

History of perspectives on the study of coral disease in the eastern tropical Pacific

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Table S1. Summary table of the scientific publications regarding coral and diseases in the Pacific region from 1970 to 2018.

Reference	Year	Place	Condition	Species
Jokiel PL, Coles SL (1977) Effects of temperature on the mortality and growth of Hawaiian reef corals. <i>Mar Biol</i> 43:201–208	1977	Central Pacific	Mortality	<i>Pocillopora damicornis</i> , <i>Montipora verrucosa</i> , and <i>Fungia scutaria</i>
Antonius A (1985) Coral diseases in the Indo-Pacific: A first record. <i>Mar Ecol</i> 6:197–218	1985	Indo Pacific	Black band and white band disease	Acroporidae and Faviidae families
Glynn PW, Peters EC, Muscatine L (1985) Coral tissue microstructure and necrosis: relation to catastrophic coral mortality in Panama. <i>Dis Aquat Organ</i> 1:29–37	1985	Eastern Pacific	Mortality	Multiple
Wilson EC (1990) Mass mortality of the reef coral <i>Pocillopora</i> of the south coast of Baja California Sur, México. <i>Bull So Calif Acad Sci</i> 89:39–41	1990	Eastern Pacific	Mortality	<i>Pocillopora</i> spp.
Riegl B, Velimirov B (1991) How many damaged corals in Red Sea reef systems? A quantitative survey. <i>Hydrobiologia</i> 216:249–256	1991	Indo Pacific	Multiple	Multiple
Guzman HM, Cortes J (1993) Coral-reefs of the tropical eastern pacific-review and	1993	Eastern Pacific	Multiple	

perspectives. Rev Biol Trop 41:535–557				
Littler MM, Littler DS (1996) Black band disease in the South Pacific. Coral Reefs 15(1):654–664	1996	South Pacific	Black band disease	Massive colonies
Korrubel JL, Riegl B (1998) A new coral disease from the southern Arabian Gulf. Coral reefs 17:22	1998	Indo Pacific	Yellow band disease	<i>Acropora clathrata</i>
Garzón-Ferreira J, Pinzón C, Jorge H (1999) Rapid assessment of coral community structure and health at Malpelo island (Colombian Pacific). Boletín Investig Mar y Costeras-INVEMAR 28:137–154	1999	Eastern Pacific	Multiple	<i>Pocillopora</i> spp.
Garzón-Ferreira J, Pinzón C, Jorge H (1999) Rapid assessment of coral community structure and health at Malpelo island (Colombian Pacific). Boletín Investig Mar y Costeras-INVEMAR 28:137–154	1999	Indo Pacific	Skeleton eroding band	Multiple
Aeby G (1998) A digenean metacercaria from the reef coral, <i>Porites compressa</i> , experimentally identified as <i>Podocotyloides stenometra</i> . J Parasitol 84:1259–1261	1999	Central Pacific	<i>Porites</i> trematodiasis	<i>Porites compressa</i>
Barber RT, Hilting AK, Hayes ML (2001) The changing health of coral reefs. Hum Ecol Risk Assess An Int J 7:1255–1270	2001	Global	Multiple	Multiple
Fitt WK, Brown BE, Warner ME, y, Dunne RP (2001) Coral bleaching: interpretation of thermal tolerance limits and thermal thresholds in tropical corals. Coral Reefs 20:51–65	2001	Global	Bleaching	Multiple

Richmond R, Kelty R, Craig P, Emaurois C, Green A, Birkeland C, Davis G, Edward A, Golbuu Y, Gutierrez J (2002) Status of the coral reefs in Micronesia and American Samoa: US affiliated and freely associated islands in the Pacific. Status of coral reefs of the world:217-236	2002	Central Pacific	Multiple	Multiple
Richmond R, Kelty R, Craig P, Emaurois C, Green A, Birkeland C, Davis G, Edward A, Golbuu Y, Gutierrez J (2002) Status of the coral reefs in Micronesia and American Samoa: US affiliated and freely associated islands in the Pacific. Status of coral reefs of the world:217-236	2002	South Pacific	Multiple	Multiple
Riegl B, Antonius A (2003) <i>Halofolliculina</i> skeleton eroding band (SEB): a coral disease with fossilization potential? Coral Reefs 22:48	2003	Indo Pacific	Skeleton eroding band	<i>Goniastrea retiformis</i> , <i>Acropora</i> spp
Raymundo LJ, Harvell CD, Reynolds TL (2003) <i>Porites</i> ulcerative white spot disease: description, prevalence, and host range of a new coral disease affecting Indo-Pacific reefs. Dis Aquat Organ 56:95-104	2003	Indo Pacific	White spot disease	<i>Porites attenuata</i>
Sutherland KP, Porter JW, Torres C (2004) Disease and immunity in Caribbean and Indo-Pacific zooxanthellate corals. Mar Ecol Prog Ser 266:265-272	2004	Indo Pacific	Review	Multiple
Aeby GS (2005) Outbreak of coral disease in the Northwestern Hawaiian Islands. Coral Reefs 24:481	2005	Central Pacific	Multiple	Multiple

Brainard R, Maragos J, Schroeder R, Kenyon J, Vroom P, Godwin S, Hoeke R, Aeby G, Moffitt R, Lammers M (2005) The state of coral reef ecosystems of the United States and Pacific Freely Associated States:338–372.	2005	Central Pacific	Multiple	Multiple
Glynn PW, Fong P (2006) Patterns of reef coral recovery by the regrowth of surviving tissues following the 1997–98 El Niño warming and 2000, 2001 upwelling cool events in Panamá, eastern Pacific. In: Proceedings of 10th International Coral Reef Symposium.p 624–630	2006	Eastern Pacific	Multiple	<i>Pavona clavus</i> , <i>Pocillopora elegans</i>
Kaczmarek LT (2006) Coral disease dynamics in the central Philippines. Dis Aquat Organ 69:9–21	2006	Indo Pacific	Multiple	<i>Porites lutea</i>
Page C, Willis B (2006) Distribution, host range and large-scale spatial variability in black band disease prevalence on the Great Barrier Reef, Australia.	2006	West Pacific	Black band disease	Multiple, mainly <i>Acropora</i> spp
Liao M-H, Tang S-L, Hsu C-M, Wen K-C, Wu H, Chen W-M, Wang J-T, Meng P-J, Twan W-H, Lu C-K (2007) The "Black Disease" of Reef-Building Corals at Green Island, Taiwan-Outbreak of a Cyanobacteriosponge. <i>Terpios hoshinota</i> (Suberitidae; Hadromerida). Zool Stud 46:520	2007	Indo Pacific	Black band disease	<i>Montipora efflorescens</i> , <i>Acropora humilis</i>
Pratchett MS, Schenk TJ, Baine M, Syms C, Baird AH (2009) Selective coral mortality associated with outbreaks of <i>Acanthaster planci</i> L. in Bootless Bay, Papua New	2007	Indo Pacific	Mortality/predation	Multiple

Guinea. Mar Environ Res 67:230–236				
Williams GJ, Aeby GS, Davy SK (2008) Coral disease at Palmyra Atoll, a remote reef system in the Central Pacific. Coral Reefs 27:207	2007	Central Pacific	Multiple	Multiple
Williams GJ, Aeby GS, Davy SK (2008) Coral disease at Palmyra Atoll, a remote reef system in the Central Pacific. Coral Reefs 27:207	2007	Indo Pacific	Growth anomalies	<i>Porites lutea</i> , <i>P. lobata</i>
Benzoni F, Calcinai B, Eisinger M, Klaus R (2008) Coral disease mimic: sponge attacks <i>Porites lutea</i> in Yemen. Coral Reefs 27:695	2008	Indo Pacific	Overgrowth	<i>Porites lutea</i>
McClanahan T, Weil E, Maina J (2009) Strong relationship between coral bleaching and growth anomalies in massive <i>Porites</i> . Glob Chang Biol 15:1804–1816	2008	Indo Pacific	Bleaching and growth anomalies	<i>Porites</i> spp.
Baker AC, Glynn PW, Riegl B (2008) Climate change and coral reef bleaching: An ecological assessment of long-term impacts, recovery trends and future outlook. Estuar Coast Shelf Sci 80:435–471	2008	Global	Bleaching	Multiple
Sussman M, Willis BL, Victor S, Bourne DG (2008) Coral pathogens identified for White Syndrome (WS) epizootics in the Indo-Pacific. PLoS One 3	2008	West Pacific	White syndrome	Multiple
Danovaro R, Bongiorno L, Corinaldesi C, Giovannelli D, Damiani E, Astolfi P, Greci L, Pusceddu A (2008) Sunscreens cause coral bleaching by promoting viral infections. Environ Health Perspect 116:441	2008	Indo Pacific	Bleaching	Multiple

Raymundo L, Work T, Bruckner A, Willis B (2008) A decision tree for describing coral lesions in the field. In: Coral Reef Targeted Research and Capacity Building for Management Program	2008	Pacific	Multiple	<i>Multiple</i>
Haapkyla J, Unsworth RK, Seymour AS, Melbourne-Thomas J, Flavell M, Willis BL, Smith DJ (2009) Spatio-temporal coral disease dynamics in the Wakatobi Marine National Park, South-East Sulawesi, Indonesia. Dis Aquat Organ 87:105–115	2009	Indo Pacific	Multiple	<i>Multiple</i>
Kaczmarek LT (2009) Characterizations of the major coral diseases of the Philippines: Ulcerative white spot disease and novel growth anomalies of <i>Porites</i> .	2009	Indo Pacific	Ulcerative white spot disease, growth anomalies	<i>Porites</i>
Page CA, Baker DM, Harvell CD, Golbuu Y, Raymundo L, Neale SJ, Rosell KB, Rypien KL, Andras JP, Willis BL (2009) Influence of marine reserves on coral disease prevalence. Dis Aquat Organ 87:135–150.	2009	Indo Pacific	Multiple	Multiple
Vargas-Angel B (2009) Coral health and disease assessment in the US Pacific remote island areas. Bull Mar Sci 84:211–227	2009	Central Pacific	Multiple	Multiple
Navas-Camacho R, Rodríguez-Ramírez A, Reyes-Nivia MC (2010) Agents of coral mortality on reef formations of the Colombian Pacific. Rev Biol Trop 58:133–138	2009	Eastern Pacific	Multiple	<i>Pocillopora</i> spp.
Palmer CV, Gates RD (2010) Skeletal eroding band in Hawaiian corals. Coral Reefs 29: 469–469.	2010	Central Pacific	Skeleton eroding base	<i>Montipora capitata</i> , <i>Pocillopora</i> spp.

Aeby GS, Ross M, Williams GJ, Lewis TD, Work TM (2010) Disease dynamics of <i>Montipora</i> white syndrome within Kaneohe Bay, Oahu, Hawaii: distribution, seasonality, virulence, and transmissibility. Dis Aquat Organ 91:1–8	2010	Central Pacific	White syndrome	<i>Montipora capitata</i>
Arboleda MDM, Reichardt WT (2010) <i>Vibrio</i> sp. causing <i>Porites</i> ulcerative white spot disease. Dis Aquat Organ 90:93–104	2010	Indo Pacific	White spot disease	<i>Porites cylindrica</i>
Williams G, Aeby GS, Cowie ROM, Davy SK (2010) Predictive modeling of coral disease distribution within a reef system. PLoS One, 2010, vol. 5, no 2, p. e9264.	2010	Central Pacific	Multiple	<i>Porites compressa</i> , <i>Montipora capitata</i>
Luna GM, Bongiorno L, Gili C, Biavasco F, Danovaro R (2010) <i>Vibrio harveyi</i> as a causative agent of the White Syndrome in tropical stony corals. Environ Microbiol Rep 2:120–127.	2010	Indo Pacific	White syndrome	<i>Pocillopora damicornis</i>
Dalton SJ, Godwin S, Smith SDA, Pereg L (2010) Australian subtropical white syndrome: a transmissible, temperature-dependent coral disease. Mar Freshw Res 61:342–350	2010	West Pacific	White syndrome	<i>Turbinaria mesenterina</i>
Pillai CSG (2010) A review of the status of corals and coral reefs of India. Indian J Anim Sci 80:53–56	2010	Indo Pacific	Multiple	Multiple
Sánchez JA, Gómez CE, Escobar D, Dueñas LF (2011) Diversidad, abundancia y amenazas de los octocorales de la isla Malpelo, Pacífico Oriental Tropical, Colombia.	2011	Eastern Pacific	Multiple	Multiple

Vinueza Hidalgo GS (2011) Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos.	2011	Eastern Pacific	Bleaching and others	Multiple
Williams GJ, Knapp IS, Work TM, Conklin EJ (2011) Outbreak of <i>Acropora</i> white syndrome following a mild bleaching event at Palmyra Atoll, Northern Line Islands, Central Pacific. Coral Reefs 30:621	2011	Central Pacific	White syndrome	<i>Acropora</i> spp.
Burns JHR, Takabayashi M (2011) Histopathology of growth anomaly affecting the coral, <i>Montipora capitata</i> : implications on biological functions and population viability. PLoS One 6:e28854	2011	Central Pacific	Growth anomalies	<i>Montipora capitata</i>
Roff G, Kvennefors ECE, Fine M, Ortiz J, Davy JE, Hoegh-Guldberg O (2011) The Ecology of ‘Acroporid White Syndrome’, a Coral Disease from the Southern Great Barrier Reef (RKF Unsworth, Ed.). PLoS One 6:e26829.	2011	West Pacific	White syndrome	<i>Acropora cytherea</i> , <i>A. hyacinthus</i> , <i>A. clathrata</i>
Palmer C V, Bythell JC, Willis BL (2011) A comparative study of phenoloxidase activity in diseased and bleached colonies of the coral <i>Acropora millepora</i> . Dev Comp Immunol 35:1098–1101	2011	Indo Pacific	Bleaching and white syndrome	<i>Acropora millepora</i>
Burns JHR, Rozet NK, Takabayashi M (2011) Morphology, severity, and distribution of growth anomalies in the coral, <i>Montipora capitata</i> , at Wai ‘ōpae, Hawai ‘i. Coral reefs 30:819–826	2011	Central Pacific	Growth anomalies	<i>Montipora capitata</i>

Irikawa A, Casareto BE, Suzuki Y, Agostini S, Hidaka M, Woesik R van (2011) Growth anomalies on <i>Acropora cytherea</i> corals. Mar Pollut Bull 62:1702–1707	2011	West Pacific	Growth anomalies	<i>Acropora cytherea</i>
Work TM, Aeby GS (2011) Pathology of tissue loss (white syndrome) in <i>Acropora</i> sp. corals from the Central Pacific. J Invertebr Pathol 107:127–131	2011	Central Pacific	White syndrome	<i>Acropora</i> spp
Maynard JA, Anthony KRN, Harvell CD, Burgman MA, Beeden R, Sweatman H, Heron SF, Lamb JB, Willis BL (2011) Predicting outbreaks of a climate-driven coral disease in the Great Barrier Reef. Coral Reefs 30:485–495.	2011	West Pacific	White syndrome	Multiple
Aeby GS, Williams GJ, Franklin EC, Kenyon J, Cox EF, Coles S, Work TM (2011) Patterns of Coral Disease across the Hawaiian Archipelago: Relating Disease to Environment. PLoS One 6:1–13	2011	Central Pacific	Multiple	Multiple
Aeby GS, Williams GJ, Franklin EC, Haapkyla J, Harvell CD, Neale S, Page CA, Raymundo L, Vargas-Ángel B, Willis BL, Work TM, Davy SK (2011) Growth Anomalies on the Coral Genera <i>Acropora</i> and <i>Porites</i> Are Strongly Associated with Host Density and Human Population Size across the Indo-Pacific. PLoS One 6:e16887	2011	Indo Pacific	Growth anomalies	Multiple

Onton K, Page CA, Wilson SK, Neale S, Armstrong S (2011) Distribution and drivers of coral disease at Ningaloo reef, Indian Ocean. <i>Mar Ecol Prog Ser</i> 433:75–84	2011	West Pacific	Multiple	Multiple
Vera M, Banks S (2009) Health status of the coral communities of the northern Galápagos Islands Darwin, Wolf and Marchena. <i>Galapagos Res</i> 66:65–74	2011	Eastern Pacific	Multiple	Multiple
Glynn PW (2011) In tandem reef coral and cryptic metazoan declines and extinctions. <i>Bull Mar Sci</i> 87:767–794	2011	Varied	Multiple	Multiple
Pollock FJ, Katz SM, Bourne DG, Willis BL (2012) <i>Cyromelanodactylus</i> crabs slow progression of white syndrome lesions on corals. <i>Coral Reefs</i> 32:43–48	2012	West Pacific	White syndrome	<i>Acropora hyacinthus</i>
Ushijima B, Smith A, Aeby GS, Callahan SM (2012) <i>Vibrio owensii</i> induces the tissue loss disease <i>Montipora</i> white syndrome in the Hawaiian reef coral <i>Montipora capitata</i>	2012	Central Pacific	White syndrome	<i>Montipora capitata</i>
Yasuda N, Hidaka M (2012) Cellular kinetics in growth anomalies of the scleractinian corals <i>Porites australiensis</i> and <i>Montipora informis</i> . <i>Dis Aquat Organ</i> 102:1–11	2012		Growth anomalies	<i>Porites australiensis</i> , <i>Montipora informis</i>
Sudek M, Work TM, Aeby GS, Davy SK (2012) Histological observations in the Hawaiian reef coral, <i>Porites compressa</i> , affected by <i>Porites</i> bleaching with tissue loss. <i>J Invertebr Pathol</i> 111:121–125	2012	Central Pacific	Bleaching	<i>Porites</i> spp.

Palmer C V, Bythell JC, Willis BL (2012) Enzyme activity demonstrates multiple pathways of innate immunity in Indo-Pacific anthozoans. Proc R Soc London B Biol Sci:rspb20112487	2012	West Pacific	Multiple	Multiple
Godwin S, Bent E, Borneman J, Pereg L (2012) The role of coral-associated bacterial communities in Australian subtropical white syndrome of <i>Turbinaria mesenterina</i> . PLoS One 7:e44243	2012	West Pacific	White syndrome	<i>Turbinaria mesenterina</i>
Wang J-T, Hirose E, Hsu C-M, Chen Y-Y, Meng P-J, Chen CA (2012) A coral-killing sponge, <i>Terpios hoshinota</i> , releases larvae harboring cyanobacterial symbionts: an implication of dispersal. Zool Stud 51:314-320	2012	Indo Pacific	Overgrowth	
Wilson B, Aeby GS, Work TM, Bourne DG (2012) Bacterial communities associated with healthy and <i>Acropora</i> white syndrome-affected corals from American Samoa. FEMS Microbiol Ecol 80:509-520	2012	Indo Pacific	White syndrome	<i>Acropora</i> spp.
Weil E, Irikawa A, Casareto B, Suzuki Y (2012) Extended geographic distribution of several Indo-Pacific coral reef diseases. Dis Aquat Organ 98:163-170	2012	West Pacific	Multiple	Multiple
Chiu JMY, Li S, Li A, Po B, Zhang R, Shin PKS, Qiu J-W (2012) Bacteria associated with skeletal tissue growth anomalies in the coral <i>Platygyra carnosus</i> . FEMS Microbiol Ecol 79:380-391	2012	Indo Pacific	Growth anomalies	<i>Platygyra carnosus</i>

Yasuda N, Nakano Y, Yamashiro H, Hidaka M (2012) Skeletal structure and progression of growth anomalies in <i>Porites australiensis</i> in Okinawa, Japan. Dis Aquat Organ 97:237–247	2012	West Pacific	Growth anomalies	<i>Porites australiensis</i>
Shi Q, Liu GH, Yan HQ, Zhang HL (2012) Black disease (<i>Terpios hoshinota</i>): a probable cause for the rapid coral mortality at the northern reef of Yongxing Island in the South China Sea. Ambio 41:446–455.	2012		Black band disease	
Riegl BM, Bruckner AW, Samimi-Namin K, Purkis SJ (2012) Diseases, harmful algae blooms (HABs) and their effects on Gulf coral populations and communities. In: Coral Reefs of the Gulf. Springer, p 107–125	2012	Indo Pacific	Multiple	<i>Multiple</i>
Williams GJ (2013) Contrasting recovery following removal of growth anomalies in the corals <i>Acropora</i> and <i>Montipora</i> . Dis Aquat Organ 106:181–185	2013	Central Pacific	Growth anomalies	<i>Acropora acuminata</i> , <i>Montipora efflorescens</i>
Zhenyu X, Shaowen K, Chaoqun H, Zhixiong Z, Shifeng W, Yongcan Z (2013) First characterization of bacterial pathogen, <i>Vibrio alginolyticus</i> , for <i>Porites andrewsi</i> white syndrome in the South China Sea. PLoS One 8:e75425	2013	West Pacific	White syndrome	<i>Porites andrewsi</i>
Haapkylä J, Melbourne-Thomas J, Flavell M, Willis BL (2013) Disease outbreaks, bleaching and a cyclone drive changes in coral assemblages on an inshore reef of the Great Barrier Reef. Coral Reefs 32:815–824	2013	West Pacific	Multiple	<i>Multiple</i>

Burns JHR, Gregg TM, Takabayashi M (2013) Does coral disease affect <i>Symbiodinium</i> ? investigating the impacts of growth anomaly on symbiont photophysiology. PLoS One 8:e72466	2013	Central Pacific	Growth anomalies	<i>Montipora capitata</i>
Spies NP, Takabayashi M (2013) Expression of galaxin and oncogene homologs in growth anomaly in the coral <i>Montipora capitata</i> . Dis Aquat Organ 104:249–256	2013	Central Pacific	Growth anomalies	<i>Montipora capitata</i>
Nicolet KJ, Hoogenboom MO, Gardiner NM, Pratchett MS, Willis BL (2013) The corallivorous invertebrate <i>Drupella</i> aids in transmission of brown band disease on the Great Barrier Reef. Coral Reefs 32:585–595	2013	West Pacific	Brown band disease	<i>Acropora muricata</i>
Thinesh T, Raj KD, Mathews G, Edward JKP (2013) Coral diseases are major contributors to coral mortality in Shingle Island, Gulf of Mannar, southeastern India. Dis Aquat Organ 106:69–77	2013	India	Multiple	<i>Multiple</i>
Aprill A, Huguen K, Mincer T (2013) Major similarities in the bacterial communities associated with lesioned and healthy Fungiidae corals. Environ Microbiol 15:2063–2072	2013	Red Sea	Yellow band disease	<i>Fungiidae</i>
Rodríguez-Villalobos JC, Rocha-Olivares A, Work TM, Calderon-Aguilera LE, Cáceres-Martínez JA (2014) Gross and microscopic pathology of lesions in <i>Pocillopora</i> spp. from the subtropical eastern Pacific. J Invertebr Pathol 120:9–17	2014	Eastern Pacific	Multiple	<i>Pocillopora</i> spp.

Work TM, Meteyer C (2014) To understand coral disease, look at coral cells. <i>Ecohealth</i> 11:610–618.	2014	Varied	Multiple	Multiple
Couch CS, Garriques JD, Barnett C, Preskitt L, Cotton S, Giddens J, Walsh W (2014) Spatial and temporal patterns of coral health and disease along leeward Hawai'i Island. <i>Coral Reefs</i> 33:693–704	2014	Central Pacific	Multiple	Multiple
Pollock FJ, Lamb JB, Field SN, Heron SF, Schaffelke B, Shedrawi G, Bourne DG, Willis BL (2014) Sediment and Turbidity Associated with Offshore Dredging Increase Coral Disease Prevalence on Nearby Reefs. <i>PLoS One</i> 9:e102498	2014	West Pacific	Multiple	Multiple
Work TM, Aeby GS, Lasne G, Tribollet A (2014) Gross and microscopic pathology of hard and soft corals in New Caledonia. <i>J Invertebr Pathol</i> 120:50–58	2014	Eastern Pacific	Multiple	Multiple
Ushijima B, Videau P, Burger AH, Shore-Maggio A, Runyon CM, Sudek M, Aeby GS, Callahan SM (2014) <i>Vibrio coralliilyticus</i> Strain OCN008 Is an Etiological Agent of Acute <i>Montipora</i> White Syndrome. <i>Appl Environ Microbiol</i> 80:2102–2109	2014	Central Pacific	White syndrome	<i>Montipora capitata</i>
Pollock FJ, Wood-Charlson EM, Oppen MJH van, Bourne DG, Willis BL, Weynberg KD (2014) Abundance and morphology of virus-like particles associated with the coral <i>Acropora hyacinthus</i> differ between healthy and white syndrome-infected states. <i>Mar Ecol Prog Ser</i> 510:39–43	2014	West Pacific	White syndrome	<i>Acropora hyacinthus</i>

Pollock FJ, Wood-Charlson EM, Oppen MJH van, Bourne DG, Willis BL, Weynberg KD (2014) Abundance and morphology of virus-like particles associated with the coral <i>Acropora hyacinthus</i> differ between healthy and white syndrome-infected states. Mar Ecol Prog Ser 510:39–43	2014	Indo Pacific	White syndrome	<i>Porites lutea</i>
Sabdono A, Radjasa OK, Trianto A, Wijayanti DP, Pringgenies D (2014) An early evaluation of coral disease prevalence on Panjang island, Java Sea, Indonesia. Int J Zool Res 10:20	2014	Indo Pacific	Multiple	<i>Multiple</i>
Ainsworth TD, Knack B, Ukani L, Seneca F, Weiss Y, Leggat W (2015) In situ hybridisation detects pro-apoptotic gene expression of a Bcl-2 family member in white syndrome-affected coral. Dis Aquat Organ 117:155–163	2015	West Pacific	White syndrome	<i>Acropora hyacinthus</i>
Weynberg KD, Voolstra CR, Neave MJ, Buerger P, Oppen MJH Van (2015) From cholera to corals: viruses as drivers of virulence in a major coral bacterial pathogen. Sci Rep 5:17889.	2015	Varied	Bleaching and white syndrome	Multiple
Ng JCY, Chan Y, Tun HM, Leung FCC, Shin PKS, Chiu JMY (2015) Pyrosequencing of the bacteria associated with <i>Platygyra carnosus</i> corals with skeletal growth anomalies reveals differences in bacterial community composition in apparently healthy and diseased tissues. Front Microbiol 6:1142	2015	Indo Pacific	Growth anomalies	<i>Platygyra carnosus</i>

Rodriguez-Villalobos JC, Work TM, Calderon-Aguilera LE, Reyes-Bonilla H, Hernández L (2015) Explained and unexplained tissue loss in corals from the Tropical Eastern Pacific. <i>Dis Aquat Organ</i> 116:121–131	2015	Eastern Pacific	White syndrome	<i>Pocillopora</i>
Miller AW, Richardson LL (2014) Emerging coral diseases: a temperature-driven process? <i>Mar Ecol</i> :1–14	2015	Varied	Multiple	Multiple
Bahr KD, Jokiel PL, Rodgers KS (2015) The 2014 coral bleaching and freshwater flood events in Kāneʻohe Bay, Hawaiʻi. <i>PeerJ</i> 3:e1136.	2015	Central Pacific	Bleaching, mortality	Multiple
Hobbs JPA, Frisch AJ, Newman SJ, Wakefield CB (2015) Selective impact of disease on coral communities: Outbreak of white syndrome causes significant total mortality of <i>acropora</i> plate corals. <i>PLoS One</i> 10:1–15	2015	Indo Pacific	White syndrome	<i>Acropora</i>
Lozada-Misa P, Kerr A, Raymundo L (2015) Contrasting Lesion Dynamics of White Syndrome among the scleractinian corals <i>Porites</i> spp. <i>PLoS One</i> 10	2015	Central Pacific	White syndrome	<i>Porites</i> spp.
Pollock FJ, Krediet CJ, Garren M, Stocker R, Winn K, Wilson B, Huete-Stauffer C, Willis BL, Bourne DG (2015) Visualization of coral host–pathogen interactions using a stable GFP-labeled <i>Vibrio coralliilyticus</i> strain. <i>Coral Reefs</i> 34:655–662	2015	West Pacific	White syndrome	<i>Montipora aequituberculata</i>

Wright RM, Aglyamova G V, Meyer E, Matz M V (2015) Gene expression associated with white syndromes in a reef building coral, <i>Acropora hyacinthus</i> . BMC Genomics 16:371	2015	South Pacific	White syndrome	<i>Acropora hyacinthus</i>
Aeby GS, Work TM, Runyon CM, Shore-Maggio A, Ushijima B, Videau P, Beurmann S, Callahan SM (2015) First Record of Black Band Disease in the Hawaiian Archipelago: Response, Outbreak Status, Virulence, and a Method of Treatment. PLoS One 10:e0120853.	2015	Central Pacific	Black band disease	<i>Montipora</i> spp.
Bourne DG, Ainsworth TD, Pollock FJ, Willis BL (2015) Towards a better understanding of white syndromes and their causes on Indo-Pacific coral reefs. Coral Reefs 34:233–242	2015	Indo Pacific	White syndrome	Multiple
Sudek M, Williams GJ, Runyon C, Aeby GS, Davy SK (2015) Disease dynamics of <i>Porites</i> bleaching with tissue loss: prevalence, virulence, transmission, and environmental drivers. Dis Aquat Organ 113:59–68	2015	Central Pacific	Bleaching	<i>Porites compressa</i>
Arotsker L, Kramarsky-Winter E, Ben-Dov E, Siboni N, Kushmaro A (2015) Changes in the bacterial community associated with black band disease in a Red Sea coral, <i>Favia</i> sp., in relation to disease phases. Dis Aquat Organ 116:47–58	2015	Indo Pacific	Black band disease	<i>Favia</i> sp.
Work TM, Aeby GS, Hughen KA (2015) Gross and microscopic lesions in corals from Micronesia. Vet Pathol:0300985815571669	2015	Central Pacific	Multiple	Multiple

Aeby GS, Callahan S, Cox EF, Runyon C, Smith A, Stanton FG, Ushijima B, Work TM (2016) Emerging coral diseases in Kāne 'ohe Bay, O 'ahu, Hawai 'i (USA): two major disease outbreaks of acute <i>Montipora</i> white syndrome. Dis Aquat Organ 119:189–198	2016	Central Pacific	White syndrome	<i>Montipora</i> spp.
Raymundo LJ, Work TM, Miller RL, Lozada-Misa PL (2016) Effects of <i>Coralliophila violacea</i> on tissue loss in the scleractinian corals <i>Porites</i> spp. depend on host response. Dis Aquat Organ 119:75–83	2016		Predation, white syndrome	<i>Porites</i> spp.
Rodríguez-Villalobos JC, Ayala-Bocos A, Hernández L (2015) Predation by <i>Epidendrium billeeaanum</i> on <i>Tubastrea coccinea</i> : use of the denuded skeleton for laying eggs. Coral Reefs:1	2016	Eastern Pacific	Predation	<i>Tubastrea coccinea</i>
Ushijima B, Videau P, Poscablo D, Stengel JW, Beurmann S, Burger AH, Aeby GS, Callahan SM (2016) Mutation of the toxR or mshA genes from <i>Vibrio coralliilyticus</i> strain OCN014 reduces infection of the coral <i>Acropora cytherea</i> . Environ Microbiol 18:4055–4067	2016	Central Pacific	White syndrome	<i>Acropora cytherea</i>
Ponti M, Fratangeli F, Dondi N, Reinach MS, Serra C, Sweet MJ (2016) Baseline reef health surveys at Bangka Island (North Sulawesi, Indonesia) reveal new threats. PeerJ 4:e2614	2016	Indo Pacific	Multiple	Multiple
Brown EK, McKenna SA, Beavers SC, Clark T, Gawel M, Raikow DF (2016) Informing coral reef management decisions at four US National Parks in	2016	Central Pacific	Multiple	Multiple

the Pacific using long-term monitoring data. <i>Ecosphere</i> 7				
Burns JHR, Alexandrov T, Ovchinnikova E, Gates RD, Takabayashi M (2016) Investigating the spatial distribution of growth anomalies affecting <i>Montipora capitata</i> corals in a 3-dimensional framework. <i>J Invertebr Pathol</i> 140:51-57	2016	Central Pacific	Growth anomalies	<i>Montipora capitata</i>
Rodríguez-Villalobos JC, Work TM, Calderon-Aguilera LE (2016) Wound repair in <i>Pocillopora</i> . <i>J Invertebr Pathol</i> 139:1-5	2016	Eastern Pacific	White syndrome	<i>Pocillopora spp.</i>
Montano S, Giorgi A, Monti M, Seveso D, Galli P (2016) Spatial variability in distribution and prevalence of skeletal eroding band and brown band disease in Faafu Atoll, Maldives. <i>Biodivers Conserv</i> 25:1625-1636	2016	Indo Pacific	Skeleton eroding base	Multiple
Sweet MJ, Séré MG (2016) Ciliate communities consistently associated with coral diseases. <i>J Sea Res</i> 113:119-131	2016	Eastern and West Pacific	Multiple	Multiple
Roff G (2016) Earliest record of a coral disease from the Indo-Pacific? <i>Coral Reefs</i> 35:457	2016	Indo Pacific	Black band disease	Multiple
Yoshioka RM, Kim CJS, Tracy AM, Most R, Harvell CD (2016) Linking sewage pollution and water quality to spatial patterns of <i>Porites lobata</i> growth anomalies in Puako, Hawaii. <i>Mar Pollut Bull</i> 104:313-321	2016	Central Pacific	Growth anomalies	<i>Porites lobata</i>

Aeby G, Tribollet A, Lasne G, Work T (2016) Assessing threats from coral and crustose coralline algae disease on the reefs of New Caledonia. <i>Mar Freshw Res</i> 67:455–465	2016	South Pacific	Multiple	Multiple
Rouzé H, Lecellier G, Saulnier D, Berteaux-Lecellier V (2016) Symbiodinium clades A and D differentially predispose <i>Acropora cytherea</i> to disease and <i>Vibrio</i> spp. colonization. <i>Ecol Evol</i> 6:560–572	2016	South Pacific	Multiple	<i>Acropora cytherea</i>
Hussain A, De K, Thomas L, Nagesh R, Mote S, Ingole B (2016) Prevalence of skeletal tissue growth anomalies in a scleractinian coral: <i>Turbinaria mesenterina</i> of Malvan Marine Sanctuary, eastern Arabian Sea. <i>Dis Aquat Organ</i> 121:79–83	2016	Indo Pacific	Growth anomalies	<i>Turbinaria mesenterina</i>
Zhang Y, Sun J, Mu H, Lun JCY, Qiu J-W (2017) Molecular pathology of skeletal growth anomalies in the brain coral <i>Platygyra carnosa</i> : A meta-transcriptomic analysis. <i>Mar Pollut Bull</i> 124:660–667	2017		Growth anomalies	<i>Platygyra carnosa</i>
Pollock FJ, Wada N, Torda G, Willis BL, Bourne DG (2017) White syndrome-affected corals have a distinct microbiome at disease lesion fronts. <i>Appl Environ Microbiol</i> 83	2017	West Pacific	White syndrome	<i>Acropora</i> spp.
Mera H, Bourne DG (2018) Disentangling causation: complex roles of coral-associated microorganisms in disease. <i>Environ Microbiol</i> 20:431–449	2018		Multiple	<i>Multiple</i>

Wada N, Ohdera A, Mano N (2018) Coral Disease in Japan. In: Coral Reef Studies of Japan. Springer, p 41-62	2018	West Pacific	Multiple	<i>Multiple</i>
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Table S2. Coral diseases studies from coral reefs of the eastern tropical Pacific since 1970.

Disease/condition	Species	Etiologic agent	Site	Year	Methods	Reference
White plague disease	<i>Porites lobata</i>	Not known	Malpelo	1999	Field observations	Garzón-Ferreira, J., Pinzón, C., & Jorge, H. (1999). Rapid assessment of coral community structure and health at Malpelo island (Colombian Pacific). <i>Boletín de Investigaciones Marinas y Costeras-INVEMAR</i> , 28(1), 137-154.
	<i>Pavona gigantea</i>	Not known	Gorgona	2003-2004	Field observations	
	<i>Pavona clavus</i> , <i>Porites lobata</i> , <i>Psammocora superficialis</i>	Not known	San Cristóbal Island, Galápagos, Ecuador	2005-2007	Field observations	Vinueza Hidalgo, G. S. (2011). Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos (Bachelor's thesis, Quito: USFQ, 2011).
White band disease	<i>Pocillopora spp.</i>	Not known	Malpelo	1999	Field observations	Navas-Camacho, R., Rodríguez-Ramírez, A., & Reyes-Nivia, M. C. (2010). Agents of coral mortality on reef formations of the Colombian Pacific. <i>Revista de Biología Tropical</i> , 58(1), 133–138.
		Not known	Malpelo	2003-2004	Field observations	Navas-Camacho, R., Rodríguez-Ramírez, A., & Reyes-Nivia, M. C. (2010). Agents of coral mortality on reef formations of the Colombian Pacific. <i>Revista de Biología Tropical</i> , 58(1), 133–138.
	<i>Pocillopora damicornis</i>	Not known	Malpelo	2003-2004	Field observations	Navas-Camacho, R., Rodríguez-Ramírez, A., & Reyes-Nivia, M. C. (2010). Agents

						of coral mortality on reef formations of the Colombian Pacific. <i>Revista de Biología Tropical</i> , 58(1), 133–138.
	<i>Pocillopora eydouxi</i>	Not known	San Cristóbal Island, Galápagos, Ecuador	2005-2007	Field observations	Vinueza Hidalgo, G. S. (2011). Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos (Bachelor's thesis, Quito: USFQ, 2011).
Bacterial bleaching	<i>Pocillopora spp.</i>	Not known	Gorgona, Colombia	2003-2004	Field observations	Navas-Camacho, R., Rodríguez-Ramírez, A., & Reyes-Nivia, M. C. (2010). Agents of coral mortality on reef formations of the Colombian Pacific. <i>Revista de Biología Tropical</i> , 58(1), 133–138.
Growth anomalies	<i>Pavona gigantea and Gardinoseros planulata</i>	Coral response against stress produced by algal territories of <i>Stegastes</i> spp	Gorgona, Colombia	2003-2004	Field observations	Navas-Camacho, R., Rodríguez-Ramírez, A., & Reyes-Nivia, M. C. (2010). Agents of coral mortality on reef formations of the Colombian Pacific. <i>Revista de Biología Tropical</i> , 58(1), 133–138.
	<i>Pavona clavus</i>	Not known	Darwin, Wolf and Marchena Islands, Ecuador	2005-2007	Field observations	Vera M, Banks S (2009) Health status of the coral communities of the northern Galápagos Islands Darwin, Wolf and Marchena. <i>Galápagos Res</i> 66:65–74
	<i>Porites lobata</i>	Not known	Darwin, Wolf and Marchena Islands, Ecuador	2005-2007	Field observations	

Aspergillosis	<i>Pacifigorgia</i> <i>sp.</i>	Aspergillus (?)	Utría, Colombia	2003- 2004	Field observations	Navas-Camacho, R., Rodríguez-Ramírez, A., & Reyes-Nivia, M. C. (2010). Agents of coral mortality on reef formations of the Colombian Pacific. <i>Revista de Biología Tropical</i> , 58(1), 133–138.
Bleaching	<i>P. damicornis</i> , <i>P. capitata</i> , <i>Pavona gigantea</i> and <i>Psammocora stellata</i> <i>Millepora intricata</i> , <i>Gardineseria planulata</i> , <i>Pavona clavus</i> , <i>P. gigantea</i> , <i>P. varians</i> , <i>Porites lobata</i> , <i>P. panamensis</i> , <i>Psammocora stellata</i> , <i>Pocillopora elegans</i> , <i>P. damicornis</i> <i>Pocillopora spp.</i>	El Niño (1997-1998) El Niño (1983)	Utría, Malpelo, Gorgona, Colombia Panamá	1983	Field observations Histopathology and field transplantation	Glynn, P. W., Peters, E. C., & Muscatine, L. (1985). Coral tissue microstructure and necrosis: relation to catastrophic coral mortality in Panama. <i>Diseases of Aquatic Organisms</i> , 1, 29– 37.
Mortality	<i>Pavona clavus</i> , <i>P. varians</i> , <i>Pocillopora capitata</i> , <i>P. eydouxi</i> , <i>Porites lobata</i> , <i>Tubastrea coccinea</i>	Not known. Presumed sedimentation	México, Baja California Sur Malpelo, Colombia	1989 1999	Field observations Field observations	Wilson, E. C. (1990). Mass mortality of the reef coral <i>Pocillopora</i> of the south coast of Baja California Sur, México. <i>Bull. So. Calif. Acad. Sci.</i> , 89, 39–41. Garzón-Ferreira, J., Pinzón, C., & Jorge, H. (1999). Rapid assessment of coral community structure and health at Malpelo island (Colombian Pacific). <i>Boletín de Investigaciones Marinas y Costeras- INVEMAR</i> , 28(1), 137-154.

	<i>Tubastrea coccinea</i>	Epidendrium billeeanum	Nicaragua	2015	Field observations	Rodríguez-Villalobos, J. C., Ayala-Bocos, A., & Hernández, L. (2016). Predation by <i>Epidendrium billeeanum</i> on <i>Tubastrea coccinea</i> : use of the denuded skeleton for laying eggs. <i>Coral Reefs</i> , 35(1), 271-271.
Tissue loss	<i>Pocillopora sp.</i>	Not known, and different predators	Oaxaca, Nayarit, Jalisco, Colima, Baja California Sur, México	2010-2015	Field observations and histopathology	Rodríguez-Villalobos, J. C., Rocha-Olivares, A., Work, T. M., Calderon-Aguilera, L. E., & Cáceres-Martínez, J. A. (2014). Gross and microscopic pathology of lesions in <i>Pocillopora</i> spp. from the subtropical eastern Pacific. <i>Journal of invertebrate pathology</i> , 120, 9-17. Rodríguez-Villalobos, J. C., Work, T. M., Calderon-Aguilera, L. E., Reyes-Bonilla, H., & Hernández, L. (2015). Explained and unexplained tissue loss in corals from the Tropical Eastern Pacific. <i>Diseases of aquatic organisms</i> , 116(2), 121-131.
	<i>Leptogorgia alba</i> and <i>Pacifigorgia cf. lacerata</i>	Fungi, presumed	Malpelo, Colombia	2009-2010	Field observations	Sánchez, J. A., Gómez, C. E., Escobar, D., & Dueñas, L. F. (2011). Diversidad, abundancia y

						amenazas de los octocorales de la isla Malpelo, Pacífico Oriental Tropical, Colombia.
	<i>Porites lobata</i>	Not known	San Cristóbal Island, Galápagos, Ecuador	2009-2010	Field observations	Vinueza Hidalgo, G. S. (2011). Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos (Bachelor's thesis, Quito: USFQ, 2011).
Trematodiasis	<i>Porites lobata</i>	Not known	Darwin, Wolf and Marchena Islands, Ecuador	2005-2007	Field observations	Vera M, Banks S (2009) Health status of the coral communities of the northern Galápagos Islands Darwin, Wolf and Marchena. Galápagos Res 66:65–74
	<i>Pavona clavus, Psammocora stellata</i>	Not known	San Cristóbal Island, Galápagos, Ecuador	2009-2010	Field observations	Vinueza Hidalgo, G. S. (2011). Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos (Bachelor's thesis, Quito: USFQ, 2011).
Discoloration tissue thinning syndrome	<i>Porites lobata</i>	Not known	San Cristóbal Island, Galápagos, Ecuador	2009-2010	Field observations	Vinueza Hidalgo, G. S. (2011). <i>Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos</i> (Bachelor's thesis, Quito: USFQ, 2011).
	<i>Pavona clavus</i>	Not known	San Cristóbal Island, Galápagos, Ecuador	2009-2010	Field observations	Vinueza Hidalgo, G. S. (2011). <i>Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos</i> (Bachelor's thesis, Quito: USFQ, 2011).

Yellow spot	<i>P. clavus</i> and <i>P. gigantea</i>	Not known	San Cristóbal Island, Galápagos, Ecuador	2009-2010	Field observations	Vinueza Hidalgo, G. S. (2011). Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos (Bachelor's thesis, Quito: USFQ, 2011).
Uncharacterized disease (Uncharacterized abnormal conditions)	<i>Pavona clavus</i> , <i>P. giganta</i> , <i>P. varians</i> , <i>Pocillopora effusus</i> , <i>Porites lobata</i>	Not known	Darwin, Wolf and Marchena Islands, Ecuador	2005-2007	Field observations	Vera M, Banks S (2009) Health status of the coral communities of the northern Galápagos Islands Darwin, Wolf and Marchena. Galápagos Res 66:65–74
	<i>Pavona clavus</i> , <i>Pavona gigantea</i> , <i>Pocillopora capitata</i> , <i>Pocillopora inflata</i> , <i>Pocillopora eydouxi</i>	Not known	San Cristóbal Island, Galápagos, Ecuador	2009-2010	Field observations	Vinueza Hidalgo, G. S. (2011). Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos (Bachelor's thesis, Quito: USFQ, 2011).
Dark spot	<i>P. clavus</i> and <i>P. gigantea</i> , <i>Psammocora cf. superficialis</i>	Not known	San Cristóbal Island, Galápagos, Ecuador	2009-2010	Field observations	Vinueza Hidalgo, G. S. (2011). Estado de salud de comunidades de coral en Punta Pitt y Bahía Rosa Blanca, Islas Galápagos (Bachelor's thesis, Quito: USFQ, 2011).
Discoloration	<i>Pocillopora spp.</i>	Not known	Oaxaca, Nayarit, Jalisco, Colima	2010	Field observations and histopathology	Rodríguez-Villalobos, J. C., Rocha-Olivares, A., Work, T. M., Calderon-Aguilera, L. E., & Cáceres-Martínez, J. A. (2014). Gross and microscopic pathology of lesions in <i>Pocillopora</i> spp. from the subtropical eastern

Overgrowth	<i>Pocillopora spp.</i>	Algae, sponges	Oaxaca, Nayarit, Jalisco, Colima	2010	Field observations and histopathology	Rodríguez-Villalobos, J. C., Rocha-Olivares, A., Work, T. M., Calderon-Aguilera, L. E., & Cáceres-Martínez, J. A. (2014). Gross and microscopic pathology of lesions in <i>Pocillopora spp.</i> from the subtropical eastern Pacific. <i>Journal of invertebrate pathology</i> , 120, 9-17.
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