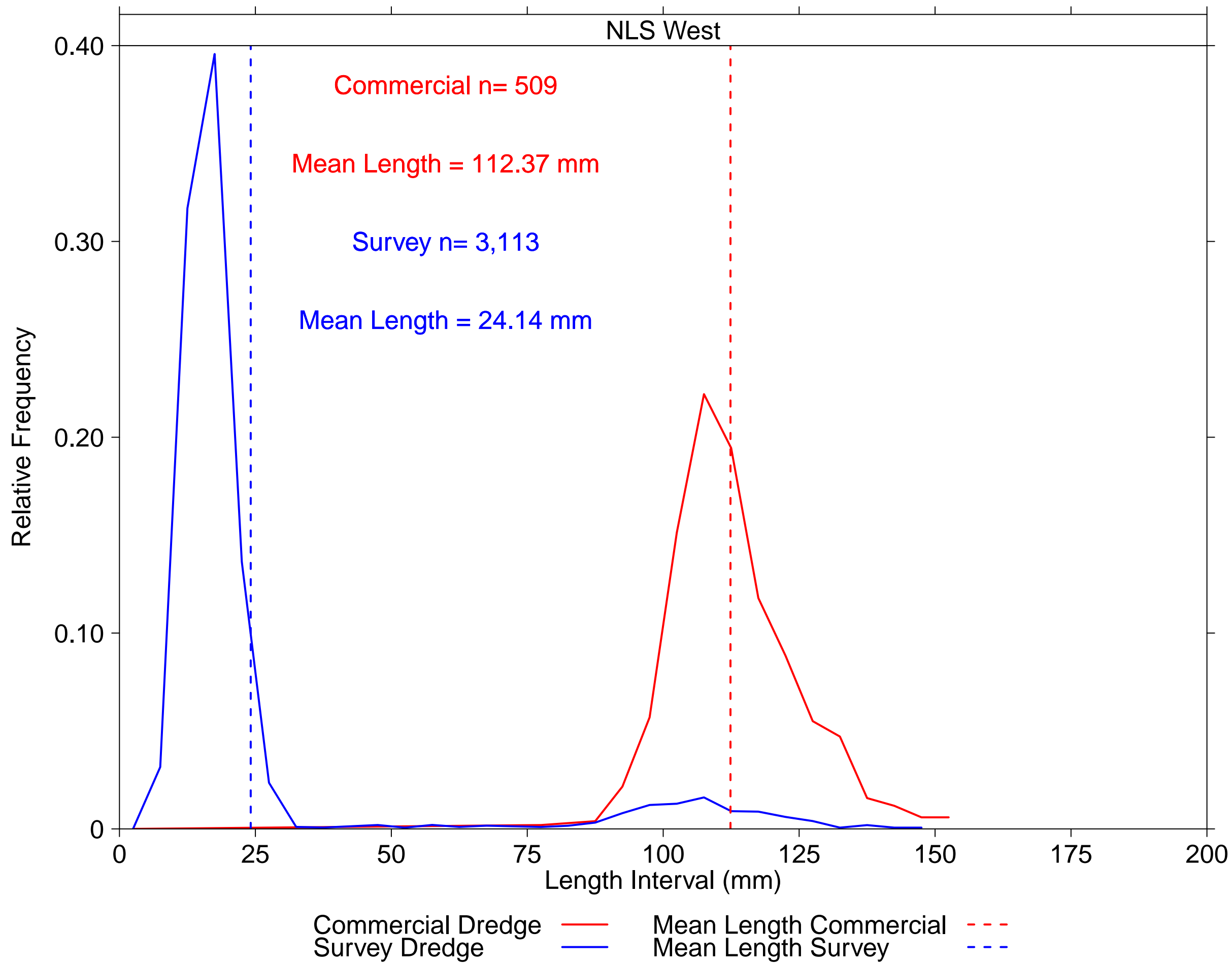


SAMS_Area	Length	Commercial	Survey
NLS_South_Deep	7.5	0	3
NLS_South_Deep	12.5	0	25
NLS_South_Deep	17.5	0	11
NLS_South_Deep	22.5	0	4
NLS_South_Deep	42.5	0	1
NLS_South_Deep	52.5	0	39
NLS_South_Deep	57.5	0	14
NLS_South_Deep	62.5	54	11
NLS_South_Deep	67.5	110	76
NLS_South_Deep	72.5	407	407
NLS_South_Deep	77.5	2,743	2,655
NLS_South_Deep	82.5	9,402	8,676
NLS_South_Deep	87.5	20,644	16,687
NLS_South_Deep	92.5	26,983	19,756
NLS_South_Deep	97.5	22,964	14,698
NLS_South_Deep	102.5	13,458	6,550
NLS_South_Deep	107.5	6,038	2,633
NLS_South_Deep	112.5	3,016	947
NLS_South_Deep	117.5	833	316
NLS_South_Deep	122.5	464	133
NLS_South_Deep	127.5	63	29
NLS_South_Deep	132.5	52	5
NLS_South_Deep	137.5	18	1
NLS_South_Deep	142.5	3	0
NLS_South_Deep	147.5	1	0
NLS_South_Deep	152.5	0	1

# Number Caught at Length by Gear

## Left – Relative Length Frequency Graph

## Right – Expanded Number of Scallops Caught at Length Table



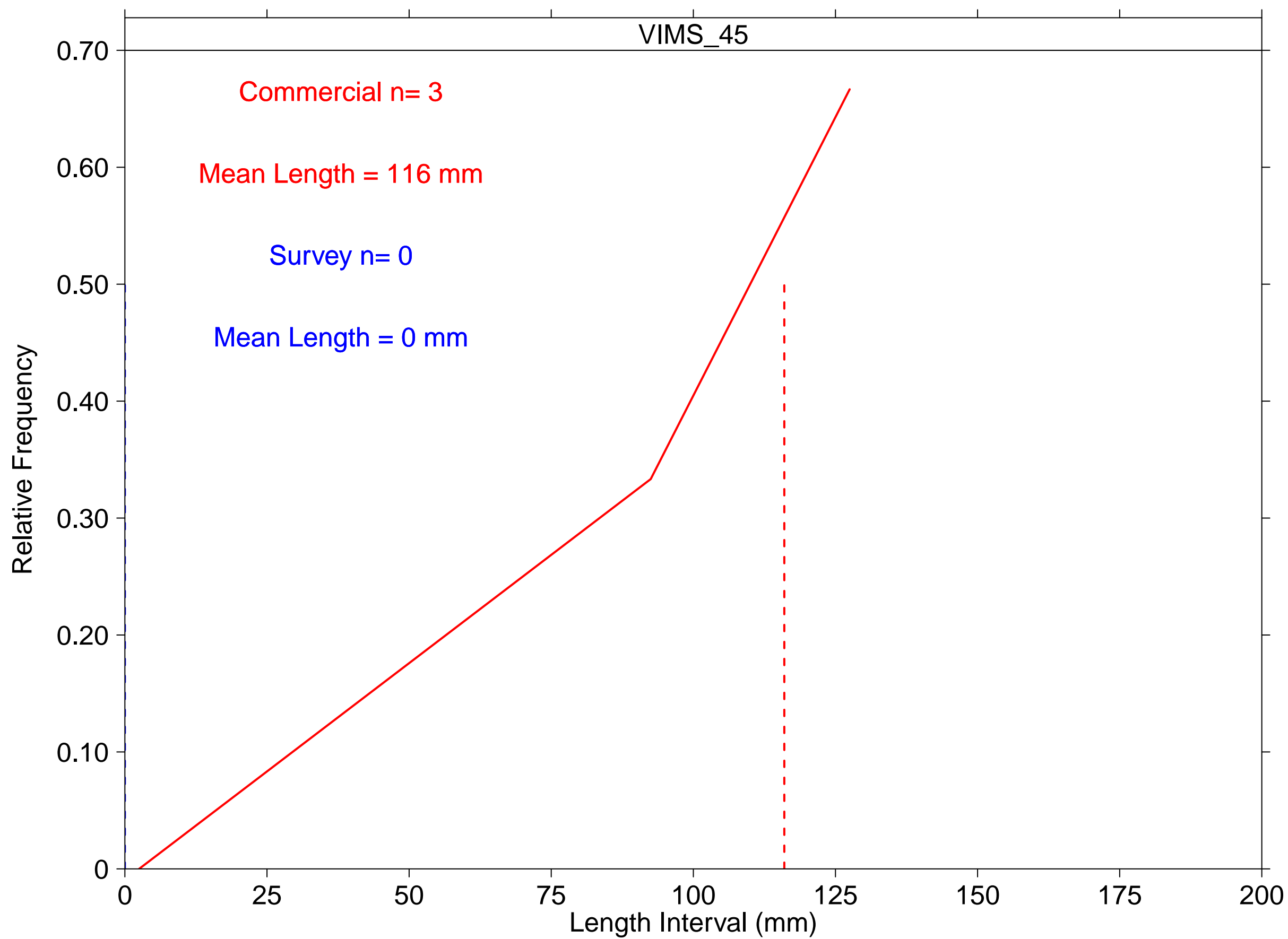
SAMS_Area	Length	Commercial	Survey
NLS_West	7.5	0	98
NLS_West	12.5	0	987
NLS_West	17.5	0	1,232
NLS_West	22.5	0	425
NLS_West	27.5	0	73
NLS_West	32.5	0	3
NLS_West	37.5	0	2
NLS_West	47.5	0	6
NLS_West	52.5	0	2
NLS_West	57.5	0	6
NLS_West	62.5	0	3
NLS_West	67.5	0	5
NLS_West	77.5	1	3
NLS_West	82.5	0	5
NLS_West	87.5	2	10
NLS_West	92.5	11	25
NLS_West	97.5	29	38
NLS_West	102.5	77	40
NLS_West	107.5	113	50
NLS_West	112.5	99	28
NLS_West	117.5	60	27
NLS_West	122.5	45	19
NLS_West	127.5	28	12
NLS_West	132.5	24	2
NLS_West	137.5	8	6
NLS_West	142.5	6	2
NLS_West	147.5	3	2
NLS_West	152.5	3	0



# Number Caught at Length by Gear

Left – Relative Length Frequency Graph

Right – Expanded Number of Scallops Caught at Length Table



Commercial Dredge ——— Mean Length Commercial - - - -  
Survey Dredge ——— Mean Length Survey - - - -

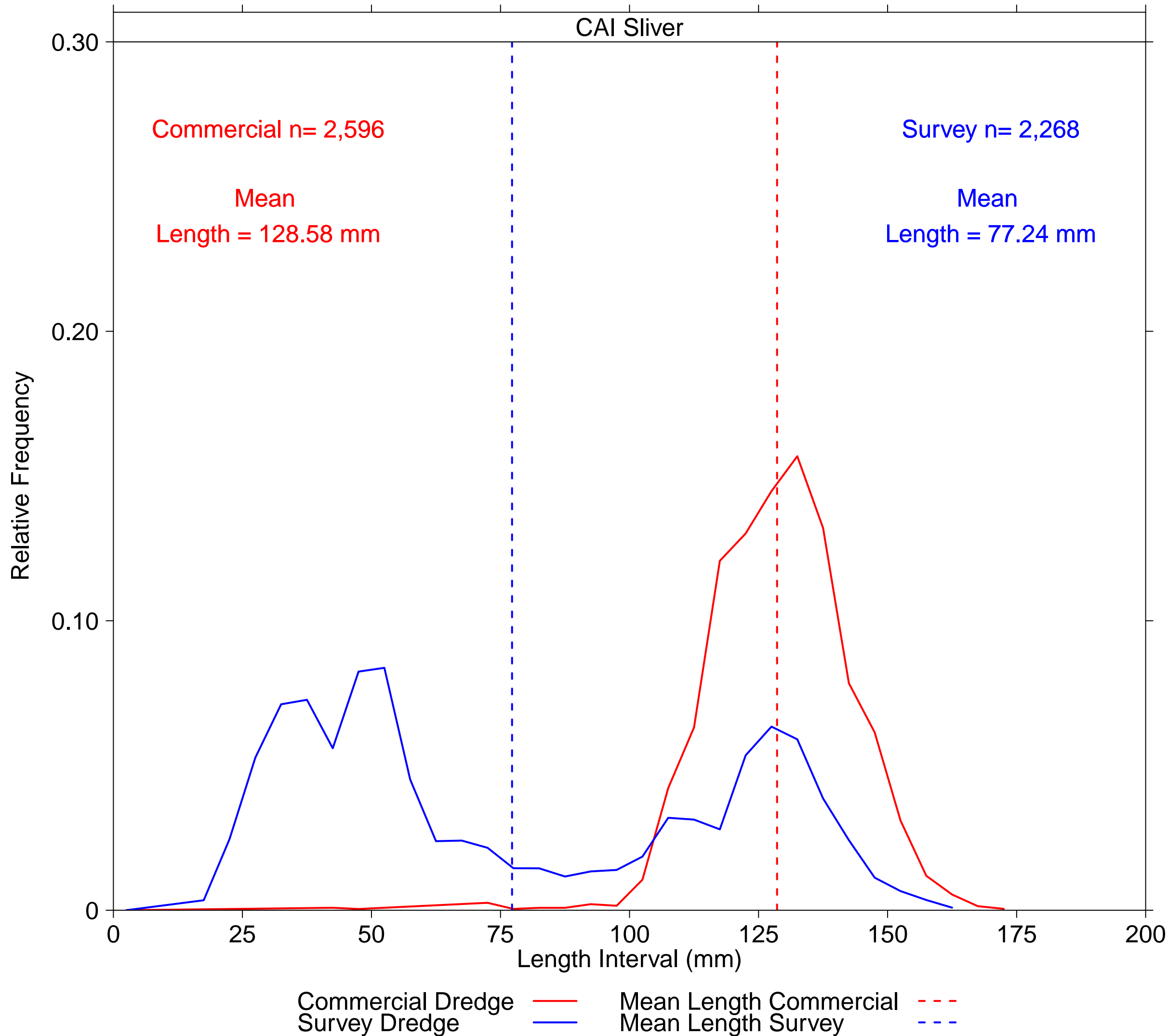
SAMS_Area	Length	Commercial	Survey
VIMS_45	92.5	1	0
VIMS_45	127.5	2	0

# Number Caught at Length by Gear

Left – Relative Length Frequency Graph

2021 CAI II Survey

Right – Expanded Number of Scallops Caught at Length Table

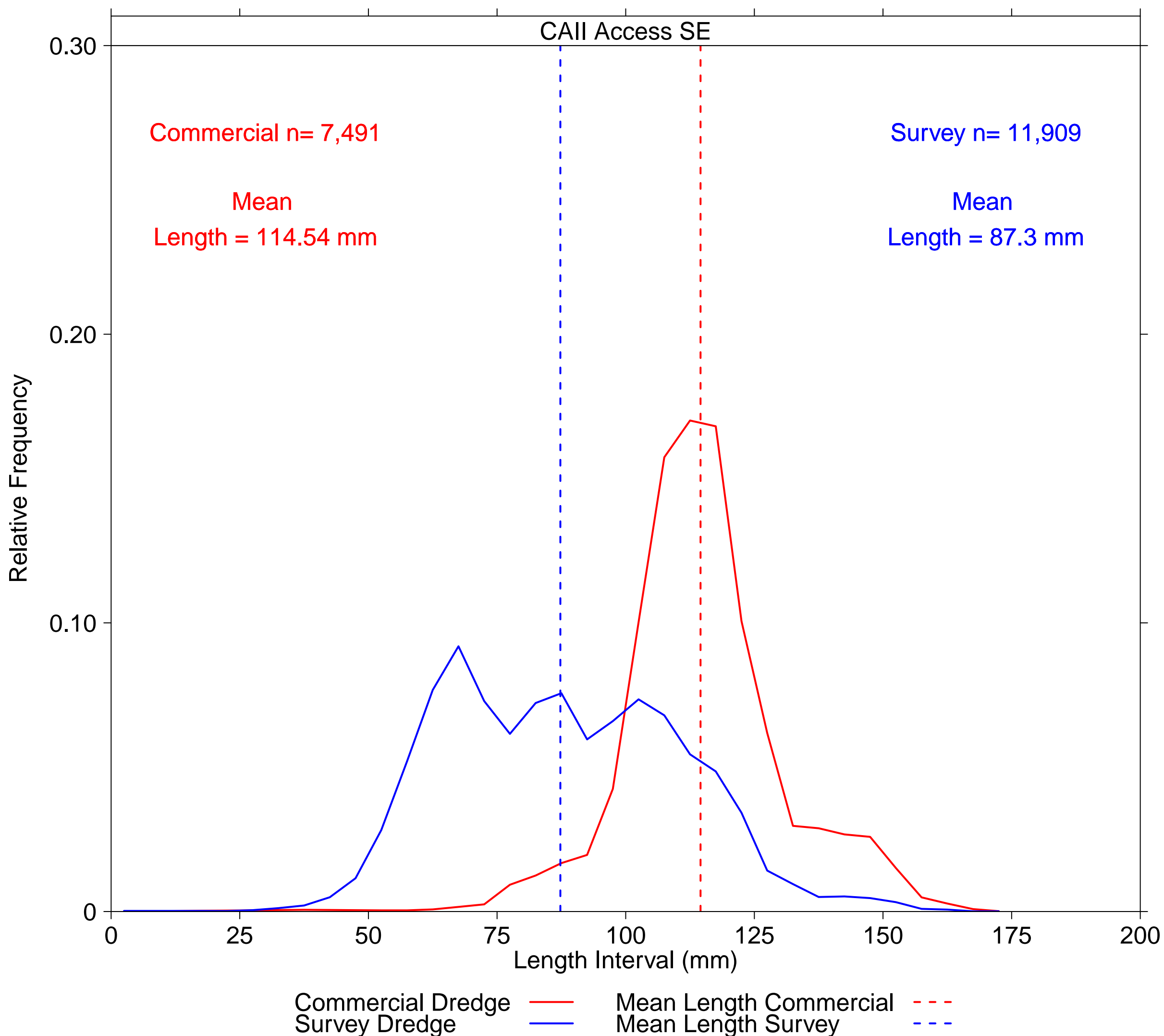


SAMS_Area	Length	Commercial	Survey
CAI_Sliver	17.5	0	8
CAI_Sliver	22.5	0	56
CAI_Sliver	27.5	0	120
CAI_Sliver	32.5	0	161
CAI_Sliver	37.5	0	165
CAI_Sliver	42.5	2	127
CAI_Sliver	47.5	1	187
CAI_Sliver	52.5	0	190
CAI_Sliver	57.5	0	102
CAI_Sliver	62.5	0	54
CAI_Sliver	67.5	0	55
CAI_Sliver	72.5	7	49
CAI_Sliver	77.5	1	33
CAI_Sliver	82.5	2	33
CAI_Sliver	87.5	2	26
CAI_Sliver	92.5	5	30
CAI_Sliver	97.5	4	32
CAI_Sliver	102.5	27	42
CAI_Sliver	107.5	110	72
CAI_Sliver	112.5	164	71
CAI_Sliver	117.5	313	63
CAI_Sliver	122.5	338	121
CAI_Sliver	127.5	376	144
CAI_Sliver	132.5	407	134
CAI_Sliver	137.5	343	88
CAI_Sliver	142.5	204	55
CAI_Sliver	147.5	159	26
CAI_Sliver	152.5	80	15
CAI_Sliver	157.5	31	8
CAI_Sliver	162.5	14	2
CAI_Sliver	167.5	4	0
CAI_Sliver	172.5	1	0

# Number Caught at Length by Gear

## Left – Relative Length Frequency Graph

## Right – Expanded Number of Scallops Caught at Length Table

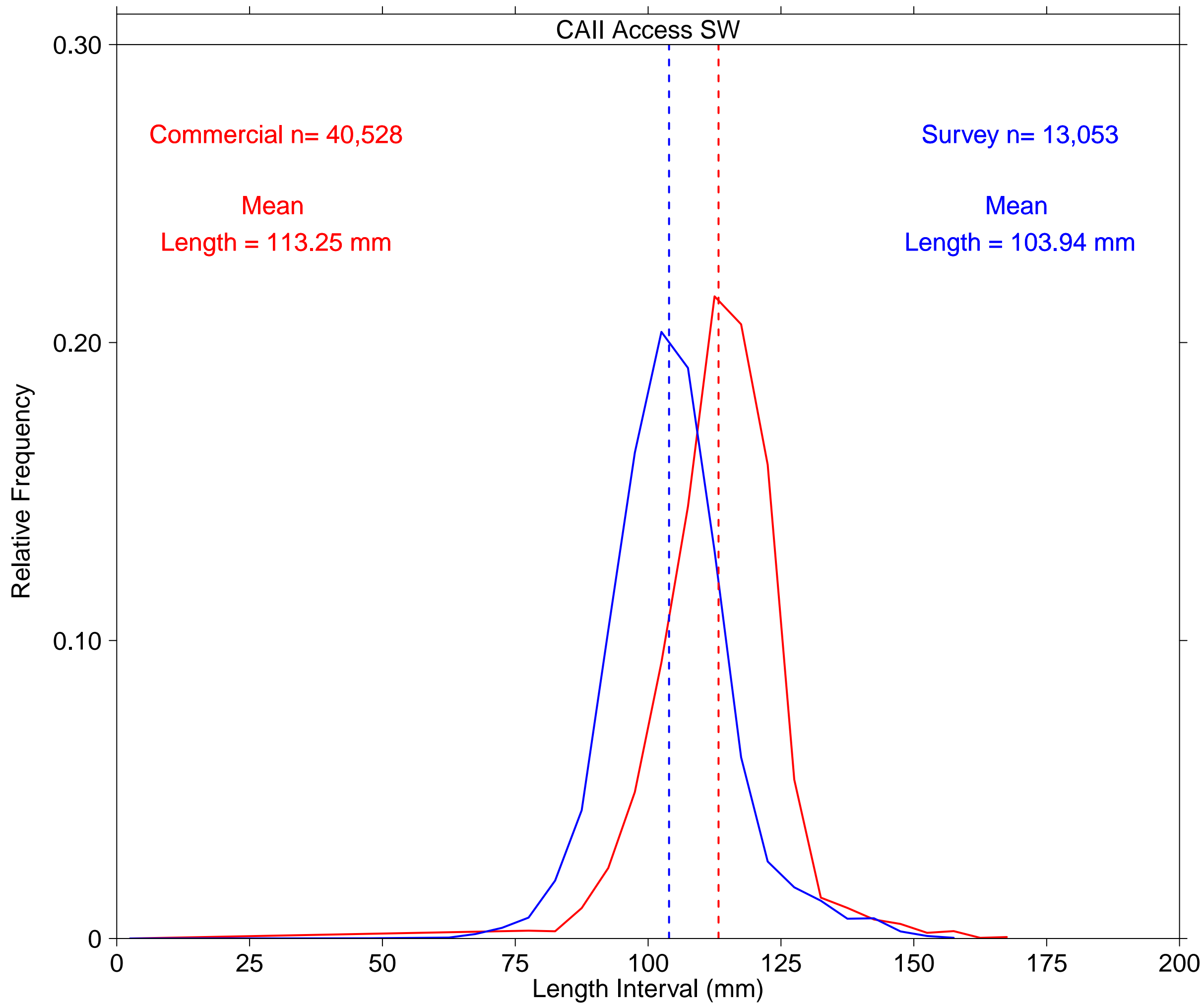


SAMS_Area	Length	Commercial	Survey
CAII_Access_SE	2.5	0	3
CAII_Access_SE	17.5	0	3
CAII_Access_SE	22.5	0	2
CAII_Access_SE	27.5	0	6
CAII_Access_SE	32.5	0	14
CAII_Access_SE	37.5	4	25
CAII_Access_SE	42.5	0	59
CAII_Access_SE	47.5	0	137
CAII_Access_SE	52.5	3	336
CAII_Access_SE	57.5	3	619
CAII_Access_SE	62.5	6	914
CAII_Access_SE	67.5	12	1,094
CAII_Access_SE	72.5	19	868
CAII_Access_SE	77.5	70	733
CAII_Access_SE	82.5	93	860
CAII_Access_SE	87.5	126	901
CAII_Access_SE	92.5	147	710
CAII_Access_SE	97.5	318	786
CAII_Access_SE	102.5	751	875
CAII_Access_SE	107.5	1,179	809
CAII_Access_SE	112.5	1,274	649
CAII_Access_SE	117.5	1,259	578
CAII_Access_SE	122.5	754	408
CAII_Access_SE	127.5	463	169
CAII_Access_SE	132.5	222	113
CAII_Access_SE	137.5	216	60
CAII_Access_SE	142.5	200	62
CAII_Access_SE	147.5	194	55
CAII_Access_SE	152.5	113	39
CAII_Access_SE	157.5	37	11
CAII_Access_SE	162.5	21	8
CAII_Access_SE	167.5	6	1
CAII_Access_SE	172.5	1	1

# Number Caught at Length by Gear

Left – Relative Length Frequency Graph

Right – Expanded Number of Scallops Caught at Length Table



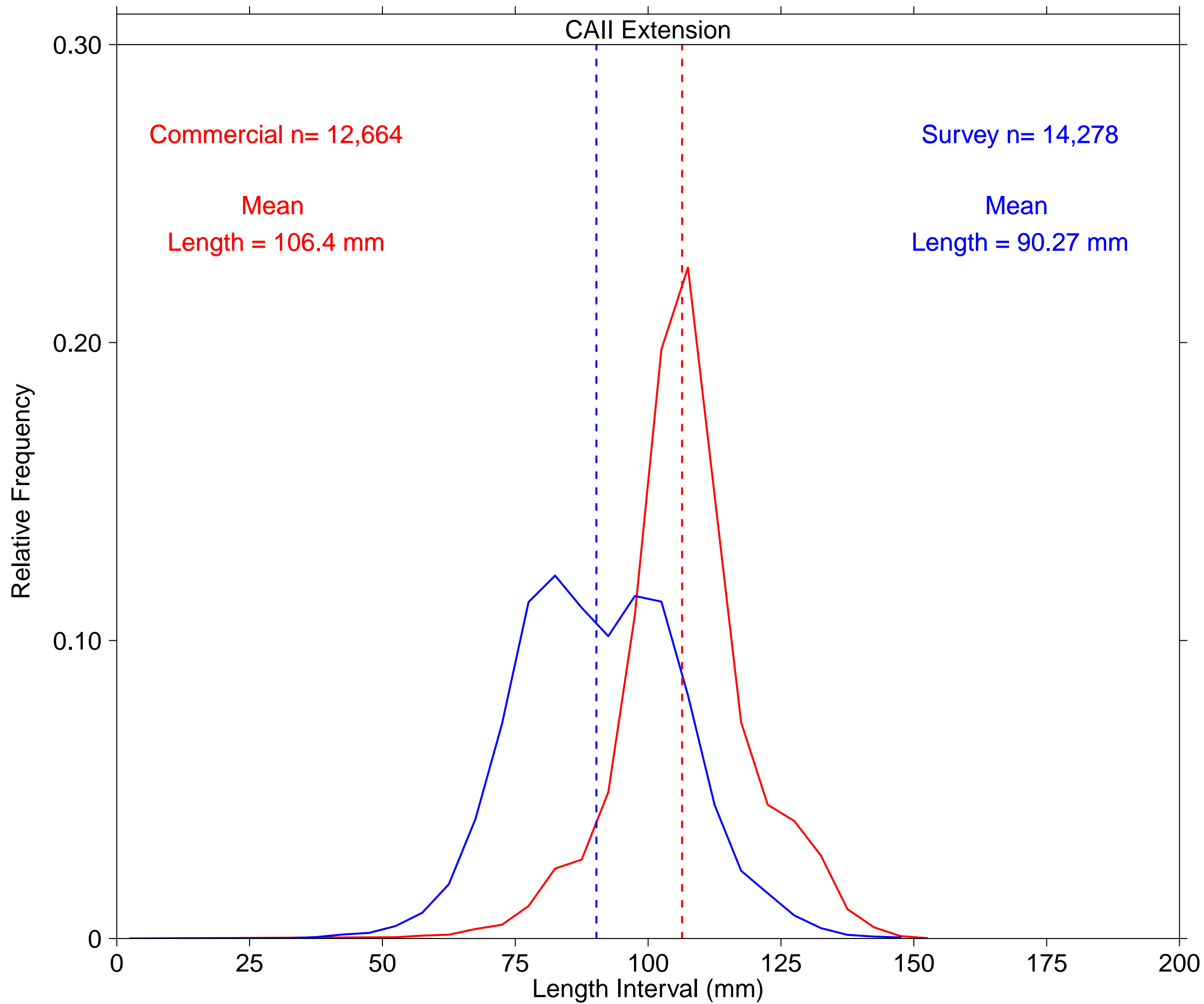
SAMS_Area	Length	Commercial	Survey
CAII_Access_SW	47.5	0	1
CAII_Access_SW	62.5	0	4
CAII_Access_SW	67.5	0	20
CAII_Access_SW	72.5	0	47
CAII_Access_SW	77.5	106	91
CAII_Access_SW	82.5	98	254
CAII_Access_SW	87.5	414	562
CAII_Access_SW	92.5	959	1,351
CAII_Access_SW	97.5	1,992	2,128
CAII_Access_SW	102.5	3,754	2,657
CAII_Access_SW	107.5	5,877	2,499
CAII_Access_SW	112.5	8,734	1,698
CAII_Access_SW	117.5	8,354	794
CAII_Access_SW	122.5	6,443	337
CAII_Access_SW	127.5	2,161	224
CAII_Access_SW	132.5	556	166
CAII_Access_SW	137.5	416	87
CAII_Access_SW	142.5	259	88
CAII_Access_SW	147.5	198	31
CAII_Access_SW	152.5	77	11
CAII_Access_SW	157.5	100	3
CAII_Access_SW	162.5	9	0
CAII_Access_SW	167.5	20	0

Commercial Dredge ——— Mean Length Commercial - - -  
 Survey Dredge ——— Mean Length Survey - - -

# Number Caught at Length by Gear

## Left – Relative Length Frequency Graph

## Right – Expanded Number of Scallops Caught at Length Table



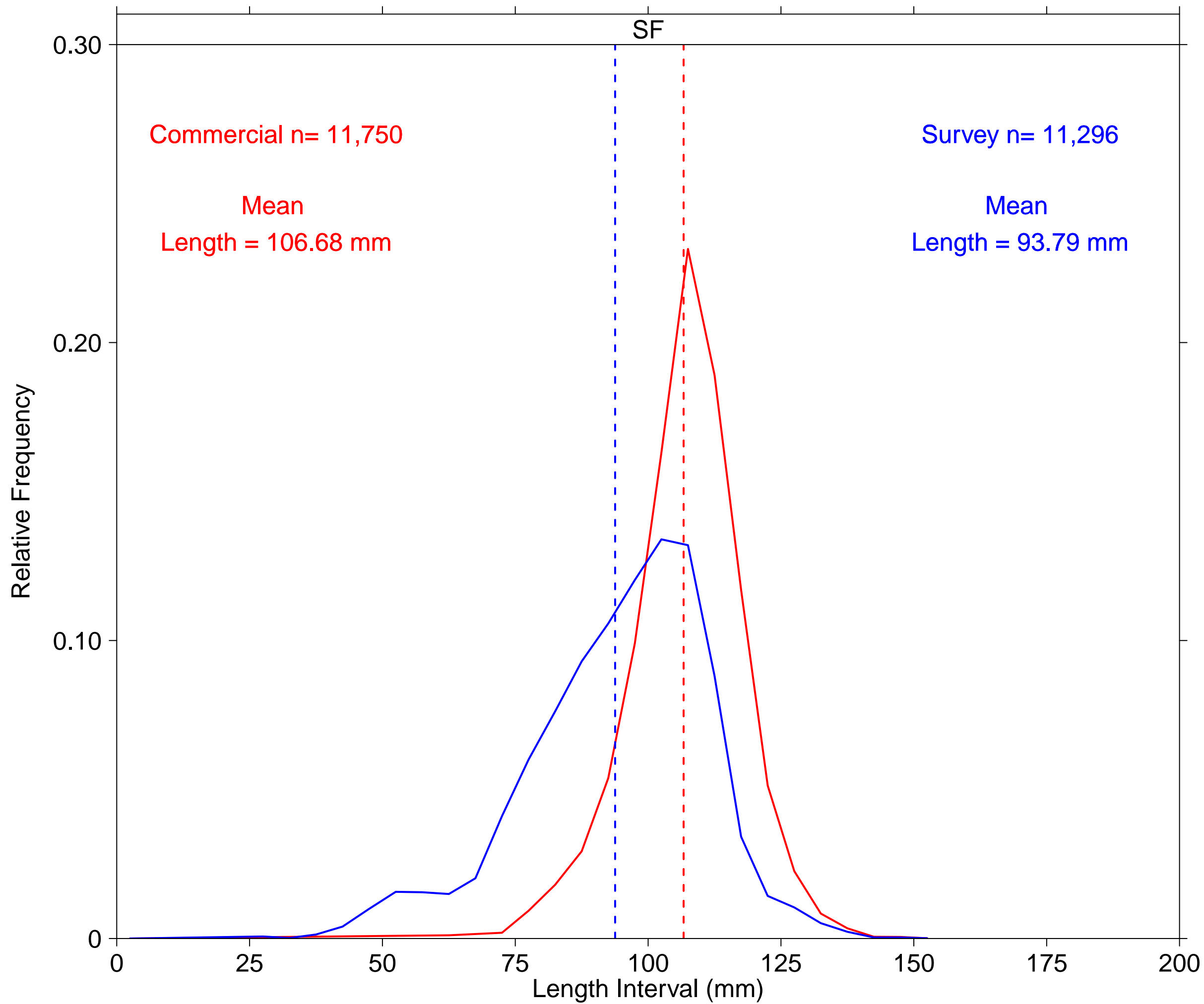
Commercial Dredge ——— Mean Length Commercial - - -  
 Survey Dredge ——— Mean Length Survey - - -

SAMS_Area	Length	Commercial	Survey
CAII_Ext	32.5	0	2
CAII_Ext	37.5	0	7
CAII_Ext	42.5	0	19
CAII_Ext	47.5	0	27
CAII_Ext	52.5	6	60
CAII_Ext	57.5	12	123
CAII_Ext	62.5	16	260
CAII_Ext	67.5	40	572
CAII_Ext	72.5	59	1,028
CAII_Ext	77.5	138	1,612
CAII_Ext	82.5	297	1,739
CAII_Ext	87.5	335	1,585
CAII_Ext	92.5	621	1,449
CAII_Ext	97.5	1,374	1,641
CAII_Ext	102.5	2,504	1,614
CAII_Ext	107.5	2,851	1,165
CAII_Ext	112.5	1,885	641
CAII_Ext	117.5	919	325
CAII_Ext	122.5	569	217
CAII_Ext	127.5	499	111
CAII_Ext	132.5	353	50
CAII_Ext	137.5	125	18
CAII_Ext	142.5	48	9
CAII_Ext	147.5	10	5
CAII_Ext	152.5	2	0

# Number Caught at Length by Gear

Left – Relative Length Frequency Graph

Right – Expanded Number of Scallops Caught at Length Table



Commercial Dredge ——— Mean Length Commercial - - -  
Survey Dredge ——— Mean Length Survey - - -

SAMS_Area	Length	Commercial	Survey
SF	27.5	0	8
SF	32.5	0	2
SF	37.5	0	15
SF	42.5	0	45
SF	47.5	0	112
SF	52.5	0	177
SF	57.5	0	175
SF	62.5	13	169
SF	67.5	0	228
SF	72.5	23	464
SF	77.5	109	678
SF	82.5	212	861
SF	87.5	344	1,051
SF	92.5	632	1,194
SF	97.5	1,164	1,359
SF	102.5	1,916	1,513
SF	107.5	2,719	1,491
SF	112.5	2,222	995
SF	117.5	1,375	386
SF	122.5	603	161
SF	127.5	266	118
SF	132.5	98	58
SF	137.5	40	25
SF	142.5	7	4
SF	147.5	6	4
SF	152.5	1	1

#### 4.0 ADDITIONAL ANALYSES

GB	NumMil	BmsMT	SE	MeanWt	Avg. Size	Scallop density	# Tows/Drops, HabCam images annotated
GSC-North							
GSC-Middle							
GSC-South							
Split GSC Total							100 tows
GSC original							

GB	NumMil	BmsMT	SE	MeanWt	Avg. Size	Scallop density	# Tows/Drops, HabCam images annotated
Outer Cape Cod							
EGB Non-SAMS							

	SARC 65 SH/MW	VIMS SH/MW 2016-2021
NLS-South	9,863.43	9,375.19

	No adjustment		Reduced efficiency (*0.13)	
	NumMill	BiomassMT	NumMill	BiomassMT
NLS-South	802,244,531	9,863.43	2,468,444,710	30,349.02

## **5.0 SPECIAL COMMENTS**

### **Recruitment**

Scallops <35 mm observed in our 2020 survey of CA I and II were sampled again in 2021. These scallops have grown into the 35 - 75 mm size class and are distributed along the 50 fathom depth contour throughout the SF, Ext, and Southeast SAMS Areas. Scallops >75 mm were also observed along the 50 fathom depth contour in the SF, Ext, and CAII Southeast SAMS Areas. Very little recruitment was observed in the CAI Sliver SAMS Area in CAI.

For the NL survey, pre-recruits (scallops <35 mm) were observed in the West SAMS Area and scallops ranging in size from 35 - 75 mm were observed in the South and North SAMS Areas. The smaller scallops in the South SAMS Area are not likely new recruits, but the slowest growing scallops from the cohort in this area.

Small scale recruitment was observed throughout the open area in the Mid-Atlantic, mainly in the NYB, LI, and BI SAMS Areas. The highest concentrations of recruits were observed in the HCS SAMS Area around the Gully.

### **Nematode Distribution**

The prevalence and intensity of nematodes present in scallops in the MAB has been monitored by VIMS since 2015. Prevalence is defined as the number of scallops observed to be infected with nematodes out of all scallops sampled for SHMW analysis at the station-level. Intensity is defined as the number of lesions observed in infected scallops. Figures 1 and 2 below illustrate the spatial distribution of the prevalence and intensity of nematode infected scallops observed in the VIMS surveys for 2015 - 2021. The majority of infected scallops have been observed in the southern extent of the resource (VIR, DMV, and the ET SAMS Areas). Since 2016, nematode infected scallops have also been detected in the HCS SAMS Area. From 2016 - 2020, the distribution of infected scallops was patchy and prevalence was low (20 percent or less of scallops are infected) in the HCS SAMS Area. The distribution of infected scallops observed in 2021 was broader in distribution compared to 2019 and 2020 for both prevalence and intensity. The ET Open and ET Flex SAMS Areas were again identified as hot spots with high proportions of infected scallops, as well as the greatest number of lesions observed per scallop. A higher percentage of infected scallops was also observed in the HCS SAMS Area in 2021. The number of infected scallops in the southern portion of the resource area has continued to decline since 2018. This decline may be related to a decline in biomass in the southern portion of the resource. Very few infected scallops were observed in the MAB Nearshore, NYB or the open areas off of LI and BI. No infected scallops were observed in CA I or II. One scallop in the NL South SAMS Area appeared to have a nematode lesion, but no other infected scallops were observed.



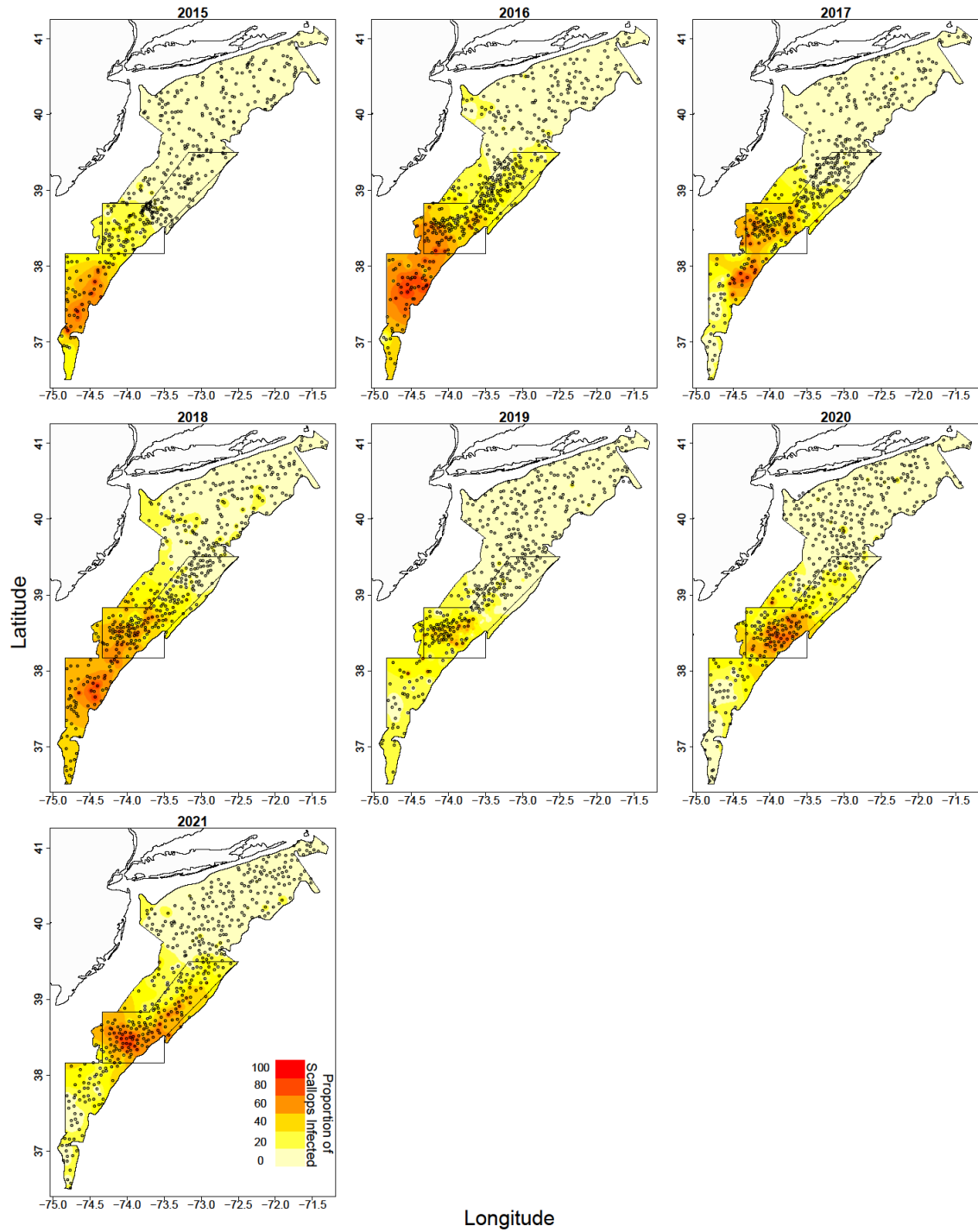


Figure 1. Proportion of nematode infected scallops as a percentage of all scallops assessed during SHMW analysis at the station-level by year for 2015 - 2021 from the VIMS dredge survey.

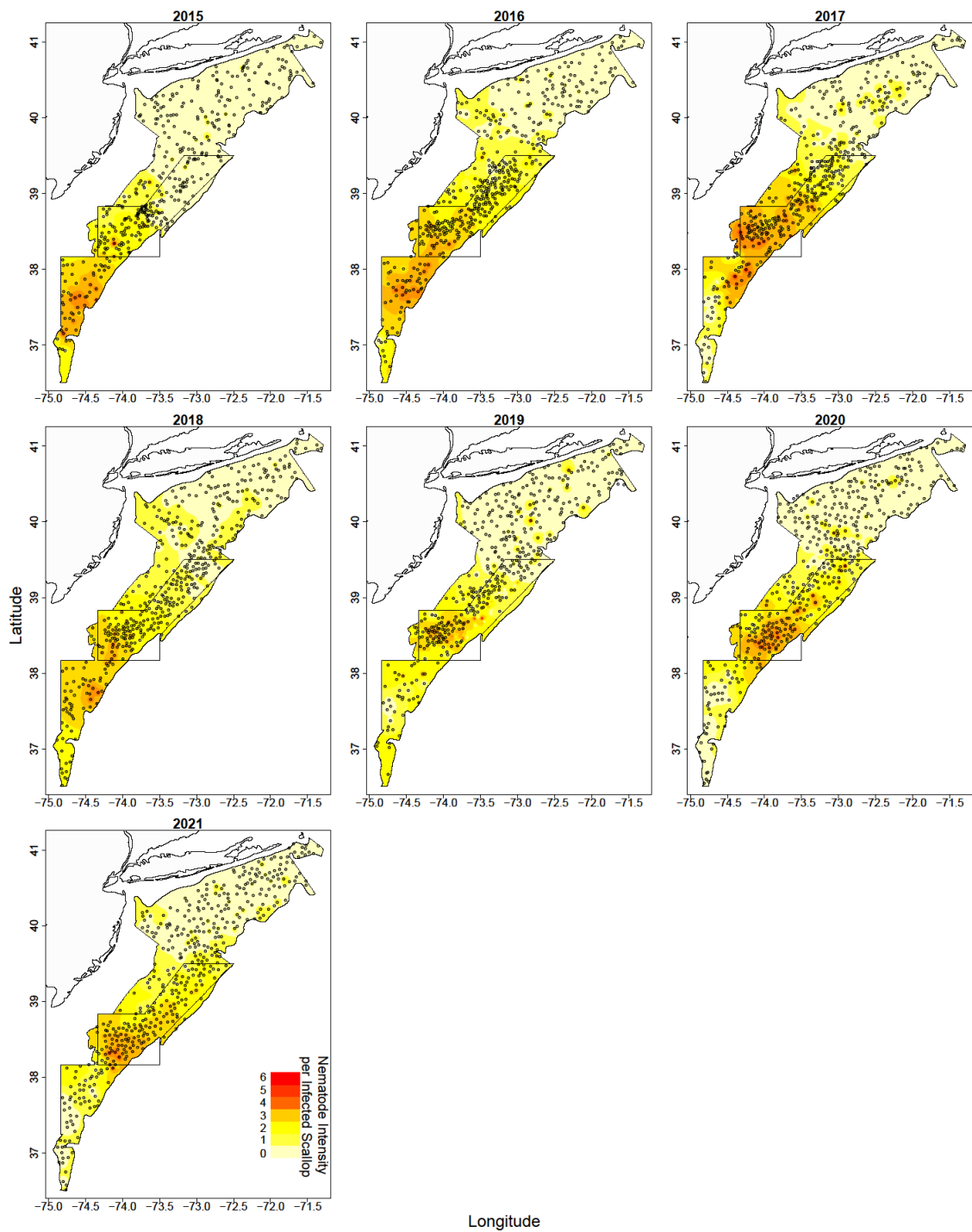


Figure 2. Intensity of nematode lesions observed in infected scallops assessed during SHMW analysis at the station-level by year for 2015 - 2021 from the VIMS dredge survey.

## Shell Blister Disease

The number of scallops with shell blister disease in the MAB has increased in 2020 and 2021. The presence and severity of shell blister disease is documented for all scallops sampled for SHMW analysis. Shell blister disease is given a qualitative code based on the severity of the disease. A code of 4 is given to a scallop with no disease, a code of 3 is considered a mild shell blister, a code of 2 is a more advanced blister, and the most severe code is a code of 1 (Figure 3). Scallops with shell blister disease have been observed in greater numbers in the ET Flex, ET Open, and HCS SAMS Areas in 2020 and 2021 (Figure 4), with almost 30% of scallops assessed showing signs of blister disease in the ET Open SAMS Area in 2021. The increase was also observed in the more northern SAMS Areas (LI and NYB), but the percentage of scallops with shell blister disease was lower at approximately 10%. Scallops with shell blister disease have typically been found in deeper water in the most eastern boundary of the MAB survey domain. These scallops also tend to be larger and older. In 2020, more diseased scallops were documented in the MAAA. This trend continued in 2021, where scallops throughout the ET Flex and ET Open SAMS Areas had shell blister disease, and an increasing number of scallops in the HCS SAMS Area to the west also had blisters (Figure 5). Shell blister disease can impact scallop yield, resulting in a poorer quality scallop meat and lower the SHMW relationship (Figure 6).



Figure 3. Example of a scallop with moderate shell blister disease (code 2).

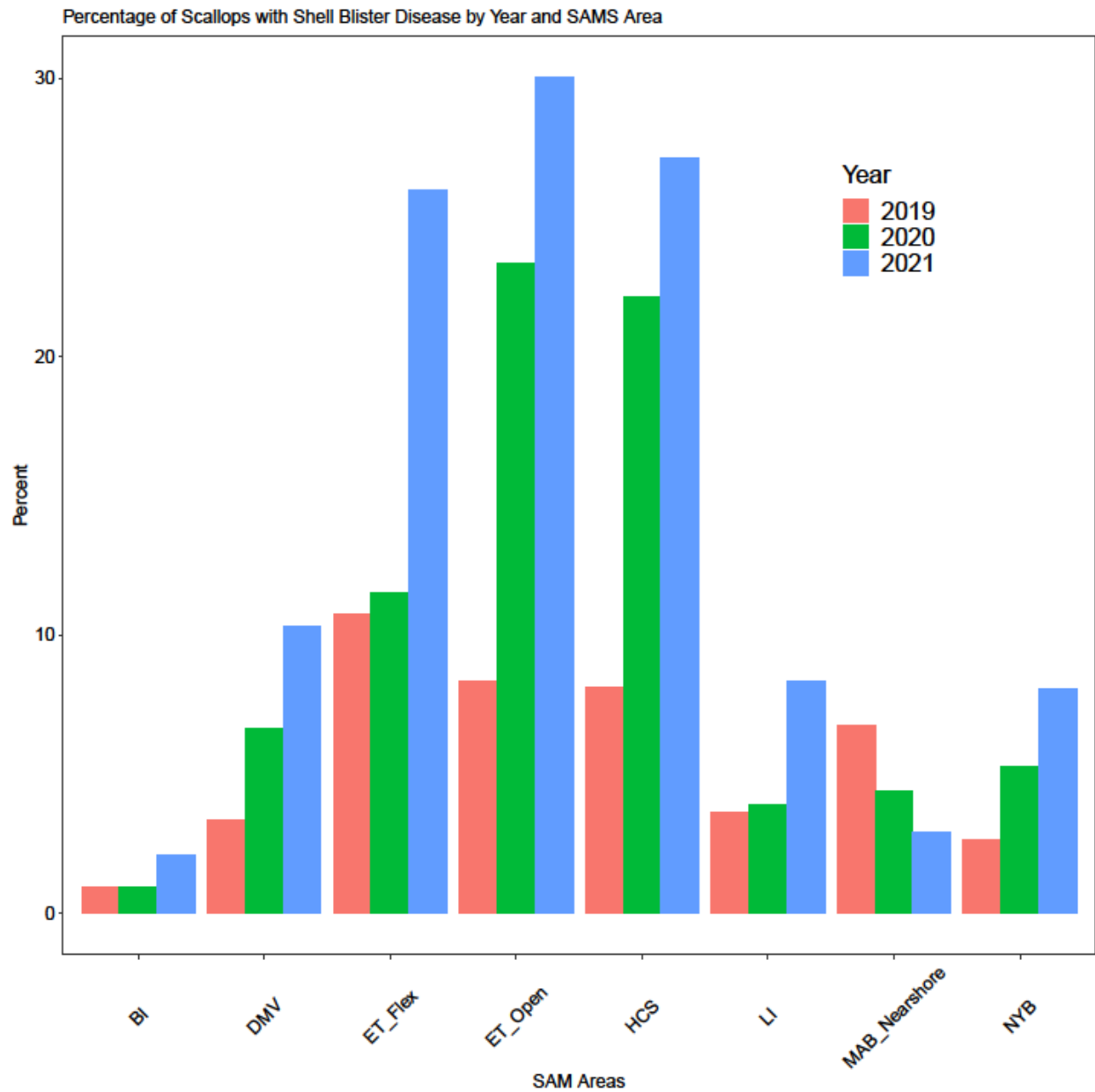


Figure 4. Percentage of scallops with shell blister disease by Year and SAMS Area. Only scallops with a shell blister code of 1-3 are included.

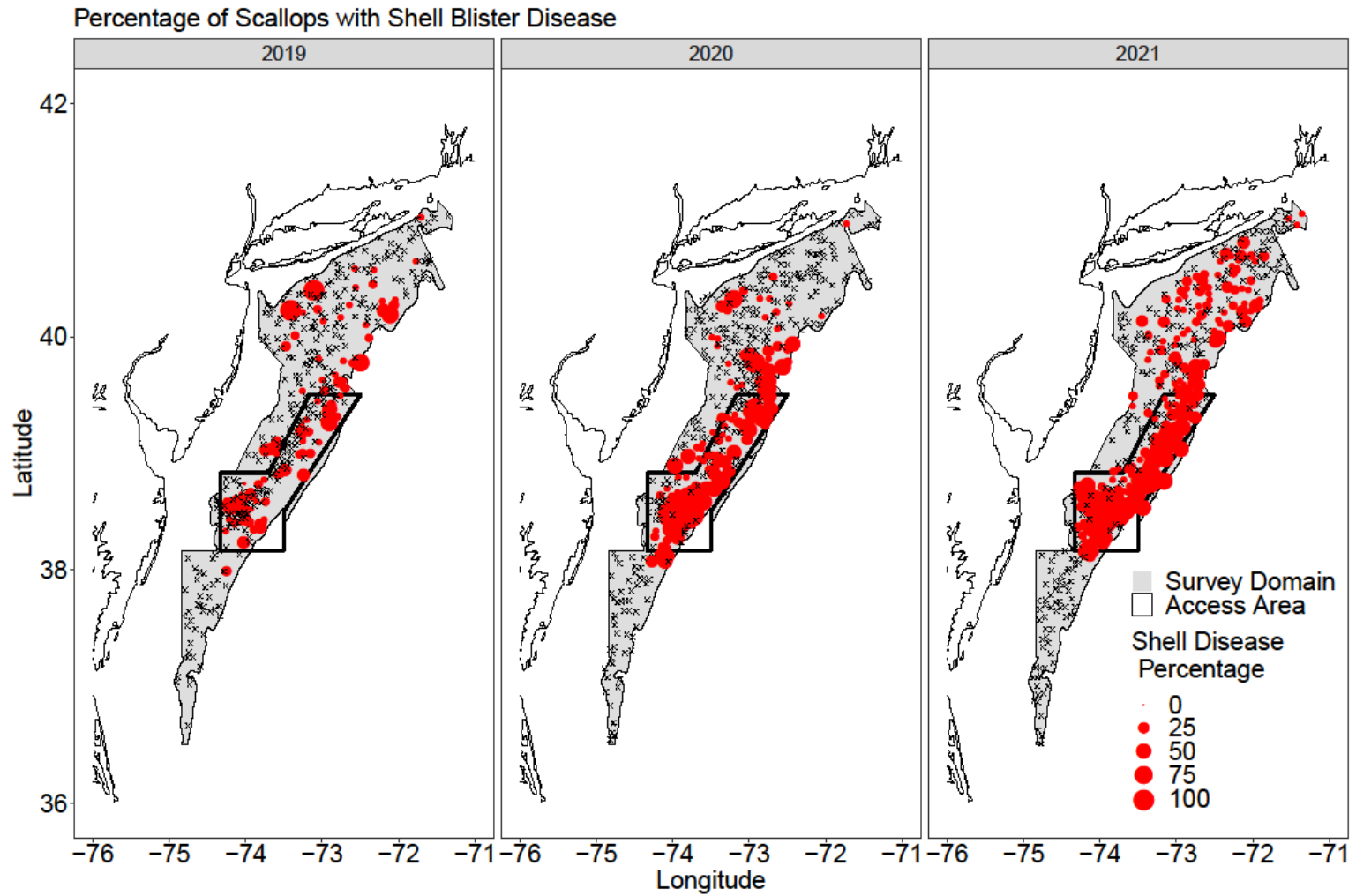


Figure 5. Bubble plots showing the spatial distribution of the percentage of scallops with shell blister disease by Year

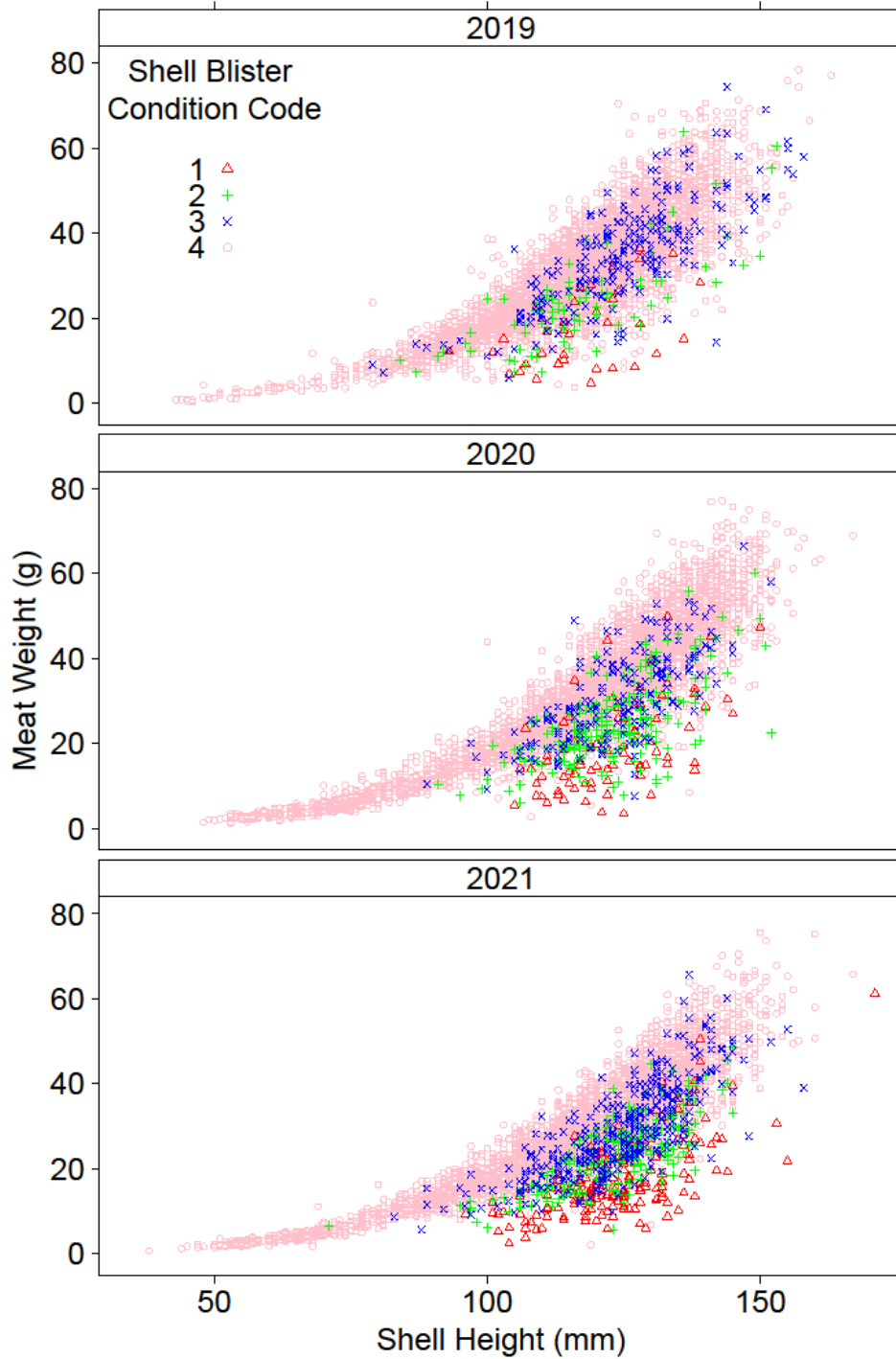


Figure 6. Observed SHMW relationships by Year and shell blister code.

## Biomass in VIR and DMV SAMS Areas

Biomass in the southern portion of the resource continues to decline (Figure 7). Since 2018, we have observed small number of pre-recruits, but these scallops have not persisted to large size classes.

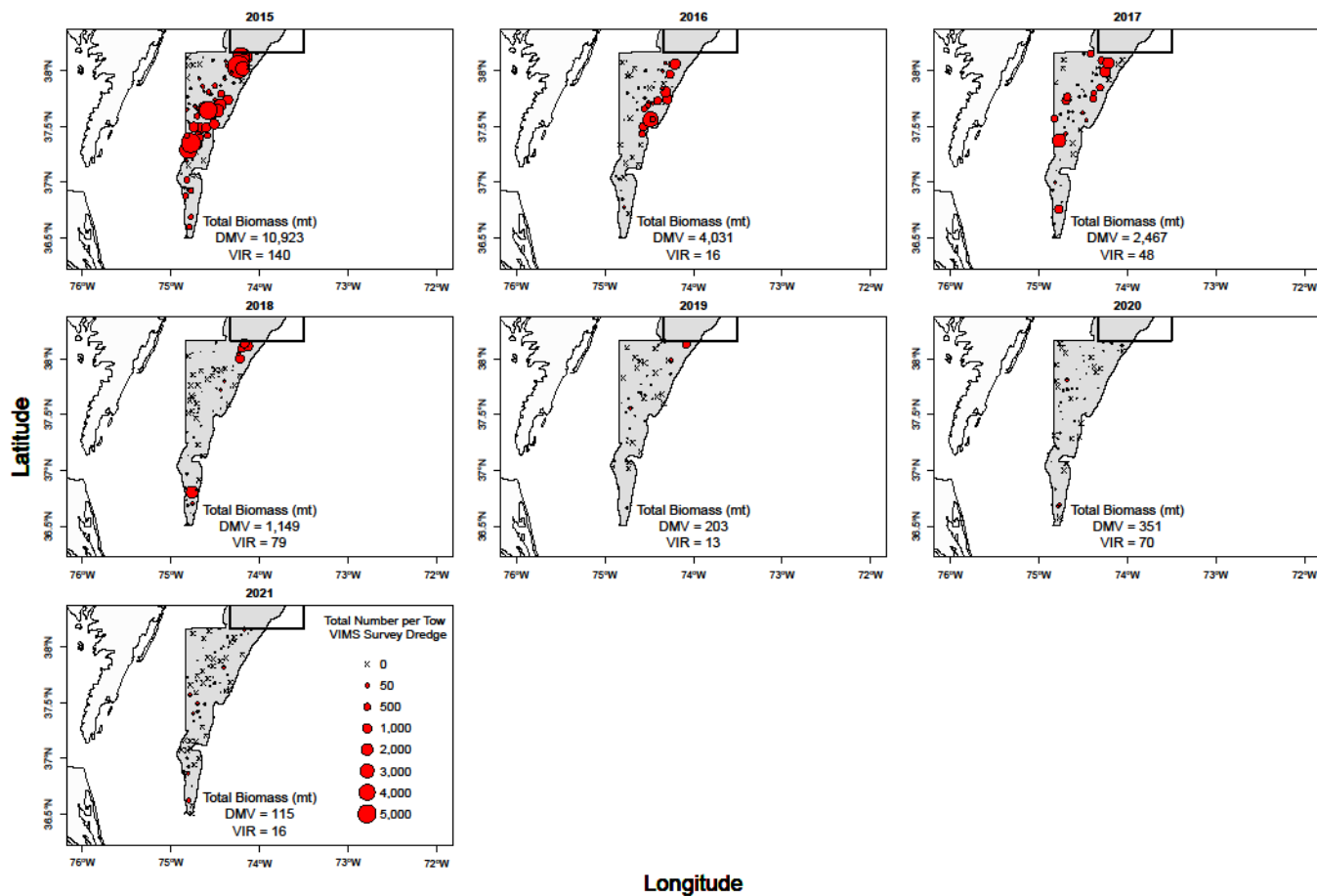


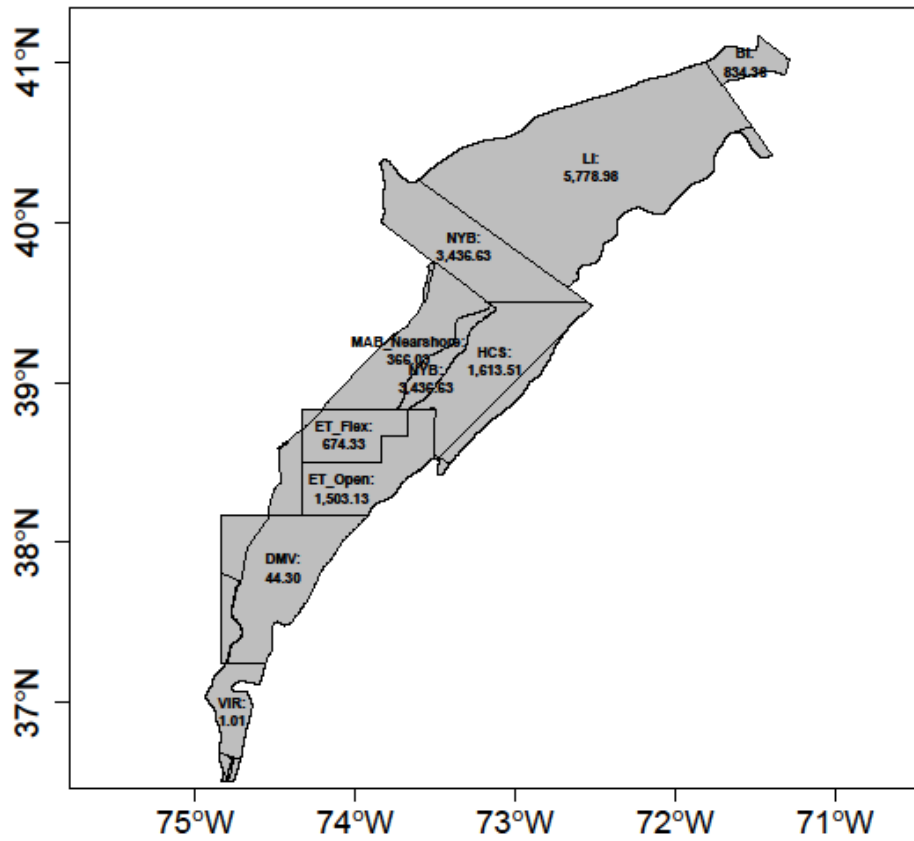
Figure 7. Bubble plots of the spatial distribution of scallops observed in the VIR and DMV SAMS Areas by Year. Total biomass estimates (mt) are also provided for each SAMS Area by Year.

## 6.0 EXPLOITABLE BIOMASS ESTIMATES FOR 2021 (CURRENT FY)

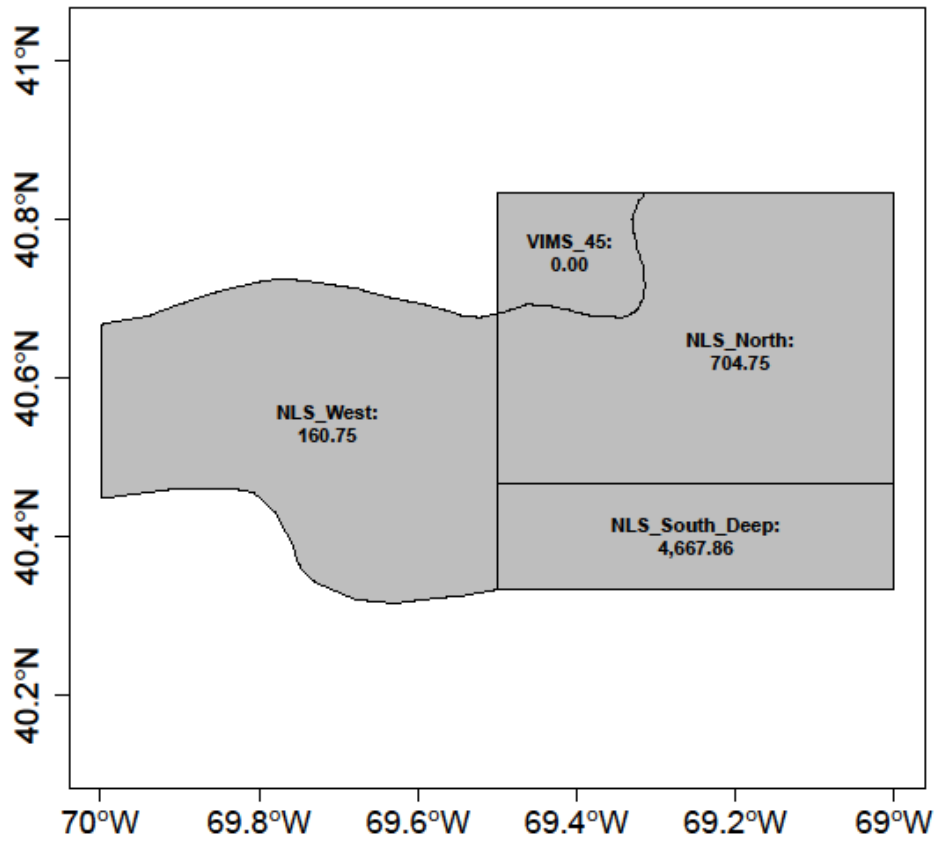
Survey Dredge				
Georges Bank	NumMill	Exploitable BmsMT	SE	MeanWt
CL1-Sliver	18,917,700.62	637.36	44.17	33.22
CL2-Southeast	139,605,779.56	3,493.60	245.94	24.91
CL2-Southwest	286,128,638.85	8,078.71	1,148.75	28.32
CL2-Ext	315,450,607.38	6,995.94	785.03	22.37
NLS-North	17,254,382	704.75	66.91	39.89
NLS-South	348,621,573	4,667.86	1,047.92	13.23
NLS-West	5,301,391	160.75	38.20	30.2
SF	313,796,450.39	6,896.26	908.66	21.98
<b>MidAtlantic</b>				
Block Island	39,052,723.83	834.36	121.02	21.72
Long Island	213,316,961.76	5,778.98	207.64	26.97
NYB	158,543,940.86	3,436.63	234.55	20.95
MA inshore	11,722,480.20	366.03	36.81	31.25
HCS	61,841,076.81	1,613.51	77.42	26.23
ET Open	51,882,905.31	1,503.13	60.54	29.72
ET Flex	21,483,637.31	674.33	54.31	31.51
DMV	2,220,777.65	44.30	12.32	21.01
VIR	201,368.78	1.01	0.16	5.01



# 2021 MAB Survey



2021 NL Survey



# 2021 CAI II Survey

