

# **Summary of Data from 2015, 2016 and 2017 Herring Acoustic Surveys in the Northwest Atlantic Fisheries Organization Divisions 4VWX**

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## **Canadian Data Report of Fisheries and Aquatic Sciences 1299**



## **Canadian Data Report of Fisheries and Aquatic Sciences**

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## **ABSTRACT**

Singh, R, MacIntyre, A., Munden, J., Clay A., Knox, D., and Melvin, G. 2019. Summary of data from 2015, 2016 and 2017 Herring acoustic surveys in the Northwest Atlantic Fisheries Organization Divisions 4VWX. Can. Data Rep. Fish. Aquat. Sci.1299: iv + 68 p.

Automated acoustic recording systems were deployed on commercial fishing vessels to document the distribution and relative abundance of Atlantic Herring from industry vessel surveys and fishing excursions in the Bay of Fundy and coastal Nova Scotia area within Northwest Atlantic Fisheries Organization (NAFO) divisions 4VWX. During the years, 2015-2017, regularly scheduled surveys at approximately 14 day intervals were conducted on the main Herring spawning components, and the spawning stock biomass for each component estimated by summing these results. Within the Southwest Nova Scotia/Bay of Fundy area, structured surveys were conducted in Scots Bay, German Bank, Trinity Ledge and Spectacle Buoy areas. In the coastal Nova Scotia area, structured surveys were conducted in the Little Hope/Port Mouton and Halifax/Eastern Shore areas. No survey was completed in Glace Bay during the 2015-2017 period. This report summarizes the acoustic data outputs that were obtained from the analyses of the recorded acoustic data for the three years.

## **RÉSUMÉ**

Singh, R, MacIntyre, A., Munden, J., Clay A., Knox, D., and Melvin, G. 2019. Summary of data from 2015, 2016 and 2017 Herring acoustic surveys in the Northwest Atlantic Fisheries Organization Divisions 4VWX. Can. Data Rep. Fish. Aquat. Sci.1299: iv + 68 p.

Des systèmes d'enregistrement acoustiques automatiques ont été installés à bord des bateaux de pêche commerciaux pour documenter la répartition et l'abondance relative du hareng de l'Atlantique au cours de relevés de l'industrie et de sorties de pêche effectués dans la baie de Fundy et la région côtière de la Nouvelle-Écosse à l'intérieur des divisions 4VWX de l'Organisation des pêches de l'Atlantique Nord-Ouest (OPANO). Entre 2015 et 2017, on a effectué, à environ 14 jours d'intervalle, des relevés des principales composantes de reproducteurs du hareng et on a ensuite évalué la biomasse du stock reproducteur de chaque composante en additionnant les résultats obtenus. Dans la région du sud-ouest de la Nouvelle-Écosse et de la baie de Fundy, des relevés structurés ont été effectués dans les secteurs de la baie Scots, du banc German, du récif de la Trinité et de la zone de la bouée Spectacle. Dans la région côtière de la Nouvelle-Écosse, des relevés structurés ont été effectués dans les zones de Little Hope/Port Mouton et de Halifax/côte est. Aucun relevé n'a été effectué à Glace Bay au cours de la période 2015 à 2017. Le présent rapport résume les données acoustiques qui ont été obtenues à partir de l'analyse des données acoustiques enregistrées pour les trois années.

## **BACKGROUND**

Since 1997, the spawning stock biomass (SSB) of Northwest Atlantic Fisheries Organization (NAFO) divisions 4WX Atlantic Herring has been estimated using acoustic surveys conducted by the fishing industry (Stephenson et al. 1998; Power and Melvin 2010). Each year, commercial fishing vessels equipped with calibrated acoustic logging systems undertake both scheduled and unscheduled surveys of herring aggregations on the spawning grounds. The estimates for individual spawning areas are summed, under specific assumptions about elapsed time between surveys, to provide an annual index of SSB for assessment processes. The purpose of this document is to summarize the NAFO divisions 4VWX Atlantic Herring acoustic surveys data collected during 2015, 2016 and 2017.

## **METHODS**

Data from the 2015, 2016 and 2017 fishing seasons were obtained during regularly scheduled structured surveys. Structured surveys included mapping and/or acoustic surveys (Melvin et al. 2001); however, only acoustic surveys were used to determine the biomass estimates for the three reporting years (2015 to 2017). Structured surveys were conducted in accordance with the protocol established by Melvin and Power (1999), and completed transects provided appropriate coverage of the defined spawning survey areas. Detailed descriptions of each of the individual surveys are summarised in Singh et al. (2019). Only the outputs from the analyses are presented in this report.

## **RESULTS**

The data are presented in tables 1-86.

## **ACKNOWLEDGEMENTS**

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## TABLES

*Table 1. Scots Bay acoustic survey (#1) on June 27, 2015, using sample Target Strength (TS) from fishery samples on June 28 & 29, 2015. Sa = Area backscattering coefficient ;SE = Standard Error.*

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main box	35.4487	728	-44.9092	0.1164	82,428	24,799	30%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main_box	C100_T02	43.7650	-35.4487	-43.1994	0.1679
	C100_T01	37.2833	-35.4487	-50.3583	0.0323
	BP_T01	45.3747	-35.4487	-42.8086	0.1837
	BP_T02	37.1966	-35.4487	-46.8031	0.0732
	ME_T01	45.6133	-35.4487	-56.0952	0.0086
	ME_T02	38.0348	-35.4487	-48.5031	0.0495
	LM_T01	40.2126	-35.4487	-40.8756	0.2866
	LM_T02	46.8923	-35.4487	-61.8266	0.0023
	LJ_T01	47.9524	-35.4487	-53.7882	0.0147
	LJ_T02	41.0979	-35.4487	-39.9830	0.3520
	MS_T01	40.9258	-35.4487	-42.5677	0.1941
	MS_T02	50.1539	-35.4487	-50.3457	0.0324

Table 2. Scots Bay acoustic survey (#2) on July 11, 2015, using sample Target Strength (TS) from fishery samples on July 13 & 14, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main box	-35.3110	688	-45.7217	0.0937	62,598	13,636	22%
Eastern Area	-35.3110	128	-43.5790	0.1346	19,075	9,137	48%
Total	-35.3110	816	-45.3065	0.1001	81,672	16,414	20%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main_box	BP_T01	45.9364	-35.3114	-43.2833	0.1595
	BP_T02	37.5341	-35.3114	-45.5574	0.0945
	ME_T01	46.3841	-35.3114	-47.4691	0.0608
	ME_T02	39.4875	-35.3114	-45.0113	0.1072
	LM_T01	46.4464	-35.3114	-49.6668	0.0367
	LM_T02	37.0885	-35.3114	-47.2556	0.0639
	SLII_T01	45.5422	-35.3114	-52.2745	0.0201
	SLII_T02	38.2536	-35.3114	-45.9757	0.0858
	DV_T01	49.5279	-35.3114	-49.5456	0.0377
	DV_T02	42.1119	-35.3114	-42.8594	0.1759
	LB_T01	48.8975	-35.3114	-49.8045	0.0355
	LB_T02	39.8777	-35.3114	-41.3917	0.2466
Eastern Box	C100_T01	12.1826	-35.3114	-54.9976	0.0107
	C100_T02	14.2043	-35.3114	-51.7088	0.0229
	C100_T03	16.3190	-35.3114	-40.4662	0.3052
	C100_T04	18.2920	-35.3114	-42.3070	0.1997

Table 3. Scots Bay acoustic survey (#3) on July 25, 2015, using sample Target Strength (TS) from fishery samples on July 26 & 27, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main box	-35.6250	693	-48.1982	0.0595	38,318	10,381	27%
Eastern Area	-35.6250	112	-57.6314	0.0060	706	243	34%
Northern Area	-35.6250	75	-51.0156	0.0282	2,168	542	25%
Total	-35.6250	880	-48.6346	0.0500	41,192	10,398	25%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main box	DV_T01	49.4231	-35.6249	-56.6524	0.0079
	DV_T02	42.2078	-35.6249	-46.9104	0.0744
	MS_T01	47.1168	-35.6249	-53.5705	0.0160
	MS_T02	40.7067	-35.6249	-46.0268	0.0912
	SH_T01	46.5737	-35.6249	-58.9658	0.0046
	SH_T02	39.2565	-35.6249	-44.2819	0.1362
	LJ_T01	45.5687	-35.6249	-57.0378	0.0072
	LJ_T02	38.8849	-35.6249	-45.6948	0.0984
	SLII_T01	44.1167	-35.6249	-52.1576	0.0222
	SLII_T02	37.0340	-35.6249	-47.0741	0.0716
	ME_T01	42.6468	-35.6249	-50.4973	0.0326
	ME_T02	35.8632	-35.6249	-43.8246	0.1514
Eastern Box	C100_T01	12.1317	-35.6249	-79.1030	0.0000
	C100_T02	14.4195	-35.6249	-55.4337	0.0105
	C100_T03	16.3457	-35.6249	-57.5683	0.0064
	C100_T04	18.1161	-35.6249	-57.1107	0.0071
Northern Box	BP_T01	18.3884	-35.6249	-50.8318	0.0302
	BP_T02	17.1499	-35.6249	-48.8239	0.0479
	BP_T03	15.8782	-35.6249	-53.1637	0.0176
	BP_T04	14.3548	-35.6249	-53.2921	0.0171

Table 4. Scots Bay acoustic survey (#4) on August 8, 2015, using sample Target Strength (TS) from fishery samples on August 9 & 11, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main box	-35.6402	732	-49.3434	0.0424	31,203	8,737	28%
Eastern Area	-35.6402	121	-54.8689	0.0091	1,586	842	58%
Northern Area	-35.6402	79	-52.6130	0.0204	1,445	214	14%
Total	-35.6402	932	-50.0566	0.0362	34,234	8,780	26%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main box	DV_T01	47.2400	-35.6402	-64.7738	0.0012
	DV_T02	40.1000	-35.6402	-49.2290	0.0438
	MS_T01	48.1760	-35.6402	-64.4083	0.0013
	MS_T02	41.3360	-35.6402	-48.8497	0.0478
	ME_T01	44.7739	-35.6402	-45.6296	0.1002
	ME_T02	40.5373	-35.6402	-49.3797	0.0423
	LB_T01	46.1381	-35.6402	-45.5422	0.1023
	LB_T02	39.3751	-35.6402	-50.8250	0.0303
	LJ_T01	45.3805	-35.6402	-58.7097	0.0049
	LJ_T02	37.5343	-35.6402	-52.0841	0.0227
Eastern Box	LM_T01	42.3512	-35.6402	-45.1771	0.1113
	LM_T02	37.5414	-35.6402	-72.0449	0.0002
	BP_T03	15.9004	-35.6402	-51.9067	0.0236
	BP_T04	15.3112	-35.6402	-51.9454	0.0234
Northern Box	C100_T01	12.1905	-35.6402	-67.0453	0.0007
	C100_T02	14.1919	-35.6402	-66.3160	0.0009
	C100_T03	16.6076	-35.6402	-58.6822	0.0050
	C100_T04	23.0573	-35.6402	-50.9087	0.0297

Table 5. Scots Bay acoustic survey (#5) on August 22, 2015, using sample Target Strength (TS) from fishery samples on August 24 & 25, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main_box	-35.688	654	-49.1569	0.0435	29,424	11,893	40%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main_box	MS_T01	48.1105	-35.6881	-66.3749	0.0009
	MS_T02	41.7692	-35.6881	-51.5612	0.0259
	SLII_T01	46.6173	-35.6881	-42.6840	0.1997
	SLII_T02	40.0783	-35.6881	-48.6505	0.0506
	ME_T01	44.3954	-35.6881	-51.0029	0.0294
	ME_T02	37.7014	-35.6881	-51.2591	0.0277
	C100_T01	44.3527	-35.6881	-57.6118	0.0064
	C100_T02	37.5390	-35.6881	-54.9951	0.0117
	BP_T01	42.1087	-35.6881	-48.3375	0.0543
BP_T02	36.3218	-35.6881	-51.1654	0.0283	

Table 6. Scots Bay acoustic survey (#6) on September 8, 2015, using sample Target Strength (TS) from fishery samples on September 10 & 13, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main_box	-35.489	673	-51.6616	0.0251	16,245	5,298	33%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main_box	BP_T01	42.1087	-35.4886	-48.3375	0.0519
	BP_T02	36.3218	-35.4886	-51.1654	0.0271
	C100_T01	46.0910	-35.4886	-59.8947	0.0036
	C100_T02	38.5808	-35.4886	-51.5646	0.0247
	ME_T01	47.9379	-35.4886	-59.8168	0.0037
	ME_T02	40.0306	-35.4886	-49.4823	0.0399

Table 7. German Bank acoustic survey (#1) on August 17, 2015, using sample Target Strength (TS) from fishery samples on August 17 & 18, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.6253	843	-57.6612	0.0061	16,156	9,376	58%

  

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	SLII_T01	36.6816	-35.6119	-59.3913	0.0042
	SLII_T02	36.9758	-35.6119	-60.1081	0.0036
	LJ_T01	36.2566	-35.6119	-58.5905	0.0050
	LJ_T02	37.2638	-35.6119	-63.0417	0.0018
	MS_T01	37.1240	-35.6119	-43.1254	0.1773
	MS_T02	36.7893	-35.6119	-64.3635	0.0013
	LB_T01	38.4986	-35.6119	-47.7818	0.0607
	LB_T02	37.6576	-35.6119	-59.0016	0.0046
	SH_T01	37.0837	-35.6119	-56.2858	0.0086
	SH_T02	36.5514	-35.6119	-60.9302	0.0029
	TM_T01	37.4296	-35.7192	-61.9060	0.0024
	TM_T02	37.4689	-35.7192	-59.3595	0.0043
	DV_T01	37.5772	-35.6119	-57.4743	0.0065
	DV_T02	37.0385	-35.6119	-57.9629	0.0058
	LM_T01	37.7275	-35.6119	-55.9734	0.0092
	LM_T02	37.3339	-35.6119	-57.2833	0.0068

Table 8. German Bank acoustic survey (#2) on September 1, 2015, using sample Target Strength (TS) from fishery samples on September 1 & 2, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.3764	805	-50.9930	0.0282	64,219	27,219	42%

  

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	SH_T01	36.9922	-35.3764	-57.6927	0.0059
	SH_T02	36.6864	-35.3764	-54.1497	0.0133
	LJ_T01	36.9817	-35.3764	-58.1940	0.0052
	LJ_T02	37.2399	-35.3764	-51.5924	0.0239
	MS_T01	36.5967	-35.3764	-38.6556	0.4700
	MS_T02	37.5921	-35.3764	-60.6110	0.0030
	LB_T01	38.2526	-35.3764	-52.3171	0.0202
	LB_T02	37.6743	-35.3764	-42.2886	0.2036
	SLII_T01	36.8140	-35.3764	-46.9907	0.0690
	SLII_T02	36.8486	-35.3764	-46.3519	0.0799
	DV_T01	38.1457	-35.3764	-44.8919	0.1118
	DV_T02	37.3300	-35.3764	-58.4118	0.0050
	LM_T01	37.7646	-35.3764	-45.2454	0.1031
	LM_T02	37.2451	-35.3764	-56.5094	0.0077

Table 9. German Bank acoustic survey (#3) on September 13, 2015, using sample Target Strength (TS) from fishery samples on September 14 & 15, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.4146	816	-47.3066	0.0631	52,782	29,766	56%

  

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	SH_T01	36.9687	-35.4146	-58.1212	0.0054
	SH_T02	36.9949	-35.4146	-58.4643	0.0050
	LJ_T01	37.4659	-35.4146	-44.2819	0.1298
	LJ_T02	37.4336	-35.4146	-59.3005	0.0041
	MS_T01	37.0395	-35.4146	-52.1481	0.0212
	MS_T02	37.0268	-35.4146	-60.1598	0.0034
	LB_T01	38.9625	-35.4146	-38.2710	0.5180
	LB_T02	37.9295	-35.4146	-60.2519	0.0033
	SLII_T01	36.9748	-35.4146	-49.7749	0.0366
	SLII_T02	36.3341	-35.4146	-56.3535	0.0081
	DV_T01	38.5238	-35.4146	-45.5638	0.0966
	DV_T02	37.7555	-35.4146	-55.9240	0.0089
	LM_T01	37.8018	-35.4146	-49.8735	0.0358
	LM_T02	37.6024	-35.4146	-56.8298	0.0072



Table 10. German Bank acoustic survey (#5) on September 27, 2015, using sample Target Strength (TS) from fishery samples on September 28, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.1587	645	-51.9042	0.0229	39,242	17,880	46%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	SH_T01	36.9923	-35.1587	-57.2682	0.0062
	SH_T02	36.6922	-35.1587	-57.7736	0.0055
	LJ_T01	37.3812	-35.1587	-51.9758	0.0208
	LJ_T02	36.9574	-35.1587	-43.8735	0.1344
	MS_T01	37.0206	-35.1587	-58.4255	0.0047
	MS_T02	37.0791	-35.1587	-58.1975	0.0050
	LB_T01	38.6964	-35.1587	-55.4475	0.0094
	LB_T02	37.9240	-35.1587	-55.5294	0.0092
	SLII_T01	35.3074	-35.1587	-53.1485	0.0159
	SLII_T02	36.4160	-35.1587	-55.9542	0.0083
	DV_T01	38.3051	-35.1587	-39.2601	0.3889
	DV_T02	38.3062	-35.1587	-45.6069	0.0902
	LM_T01	37.9490	-35.1587	-45.1629	0.0999
	LM_T02	37.3803	-35.1587	-49.0356	0.0410

Table 11. German Bank acoustic survey (#6) on October 5, 2015, using sample Target Strength (TS) from fishery samples on October 6, 2015.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.0619	651	-48.7201	0.0436	28,039	16,064	57%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	SLII_T01	41.1461	-35.0619	-54.5556	0.0112
	SLII_T02	36.1569	-35.0619	-57.8629	0.0052
	MS_T01	37.1825	-35.0619	-53.2456	0.0152
	MS_T02	37.1590	-35.0619	-59.7674	0.0034
	LB_T01	40.7636	-35.0619	-57.1604	0.0062
	LB_T02	38.3810	-35.0619	-40.4365	0.2901
	LJ_T01	42.1126	-35.0619	-54.0491	0.0126
	LJ_T02	37.8696	-35.0619	-43.8386	0.1325
	DV_T01	41.8539	-35.0619	-52.5604	0.0178
	DV_T02	37.3499	-35.0619	-59.6569	0.0035
	LM_T01	41.6959	-35.0619	-51.3241	0.0236
	LM_T02	37.6668	-35.0619	-62.0468	0.0020

Table 12. German Bank acoustic survey (#7) on October 12, 2015, using the standard Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.5100	714	-58.0367	0.0056	3,990	1,110	28%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	SH_T01	37.0328	-35.5100	-60.4802	0.0032
	SH_T02	36.4749	-35.5100	-62.0882	0.0022
	SLII_T01	36.9412	-35.5100	-60.6688	0.0030
	SLII_T02	36.4641	-35.5100	-64.2142	0.0013
	MS_T01	36.6734	-35.5100	-63.9017	0.0014
	MS_T02	37.0644	-35.5100	-64.4804	0.0013
	LB_T01	38.7277	-35.5100	-60.5651	0.0031
	LB_T02	37.9995	-35.5100	-59.3613	0.0041
	LJ_T01	No data	No data	No data	No data
	LJ_T02	37.0511	-35.5100	-61.4521	0.0025
	DV_T01	38.1254	-35.5100	-54.0920	0.0139
	DV_T02	37.4960	-35.5100	-58.1665	0.0054
	LM_T01	37.8702	-35.5100	-54.7853	0.0118
	LM_T02	36.8741	-35.5100	-52.7362	0.0189

Table 13. Trinity Ledge acoustic survey (#2) on September 11, 2015, using the standard Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Trinity Ledge	-35.9590	0.67	-36.0425	1.06819	657	332	51%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Trinity Ledge	W415800	0.7404	-35.9590	-32.9771	1.9870
	W415801	0.8297	-35.9590	-33.3235	1.8346
	W415802	0.7192	-35.9590	-39.4186	0.4509
	W415803	1.0930	-35.9590	-71.3467	0.0003

Table 14. Little Hope acoustic survey (#1) on September 24, 2015. One multipanel gillnet sample from September 24 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.9890	13.77	-40.6669	0.3448	4,690	1,016	22%
Tr01	-35.9890	0.78	-36.6696	0.9305	667	440	66%
Tr02	-35.9890	1.47	-38.1649	0.5893	891	344	39%
Tr03	-35.9890	1.00	-42.7501	0.1922	211	59	28%
Tr04	-35.9890	1.58	-43.7911	0.1570	262	63	24%
Little Hope	-35.9890	18.60	-40.3714	0.3645	6,720	355	5%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	E415800H	1.1279	-35.9890	-41.5475	0.2781
	E415801H	1.8455	-35.9890	-41.5732	0.2764
	E415802H	2.5120	-35.9890	-40.8510	0.3264
	E415803H	2.5439	-35.9890	-39.5906	0.4364
	E415804H	3.4934	-35.9890	-41.3771	0.2892
	E415805H	2.8136	-35.9890	-42.8238	0.2073
	E415806H	2.8257	-35.9890	-40.8298	0.3280
	E415807H	2.1793	-35.9890	-36.5554	0.8777
Tr01	A515800H	0.5258	-35.9890	-46.6591	0.0857
	A515801H	0.6828	-35.9890	-40.5887	0.3468
	A515802H	0.5937	-35.9890	-42.4824	0.2242
	A515803H	0.4922	-35.9890	-31.0447	3.1220
	A515804H	0.5393	-35.9890	-36.5751	0.8737
Tr02	A515505H	0.6653	-35.9890	-45.6738	0.1075
	A515806H	0.7168	-35.9890	-49.0511	0.0494
	A515807H	0.7788	-35.9890	-45.7800	0.1049
	A515808H	0.8426	-35.9890	-39.9148	0.4050
	A515809H	0.8735	-35.9890	-33.0884	1.9501
	A515810H	0.6193	-35.9890	-39.5052	0.4450
	A515811H	0.6810	-35.9890	-39.5045	0.4451
Tr03	A515812H	0.5406	-35.9890	-35.1716	1.2071
	A515813H	0.6751	-35.9890	-55.0653	0.0124
	A515814H	0.6991	-35.9890	-44.3281	0.1466
	A515815H	1.0481	-35.9890	-40.9627	0.3181
	A515816H	0.9490	-35.9890	-40.8710	0.3249
	A515817H	0.8090	-35.9890	-43.9763	0.1590
Tr04	A515818H	0.4927	-35.9890	-46.4987	0.0889
	A515819H	1.0227	-35.9890	-44.7868	0.1319
	A515820H	1.4344	-35.9890	-46.5851	0.0872
	A515821H	1.2548	-35.9890	-40.5585	0.3492
	A515822H	1.2993	-35.9890	-43.8981	0.1618
A515823H	0.9086	-35.9890	-45.0991	0.1227	

Table 15. Little Hope acoustic survey (#2) on October 7, 2015. One multipanel gillnet sample from October 9 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.9370	23.83	-39.0872	0.6853	11,537	8,973	78%
Tr01	-35.9370	1.57	-33.2990	1.7782	2,882	2,162	75%
Tr02	-35.9370	4.45	-39.7323	0.4183	1,857	121	6%
Little Hope	-35.9370	29.85	-37.4674	0.7030	16,276	9,231	57%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	E415800H	2.0934	-35.9370	-41.7755	0.2607
	E415801H	1.9256	-35.9370	-45.5211	0.1101
	E415802H	1.6627	-35.9370	-38.1660	0.5985
	E415803H	1.8751	-35.9370	-35.7677	1.0398
	E415804H	2.0353	-35.9370	-28.2406	5.8836
	E415805H	2.1371	-35.9370	-41.4518	0.2809
	E415806H	2.5877	-35.9370	-40.9334	0.3165
	E415807H	6.3030	-35.9370	-39.4138	0.4491
	E415808H	6.5820	-35.9370	-40.3995	0.3579
	E415809H	7.0304	-35.9370	-43.2000	0.1878
	E415810H	7.0144	-35.9370	-43.0096	0.1962
	E415811H	5.1826	-35.9370	-44.3364	0.1446
	E415812H	4.8165	-35.9370	-42.2139	0.2357
	E415813H	4.2393	-35.9370	-44.5313	0.1382
E415814H	1.4542	-35.9370	-46.8767	0.0805	
Tr01	A515800H	0.8896	-35.9370	-44.1819	0.1498
	A515801H	0.9433	-35.9370	-42.2835	0.2319
	A515802H	1.0056	-35.9370	-44.7808	0.1305
	A515803H	1.0030	-35.9370	-34.2315	1.4810
	A515804H	1.0144	-35.9370	-26.6034	8.5774
	A515805H	1.0107	-35.9370	-45.9888	0.0988
Tr02	A515807H	1.9043	-35.9370	-42.4209	0.2247
	A515808H	1.9394	-35.9370	-39.3560	0.4551
	A515809H	2.0208	-35.9370	-39.4781	0.4425
	A515810H	1.8494	-35.9370	-39.2481	0.4665
	A515811H	1.8992	-35.9370	-40.1528	0.3788
	A515812H	1.6654	-35.9370	-39.8207	0.4089
	A515813H	1.8238	-35.9370	-39.2778	0.4634
	A515814H	1.7405	-35.9370	-38.9028	0.5051
A515815H	0.8547	-35.9370	-39.7083	0.4196	

Table 16. Little Hope acoustic survey (#3) on October 18, 2015. One multipanel gillnet sample from October 17 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-36.0260	21.83	-38.7889	0.5107	11,555	1,914	17%
Tr01	-36.0260	3.06	-28.9157	4.9119	15,731	4,010	25%
Tr02	-36.0260	1.34	-33.8072	1.6121	2,239	1,295	58%
Tr03	-36.0260	9.99	-41.8088	0.2476	2,644	422	16%
Little Hope	-36.0260	36.22	-36.7281	0.8507	32168	4647	14%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	E415800H	2.0032	-36.0260	-47.6187	0.0693
	E415801H	3.1212	-36.0260	-42.0220	0.2514
	E415802H	2.8386	-36.0260	-41.0142	0.3171
	E415803H	3.4935	-36.0260	-41.4699	0.2855
	E415804H	3.9465	-36.0260	-37.2450	0.7553
	E415805H	3.8146	-36.0260	-37.7862	0.6668
	E415806H	4.3317	-36.0260	-33.9488	1.6133
	E415807H	4.5409	-36.0260	-37.1314	0.7753
	E415808H	5.5126	-36.0260	-36.8598	0.8253
	E415809H	5.5646	-36.0260	-41.2274	0.3019
	E415810H	5.8133	-36.0260	-41.6837	0.2718
	E415811H	6.9446	-36.0260	-40.5805	0.3504
	E415812H	6.9538	-36.0260	-38.5960	0.5534
	E415813H	7.1972	-36.0260	-40.3586	0.3688
	E415814H	2.3256	-36.0260	-38.5442	0.5600
	E415815H	2.4944	-36.0260	-38.6195	0.5504
E415816H	2.0588	-36.0260	-43.8248	0.1660	
TR01	A515800H	0.9678	-36.0260	-40.4997	0.3570
	A515801H	1.4341	-36.0260	-28.8199	5.2555
	A515802H	1.8906	-36.0260	-25.6952	10.7914
	A515803H	2.2899	-36.0260	-28.6341	5.4851
	A515804H	2.4037	-36.0260	-35.1201	1.2319
	A515805H	2.3459	-36.0260	-27.8486	6.5726
TR02	A515806H	2.1530	-36.0260	-29.3143	4.6900
	A515808H	0.7745	-36.0360	-28.5000	5.6702
	A515809H	0.6675	-36.0360	-30.7636	3.3669
	A515810H	0.7047	-36.0360	-41.9926	0.2537
	A515811H	0.6881	-36.0360	-45.6326	0.1097
	A515812H	0.7311	-36.0360	-44.5462	0.1409
TR03	A515813H	0.6749	-36.0360	-44.8610	0.1311
	A515815H	2.9808	-36.0360	-45.3190	0.1180
	A515816H	3.1924	-36.0360	-44.9150	0.1294
	A515817H	3.0317	-36.0360	-41.7719	0.2669
	A515818H	3.1959	-36.0360	-40.1573	0.3871
	A515819H	4.4997	-36.0360	-39.8844	0.4122
	A515820H	4.6831	-36.0360	-40.8286	0.3317
A515821H	2.8525	-36.0360	-42.9394	0.2040	

	A515822H	2.5086	-36.0360	-44.8451	0.1316
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Table 17. Little Hope acoustic survey (#4) on November 4, 2015. One multipanel gillnet sample from November 5 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea02	-35.8390	3.18	-42.6151	0.1975	668	220	33%
Ea03	-35.8390	15.61	-31.3921	2.4482	43,460	10,357	24%
TR01	-35.8390	8.13	-41.3953	0.2817	2,262	1,287	57%
TR02	-35.8390	1.85	-30.5355	3.3551	6,274	3,582	57%
TR03	-35.8390	2.66	-33.2862	1.7229	4,788	2,596	54%
TR04	-35.8390	1.78	-31.8140	2.9588	4,497	4,628	103%
TR05	-35.8390	2.54	-25.3722	10.7590	28,282	14,321	51%
Little Hope	-35.8390	35.75	-32.1022	2.3642	90,231	18,843	21%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea02	E415807H	1.0996	-35.8390	-46.5295	0.0853
	E415808H	1.4472	-35.8390	-44.1210	0.1485
	E415809H	1.4789	-35.8390	-41.4187	0.2767
	E415810H	1.7411	-35.8390	-38.8105	0.5045
	E415811H	1.7822	-35.8390	-44.9070	0.1239
	E415812H	1.4117	-35.8390	-49.1905	0.0462
Ea03	E415813H	3.0525	-35.8390	-39.2550	0.4554
	E415814H	3.7630	-35.8390	-36.0567	0.9511
	E415815H	4.1865	-35.8390	-36.9287	0.7781
	E415816H	4.9474	-35.8390	-30.0625	3.7814
	E415817H	4.9140	-35.8390	-31.1066	2.9733
	E415818H	5.7107	-35.8390	-27.3006	7.1424
	E415819H	6.0939	-35.8390	-32.3468	2.2347
	E415820H	4.7960	-35.8390	-29.7661	4.0484
	E415821H	4.6145	-35.8390	-34.9270	1.2337
	E415822H	2.0568	-35.8390	-36.3758	0.8837
TR01	A515800H	3.8309	-35.8390	-42.5606	0.2127
	A515801H	3.7812	-35.8390	-44.4891	0.1365
	A515802H	4.7438	-35.8390	-45.4639	0.1090
	A515803H	3.2302	-35.8390	-36.2688	0.9058
	A515804H	1.8749	-35.8390	-49.3343	0.0447
TR02	A515505H	0.8467	-35.8390	-63.1621	0.0019
	A515806H	0.8419	-35.8390	-27.5699	6.7130
	A515807H	1.1909	-35.8390	-27.5757	6.7040
	A515808H	1.1424	-35.8390	-64.3006	0.0014
TR03	A515809H	1.8807	-35.8390	-42.1760	0.2324
	A515810H	2.1970	-35.8390	-42.7392	0.2042
	A515811H	1.7834	-35.8390	-29.2940	4.5134
	A515812H	1.2700	-35.8390	-30.2004	3.6632
TR04	A515813H	0.4174	-35.8390	-64.6024	0.0013
	A515814H	1.3613	-35.8390	-26.7281	8.1488
	A515815H	1.6490	-35.8390	-37.7713	0.6409
TR05	A515816H	1.8629	-35.8390	-46.4511	0.0869
	A515817H	1.2148	-35.8390	-22.6213	20.9781
	A515818H	1.4003	-35.8390	-21.4331	27.5797
	A515819H	1.5847	-35.8390	-31.0850	2.9881
	A515820H	1.7627	-35.8390	-32.3672	2.2242
	A515821H	0.5734	-35.8390	-51.9207	0.0247

Table 18. Eastern Shore acoustic survey (#1) on September 27, 2015. No multipanel available so the standard Target Strength (TS) was used.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.9590	0.50	-44.8325	0.1312	65	23	36%
Ea02	-35.9590	1.56	-48.3908	0.0609	89	54	61%
Eastern Shore	-35.9590	2.06	-47.0394	0.0780	154	59	38%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B515800H	0.7147	-35.9590	-41.4468	0.2826
	B515801H	0.6680	-35.9590	-43.1762	0.1898
	B515802H	0.6614	-35.9590	-46.3106	0.0922
	B515803H	0.7602	-35.9590	-48.5444	0.0551
	B515804H	0.7286	-35.9590	-50.3965	0.0360
Ea02	B515806H	1.4802	-35.9590	-51.3640	0.0288
	B515807H	1.3601	-35.9590	-49.6928	0.0423
	B515808H	1.2058	-35.9590	-43.8398	0.1629
	B515809H	1.3812	-35.9590	-56.0939	0.0097

Table 19. Eastern Shore acoustic survey (#2) on October 5, 2015. One multipanel gillnet sample from October 6 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
BK01	-35.9880	0.48	-43.3710	0.2055	88	22	26%
BK02	-35.9880	0.61	-25.6808	9.9334	6,547	1,839	28%
Eastern Shore	-35.9880	1.09	-28.4679	5.6496	6,635	1,839	28%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
BK01	B515800H	0.6966	-35.9880	-41.6072	0.2742
	B515801H	0.5388	-35.9880	-41.4104	0.2869
	B515802H	1.1248	-35.9880	-43.6086	0.1730
	B515803H	1.1522	-35.9880	-46.5384	0.0881
BK02	B515805H	0.4413	-35.9880	-39.2137	0.4758
	B515806H	0.3857	-35.9880	-79.1235	0.0000
	B515807H	0.5012	-35.9880	-22.3562	23.0772
	B515808H	0.6016	-35.9880	-23.3529	18.3446
	B515809H	0.6990	-35.9880	-22.7434	21.1085
	B515810H	0.8899	-35.9880	-26.5783	8.7290
	B515811H	1.1980	-35.9880	-26.0743	9.8033
	B515812H	0.9520	-35.9880	-27.2894	7.4107
	B515813H	0.3203	-35.9880	-39.4442	0.4512

Table 20. Eastern Shore acoustic survey (#3) on October 10, 2015. One multipanel gillnet sample from October 11 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.9021	2.76	-23.2225	16.8510	51,152	16,884	33%
Or01	-35.9020	0.44	-42.9089	0.1963	88	10	12%
Eastern Shore	-35.9020	3.20	-24.2701	14.5610	51,240	16,884	33%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B515800	1.5682	-35.9021	-25.6385	10.6256
	B515801	1.1973	-35.9021	-35.5410	1.0867
	B515802	1.2029	-35.9021	-23.3168	18.1352
	B515803	1.4410	-35.9021	-22.8629	20.1332
	B515804	1.9406	-35.9021	-18.8857	50.3078
	B515805	1.8645	-35.9021	-24.9973	12.3161
Or01	B515806	1.4114	-35.9021	-28.6165	5.3525
	T515800H	1.0467	-35.9021	-42.8176	0.2034
	T515801A	0.2552	-35.9021	-41.8737	0.2528
	T515801B	0.4997	-35.9021	-43.7212	0.1652
	T515802H	0.6474	-35.9021	-42.2945	0.2295
	T515803H	0.6277	-35.9021	-44.5561	0.1363
	T515804H	0.6589	-35.9021	-41.4655	0.2778
	T515805H	0.3671	-35.9021	-45.5163	0.1093

Table 21. Eastern Shore acoustic survey (#4) on October 16, 2015. One multipanel gillnet sample from October 16 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.9978	0.61	-27.7765	5.1845	4,050	2,036	50%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B515800	0.8263	-35.9978	-65.9264	0.0010
	B515801	1.0216	-35.9978	-26.1386	9.6810
	B515802	0.9684	-35.9978	-23.8936	16.2339
	B515803	0.8234	-35.9978	-57.8060	0.0066
	B515804	0.2187	-35.9978	-79.2116	0.0000



Table 22. Eastern Shore acoustic survey (#5) on October 27, 2015. One multipanel gillnet sample from October 27 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.8230	0.93	-24.4882	12.6908	12,647	2,909	23%
Or01	-35.8230	1.10	-39.5098	0.4204	471	35	7%
Eastern Shore	-35.8230	2.03	-28.0113	6.0418	13,118	2,909	22%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B515800	0.8840	-35.8232	-23.7942	15.9552
	B515801	0.5912	-35.8232	-21.4483	27.3833
	B515802	0.6564	-35.8232	-24.0641	14.9937
	B515803	0.6136	-35.8232	-24.5328	13.4600
	B515804	0.7058	-35.8232	-44.9945	0.1210
	B515805	0.9164	-35.8232	-23.8842	15.6278
	B515806	0.9985	-35.8232	-24.5317	13.4632
Or01	B515807	0.2504	-35.8232	-38.6473	0.5219
	T515800	0.9379	-35.8232	-41.9692	0.2429
	T515801	1.3587	-35.8232	-38.3029	0.5650
	T515802	1.0923	-35.8232	-38.4058	0.5517
	T515803	1.1985	-35.8232	-38.5415	0.5348
	T515804	1.1759	-35.8232	-39.3089	0.4482
	T515805	1.2703	-35.8232	-39.7070	0.4089
	T515806	1.2129	-35.8232	-40.1500	0.3692
	T515807	1.1600	-35.8232	-40.0178	0.3807
	T515808	1.0769	-35.8232	-39.0815	0.4723
	T515809	0.9139	-35.8232	-40.4620	0.3437
T515810	0.9989	-35.8232	-40.9497	0.3071	

Table 23. Scots Bay acoustic survey (#1) on June 18, 2016, using sample Target Strength (TS) from fishery samples on June 21 & 22, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Scots Bay	-35.2999	665.16	-49.7291	0.0381	23,989	14,461	60%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	BP_T01	42.0419	-35.2999	-53.7657	0.0142
	BP_T02	36.7760	-35.2999	-67.2883	0.0006
	C1_T01	44.6550	-35.2999	-54.5737	0.0118
	C1_T02	37.5960	-35.2999	-52.4431	0.0193
	DV_T01	46.1161	-35.2999	-49.6140	0.0370
	DV_T02	41.1008	-35.2999	-63.2816	0.0016
	LB_T01	46.8067	-35.2999	-51.5048	0.0240
	LB_T02	39.6988	-35.2999	-50.7925	0.0282
ME_T01	36.2791	-35.2999	-42.1509	0.2065	

Table 24. Scots Bay acoustic survey (#2) on July 2, 2016, using sample Target Strength (TS) from fishery samples on July 3 & 4, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box	-35.2546	640.25	-47.2941	0.0659	40,032	11,575	29%
Northern Area	-35.2546	80.66	-54.0618	0.0129	1,062	234	22%
Total	-35.2546	720.91	-47.4769	0.0599	41,093	11,577	28%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	C1_T01	42.6934	-35.2546	-51.1663	0.0256
	C1_T02	41.7796	-35.2546	-47.8172	0.0554
	DV_T01	47.5025	-35.2546	-48.5065	0.0473
	DV_T02	40.0347	-35.2546	-48.0932	0.0520
	LJ_T01	45.5938	-35.2546	-54.8159	0.0111
	LJ_T02	36.7605	-35.2546	-42.6367	0.1827
	LM_T01	44.4254	-35.2546	-54.8159	0.0111
	LM_T02	40.1286	-35.2546	-42.6367	0.1827
	ME_T01	43.4992	-35.2546	-52.5184	0.0188
	ME_T02	39.4410	-35.2546	-45.9354	0.0855
	MS_T01	47.7497	-35.2546	-54.0935	0.0131
MS_T02	41.5145	-35.2546	-45.1914	0.1015	
Northern Area	BP_T01	18.3814	-35.2546	-52.1639	0.0204
	BP_T02	17.1814	-35.2546	-55.9515	0.0085
	BP_T03	15.9321	-35.2546	-53.5822	0.0147
	BP_T04	15.4316	-35.2546	-56.1422	0.0082

Table 25. Scots Bay acoustic survey (#3) on July 16, 2016, using sample Target Strength (TS) from fishery samples on July 18, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Area	-35.2457	640.55	-53.9998	0.0135	8,534	2,140	25%
Northern Area	-35.2457	82.35	-58.2522	0.0049	412	48	12%
Eastern Area	-35.2457	136.66	-59.8136	0.0032	477	175	37%
Total	-35.2457	859.56	-48.8893	0.0432	9,423	2,147	23%
Outbox only	-35.2457	219.01	-65.9738	0.0008	889	182	20%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Area	C1_T01	42.7484	-35.2457	-59.2573	0.0040
	C1_T02	36.7875	-35.2457	-48.8862	0.0432
	LM_T01	44.3145	-35.2457	-61.3528	0.0025
	LM_T02	38.1918	-35.2457	-59.2991	0.0039
	LB_T01	46.3596	-35.2457	-57.7319	0.0056
	LB_T02	39.3964	-35.2457	-53.1849	0.0161
	ME_T01	42.9539	-35.2457	-60.8925	0.0027
	ME_T02	36.1880	-35.2457	-55.5864	0.0092
	MS_T01	46.3398	-35.2457	-61.8921	0.0022
	MS_T02	40.7057	-35.2457	-54.2616	0.0125
	SL_T01	45.6929	-35.2457	-51.6037	0.0231
	SL_T02	38.5769	-35.2457	-53.5558	0.0148
	SH_T01	47.6332	-35.2457	-49.9523	0.0338
SH_T02	41.2518	-35.2457	-53.5620	0.0147	
Northern Area	BP_T01	18.2227	-35.2457	-57.8659	0.0055
	BP_T02	17.1188	-35.2457	-57.4766	0.0060
	BP_T03	15.8512	-35.2457	-58.2368	0.0050
	BP_T04	14.8012	-35.2457	-60.0865	0.0033
Eastern Area	DV_T01	11.6457	-35.2457	-65.2692	0.0010
	DV_T02	13.8940	-35.2457	-62.3218	0.0020
	DV_T03	15.8744	-35.2457	-60.5452	0.0030
	DV_T04	17.5859	-35.2457	-56.8905	0.0068

Table 26. Scots Bay acoustic survey (#4) on July 30, 2016, using sample Target Strength (TS) from fishery samples on July 31 & August 1, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Area	-35.5336	626.20	-53.6177	0.0157	9,734	3,557	37%
Northern Area	-35.5336	89.00	-56.9474	0.0072	643	66	10%
Eastern Area	-35.5336	139.80	-58.0207	0.0048	788	521	66%
Total	-35.5336	855.00	-54.3845	0.0130	11,165	3,595	32%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main_Area	DV_T01	44.3840	-35.5336	-58.6199	0.0049
	DV_T02	38.2770	-35.5336	-57.7026	0.0061
	LJ_T01	37.3677	-35.5336	-55.4721	0.0101
	LJ_T02	42.8848	-35.5336	-51.6374	0.0245
	LB_T01	39.2638	-35.5336	-51.7251	0.0240
	LB_T02	45.0410	-35.5336	-56.5238	0.0080
	ME_T01	40.8870	-35.5336	-55.9434	0.0091
	ME_T02	36.6323	-35.5336	-56.6330	0.0078
	MS_T01	46.0169	-35.5336	-54.3998	0.0130
	MS_T02	38.7180	-35.5336	-58.5099	0.0050
	SL_T01	44.9718	-35.5336	-56.4700	0.0081
	SL_T02	40.0263	-35.5336	-54.7708	0.0119
Northern Area	SH_T01	41.1861	-35.5336	-46.1978	0.0858
	SH_T02	47.7699	-35.5336	-64.3494	0.0004
	BP_T01	16.6879	-35.5336	-57.7531	0.0060
	BP_T02	17.7127	-35.5336	-56.0167	0.0089
Eastern Area	BP_T03	16.5302	-35.5336	-56.5766	0.0079
	BP_T04	16.2459	-35.5336	-57.7952	0.0059
	C1_T01	11.9684	-35.5336	-66.3951	0.0008
	C1_T02	14.1278	-35.5336	-69.6254	0.0004
	C1_T04	18.3947	-35.5336	-53.5041	0.0160
	C1_T03	16.6730	-35.5336	-62.1754	0.0022

Table 27. Scots Bay acoustic survey (#5) on August 13, 2016, using sample Target Strength (TS) from fishery samples on August 15, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Area	-35.5425	642.71	-49.7018	0.0360	24,666	17,600	71%
Northern Area	-35.5425	78.43	-52.1357	0.0215	1,719	410	24%
Eastern Area	-35.5425	133.32	-59.2578	0.0045	567	183	32%
Total	-35.5425	854.46	-50.8034	0.0298	26,951	3,595	13%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Area	DV_T01	46.9337	-35.5425	-49.4080	0.0411
	DV_T02	40.4654	-35.5425	-59.8575	0.0037
	LB_T01	42.7549	-35.5425	-56.8595	0.0074
	LB_T02	37.9187	-35.5425	-57.1493	0.0069
	LJ_T01	45.3541	-35.5425	-54.6723	0.0122
	LJ_T02	39.3611	-35.5425	-60.0121	0.0036
	LM_T01	45.0540	-35.5425	-40.2874	0.3354
	LM_T02	39.1991	-35.5425	-59.9639	0.0036
	ME_T01	43.1752	-35.5425	-56.2056	0.0086
	ME_T02	37.2870	-35.5425	-58.8628	0.0047
	MS_T01	46.9386	-35.5425	-58.4252	0.0051
MS_T02	40.9778	-35.5425	-60.5029	0.0002	
Northern Area	BP_T01	17.6109	-35.5425	-50.2526	0.0338
	BP_T02	17.1291	-35.5425	-52.4415	0.0204
	BP_T03	16.1462	-35.5425	-52.2945	0.0211
	BP_T04	15.4039	-35.5425	-55.2102	0.0108
Eastern Area	C1_T01	12.0279	-35.5425	-56.5402	0.0079
	C1_T02	13.8263	-35.5425	-59.9191	0.0037
	C1_T03	15.9400	-35.5425	-63.2873	0.0017
	C1_T04	17.7661	-35.5425	-58.9901	0.0045

Table 28. Scots Bay acoustic survey (#6) on August 27, 2016. No fishery samples close to survey date, so the standard Target Strength (TS) was used for biomass calculations.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Scots Bay	-35.5000	623.96	-58.6122	0.0048	3,047	719	24%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	BP_T01	45.4893	-35.5000	-53.7336	0.0150
	BP_T02	40.0961	-35.5000	-56.9843	0.0071
	C1_T01	46.3543	-35.5000	-56.2801	0.0084
	C1_T02	38.8157	-35.5000	-61.2515	0.0027
	DV_T01	43.4224	-35.5000	-60.7246	0.0030
	DV_T02	36.8692	-35.5000	-57.5600	0.0062
	ME_T01	45.2930	-35.5000	-60.5505	0.0031
	ME_T02	39.8766	-35.5000	-59.8253	0.0037
	MS_T01	43.4532	-35.5000	-64.9927	0.0011
	MS_T02	37.7650	-35.5000	-61.1321	0.0027
	SL_T01	36.2462	-35.5000	-59.3467	0.0041
	SL_T02	41.6311	-35.5000	-59.5558	0.0002

Table 29. German Bank acoustic survey (#1) on August 21, 2016, using sample Target Strength (TS) from fishery samples on August 22, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.3147	650.42	-47.9365	0.0551	35,565	8,856	25%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	DV_T02	37.4579	-35.3147	-57.0604	0.0067
	DV_T01	37.2681	-35.3147	-48.0277	0.0535
	LB_T02	36.6466	-35.3147	-47.0036	0.0678
	LB_T01	37.6051	-35.3147	-46.9983	0.0679
	LJ_T01	30.6445	-35.3147	-46.0236	0.0849
	LM_T01	37.8521	-35.3147	-51.0557	0.0267
	LM_T02	37.6295	-35.3147	-49.1401	0.0414
	MS_T01	36.7043	-35.3147	-48.9146	0.0437
	MS_T02	35.8494	-35.3147	-51.8445	0.0222
	SH_T01	37.0998	-35.3147	-42.4873	0.1918
	SH_T02	37.1497	-35.3147	-56.5911	0.0075
	SL_T01	36.7109	-35.3147	-46.0653	0.0841
	SL_T02	36.8968	-35.3147	-52.7326	0.0181

Table 30. German Bank acoustic survey (#2) on September 1, 2016, using sample Target Strength (TS) from fishery samples on September 2, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box	-35.3119	779.36	-53.6700	0.0144	11,374	2,243	20%
Tow Area	-35.3119	47.80	-40.4288	0.3106	14,714	6,044	41%
Total	-35.3119	827.16	-50.3207	0.0316	26,089	6,447	25%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Area	DV_T01	38.7718	-35.3119	-54.1161	0.0132
	DV_T02	37.5466	-35.3119	-57.7869	0.0057
	LB_T01	39.6711	-35.3119	-50.0018	0.0340
	LB_T02	37.9156	-35.3119	-52.0860	0.0210
	LJ_T01	37.7613	-35.3119	-50.4893	0.0304
	LJ_T02	37.0530	-35.3119	-54.1050	0.0132
	LM_T01	37.0077	-35.3119	-57.4347	0.0061
	LM_T02	36.8110	-35.3119	-62.1078	0.0021
	MS_T02	36.7383	-35.3119	-53.0357	0.0169
	MS_T01	36.6491	-35.3119	-56.6102	0.0074
Tow Area	SL_T01	37.0048	-35.3119	-56.8438	0.0070
	SL_T02	36.8207	-35.3119	-53.1571	0.0164
	DV_T03	6.5703	-35.3119	-39.9481	0.3439
	LB_T03	6.3055	-35.3119	-37.7619	0.5689
	LJ_T03	6.3154	-35.3119	-44.2648	0.1273
	LM_T03	6.0862	-35.3119	-52.3650	0.0197
MS_T03	6.0014	-35.3119	-36.4242	0.7740	
SL_T03	6.4249	-35.3119	-50.5794	0.0297	

Table 31. German Bank acoustic survey (#3) on September 12, 2016, using sample Target Strength (TS) from fishery samples on September 13, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Area	-35.2947	721.95	-47.8867	0.0554	39,748	14,511	37%
Tow Area	-35.2947	45.09	-34.8150	1.1087	50,356	33,013	66%
Total	-35.2947	767.04	-44.6028	0.1173	90,104	36,061	40%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Area	C1_T01	37.2920	-35.2947	-52.7950	0.0178
	C1_T02	37.3894	-35.2947	-49.0187	0.0424
	DV_T01	38.1348	-35.2947	-51.2184	0.0256
	DV_T02	38.1582	-35.2947	-56.5985	0.0074
	LB_T01	38.2820	-35.2947	-49.2725	0.0400
	LB_T02	39.0678	-35.2947	-47.3505	0.0623
	LJ_T01	38.6334	-35.2947	-54.1315	0.0131
	LJ_T02	37.5377	-35.2947	-50.3188	0.0314
	LM_T01	37.8092	-35.2947	-41.1319	0.2608
	LM_T02	38.3471	-35.2947	-59.8065	0.0035
	MS_T01	36.6791	-35.2947	-42.5556	0.1879
	MS_T02	37.3315	-35.2947	-60.4425	0.0031
Tow Area	SL_T01	37.0375	-35.2947	-51.3500	0.0248
	SL_T02	37.0751	-35.2947	-47.9011	0.0549
	C1_T03	6.3231	-35.2947	-28.0026	5.3607
	DV_T03	6.3635	-35.2947	-46.7646	0.0713
	LB_T03	6.3589	-35.2947	-33.8917	1.3814
	LJ_T03	6.3891	-35.2947	-57.9127	0.0055
	LM_T03	5.5449	-35.2947	-62.3042	0.0020
	MS_T03	6.0465	-35.2947	-37.5924	0.5892
SL_T03	7.0348	-35.2947	-39.8734	0.3484	



Table 32. German Bank acoustic survey (#4) on September 19, 2016, using sample Target Strength (TS) from fishery samples on September 21 & 22, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Area	-34.8285	700.84	-51.4105	0.0219	15,396	4,614	30%

  

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Area	DV_T01	38.1363	-34.8285	-56.6162	0.0066
	DV_T02	37.7336	-34.8285	-56.7693	0.0064
	LB_T01	38.4908	-34.8285	-45.5350	0.0850
	LB_T02	37.8608	-34.8285	-55.8911	0.0078
	LJ_T01	36.7451	-34.8285	-56.7263	0.0065
	LJ_T02	36.8433	-34.8285	-55.4327	0.0087
	LM_T01	37.5330	-34.8285	-58.0656	0.0047
	LM_T02	37.3994	-34.8285	-54.9645	0.0097
	MS_T01	37.0412	-34.8285	-52.3870	0.0175
	MS_T02	36.7129	-34.8285	-55.4957	0.0086
	SH_T02	37.0799	-34.8285	-54.4371	0.0109
	SH_T01	37.6695	-34.8285	-49.0429	0.0379
	SL_T01	36.2416	-34.8285	-46.8485	0.0628
	SL_T02	37.1259	-34.8285	-49.5678	0.0336

Table 33. German Bank acoustic survey (#5) on September 26, 2016, using sample Target Strength (TS) from fishery samples on September 27, 2016.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Area	-35.5153	701.33	-47.1488	0.0698	48,752	32,055	66%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Area	LB_T01	38.2460	-35.5000	-49.1866	0.0428
	LB_T02	38.7534	-35.5000	-47.2676	0.0666
	LJ_T01	35.5969	-35.5000	-58.5722	0.0049
	LJ_T02	37.1931	-35.5000	-62.0391	0.0022
	LM_T01	37.9305	-35.5000	-63.6937	0.0015
	LM_T02	37.7698	-35.5000	-65.0069	0.0011
	MS_T01	36.6602	-35.5000	-59.0629	0.0044
	MS_T02	36.8265	-35.5000	-58.0537	0.0056
	SL_T01	36.1293	-35.5000	-59.1665	0.0043
	SL_T02	37.0244	-35.5000	-59.9220	0.0036
	TM_T01	37.3075	-35.6073	-62.9497	0.0018
	TM_T02	37.3489	-35.6073	-50.9526	0.0292

Table 34. Trinity Ledge acoustic survey (#1) on August 12, 2016, using the standard Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Trinity Ledge	-35.9590	0.84	-57.7423	0.0062	5.5712	1.3	23%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	W416800	0.3081	-35.9590	-67.0880	0.0008
	W416801	0.7792	-35.9590	-65.9149	0.0010
	W416802	0.8147	-35.9590	-59.5657	0.0044
	W416803	0.7952	-35.9590	-58.0534	0.0062
	W416804	0.8483	-35.9590	-53.7052	0.0168
	W416805	0.9176	-35.9590	-58.3413	0.0058
	W416806	0.8856	-35.9590	-56.8292	0.0082
	W416807	0.8782	-35.9590	-58.1870	0.0060
	W416808	0.7411	-35.9590	-57.9655	0.0063

Table 35. Trinity Ledge acoustic survey (#2) on August 29, 2016, using the standard Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Trinity Ledge	-35.9590	0.52	-37.1497	0.7210	395	86	22%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
KK01	W416800	0.8281	-35.9590	-36.2871	0.9272
	W416801	0.7381	-35.9590	-37.0235	0.7826
	W416802	0.7995	-35.9590	-34.5815	1.3732
	W416804	0.5359	-35.9590	-39.2916	0.4642
	W416805	0.8196	-35.9590	-42.4767	0.2230
	W416806	0.2248	-35.9590	-38.5120	0.5555

Table 36. Trinity Ledge acoustic survey (#3) on September 13, 2016, using the standard Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Trinity Ledge	-35.9590	0.49	42.6622	0.2380	105	55	52%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
KK01	W416800	0.9938	-35.9590	-50.1577	0.0380
	W416801	0.4265	-35.9590	-41.2767	0.2939
	W416802	0.7853	-35.9590	-37.4778	0.7049
	W416803	0.9728	-35.9590	-40.4700	0.3539
	W416804	0.8567	-35.9590	-75.4115	0.0001
	W416805	1.1281	-35.9590	-50.2571	0.0372

Table 37. Little Hope acoustic survey (#1) on September 13, 2016. One multipanel gillnet sample from September 14 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.7473	3.96	-39.6984	0.3936	1,594	413	26%
As02	-35.7473	4.24	-44.7854	0.1206	529	71	13%
As03	-35.7473	4.21	-43.9626	0.1727	635	194	31%
E8 Sep 13	-35.7473	6.54	-44.7971	0.1078	814	177	22%
Little Hope	-35.7473	18.95	-43.0798	0.1848	3,572	495	14%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A516800	0.8349	-35.7473	-40.4167	0.3413
	A516801	1.5148	-35.7473	-41.1309	0.2895
	A516802	1.6946	-35.7473	-36.3644	0.8675
	A516803	2.4638	-35.7473	-41.2828	0.2795
	A516804	1.0722	-35.7473	-39.1369	0.4582
	A516805	1.1622	-35.7473	-44.7469	0.1259
As02	A516807	1.3597	-35.7473	-47.8740	0.0613
	A516808	1.8766	-35.7473	-44.8618	0.1226
	A516809	1.9560	-35.7473	-44.8003	0.1244
	A516810	2.0399	-35.7473	-43.5665	0.1652
	A516811	1.8028	-35.7473	-44.6190	0.1297
As03	A515813	0.8685	-35.7473	-40.8058	0.3120
	A515814	0.8769	-35.7473	-40.2308	0.3562
	A515815	1.1336	-35.7473	-43.0692	0.1853
	A515816	1.5583	-35.7473	-45.4962	0.1060
	A516817	1.4588	-35.7473	-44.6877	0.1276
	A515818	1.4511	-35.7473	-45.3484	0.1096
	A516819	1.4143	-35.7473	-54.7631	0.0125
E8 Sep 13	E416800	2.2586	-35.7473	-41.7508	0.2510
	E416801	2.2214	-35.7473	-43.6512	0.1620
	E416802	2.3448	-35.7473	-45.8837	0.0969
	E416803	1.3375	-35.7473	-48.8690	0.0487
	E416804	1.4198	-35.7473	-44.3875	0.1368
	E416805	1.0008	-35.7473	-41.3064	0.2780
	E416806	1.1668	-35.7473	-44.4021	0.1363
	E416807	1.0390	-35.7473	-46.5777	0.0826
	E416808	1.0316	-35.7473	-48.6448	0.0513
	E416809	0.8858	-35.7473	-49.5107	0.0420
	E416810	1.0070	-35.7473	-58.8461	0.0049
E416811	0.6234	-35.7473	-61.7866	0.0025	

Table 38. Little Hope acoustic survey (#2) on September 23, 2016. One multipanel gillnet sample from September 24 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.7473	3.96	-39.6984	0.3936	1,594	413	26%
As01	-35.7223	1.55	-31.1094	3.4078	4,484	3,317	74%
As02	-35.7223	0.82	-32.7573	1.9464	1,623	838	52%
As03	-35.7223	1.15	-31.6229	4.1923	2,956	3,998	135%
As04	-35.7223	5.43	-37.0728	0.7189	3,979	702	18%
E801	-35.7223	2.9	-38.0433	0.5258	1,699	423	25%
E802	-35.7223	1.34	-35.4368	1.0109	1,431	201	14%
E803	-35.7223	17.77	-43.5403	0.1511	2,937	602	21%
Little Hope	-35.7223	30.96	-37.3737	0.6837	19,108	5,363	28%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A516800	0.9632	-35.7223	-25.1368	11.4432
	A516801	1.3192	-35.7223	-29.5536	4.1388
	A516802	1.3529	-35.7223	-34.7877	1.2401
	A516803	1.4254	-35.7223	-43.3612	0.1722
	A516804	1.3228	-35.7223	-49.2013	0.0449
As02	A516806	0.8394	-35.7223	-32.6118	2.0467
	A516807	0.8883	-35.7223	-28.9543	4.7511
	A516808	0.7951	-35.7223	-35.8956	0.9609
	A516809	0.8756	-35.7223	-51.3962	0.0271
As03	A516810	0.3642	-35.7223	-67.4676	0.0007
	A516811	0.3994	-35.7223	-22.4018	21.4809
	A516812	1.3122	-35.7223	-31.9621	2.3770
	A516813	0.7367	-35.7223	-35.9756	0.9433
	A516814	1.0440	-35.7223	-40.7229	0.3162
	A516815	1.1101	-35.7223	-50.1970	0.0357
As04	A516816	1.5128	-35.7223	-44.9345	0.1199
	A516817	1.4141	-35.7223	-32.5427	2.0795
	A516818	1.4027	-35.7223	-37.1760	0.7155
	A516819	1.6166	-35.7223	-37.0347	0.7392
	A516820	1.4249	-35.7223	-38.8153	0.4906
	A516821	1.9155	-35.7223	-44.4348	0.1345
	A516822	1.2104	-35.7223	-39.5203	0.4171
	A516823	1.7913	-35.7223	-40.2632	0.3515
	A516824	1.4065	-35.7223	-37.0656	0.7340
	A516825	1.5151	-35.7223	-36.0860	0.9197
	A516826	1.1687	-35.7223	-34.4648	1.3358
	A516827	1.4518	-35.7223	-35.8396	0.9734
	A516828	1.2158	-35.7223	-39.5704	0.4123
	A516829	1.3572	-35.7223	-34.0266	1.4776
	A516830	0.6849	-35.7223	-36.5735	0.8220
	A516831	0.8292	-35.7223	-38.9135	0.4796

Table 38 (continued). Little Hope acoustic survey (#2) on September 23, 2016. One multipanel gillnet sample from September 24 was used to calculate the Target Strength (TS).

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
E801	E416800	0.7175	-35.7223	-50.1477	0.0361
	E416801	0.9383	-35.7223	-39.5341	0.4157
	E416802	0.7942	-35.7223	-36.3413	0.8672
	E416803	1.0595	-35.7223	-33.8265	1.5473
	E416804	0.9758	-35.7223	-39.5823	0.4112
	E416805	0.8606	-35.7223	-43.6488	0.1612
	E416806	0.9024	-35.7223	-44.4763	0.1332
	E416807	1.2125	-35.7223	-36.6794	0.8022
	E416808	1.2017	-35.7223	-35.5180	1.0482
	E416809	1.3296	-35.7223	-40.6159	0.3241
E802	E416810	0.3868	-35.7223	-49.9386	0.0379
	E416811	0.6039	-35.7223	-37.3876	0.6815
	E416812	0.6700	-35.7223	-33.9972	1.4877
	E416813	0.5099	-35.7223	-36.7924	0.7816
	E416814	0.8858	-35.7223	-35.8012	0.9820
	E416815	1.0681	-35.7223	-37.3137	0.6932
E803	E416816	1.5457	-35.7223	-34.1398	1.4396
	E416817	0.6663	-35.7223	-43.6075	0.1627
	E416818	2.6091	-35.7223	-43.3339	0.1733
	E416819	4.1102	-35.7223	-48.3079	0.0551
	E416820	4.5835	-35.7223	-47.2016	0.0711
	E416821	5.5130	-35.7223	-48.1568	0.0571
	E416822	8.1295	-35.7223	-43.8768	0.1530
	E416823	8.6828	-35.7223	-42.9128	0.1910
E416824	7.4387	-35.7223	-40.3416	0.3452	

Table 39. Little Hope acoustic survey (#3) on October 4, 2016. One multipanel gillnet sample from October 5 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.7005	1.74	-38.7828	0.5159	856	422	49%

  

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A516800	1.7514	-35.7005	-47.6672	0.0636
	A516801	1.2859	-35.7005	-41.0333	0.2929
	A516802	1.4001	-35.7005	-36.4614	0.8393
	A516803	1.2391	-35.7005	-40.9396	0.2993
	A516804	1.2243	-35.7005	-33.7292	1.5745
	A516805	1.2182	-35.7005	-51.6136	0.0256

Table 40. Little Hope acoustic survey (#4) on October 17, 2016. One multipanel gillnet sample from October 20 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.8782	2.04	-35.4579	1.1188	2,247	1,617	72%
As02	-35.8782	0.79	-30.4154	3.3613	2,779	1,995	72%
As03	-35.8782	0.92	-36.7562	0.9105	752	757	101%
E801	-35.8782	0.29	-28.8440	4.6297	1,465	693	47%
E802	-35.8782	1.63	-31.5734	2.7678	4,392	1,773	40%
E803	-35.8782	1.33	-29.8218	4.6045	5,364	2,227	42%
Little Hope	35.8781	7.00	-31.8363	2.5362	16,999	3,968	23%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A516800	1.1553	-35.8782	-51.8490	0.0253
	A516801	1.2354	-35.8782	-44.4042	0.1404
	A516802	1.1999	-35.8782	-36.1460	0.9402
	A516803	1.2153	-35.8782	-28.2289	5.8201
	A516804	1.2367	-35.8782	-38.8005	0.5102
	A516805	1.2999	-35.8782	-41.1203	0.2991
As02	A516806	1.3281	-35.8782	-46.0522	0.0961
	A516807	0.7857	-35.8782	-51.3799	0.0282
	A516808	0.7943	-35.8782	-46.2865	0.0910
	A516809	0.8700	-35.8782	-25.5758	10.7210
As03	A516810	0.8791	-35.8782	-31.7203	2.6049
	A516811	0.4743	-35.8782	-45.9626	0.0981
	A516812	0.5646	-35.8782	-28.8687	5.0228
	A516813	0.6568	-35.8782	-45.2022	0.1168
	A516814	0.6367	-35.8782	-44.9096	0.1250
	A516815	0.7568	-35.8782	-47.9068	0.0627
E801	A516816	0.7218	-35.8782	-50.1387	0.0375
	E416800	0.3967	-35.8782	-53.3236	0.0180
	E416801	0.4202	-35.8782	-27.3390	7.1436
	E416802	0.4946	-35.8782	-28.2445	5.7992
	E416803	0.5720	-35.8782	-24.2148	14.6669
	E416804	0.5136	-35.8782	-44.8800	0.1258
E802	E416805	0.4422	-35.8782	-51.9416	0.0248
	E415806	0.6426	-35.8782	-31.5450	2.7122
	E415807	0.8588	-35.8782	-27.6601	6.6345
	E415808	1.0101	-35.8782	-27.6140	6.7052
	E415809	1.0614	-35.8782	-31.8256	2.5424
	E415810	1.0579	-35.8782	-37.3301	0.7158
	E415811	1.1472	-35.8782	-50.9795	0.0309
E803	E415812	0.8028	-35.8782	-50.6200	0.0336
	E415813	0.4438	-35.8782	-29.9493	3.9164
	E415814	0.6213	-35.8782	-28.1566	5.9178
	E415815	0.7580	-35.8782	-25.2498	11.5569
	E415816	0.7525	-35.8782	-26.3752	8.9186
	E415817	0.9255	-35.8782	-33.8203	1.6062
	E415818	1.1470	-35.8782	-41.0355	0.3050
E415819	0.9884	-35.8782	-55.7399	0.0103	

Table 41. Little Hope acoustic survey (#5) on November 1, 2016. One multipanel gillnet sample from November 1 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.9407	1.19	-31.9664	2.4888	2,972	1041	35%
E801	-35.9407	2.26	-27.2065	7.8650	16,886	4,650	28%
Little Hope	-35.9407	3.45	-28.1515	6.0106	19,858	4,765	24%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A516800	1.0070	-35.9407	-33.7534	1.6548
	A516801	1.0590	-35.9407	-29.3967	4.5124
	A516802	1.0806	-35.9407	-33.9281	1.5895
	A516803	1.0874	-35.9407	-29.3700	4.5402
	A516804	1.0753	-35.9407	-44.2624	0.1472
E801	E416800	1.0253	-35.9407	-27.9804	6.2522
	E416801	1.0403	-35.9407	-22.5645	21.7579
	E416802	1.0769	-35.9407	-26.0612	9.7263
	E416803	1.1607	-35.9407	-23.1954	18.8160
	E416804	1.2620	-35.9407	-26.4180	8.9593
	E416805	1.3823	-35.9407	-28.2008	5.9428
	E416806	1.3891	-35.9407	-28.9001	5.0590
	E416807	1.4129	-35.9407	-29.2607	4.6559
	E416808	1.5352	-35.9407	-29.2610	4.6555
	E416809	1.2644	-35.9407	-37.6383	0.6765
	E416810	1.1699	-35.9407	-54.5074	0.0139



Table 42. Little Hope acoustic survey (#6) on November 14, 2016. No multi-panel was collected so the standard Target Strength (TS) was used for biomass calculations.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.9590	2.47	-42.8428	0.1956	506	140	28%
E801	-35.9590	1.01	-38.9352	0.4620	509	140	27%
Little Hope	-35.9590	3.48	-41.5986	0.2729	1,015	198	19%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
E801	E416800	1.0127	-35.9590	-46.6362	0.0856
	E416801	0.9526	-35.9590	-47.2188	0.0748
	E416802	0.7620	-35.9590	-44.4325	0.1421
	E416803	1.2718	-35.9590	-41.0740	0.3080
	E416804	1.8932	-35.9590	-45.1710	0.1199
	E416805	1.9169	-35.9590	-44.9257	0.1269
	E416806	1.9792	-35.9590	-44.0726	0.1544
	E416807	2.0434	-35.9590	-44.6179	0.1362
E802	E416808	1.7490	-35.9590	-38.0877	0.6125
	E416809	0.3247	-35.9590	-44.8759	0.1283
	E416810	0.3695	-35.9590	-45.6312	0.1078
	E416811	0.6379	-35.9590	-36.2533	0.9345
	E416812	0.5988	-35.9590	-35.0570	1.2308
	E416813	0.7015	-35.9590	-38.4020	0.5698
	E416814	0.6730	-35.9590	-36.5763	0.8675
	E416815	0.7309	-35.9590	-38.2874	0.5850
	E416816	0.6624	-35.9590	-44.7546	0.1320
	E416817	0.8324	-35.9590	-56.0768	0.0097
	E416818	0.2982	-35.9590	-48.5629	0.0549

Table 43. Eastern Shore acoustic survey (#1) on September 13, 2016. One multipanel gillnet sample from September 13 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Eastern Shore	-36.0848	0.22	-45.6288	0.1010	24	15	62%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B516800	0.2991	-36.0848	-51.7064	0.0274
	B516801	0.4327	-36.0848	-40.3848	0.3715
	B516802	0.4576	-36.0848	-47.5568	0.0713
	B516803	0.4574	-36.0848	-53.1985	0.0194
	B516804	0.2874	-36.0848	-54.2399	0.0153

Table 44. Eastern Shore acoustic survey (#3) on September 30, 2016. One multipanel gillnet sample from September 30 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.8992	1.35	-27.3694	6.9860	9,623	3,064	32%
MoH02	-35.8992	0.26	-28.8918	5.0126	1,305	391	30%
Eastern Shore	-35.8992	1.61	-27.6597	6.6673	10,928	3,089	28%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B516800	0.9909	-35.8992	-51.9488	0.0248
	B516801	1.0391	-35.8992	-32.6937	2.0919
	B516802	0.9288	-35.8992	-27.6587	6.6688
	B516803	0.9231	-35.8992	-27.4493	6.9982
	B516804	1.1532	-35.8992	-24.4970	13.8107
	B516805	1.1256	-35.8992	-23.3594	17.9466
	B516806	1.1265	-35.8992	-26.7298	8.2591
	B516807	1.1844	-35.8992	-46.4537	0.0880
MoH02	M516805	0.3602	-35.8992	-31.4309	2.7979
	M516806	0.4053	-35.8992	-26.7932	8.1395
	M516807	0.4984	-35.8992	-29.4552	4.4096
	M516808	0.4478	-35.8992	-26.4864	8.7353
	M516809	0.4512	-35.8992	-35.9839	0.9807

Table 45. Eastern Shore acoustic survey (#5) on October 2, 2016. One multipanel gillnet sample from October 3 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea02	-35.9047	0.65	-33.3480	1.5361	1,171	550	47%
MoH01	-35.9047	0.54	-27.8077	6.1865	3,484	1,483	43%
Or01	-35.9047	0.37	-29.3228	5.2103	1,684	690	41%
Eastern Shore	-35.9047	1.19	-29.8653	4.0173	6,339	1,726	27%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea02	B516806	0.8991	-35.9047	-30.3209	3.6173
	B516807	0.7970	-35.9047	-29.1705	4.7143
	B516808	0.7205	-35.9047	-56.3630	0.0090
	B516809	0.7022	-35.9047	-42.1653	0.2366
	B516810	0.7965	-35.9047	-38.6408	0.5326
	B516811	0.3259	-35.9047	-45.6107	0.1070
MoH01	M516800	0.6256	-35.9047	-31.0418	3.0640
	M516801	0.6958	-35.9047	-29.0481	4.8491
	M516802	0.7320	-35.9047	-23.1984	18.6479
	M516803	0.7468	-35.9047	-26.6542	8.4149
	M516804	0.7270	-35.9047	-32.5942	2.1431
	M516805	0.6240	-35.9047	-77.3364	0.0001
Or01	T516800	0.6229	-35.9047	-25.3689	11.3131
	T516801	1.3736	-35.9047	-27.5330	6.8734
	T516802	1.3525	-35.9047	-28.8146	5.1169
	T516803	1.3325	-35.9047	-34.6892	1.3230
	T516804	1.2352	-35.9047	-34.3667	1.4250

Table 46. Eastern Shore acoustic survey (#6) on October 5, 2016. One multipanel gillnet sample from October 5 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.8703	0.22	-31.7609	2.1469	567	451	80%
Ea02	-35.8703	0.21	-28.9601	4.2149	1,031	437	42%
MoH01	-35.8703	0.20	-28.0375	6.2448	1,214	402	33%
Eastern Shore	-35.8703	0.41	-30.8778	3.1568	2,245	594	26%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B516800	0.5558	-35.8703	-44.0449	0.1522
	B516801	0.7516	-35.8703	-42.4376	0.2204
	B516802	0.5720	-35.8703	-25.7192	10.3541
	B516803	0.3634	-35.8703	-58.9501	0.0049
	B516804	0.1544	-35.8703	-61.1866	0.0029
Ea02	B516805	0.3113	-35.8703	-43.5906	0.1690
	B516806	0.3631	-35.8703	-43.4830	0.1733
	B516807	0.4313	-35.8703	-26.9663	7.7696
	B516808	0.3854	-35.8703	-24.9414	12.3851
	B516809	0.4942	-35.8703	-29.0703	4.7864
	B516810	0.1752	-35.8703	-58.2771	0.0057
MoH01	M516800	0.3610	-35.8703	-30.2662	3.6342
	M516801	0.3311	-35.8703	-27.0851	7.5600
	M516802	0.3317	-35.8703	-25.2422	11.5561
	M516803	0.4087	-35.8703	-26.5895	8.4739
	M516804	0.3976	-35.8703	-999.0000	0.0000

Table 47. Eastern Shore acoustic survey (#7) on October 12 2016. One multipanel gillnet sample from October 13 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.6826	0.98	-28.3397	5.2417	5,315	1,484	28%
Or02	-35.6826	0.13	-33.4538	1.5445	217	51	23%
Eastern Shore	-35.6826	1.11	-28.8623	4.8087	5,532	1,485	27%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B516800	0.9407	-35.6826	-28.3061	5.4657
	B516801	1.0246	-35.6826	-25.8191	9.6906
	B516802	1.0409	-35.6826	-27.8696	6.0437
	B516803	1.0527	-35.6826	-28.5315	5.1893
	B516804	1.1053	-35.6826	-25.6539	10.0664
	B516805	1.0784	-35.6826	-43.9748	0.1482
	B516806	0.7971	-35.6826	-46.2497	0.0878
Or02	T516805	0.4302	-35.6826	-31.1479	2.8410
	T516806	0.3631	-35.6826	-31.8006	2.4445
	T516807	0.4498	-35.6826	-33.3680	1.7039
	T516808	0.2710	-35.6826	-35.1689	1.1256
	T516809	0.3751	-35.6826	-38.2404	0.5549
	T516810	0.2174	-35.6826	-37.9211	0.5972

Table 48. Eastern Shore acoustic survey (#9) on October 25 2016. One multipanel gillnet sample from October 26 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Eastern Shore	-35.6579	5.26	-28.239	5.734	29,035	6,975	24%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B516800	2.4321	-35.6579	-37.3524	0.6769
	B516801	2.4539	-35.6579	-33.9990	1.4652
	B516802	2.7936	-35.6579	-29.4751	4.1522
	B516803	2.8873	-35.6579	-26.7310	7.8107
	B516804	2.8729	-35.6579	-26.4563	8.3207
	B516805	2.7146	-35.6579	-27.2757	6.8900
	B516806	2.7063	-35.6579	-28.0359	5.7837
	B516807	0.9871	-35.6579	-24.3510	13.5110
	B516808	0.5687	-35.6579	-30.8874	2.9995

Table 49. Eastern Shore acoustic survey (#10) on November 5. No multi-panel sample was collected so the standard Target Strength (TS) was used for biomass calculations.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Eastern Shore	-35.9590	0.26	-36.9433	0.6827	207	176	85%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B516800	0.3077	-35.9590	-57.8055	0.0065
	B516801	0.6400	-35.9590	-56.9944	0.0079
	B516802	0.6066	-35.9590	-31.6314	2.7087
	B516803	0.5204	-35.9590	-57.1871	0.0075

Table 50. Scots Bay acoustic survey (#1) on June 21, 2017, using sample Target Strength (TS) from fishery samples on June 22 & 23, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box Total	-34.7902	626.84	-43.9902	0.1159	75,364	28,362	38%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	BP_T01	38.9556	-34.7902	-61.2902	0.0022
	BP_T02	35.9427	-34.7902	-63.2934	0.0014
	C1_T01	38.0259	-34.7902	-43.9725	0.1207
	C1_T02	35.4225	-34.7902	-58.3229	0.0044
	DV_T01	45.0393	-34.7902	-47.4988	0.0536
	DV_T02	41.2621	-34.7902	-42.6893	0.1622
	LB_T01	46.4630	-34.7902	-46.4880	0.0676
	LB_T02	42.9503	-34.7902	-39.1964	0.3626
	LM_T01	48.1151	-34.7902	-58.7600	0.0040
	LM_T02	43.5153	-34.7902	-37.9227	0.4861
	ME_T01	40.2281	-34.7902	-43.8869	0.1231
	ME_T02	35.5513	-34.7902	-61.2185	0.0023

Table 51. Scots Bay acoustic survey (#2) on July 1, 2017, using sample Target Strength (TS) from fishery samples on July 3, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box	-35.2704	664.42	-49.7023	0.0367	23,947	4,014	17%
Northern Box	-35.2704	79.75	-49.9395	0.0333	2,722	617	23%
Total	-35.2704	744.17	-49.6660	0.0363	26,669	4,061	15%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	C1_T01	42.8946	-35.2704	-52.4424	0.0192
	C1_T02	36.8545	-35.2704	-47.4998	0.0599
	DV_T01	48.3676	-35.2704	-49.2971	0.0396
	DV_T02	40.7039	-35.2704	-53.9610	0.0135
	LB_T01	48.5762	-35.2704	-50.0033	0.0336
	LB_T02	41.5732	-35.2704	-48.7358	0.0450
	LJ_T01	46.9097	-35.2704	-48.0582	0.0526
	LJ_T02	39.6157	-35.2704	-53.6071	0.0147
	ME_T01	44.7608	-35.2704	-52.9495	0.0171
	ME_T02	36.9708	-35.2704	-46.3730	0.0776
	SL_T01	45.4949	-35.2704	-52.8435	0.0175
	SL_T02	39.3831	-35.2704	-48.2515	0.0503
Northern Box	BP_T01	12.8476	-35.2704	-50.1927	0.0322
	BP_T02	18.7879	-35.2704	-48.2113	0.0508
	BP_T03	18.7480	-35.2704	-49.6074	0.0368
	BP_T04	16.3213	-35.2704	-54.0210	0.0133

Table 52. Scots Bay acoustic survey (#3) on July 15, 2017. No fishery samples close to survey date, so the standard Target Strength (TS) was used for biomass calculations.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box	-35.5000	646.61	-51.4492	0.0239	16,433	8,310	51%
Northern Box	-35.5000	80.31	-53.3250	0.0161	1,325	417	31%
Eastern Box	-35.5000	131.12	-48.2424	0.0504	6,973	1522	22%
Total	-35.5000	858.04	-51.1521	0.0272	24,731	8,458	34%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	DV_T01	39.3696	-35.5000	-57.5131	0.0063
	DV_T02	37.3724	-35.5000	-57.1227	0.0069
	LB_T01	45.6794	-35.5000	-43.3532	0.1639
	LB_T02	40.0624	-35.5000	-57.0535	0.0070
	LM_T01	49.4862	-35.5000	-51.6959	0.0240
	LM_T02	41.0063	-35.5000	-56.3066	0.0083
	ME_T01	45.3764	-35.5000	-56.3964	0.0081
	ME_T02	35.6642	-35.5000	-56.3666	0.0082
	SH_T01	48.9460	-35.5000	-52.2938	0.0209
	SH_T02	41.5568	-35.5000	-54.4867	0.0126
	SL_T01	44.6563	-35.5000	-53.6147	0.0154
SL_T02	38.0796	-35.5000	-58.5281	0.0050	
Northern Box	C1_T01	13.6294	-35.5000	-56.6619	0.0077
	C1_T02	17.6410	-35.5000	-55.3568	0.0103
	C1_T03	17.0646	-35.5000	-53.5833	0.0155
	C1_T04	17.0631	-35.5000	-50.6012	0.0309
Eastern Box	BP_T01	11.7526	-35.5000	-51.8783	0.0230
	BP_T02	13.3666	-35.5000	-49.4289	0.0405
	BP_T03	16.0354	-35.5000	-46.7422	0.0751
	BP_T04	17.6474	-35.5000	-47.5095	0.0630



Table 53. Scots Bay acoustic survey (#4) on July 29, 2017, using sample Target Strength (TS) from fishery samples on July 29 & 31, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box	-35.0828	668.82	-55.5797	0.0085	5,965	1,333	22%
Northern Box	-35.2546	69.86	-58.8579	0.0042	305	30	10%
Total	-35.1687	738.68	-56.0769	0.0081	6,270	1,333	21%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	C1_T01	42.7406	-35.0828	-53.2036	0.0154
	C1_T02	37.5389	-35.0828	-56.8249	0.0067
	DV_T01	46.0901	-35.0828	-56.2831	0.0076
	DV_T02	39.4920	-35.0828	-58.4677	0.0046
	LJ_T01	46.9454	-35.0828	-54.1584	0.0124
	LJ_T02	40.6455	-35.0828	-57.7930	0.0054
	LB_T01	49.5002	-35.0828	-50.8244	0.0267
	LB_T02	41.4516	-35.0828	-55.2832	0.0095
	LM_T01	45.6890	-35.0828	-58.8811	0.0042
	LM_T02	39.2260	-35.0828	-61.3735	0.0023
	ME_T01	43.3041	-35.0828	-59.1180	0.0039
ME_T02	36.4365	-35.0828	-59.5037	0.0036	
Northern Box	BP_T01	7.3182	-35.2546	-60.3722	0.0031
	BP_T02	17.2723	-35.2546	-58.4534	0.0048
	BP_T03	16.9011	-35.2546	-58.3498	0.0049
	BP_T04	15.5398	-35.2546	-59.3390	0.0039

Table 54. Scots Bay acoustic survey (#5) on August 12, 2017, using sample Target Strength (TS) from fishery samples on August 12, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box	-34.6988	643.38	-50.2700	0.0273	17,838	11,217	63%
Northern Box	-34.6988	86.36	-63.2539	0.0014	120	37	31%
Total	-34.6988	729.74	-50.8588	0.0242	17,959	9,714	54%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	BP_T02	37.0588	-34.6988	-60.8373	0.0024
	BP_T01	43.2288	-34.6988	-58.7423	0.0039
	DV_T01	48.0665	-34.6988	-50.7928	0.0246
	DV_T02	41.7159	-34.6988	-53.7431	0.0125
	LB_T02	39.0393	-34.6988	-60.5397	0.0026
	LB_T01	44.1185	-34.6988	-59.4823	0.0033
	LJ_T01	47.8695	-34.6988	-54.4427	0.0106
	LJ_T02	39.6180	-34.6988	-56.4611	0.0067
	ME_T01	42.3293	-34.6988	-41.3307	0.2172
	ME_T02	37.8161	-34.6988	-61.9755	0.0019
	SL_T01	47.4053	-34.6988	-50.5365	0.0261
	SL_T02	40.7256	-34.6988	-52.8032	0.0155
Northern Box	C1_T01	19.6731	-34.6988	-64.4409	0.0011
	C1_T02	18.0168	-34.6988	-66.3143	0.0007
	C1_T03	17.6519	-34.6988	-63.5477	0.0013
	C1_T04	16.3767	-34.6988	-60.4340	0.0027

Table 55. Scots Bay acoustic survey (#6) on August 26, 2017, using sample Target Strength (TS) from fishery samples on August 26, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box	-34.8481	629.01	-52.4830	0.0159	10,843	5,566	51%
Northern Box	-34.8481	94.05	-55.9040	0.0078	738	239	32%
Eastern Box	-34.8481	131.19	-60.6846	0.0023	342	258	75%
Total	-34.8481	854.25	-53.7349	0.0129	11,923	5,577	47%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	DV_T01	44.0221	-34.8481	-61.0086	0.0024
	DV_T02	37.5147	-34.8481	-55.9024	0.0078
	LJ_T01	48.3622	-34.8481	-44.3862	0.1112
	LJ_T02	41.2063	-34.8481	-58.7557	0.0041
	LM_T01	47.1475	-34.8481	-52.3104	0.0179
	LM_T02	40.9441	-34.8481	-58.8213	0.0040
	ME_T01	42.2990	-34.8481	-51.5258	0.0215
	ME_T02	36.5259	-34.8481	-58.0813	0.0047
	MS_T01	45.7764	-34.8481	-65.0838	0.0009
	MS_T02	38.5809	-34.8481	-57.1467	0.0059
	SL_T01	45.2455	-34.8481	-59.9276	0.0031
	SL_T02	38.8226	-34.8481	-56.2690	0.0072
Northern Box	C1_T01	23.0554	-34.8481	-56.9617	0.0061
	C1_T02	17.6600	-34.8481	-52.9846	0.0154
	C1_T03	17.1988	-34.8481	-57.2659	0.0057
	C1_T04	15.3542	-34.8481	-58.7146	0.0041
Eastern Box	BP_T01	17.1585	-34.8481	-55.7476	0.0081
	BP_T02	15.9400	-34.8481	-65.5318	0.0009
	BP_T03	13.8963	-34.8481	-84.5182	0.0000
	BP_T04	11.8237	-34.8481	-83.6052	0.0000

Table 56. Scots Bay acoustic survey (#7) on September 8, 2017, using sample Target Strength (TS) from fishery samples on September 9, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box Total	-34.4797	346.21	-50.7414	0.0248	8,188	4,960	61%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	BP_T01	47.6524	-34.4797	-61.3552	0.0021
	BP_T02	44.5399	-34.4797	-56.1214	0.0069
	C1_T01	48.7908	-34.4797	-54.7563	0.0094
	C1_T02	44.7086	-34.4797	-50.2798	0.0263
	ME_T01	45.7972	-34.4797	-54.6821	0.0095
	ME_T02	42.4062	-34.4797	-44.7293	0.0944

Table 57. Scots Bay acoustic survey (#8) on September 23, 2017, using sample Target Strength (TS) from fishery samples on September 24 & 25, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Main Box Total	-34.6340	343.36	-57.5587	0.0051	1,751	163	9%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Main Box	DV_T01	52.2964	-34.6340	-58.4677	0.0041
	DV_T02	43.1426	-34.6340	-56.8929	0.0059
	LB_T01	47.2595	-34.6340	-58.3838	0.0042
	LB_T02	46.0063	-34.6340	-56.1763	0.0070
	MS_T01	47.0100	-34.6340	-57.4814	0.0052
	MS_T02	43.7455	-34.6340	-58.3372	0.0043

Table 58. German Bank acoustic survey (#1) on August 21, 2017, using sample Target Strength (TS) from fishery samples on August 21, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-34.7261	819.58	-48.5748	0.0414	33,839	10,175	30%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	C1_T01	37.0827	-34.7141	-45.6864	0.0799
	C1_T02	37.2874	-34.7141	-55.9872	0.0075
	DV_T01	38.1338	-34.7141	-57.8526	0.0049
	DV_T02	37.6073	-34.7141	-53.5969	0.0129
	LB_T01	37.4484	-34.7141	-49.8603	0.0306
	LB_T02	38.0687	-34.7141	-47.3309	0.0547
	LJ_T01	37.6067	-34.7141	-59.4740	0.0033
	LJ_T02	36.9888	-34.7141	-54.0680	0.0116
	LM_T01	37.4642	-34.7141	-58.3892	0.0043
	LM_T02	37.4932	-34.7141	-54.0766	0.0116
	MS_T01	37.2442	-34.7141	-41.4622	0.2114
	MS_T02	36.7079	-34.7141	-54.3893	0.0108
	SH_T01	37.0090	-34.7141	-50.2837	0.0277
	SH_T02	38.2143	-34.7141	-46.6856	0.0635
	SL_T01	38.0945	-34.7141	-46.3967	0.0679
	SL_T02	37.4453	-34.7141	-56.5760	0.0065
TM_T01	36.8582	-34.8214	-50.8710	0.0248	
TM_T02	36.5786	-34.8214	-44.3914	0.1104	

Table 59. German Bank acoustic survey (#2) on September 8, 2017, using sample Target Strength (TS) from fishery samples on September 9, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-34.7065	830.85	-45.78459	0.0788	65,393	29,635	45%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	DV_T01	38.7561	-34.7065	-54.2332	0.0112
	DV_T02	37.7890	-34.7065	-53.4814	0.0133
	LB_T01	37.3521	-34.7065	-55.0378	0.0093
	LB_T02	38.7358	-34.7065	-40.0151	0.2945
	LJ_T01	36.9347	-34.7065	-55.7546	0.0079
	LJ_T02	37.3261	-34.7065	-55.1311	0.0091
	LM_T01	38.4576	-34.7065	-54.4165	0.0107
	LM_T02	36.9493	-34.7065	-58.8133	0.0039
	MS_T01	36.9496	-34.7065	-56.2018	0.0071
	MS_T02	37.0738	-34.7065	-39.6423	0.3209
	SH_T01	36.6815	-34.7065	-44.6919	0.1003
	SH_T02	36.7799	-34.7065	-75.3591	0.0001
	SL_T01	37.2169	-34.7065	-56.5212	0.0066
	SL_T02	37.8516	-34.7065	-56.0248	0.0074
	TM_T01	36.8525	-34.8138	-38.2651	0.4517
	TM_T02	37.4624	-34.8138	-56.2166	0.0072

Table 60. German Bank acoustic survey (#3) on September 17 2017, using sample Target Strength (TS) from fishery samples on September 18, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-34.6066	841.28	-45.8569	0.0749	62,935	33,366	53%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	DV_T01	38.2215	-34.5932	-52.6464	0.0157
	DV_T02	37.4107	-34.5932	-47.9859	0.0458
	LB_T01	38.6626	-34.5932	-56.3761	0.0066
	LB_T02	37.7695	-34.5932	-56.4368	0.0065
	LJ_T01	37.4307	-34.5932	-36.6701	0.6199
	LJ_T02	37.0691	-34.5932	-55.5441	0.0080
	LM_T01	37.5663	-34.5932	-40.6471	0.2481
	LM_T02	37.0915	-34.5932	-45.3124	0.0847
	MS_T01	37.2308	-34.5932	-59.4815	0.0032
	MS_T02	37.1001	-34.5932	-60.9833	0.0023
	SH_T01	37.2921	-34.5932	-57.3829	0.0053
	SH_T02	37.0940	-34.5932	-54.8311	0.0095
	SL_T01	37.4239	-34.5932	-44.4409	0.1036
	SL_T02	37.5762	-34.5932	-60.2548	0.0027
	TM_T01	37.1927	-34.7005	-55.8901	0.0076
	TM_T02	37.5466	-34.7005	-50.1609	0.0284

Table 61. German Bank acoustic survey (#4) on October 1 2017. No fishery samples close to survey date, so the standard Target Strength (TS) was used for biomass calculations.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.5000	713.16	-59.2400	0.0042	3,014	962	32%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	DV_T01	38.0953	-35.5000	-55.0273	0.0111
	DV_T02	38.6457	-35.5000	-63.8558	0.0015
	LB_T01	37.7807	-35.5000	-52.7727	0.0187
	LB_T02	38.7006	-35.5000	-62.9762	0.0018
	LJ_T01	37.2192	-35.5000	-57.8284	0.0059
	LJ_T02	37.3638	-35.5000	-62.9762	0.0018
	LM_T01	37.4315	-35.5000	-60.4991	0.0032
	LM_T02	37.9643	-35.5000	-63.7349	0.0015
	MS_T02	37.9167	-35.5000	-65.2375	0.0011
	MS_T01	36.9277	-35.5000	-58.2275	0.0053
	SH_T01	37.2110	-35.5000	-59.6432	0.0039
	SH_T02	37.1429	-35.5000	-112.5455	0.0000
	SL_T01	37.3781	-35.5000	-62.4426	0.0020
	SL_T02	37.2332	-35.5000	-63.9677	0.0014

Table 62. German Bank acoustic survey (#5) on October 6, 2017, using sample Target Strength (TS) from fishery samples on September 7, 2017.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.3147	822.33	-57.1523	0.0066	5,386	1,885	35%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	DV_T01	36.2676	-35.3147	-54.7851	0.0113
	DV_T02	37.6342	-35.3147	-59.6333	0.0037
	LB_T02	37.7499	-35.3147	-58.3641	0.0050
	LJ_T01	36.4815	-35.3147	-50.8337	0.0281
	LJ_T02	36.9546	-35.3147	-61.4583	0.0024
	LM_T01	37.4213	-35.3147	-56.9960	0.0068
	LM_T02	37.3758	-35.3147	-62.2736	0.0020
	MS_T01	36.3461	-35.3147	-59.2730	0.0040
	MS_T02	37.0763	-35.3147	-61.8568	0.0022
	SL_T01	35.1797	-35.3147	-60.3392	0.0031
	SL_T02	37.1999	-35.3147	-59.5772	0.0037

Table 63. German Bank acoustic survey (#6) on October 18, 2017. No fishery samples close to survey date, so the standard Target Strength (TS) was used for biomass calculations.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
German Bank	-35.5000	829.72	-49.8611	0.0370	30,396	27,663	91%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
German Bank	DV_T01	39.0730	-35.5000	-64.3431	0.0013
	DV_T02	38.5731	-35.5000	-60.6275	0.0031
	LB_T01	40.1053	-35.5000	-58.6768	0.0048
	LB_T02	39.6228	-35.5000	-58.5362	0.0050
	LJ_T01	37.9168	-35.5000	-39.4411	0.4035
	LJ_T02	37.4263	-35.5000	-62.0341	0.0022
	LM_T01	39.5098	-35.5000	-61.5350	0.0025
	LM_T02	37.9117	-35.5000	-62.4406	0.0020
	MS_T01	37.4826	-35.5000	-65.6879	0.0010
	MS_T02	37.3228	-35.5000	-63.7615	0.0015
	SL_T01	37.1087	-35.5000	-62.0332	0.0022
	SL_T02	38.3172	-35.5000	-53.7570	0.0149



Table 64. Trinity Ledge acoustic survey (#1) on August 12, 2016, using the standard Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
DD01	-35.9590	2.61	-45.6727	0.1074	279	109	39%
DD02	-35.9590	0.62	-48.2629	0.0586	36	15	40%
DD03	-35.9590	0.27	-41.3940	0.2560	77	41	53%
DD04	-35.9590	1.30	-50.1650	0.0411	49	12	24%
DD05	-35.9590	0.97	-45.6272	0.1077	105	13	12%
Trinity Ledge	-35.9590	5.77	-46.2190	0.0942	547	48	9%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
DD01	W417800	1.9069	-35.9590	-43.8187	0.1637
	W417801	2.2954	-35.9590	-44.9194	0.1270
	W417802	2.2803	-35.9590	-51.9012	0.0255
	W417803	2.7435	-35.9590	-42.5236	0.2206
	W417804	2.6355	-35.9590	-83.3322	0.0000
DD02	W417805	2.0687	-35.9590	-50.5099	0.0351
	W417806	2.1091	-35.9590	-46.8135	0.0821
DD03	W417810	0.3975	-35.9590	-49.3242	0.0461
	W417811	0.3408	-35.9590	-49.3696	0.0456
	W417812	0.2274	-35.9590	-48.5551	0.0550
	W417813	0.3058	-35.9590	-44.6392	0.1355
	W417814	0.4227	-35.9590	-40.3553	0.3634
	W417815	0.4653	-35.9590	-35.4450	1.1256
DD04	W417816	0.5558	-35.9590	-52.7476	0.0209
	W417820	0.5492	-35.9590	-45.6570	0.1072
	W417821	0.7487	-35.9590	-53.3967	0.0180
	W417822	0.3842	-35.9590	-49.9598	0.0398
	W417823	0.5011	-35.9590	-51.7219	0.0265
	W417824	0.4638	-35.9590	-48.8335	0.0516
	W417825	0.7002	-35.9590	-50.9376	0.0318
	W417826	0.6457	-35.9590	-52.6695	0.0213
	W417827	0.6493	-35.9590	-48.6662	0.0536
	W417828	0.4474	-35.9590	-49.1883	0.0475
	W417829	0.5352	-35.9590	-54.1128	0.0153
	W417830	0.4561	-35.9590	-51.6801	0.0268
	W417831	0.3695	-35.9590	-51.3207	0.0291
	W417832	0.3686	-35.9590	-44.3313	0.1455
	W417833	0.5328	-35.9590	-50.9833	0.0314
W417834	0.5836	-35.9590	-58.1614	0.0060	
W417835	0.6404	-35.9590	-58.5250	0.0055	
DD05	W417807	2.2737	-35.9590	-45.1370	0.1208
	W417809	2.1779	-35.9590	-46.2058	0.0945

Table 65. Trinity Ledge acoustic survey (#2) on August 22, 2017. One multipanel gillnet sample from August 22 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Trinity Ledge	-35.2482	1.79	-41.7490	0.2209	401	113	28%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
DD01	W417800	0.6943	-35.2482	-39.9221	0.3409
	W417801	0.6723	-35.2482	-45.9235	0.0856
	W417802	0.4577	-35.2482	-40.9111	0.2715
	W417803	0.3986	-35.2482	-39.2412	0.3987
	W417804	0.5235	-35.2482	-45.3544	0.0976
	W417805	0.2391	-35.2482	-47.2344	0.0633
	W417806	0.5433	-35.2482	-35.7981	0.8811
	W417807	0.4073	-35.2482	-42.6006	0.1840
	W417808	0.7640	-35.2482	-43.9498	0.1348
	W417809	0.3117	-35.2482	-42.5118	0.1878
	W417810	0.5029	-35.2482	-47.1221	0.0650
	W417811	0.3923	-35.2482	-44.2201	0.1267
W417812	0.6307	-35.2482	-49.7882	0.0352	

Table 66. Trinity Ledge acoustic survey (#3) on August 29, 2017. One multipanel gillnet sample from August 30 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Trinity Ledge	-35.4104	12.94	-37.2288	0.8553	8,513	4,076	48%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
DD01	W417800	3.3228	-35.4104	-32.1059	2.1402
	W417801	3.2674	-35.4104	-35.0225	1.0934
	W417802	3.0913	-35.4104	-39.5326	0.3871
	W417803	3.1998	-35.4104	-48.2671	0.0518
	W417804	3.7516	-35.4104	-51.7429	0.0233
	W417805	5.3047	-35.4104	-47.0674	0.0683
	W417806	2.3894	-35.4104	-46.1844	0.0837
	W417807	1.4479	-35.4104	-59.7895	0.0036
	W417808	1.7927	-35.4104	-60.2322	0.0033
	W417809	3.2929	-35.4104	-44.6808	0.1183
	W417810	2.3103	-35.4104	-33.6711	1.4925
	W417811	1.1899	-35.4104	-31.6050	2.4018
	W417812	1.1475	-35.4104	-29.6435	3.7730
	W417813	1.1456	-35.4104	-40.1795	0.3335

Table 67. Trinity Ledge acoustic survey (#4) on September 8, 2017. One multipanel gillnet sample from September 9 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Trinity Ledge	-35.2679	15.79	-40.8124	0.2742	4,405	1,860	42%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
DD01	W417800	4.0357	-35.2679	-63.7391	0.0014
	W417801	4.1442	-35.2679	-43.3052	0.1571
	W417802	5.2257	-35.2679	-39.8767	0.3460
	W417803	5.7354	-35.2679	-36.0697	0.8314
	W417804	6.5529	-35.2679	-44.0187	0.1333
	W417805	5.4622	-35.2679	-99.0000	0.0000
	W417806	2.5861	-35.2679	-36.6675	0.7245
	W417807	2.0368	-35.2679	-99.0000	0.0000

Table 68. Spectacle Buoy acoustic survey (#1) on August 25, 2017. One multipanel gillnet sample from August 25 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Spectacle Buoy	-35.0499	0.82	-32.0213	2.1909	1,466	796	54%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
DD01	W417800	0.9438	-35.0499	-28.1540	4.8933
	W417801	1.1716	-35.0499	-28.2532	4.7827
	W417802	1.1160	-35.0499	-35.1702	0.9727
	W417803	1.2650	-35.0499	-41.6368	0.2194
	W417804	1.3289	-35.0499	-45.6712	0.0867

Table 69. Spectacle Buoy acoustic survey (#2) on September 4, 2017. No multipanel gillnet sample available close to survey date, so the standard Target Strength (TS) was used.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
DD01	-35.9590	10.7	-41.4126	0.2533	3,048	1,388	46%
DD02	-35.9590	1.80	-41.3877	0.2833	516	309	60%
Spectacle Buoy	-35.9590	12.5	-41.8494	0.2576	3,564	1202	34%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
DD01	W417800	4.7245	-35.9590	-51.7396	0.0264
	W417801	4.5330	-35.9590	-52.8461	0.0205
	W417802	5.5085	-35.9590	-40.7408	0.3325
	W417803	5.6576	-35.9590	-36.7542	0.8327
	W417804	3.6133	-35.9590	-53.5335	0.0175
	W417805	4.5273	-35.9590	-41.3332	0.2901
DD02	W417806	2.6625	-35.9590	-39.3772	0.4552
	W417807	2.5651	-35.9590	-45.4890	0.1114

Table 70. Spectacle Buoy acoustic survey (#3) on September 16, 2017. One multipanel gillnet sample from September 16 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Spectacle Buoy	-34.9098	31.85	-43.8052	0.1116	3,697	3,171	86%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
DD01	W417800	5.1660	-34.9098	-64.2834	0.0012
	W417801	7.3768	-34.9098	-70.3298	0.0003
	W417802	8.0097	-34.9098	-60.1870	0.0030
	W417803	8.3024	-34.9098	-36.6839	0.6646
	W417804	7.5214	-34.9098	-71.9097	0.0002
	W417805	6.6824	-34.9098	-71.2698	0.0002

Table 71. Little Hope acoustic survey (#1) on September 15, 2017. One multipanel gillnet sample from September 17 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.0231	2.08	-36.5058	0.7383	1,478	543	37%
As02	-35.0231	2.36	-41.3508	0.2208	550	84	15%
As03	-35.0231	10.59	-33.9721	1.1598	13,490	2,645	20%
E8 Sep 15	-35.0231	8.89	-33.1535	1.9689	13,673	3,384	25%
Swh01	-35.0231	6.72	-46.5288	0.0694	475	119	25%
Swh02	-35.0231	2.78	-41.9760	0.1985	561	115	20%
Swh03	-35.0231	1.89	-32.8639	1.3065	3,107	933	30%
Little Hope	-35.0231	35.31	-35.0208	1.0005	28334	2021	7%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A517800	1.4922	-35.0231	-34.1977	1.2093
	A517801	1.4836	-35.0231	-33.5273	1.4112
	A517802	1.5799	-35.0231	-36.2056	0.7616
	A517803	1.6240	-35.0231	-45.3650	0.0924
	A517804	1.7407	-35.0231	-41.6553	0.2172
As02	A517805	0.7181	-35.0231	-43.8830	0.1300
	A517806	1.2358	-35.0231	-42.1511	0.1937
	A517807	1.3311	-35.0231	-40.9115	0.2577
	A517808	1.3179	-35.0231	-44.4132	0.1151
	A517809	1.5177	-35.0231	-40.7812	0.2656
	A517810	1.6013	-35.0231	-39.1193	0.3894
	A517811	1.4162	-35.0231	-42.1491	0.1938
As03	A517812	0.9727	-35.0231	-50.6215	0.0276
	A517813	1.0436	-35.0231	-43.5589	0.1401
	A517814	1.0000	-35.0231	-36.3681	0.7337
	A517815	0.9895	-35.0231	-38.0863	0.4939
	A517816	1.3973	-35.0231	-37.8407	0.5227
	A517817	1.4826	-35.0231	-34.7360	1.0683
	A517818	2.0975	-35.0231	-33.4426	1.4390
	A517819	1.9421	-35.0231	-29.7857	3.3399
	A517820	1.6764	-35.0231	-32.4502	1.8084
	A517821	1.7932	-35.0231	-32.2660	1.8867
	A517822	2.9699	-35.0231	-29.0883	3.9217
	A517823	3.0126	-35.0231	-31.9353	2.0360
	A517824	2.9897	-35.0231	-30.7720	2.6614
	A517825	2.9516	-35.0231	-31.7453	2.1271
	A517826	2.9741	-35.0231	-35.6893	0.8578
	A517827	2.8509	-35.0231	-39.3893	0.3659
	A517828	2.7695	-35.0231	-40.9882	0.2532
	A517829	3.5889	-35.0231	-43.5562	0.1402
	A517830	3.4915	-35.0231	-43.6189	0.1382
	A517831	1.6882	-35.0231	-42.0326	0.1991
	A517832	1.5007	-35.0231	-42.1438	0.1941

Table 71 (continued). Little Hope acoustic survey (#1) on September 15, 2017. One multipanel gillnet sample from September 17 was used to calculate the Target Strength (TS).

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
E8 Sep 15	E417800	0.4471	-35.0231	-39.8129	0.3319
	E417801	0.4892	-35.0231	-26.6545	6.8685
	E417802	0.5374	-35.0231	-29.3215	3.7167
	E417803	0.5994	-35.0231	-28.7711	4.2188
	E417804	0.6566	-35.0231	-29.0034	3.9991
	E417805	0.9286	-35.0231	-25.2834	9.4183
	E417806	0.8748	-35.0231	-28.0752	4.9521
	E417807	0.9158	-35.0231	-40.1141	0.3097
	E417808	0.6848	-35.0231	-38.0226	0.5012
	E417809	1.0876	-35.0231	-41.5034	0.2249
	E417810	0.9721	-35.0231	-41.3462	0.2332
	E417811	1.7135	-35.0231	-42.4232	0.1820
	E417812	1.8623	-35.0231	-36.7662	0.6694
	E417813	1.8513	-35.0231	-37.2463	0.5993
	E417814	1.8780	-35.0231	-37.0715	0.6240
	E417815	3.6357	-35.0231	-36.5252	0.7076
	E417816	5.1198	-35.0231	-35.4183	0.9130
	E417817	4.9270	-35.0231	-30.7964	2.6464
	E417818	4.8563	-35.0231	-35.7813	0.8398
	E417819	4.9050	-35.0231	-34.4565	1.1394
	E417820	4.5709	-35.0231	-32.5632	1.7619
	E417821	4.5143	-35.0231	-35.1179	0.9784
	E417822	1.0440	-35.0231	-32.7117	1.7027
	E417823	1.1442	-35.0231	-31.7652	2.1173
	E417823	1.3829	-35.0231	-31.8557	2.0736
	E417825	1.4902	-35.0231	-30.7764	2.6587
	E417826	1.4036	-35.0231	-31.0388	2.5028
	E417827	1.3997	-35.0231	-32.5828	1.7540
	E417828	1.2112	-35.0231	-37.2794	0.5948
	E417829	1.0411	-35.0231	-33.3371	1.4743
E417830	0.7616	-35.0231	-39.9626	0.3207	

Table 71 (continued). Little Hope acoustic survey (#1) on September 15, 2017. One multipanel gillnet sample from September 17 was used to calculate the Target Strength (TS).

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Swh01	S417800	1.7880	-35.0231	-49.4235	0.0363
	S417801	2.6209	-35.0231	-47.1695	0.0610
	S417802	3.1075	-35.0231	-49.9958	0.0318
	S417803	2.7711	-35.0231	-46.9100	0.0648
	S417804	2.9573	-35.0231	-47.1577	0.0612
	S417805	2.4682	-35.0231	-46.2700	0.0750
	S417806	2.4937	-35.0231	-41.8771	0.2063
	S417807	2.4298	-35.0231	-48.7759	0.0421
Swh02	S417808	1.0815	-35.0231	-48.4373	0.0456
	S417809	0.8840	-35.0231	-47.9751	0.0507
	S417810	0.8587	-35.0231	-48.4996	0.0449
	S417811	1.0072	-35.0231	-42.6319	0.1734
	S417812	0.8256	-35.0231	-41.2526	0.2383
	S417813	0.8373	-35.0231	-38.3828	0.4613
	S417814	0.8836	-35.0231	-39.8474	0.3293
	S417815	1.0717	-35.0231	-41.3319	0.2339
	S417816	1.0572	-35.0231	-44.1358	0.1227
	S417817	0.8051	-35.0231	-41.0439	0.2500
	S417818	1.0568	-35.0231	-40.6369	0.2745
Swh03	S417819	0.6636	-35.0231	-58.0678	0.0050
	S417820	0.7435	-35.0231	-41.7322	0.2133
	S417821	2.1180	-35.0231	-33.4747	1.4284
	S417822	1.8928	-35.0231	-30.3147	2.9569
	S417823	1.0072	-35.0231	-30.9764	2.5390
	S417824	0.8088	-35.0231	-38.3734	0.4624
	S417825	0.6476	-35.0231	-41.2415	0.2389

Table 72. Little Hope acoustic survey (#2) on September 26, 2017. One multipanel gillnet sample from September 26 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.4516	1.54	-35.4893	0.8755	1,527	1,281	84%
As02	-35.4516	20.22	-40.3859	0.2512	6,491	797	12%
Swh01	-35.4516	2.84	-39.8708	0.3388	1,027	219	21%
Swh02	-35.4516	13.14	-42.0017	0.2014	2,908	751	26%
Little Hope	-35.4516	37.74	-41.2041	0.2659	11,953	815	7%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A517800	0.6695	-35.4516	-54.5002	0.0124
	A517801	1.4570	-35.4516	-45.5035	0.0988
	A517802	1.4927	-35.4516	-29.2156	4.2033
	A517803	1.5533	-35.4516	-50.4991	0.0313
	A517804	1.4037	-35.4516	-50.4744	0.0315
As02	A517805	0.7108	-35.4516	-58.3560	0.0051
	A517806	0.7416	-35.4516	-52.9640	0.0177
	A517807	1.4618	-35.4516	-46.4508	0.0794
	A517808	1.1342	-35.4516	-44.2110	0.1331
	A517809	2.4149	-35.4516	-44.1721	0.1343
	A517810	1.1362	-35.4516	-41.8231	0.2306
	A517811	1.8136	-35.4516	-42.0620	0.2183
	A517812	1.3657	-35.4516	-39.8351	0.3645
	A517813	2.2215	-35.4516	-41.1627	0.2685
	A517814	2.1082	-35.4516	-42.1187	0.2154
	A517815	2.2277	-35.4516	-40.1499	0.3390
	A517816	4.7289	-35.4516	-39.5183	0.3920
	A517817	4.9138	-35.4516	-39.1884	0.4230
	A517818	5.4533	-35.4516	-39.3241	0.4100
	A517819	4.6379	-35.4516	-37.8952	0.5697
	A517820	4.6477	-35.4516	-42.0648	0.2181
Swh01	S417800	1.6258	-35.4516	-37.4816	0.6266
	S417801	1.6408	-35.4516	-39.8399	0.3640
	S417802	3.1678	-35.4516	-39.2208	0.4198
	S417803	3.0178	-35.4516	-41.2517	0.2630
	S417804	1.5339	-35.4516	-40.5763	0.3073
	S417805	0.7751	-35.4516	-48.2912	0.0520
Swh02	S417806	4.3314	-35.4516	-39.1183	0.4299
	S417807	4.2901	-35.4516	-39.9937	0.3514
	S417808	4.2358	-35.4516	-41.5883	0.2434
	S417809	4.4078	-35.4516	-42.3759	0.2030
	S417810	4.3447	-35.4516	-46.4644	0.0792
	S417811	4.3904	-35.4516	-46.9155	0.0714
	S417812	1.0495	-35.4516	-50.4266	0.0318



Table 73. Little Hope acoustic survey (#3) on October 6, 2017. One multipanel gillnet sample from October 7 was used to calculate the Target Strength (TS)S.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.5283	0.72	-34.4757	1.2966	917	502	55%
E8 Oct 06	-35.5283	4.57	-38.1049	0.7319	2,525	1112	44%
Swh01	-35.5283	2.13	-47.8927	0.0573	124	17	14%
Swh02	-35.5283	9.24	-44.6033	0.1227	1143	390	34%
Little Hope	-35.5283	16.66	-40.3148	0.3322	4709	788	17%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A517800	0.8862	-35.5283	-39.9482	0.3614
	A517801	0.7426	-35.5283	-30.6818	3.0525
	A517802	0.7501	-35.5283	-33.0604	1.7652
	A517803	0.6944	-35.5283	-56.7889	0.0075
E8 Oct 06	E417800	0.7550	-35.5283	-31.4781	2.5411
	E417801	0.9260	-35.5283	-32.0042	2.2512
	E417802	1.3737	-35.5283	-35.5325	0.9990
	E417803	1.3090	-35.5283	-38.5246	0.5016
	E417804	1.6847	-35.5283	-36.2870	0.8397
	E417805	1.5613	-35.5283	-36.7764	0.7502
	E417806	2.1776	-35.5283	-40.0246	0.3551
	E417807	1.6746	-35.5283	-42.2938	0.2106
	E417808	2.0336	-35.5283	-45.3844	0.1034
	E417809	1.9323	-35.5283	-45.1368	0.1094
	E417810	2.3281	-35.5283	-46.5716	0.0786
Swh01	E417811	1.0564	-35.5283	-49.2008	0.0429
	S417800	1.7880	-35.5283	-49.4235	0.0408
	S417801	2.6209	-35.5283	-47.1695	0.0685
	S417802	3.1075	-35.5283	-49.9958	0.0357
	S417803	2.7711	-35.5283	-46.9100	0.0728
Swh02	S417804	2.9573	-35.5283	-47.1577	0.0687
	S417805	2.9359	-35.5283	-44.1748	0.1366
	S417806	3.0980	-35.5283	-43.9925	0.1424
	S417807	3.0617	-35.5283	-40.6263	0.3092
	S417808	3.9747	-35.5283	-46.4359	0.0811
	S417809	3.9309	-35.5283	-48.6223	0.0490
	S417810	1.8880	-35.5283	-53.0714	0.0176

Table 74. Little Hope acoustic survey (#4) on October 17, 2017. One multipanel gillnet sample from October 18 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.5074	1.46	-45.5641	0.0998	144	22	15%
As02	-35.5074	2.98	-46.0409	0.0869	264	50	19%
Swh01	-35.5074	0.81	-30.6313	3.1606	2,489	1,050	42%
Swh02	-35.5074	6.25	-42.9774	0.2734	1,119	745	67%
Little Hope	-35.5074	11.5	-39.4181	0.4064	4,016	686	17%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A517800	0.9500	-35.5074	-44.6685	0.1213
	A517801	1.1389	-35.5074	-45.2146	0.1070
	A517802	1.1167	-35.5074	-46.9925	0.0710
As02	A517803	1.3335	-35.5074	-44.6406	0.1221
	A517804	1.3286	-35.5074	-45.1124	0.1095
	A517805	1.3194	-35.5074	-45.8584	0.0922
	A517806	1.1752	-35.5074	-51.5910	0.0246
	A517807	1.1741	-35.5074	-46.1641	0.0860
Swh01	S417800	0.5810	-35.5074	-28.2082	5.3694
	S417801	0.7742	-35.5074	-31.9786	2.2536
	S417802	0.7576	-35.5074	-27.0952	6.9377
	S417803	0.7548	-35.5074	-34.5988	1.2327
	S417804	0.7304	-35.5074	-55.7919	0.0094
Swh02	S417805	0.6589	-35.5074	-40.6942	0.1996
	S417806	0.7915	-35.5074	-36.0126	0.7045
	S417807	1.7073	-35.5074	-42.0142	0.3816
	S417808	2.7573	-35.5074	-42.6625	0.5308
	S417809	3.3097	-35.5074	-43.5852	0.5152
	S417810	3.3911	-35.5074	-45.3902	0.3484
	S417811	3.1701	-35.5074	-48.8624	0.1464

Table 75. Little Hope acoustic survey (#5) on October 28, 2017. No multipanel gillnet sample available close to survey date, so the standard Target Strength (TS) was used.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.9590	6.00	-43.2832	0.1792	1,111	283	25%
E8 Oct 28	-35.9590	2.64	-36.5942	0.9779	2,281	1,636	72%
Swh01	-35.9590	1.33	-29.6881	3.8308	5,636	1,598	28%
Swh02	-35.9590	3.68	-41.5215	0.2600	1,022	161	16%
Little Hope	-35.9590	13.65	-37.4388	0.7112	10,050	1205	12%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A517800	3.1101	-35.9590	-48.3523	0.0576
	A517801	3.1531	-35.9590	-42.1982	0.2377
	A517802	3.0209	-35.9590	-40.8614	0.3234
	A517803	1.9277	-35.9590	-43.6228	0.1712
	A517804	2.0151	-35.9590	-45.7110	0.1059
E8 Oct 28	E417800	0.8004	-35.9590	-52.7084	0.0211
	E471801	1.0333	-35.9590	-51.3290	0.0290
	E417802	1.0192	-35.9590	-29.0281	4.9327
	E417803	1.9600	-35.9590	-32.6500	2.1424
	E417804	1.9869	-35.9590	-39.3590	0.4571
	E417805	2.2345	-35.9590	-45.1093	0.1216
	E417806	2.1482	-35.9590	-47.4902	0.0703
Swh01	E417807	1.1574	-35.9590	-49.0827	0.0487
	S417800	0.5737	-35.9590	-41.1020	0.3060
	S417801	0.7438	-35.9590	-32.5797	2.1773
	S417802	0.7820	-35.9590	-26.4895	8.8501
	S417803	0.6805	-35.9590	-26.4419	8.9477
	S417804	0.7914	-35.9590	-27.7289	6.6528
	S417805	0.7022	-35.9590	-29.7427	4.1843
	S417806	0.7088	-35.9590	-30.7386	3.3269
	S417807	0.6753	-35.9590	-53.7618	0.0166
	S417808	0.3325	-35.9590	-54.1376	0.0152
Swh02	S417809	1.5376	-35.9590	-46.5023	0.0882
	S417810	1.6090	-35.9590	-40.5246	0.3495
	S417811	1.9446	-35.9590	-41.3354	0.2900
	S417812	1.9852	-35.9590	-39.1306	0.4818
	S417813	2.2742	-35.9590	-40.8768	0.3223
	S417814	2.0492	-35.9590	-41.3542	0.2887
	S417815	1.8230	-35.9590	-42.5822	0.2176
	S417816	1.7123	-35.9590	-41.9334	0.2527
	S417817	0.9765	-35.9590	-49.0302	0.0493

Table 76. Little Hope acoustic survey (#6) on November 7, 2017. No multipanel gillnet sample available close to survey date, so the standard Target Strength (TS) was used.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
As01	-35.9590	0.96	-33.6707	1.7101	1,626	465	29%
As02	-35.9590	0.47	-37.1335	0.7685	359	235	66%
E8 Nov 07	-35.9590	2.11	-31.5907	2.6983	5,769	1,683	29%
Little Hope	-35.9590	3.54	-32.5862	2.1741	7,754	1146	15%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
As01	A517800	0.6245	-35.9590	-31.0775	3.0772
	A517801	0.6942	-35.9590	-32.1725	2.3914
	A517802	0.7883	-35.9590	-32.7710	2.0835
	A517803	0.8172	-35.9590	-32.5246	2.2052
	A517804	0.8395	-35.9590	-39.7993	0.4130
	A517805	0.6228	-35.9590	-46.4163	0.0900
As02	A517806	1.3805	-35.9590	-34.9229	1.2694
	A517807	1.4110	-35.9590	-41.6841	0.2676
E8 Nov 07	E417800	1.3385	-35.9590	-41.5459	0.2763
	E417801	1.4708	-35.9590	-30.6632	3.3851
	E417802	1.7138	-35.9590	-28.4062	5.6922
	E417803	1.7530	-35.9590	-31.7452	2.6386
	E417804	2.0145	-35.9590	-30.7283	3.3348
	E417805	2.0197	-35.9590	-36.5992	0.8629

Table 77. Eastern Shore acoustic survey (#1) on September 15, 2017. Two multipanel gillnet samples from September 15 & 16 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01	-35.7918	0.31	-33.2619	1.8822	555	409	74%
MoH01	-35.7981	1.17	-27.9305	5.6734	7160	1419	20%
Eastern Shore	-35.7950	1.48	-28.9114	4.8793	7,716	1198	15%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B517800	0.5157	-35.7918	-50.6737	0.0325
	B517801	0.4479	-35.7918	-32.9342	1.9309
	B517802	0.4660	-35.7918	-27.3570	6.9741
	B517803	0.5205	-35.7918	-39.1375	0.4628
	B517804	0.4949	-35.7918	-55.4911	0.0107
MoH01	M517800	0.5834	-35.8992	-39.6333	0.4232
	M517801	0.7457	-35.8992	-31.0919	3.0250
	M517802	0.7635	-35.8992	-30.5534	3.4243
	M517803	0.7406	-35.8992	-30.3968	3.5501
	M517804	0.9380	-35.8992	-26.8284	8.0737
	M517805	0.8884	-35.8992	-26.5301	8.6478
	M517806	0.8289	-35.8992	-26.1536	9.4309
	M517807	0.8765	-35.8992	-25.6113	10.6852
	M517808	0.8871	-35.8992	-25.3683	11.3003
	M517809	0.7830	-35.8992	-28.6453	5.3135
	M517810	0.6448	-35.8992	-61.7608	0.0026

Table 78. Eastern Shore acoustic survey (#2) on September 26, 2017. One multipanel gillnet sample from September 30 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea01 (Excluded)	-35.9590	1.36	-30.2555	3.5519	5,057	3,086	61%
MoH01	-36.2449	0.58	-28.8902	5.3065	3,154	972	31%
Eastern Shore	-36.2449	0.58	-28.8902	5.3065	3,154	972	31%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B517800	1.234	-35.959	-29.85	4.08211
	B517801	1.216	-35.959	-37.637	0.67949
	B517802	1.601	-35.959	-28.283	5.85586
	B517803	1.373	-35.959	-30.408	3.59033
Ea02	B517804	0.5370	-36.2449	-40.9298	0.3400
	B517805	0.5870	-36.2449	-27.8996	6.8318
	B517806	0.6160	-36.2449	-27.8649	6.8865
	B517807	0.5657	-36.2449	-27.9938	6.6852
	B517808	0.5233	-36.2449	-24.8444	13.8054
	B517809	0.6051	-36.2449	-27.6334	7.2636
	B517810	0.6181	-36.2449	-38.6698	0.5721
	B517811	0.4006	-36.2449	-47.9681	0.0672

Table 79. Eastern Shore acoustic survey (#3) on September 29, 2017. One multipanel gillnet sample from September 30 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Ea02 (Excluded)	-36.2449	0.31	-41.1834	0.3074	99	26	26%
Or01	-35.9590	0.37	-37.8225	0.6568	241	77	32%
Eastern Shore	-35.9590	0.37	-37.8225	0.6568	241	77	32%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea02 (excluded)	B517807	0.6540	-36.2449	-40.4717	0.3779
	B517808	0.5205	-36.2449	-45.0751	0.1309
	B517809	0.5226	-36.2449	-40.5223	0.3735
	B517810	0.5023	-36.2449	-38.8257	0.5520
	B517811	0.3775	-36.2449	-46.1240	0.1028
Or01	T517800	0.5138	-35.9590	-52.9333	0.0201
	T517801	0.5848	-35.9590	-36.9754	0.7913
	T517802	0.7175	-35.9590	-33.7387	1.6674
	T517803	0.6990	-35.9590	-35.9178	1.0095
	T517804	0.8071	-35.9590	-40.2163	0.3752
	T517805	0.9077	-35.9590	-41.8823	0.2557

	T517806	0.9027	-35.9590	-39.1598	0.4785
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Table 80. Eastern Shore acoustic survey (#4) on September 30, 2017. One multipanel gillnet sample from September 30 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Eastern Shore	-36.2449	2.13	-26.2839	9.1432	21,110	5,248	25%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B517800	1.1210	-36.2449	-45.7770	0.1114
	B517801	0.8874	-36.2449	-47.0759	0.0826
	B517802	0.8378	-36.2449	-25.8614	10.9232
	B517803	1.0250	-36.2449	-22.7260	22.4851
	B517804	1.1212	-36.2449	-22.6493	22.8856
	B517805	1.1539	-36.2449	-23.0559	20.8402
	B517806	1.2831	-36.2449	-24.2812	15.7170
	B517807	1.2695	-36.2449	-25.3656	12.2442
	B517808	1.2364	-36.2449	-29.3706	4.8690
	B517809	1.1867	-36.2449	-30.9448	3.3886
	B517810	1.2171	-36.2449	-37.0293	0.8348
	B517811	0.4898	-36.2449	-29.9821	4.2295
B517812	0.3934	-36.2449	-42.2483	0.2510	

Table 81. Eastern Shore acoustic survey (#5) on October 7, 2017. One multipanel gillnet sample from October 8 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Moh01	-35.8625	0.73	-34.0196	1.4507	1,116	577	52%
Ea01	-35.8625	0.55	-25.6524	10.4995	5,773	1,374	24%
Eastern Shore	-35.8625	1.28	-28.5880	5.3389	6,888	1,150	17%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
MoH01	M517800	0.7177	-35.5414	-31.0034	2.8431
	M517801	0.8914	-35.5414	-29.9991	3.5828
	M517802	0.8316	-35.5414	-25.7232	9.5900
	M517803	0.7781	-35.5414	-25.0609	11.1699
	M517804	0.8248	-35.5414	-23.4162	16.3126
	M517805	0.7588	-35.5414	-40.4224	0.3250
	M517806	0.5270	-35.5414	-61.9717	0.0023
Ea01	B517800	0.5809	-35.8992	-38.0559	0.6086
	B517801	0.7035	-35.8992	-28.7499	5.1872
	B517802	0.7061	-35.8992	-27.5926	6.7711
	B517803	0.6837	-35.8992	-24.2587	14.5898
	B517804	0.7205	-35.8992	-24.4774	13.8731
B517805	0.6112	-35.8992	-22.8615	20.1264	

	B517806	0.5651	-35.8992	-24.7717	12.9643
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Table 82. Eastern Shore acoustic survey (#6) on October 16, 2017. One multipanel gillnet sample from October 17 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Eastern Shore	-35.5414	0.81	-27.2933	6.2608	5,411	1,893	35%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
MoH01	M517800	0.7177	-35.5414	-31.0034	2.8431
	M517801	0.8914	-35.5414	-29.9991	3.5828
	M517802	0.8316	-35.5414	-25.7232	9.5900
	M517803	0.7781	-35.5414	-25.0609	11.1699
	M517804	0.8248	-35.5414	-23.4162	16.3126
	M517805	0.7588	-35.5414	-40.4224	0.3250
	M517806	0.5270	-35.5414	-61.9717	0.0023

Table 83. Eastern Shore acoustic survey (#7) on October 21, 2017. One multipanel gillnet sample from October 22 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Eastern Shore	-35.3627	0.34	-27.5240	5.9960	2,067	1,061	51%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B517800	0.3753	-35.3627	-55.2514	0.0103
	B517801	0.3800	-35.3627	-57.6824	0.0059
	B517802	0.3914	-35.3627	-22.7654	18.1857
	B517803	0.3986	-35.3627	-21.2609	25.7148
	B517804	0.4183	-35.3627	-28.7523	4.5819
	B517805	0.4120	-35.3627	-30.6415	2.9657
	B517806	0.3556	-35.3627	-33.1653	1.6586
	B517807	0.3977	-35.3627	-36.5957	0.7528
	B517808	0.3973	-35.3627	-45.8837	0.0887



Table 84. Eastern Shore acoustic survey (#8) on October 22, 2017. One multipanel gillnet sample from October 23 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Eastern Shore	-35.8065	0.60	-26.8848	7.7708	4,681	1,588	34%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
MoH01	M517800	0.9335	-35.8065	-26.2410	9.0480
	M517801	0.8802	-35.8065	-23.3740	17.5089
	M517802	0.8728	-35.8065	-24.8884	12.3542
	M517803	0.8904	-35.8065	-28.9386	4.8618
	M517804	0.8856	-35.8065	-31.3287	2.8041
	M517805	0.8562	-35.8065	-49.0132	0.0478

Table 85. Eastern Shore acoustic survey (#9) on November 11, 2017. One multipanel gillnet sample from November 11 was used to calculate the Target Strength (TS).

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Eastern Shore	-35.7798	1.70	-29.9180	3.6801	6,556	2,319	35%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
Ea01	B517800	1.1751	-35.7798	-38.7721	0.5021
	B517801	1.2706	-35.7798	-27.1292	7.3293
	B517802	1.3517	-35.7798	-26.9238	7.6842
	B517803	1.2593	-35.7798	-29.3309	4.4146
	B517804	1.2618	-35.7798	-32.4732	2.1412
	B517805	1.0875	-35.7798	-56.1232	0.0092

Table 86. Eastern Shore acoustic survey (#10) on November 12, 2017. No multi-panel herring gillnet sample was collected. The standard Target Strength (TS) was used.

Stratum Layer 1	Average TS (dB/kg)	Stratum Area (km <sup>2</sup> )	Weighted Mean Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )	Strata Biomass (t)	SE (t)	SE (%)
Eastern Shore	-35.9590	0.94	-36.3600	0.8622	857	158	18%

Stratum Layer 1	Transect Number	Transect Length (km)	TS (dB/kg)	Average Sa (/m <sup>2</sup> )	Biomass Density (kg/m <sup>2</sup> )
MoH01	M517800	1.0830	-35.9590	-36.0138	0.9875
	M517801	1.0539	-35.9590	-35.2183	1.1860
	M517802	1.1025	-35.9590	-34.7418	1.3235
	M517803	1.0880	-35.9590	-34.0561	1.5499
	M517804	0.9199	-35.9590	-37.9121	0.6378
	M517805	0.9718	-35.9590	-37.7380	0.6639
	M517806	0.7754	-35.9590	-41.0872	0.3070
	M517807	0.8321	-35.9590	-42.1153	0.2423