

MONTHLY AND ANNUAL MEANS OF
SEA SURFACE TEMPERATURE
Boothbay Harbor, Maine
1905 through 1980

Data Prior to 1967 Corrected and Revised May 1967.

Research Reference Document No. 81/8

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Use of these data for publication
will be granted when proper acknowl-
edgement is assured.

The record of sea water temperatures at Boothbay Harbor, Maine, is one of the most extensive available for any point on the Atlantic coast. From 1905 to 1967, temperature readings had been taken by many different people and by several different methods. Calculations of totals and means had also been carried out by non-standard methods. In the latter part of the period, during which extensive use of the temperature data had been made, sufficient errors were discovered to have the entire record checked and values recalculated, using standard methods. This was accomplished by May 1967 and the following tables include the most complete and accurate data available for Boothbay Harbor.

The temperature information was obtained and handled in the following ways:

From March 1905 to 12 October 1973, the data were obtained by the U.S. Bureau of Fisheries and its successor agencies. Since 13 October 1973, the Federal facilities in Boothbay Harbor have been leased to the Maine Department of Marine Resources which has carried on the water temperature and other environmental observations without a break.

From March 1905 through June 1949, sea water temperatures were read three times daily (8:00 AM, 12:00 Noon, 5:00 PM) by inserting a thermometer into a bucket of water taken at the surface at the station wharf.

From November 1949 through September 1950, temperatures were read by thermometer several times daily in laboratory tanks copiously supplied with running water. Temperatures were generally little different from those taken in harbor surface water.

From October 1950 to the present, with minor interruptions, water temperature has been recorded continuously with the sensor located at 5.5 feet below Mean Low Water, at the end of the laboratory wharf.

During August and September 1957, while the recorder was inoperative, temperatures were taken from a continuously recording thermometer with its sensor in a laboratory tank amply supplied with running water. Subsequent temperatures obtained from this source simultaneously with temperatures from the dockside instrument were nearly identical.

Daily means were calculated from the totals of the three observations made per day during the earlier period and the 24 hourly readings taken from the continuous recordings during the later period. Monthly and annual means were calculated from totals of the individual observations rather than by averaging totaled means.

There is of course no way to check on the accuracy of the early temperature observations. After the continuous recording of temperature was started in 1950, the accuracy of the instrument was checked at infrequent and irregular intervals. Since September 1966 water temperature has been recorded in duplicate by a separate instrument to insure against gaps in the data resulting from malfunction of the recorder. Since December 1966 a system of daily operational checks and monthly calibration checks has been instituted to detect malfunction or failure of the instruments as soon as is practicable.

The issuance of this temperature data does not constitute publication, but interested persons will be granted use of the information provided proper acknowledgement of the source is assured.

MONTHLY AND ANNUAL MEAN SURFACE SEA WATER TEMPERATURES, °C
BOOTHBAY HARBOR, MAINE

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Mean
1905	----	----	0.4	3.3	6.8	11.5	15.2	----	12.4	8.8	5.2	2.1	----
1906	1.6	-0.3	-0.4	3.2	7.2	10.9	14.7	16.7	13.2	9.4	5.7	1.9	7.1
07	0.1	-1.8	0.1	3.0	6.1	10.8	14.3	15.4	14.1	9.1	6.2	3.9	6.8
08	2.3	0.2	1.6	4.5	10.0	13.5	16.9	17.2	14.9	11.7	6.7	2.8	8.6
09	0.9	0.2	1.9	4.8	8.9	14.4	16.2	17.0	15.0	11.9	7.4	3.6	8.6
1910	1.4	0.9	2.9	7.4	10.0	14.0	17.8	17.3	15.2	10.5	7.6	2.4	9.0
1911	1.6	-0.3	1.3	4.4	9.5	13.2	18.2	16.2	13.6	10.1	6.7	4.2	8.3
12	-0.2	-0.9	0.7	3.8	8.4	12.2	16.4	16.7	14.1	10.4	7.1	3.8	7.7
13	2.6	0.8	2.1	4.8	7.9	12.2	16.5	16.3	13.8	11.9	8.6	5.4	8.6
14	1.2	-1.2	-0.1	2.8	7.8	11.7	14.7	15.4	13.4	10.2	5.6	1.4	7.0
1915	-0.3	-0.8	0.6	4.3	7.4	12.4	15.6	14.9	14.0	8.7	5.4	2.4	7.1
1916	0.6	-0.4	-0.7	3.5	7.2	11.6	15.2	15.2	12.6	8.5	5.1	1.9	6.7
17	0.6	-1.2	-0.1	2.6	4.8	10.7	15.4	16.9	12.2	8.9	4.6	-0.1	6.3
18	-2.2	-1.4	0.6	3.8	9.4	12.1	16.8	16.7	13.7	9.9	6.8	3.0	7.7
19	1.4	1.4	2.7	5.3	9.2	14.6	17.1	15.8	14.1	10.2	6.7	2.7	8.4
1920	-1.2	-1.4	2.0	4.3	9.8	13.1	16.4	17.9	13.9	11.9	6.6	4.3	8.2
1921	1.9	0.7	2.6	6.2	10.4	14.0	17.4	15.9	16.0	10.8	5.9	2.9	8.8
22	-0.1	-0.6	1.6	5.3	9.7	14.5	17.7	16.9	15.0	9.7	5.3	0.8	8.1
23	-1.1	-1.2	-0.8	3.6	9.4	13.0	15.3	14.7	14.3	10.0	6.8	4.7	7.4
24	1.3	-0.6	1.4	4.0	8.3	12.6	16.4	16.2	13.8	10.2	6.6	2.1	7.7
1925	-1.3	-0.3	2.0	4.8	8.9	13.0	16.3	16.2	13.4	8.2	5.3	2.7	7.5
1926	0.4	-1.2	0.1	2.3	7.2	11.6	16.2	16.3	13.5	10.2	6.4	2.1	7.1
27	0.7	0.3	1.4	3.7	8.4	13.1	16.1	15.8	13.8	10.6	7.0	3.7	7.9
28	2.2	0.6	1.6	3.9	8.1	12.8	17.3	18.1	14.1	10.9	6.6	3.3	8.3
29	1.4	0.6	0.9	3.2	7.8	14.8	14.3	14.8	13.1	9.4	5.8	0.4	7.2
1930	0.2	-0.4	0.6	4.2	8.4	14.3	17.0	16.0	14.0	12.1	7.5	3.2	8.1
1931	3.3	2.5	3.7	6.4	8.9	15.3	17.9	15.8	14.4	10.1	7.3	3.6	9.1
32	2.3	2.2	2.2	4.5	7.6	12.3	14.8	16.9	13.8	10.3	8.0	3.8	8.2
33	3.3	3.3	3.4	5.3	10.2	13.9	16.4	16.7	13.2	9.1	6.0	1.9	8.6
34	-0.2	-1.1	-0.1	5.1	10.1	13.7	16.4	15.6	15.1	8.3	5.2	2.3	7.6
1935	0.0	0.0	1.6	4.9	8.3	13.6	16.9	16.8	14.1	10.5	7.3	3.3	8.2
1936	0.9	-0.4	3.0	4.7	7.8	11.7	15.8	16.4	14.1	8.9	4.1	2.2	7.5
37	2.2	2.2	3.1	5.2	9.3	13.7	16.4	17.9	14.4	10.7	7.2	5.4	9.0
38	1.3	-0.2	0.2	3.1	6.6	13.3	15.3	15.7	12.4	9.9	6.7	2.9	7.3
39	1.2	0.0	0.0	1.4	6.9	9.9	13.9	15.6	12.6	8.9	4.9	0.9	6.4
1940	-0.3	-1.6	-1.1	2.3	8.8	11.1	15.3	15.0	13.5	9.6	7.2	4.3	7.0
1941	2.4	0.7	1.9	5.4	9.1	11.8	15.9	13.9	11.2	10.2	7.1	4.2	7.8
42	1.4	0.0	1.1	4.3	9.9	13.5	15.6	15.6	14.1	11.6	7.2	3.0	8.1
43	0.4	0.5	0.9	2.8	7.8	11.7	12.7	15.5	12.6	10.9	8.2	4.5	7.4
44	1.2	1.1	1.1	3.6	9.0	11.6	16.0	15.8	14.8	10.6	7.7	4.0	8.0
1945	2.5	0.9	2.4	6.4	8.7	11.9	15.4	16.5	14.6	10.6	7.6	2.8	8.4

BOOTHBAY HARBOR, MAINE (Cont'd)

1981
82
83
84
1985

MONTHLY AND ANNUAL MEAN SURFACE SEA WATER TEMPERATURES, °F
BOOTHBAY HARBOR, MAINE

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Mean
1905	----	----	32.7	38.0	44.2	52.7	59.4	----	54.3	47.9	41.3	35.8	----
1906	34.9	31.4	31.3	37.7	44.9	51.6	58.5	62.1	55.7	49.0	42.3	35.5	44.7
07	32.2	28.7	32.2	37.4	42.9	51.5	57.7	59.7	57.3	48.4	43.1	39.0	44.2
08	36.2	32.4	34.8	40.1	50.0	56.3	62.4	62.9	58.9	53.1	44.1	37.1	47.4
09	33.7	32.3	35.5	40.7	48.0	58.0	61.2	62.6	59.0	53.4	45.3	38.5	47.4
1910	34.6	33.6	37.2	45.3	50.0	57.2	64.0	63.1	59.4	50.9	45.7	36.4	48.2
1911	34.9	31.5	34.3	40.0	49.1	55.8	64.8	61.2	56.4	50.1	44.0	39.5	46.9
12	31.6	30.4	33.2	38.9	47.1	54.0	61.6	62.0	57.3	50.7	44.8	38.9	45.9
13	36.6	33.4	35.7	40.7	46.3	54.0	61.7	61.3	56.9	53.5	47.5	41.8	47.5
14	34.1	29.9	31.9	37.1	46.0	53.0	58.5	59.8	56.3	50.4	42.1	34.6	44.6
1915	31.4	30.6	33.1	39.8	45.3	54.4	60.1	58.8	57.2	47.7	41.8	36.3	44.8
1916	33.0	31.3	30.8	38.3	45.0	52.9	59.4	59.4	54.6	47.3	41.2	35.4	44.1
17	33.0	29.9	31.9	36.6	40.6	51.3	59.8	62.5	53.9	48.0	40.3	31.9	43.4
18	28.1	29.5	33.0	38.8	49.0	53.8	62.3	62.0	56.6	49.8	44.3	37.4	45.8
19	34.6	34.5	36.8	41.6	48.5	58.3	62.8	60.5	57.3	50.4	44.1	36.8	47.2
1920	29.9	29.4	35.6	39.7	49.7	55.5	61.6	64.2	57.0	53.5	43.8	39.8	46.7
1921	35.4	33.2	36.7	43.1	50.7	57.2	63.3	60.7	60.8	51.4	42.7	37.2	47.8
22	31.8	31.0	34.9	41.6	49.4	58.1	63.9	62.4	59.0	49.4	41.6	33.4	46.5
23	30.1	29.8	30.5	38.5	49.0	55.4	59.5	58.5	57.8	50.0	44.3	40.4	45.4
24	34.3	30.9	34.6	39.2	46.9	54.6	61.5	61.1	56.9	50.4	43.8	35.8	45.9
1925	29.6	31.5	35.6	40.6	48.0	55.4	61.4	61.2	56.1	46.8	41.5	36.8	45.5
1926	32.7	29.8	32.2	36.1	45.0	52.9	61.2	61.4	56.3	50.3	43.5	35.7	44.8
27	33.3	32.5	34.5	38.6	47.1	55.6	60.9	60.4	56.8	51.1	44.6	38.7	46.2
28	36.0	33.0	34.9	39.1	46.6	55.1	63.1	64.6	57.4	51.7	43.8	38.0	47.0
29	34.5	33.1	33.7	37.7	46.1	58.7	57.8	58.6	55.5	48.9	42.4	32.7	45.0
1930	32.3	31.2	33.1	39.5	47.2	57.7	62.6	60.8	57.2	53.7	45.5	37.8	46.6
1931	38.0	36.5	38.7	43.5	48.1	59.6	64.2	60.4	58.0	50.1	45.2	38.4	48.4
32	36.2	36.0	35.9	40.1	45.7	54.1	58.7	62.5	56.9	50.5	46.4	38.9	46.8
33	37.9	38.0	38.2	41.6	50.3	57.1	61.6	62.1	55.8	48.3	42.8	35.5	47.5
34	31.7	30.0	31.9	41.2	50.2	56.6	61.5	60.1	59.1	46.9	41.3	36.2	45.6
1935	32.0	32.0	34.8	40.9	47.0	56.5	62.4	62.3	57.3	50.9	45.2	37.9	46.7
1936	33.7	31.3	37.4	40.5	46.0	53.1	60.5	61.6	57.3	48.0	39.3	36.0	45.5
37	36.0	36.0	37.5	41.3	48.7	56.6	61.5	64.2	57.9	51.2	45.0	41.7	48.2
38	34.4	31.7	32.3	37.5	43.8	56.0	59.6	60.2	54.3	49.8	44.1	37.3	45.2
39	34.1	32.0	32.0	34.6	44.4	49.8	57.1	60.1	54.7	48.1	40.9	33.7	43.5
1940	31.4	29.1	30.1	36.1	47.9	51.9	59.5	59.0	56.3	49.2	45.0	39.7	44.6
1941	36.3	33.2	35.5	41.7	48.3	53.2	60.6	57.1	52.1	50.4	44.8	39.5	46.1
42	34.6	32.0	33.9	39.8	49.8	56.3	60.0	60.0	57.3	52.8	45.0	37.4	46.6
43	32.8	32.9	33.6	37.0	46.1	53.0	54.9	59.9	54.7	51.7	46.7	40.1	45.3
44	34.1	34.0	34.0	38.5	48.2	52.8	60.8	60.5	58.6	51.0	45.8	39.2	46.4
1945	36.5	33.6	36.4	43.5	47.6	53.5	59.8	61.7	58.2	51.0	45.7	37.1	47.1

MEAN SURFACE SEA WATER TEMPERATURES, °F
BOOTHBAY HARBOR, MAINE
(Cont'd)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Mean
1946	33.4	33.7	37.5	40.4	46.5	53.6	60.4	60.4	58.8	52.5	47.7	41.3	47.3
47	36.5	35.6	36.4	41.1	46.7	54.0	63.2	63.4	60.5	55.9	48.6	40.0	48.6
48	34.6	32.4	34.8	40.6	47.5	53.6	60.5	61.0	57.0	----	47.6	42.4	----
49	38.4	36.0	37.0	42.9	50.9	57.3	----	----	----	----	49.7	44.3	----
1950	41.2	37.5	38.0	39.7	47.7	55.7	62.7	62.7	56.5	54.1	50.5	45.8	49.3
1951	43.0	39.4	40.5	44.6	51.3	57.7	63.1	63.6	62.0	55.0	51.1	46.3	51.4
52	41.4	39.6	39.6	43.6	49.6	56.4	63.0	62.6	60.7	54.3	46.9	43.6	50.2
53	40.5	41.8	42.9	45.5	52.1	57.7	62.9	62.8	61.0	55.4	51.3	48.4	52.0
54	39.6	38.3	41.0	44.7	50.4	57.1	60.5	59.8	58.7	55.8	50.7	46.6	50.3
1955	41.9	38.4	39.6	44.3	50.7	56.5	62.2	62.7	59.0	54.8	50.0	40.7	50.0
1956	38.1	37.7	37.8	41.5	46.8	54.1	58.6	60.8	58.3	53.2	50.0	44.8	48.6
57	38.6	38.8	39.4	43.3	50.4	58.0	59.3	59.4	57.5	50.8	47.6	42.8	48.8
58	39.7	37.0	37.5	41.7	47.8	52.3	57.4	59.0	56.0	50.6	47.3	40.8	47.4
59	36.0	35.4	35.1	41.3	46.7	52.6	59.1	60.0	58.0	51.7	46.7	42.0	47.0
1960	39.0	36.0	35.9	39.7	50.0	55.3	58.5	60.7	56.8	51.2	48.5	42.2	47.9
1961	38.0	35.1	36.4	41.2	46.2	55.0	59.0	59.7	59.6	51.0	46.4	41.3	47.3
62	37.9	33.1	35.2	41.0	46.0	54.4	57.6	60.7	57.2	52.0	46.7	41.5	46.6
63	37.0	36.4	38.3	41.4	48.8	56.0	60.4	59.7	56.6	52.8	48.3	40.6	47.9
64	37.9	37.0	36.5	40.6	48.2	53.2	59.6	58.5	56.1	51.2	45.7	38.6	46.9
1965	34.3	32.1	35.5	39.9	48.8	53.1	58.1	59.1	55.3	48.3	43.5	40.2	45.8
1966	37.3	34.8	35.2	39.5	45.3	53.4	56.6	58.2	54.9	47.8	44.0	40.7	45.7
67	35.9	32.3	34.3	36.9	42.8	51.8	56.7	58.7	55.6	50.1	44.2	41.4	45.1
68	34.0	33.2	34.0	39.6	46.8	52.8	57.7	58.6	59.5	52.8	46.3	42.7	46.6
69	38.1	35.0	35.8	41.0	47.1	56.0	59.0	60.0	58.1	52.9	48.7	42.9	47.9
1970	38.4	36.6	37.1	41.1	49.4	54.8	58.6	61.2	55.7	53.9	48.8	39.8	48.0
1971	33.4	34.9	36.0	40.2	47.6	55.0	59.5	61.1	58.7	55.0	48.4	41.8	47.7
72	38.1	35.5	34.7	38.9	47.0	54.2	59.9	59.1	57.9	52.0	46.8	41.2	47.1
73	38.0	35.6	36.5	41.2	48.5	52.5	58.4	61.1	57.2	52.2	46.9	44.8	47.8
74	40.5	37.3	37.9	40.7	46.8	54.9	59.1	62.5	58.9	51.3	47.7	43.9	48.5
1975	40.5	36.7	38.2	40.6	49.1	55.1	61.8	60.7	57.1	52.7	49.9	43.2	48.9
1976	37.3	37.2	38.1	43.4	48.8	57.4	60.8	62.5	59.1	53.5	46.2	39.4	48.7
77	35.7	34.6	36.7	41.4	47.4	53.5	58.1	60.2	57.2	52.8	50.0	43.0	47.6
78	36.6	33.4	35.6	39.1	46.4	52.2	58.7	60.9	55.9	51.5	46.3	39.2	46.4
79	37.5	33.8	36.0	40.5	49.1	55.1	60.8	60.0	57.4	52.3	49.9	42.4	48.0
1980	37.4	33.4	34.4	41.0	46.8	53.7	58.2	60.1	57.1	51.8	43.9	38.8	46.4
1981													
82													
83													
84													
1985													

AVERAGE YEARLY, SEA WATER TEMPERATURES
BOOTHBAY HARBOR, MAINE



