

Table S1. Reports of bleaching related to cold-water.

Site	Year	SST reported	Depth	Genus/sp.	Type	Reported cause	Reference
Dry Tortugas, USA	1977	14 - 16 °C	1 m	- <i>Orbicella (Montastraea) annularis</i> - <i>Acropora cervicornis</i>	Field	Low SST	Davis 1982
Gray's reef, Georgia USA	2005	10 °C	18 -21 m	- <i>Oculina arbuscula</i> - <i>Astrangia poculata</i>	Lab.	Not bleaching reported but low-temperature stress of symbionts	Thornhill et al. 2008
Florida Keys, USA	2010	11 °C		- <i>Orbicella (Montastrea) spp</i> and <i>Acropora sp</i>	Field	Low SST Air-cold fronts	Lirman et al. 2011
Florida Keys, USA	2010	<12 °C	1 to 4 m	- <i>Porites astreoides</i> - <i>Acropora cervicornis</i> - <i>Favia fragum</i> - <i>Colpophyllia natans</i> - <i>Dendrogyra cylindrus</i> - <i>Orbicella (Montastraea) annularis</i>	Field	Low SST Air-cold fronts	Kemp et al. 2011
Florida Keys, USA	2010	12 °C	5 to 8 m	- <i>Orbicella (Montastraea) spp</i> - <i>Porites astreoides</i>	Field	Low SST Air-cold fronts	Colella et al. 2012
Birch Aquarium Scripps, USA	2013	21 °C	N/A	- <i>Acropora yongei</i> ,	Lab	Cold temperature was mentioned as a factor for more damage for branching corals than the short-term warm temperature	-Roth et al, 2012 -Roth and Deheyn 2013

Florida Bay and Bahamas Bank, USA and Bahamas	1977	12.6 °C	1.7 m	<i>-Acropora cervicornis</i>	Field	Low SST	Roberts et al. 1982
Arabic Gulf	1988-1989	11.5 °C	6 m	<i>-Acropora pharaonis</i> <i>-Platygyra daedalea</i>	Field	Low SST	Coles and Fadlallah 1991
Bonaire, The Netherlands	1992	24.4 °C	-10 to 30 m	<i>-Agaricia spp, Eusmilia sp,</i> <i>Porites sp y Meandrina sp</i>	Field	Thermal shock due to low SST	Kobluk and Lysenko 1994
Heron Island, Australia	2003	12 °C	Not reported	<i>-Montipora digitata</i>	Lab	Low SST	Saxby et al. 2003
Lord Howe Islands, Australia	2007	14 °C	Sampled at 2 to 3 m	<i>-Pocillopora damicornis</i>	Lab	No bleaching observed	Wicks et al. 2010
Capricorn Bunker, Australia	2005	13.3 °C	5 m	<i>-Acropora aspera</i>	Field	Air exposure	Hoegh-Guldberg et al. 2005
Ningaloo, Australia	2006	Not mentioned	Not reported, only mentioned shallow-water	<i>- Not specified</i> <i>-Plate and corymbose acroporids</i>	Field	Air exposure and cold temperature and low-SST	Australia’s, Gov. P.I. Shannon Armstrong *
Perth, Western Australia	2016	15.03 °C	8-12 m	<i>-Plesiastrea versipora</i> <i>-Montipora mollis</i>	Field	Marine Cold Spell	Tuckett and Wernberg 2018
Cabo Pulmo, La Paz and Loreto Gulf of California, México	2006	~ 19 °C on average from satellite data	2 m	<i>-Pocillopora spp, Porites spp,</i> <i>Pavona spp</i>	Field	Previous low SST and posterior unusual water clarity	LaJeunesse et al. 2007

Cabo Pulmo, La Paz and Loreto Gulf of California, México, 2008	2008	-Cabo Pulmo 21 °C, -La Paz area 20 °C -Loreto 17 °C - 4 °C below historical averages	3 – 10 m	- <i>Pocillopora</i> spp, <i>Porites</i> spp, <i>Pavona</i> spp and <i>Psammocora</i> spp	Field	Low SST	Hernández et al. 2010 LaJuenesse et al. 2010 Personal observation
Cabo Pulmo, La Paz and Loreto Gulf of California, México, 2011	2011	~18 °C	2 to 4 m	- <i>Pocillopora</i> spp, <i>Porites</i> spp, <i>Pavona</i> spp and <i>Psammocora</i> spp	Field	Low SST	Paz García et al. 2012 Personal observation Personal communication NGO's COBI and Cabo Pulmo community
Islas Marietas, México	2008	19 °C	Not reported	- <i>Pocillopora damicornis</i>	Field	Low SST	Cupul-Magaña and Calderón-Aguilera 2008 Personal comm. with authors
Islas Marietas, México	2010	19.7 °C	Sampled at 4 to 10 m	- <i>Pocillopora verrucosa</i>	Lab	Low SST seems to have a greater effect on bleaching response	Rodríguez-Troncoso et al 2010 Personal comm. with author Rodríguez-

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Islas Marietas, México	2011	21 °C	-2 to 11 m	<i>-Pocillopora damicornis</i>	Field	Low SST	Rodríguez-Villalobos et al. 2014 Personal comm. with author Rodríguez-Villalobos
Malpelo, Colombia	2009	15.8 °C 23.1 °C (satellite)	-up to 20 m	<i>-Porites lobata</i>	Field	Extreme SST and other factors not identified	Zapata et al. 2010 Personal comm. with author Zapata
Galapagos Islands, Ecuador	2007	16 °C	-10 to 15 m	<i>-Pocillopora spp</i> <i>-Porites lobata</i> <i>-Pavona clavus</i>	Field	Rapid decline of SST	Glynn et al. 2009 Glynn et al. 2017
Nagasaki, Japan	2013	< 13 °C	- 9 m	<i>-Acropora spp</i>	Field	Low SST	Suzuki et al. 2013
Tosa Bay, Japan	2018	< 15 °C	- 2 to 5 m	<i>-Acropora spp</i>	Field	Low SST	Lerriorato and Nakamura 2019

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