

The University of Maine

DigitalCommons@UMaine

Fisheries

Maine Environmental Collection

10-2-2020

Massachusetts Marine Fisheries Letter 1/1/2019

Massachusetts Division of Marine Fisheries

Follow this and additional works at: https://digitalcommons.library.umaine.edu/maine_env_fisheries

Repository Citation

Marine Fisheries, Massachusetts Division of, "Massachusetts Marine Fisheries Letter 1/1/2019" (2020). *Fisheries*. 13.

https://digitalcommons.library.umaine.edu/maine_env_fisheries/13

This Article is brought to you for free and open access by DigitalCommons@UMaine. It has been accepted for inclusion in Fisheries by an authorized administrator of DigitalCommons@UMaine. For more information, please contact um.library.technical.services@maine.edu.



David E. Pierce, Ph.D.
Director

Commonwealth of Massachusetts

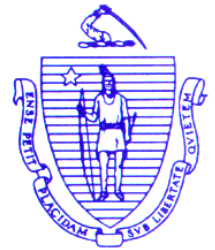
Division of Marine Fisheries

251 Causeway Street, Suite 400

Boston, Massachusetts 02114

(617)626-1520

fax (617)626-1509



Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Ronald Amidon
Commissioner

Mary-Lee King
Deputy Commissioner

Jan 1, 2019

Fixed Gear Fishermen of Massachusetts,

Marine Fisheries will be conducting its annual spring trawl survey throughout state coastal waters beginning May 6, 2019. Surveys have been conducted each May and September since 1978 to provide a consistent sampling of benthic fishes and mobile invertebrates. Survey data is used to monitor the condition of fish stocks, as well as to inform the environmental review process that minimizes construction impacts on fisheries resources. Maintaining access to the planned sampling sites is critical to the integrity of the survey.

Please review the attached table of station locations and the accompanying figures which plot the sample sites. Station location information can also be accessed on our website (<http://www.mass.gov/eea/agencies/dfg/dmf/programs-and-projects/resource-assessment-surveys-project.html>). **We kindly ask for your cooperation and insist that all fixed gear be kept clear of station locations (1.5 n. mi. diameter circle as shown in figure - center point reported in table) for the indicated periods until station completion.** While we will make every attempt to complete stations during the assigned period to minimize inconvenience to fixed gear fishermen, *Marine Fisheries* is prepared to attach restrictions to permit renewals (under 322 CMR 7.01 (7)), mandating that fixed gear not be set on designated trawl survey sites for the announced dates. It remains our hope that this action will be unnecessary.

Sign-up to receive text notifications of trawl survey progress on the *Marine Fisheries* website (<http://www.mass.gov/dmf/trawlsurvey>). A daily updated list of completed survey stations will be sent via text, and posted on the *Marine Fisheries* website and on Twitter (handle: @MassDMF). The Massachusetts Lobstermen's Association will also post survey information on their webpage (<http://www.lobstermen.com>), as well as on Facebook (username: lobstermensassoc) and Twitter (handle: @masslobstermens). In the event of a delay due to weather, the schedule will be resumed as soon as working conditions permit. Fishermen can contact the R/V *Gloria Michelle* on VHF channels 13 or 16 to determine the updated daily schedule.

Personnel aboard the NOAA R/V *Gloria Michelle*, a 65' western rigged steel stern trawler with a blue hull and white deckhouse, will carefully check each site for marked gear by cruising along a selected tow path before the net is set. Twenty-minute tows undertaken at 2.5 knots cover approximately 0.8 nautical miles. We encourage communicating helpful information to the R/V officers (via channels 13 or 16).

Your cooperation is greatly appreciated and is vital to the effective monitoring of marine resources in the Commonwealth. If you have any questions about the survey, please contact me (matt.camisa@mass.gov, (508) 742-9743). **If you have any questions about the *Marine Fisheries* website, Facebook, or Twitter, please contact Story Reed (story.reed@mass.gov, 617- 626-1524).**

Sincerely,

Matt Camisa
Senior Marine Fisheries Biologist

Cc. David Pierce, Director

Massachusetts Division of Marine Fisheries
May 2019 Spring Trawl Survey Station Locations
Massachusetts Bay to New Hampshire

* Loran coordinates taken from NOAA paper charts.
Please refer to Lat/Long for best accuracy.

Area Description	Depth	Range of Dates	Latitude	Longitude	Loran	Sta. ID#
Cape Ann and North	0-30'	May 10-13	42°42.50	-70°45.31	13830.5/44381.2	N-1
	0-30'	May 10-13	42°40.44	-70°41.87	13819.3/44364.0	N-2
	31'-60'	May 10-13	42°41.21	-70°41.33	13811.7/44366.8	N-3
	31'-60'	May 10-13	42°44.76	-70°45.70	13821.0/44394.0	N-4
	61'-90'	May 10-13	42°46.30	-70°44.79	13806.8/44400.2	N-5
	61'-90'	May 10-13	42°44.26	-70°44.27	13814.4/44388.7	N-6
	61'-90'	May 10-13	42°41.59	-70°40.73	13806.0/44367.7	N-7
	91'-120'	May 10-13	42°42.75	-70°39.84	13793.9/44372.1	N-8
	91'-120'	May 10-13	42°41.52	-70°35.22	13770.6/44356.8	N-9
	91'-120'	May 10-13	42°39.35	-70°34.24	13776.1/44343.6	N-10
	121'-180'	May 10-13	42°42.25	-70°36.33	13774.0/44362.7	N-11
	121'-180'	May 10-13	42°38.81	-70°32.83	13770.0/44338.1	N-12
	121'-180'	May 10-13	42°43.75	-70°37.24	13771.6/44372.4	N-13
	181'+	May 10-13	42°43.88	-70°36.23	13764.5/44371.2	N-14
	181'+	May 10-13	42°38.28	-70°31.91	13767.0/44333.6	N-15
Massachusetts Bay	0-30'	May 9-11	42°26.84	-70°55.37	13977.0/44314.9	N-16
	0-30'	May 8-11	42°16.81	-70°51.25	14000.0/44249.8	N-17
	31'-60'	May 8-10	42°14.07	-70°44.34	13969.0/44221.2	N-18
	31'-60'	May 8-11	42°17.13	-70°48.25	13979.1/44246.0	N-19
	31'-60'	May 9-11	42°24.69	-70°56.15	13992.8/44304.2	N-20
	61'-90'	May 9-11	42°23.89	-70°53.55	13980.0/44294.7	N-21
	61'-90'	May 9-11	42°26.92	-70°52.34	13957.0/44309.6	N-22
	61'-90'	May 8-11	42°18.72	-70°47.90	13969.2/44254.7	N-23
	91'-120'	May 9-14	42°32.69	-70°43.31	13869.1/44324.6	N-24
	91'-120'	May 9-11	42°26.93	-70°50.14	13942.6/44305.4	N-25
	91'-120'	May 9-11	42°23.18	-70°49.51	13957.5/44283.2	N-26
	121'-180'	May 9-14	42°30.60	-70°41.63	13869.3/44309.7	N-27
	121'-180'	May 8-11	42°19.49	-70°42.16	13928.9/44248.7	N-28
	121'-180'	May 9-14	42°27.68	-70°43.57	13896.8/44297.3	N-29
	181'+	May 9-14	42°24.89	-70°39.51	13885.0/44274.3	N-30
	181'+	May 9-14	42°30.63	-70°39.02	13852.5/44305.1	N-31

Massachusetts Division of Marine Fisheries
May 2019 Spring Trawl Survey Station Locations
Cape Cod Bay and East of Cape Cod.

* Loran coordinates taken from NOAA paper charts.
Please refer to Lat/Long for best accuracy.

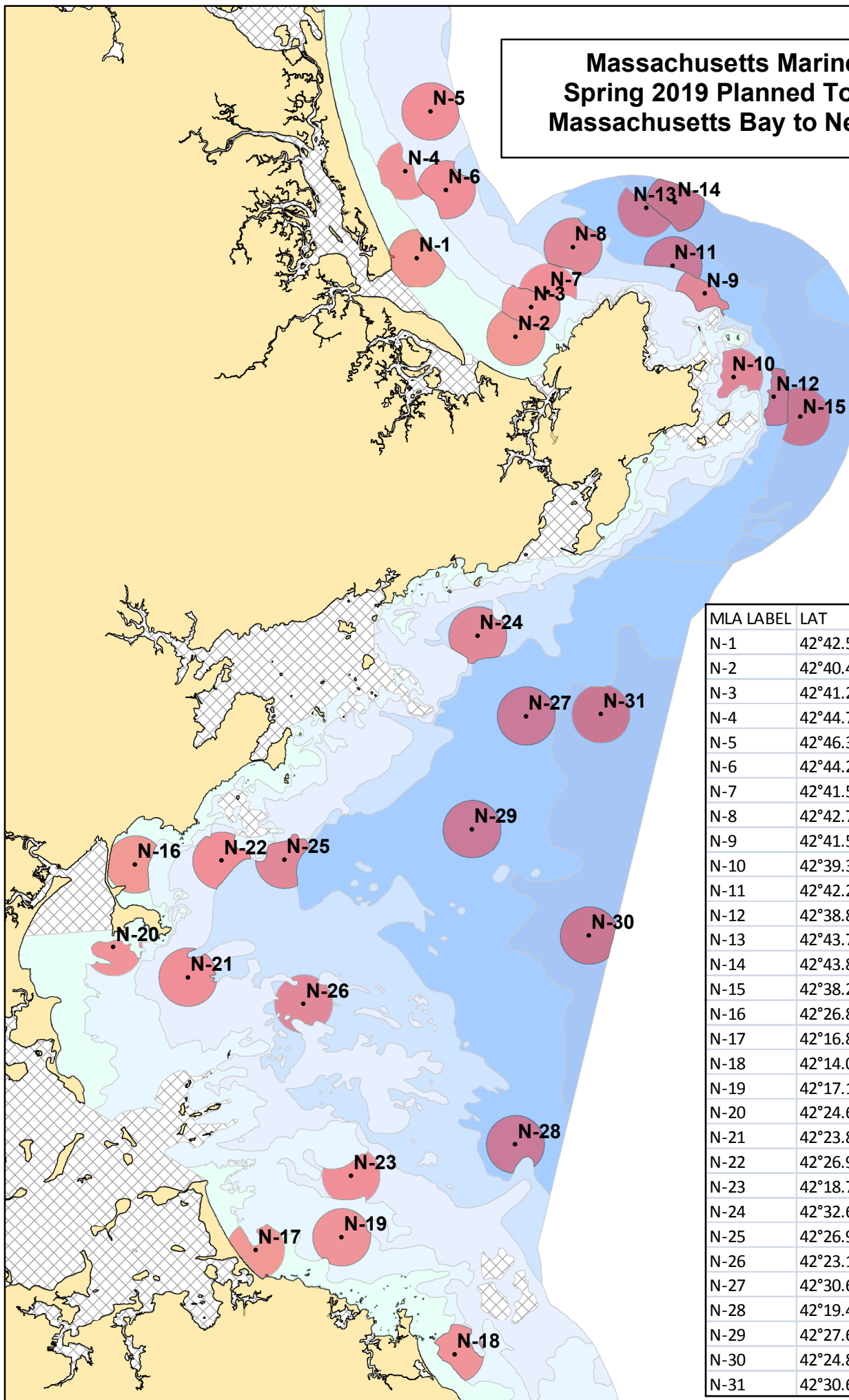
Area Description	Depth	Range of Dates	Latitude	Longitude	Loran	Sta. ID#
Western Cape Cod Bay	0-30'	May 6-9	41°58.10	-70°36.36	13994.0/44112.7	C-1
	0-30'	May 6-9	41°44.91	-70°17.07	13937.3/44002.0	C-2
	0-30'	May 6-9	41°50.77	-70°30.75	13992.5/44058.8	C-3
	31'-60'	May 6-9	41°47.40	-70°14.65	13911.7/44013.5	C-4
	31'-60'	May 6-9	41°51.47	-70°30.07	13985.6/44062.0	C-5
	31'-60'	May 6-9	41°57.81	-70°34.40	13983.3/44107.8	C-6
	61'-90'	May 6-9	41°48.50	-70°24.31	13964.0/44035.0	C-7
	61'-90'	May 6-9	41°49.27	-70°19.08	13929.6/44031.6	C-8
	61'-90'	May 6-9	41°47.42	-70°21.89	13954.5/44024.6	C-9
	91'-120'	May 12-15	41°54.77	-70°18.58	13901.5/44064.0	C-10
	91'-120'	May 6-9	41°54.27	-70°25.40	13944.4/44071.7	C-11
	91'-120'	May 6-9	41°54.52	-70°27.96	13959.0/44077.2	C-12
	121'-180'	May 6-9	41°56.13	-70°22.77	13920.0/44078.7	C-13
	121'-180'	May 8-10	42°04.46	-70°32.06	13938.0/44143.5	C-14
	121'-180'	May 6-9, 12-15	41°59.22	-70°24.84	13918.3/44100.4	C-15
Eastern Cape Cod Bay	0-30'	May 13-15	41°54.95	-70°06.05	13826.4/44045.9	C-16
	0-30'	May 6-9	41°48.89	-70°04.78	13847.0/44008.0	C-17
	31'-60'	May 6-9	41°49.39	-70°13.17	13894.0/44023.3	C-18
	31'-60'	May 13-15	41°54.11	-70°08.17	13842.7/44044.0	C-19
	61'-90'	May 13-15	41°58.73	-70°08.36	13822.0/44071.5	C-20
	61'-90'	May 6-9	41°51.72	-70°13.81	13887.0/44038.4	C-21
	91'-120'	May 13-15	41°53.65	-70°11.90	13867.0/44047.0	C-22
	91'-120'	May 13-15	41°55.36	-70°14.26	13873.0/44060.6	C-23
	121'-180'	May 12-15	42°00.82	-70°21.28	13889.4/44104.0	C-24
	121'-180'	May 12-16	42°01.76	-70°13.27	13836.8/44096.9	C-25
	181'+	May 12-14	42°06.91	-70°23.91	13876.4/44144.2	C-26
	181'+	May 12-16	42°03.77	-70°15.94	13843.0/44112.9	C-27
	181'+	May 12-14	42°05.52	-70°20.03	13859.5/44129.8	C-28
East of Cape Cod	0-30'	May 15-17	41°35.93	-69°56.55	13858.0/43917.5	B-1
	0-30'	May 14-16	42°03.53	-70°04.96	13778.8/44094.1	B-2
	31'-60'	May 15-17	41°39.44	-69°54.23	13829.4/43935.4	B-3
	31'-60'	May 15-17	41°36.47	-69°54.41	13843.6/43917.7	B-4
	31'-60'	May 14-17	41°59.02	-69°59.11	13766.2/44059.2	B-5
	61'-90'	May 14-17	41°59.15	-69°58.42	13761.5/44059.0	B-6
	61'-90'	May 14-17	41°49.00	-69°54.23	13785.5/43993.2	B-7
	91'-120'	May 14-17	41°50.31	-69°53.50	13775.0/44000.0	B-8
	91'-120'	May 14-16	42°05.91	-70°06.48	13776.2/44110.2	B-9
	91'-120'	May 14-17	41°47.86	-69°52.65	13781.6/43984.1	B-10
	121'-180'	May 14-16	42°05.40	-70°02.17	13753.3/44100.5	B-11
	121'-180'	May 14-16	42°07.28	-70°13.99	13814.3/44130.0	B-12
	121'-180'	May 14-17	41°50.47	-69°52.76	13770.0/43999.8	B-13

Massachusetts Division of Marine Fisheries
May 2019 Spring Trawl Survey Station Locations
South of Cape Cod

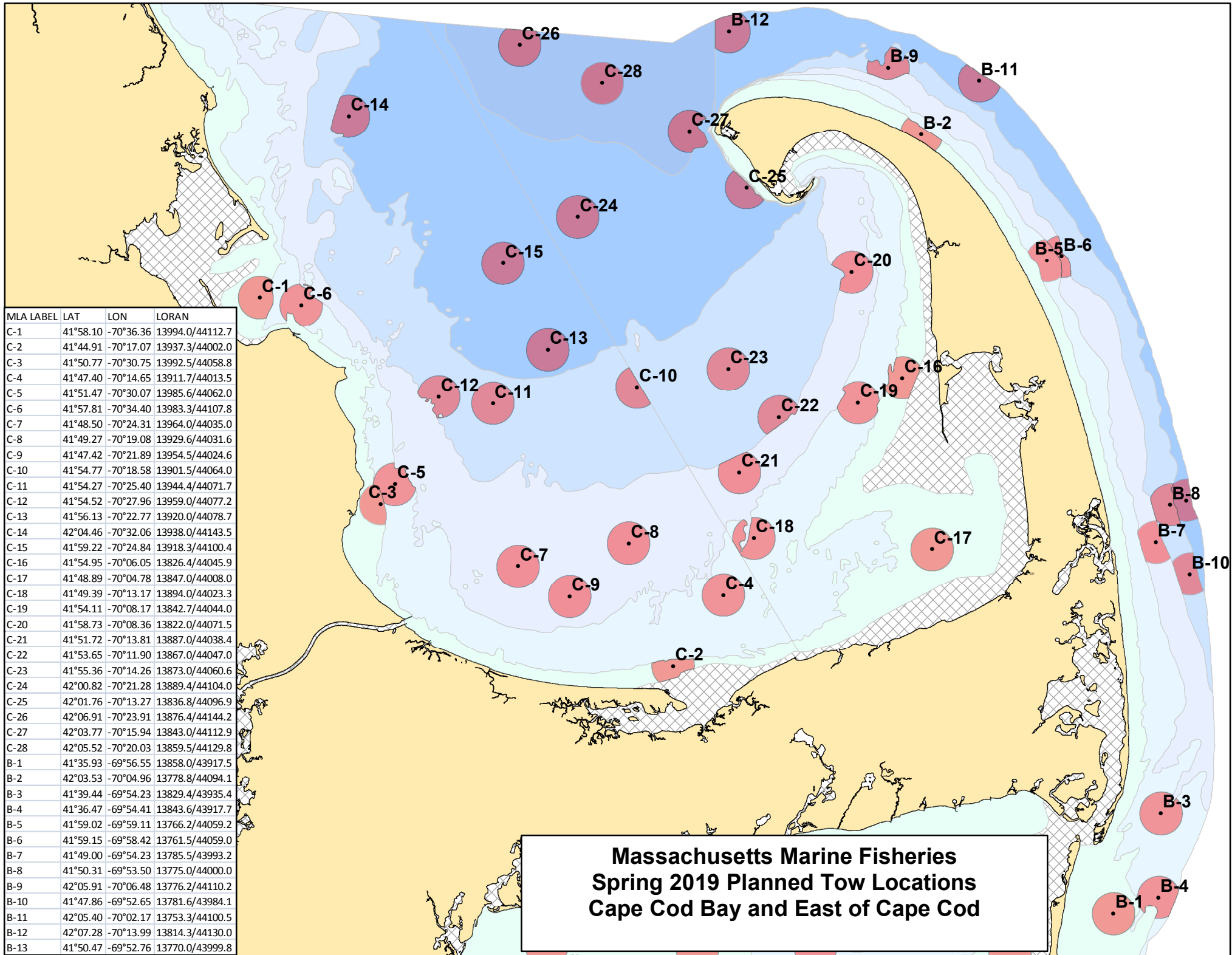
* Loran coordinates taken from NOAA paper charts.
Please refer to Lat/Long for best accuracy.

Area Description	Depth	Range of Dates	Latitude	Longitude	Loran	Sta. ID#
Buzzards Bay and Vineyard Sound	0-30'	May 16-26	41°29.80	-71°03.36	14280.0/43974.9	S-1
	0-30'	May 16-26	41°40.81	-70°41.65	14103.0/44018.3	S-2
	0-30'	May 16-26	41°37.96	-70°45.05	14136.4/44003.0	S-3
	31'-60'	May 16-26	41°31.73	-70°52.08	14203.6/43971.0	S-4
	31'-60'	May 16-26	41°29.01	-70°49.54	14199.0/43949.4	S-5
	31'-60'	May 16-26	41°31.57	-70°48.40	14181.5/43964.4	S-6
	31'-60'	May 16-26	41°29.48	-70°59.91	14260.0/43967.8	S-7
	31'-60'	May 16-26	41°35.89	-70°40.10	14114.1/43981.5	S-8
	61'-90'	May 16-26	41°27.37	-70°43.66	14170.0/43929.9	S-9
	61'-90'	May 16-26	41°23.67	-70°45.37	14194.2/43907.4	S-10
	61'-90'	May 16-26	41°22.93	-70°51.87	14236.5/43911.8	S-11
	91'-120'	May 16-26	41°21.03	-70°54.26	14258.3/43902.5	S-12
Southwest of Gay Head and South of Martha's Vineyard	0-30'	May 16-26	41°16.88	-70°25.21	14102.0/43834.9	S-13
	0-30'	May 16-26	41°23.44	-70°25.85	14080.1/43878.9	S-14
	31'-60'	May 16-26	41°19.66	-70°41.40	14186.7/43875.0	S-15
	31'-60'	May 16-26	41°19.84	-70°30.65	14122.3/43861.5	S-16
	61'-90'	May 16-26	41°18.04	-70°39.12	14179.3/43861.0	S-17
	61'-90'	May 16-26	41°18.46	-70°36.67	14163.1/43860.5	S-18
	91'-120'	May 16-26	41°19.14	-70°52.53	14254.8/43887.3	S-19
Nantucket Sound	0-30'	May 16-26	41°37.29	-70°01.67	13881.2/43933.0	S-20
	0-30'	May 16-26	41°19.06	-70°05.26	13979.8/43823.5	S-21
	0-30'	May 16-26	41°23.50	-70°10.98	13994.0/43859.5	S-22
	0-30'	May 16-26	41°37.22	-70°07.74	13916.2/43940.9	S-23
	0-30'	May 16-26	41°28.69	-70°16.48	14003.8/43899.9	S-24
	0-30'	May 16-26	41°34.94	-70°16.12	13975.2/43938.8	S-25
	0-30'	May 16-26	41°26.24	-70°30.20	14094.0/43903.0	S-26
	0-30'	May 16-26	41°32.44	-70°29.99	14068.2/43942.8	S-27
	0-30'	May 16-26	41°34.70	-70°01.44	13891.2/43917.0	S-28
	0-30'	May 16-26	41°35.12	-70°23.20	14016.3/43950.0	S-29
	31'-60'	May 16-26	41°25.30	-70°16.34	14017.5/43878.2	S-30
	31'-60'	May 16-26	41°27.11	-70°26.41	14068.6/43903.5	S-31
	31'-60'	May 16-26	41°25.88	-70°13.92	14000.9/43878.6	S-32
	31'-60'	May 16-26	41°21.50	-70°05.80	13972.5/43840.0	S-33
	31'-60'	May 16-26	41°33.39	-70°10.47	13949.2/43921.0	S-34
	31'-60'	May 16-26	41°28.12	-70°28.96	14079.8/43913.4	S-35
	31'-60'	May 16-26	41°26.87	-70°22.98	14049.5/43897.2	S-36
	31'-60'	May 16-26	41°27.03	-70°19.07	14026.0/43892.9	S-37
	31'-60'	May 16-26	41°26.90	-70°10.28	13975.5/43880.0	S-38
	31'-60'	May 16-26	41°36.61	-70°04.48	13900.2/43932.5	S-39
	31'-60'	May 16-26	41°34.93	-70°10.57	13943.0/43930.7	S-40
South and East of Nantucket	0-30'	May 16-26	41°14.96	-70°10.50	14025.9/43803.6	S-41
	0-30'	May 16-26	41°17.39	-70°20.59	14073.5/43832.2	S-42
	0-30'	May 15-26	41°24.58	-69°58.05	13915.8/43849.5	S-43
	31'-60'	May 16-26	41°13.30	-70°04.27	13997.0/43785.1	S-44
	31'-60'	May 16-26	41°16.82	-70°16.66	14053.1/43823.2	S-45
	31'-60'	May 16-26	41°13.03	-70°09.80	14029.3/43790.2	S-46
	61'-90'	May 16-26	41°14.68	-70°16.91	14063.0/43810.0	S-47

Massachusetts Marine Fisheries Spring 2019 Planned Tow Locations Massachusetts Bay to New Hampshire



MLA LABEL	LAT	LOE	LORAN
N-1	42°42.50	-70°45.31	13830.5/44381.2
N-2	42°40.44	-70°41.87	13819.3/44364.0
N-3	42°41.21	-70°41.33	13811.7/44366.8
N-4	42°44.76	-70°45.70	13821.0/44394.0
N-5	42°46.30	-70°44.79	13806.8/44400.2
N-6	42°44.26	-70°44.27	13814.4/44388.7
N-7	42°41.59	-70°40.73	13806.0/44367.7
N-8	42°42.75	-70°39.84	13793.9/44372.1
N-9	42°41.52	-70°35.22	13770.6/44356.8
N-10	42°39.35	-70°34.24	13776.1/44343.6
N-11	42°42.25	-70°36.33	13774.0/44362.7
N-12	42°38.81	-70°32.83	13770.0/44338.1
N-13	42°43.75	-70°37.24	13771.6/44372.4
N-14	42°43.88	-70°36.23	13764.5/44371.2
N-15	42°38.28	-70°31.91	13767.0/44333.6
N-16	42°26.84	-70°55.37	13977.0/44314.9
N-17	42°16.81	-70°51.25	14000.0/44249.8
N-18	42°14.07	-70°44.34	13969.0/44221.2
N-19	42°17.13	-70°48.25	13979.1/44246.0
N-20	42°24.69	-70°56.15	13992.8/44304.2
N-21	42°23.89	-70°53.55	13980.0/44294.7
N-22	42°26.92	-70°52.34	13957.0/44309.6
N-23	42°18.72	-70°47.90	13969.2/44254.7
N-24	42°32.69	-70°43.31	13869.1/44324.6
N-25	42°26.93	-70°50.14	13942.6/44305.4
N-26	42°23.18	-70°49.51	13957.5/44283.2
N-27	42°30.60	-70°41.63	13869.3/44309.7
N-28	42°19.49	-70°42.16	13928.9/44248.7
N-29	42°27.68	-70°43.57	13896.8/44297.3
N-30	42°24.89	-70°39.51	13885.0/44274.3
N-31	42°30.63	-70°39.02	13852.5/44305.1



MLA LABEL	LAT	Lon	LORAN
C-1	41°58.10	-70°36.36	13994.0/44112.7
C-2	41°44.91	-70°17.07	13937.3/44002.0
C-3	41°50.77	-70°30.75	13992.5/44058.8
C-4	41°47.40	-70°14.65	13911.7/44013.5
C-5	41°51.47	-70°30.07	13985.6/44062.0
C-6	41°57.81	-70°34.40	13983.3/44107.8
C-7	41°48.50	-70°24.31	13964.0/44035.0
C-8	41°49.27	-70°19.08	13929.6/44031.6
C-9	41°47.42	-70°21.89	13954.5/44024.6
C-10	41°54.77	-70°18.58	13901.5/44064.0
C-11	41°54.27	-70°25.40	13944.4/44071.7
C-12	41°54.52	-70°27.96	13959.0/44077.2
C-13	41°56.13	-70°22.77	13920.0/44078.7
C-14	42°04.46	-70°32.06	13938.0/44143.5
C-15	41°59.22	-70°24.84	13918.3/44100.4
C-16	41°54.95	-70°06.05	13826.4/44045.9
C-17	41°48.89	-70°04.78	13847.0/44008.0
C-18	41°49.39	-70°13.17	13894.0/44023.3
C-19	41°54.11	-70°08.17	13842.7/44044.0
C-20	41°58.73	-70°08.36	13822.0/44071.5
C-21	41°51.72	-70°13.81	13887.0/44038.4
C-22	41°53.65	-70°11.90	13867.0/44047.0
C-23	41°55.36	-70°14.26	13873.0/44060.6
C-24	42°00.82	-70°21.28	13889.4/44104.0
C-25	42°01.76	-70°13.27	13836.8/44096.9
C-26	42°06.91	-70°23.91	13876.4/44144.2
C-27	42°03.77	-70°15.94	13843.0/44112.9
C-28	42°05.52	-70°20.03	13859.5/44129.8
B-1	41°35.93	-69°56.55	13858.0/43917.5
B-2	42°03.53	-70°04.96	13778.8/44094.1
B-3	41°39.44	-69°54.23	13829.4/43935.4
B-4	41°36.47	-69°54.41	13843.6/43917.7
B-5	41°59.02	-69°59.11	13766.2/44059.2
B-6	41°59.15	-69°58.42	13761.5/44059.0
B-7	41°49.00	-69°54.23	13785.5/43993.2
B-8	41°50.31	-69°53.50	13775.0/44000.0
B-9	42°05.91	-70°06.48	13776.2/44110.2
B-10	41°47.86	-69°52.65	13781.6/43984.1
B-11	42°05.40	-70°02.17	13753.3/44100.5
B-12	42°07.28	-70°13.99	13814.3/44130.0
B-13	41°50.47	-69°52.76	13770.0/43999.8

Massachusetts Marine Fisheries
Spring 2019 Planned Tow Locations
South of Cape Cod

MLA LABEL	LAT	LON	LORAN	MLA LABEL	LAT	LON	LORAN	MLA LABEL	LAT	LON	LORAN
S-1	41°29.80	-71°03.36	14280.0/43974.9	S-17	41°18.04	-70°39.12	14179.3/43861.0	S-33	41°21.50	-70°05.80	13972.5/43840.0
S-2	41°40.81	-70°41.65	14103.0/44018.3	S-18	41°18.46	-70°36.67	14163.1/43860.5	S-34	41°33.39	-70°10.47	13949.2/43921.0
S-3	41°37.96	-70°45.05	14136.4/44003.0	S-19	41°19.14	-70°52.53	14254.8/43887.3	S-35	41°28.12	-70°28.96	14079.8/43913.4
S-4	41°31.73	-70°52.08	14203.6/43971.0	S-20	41°37.29	-70°01.67	13881.2/43933.0	S-36	41°26.87	-70°22.98	14049.5/43897.2
S-5	41°29.01	-70°49.54	14199.0/43949.4	S-21	41°19.06	-70°05.26	13979.8/43823.5	S-37	41°27.03	-70°19.07	14026.0/43892.9
S-6	41°31.57	-70°48.40	14181.5/43964.4	S-22	41°23.50	-70°10.98	13994.0/43859.5	S-38	41°26.90	-70°10.28	13975.5/43880.0
S-7	41°29.48	-70°59.91	14260.0/43967.8	S-23	41°37.22	-70°07.74	13916.2/43940.9	S-39	41°36.61	-70°04.48	13900.2/43932.5
S-8	41°35.89	-70°40.10	14114.1/43981.5	S-24	41°28.69	-70°16.48	14003.8/43899.9	S-40	41°34.93	-70°10.57	13943.0/43930.7
S-9	41°27.37	-70°43.66	14170.0/43929.9	S-25	41°34.94	-70°16.12	13975.2/43938.8	S-41	41°14.96	-70°10.50	14025.9/43803.6
S-10	41°23.67	-70°45.37	14194.2/43907.4	S-26	41°26.24	-70°30.20	14094.0/43903.0	S-42	41°17.39	-70°20.59	14073.5/43832.2
S-11	41°22.93	-70°51.87	14236.5/43911.8	S-27	41°32.44	-70°29.99	14068.2/43942.8	S-43	41°24.58	-69°58.05	13915.8/43849.5
S-12	41°21.03	-70°54.26	14258.3/43902.5	S-28	41°34.70	-70°01.44	13891.2/43917.0	S-44	41°13.30	-70°04.27	13997.0/43785.1
S-13	41°16.88	-70°25.21	14102.0/43834.9	S-29	41°35.12	-70°23.20	14016.3/43950.0	S-45	41°16.82	-70°16.66	14053.1/43823.2
S-14	41°23.44	-70°25.85	14080.1/43878.9	S-30	41°25.30	-70°16.34	14017.5/43878.2	S-46	41°13.03	-70°09.80	14029.3/43790.2
S-15	41°19.66	-70°41.40	14186.7/43875.0	S-31	41°27.11	-70°26.41	14068.6/43903.5	S-47	41°14.68	-70°16.91	14063.0/43810.0
S-16	41°19.84	-70°30.65	14122.3/43861.5	S-32	41°25.88	-70°13.92	14000.9/43878.6				

