

Current World Temperature

Every year the National Oceanic and Atmospheric Administration (NOAA) reports temperature anomalies for land, ocean, and land and ocean combined. This extension will report on the latest data each year. The current full-year data go to 2005. Table E17.9.1 presents the average monthly temperatures from 1880 to 2005.^(a) Table E17.9.2 shows the longterm mean temperatures.^(a)

TABLE E17.9.1

Global Mean Monthly Surface Temperature Estimates for 1880 to 2005

Land Surface Mean Temperature

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
°C	2.7	3.1	5.0	8.1	11.1	13.3	14.3	13.8	12.0	9.3	5.9	3.6
°F	36.8	37.6	40.8	46.5	52.0	55.9	57.8	56.9	53.6	48.7	42.6	38.6

Sea Surface Mean Temperature

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
°C	15.8	15.9	15.9	16.0	16.3	16.4	16.4	16.4	16.2	15.9	15.8	15.7
°F	60.5	60.6	60.7	60.9	61.3	61.5	61.5	61.4	61.1	60.6	60.4	60.4

Combined Mean Surface Temperature

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
°C	12.0	12.1	12.7	13.7	14.8	15.5	15.8	15.6	15.0	14.0	12.9	12.2
°F	53.6	53.9	54.9	56.7	58.6	59.9	60.4	60.1	59.0	57.1	55.2	54.0

TABLE E17.9.2

Global Mean Annual Temperature, 1880-2005

Category	Average Temperature	
Land Surface Mean Temperature	8.5 °C	47.3 °F
Sea Surface Mean Temperature	16.1 °C	60.9 °F
Combined Mean Surface Temperature	13.9 °C	57.0 °F

Fig. E17.1.1 shows the average temperature over this period. Note that the global temperature rises fairly steadily over the period after 1930, which is especially apparent in the land average temperature.

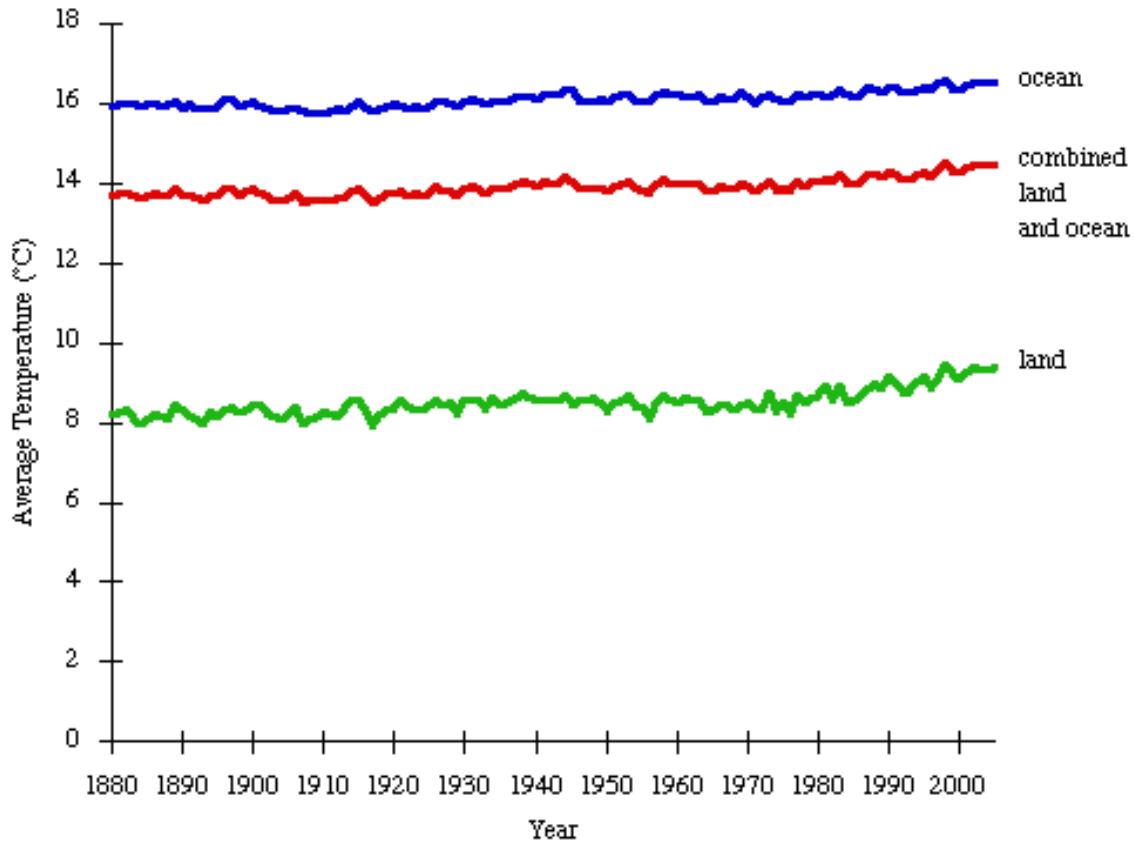


Fig. E17.1.1 Mean annual world temperatures, 1880-2005. (Ref. a)

The year 2005 ended up second on the list of all-time temperatures, just after 1998 (1998 was an El Niño year, an especially strong El Niño, and that contributed to the high global temperature that year). Table 17.9.3 gives the highest twenty-five temperatures in each category. Note that just 3 out of 25 combined temperatures are not among the last 25 years (1944 at eighteenth, 1958 at twenty-third, and 1945 at twenty-fourth); only 2 out of 25 land temperatures are not among the last 25 years (1938 at twenty-first and 1953 at twenty-fifth), and only 4 out of 25 ocean temperatures are not among the last 25 years (1944 at thirteenth, 1945 at fourteenth, 1958 at twenty-first, and 1941 at twenty-fifth).

TABLE E17.9.3

Top Twenty-Five Annual Global Mean Temperatures (°C)

Rank	Year	Combined Temperature	Year	Land Temperature	Year	Ocean Temperature
1	1998	14.53	1998	9.48	1998	16.57
2	2005	14.48	2005	9.41	2003	16.54
3	2002	14.46	2002	9.40	2005	16.54
4	2003	14.46	2003	9.35	2004	16.52
5	2004	14.44	2004	9.33	1997	16.51
6	2001	14.41	2001	9.29	2002	16.51
7	1997	14.37	1999	9.22	2001	16.49
8	1990	14.3	1995	9.18	1987	16.41
9	1995	14.3	1990	9.13	1990	16.39
10	1999	14.28	1997	9.12	1995	16.39
11	2000	14.27	2000	9.10	1991	16.38
12	1991	14.24	1994	9.02	2000	16.37
13	1987	14.23	1991	9.00	1944	16.36
14	1988	14.22	1988	8.98	1945	16.35
15	1994	14.21	1983	8.92	1983	16.35
16	1983	14.2	1981	8.91	1996	16.35
17	1996	14.18	1987	8.89	1988	16.34
18	1944	14.14	1996	8.87	1999	16.34
19	1989	14.14	1989	8.85	1994	16.33
20	1993	14.11	1993	8.79	1989	16.29
21	1992	14.1	1938	8.76	1958	16.28
22	1981	14.09	1992	8.75	1992	16.28
23	1958	14.08	1973	8.72	1993	16.28
24	1945	14.06	1980	8.71	1969	16.27
25	1980	14.06	1953	8.70	1941	16.26

Fig. E17.9.2 (following page) shows the combined monthly temperature anomaly since 1880. Here, the rise since 1930 and the very steep rise since 1970 are apparent. The generally below zero nature of times prior to 1940 shows that a change was in the process of occurring between lower and higher values of the temperature anomaly. The zero line is the average temperature between 1940 and 1980, which sets the scale for the whole graph, and was a rather constant temperature anomaly compared to before 1940 and after 1970.

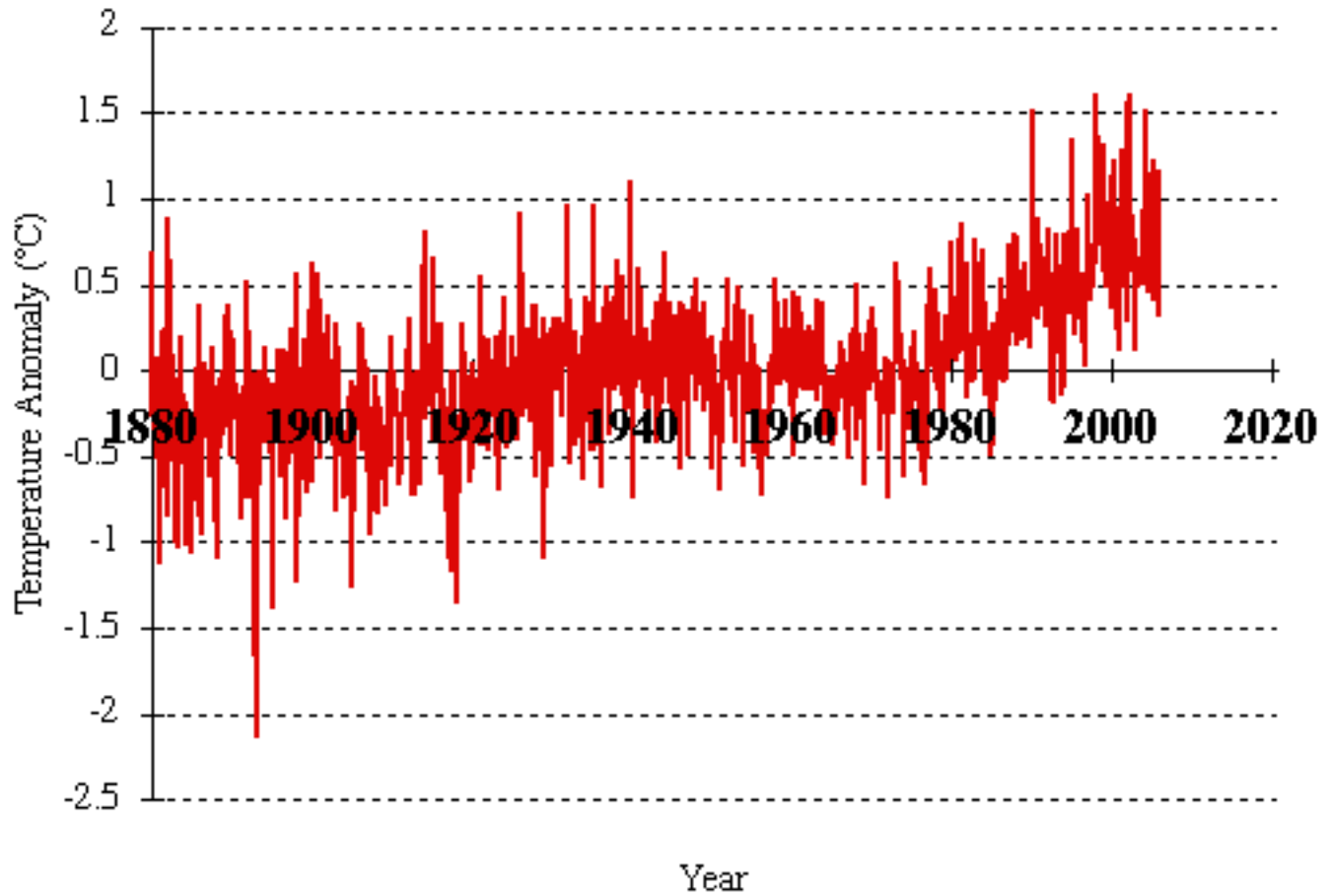


Fig. E17.1.1 Combined land and ocean temperature anomaly, 1880-2005. (Ref. a)

Reference

a. R. G. Quayle, T. C. Peterson, A. N. Basist, and C. S. Godfrey, "An operational near real time global temperature index," National Climatic Data Center (NCDC), NOAA/NESDIS, Asheville N.C., URL <http://www.ncdc.noaa.gov/oa/climate/research/anomalies/anomalies.html>.