

Region	Subregion	1996	1997	1998
Middle East	Bahrain	"Major" bleaching in summer (37.3°C)-CW (report is probably for summer and fall)		mid-August (34-37°C): 50%-100% bleaching (w/90%-95% mortality) on reefs N. of Bahrain.-CW
	Eritea			Deep and shallow bleaching starting in
	Oman			late May (29.5-31.5°C) bleaching (75%-95% <i>Stylophora</i> spp. And 50% <i>Porites</i> spp.) S. Oman.-CW
	Saudi Arabia	"Severe" bleaching on nearshore reefs, and <i>Porites</i> spp. reefs in the north.-CW Summer and early Fall (37°C inshore		Inshore patch reefs bleaching in mid-August (35-36°C), offshore island reef is largely unaffected.-CW
	United Arab Emirates (UAE)	Bleaching in marine protected area, high eventual mortality.-CW		
	Yemen (Socotra)			Extensive bleaching w/ high mortality beginning in May.-CW
Indian Ocean	India (Lakashadweep, Andamans, Gulf of Mannar)			Some bleaching starting in May-CW Greater than 50% bleaching in Lakshadweep, Andamans, and Gulf of Mannar. - Ambio
	Kenya			Bleaching starting in mid-May (32°C) and through April. 50-95% of coral cover bleached in areas w/ very high mortality. Bleaching also seen throughout E. Africa from N. Kenya to Mozambique, w/ decreasing severity
	Tanzania			Bleaching starting in mid-May (32°C) along the whole coast (15-50%). •20-50% mortality to near 100% in many
	Madagascar (Mananara)			30% bleaching to 40-80% in shallow <i>Acropora</i> spp. On the mid-west and north-east coasts in Feb. and Mar.-CW and Ambio
	Maldives			"Severe, rapid" bleaching between April-May. 80% on back reef and 30-40% at various depths on the reef slope.
	Mayotte			Bleaching in shallow corals (up to 80% mortality in <i>Acropora</i> spp.), however, <i>Porites</i> spp. were unaffected.-CW
	Reunion			Starting in late March 30-50% bleaching on the flats and reef slopes. Corals overgrown w/ turf several months later.-CW
	Seychelles			Extensive bleaching to 23m during March-May (29-32°C reef slope, 34°C lagoon) in the south.-CW

	Sri Lanka			Bleaching (75%) began in mid-April (35.5°C and above 33°C until late May) in the SW (probably more shallow corals?). Bleaching remaining until early June, w/ most ramose corals
	Timor Sea Reefs (Scott - Australia)			Scott Reef most severely affected beginning in May. 70-100% bleaching and mortality in corals from 1-9 m, and
	Cambodia			Moderate-severe bleaching in mid-May ("warm and very turbid"). Up to 80%.-CW
	Indonesia			Bleaching initiated by a warm current from the S. China Sea. 75-100% bleaching in NW and E Bali reefs w/
Southeast and East Asia	Japan			Started on Okinawa I. In mid-July (25-28°C increased to 28-31.5°C in July). Bleaching increased in August (31°C)
	Malaysia (Sabah)			Mid-May (32°C) bleaching to 30-40% in shallow (1-2 m) at Palau Gaya, Sabah. 30% bleaching at Palau Sakar to 20 m. No significant bleaching at 20 other reef sites.-CW
	Philippines			"Massive" bleaching starting in mid-July (surface 33-34 °C, 30-31°C at 28 m) w/ up to 75% community bleaching in some areas.-CW
	Singapore			"Mass" bleaching in June and July (33°C) affecting all spp., throughout the entire depth range. "This is the first
	Taiwan			Coral bleaching first observed in June (30°C) around the Penghu Islands w/
	Thailand			"Widespread" in the Gulf of Thailand (except on the W. side of the Andaman Sea) in April (28-29°C increased to above 32°C, w/ 35°C reported at Ko Samui). 50-60% corals bleached w/ •50% mortality.-CW
	Vietnam			Began in mid-July w/ major bleaching in the S. (70% to 15 m). Mortality of massive <i>Porites</i> spp. Including large colonies.-CW
	Australia			Late Feb. bleaching along the entire GBR, w/ 87% of inshore reefs showing some bleaching (heavy bleaching on 55%) and 28% for offshore reefs. High
Pacific Ocean (West)	Federated States of Micronesia			20% bleaching to 20 m in the N. of Yap at the beginning of Sep.(30-31°C).-CW
	French Polynesia			Variable bleaching. Strong on Takapoto, Rangiroa, and Manihi.-CW

	Hawaii	"Major" bleaching event began in late August (29-30°C in restricted basin in response to hot, calm weather) in the S. of Kane'ohe Bay, O'ahu.-CL Bleaching reported for Kailua Bay,		
	Johnston Atoll	"Extensive" bleaching of <i>Pocillopora</i> spp. and <i>Montipora</i> spp. in the lagoon. In August oceanic temperatures were 31.1°C. Bleaching was observed to start in mid-September (Sea Surface		
	Palau			September (30-32°C) w/ about 75% of corals less than 15 m. "Everything that could bleach was bleaching."-CW
	Papua New Guinea	Significant area S. out of Normanby I. through Cape Vogel and to Tufi bleached in late February (29-30°C, calm, clear weather).-Bob Halstead (Dive Boat Operator)-CL S. New Ireland, 10-60% of shallow water corals		August (31-31.5°C below 10 m and 32-33°C on the surface) bleaching in Kimbe Bay. High mortality(w/ 75% <i>Acropora</i> spp. affected) and bleaching in <i>Porites</i> spp., <i>Platygyra</i> spp., and <i>Montipora</i> spp.. Bleaching of areas S.
	Samoa (Western)			Bleaching of 60-70% <i>Acropora</i> spp. on reef tops in late February at Palolo Deep, National Marine Park near
	Vanuatu	Some level of coral bleaching. Up to 50% of coral cover along reefs W. of Port Vila.-Peter Raines(Coral Health		
	Galapagos		Starting December (28°C) and continued into February, 1998 (30°C).-CW	February (30°C) bleaching from 1997. Nearly all corals bleached to some extent by March. <i>Porites</i> spp. and <i>Pavona</i> spp. were most affected.-CW
Pacific Ocean (East)	Mexico		First noticed in July 1997 in the Gulf of California to Jalisco and the Revillagigedo Islands. Peaked in August-September (31-34°C) with •25% coral cover bleached (•60% at Nayarit shallower than 4 m). First report of bleaching on the Pacific Coast. minor bleaching at Oaxaca (31°C).-CW	Sudden drop in temp in mid-September caused extensive bleaching.-CW
	Panama		Uva Island bleaching starting mid-September, affecting all corals to 20 m. <i>Millepora intricata</i> bleached and died, with others bleaching.-CW	Gulf of Chiriqui began bleaching in mid-April (29-31°C), w/ 50-90% of corals at least partially bleached.-CW
	Bahamas			Central Bahamas showed extensive bleaching in August.-CW

	Belize			"Massive" coral bleaching in early September to October (30-32°C sub-surface, 36-38°C on the surface). Larger than the 1995 event.-CW
Caribbean Sea	Bonaire (Dutch Antilles)			<15% Bleaching in August and September (30°C surface and 29.5°C below). 100% bleaching in <i>Agaracia</i> spp. from 8-30 m.-CW
	Cayman Islands	Bleaching of 50-60% cover of <i>Montastraea faveolata</i> on the North Side of Grand Cayman but not on the W. side of the island.-Jason DeSalvo (Vacationer)-CL		"Unprecedented" bleaching during late September on Little and Grand Cayman. All spp. affected w/ up to 90% heavily bleached.-CW
	Cuba			No bleaching in S. Cuba, but extensive bleaching at reefs W. and E. of Havana in late August. Bleaching reported to 35 m near Santiago. "Bleaching was
	Florida			July and August (30-31°C) bleaching a Coffins Patch Light. Late August (30-32°C surface, and 26°C at 10 m) "extensive" bleaching at Western
	Guadeloupe			"Severe" bleaching reported.-CW
	Haiti			"Extensive" bleaching after Hurricane Georges in September.-CW
	Honduras			To 50% of live coral cover showing bleaching from 10-25 m around Roatan in mid-September.-CW
	Jamaica			Late September (29-30°C below 30 m) and by early October 70-75% of all <i>Montastrea</i> spp. were bleached.-CW
	Mexico			Bleaching started in late August (30°C and 33°C lagoon) and temperatures stayed high (29.5-30.5°C) through
	Panama			"Extensive" bleaching was reported in October in W. Panama.-CW
St. Lucia			"Worst ever seen" bleaching in the Soufriere area, w/ 100% of <i>Diploria</i> spp. affected.-CW	
Virgin Islands (UK)			"Widespread" bleaching in mid-September on five reefs S. of St. Thomas (unaffected in early August). Patchy w/ little evidence of bleaching by mid-October.-CW	

	Barbados			In September a large area of Carribee bank reef at 25-35 m has bleached.-CW
	Bermuda			Bleaching started in early August (28°C rising to 30°C and dropping to 27°C by the end of September). 5-15% bleaching in all colonies.-CW
Atlantic Ocean	Brazil			Mass bleaching of patch reefs on N. coast of Bahia State in mid-April (29.5°C at 9-12 m, highest temp. in the
		Source Abbreviations: CL = Coral List Server, CW = Wilkenson, Clive R.(ed.) 1988. Status of Coral Reefs of the World: 1988. Australian Institute of Marine Science Publication, Queensland. Ambio = Wilkinson, C., Linden, O., Cesar, H., Hodgson, G., Ruben, J., and A.E. Strong. 1999. Ecological and socioeconomic impacts of 1998 coral mortality in the Indian Ocean: an ENSO impact and a warning of future change? Ambio Vol. 28, No. 2 pp. 188-1996.		List Compiled By: Tyler B Smith, Rosenstiel School of Atmospheric and Marine Science. Correspondance: tsmith@rsmas.miami.edu