

SUPPORTING INFORMATION

S2

MedSens index: The bridge between marine citizen science and coastal management

Eva Turicchia^{1,5,7,9,10}, Carlo Cerrano^{2,5,7,8,11}, Matteo Ghetta³, Marco Abbiati^{1,5,6,9,10}, Massimo Ponti^{4,5,7,9,10}

¹ Dipartimento di Conservazione dei Beni Culturali, Università di Bologna, Via degli Ariani 1, 48121 Ravenna, Italy.

² Dipartimento di Scienze della Vita e dell'Ambiente, Università Politecnica delle Marche, Via Brecce Bianche, 60131 Ancona, Italy.

³ Faunalia, Piazza Garibaldi 5, 56025 Pontedera, Italy.

⁴ Dipartimento di Scienze Biologiche, Geologiche e Ambientali, Università di Bologna, Via S. Alberto 163, 48123 Ravenna, Italy.

⁵ Consorzio Nazionale Interuniversitario per le Scienze del Mare, Piazzale Flaminio 9, 00196 Roma, Italy.

⁶ Istituto di Scienze Marine, Consiglio Nazionale delle Ricerche, Via Piero Gobetti 101, 40129 Bologna, Italy.

⁷ Reef Check Italia onlus, Via Brecce Bianche, 60131 Ancona, Italy.

⁸ Stazione Zoologica Anton Dohrn, Villa Comunale, 80121, Napoli, Italy

⁹ Centro Interdipartimentale di Ricerca Industriale Fonti Rinnovabili, Ambiente, Mare ed Energia, Università di Bologna, Via S. Alberto 163, 48123 Ravenna, Italy

¹⁰ Centro Interdipartimentale di Ricerca per le Scienze Ambientali, University of Bologna, Via S. Alberto 163, 48123 Ravenna, Italy

¹¹ Fano Marine Center, Viale Adriatico 1, 61032 Fano, Italy

TABLE S2 Evidence-based sensitivity assessment, including references, for the 25 selected taxa (Table S1.1), carried out by following the MarESA approach (Tyler-Walters, Tillin, d'Avack, Perry & Stamp 2018). For each taxon and pressure (Table S1.2), a resistance (none, low, medium, high, or not relevant) and resilience ranks (very low, low, medium, high, or not relevant) were attributed according to the MarESA standard benchmarks. For each resistance and resilience quality score, the literature review was performed according to the MarESA guidelines, and the sources were reported. When necessary, the literature was supplemented by expert judgments (indicated by EJ). Quality and applicability of evidence were also assessed according to the MarESA principles. Then, species sensitivity ranks (not sensitive, low, medium, high) toward each pressure, at the benchmark levels, were established by combining the resistance and resilience ranks using the MarESA conversion table. Species sensitivity ranks were turned into numerical scores (0-3, where 0 means not sensitive and 3 highly sensitive). In some cases, sensitivity assessment were not possible, because there were not relevant (NR) evidences of direct interaction between the pressure and the taxa, or there were not enough evidence (NEv) to assess the resistance and resilience of taxa toward the pressure, or even when a sensitivity assessment was not considered adequate to be made according to the evidence available, which were limited or absent (NA). The tables for each taxon with the related references are reported on the following pages.

Reference

Tyler-Walters, H., Tillin, H. M., d'Avack, E. A. S., Perry, F. & Stamp, T. (2018). *Marine Evidence-based Sensitivity Assessment (MarESA) – A Guide*. Marine Life Information Network (MarLIN), Marine Biological Association of the UK, Plymouth.

Caulerpa cylindracea

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	High	[1] [2]	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Salinity changes (increase)	High	[5]	Medium	High	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Salinity changes (decrease)	High	[6]	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Temperature changes (increase)	High	[7]	Medium	High	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Temperature changes (decrease)	High	[8]	Medium	High	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Water flow (tidal current) changes	Medium	[5] [9] [10]	Medium	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Wave exposure changes	Medium	[5]	Medium	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Changes in suspended solids (water clarity)	Medium	[8] [5]	High	High	High	[3] [4] [5] & EJ	Medium	Low	Medium	2
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Low	EJ	Low	Low	High	[3] [4] [5] [10]	Medium	Low	Low	1
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	[11]	High	High	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Smothering and siltation rate changes (heavy)	Medium	[11]	High	High	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Physical change	High	EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Physical loss	None	EJ	Low	Low	Low	[3] [4] [5] & EJ	Medium	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
Introduction of light	NR				NR				NA	NA	
Litter	High	EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0	
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	High	[12]	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	De-oxygenation	Low	[13] & EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	High	[14] [10]	High	High	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Hydrocarbon and PAH contamination	Medium	[15]	High	Medium	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Radionuclide contamination	High	[16] & EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Synthetic compound contamination	Medium	EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
Transition elements & organo-metal contamination	Low	[17] [18] & EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1	
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	High	[5]	Medium	Medium	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Introduction or spread of invasive non-indigenous species	Medium	[19] [20] [10]	Medium	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Removal of non-target species	High	[21] & EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Removal of target species	NR				NR				NA	NA

References

- 1 Boudouresque CF, et al. (1995) *Sci Mar* 59: 21-29.
- 2 West EJ, et al. (2007) *Aquat Bot* 87: 196-202.
- 3 Ceccherelli G, Piazzzi L (2001) *Bot Mar* 44: 209-213.
- 4 Panayotidis P, Žuijjevic A (2001) *Oceanologica Acta* 24: 199-203.
- 5 Klein J, Verlaque M (2008) *Mar Pollut Bull* 56: 205-225.
- 6 West EJ, West RJ (2007) *Hydrobiologia* 577: 87-94.
- 7 Samperio-Ramos G, et al. (2015) *Mar Pollut Bull* 96: 418-423.
- 8 Raniello R, et al. (2004) *Mar Ecol Prog Ser* 271: 113-120.
- 9 Infantes E, et al. (2011) *Estuar Coast Shelf S* 91: 434-441.
- 10 Piazzzi L, et al. (2016) *Mar Biol* 163: 14.
- 11 Piazzzi L, et al. (2005) *Estuar Coast Shelf S* 64: 467-474.
- 12 Terrados J, Maba N (2006) *Bot Mar* 49: 331-338.
- 13 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 14 Gennaro P, Piazzzi L (2011) *Mar Ecol Prog Ser* 427: 59-70.
- 15 Pietroletti M, et al. (2010) *Spectroc Acta Pt A-Molec Biomolec Spectr* 77: 673-679.
- 16 Warnau M, et al. (1996) *Mar Environ Res* 41: 343-362.
- 17 Fernex FE, et al. (2001) *Hydrobiologia* 450: 31-46.
- 18 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 19 Piazzzi L, et al. (2003) *Cryptogam Algal* 24: 233-243.
- 20 Balata D, et al. (2011) *Mar Biol* 158: 2459.
- 21 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.

Caulerpa taxifolia

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	High	[1] [2]	Medium	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Salinity changes (increase)	High	[6]	Medium	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Salinity changes (decrease)	High	[6]	High	High	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Temperature changes (increase)	High	[1]	Medium	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Temperature changes (decrease)	High	[1] [6]	High	High	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Water flow (tidal current) changes	Medium	[7]	Medium	Medium	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Wave exposure changes	Medium	EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Changes in suspended solids (water clarity)	Medium	[1] [8]	High	Low	High	[3] [4] [8] [5] & EJ	Medium	Low	Medium	2
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Low	EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	[1] [9]	High	High	High	[3] [9] [4] [5]	High	High	Not sensitive	0
	Smothering and siltation rate changes (heavy)	Medium	[9]	High	High	High	[3] [9] [4] [5]	High	High	Low	1
	Physical change	High	EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Physical loss	None	EJ	Low	Low	Low	[3] [4] [5] & EJ	Medium	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
Death or injury by collision	NR				NR				NA	NA	
Introduction of light	NR				NR				NA	NA	
Litter	High	EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0	
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	High	[10]	High	High	High	[3] [4] [10] [5] & EJ	Medium	Medium	Not sensitive	0
	De-oxygenation	Low	[11] & EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	High	[12] [13] [8]	High	High	High	[12] [3] [4] [8] [5] [13] & EJ	Medium	High	Not sensitive	0
	Hydrocarbon and PAH contamination	Medium	[14] & EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Radionuclide contamination	High	[15] & EJ	Medium	Medium	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Synthetic compound contamination	Medium	[16] & EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1
Transition elements & organo-metal contamination	Low	[16] [17] & EJ	Medium	Low	High	[3] [4] [5] & EJ	Medium	Low	Low	1	
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	High	[18]	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Introduction or spread of invasive non-indigenous species	Medium	[19]	Medium	Medium	High	[3] [4] [5] & EJ	Medium	Low	Low	1
	Removal of non-target species	High	[20] & EJ	Low	Low	High	[3] [4] [5] & EJ	Medium	Low	Not sensitive	0
	Removal of target species	NR				NR				NA	NA

References

- 1 Boudouresque CF, et al. (1995) *Sci Mar* 59: 21-29.
- 2 West EJ, et al. (2007) *Aquat Bot* 87: 196-202.
- 3 Ceccherelli G, Cinelli F (1999) *Mar Ecol Prog Ser* 182: 299-303.
- 4 Ruesink JL, Collado-Vides L (2006) *Biol Inva* 8: 309-325.
- 5 Phillips JA (2009) *Eur J Phycol* 44: 81-88.
- 6 West EJ, West RJ (2007) *Hydrobiologia* 577: 87-94.
- 7 Infantes E, et al. (2011) *Estuar Coast Shelf S* 91: 434-441.
- 8 Burfeind DD, Udy JW (2009) *Aquat Bot* 90: 105-109.
- 9 Glasby TM, et al. (2005) *Aquat Bot* 82: 71-81.
- 10 Terrados J, Maba N (2006) *Bot Mar* 49: 331-338.
- 11 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 12 Ceccherelli G, Cinelli F (1997) *J Exp Mar Biol Ecol* 217: 165-177.
- 13 Ceccherelli G, Sechi N (2002) *Hydrobiologia* 474: 57-66.
- 14 Pietroletti M, et al. (2010) *Spectroc Acta Pt A-Molec Biomolec Spectr* 77: 673-679.
- 15 Warnau M, et al. (1996) *Mar Environ Res* 41: 343-362.
- 16 Fernex FE, et al. (2001) *Hydrobiologia* 450: 31-46.
- 17 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 18 Klein J, Verlaque M (2008) *Mar Pollut Bull* 56: 205-225.
- 19 Piazza L, et al. (2003) *Cryptogam Algal* 24: 233-243.
- 20 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.

Axinella spp.

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Medium	EJ	Low	Low	High	EJ	Medium	Low	Low	1
	Salinity changes (decrease)	Low	EJ	Low	Low	Medium	EJ	Medium	Low	Medium	2
	Temperature changes (increase)	Medium	[1] [2] [3] [4] [5]	High	Medium	High	EJ	Medium	Low	Low	1
	Temperature changes (decrease)	High	EJ	Low	Low	High	EJ	Medium	Low	Not sensitive	0
	Water flow (tidal current) changes	High	EJ	Low	Low	High	EJ	Medium	Low	Not sensitive	0
	Wave exposure changes	Low	[6] [7] & EJ	Low	Low	High	[7] & EJ	Medium	Low	Low	1
	Changes in suspended solids (water clarity)	High	EJ	Low	Low	Medium	EJ	Medium	Low	Low	1
	Habitat structure changes - removal of substratum (extraction)	NR	[8]	High	High	NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	None	[9] [10] & EJ	Medium	Medium	Medium	EJ	Medium	Low	Medium	2
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	[11] [12] & EJ	Medium	Medium	High	EJ	Medium	Low	Not sensitive	0
	Smothering and siltation rate changes (heavy)	Medium	[11] [12] & EJ	Medium	Medium	High	EJ	Medium	Low	Low	1
	Physical change	None	EJ	Low	Low	Very low	EJ	Medium	Low	High	3
	Physical loss	None	EJ	Low	Low	Very low	EJ	Medium	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	Medium	[8] [13] & EJ	Low	Low	High	EJ	Medium	Low	Low	1
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	High	EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0
	De-oxygenation	Low	[14] [15] [16] [17] & EJ	Medium	Low	High	EJ	Low	Low	Low	1
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Medium	[18] & EJ	Medium	Low	High	EJ	Medium	Low	Low	1
	Hydrocarbon and PAH contamination	Low	[19] [20] [21] & EJ	Medium	Low	High	EJ	Medium	Low	Low	1
	Radionuclide contamination	High	[22] [23]	Medium	Low	High	EJ	Medium	Low	Not sensitive	0
	Synthetic compound contamination	Medium	EJ	Low	Low	High	EJ	Low	Low	Low	1
	Transition elements & organo-metal contamination	Low	[24] [25] [20] [26] [27] & EJ	Medium	Low	High	[28] & EJ	Medium	Low	Low	1
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[29] [30] & EJ	Medium	Low	Medium	EJ	Medium	Low	Medium	2
	Introduction or spread of invasive non-indigenous species	Low	[31] [32] [33]	Medium	High	High	EJ	Medium	Low	Low	1
	Removal of non-target species	Low	[4] & EJ	Low	Low	High	EJ	Medium	Low	Low	1
	Removal of target species	NR				NR				NA	NA

References

- 1 Cerrano C, et al. (2000) *Ecol Lett* 3: 284-293.
- 2 Lejeune C, et al. (2010) *Trends Ecol Evol* 25: 250-260.
- 3 Rivetti I, et al. (2014) *PLoS ONE* 9: e115655.
- 4 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 5 Gómez-Gras D, et al. (2019) *Ecol Evol* 9: 4168-4180
- 6 Wulff JL (1995) *Coral Reefs* 14: 55-61.
- 7 Wulff JL (2006) *Funct Ecol* 20: 699-708.
- 8 Kefalas E, et al. (2003) *ICES J Mar Sci* 60: 402-410.
- 9 Gage JD, et al. (2005). In: Barnes BW, Thomas JP, editors. Bethesda: Amer Fisheries Soc. 503-517.
- 10 Buhl-Mortensen L, et al. (2016) *ICES J Mar Sci* 73: 98-114.
- 11 Airoidi L (2003). In: Gibson RN, Atkinson RJA, editors. London, England: Taylor & Francis Group. 161-236.
- 12 Pineda MC, et al. (2017) *Sci Rep* 7: 15.
- 13 Angiolillo M, et al. (2015) *Mar Pollut Bull* 92: 149-159.
- 14 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 15 Hoffmann F, et al. (2005) *Geomicrobiol J* 22: 1-10.
- 16 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 17 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 18 Devescovi M, Ivesa L (2007) *Mar Pollut Bull* 54: 887-893.
- 19 Zahn RK, et al. (1981) *Sci Total Environ* 20: 147-169.
- 20 Cebrian E, Uriz MJ (2007) *Aquat Toxicol* 81: 137-143.
- 21 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 22 Genta-Jouve G, et al. (2012) *Chemosphere* 89: 340-349.
- 23 Maloubier M, et al. (2016) *Environ Sci Technol* 50: 10730-10738.
- 24 Ugarkovic D, et al. (1991) *Bull Environ Contam Toxicol* 47: 751-757.
- 25 Neff JM (2002) Elsevier Ltd.
- 26 Saby E, et al. (2009) *Aquat Toxicol* 94: 204-210.
- 27 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 28 Cebrian E, et al. (2006) *Environ Pollut* 141: 452-458.
- 29 Webster NS, Taylor MW (2012) *Environ Microbiol* 14: 335-346.
- 30 White JR, et al. (2012) *PLoS ONE* 7: e38204.
- 31 Piazzi L, Balata D (2008) *Mar Environ Res* 65: 50-61.
- 32 Baldacconi R, Corriero G (2009) *Mar Ecol Evol Persp* 30: 337-345.
- 33 de Caralt S, Cebrian E (2013) *Biol Inva* 15: 1591-1600.

Aplysina spp.

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Medium	[1]	Medium	Low	High	[1] & EJ	Medium	Low	Low	1
	Salinity changes (decrease)	Low	EJ	Low	Low	Medium	EJ	Medium	Low	Medium	2
	Temperature changes (increase)	Low	[2] [3] [4]	High	Medium	Medium	EJ	Medium	Low	Medium	2
	Temperature changes (decrease)	High	EJ	Low	Low	High	EJ	Medium	Low	Not sensitive	0
	Water flow (tidal current) changes	High	[5]	Medium	High	High	[5] & EJ	Medium	Medium	Not sensitive	0
	Wave exposure changes	Low	[6] [7] [8] & EJ	Medium	Medium	Medium	[7] & EJ	Medium	Low	Medium	2
	Changes in suspended solids (water clarity)	Medium	[9] [10] [11]	High	Medium	Medium	[9] [10] [11] [12]	High	High	Medium	2
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	None	[13] [14] [10] [15]	Medium	Medium	Medium	[7] [10] & EJ	Medium	Low	Medium	2
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	[16] [5] [17]	Medium	Medium	High	[12] & EJ	Medium	Low	Not sensitive	0
	Smothering and siltation rate changes (heavy)	Medium	[16] [10] [5] [17]	Medium	Medium	Medium	[12] [10] & EJ	Medium	Low	Medium	2
	Physical change	None	[10] [5]	Medium	Low	Very low	EJ	Medium	Low	High	3
	Physical loss	None	EJ	Low	Low	Very low	EJ	Medium	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
Litter	Medium	[13] [18] & EJ	Medium	Low	High	EJ	Medium	Low	Low	1	
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	High	EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0
	De-oxygenation	Low	[19] [20] [21] [22] [23]	Medium	Medium	High	EJ	Medium	Low	Low	1
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				Not available	NA
	Nutrient enrichment	Medium	[24] [25] [26] & EJ	High	Medium	High	EJ	Medium	Low	Low	1
	Hydrocarbon and PAH contamination	Low	[27] [28] [29]	Low	Low	High	EJ	Medium	Low	Low	1
	Radionuclide contamination	High	[30] [31] [32] [33]	Medium	Low	High	[31] [33] & EJ	Medium		Not sensitive	0
	Synthetic compound contamination	Medium	EJ	Low	Low	High	EJ	Low	Low	Low	1
Transition elements & organo-metal contamination	Low	[34] [35] [28] [36] [37] & EJ	Medium	Low	High	EJ	Low	Low	Low	1	
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[38] [3] [39] [26] [40] [41] [8]	High	Medium	Low	[8] & EJ	Low	Low	High	3
	Introduction or spread of invasive non-indigenous species	High	[42] & EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0
	Removal of non-target species	High	[43] & EJ	Medium	Low	Medium	EJ	Low	Low	Low	1
	Removal of target species	NR				NR				NA	NA

References

- 1 Pfannkuchen M, et al. (2009) *J Exp Mar Biol Ecol* 369: 65-71.
- 2 Perez T, et al. (2000) *C R Acad Sci Ser III Sci Vie* 323: 853-865.
- 3 Skoufias G (2003). Chersonissos, Greece, 6-9 May 2003. 258.
- 4 Kruzic P, et al. (2016) *Mar Ecol Evol Persp* 37: 1190-1209.
- 5 Zucht W, et al. (2008) *Fresenius Environ Bull* 17: 890-901.
- 6 Wulff JL (1995) *Coral Reefs* 14: 55-61.
- 7 Wulff JL (2006) *Funct Ecol* 20: 699-708.
- 8 Easson CG, et al. (2013) *PLoS ONE* 8.
- 9 Wilkinson CR, Vacelet J (1979) *J Exp Mar Biol Ecol* 37: 91-104.
- 10 Kloppel A, et al. (2008) *Mar Ecol Evol Persp* 29: 259-272.
- 11 Wulff J (2012) *Adv Mar Biol Volume* 61: 273-344.
- 12 Abdul Wahab MA, et al. (2017) *Mar Pollut Bull* 122: 176-193.
- 13 Kefalas E, et al. (2003) *ICES J Mar Sci* 60: 402-410.
- 14 Gage JD, et al. (2005). In: Barnes BW, Thomas JP, editors. Bethesda: Amer Fisheries Soc. 503-517.
- 15 Buhl-Mortensen L, et al. (2016) *ICES J Mar Sci* 73: 98-114.
- 16 Airoldi L (2003). In: Gibson RN, Atkinson RJA, editors. London, England: Taylor & Francis Group. 161-236.
- 17 Pineda MC, et al. (2017) *Sci Rep* 7: 15.
- 18 Angiolillo M, et al. (2015) *Mar Pollut Bull* 92: 149-159.
- 19 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 20 Hoffmann F, et al. (2005) *Geomicrobiol J* 22: 1-10.
- 21 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 22 Hoffmann F, et al. (2008) *Mar Biol* 153: 1257-1264.
- 23 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 24 Devescovi M, Ivesa L (2007) *Mar Pollut Bull* 54: 887-893.
- 25 Dolenc T, et al. (2007) *Aquaculture* 262: 237-249.
- 26 Gochfeld DJ, et al. (2012) *Mar Ecol Prog Ser* 456: 101-111.
- 27 Zahn RK, et al. (1981) *Sci Total Environ* 20: 147-169.
- 28 Cebrian E, Uriz MJ (2007) *Aquat Toxicol* 81: 137-143.
- 29 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 30 Genta-Jouve G, Thomas OP (2013) *Phytochem Rev* 12: 425-434.
- 31 Maloubier M, et al. (2015) *Dalton Transactions* 44: 20584-20596.
- 32 Lacoue-Labarthe T, et al. (2016) *Chemosphere* 144: 1885-1892.
- 33 Maloubier M, et al. (2016) *Environ Sci Technol* 50: 10730-10738.
- 34 Neff JM (2002) Elsevier Ltd.
- 35 Cebrian E, et al. (2006) *Environ Pollut* 141: 452-458.
- 36 Saby E, et al. (2009) *Aquat Toxicol* 94: 204-210.
- 37 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 38 Friedrich AB, et al. (2001) *FEMS Microbiol Ecol* 38: 105-113.
- 39 Webster NS, et al. (2008) *Environ Microbiol* 10: 3366-3376.
- 40 Gochfeld DJ, et al. (2012) *J Chem Ecol* 38: 451-462.
- 41 Webster NS, Taylor MW (2012) *Environ Microbiol* 14: 335-346.
- 42 Zuljevic A, et al. (2011) *Biol Inva* 13: 2303-2308.
- 43 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.

Geodia cydonium

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Salinity changes (decrease)	Low	[1] & EJ	Low	Low	Medium	EJ			Medium	2
	Temperature changes (increase)	Low	[2] [3] [4] [5]	Medium	Medium	Medium	[6] & EJ	Medium	Low	Medium	2
	Temperature changes (decrease)	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Water flow (tidal current) changes	High	EJ	Low	Low	Medium	[6] & EJ	Medium	Low	Low	1
	Wave exposure changes	High	[7] [8] & EJ	Medium	Low	Medium	[8] [6] & EJ	Medium	Low	Low	1
	Changes in suspended solids (water clarity)	High	EJ	Low	Low	Medium	[9] [6] [10] & EJ	Medium	Low	Low	1
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	None	[11] [12] [13]	Medium	Medium	Low	[8] [6] [14] & EJ	Medium	Low	High	3
Physical	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	[15] [16] & EJ	Medium	Medium	Medium	[6] [10] & EJ	Medium	Low	Low	1
	Smothering and siltation rate changes (heavy)	Medium	[15] [16] & EJ	Medium	Medium	Medium	[6] [10] & EJ	Medium	Low	Medium	2
	Physical change	None	EJ	Low	Low	Very low	[6] & EJ	Medium	Low	High	3
	Physical loss	None	[5]	Low	Low	Very low	EJ	Medium	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	Medium	[11] [17] [18]	High	High	High	[6] [14] & EJ	Medium	Low	Low	1
	Noise changes	NR				NR				NA	NA
	Visual disturbance	NR				NR				NA	NA
	Organic enrichment	High	EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0
	De-oxygenation	Low	[19] [20] [21] [22] & EJ	Low	Low	Medium	[6] & EJ	Medium	Low	Medium	2
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Medium	[23] & EJ	High	Low	Medium	[6] & EJ	Medium	Low	Medium	1
Chemical	Hydrocarbon and PAH contamination	Low	[24] [25] [26] & EJ	Low	Low	Medium	[6] & EJ	Medium	Low	Medium	2
	Radionuclide contamination	High	[27] [28] & EJ	Medium	Low	Medium	[6] & EJ	Medium	Low	Low	1
	Synthetic compound contamination	Medium	EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Transition elements & organo-metal contamination	Low	[29] [30] [31] [32] [25] [33] [34]	Medium	Medium	Low	[29] [6]	High	High	High	3
	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
Biological	Introduction of microbial pathogens	Low	[35] [36] [37]	Medium	Low	Medium	[6] & EJ	Medium	Low	Medium	2
	Introduction or spread of invasive non-indigenous species	High	[31] [38] [39]	Medium	Low	Medium	[6] & EJ	Medium	Low	Low	1
	Removal of non-target species	Medium	EJ	Low	Low	Medium	[6] & EJ	Medium	Low	Medium	2
	Removal of target species	NR				NR				NA	NA

References

- 1 Bell JJ, et al. (2015) *Conserv Biol* 29: 42-53.
- 2 Cerrano C, et al. (2000) *Ecol Lett* 3: 284-293.
- 3 Rivetti I, et al. (2014) *PLoS ONE* 9: e115655.
- 4 Bertolino M, et al. (2016) *J Mar Biol Assoc U K* 96: 341-350.
- 5 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 6 Mercurio M, et al. (2007) *Mar Biol* 151: 1491-1500.
- 7 Wulff JL (1995) *Coral Reefs* 14: 55-61.
- 8 Wulff JL (2006) *Funct Ecol* 20: 699-708.
- 9 Wilkinson CR, Vacelet J (1979) *J Exp Mar Biol Ecol* 37: 91-104.
- 10 Abdul Wahab MA, et al. (2017) *Mar Pollut Bull* 122: 176-193.
- 11 Kefalas E, et al. (2003) *ICES J Mar Sci* 60: 402-410.
- 12 Gage JD, et al. (2005). In: Barnes BW, Thomas JP, editors. Bethesda: Amer Fisheries Soc. 503-517.
- 13 Buhl-Mortensen L, et al. (2016) *ICES J Mar Sci* 73: 98-114.
- 14 Turicchia E, et al. (2013). 28 October - 1 November 2013, Marseille, France. CIESM. 699.
- 15 Airoidi L (2003). In: Gibson RN, Atkinson RJA, editors. London, England: Taylor & Francis Group. 161-236.
- 16 Pineda MC, et al. (2017) *Sci Rep* 7: 15.
- 17 Angiolillo M, et al. (2015) *Mar Pollut Bull* 92: 149-159.
- 18 Melli V, et al. (2017) *Mar Pollut Bull* 114: 821-830.
- 19 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 20 Hoffmann F, et al. (2005) *Geomicrobiol J* 22: 1-10.
- 21 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 22 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 23 Devescovi M, Ivesa L (2007) *Mar Pollut Bull* 54: 887-893.
- 24 Zahn RK, et al. (1981) *Sci Total Environ* 20: 147-169.
- 25 Cebrian E, Uriz MJ (2007) *Aquat Toxicol* 81: 137-143.
- 26 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 27 Genta-Jouve G, et al. (2012) *Chemosphere* 89: 340-349.
- 28 Maloubier M, et al. (2015) *Dalton Transactions* 44: 20584-20596.
- 29 Batel R, et al. (1993) *Mar Ecol Prog Ser* 93: 245-251.
- 30 Ugarkovic D, et al. (1991) *Bull Environ Contam Toxicol* 47: 751-757.
- 31 Schroder HC, et al. (1998) *Environ Toxicol Pharmacol* 5: 119-126.
- 32 Neff JM (2002) Elsevier Ltd.
- 33 Saby E, et al. (2009) *Aquat Toxicol* 94: 204-210.
- 34 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 35 Webster NS (2007) *Environ Microbiol* 9: 1363-1375.
- 36 Hoffmann F, et al. (2009) *Environ Microbiol* 11: 2228-2243.
- 37 Webster NS, Taylor MW (2012) *Environ Microbiol* 14: 335-346.
- 38 Baldacconi R, Corriero G (2009) *Mar Ecol Evol Persp* 30: 337-345.
- 39 Zuljevic A, et al. (2011) *Biol Inva* 13: 2303-2308.

Corallium rubrum

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	EJ	Low	Low	Very low	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	High	3
	Salinity changes (decrease)	Low	[12] [13] & EJ	Low	Low	Low	[1] [2] [3] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	High	3
	Temperature changes (increase)	Low	[14] [15] [16] [17] [18] [19] [20] [7] [21] [22] [23] [10] [24] [25] [26]	High	High	Very low	[15] [1] [2] [3] [4] [27] [5] [6] [7] [8] [9] [22] [10] [11] [26]	Medium	Medium	High	3
	Temperature changes (decrease)	High	[28]	Medium	Medium	Medium	[1] [2] [4] [27] [5] [6] [7] [8] [9] [11] [10] & EJ	Low	Low	Low	1
	Water flow (tidal current) changes	High	[29] [20] [28] [22]	Medium	Medium	High	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [30] & EJ	Low	Low	Not sensitive	0
	Wave exposure changes	Low	[31] & EJ	Low	Low	Medium	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	Medium	2
Physical	Changes in suspended solids (water clarity)	Medium	[32] & EJ	Low	Low	Medium	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	Medium	2
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	None	[33] [34] [35] [36] [37] [24] [38] [39]	High	High	Very low	[33] [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [26]	Medium	Low	High	3
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	Medium	[20] [12] [28]	Medium	Low	Medium	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	Medium	2
	Smothering and siltation rate changes (heavy)	None	[20] [12]	Medium	Low	Very low	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	High	3
	Physical change	None	EJ	Medium	Low	Very low	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	High	3
	Physical loss	None	[12] & EJ	Medium	Low	Very low	[1] [2] [3] [4] [5] [6] [7] [8] [9] [37] [10] [11] & EJ	Low	Low	High	3
	Barrier to species movement	NR				NR				NA	NA

	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	Medium	[40] [20] [41] [12] [42] [39]	High	Medium	Medium	[1] [2] [3] [4] [5] [6] [7] [8] [9] [37] [10] [11] & EJ	Low	Low	Medium	2
	Noise changes	NR				NR				NA	NA
	Visual disturbance	NR				NR				NA	NA
	Organic enrichment	Low	EJ	Low	Low	Low	EJ	Low	Low	High	3
	De-oxygenation	Low	[43] [44] [45] [46] & EJ	Low	Low	Low	[9] [2] [4] [5] [7] [10] [6] [1] [8] [11] [3] & EJ	Low	Low	High	3
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Medium	[32] [12] [13]	Low	Low	Medium	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	Medium	2
Chemical	Hydrocarbon and PAH contamination	Low	[47] [48] [49] [50] [12] [51] [52] [53] [54]	Low	Low	Very low	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [54] & EJ	Low	Low	High	3
	Radionuclide contamination	NEv				NEv				NA	NA
	Synthetic compound contamination	Medium	[55] [20] [12] [56]			Low	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	Medium	2
	Transition elements & organo-metal contamination	High	[57] [36] [20] [12] [58] & EJ	Low	Low	Medium	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] & EJ	Low	Low	Low	1
	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[59] [20] [60] [12] [21] [61] [62] [63]			Very low	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [61]	Low	Medium	High	3
	Introduction or spread of invasive non-indigenous species	NEv				NEv				NA	NA
Biological	Removal of non-target species	Low	[34] [36] [64] [20] [65] [24] [38]	High	Medium	Very low	[33] [1] [2] [3] [4] [5] [20] [6] [7] [8] [9] [37] [10] [11] [66] [26] & EJ	Low	Low	High	3
	Removal of target species	Low	[67] [68] [69] [36] [64] [37] [24]	High	Medium	Very low	[33] [1] [2] [3] [4] [5] [6] [7] [8] [9] [37] [10] [11] [66] [26]	Low	Low	High	3

References

- 1 Bramanti L, et al. (2005) *J Exp Mar Biol Ecol* 314: 69-78.
- 2 Gallmetzer I, et al. (2010) *Estuar Coast Shelf S* 90: 1-10.
- 3 Costantini F, et al. (2011) *Coral Reefs* 30: 991-1003.
- 4 Santangelo G, et al. (2012) *J Exp Mar Biol Ecol* 411: 7-13.
- 5 Priori C, et al. (2013) *Estuar Coast Shelf S* 118: 43-49.
- 6 Bramanti L, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-20.
- 7 Costantini F, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-22.
- 8 Santangelo G, et al. (2015) *Hydrobiologia* 759: 171-187.
- 9 Benedetti MC, et al. (2016) *Estuar Coast Shelf S* 171: 106-110.
- 10 Viladrich N, et al. (2016) *Coral Reefs* 35: 1033-1045.
- 11 Garrabou J, et al. (2017) *Sci Rep* 7: 42404.
- 12 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 13 Lecher AL, Mackey KRM (2018) *Hydrol* 5: 60.
- 14 Cerrano C, et al. (2000) *Ecol Lett* 3: 284-293.
- 15 Garrabou J, et al. (2001) *Mar Ecol Prog Ser* 217: 263-272.
- 16 Torrents O, et al. (2008) *J Exp Mar Biol Ecol* 357: 7-19.
- 17 Garrabou J, et al. (2009) *Glob Change Biol* 15: 1090-1103.
- 18 Bensoussan N, et al. (2010) *Estuar Coast Shelf S* 87: 431-441.
- 19 Previati M, et al. (2010) *J Exp Mar Biol Ecol* 390: 39-48.
- 20 Bavestrello G, et al. (2014) *Ital J Zool* 81: 552-563.
- 21 Weil E, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-55.
- 22 Galli G, et al. (2016) *Ecol Model* 337: 137-148.
- 23 Kruzic P, et al. (2016) *Mar Ecol Evol Persp* 37: 1190-1209.
- 24 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 25 Le Goff C, et al. (2017) *Sci Rep* 7: 11210.
- 26 Montero-Serra I, et al. (2019) *J Appl Ecol* 56: 1063-1074.
- 27 Cerrano C, et al. (2013) *Sci Rep* 3: 1457.
- 28 Cau A, et al. (2016) *Sci Rep* 6: 23322.
- 29 Picciano M, Ferrier-Pages C (2007) *Mar Biol* 150: 773-782.
- 30 Sebens K, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-42.
- 31 Teixeira N, et al. (2013) *PLoS ONE* 8: e53742.
- 32 Reopanichkul P, et al. (2009) *Mar Pollut Bull* 58: 1356-1362.
- 33 Garrabou J, Harmelin JG (2002) *J Anim Ecol* 71: 966-978.
- 34 Claudet J, Fraschetti S (2010) *Biol Conserv* 143: 2195-2206.
- 35 Linares C, et al. (2012) *Conserv Biol* 26: 88-96.
- 36 Rossi S (2013) *Ocean Coast Manage* 84: 77-85.
- 37 Cattaneo-Vietti R, et al. (2016) *Ital J Zool* 83: 443-455.
- 38 Gori A, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-28.
- 39 Ferrigno F, et al. (2018) *J Mar Biol Assoc U K* 98: 41-50.
- 40 Bramanti L, et al. (2011) *J Nat Conserv* 19: 312-318.
- 41 Angiolillo M, et al. (2015) *Mar Pollut Bull* 92: 149-159.
- 42 Sheehan EV, et al. (2017) *Biol Conserv* 209: 482-487.
- 43 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 44 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 45 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 46 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 47 Neff JM (2002) Elsevier Ltd.
- 48 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 49 White HK, et al. (2012) *Proc Natl Acad Sci U S A* 109: 20303-20308.
- 50 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 51 Etnoyer PJ, et al. (2016) *Coral Reefs* 35: 77-90.
- 52 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 53 Prouty NG, et al. (2016) *Deep-Sea Res Pt II* 129: 196-212.
- 54 Girard F, et al. (2018) *J Appl Ecol* 55: 1812-1822.
- 55 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 56 Vielzeuf D, et al. (2018) *Frontiers in Earth Science* 6: 167.
- 57 Chan I, et al. (2012) *Zool Stud* 51: 27-37.
- 58 Ricolleau A, et al. (2019) *Chemical Geology*: in press.
- 59 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 60 La Riviere M, et al. (2015) *Coral Reefs* 34: 1087-1098.
- 61 van de Water JAJM, et al. (2018) *Microb Ecol* 75: 274-288.
- 62 van de Water J, et al. (2017) *Microb Ecol* 73: 466-478.
- 63 Poli A, et al. (2018) *Anton Leeuw Int J G* 111: 1105-1115.
- 64 Tsounis G, et al. (2013) *Mar Policy* 39: 361-364.
- 65 Casas-Guell E, et al. (2016) *Sci Rep* 6: 36535.
- 66 Jaziri S, et al. (2017) *Hydrobiologia* 784: 211-224.
- 67 Abbiati M, et al. (1992) *Neth J Sea Res* 30: 219-228.
- 68 Santangelo G, et al. (1993) *Sci Mar* 57: 139-143.
- 69 Santangelo G, Abbiati M (2001) *Aquat Conserv* 11: 253-259.

Paramuricea clavata

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] & EJ	Low	Low	Very low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Medium	Medium	High	3
	Salinity changes (decrease)	Low	[17] [18] [19] [20] & EJ	Medium	Medium	Very low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Medium	Medium	High	3
	Temperature changes (increase)	None	[21] [22] [23] [24] [5] [25] [26] [27] [28] [6] [29] [30] [8] [31] [32] [33] [34] [35] [36] [37] [38] [39] [40] [14] [41] [42] [43] [15] [44]	High	High	Low	[2] [3] [4] [5] [25] [28] [6] [7] [29] [8] [32] [33] [9] [10] [11] [12] [13] [14] [43] [15] [16] [44]	High	High	High	3
Physical	Temperature changes (decrease)	Medium	EJ	Low	Low	High	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Low	Low	Low	1
	Water flow (tidal current) changes	Medium	[45] [46] [47]	Medium	Low	High	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Medium	Low	Low	1
	Wave exposure changes	Medium	[48] [49] [6] [50] [51] & EJ	Medium	Medium	Medium	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Medium	Medium	Medium	2
	Changes in suspended solids (water clarity)	Medium	[18] [52] [53] & EJ	Medium	Low	Low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [53] [12] [13] [14] [15] [16] & EJ	Medium	Low	Medium	2
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Low	[48] [54] [55] [56] [57] [32] [58] [37] [51] [42] [59] [60]	High	High	Low	[2] [3] [4] [5] [5]. [6] [7] [8] [32] [9] [10] [58] [62] [11]	Medium	Medium	High	3

		[61]				[12] [13] [14] [15] [16] & EJ					
Penetration and/or disturbance of the substratum below the surface	NR				NR				NA		NA
Smothering and siltation rate changes (light)	Medium	[63] [64] [7] [1] [19]	High	Medium	Medium	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Medium	Low	Medium		2
Smothering and siltation rate changes (heavy)	Low	[63] [64] [7] [1] [19]	High	Medium	Low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Medium	Medium	High		3
Physical change	None	EJ	Medium	Low	Very low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Low	Low	High		3
Physical loss	None	[19] & EJ	Medium	Low	Very low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Medium	Low	High		3
Barrier to species movement	NR				NR				NA		NA
Electromagnetic changes	NR				NR				NA		NA
Death or injury by collision	NR				NR				NA		NA
Introduction of light	NR				NR				NA		NA
Litter	Medium	[48] [55] [65] [66] [67] [19] [51] [59] [68] [61]	High	Medium	Low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Medium	Low	High		3
Noise changes	NR				NR				NA		NA
Visual disturbance	NR				NR				NA		NA
Organic enrichment	Low	[69] [70] [71] [52] [36] [72] [67] [19] [40] [20] [73]	Medium	Low	Low	[2] [3] [4] [69] [70] [5] [71] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [73] [16]			High		3
Chemical De-oxygenation	Low	[74] [27] [75] [33] [76] [77] & EJ	Medium	Medium	Low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] & EJ	Low	Low	Medium		3
Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA		NA
Nutrient enrichment	Medium	[69] [70] [71] [52] [36] [72] [67] [19] [40]	Medium	Low	Medium	[2] [3] [4] [69] [70] [5] [71] [6] [7] [8] [9] [10]	High	Medium	Medium		2

References

- 1 Williamson EA, et al. (2011) *J Exp Mar Biol Ecol* 409: 331-338.
- 2 Coma R, et al. (1994) *Mar Ecol Prog Ser* 115: 257-270.
- 3 Mistri M, Ceccherelli VU (1994) *Mar Ecol Prog Ser* 103: 291-296.
- 4 Coma R, et al. (1995) *Mar Ecol Prog Ser* 117: 173-183.
- 5 Cerrano C, et al. (2005) *Aquat Conserv* 15: 147-157.
- 6 Linares C, et al. (2008) *Coral Reefs* 27: 27-34.
- 7 Cupido R, et al. (2009) *Mar Ecol Prog Ser* 394: 195-200.
- 8 Fava F, et al. (2010) *Ital J Zool* 77: 44-52.
- 9 Mokhtar-Jamai K, et al. (2011) *Mol Ecol* 20: 3291-3305.
- 10 Cupido R, et al. (2012) *Mar Ecol Prog Ser* 469: 25-36.
- 11 Bramanti L, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-20.
- 12 Santangelo G, et al. (2015) *Hydrobiologia* 759: 171-187.
- 13 Pilczynska J, et al. (2016) *PLoS ONE* 11: e0150590.
- 14 Viladrich N, et al. (2016) *Coral Reefs* 35: 1033-1045.
- 15 Pilczynska J, et al. (2017) *Sci Mar* 81: 103-110.
- 16 Pilczynska J, et al. (2019) *Peerj* 7: e6794.
- 17 Chesher RH (1975). In: Wood EJP, Johannes RE, editors: Elsevier. 99-153.
- 18 Bavestrello G, et al. (1994) *Mar Life* 4: 15-19.
- 19 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 20 Lecher AL, Mackey KRM (2018) *Hydrol* 5: 60.
- 21 Cerrano C, et al. (2000) *Ecol Lett* 3: 284-293.
- 22 Perez T, et al. (2000) *C R Acad Sci Ser III Sci Vie* 323: 853-865.
- 23 Garrabou J, Harmelin JG (2002) *J Anim Ecol* 71: 966-978.
- 24 Martin Y, et al. (2002) *Water Res* 36: 779-782.
- 25 Linares C, et al. (2005) *Mar Ecol Prog Ser* 305: 127-137.
- 26 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 27 Cerrano C, Bavestrello G (2008) *Chem Ecol* 24: 73-82.
- 28 Cupido R, et al. (2008) *Aquat Conserv* 18: 984-992.
- 29 Coma R, et al. (2009) *Proc Natl Acad Sci U S A* 106: 6176-6181.
- 30 Garrabou J, et al. (2009) *Glob Change Biol* 15: 1090-1103.
- 31 Gambi MC, et al. (2010) *Biol Mar Mediterr* 17: 126-127.
- 32 Linares C, Doak DF (2010) *Mar Ecol Prog Ser* 402: 59-68.
- 33 Previati M, et al. (2010) *J Exp Mar Biol Ecol* 390: 39-48.
- 34 Vezzulli L, et al. (2010) *Environ Microbiol* 12: 2007-2019.
- 35 Crisci C, et al. (2011) *PLoS ONE* 6: e23814.
- 36 Huete-Stauffer C, et al. (2011) *Mar Ecol Evol Persp* 32: 107-116.
- 37 Vezzulli L, et al. (2013) *PLoS ONE* 8: e67745.
- 38 Rivetti I, et al. (2014) *PLoS ONE* 9: e115655.
- 39 Arizmendi-Mejia R, et al. (2015) *Coral Reefs* 34: 1207-1216.
- 40 Kruzic P, et al. (2016) *Mar Ecol Evol Persp* 37: 1190-1209.
- 41 Betti F, et al. (2017) *Mar Ecol* 38: e12439.
- 42 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 43 Crisci C, et al. (2017) *Sci Rep* 7: 5069.
- 44 Verdura J, et al. (2019) *Sci Rep* 9: 5911.
- 45 Weinbauer MG, Velimirov B (1996) *Estuar Coast Shelf S* 42: 583-595.
- 46 Bo M, et al. (2009) *Mar Ecol Prog Ser* 397: 53-61.
- 47 Sebens K, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-42.
- 48 Harmelin JG, Marinopoulos J (1994) *Mar Life* 4: 5-13.
- 49 Denoual D (2004) [Thèse d'exercice]: Ecole Nationale Vétérinaire de Toulouse. 86 p.
- 50 Teixido N, et al. (2013) *PLoS ONE* 8: e53742.
- 51 Grinyo J, et al. (2016) *Prog Oceanogr* 145: 42-56.
- 52 Reopanichkul P, et al. (2009) *Mar Pollut Bull* 58: 1356-1362.
- 53 Gatti G, et al. (2015) *PLoS ONE* 10: e0118581.
- 54 MacDonald DS, et al. (1996) *Aquat Conserv* 6: 257-268.
- 55 Bavestrello G, et al. (1997) *Aquat Conserv* 7: 253-262.
- 56 Jennings S, Kaiser MJ (1998). In: Blaxter JHS et al., editors. London: Academic Press Ltd-Elsevier Science Ltd. 201-352.
- 57 Coma R, et al. (2004) *Ecol Appl* 14: 1466-1478.
- 58 Tsounis G, et al. (2012) *Mar Ecol Prog Ser* 449: 161-172.
- 59 Gori A, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-28.
- 60 Hinz H (2017). In: Rossi S et al., editors. Cham, Switzerland: Springer International Publishing. 1041-1059.
- 61 Ferrigno F, et al. (2018) *J Mar Biol Assoc U K* 98: 41-50.
- 62 Sheehan EV, et al. (2013) *PLoS ONE* 8: e83883.
- 63 Rogers CS (1990) *Mar Ecol Prog Ser* 62: 185-202.
- 64 Balata D, et al. (2005) *Mar Environ Res* 60: 403-421.
- 65 Rossi S (2013) *Ocean Coast Manage* 84: 77-85.
- 66 Angiolillo M, et al. (2015) *Mar Pollut Bull* 92: 149-159.
- 67 Kipson S, et al. (2015) *Mar Ecol Evol Persp* 36: 982-993.
- 68 Sheehan EV, et al. (2017) *Biol Conserv* 209: 482-487.
- 69 Mistri M, Ceccherelli VU (1996) *Ital J Zool* 63: 221-230.
- 70 Mistri M, Ceccherelli VU (1996) *Ital J Zool* 63: 231-236.
- 71 Giuliani S, et al. (2005) *Sci Total Environ* 353: 340-349.
- 72 Cocito S, et al. (2013) *Mar Ecol Prog Ser* 473: 179-188.
- 73 Ponti M, et al. (2018) *Aquat Conserv* 28: 1153-1166.
- 74 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 75 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 76 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 77 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 78 Neff JM (2002) Elsevier Ltd.
- 79 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 80 White HK, et al. (2012) *Proc Natl Acad Sci U S A* 109: 20303-20308.
- 81 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 82 Etnoyer PJ, et al. (2016) *Coral Reefs* 35: 77-90.
- 83 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.

- 84 Prouty NG, et al. (2016) *Deep-Sea Res Pt II* 129: 196-212.
- 85 Girard F, et al. (2018) *J Appl Ecol* 55: 1812-1822.
- 86 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 87 Chan I, et al. (2012) *Zool Stud* 51: 27-37.
- 88 Munn CB (2015) *Microbiol Spectr* 3: 1-12.
- 89 La Riviere M, et al. (2015) *Coral Reefs* 34: 1087-1098.
- 90 Weil E, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-55.
- 91 van de Water J, et al. (2017) *Microb Ecol* 73: 466-478.
- 92 van de Water J, et al. (2018) *Microbiome* 6: 64.
- 93 van de Water JAJM, et al. (2018) *Microb Ecol* 75: 274-288.
- 94 Thomsen MS, et al. (2009) *J Phycol* 45: 812-819.
- 95 Cebrian E, et al. (2012) *Biol Inva* 14: 2647-2656.
- 96 Eno NC, et al. (2001) *ICES J Mar Sci* 58: 11-20.

Eunicella cavolini

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	EJ	Low	Low	Very low	EJ	Low	Low	High	3
	Salinity changes (decrease)	Low	[1] & EJ	Low	Low	Very low	EJ	Low	Low	High	3
	Temperature changes (increase)	Low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13]	High	High	Low	[14] [15] [16] [8] [17]	High	High	High	3
	Temperature changes (decrease)	Medium	EJ	Low	Low	High	EJ	Low	Low	Low	1
	Water flow (tidal current) changes	Medium	[18] [19] [20] [21]	Medium	Low	High	[21] & EJ	Low	Low	Low	1
	Wave exposure changes	Medium	[22] [23] [24] & EJ	Low	Low	Medium	[22] & EJ	Medium	Low	Medium	2
	Changes in suspended solids (water clarity)	Medium	EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Habitat structure changes - removal of substratum (extraction)	NR					NR			NA	NA
	Abrasion/ disturbance at the surface of the substratum	Low	[19] [25] [26] [24] [27] [28]	High	Medium	Low	[29] [30] [31] [17] & EJ	Medium	Low	High	3
	Penetration and/or disturbance of the substratum below the surface	NR					NR			NA	NA
	Smothering and siltation rate changes (light)	Medium	[32] [1] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Smothering and siltation rate changes (heavy)	Low	[32] [1] & EJ	Low	Low	Low	EJ	Low	Low	High	3
	Physical change	None	EJ	Low	Low	Very low	EJ	Low	Low	High	3
	Physical loss	None	[1] & EJ	Medium	Low	Very low	EJ	Low	Low	High	3
	Barrier to species movement	NR					NR			NA	NA
	Electromagnetic changes	NR					NR			NA	NA
	Death or injury by collision	NR					NR			NA	NA
	Introduction of light	NR					NR			NA	NA
	Litter	Medium	[33] [1] [34] [28]	High	Medium	Low	EJ	Low	Low	High	3
Noise changes	NR					NR			NA	NA	
Visual disturbance	NR					NR			NA	NA	
Chemical	Organic enrichment	Low	EJ	Low	Low	Low	EJ	Low	Low	High	3
	De-oxygenation	Low	[35] [36] [37] [38] & EJ	Low	Low	Low	[21] & EJ	Low	Low	High	3
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Medium	[39] [1]	High	Medium	High	EJ	Low	Low	Low	1
	Hydrocarbon and PAH contamination	Low	[40] [41] [42] [43] [1] [44] [45] [46] [47]	Medium	Low	Very low	[47]	Medium	Low	High	3
	Radionuclide contamination	NEv				NEv				NA	NA
	Synthetic compound contamination	Low	[22] [48] [1] & EJ	Low	Low	Low	EJ	Low	Low	High	3
	Transition elements & organo-metal contamination	High	[48] [49] [1] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[4] [50] [51] [52] [53] [1] [54] [55] [56] [57]	High	Medium	Low	[9] [17]	Medium	Low	High	3
	Introduction or spread of invasive non-indigenous species	Low	[58] [59] & EJ	Medium	Low	Medium	EJ	Low	Low	Medium	2
	Removal of non-target species	Low	[27] & EJ	Medium	Low	Low	[17] & EJ	Low	Low	High	3
	Removal of target species	None	EJ	Low	Low	Low	EJ	Low	Low	High	3

References

- 1 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 2 Cerrano C, et al. (2000) *Ecol Lett* 3: 284-293.
- 3 Perez T, et al. (2000) *C R Acad Sci Ser III Sci Vie* 323: 853-865.
- 4 Martin Y, et al. (2002) *Water Res* 36: 779-782.
- 5 Coma R, et al. (2006) *Mar Ecol Prog Ser* 327: 51-60.
- 6 Garrabou J, et al. (2009) *Glob Change Biol* 15: 1090-1103.
- 7 Gambi MC, et al. (2010) *Biol Mar Mediterr* 17: 126-127.
- 8 Previati M, et al. (2010) *J Exp Mar Biol Ecol* 390: 39-48.
- 9 Carella F, et al. (2014) *Dis Aquat Org* 111: 69-80.
- 10 Rivetti I, et al. (2014) *PLoS ONE* 9: e115655.
- 11 Pivotto ID, et al. (2015) *Royal Society Open Science* 2: 11.
- 12 Kruzic P, et al. (2016) *Mar Ecol Evol Persp* 37: 1190-1209.
- 13 Turicchia E, et al. (2018) *Dis Aquat Org* 131: 79-85.
- 14 Bavestrello G, Boero F (1988) *Boll Mus Ist Biol Univ Genova* 52: 295-300.
- 15 Cerrano C, et al. (2005) *Aquat Conserv* 15: 147-157.
- 16 Fava F, et al. (2010) *Ital J Zool* 77: 44-52.
- 17 Canovas-Molina A, et al. (2018) *C R Biol* 341: 421-432.
- 18 Velimirov B (1976) *J Exp Mar Biol Ecol* 21: 109-117.
- 19 Weinbauer MG, Velimirov B (1996) *Estuar Coast Shelf S* 42: 583-595.
- 20 Bo M, et al. (2009) *Mar Ecol Prog Ser* 397: 53-61.
- 21 Sebens K, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-42.
- 22 Denoual D (2004) [Thèse d'exercice]: Ecole Nationale Vétérinaire de Toulouse. 86 p.
- 23 Teixeira N, et al. (2013) *PLoS ONE* 8: e53742.
- 24 Grinyo J, et al. (2016) *Prog Oceanogr* 145: 42-56.
- 25 Coma R, et al. (2004) *Ecol Appl* 14: 1466-1478.
- 26 Rossi S (2013) *Ocean Coast Manage* 84: 77-85.
- 27 Gori A, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-28.
- 28 Ferrigno F, et al. (2018) *J Mar Biol Assoc U K* 98: 41-50.
- 29 Bavestrello G, et al. (1997) *Aquat Conserv* 7: 253-262.
- 30 Linares C, Doak DF (2010) *Mar Ecol Prog Ser* 402: 59-68.
- 31 Tsounis G, et al. (2012) *Mar Ecol Prog Ser* 449: 161-172.
- 32 Balata D, et al. (2005) *Mar Environ Res* 60: 403-421.
- 33 Angiolillo M, et al. (2015) *Mar Pollut Bull* 92: 149-159.
- 34 Sheehan EV, et al. (2017) *Biol Conserv* 209: 482-487.
- 35 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 36 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 37 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 38 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 39 Sini M, et al. (2015) *PLoS ONE* 10: e0126253.
- 40 Neff JM (2002) Elsevier Ltd.
- 41 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 42 White HK, et al. (2012) *Proc Natl Acad Sci U S A* 109: 20303-20308.
- 43 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 44 Etnoyer PJ, et al. (2016) *Coral Reefs* 35: 77-90.
- 45 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 46 Prouty NG, et al. (2016) *Deep-Sea Res Pt II* 129: 196-212.
- 47 Girard F, et al. (2018) *J Appl Ecol* 55: 1812-1822.
- 48 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 49 Chan I, et al. (2012) *Zool Stud* 51: 27-37.
- 50 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 51 Bayer T, et al. (2013) *Mar Ecol Prog Ser* 479: 75-84.
- 52 Munn CB (2015) *Microbiol Spectr* 3: 1-12.
- 53 La Riviere M, et al. (2015) *Coral Reefs* 34: 1087-1098.
- 54 Weil E, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-55.
- 55 van de Water J, et al. (2017) *Microb Ecol* 73: 466-478.
- 56 van de Water J, et al. (2018) *Microbiome* 6: 64.
- 57 van de Water JAJM, et al. (2018) *Microb Ecol* 75: 274-288.
- 58 Thomsen MS, et al. (2009) *J Phycol* 45: 812-819.
- 59 Cebrian E, et al. (2012) *Biol Inva* 14: 2647-2656.

Eunicella singularis

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	EJ	Low	Low	Very low	EJ	Low	Low	High	3
	Salinity changes (decrease)	Low	[1] & EJ	Low	Low	Very low	EJ	Low	Low	High	3
	Temperature changes (increase)	Low	[2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19]	High	High	Medium	[20] [6] [7] [21] [11]	High	High	Medium	2
	Temperature changes (decrease)	Medium	EJ	Low	Low	High	EJ	Low	Low	Low	1
	Water flow (tidal current) changes	Medium	[22] [23] [24] [25]	Low	Low	High	EJ	Low	Low	Low	1
	Wave exposure changes	Medium	[22] [26] [27] [28] & EJ	Medium	Low	Medium	EJ	Medium	Low	Medium	2
	Changes in suspended solids (water clarity)	Low	[29] [30] & EJ	Medium	Low	Low	[30] & EJ	Low	Low	Low	1
	Habitat structure changes - removal of substratum (extraction)	NR					NR			NA	NA
	Abrasion/ disturbance at the surface of the substratum	Low	[25] [24] [31] [32] [33] [28] & EJ	High	Medium	Low	EJ	Medium	Low	High	3
	Penetration and/or disturbance of the substratum below the surface	NR					NR			NA	NA
	Smothering and siltation rate changes (light)	Medium	[23] [1]	Low	Low	Medium	EJ	Low	Low	Medium	2
	Smothering and siltation rate changes (heavy)	Low	[23] [1]	Low	Low	Low	EJ	Low	Low	High	3
	Physical change	None	EJ	Low	Low	Very low	EJ	Low	Low	High	3
	Physical loss	None	[1] & EJ	Medium	Low	Very low	EJ	Low	Low	High	3
	Barrier to species movement	NR					NR			NA	NA
	Electromagnetic changes	NR					NR			NA	NA
Death or injury by collision	NR					NR			NA	NA	
Introduction of light	NR					NR			NA	NA	
Litter	Medium	[34] [1] [35] [36]	High	Medium	Medium	EJ	Low	Low	Medium	2	
Noise changes	NR					NR			NA	NA	
Visual disturbance	NR					NR			NA	NA	
Chemical	Organic enrichment	Low	EJ	Low	Low	Low	EJ	Low	Low	High	3
	De-oxygenation	Low	[37] [38] [39] [40] & EJ	Low	Low	Low	[41] & EJ	Low	Low	High	3
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Medium	[42] [43] [1]	High	Medium	High	EJ	Low	Low	Medium	2
	Hydrocarbon and PAH contamination	Low	[44] [45] [46] [47] [1] [48] [49] [50] [51]	Medium	Low	Very low	[51]	Medium	Low	High	3
	Radionuclide contamination	NEv					NEv			NA	NA
	Synthetic compound contamination	Low	[26] [52] [1] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Transition elements & organo-metal contamination	Medium	[52] [53] [1] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[54] [55] [56] [57] [58] [1] [59] [60] [61] [62]	Medium	Medium	Low	[15]	Medium	Low	High	3
	Introduction or spread of invasive non-indigenous species	Medium	[63]	Medium	Medium	Medium	EJ	Low	Low	Medium	2
	Removal of non-target species	Low	EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
Removal of target species	None	EJ	Low	Low	Low	EJ	Low	Low	High	3	

References

- 1 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 2 Cerrano C, et al. (2000) *Ecol Lett* 3: 284-293.
- 3 Perez T, et al. (2000) *C R Acad Sci Ser III Sci Vie* 323: 853-865.
- 4 Romano J-C, et al. (2000) *Comptes Rendus de l'Académie des Sciences - Series III - Sciences de la Vie* 323: 415-427.
- 5 Skoufias G, et al. (2000) *Belg J Zool* 130: 125-128.
- 6 Coma R, et al. (2006) *Mar Ecol Prog Ser* 327: 51-60.
- 7 Linares C, et al. (2008) *J Appl Ecol* 45: 688-699.
- 8 Ferrier-Pages C, et al. (2009) *J Exp Biol* 212: 3007-3015.
- 9 Garrabou J, et al. (2009) *Glob Change Biol* 15: 1090-1103.
- 10 Gambi MC, et al. (2010) *Biol Mar Mediterr* 17: 126-127.
- 11 Previati M, et al. (2010) *J Exp Mar Biol Ecol* 390: 39-48.
- 12 Ezzat L, et al. (2013) *PLoS ONE* 8: e64370.
- 13 Linares C, et al. (2013) *Mar Environ Res* 89: 45-52.
- 14 Pey A, et al. (2013) *C R Biol* 336: 331-341.
- 15 Carella F, et al. (2014) *Dis Aquat Org* 111: 69-80.
- 16 Rivetti I, et al. (2014) *PLoS ONE* 9: e115655.
- 17 Kruzic P, et al. (2016) *Mar Ecol Evol Persp* 37: 1190-1209.
- 18 Rubio-Portillo E, et al. (2016) *Mar Environ Res* 122: 135-142.
- 19 Turicchia E, et al. (2018) *Dis Aquat Org* 131: 79-85.
- 20 Cerrano C, et al. (2005) *Aquat Conserv* 15: 147-157.
- 21 Fava F, et al. (2010) *Ital J Zool* 77: 44-52.
- 22 Weinberg S (1979) *Bijdragen tot de Dierkunde* 49: 16-30.
- 23 Weinberg S, Weinberg F (1979) *Bijdr Dierk* 48: 127-140.
- 24 Weinbauer MG, Velimirov B (1996) *Estuar Coast Shelf S* 42: 583-595.
- 25 Harmelin JG, Marinopoulos J (1994) *Mar Life* 4: 5-13.
- 26 Denoual D (2004) [Thèse d'exercice]: Ecole Nationale Vétérinaire de Toulouse. 86 p.
- 27 Teixido N, et al. (2013) *PLoS ONE* 8: e53742.
- 28 Grinyo J, et al. (2016) *Prog Oceanogr* 145: 42-56.
- 29 Gori A, et al. (2011) *Mar Biol* 158: 1721-1732.
- 30 Gatti G, et al. (2015) *PLoS ONE* 10: e0118581.
- 31 Coma R, et al. (2004) *Ecol Appl* 14: 1466-1478.
- 32 Di Franco A, et al. (2009) *Environ Conserv* 36: 32-40.
- 33 Rossi S (2013) *Ocean Coast Manage* 84: 77-85.
- 34 Angiolillo M, et al. (2015) *Mar Pollut Bull* 92: 149-159.
- 35 Sheehan EV, et al. (2017) *Biol Conserv* 209: 482-487.
- 36 Ferrigno F, et al. (2018) *J Mar Biol Assoc U K* 98: 41-50.
- 37 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 38 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 39 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 40 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 41 Sebens K, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-42.
- 42 Giuliani S, et al. (2005) *Sci Total Environ* 353: 340-349.
- 43 Schiaparelli S, et al. (2007) *Mar Ecol Evol Persp* 28: 341-353.
- 44 Neff JM (2002) Elsevier Ltd.
- 45 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 46 White HK, et al. (2012) *Proc Natl Acad Sci U S A* 109: 20303-20308.
- 47 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 48 Etnoyer PJ, et al. (2016) *Coral Reefs* 35: 77-90.
- 49 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 50 Prouty NG, et al. (2016) *Deep-Sea Res Pt II* 129: 196-212.
- 51 Girard F, et al. (2018) *J Appl Ecol* 55: 1812-1822.
- 52 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 53 Chan I, et al. (2012) *Zool Stud* 51: 27-37.
- 54 Martin Y, et al. (2002) *Water Res* 36: 779-782.
- 55 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 56 Forcioli D, et al. (2011) *Mar Ecol Prog Ser* 439: 57-71.
- 57 Munn CB (2015) *Microbiol Spectr* 3: 1-12.
- 58 La Riviere M, et al. (2015) *Coral Reefs* 34: 1087-1098.
- 59 Weil E, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-55.
- 60 van de Water J, et al. (2017) *Microb Ecol* 73: 466-478.
- 61 van de Water J, et al. (2018) *Microbiome* 6: 64.
- 62 van de Water JAJM, et al. (2018) *Microb Ecol* 75: 274-288.
- 63 Cebrian E, et al. (2012) *Biol Inva* 14: 2647-2656.

Eunicella verrucosa

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Salinity changes (decrease)	Low	[1] [2] & EJ	Low	Low	Medium	[2]	Low	Low	Medium	2
	Temperature changes (increase)	Medium	[3] [4] [5] [2] & EJ	Medium	Low	Low	[6] [2]	High	High	Medium	2
	Temperature changes (decrease)	Medium	[2]	Low	Low	Medium	[2]	Low	Low	Medium	2
	Water flow (tidal current) changes	High	[2]	Low	Low	High	[2]	Low	Low	Not sensitive	0
	Wave exposure changes	High	[7] [8] [9] [2]	Medium	Low	High	[2]	Low	Low	Not sensitive	0
	Changes in suspended solids (water clarity)	High	[10] [2]	Low	Low	High	[11] [2] [12]	Low	Low	Not sensitive	0
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Low	[13] [14] [15] [16] [17] [18] [19]	High	Medium	Low	[13] [11] [16] [12]	Medium	Low	High	3
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	Medium	[20] [21] [10] [1] [2]	Medium	Medium	High	[11] [2]	Medium	Low	Low	1
	Smothering and siltation rate changes (heavy)	Low	[10] [1] [2]	Medium	Low	Medium	[11] [2]	Medium	Low	Medium	2
	Physical change	None	[16]	Medium	Low	Very low	[2] & EJ	Low	Low	High	3
	Physical loss	None	[16]	Medium	Low	Very low	[2] & EJ	Low	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
Litter	Medium	[22] [1] [23] [24]	Medium	Medium	Medium	[11] [16]	Low	Low	Medium	2	
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	Low	EJ	Low	Low	Low	EJ	Low	Low	High	3
	De-oxygenation	Low	[25] [26] [27] [2] [28] & EJ	Medium	Low	Medium	[11] [2]	Low	Low	Medium	2
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Medium	[1] & EJ	Low	Low	Low	[11] & EJ	Low	Low	Medium	2
	Hydrocarbon and PAH contamination	Low	[29] [30] [31] [32] [1] [33] [34] [35] [36]	Medium	Low	Very low	[11] [36]	Low	Low	High	3
	Radionuclide contamination	NEv				NEv				NA	NA
	Synthetic compound contamination	Low	EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Transition elements & organo-metal contamination	High	[37] [38] [1] & EJ	Low	Low	Low	[11] & EJ	Low	Low	Medium	2
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[39] [40] [41] [5] [21] [42] [43] [1] [44] [45] [46] [47]	High	Medium	Low	[41]	High	Medium	High	3
	Introduction or spread of invasive non-indigenous species	Medium	[2]	Low	Low	Medium	[2]	Low	Low	Medium	2
	Removal of non-target species	Low	[15] [18] [2]	Medium	Low	Low	[2]	Low	Low	High	3
	Removal of target species	None	[2] & EJ	Low	Low	Low	[2] & EJ	Low	Low	High	3

References

- 1 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 2 Readman JAJ, Hiscock K (2017). <http://www.marlin.ac.uk/species/detail/1121>.
- 3 Cerrano C, et al. (2000) *Ecol Lett* 3: 284-293.
- 4 Garrabou J, et al. (2009) *Glob Change Biol* 15: 1090-1103.
- 5 Jason HS, et al. (2009) *FOG - Freiberg Online Geoscience* 22: 45-48.
- 6 Fava F, et al. (2010) *Ital J Zool* 77: 44-52.
- 7 Denoual D (2004) [Thèse d'exercice]: Ecole Nationale Vétérinaire de Toulouse. 86 p.
- 8 Teixido N, et al. (2013) *PLoS ONE* 8: e53742.
- 9 Grinyo J, et al. (2016) *Prog Oceanogr* 145: 42-56.
- 10 Gatti G, et al. (2015) *PLoS ONE* 10: e0118581.
- 11 Sheehan EV, et al. (2013) *PLoS ONE* 8: e83883.
- 12 Kaiser MJ, et al. (2018) *J Appl Ecol* 55: 1060-1070.
- 13 MacDonald DS, et al. (1996) *Aquat Conserv* 6: 257-268.
- 14 Bavestrello G, et al. (1997) *Aquat Conserv* 7: 253-262.
- 15 Hinz H, et al. (2011) *Mar Ecol Prog Ser* 432: 91-102.
- 16 Pikesley SK, et al. (2016) *Mar Policy* 64: 38-45.
- 17 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 18 Hinz H (2017). In: Rossi S et al., editors. Cham, Switzerland: Springer International Publishing. 1041-1059.
- 19 Encarnaç o J, Calado G (2018) *J Coast Conserv*: 1-8.
- 20 Gatti G, et al. (2012) *Adv Oceanogr Limnol* 3: 51-67.
- 21 Ransome E, et al. (2014) *FEMS Microbiol Ecol* 90: 404-416.
- 22 Angiolillo M, et al. (2015) *Mar Pollut Bull* 92: 149-159.
- 23 Sheehan EV, et al. (2017) *Biol Conserv* 209: 482-487.
- 24 Ferrigno F, et al. (2018) *J Mar Biol Assoc U K* 98: 41-50.
- 25 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 26 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 27 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 28 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 29 Neff JM (2002) Elsevier Ltd.
- 30 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 31 White HK, et al. (2012) *Proc Natl Acad Sci U S A* 109: 20303-20308.
- 32 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 33 Etnoyer PJ, et al. (2016) *Coral Reefs* 35: 77-90.
- 34 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 35 Prouty NG, et al. (2016) *Deep-Sea Res Pt II* 129: 196-212.
- 36 Girard F, et al. (2018) *J Appl Ecol* 55: 1812-1822.
- 37 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 38 Chan I, et al. (2012) *Zool Stud* 51: 27-37.
- 39 Martin Y, et al. (2002) *Water Res* 36: 779-782.
- 40 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 41 Hall-Spencer JM, et al. (2007) *Dis Aquat Org* 76: 87-97.
- 42 Munn CB (2015) *Microbiol Spectr* 3: 1-12.
- 43 La Riviere M, et al. (2015) *Coral Reefs* 34: 1087-1098.
- 44 Weil E, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-55.
- 45 van de Water J, et al. (2017) *Microb Ecol* 73: 466-478.
- 46 van de Water J, et al. (2018) *Microbiome* 6: 64.
- 47 van de Water JAJM, et al. (2018) *Microb Ecol* 75: 274-288.

Parazoanthus axinellae

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] & EJ	Low	Low	Medium	[2] [3] [4] & EJ	Low	Low	Medium	2
	Salinity changes (decrease)	Low	[5] [1] [6] & EJ	Low	Low	Medium	[2] [3] [4] & EJ	Low	Low	Medium	2
	Temperature changes (increase)	Low	[7] [8] [9] [10] [11] [12] [13]	Medium	Medium	Medium	[2] [3] [4] [12] & EJ	Medium	Low	Medium	2
	Temperature changes (decrease)	Medium	EJ	Low	Low	High	[2] [3] [4] [14] [15] & EJ	Medium	Low	Low	1
	Water flow (tidal current) changes	High	[16] & EJ	Low	Low	Medium	[2] [3] [4] [16] & EJ	Low	Low	Low	1
	Wave exposure changes	Low	[17] & EJ	Medium	Low	Medium	[3] [4] [2] & EJ	Low	Low	Medium	2
	Changes in suspended solids (water clarity)	High	[18] [19]	Medium	Low	Medium	[2] [3] [4] [19] & EJ	Medium	Low	Low	1
	Habitat structure changes - removal of substratum (extraction)	NR					NR			NA	NA
	Abrasion/ disturbance at the surface of the substratum	Low	[20] [21] [22]	Medium	Low	Medium	[2] [3] [4] [14] & EJ	Medium	Low	Medium	2
	Penetration and/or disturbance of the substratum below the surface	NR					NR			NA	NA
	Smothering and siltation rate changes (light)	High	[1] & EJ	Low	Low	Medium	[2] [3] [4] & EJ	Low	Low	Low	1
	Smothering and siltation rate changes (heavy)	None	[1] & EJ	Low	Low	Low	[2] [3] [4] & EJ	Low	Low	High	3
	Physical change	None	EJ	Low	Low	Very low	[2] [3] [4] [14] & EJ	Medium	Low	High	3
	Physical loss	None	[1] & EJ	Medium	Low	Very low	[2] [3] [4] [14] & EJ	Medium	Low	High	3
	Barrier to species movement	NR					NR			NA	NA
	Electromagnetic changes	NR					NR			NA	NA
	Death or injury by collision	NR					NR			NA	NA
	Introduction of light	NR					NR			NA	NA
Litter	High	[1] & EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0	
Noise changes	NR					NR			NA	NA	
Visual disturbance	NR					NR			NA	NA	
Chemical	Organic enrichment	Medium	EJ	Low	Low	Medium	[2] [3] [4] & EJ	Medium	Low	Medium	2
	De-oxygenation	Low	[23] [24] [25] [26] & EJ	Low	Low	Medium	[2] [3] [4] & EJ	Low	Low	Medium	2
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Medium	[1] & EJ	Low	Low	Medium	[2] [3] [4] & EJ	Low	Low	Medium	2
	Hydrocarbon and PAH contamination	Low	[27] [28] [29] [30] [1] [31] [32] [33]	Low	Low	Low	EJ	Low	Low	High	3
	Radionuclide contamination	NEv				NEv				NA	NA
	Synthetic compound contamination	Medium	[34] [1] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Transition elements & organo-metal contamination	High	[34] [1] & EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Medium	[8] [35] [1] [36] & EJ	High	Medium	Medium	[2] [3] [4] & EJ	Medium	Medium	Medium	2
	Introduction or spread of invasive non-indigenous species	High	EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0
	Removal of non-target species	High	[37] [38]	Medium	Low	High	[2] [3] [4] [14]	Medium	Low	Not sensitive	0
Removal of target species	NR					NR			NA	NA	

References

- 1 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 2 Ryland JS (1997) *Invertebrate Reproduction & Development* 31: 177-188.
- 3 Garrabou J (1999) *Mar Ecol Prog Ser* 178: 193-204.
- 4 Previati M, et al. (2010) *Mar Ecol Evol Persp* 31: 555-565.
- 5 Cheshner RH (1975). In: Wood EJJ, Johannes RE, editors: Elsevier. 99-153.
- 6 Lecher AL, Mackey KRM (2018) *Hydrol* 5: 60.
- 7 Cerrano C, et al. (2000) *Ecol Lett* 3: 284-293.
- 8 Cerrano C, et al. (2006) *Ital J Zool* 73: 355-361.
- 9 Garrabou J, et al. (2009) *Glob Change Biol* 15: 1090-1103.
- 10 Calvo E, et al. (2011) *Clim Res* 50: 1-29.
- 11 Kruzic P, et al. (2016) *Mar Ecol Evol Persp* 37: 1190-1209.
- 12 Betti F, et al. (2017) *Mar Ecol* 38: e12439.
- 13 Gómez-Gras D, et al. (2019) *Ecol Evol* 9: 4168-4180
- 14 Wangenstein OS, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-24.
- 15 Bertolino M, et al. (2016) *J Mar Biol Assoc U K* 96: 341-350.
- 16 Duchêne J-C (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-25.
- 17 Teixido N, et al. (2013) *PLoS ONE* 8: e53742.
- 18 Martí R, et al. (2004) *J Mar Biol Assoc U K* 84: 557-572.
- 19 Gatti G, et al. (2015) *PLoS ONE* 10: e0118581.
- 20 MacDonald DS, et al. (1996) *Aquat Conserv* 6: 257-268.
- 21 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 22 Hinz H (2017). In: Rossi S et al., editors. Cham, Switzerland: Springer International Publishing. 1041-1059.
- 23 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 24 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 25 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 26 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 27 Neff JM (2002) Elsevier Ltd.
- 28 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 29 White HK, et al. (2012) *Proc Natl Acad Sci U S A* 109: 20303-20308.
- 30 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 31 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 32 Prouty NG, et al. (2016) *Deep-Sea Res Pt II* 129: 196-212.
- 33 Girard F, et al. (2018) *J Appl Ecol* 55: 1812-1822.
- 34 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 35 Meron D, et al. (2012) *Isme J* 6: 1775-1785.
- 36 Weil E, et al. (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-55.
- 37 Eno NC, et al. (2001) *ICES J Mar Sci* 58: 11-20.
- 38 Sheehan EV, et al. (2013) *PLoS ONE* 8: e83883.

Savalia savaglia

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	EJ	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Medium	2
	Salinity changes (decrease)	Low	[4] & EJ	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Medium	2
	Temperature changes (increase)	Medium	[5] & EJ	Low	Low	Low	[1] [2] [3] & EJ	Low	Low	Medium	2
	Temperature changes (decrease)	Medium	EJ	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Medium	2
	Water flow (tidal current) changes	Medium	[6] [7] [8]	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Medium	2
	Wave exposure changes	Low	[9] [10] [11] & EJ	Low	Low	Low	[1] [2] [3] & EJ	Low	Low	High	3
	Changes in suspended solids (water clarity)	Medium	EJ	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Medium	2
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	None	[12] [13] [14] [5] [15] [16]	High	Medium	Very low	[1] [2] [3] & EJ	Low	Low	High	3
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	[4] & EJ	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Low	1
	Smothering and siltation rate changes (heavy)	Low	[4] & EJ	Low	Low	Low	[1] [2] [3] & EJ	Low	Low	High	3
	Physical change	None	[5] & EJ	Medium	Low	Very low	[1] [2] [3] & EJ	Low	Low	High	3
	Physical loss	None	[4] [5] & EJ	Medium	Low	Very low	[1] [2] [3] & EJ	Low	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
Death or injury by collision	NR				NR				NA	NA	
Introduction of light	NR				NR				NA	NA	
Litter	None	[13] [14] [11] [16]	High	Medium	Very low	[1] [2] [3] & EJ	Low	Low	High	3	
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	Medium	EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	De-oxygenation	Low	[17] [18] [19] [20] & EJ	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Medium	2
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Medium	[4] & EJ	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Medium	2
	Hydrocarbon and PAH contamination	Low	[21] [22] [23] [24] [4] [25] [26] [27]	Low	Low	Very low	[1] [2] [3] [27] & EJ	Low	Low	High	3
	Radionuclide contamination	NEv				NEv				NA	NA
	Synthetic compound contamination	Medium	[28] [4] & EJ	Medium	Low	Medium	EJ	Low	Low	Medium	2
Transition elements & organo-metal contamination	High	[28] [4] EJ	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Low	1	
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Medium	[29] [4]	Low	Low	Medium	[1] [2] [3] & EJ	Low	Low	Medium	2
	Introduction or spread of invasive non-indigenous species	High	EJ	Low	Low	High	[1] [2] [3] & EJ	Low	Low	Not sensitive	0
	Removal of non-target species	Low	[30] [12] [14] [15] & EJ	Medium	Low	Low	[1] [2] [3] & EJ	Low	Low	High	3
	Removal of target species	None	[30] [12] [31] [14] [15] & EJ	High	Medium	Very low	[1] [2] [3] & EJ	Low	Low	High	3

References

- 1 Roark EB, et al. (2006) *Mar Ecol Prog Ser* 327: 1-14.
- 2 Waller RG, Baco AR (2007) *B Mar Sci* 81: 533-542.
- 3 Previati M, et al. (2010) *Mar Ecol Evol Persp* 31: 555-565.
- 4 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 5 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 6 Weinbauer MG, Velimirov B (1996) *Estuar Coast Shelf S* 42: 583-595.
- 7 Bo M, et al. (2009) *Mar Ecol Prog Ser* 397: 53-61.
- 8 Sebens K, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-42.
- 9 Linares C, et al. (2008) *J Appl Ecol* 45: 688-699.
- 10 Teixido N, et al. (2013) *PLoS ONE* 8: e53742.
- 11 Grinyo J, et al. (2016) *Prog Oceanogr* 145: 42-56.
- 12 Giusti M, et al. (2014) *Cont Shelf Res* 81: 19-28.
- 13 Angiolillo M, et al. (2015) *Mar Pollut Bull* 92: 149-159.
- 14 Giusti M, et al. (2015) *Mediterr Mar Sci* 16: 128-135.
- 15 Gori A, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-28.
- 16 Ferrigno F, et al. (2018) *J Mar Biol Assoc U K* 98: 41-50.
- 17 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 18 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 19 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 20 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 21 Neff JM (2002) Elsevier Ltd.
- 22 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 23 White HK, et al. (2012) *Proc Natl Acad Sci U S A* 109: 20303-20308.
- 24 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 25 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 26 Prouty NG, et al. (2016) *Deep-Sea Res Pt II* 129: 196-212.
- 27 Girard F, et al. (2018) *J Appl Ecol* 55: 1812-1822.
- 28 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 29 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 30 Cerrano C, et al. (2009) *Biodivers Conserv* 19: 153-167.
- 31 Gatti G, et al. (2015) *PLoS ONE* 10: e0118581.

Cladocora caespitosa

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Salinity changes (decrease)	Low	[2] [3] [4] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Temperature changes (increase)	Low	[5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19]	High	High	Low	[20] [7] [8] [9] [11] [12] [21] [22] [14] [23] [24] & EJ	Medium	Medium	High	3
	Temperature changes (decrease)	Medium	[7] [25] & EJ	Medium	Low	Medium	[20] [7] [12] [25] [24] & EJ	Medium	Low	Medium	2
	Water flow (tidal current) changes	High	[26] [27] [28] [29] [24]	Medium	Low	Medium	[20] [27] [12] [22] [30] & EJ	Medium	Low	Low	1
	Wave exposure changes	Low	[31] [26] [28] [29] [32] [25] [33] [24]	Medium	Low	Medium	[31] [20] [12] [22] [25] & EJ	Medium	Low	Medium	2
	Changes in suspended solids (water clarity)	Medium	[31] [7] [34] [35] [36] [25]	Medium	High	Medium	[31] [20] [36] [12] [22] [25] & EJ	Medium	Medium	Medium	2
Physical	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	None	[37] & EJ	Medium	Low	Very low	[20] [8] [12] [22] [14] [24] & EJ	Medium	Low	High	3
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	Medium	[31] [38] [27] [14] [2] [39] [25]	High	High	Medium	[31] [20] [38] [27] [12] [22] [25] & EJ	High	Medium	Medium	2
	Smothering and siltation rate changes (heavy)	None	[38] [2] [39]	High	High	Very low	[20] [38] [12] [22] & EJ	High	Medium	High	3
	Physical change	Medium	[40] & EJ	Medium	Low	Medium	[20] [40] [24] & EJ	Medium	Low	Medium	2
	Physical loss	None	[2] & EJ	Medium	Low	Very low	[20] [24] & EJ	Low	Low	High	3
	Barrier to species movement	NR					NR			NA	NA
	Electromagnetic changes	NR					NR			NA	NA
	Death or injury by collision	NR					NR			NA	NA
	Introduction of light	NR					NR			NA	NA
	Litter	High	[2] [41]	Low	Low	Medium	[20] [41] & EJ	Low	Low	Low	1
Noise changes	NR					NR			NA	NA	
Visual disturbance	NR					NR			NA	NA	
Chemical	Organic enrichment	Low	[20] [34] [42] [39] [25]	Medium	Medium	Low	[8] [9] [11] [12] [22] [14] [21] [25] [34] [42] [20] & EJ	High	High	High	3
	De-oxygenation	Medium	[43] [44] [45] [46] & EJ	Low	Low	Low	[20] [8] [9] [11] [12] [21] [22] [14] & EJ	Medium	Low	Medium	2

Introduction of other substance (solid, liquid or gas)	NEv					NEv				NA	NA
Nutrient enrichment	Low	[34] [27] [35] [2] [39] [3] [19] [25] [24]	High	Medium	Very low	[20] [34] [12] [25] & EJ	Medium	Low		High	3
Hydrocarbon and PAH contamination	Low	[47] [48] [49] [50] [2] [39] [51]	Medium	Low	Low	EJ	Low	Low		High	3
Radionuclide contamination	NEv					NEv				NA	NA
Synthetic compound contamination	Low	[52] [2] & EJ	Low	Low	Medium	[20] [52] & EJ	Low	Low		Medium	2
Transition elements & organo-metal contamination	Medium	[47] [52] [2] [39]	Medium	Low	Medium	EJ	Low	Low		Medium	2
Genetic modification and translocation of indigenous species	NEv					NEv				NA	NA
Introduction of microbial pathogens	Low	[53] [54] [18]	Medium	High	Low	[8] [9] [11] [54] [12] [21] [22] [14] & EJ	Medium	Low		High	3
Introduction or spread of invasive non-indigenous species	Medium	[28] [22] [15]	High	High	Medium	[20] [29] [12] [22]	Medium	Low		Medium	2
Removal of non-target species	Medium	[55] & EJ	Low	Low	Low	[20] & EJ	Low	Low		Medium	2
Removal of target species	NR					NR				NA	NA

Biological

References

- 1 Gegner HM, et al. (2017) *Biol Open* 6: 1943-1948.
- 2 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 3 Lecher AL, Mackey KRM (2018) *Hydrol* 5: 60.
- 4 Shore-Maggio A, et al. (2018) *Dis Aquat Org* 128: 63-71.
- 5 Perez T, et al. (2000) *C R Acad Sci Ser III Sci Vie* 323: 853-865.
- 6 Rodolfo-Metalpa R, et al. (2000) *Coral Reefs* 19: 24-24.
- 7 Peirano A, et al. (2005) *Coral Reefs* 24: 404-409.
- 8 Rodolfo-Metalpa R, et al. (2005) *Ital J Zool* 72: 271-276.
- 9 Rodolfo-Metalpa R, et al. (2006) *Mar Biol* 150: 45-55.
- 10 Garrabou J, et al. (2009) *Glob Change Biol* 15: 1090-1103.
- 11 Kruzic P, et al. (2012) *Facies* 58: 477-491.
- 12 Kersting DK, et al. (2013) *PLoS ONE* 8: e70820.
- 13 Kruzic P, et al. (2014) *Mar Ecol Prog Ser* 509: 193-202.
- 14 Casado C, et al. (2015) *Mar Biodivers* 45: 135-137.
- 15 Kersting DK, et al. (2015) *Sci Rep* 5: 18635.
- 16 Jimenez C, et al. (2016) *Reg Envir Chang* 16: 1963-1973.
- 17 Kruzic P, et al. (2016) *Mar Ecol Evol Persp* 37: 1190-1209.
- 18 Rubio-Portillo E, et al. (2016) *Mar Environ Res* 122: 135-142.
- 19 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 20 Kruzic P, Pozar-Domac A (2002) *Period Biol* 104: 123-129.
- 21 Casado-Amezua P, et al. (2014) *Coral Reefs* 33: 1031-1040.
- 22 Kersting DK, et al. (2014) *Coral Reefs* 33: 403-407.
- 23 Franzellitti S, et al. (2018) *Mar Environ Res* 140: 444-454.
- 24 Zunino S, et al. (2018) *Mar Biol Res* 14: 307-320.
- 25 Chefaoui RM, et al. (2017) *Coral Reefs* 36: 1195-1209.
- 26 Peirano A, et al. (2001) *Facies* 44: 75-80.
- 27 Kruzic P, Benkovic L (2008) *Mar Ecol Evol Persp* 29: 125-139.
- 28 Kruzic P, et al. (2008) *Coral Reefs* 27: 337-341.
- 29 Kersting DK, Linares C (2012) *Mar Ecol Evol Persp* 33: 427-436.
- 30 Sebens K, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-42.
- 31 Schiller C (1993) *Mar Ecol-P S Z N I* 14: 205-219.
- 32 Teixeira N, et al. (2013) *PLoS ONE* 8: e53742.
- 33 Kersting DK, et al. (2017) *Mediterr Mar Sci* 18: 38-42.
- 34 Kruzic P, Pozar-Domac A (2007) *Coral Reefs* 26: 665-665.
- 35 Reopanichkul P, et al. (2009) *Mar Pollut Bull* 58: 1356-1362.
- 36 Ferrier-Pages C, et al. (2013) *Limnol Oceanogr* 58: 1409-1418.
- 37 Milazzo M, et al. (2002) *Mar Ecol-P S Z N I* 23: 280-290.
- 38 Schiaparelli S, et al. (2007) *Mar Ecol Evol Persp* 28: 341-353.
- 39 El Kateb A, et al. (2016) *Heliyon* 2: e00195.
- 40 Ozalp HB, Alparslan M (2016) *Oceanol Hydrobiol Stud* 45: 259-285.
- 41 Reichert J, et al. (2018) *Environ Pollut* 237: 955-960.
- 42 Garren M, Azam F (2011) *Isme J* 6: 1159.
- 43 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 44 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 45 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 46 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 47 Guzman HM, et al. (1991) *Coral Reefs* 10: 1-12.
- 48 Neff JM (2002) Elsevier Ltd.
- 49 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 50 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 51 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 52 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 53 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 54 Meron D, et al. (2012) *Isme J* 6: 1775-1785.
- 55 Ingrassio G, et al. (2018) *Adv Mar Biol* 79: 61-136.

Astroides calycularis

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	EJ	Low	Low	Medium	[1] [2] & EJ	Low	Low	Medium	2
	Salinity changes (decrease)	Low	[3] [4] & EJ	Low	Low	Medium	[5] [1] [2] & EJ	Low	Low	Medium	2
	Temperature changes (increase)	High	[6] [7] [8] [9] [10]	High	High	Medium	[6] [7] [5] [1] [2] [10] [11]	Medium	Medium	Low	1
	Temperature changes (decrease)	Low	[12] [6] & EJ	Medium	Medium	Medium	[5] [1] [2] & EJ	Low	Low	Medium	2
	Water flow (tidal current) changes	High	[13] [14] [15]	Low	Low	High	[7] [5] [1] [16] [2] [15] & EJ	Medium	Low	Not sensitive	0
	Wave exposure changes	Low	[17] & EJ	Low	Low	Medium	[5] [1] [2] & EJ	Low	Low	Medium	2
	Changes in suspended solids (water clarity)	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Medium	[18] [19] [20]	Low	Low	Medium	[1] & EJ	Low	Low	Medium	2
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	Low	[4] [21]	Medium	Low	Medium	[5] [1] & EJ	Low	Low	Medium	2
	Smothering and siltation rate changes (heavy)	None	[4] [21]	Medium	Low	Very low	[5] [1] & EJ	Low	Low	High	3
	Physical change	None	EJ	Low	Low	Very low	[5] [1] & EJ	Low	High	High	3
	Physical loss	None	[4] & EJ	Medium	Low	Very low	[5] [1] & EJ	Low	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	High	[4] [22] & EJ	Low	Low	High	[22] & EJ	Low	Low	Not sensitive	0
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	Medium	[23] & EJ	Medium	Low	Medium	[1] & EJ	Low	Low	Medium	2
	De-oxygenation	Low	[24] [25] [26] [21] [27] & EJ	Low	Low	Low	[15] & EJ	Low	Low	High	3
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Low	[4] & EJ	Low	Low	Low	EJ	Low	Low	High	3
	Hydrocarbon and PAH contamination	Low	[28] [29] [30] [31] [4] [32] & EJ	Medium	Low	Low	[28] & EJ	Low	Low	High	3
	Radionuclide contamination	NEv				NEv				NA	NA
	Synthetic compound contamination	Medium	[33] [4] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Transition elements & organo-metal contamination	Medium	[28] [33] [4] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
Biological	Genetic modification and translocation of indigenous species	High	[34]	High	Medium	High	EJ	Low	Low	Not sensitive	0
	Introduction of microbial pathogens	High	[35] [36] [4] & EJ	Medium	Medium	Medium	EJ	Low	Low	Low	1
	Introduction or spread of invasive non-indigenous species	High	[37] & EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Removal of non-target species	Medium	[37] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Removal of target species	NR				NR				NA	NA

References

- 1 Casado-Amezua P, et al. (2012) *Mol Ecol* 21: 3671-3685.
- 2 Musco L, et al. (2017) *Ecol Eng* 98: 206-212.
- 3 Moreira PL, et al. (2014) *Biofouling* 30: 639-650.
- 4 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 5 Goffredo S, et al. (2011) *B Mar Sci* 87: 589-604.
- 6 Grubelic I, et al. (2004) *J Mar Biol Assoc U K* 84: 599-602.
- 7 Bianchi CN (2007) *Hydrobiologia* 580: 7-21.
- 8 Gambi MC, et al. (2010) *Biol Mar Mediterr* 17: 126-127.
- 9 Movilla J, et al. (2016) *Mar Biol* 163: 14.
- 10 Prada F, et al. (2017) *Sci Rep* 7: 10.
- 11 Franzellitti S, et al. (2018) *Mar Environ Res* 140: 444-454.
- 12 Bianchi CN, Morri C (1993) *Porcupine Newsletter*: 156-159.
- 13 Zibrowius H (1995) *Geobios* 28: 9-16.
- 14 Kruzic P, et al. (2002) *Ital J Zool* 69: 345-353.
- 15 Sebens K, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-42.
- 16 Canning-Clode J, Carlton JT (2017) *Divers Distrib* 23: 463-473.
- 17 Slott JM, et al. (2006) *Geophysical Research Letters* 33: 6.
- 18 Milazzo M, et al. (2002) *Mar Ecol-P S Z N I* 23: 280-290.
- 19 Di Franco A, et al. (2009) *Environ Conserv* 36: 32-40.
- 20 Terron-Sigler A, et al. (2016) *Ocean Coast Manage* 122: 1-8.
- 21 Terron-Sigler A, et al. (2016) *J Mar Biol Assoc U K* 96: 1181-1189.
- 22 Reichert J, et al. (2018) *Environ Pollut* 237: 955-960.
- 23 Kruzic P, Pozar-Domac A (2007) *Coral Reefs* 26: 665-665.
- 24 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 25 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 26 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 27 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 28 Guzman HM, et al. (1991) *Coral Reefs* 10: 1-12.
- 29 Neff JM (2002) Elsevier Ltd.
- 30 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 31 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 32 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 33 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 34 Greff S, et al. (2017) *Sci Rep* 7: 14.
- 35 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 36 Meron D, et al. (2012) *Isme J* 6: 1775-1785.
- 37 Ingrosso G, et al. (2018) *Adv Mar Biol* 79: 61-136.

Balnophyllia europaea

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Salinity changes (decrease)	Low	[2] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Temperature changes (increase)	Low	[3] [4] [5] [6] [7] [8] [9] [10]	High	High	Low	[11] [12] [4] [5] [10] [13]	Medium	Low	High	3
	Temperature changes (decrease)	Medium	[14] [10] & EJ	Medium	Low	Medium	[11] [12] [5] [10] & EJ	Medium	Low	Medium	2
	Water flow (tidal current) changes	High	[15] [16] [17]	High	Medium	High	[11] [12] [17] & EJ	Low	Low	Not sensitive	0
	Wave exposure changes	Medium	[15] & EJ	Low	Low	High	[11] [12] & EJ	Medium	Low	Low	1
	Changes in suspended solids (water clarity)	Medium	[18] & EJ	Low	Low	Medium	[11] [12] & EJ	Medium	Low	Medium	2
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
Physical	Abrasion/ disturbance at the surface of the substratum	Low	[19] & EJ	Low	Low	Low	[11] [12] & EJ	Medium	Low	Low	1
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	[20] [11] [16] [2]	Medium	Medium	Low	[11] [12]	Medium	Low	Low	1
	Smothering and siltation rate changes (heavy)	None	[16] [2]	Medium	Medium	Very low	[11] [12]	Medium	Low	High	3
	Physical change	None	EJ	Low	Low	Low	EJ	Low	Low	High	3
	Physical loss	None	[2]	Low	Low	Low	EJ	Low	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	High	[2] [21]	Low	Low	High	EJ	Low	Low	Not sensitive	0
	Noise changes	NR				NR				NA	NA
	Visual disturbance	NR				NR				NA	NA
	Organic enrichment	Low	[22] [23] [24] & EJ	Medium	Low	Medium	[23] [6] & EJ	Low	Low	Medium	2
	De-oxygenation	Low	[25] [26] [27] [28] & EJ	Low	Low	Low	[17] & EJ	Low	Low	High	3
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
Chemical	Nutrient enrichment	Low	[2] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Hydrocarbon and PAH contamination	Low	[29] [30] [31] [32] [2] [33] & EJ	Medium	Low	Low	EJ	Low	Low	High	3
	Radionuclide contamination	NEv		Low	Low	NEv				NA	NA
	Synthetic compound contamination	Low	[29] [34] [2]	Low	Low	Medium	EJ	Low	Low	Medium	2
	Transition elements & organo-metal contamination	Medium	[34] [2] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
Biological	Introduction of microbial pathogens	Medium	[35] [36]	Medium	High	Medium	[11] [12] & EJ	Low	Low	Medium	2
	Introduction or spread of invasive non-indigenous species	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Removal of non-target species	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Removal of target species	NR				NR				NA	NA

References

- 1 Gegner HM, et al. (2017) *Biol Open* 6: 1943-1948.
- 2 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 3 Rodolfo-Metalpa R, et al. (2000) *Coral Reefs* 19: 24-24.
- 4 Caroselli E, et al. (2011) *Zoology* 114: 255-264.
- 5 Airi V, et al. (2014) *PLoS ONE* 9: e91792.
- 6 Kruzic P, Popijac A (2015) *Coral Reefs* 34: 109-118.
- 7 Kruzic P, et al. (2016) *Mar Ecol Evol Persp* 37: 1190-1209.
- 8 Rubio-Portillo E, et al. (2016) *Mar Environ Res* 122: 135-142.
- 9 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 10 Maor-Landaw K, et al. (2017) *Sci Rep* 7: 42405.
- 11 Goffredo S, et al. (2004) *Coral Reefs* 23: 433-443.
- 12 Goffredo S, Zaccanti F (2004) *B Mar Sci* 74: 449-457.
- 13 Franzellitti S, et al. (2018) *Mar Environ Res* 140: 444-454.
- 14 Chefaoui RM, et al. (2017) *Coral Reefs* 36: 1195-1209.
- 15 Teixeira N, et al. (2013) *PLoS ONE* 8: e53742.
- 16 Purser A, et al. (2014) *J Mar Biol Assoc U K* 94: 687-696.
- 17 Sebens K, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-42.
- 18 Reopanichkul P, et al. (2009) *Mar Pollut Bull* 58: 1356-1362.
- 19 Milazzo M, et al. (2002) *Mar Ecol-P S Z N I* 23: 280-290.
- 20 Goffredo S, et al. (2002) *Mar Ecol Prog Ser* 229: 83-94.
- 21 Reichert J, et al. (2018) *Environ Pollut* 237: 955-960.
- 22 Kruzic P, Pozar-Domac A (2002) *Period Biol* 104: 123-129.
- 23 Garren M, Azam F (2011) *Isme J* 6: 1159.
- 24 El Kateb A, et al. (2016) *Heliyon* 2: e00195.
- 25 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 26 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 27 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 28 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 29 Guzman HM, et al. (1991) *Coral Reefs* 10: 1-12.
- 30 Neff JM (2002) Elsevier Ltd.
- 31 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 32 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 33 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 34 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 35 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 36 Meron D, et al. (2012) *Isme J* 6: 1775-1785.

Leptosammia pruvoti

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] & EJ	Low	Low	Medium	[2] [3] & EJ	Medium	Low	Medium	2
	Salinity changes (decrease)	Low	[1] & EJ	Low	Low	Medium	[2] [3] & EJ	Medium	Low	Medium	2
	Temperature changes (increase)	High	[4] [5] [6] [7] [8] [9] [10] [11]	High	High	Medium	[2] [3] [9] [12] & EJ	Medium	Low	Low	1
	Temperature changes (decrease)	Medium	[13] & EJ	Medium	Low	Medium	[2] [3] & EJ	Medium	Low	Medium	2
	Water flow (tidal current) changes	High	[14] [15] & EJ	Low	Low	High	[2] [3] [15] & EJ	Medium	Low	Not sensitive	0
	Wave exposure changes	Medium	[14] & EJ	Low	Low	Medium	[3] & EJ	Low	Low	Medium	2
	Changes in suspended solids (water clarity)	High	[16] [17]	Low	Low	High	[2] [3] [17] & EJ	Medium	Low	Not sensitive	0
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Medium	[18] [19] [20]	Medium	Low	Medium	[3] & EJ	Low	Low	Medium	2
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	Low	[21] [1]	High	High	Low	[21] [3] & EJ	High	Medium	Medium	2
	Smothering and siltation rate changes (heavy)	None	[21] [1]	High	High	Very low	[21] [3] & EJ	High	Medium	High	3
	Physical change	None	EJ	Low	Low	Low	EJ	Low	Low	High	3
	Physical loss	None	[1] & EJ	Medium	Low	Low	EJ	Low	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	High	[1] [22] & EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	Low	[23] & EJ	Medium	Low	High	[23] & EJ	Low	Low	Low	1
	De-oxygenation	Low	[24] [21] [25] [26] [27] & EJ	Low	Medium	Low	[25] & EJ	Low	Low	High	3
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Medium	EJ	Low	Low	High	EJ	Low	Low	Low	1
	Hydrocarbon and PAH contamination	Low	[28] [29] [30] [31] [1] [32] & EJ	Medium	Low	Low	EJ	Low	Low	High	3
	Radionuclide contamination	NEv				NEv				NA	NA
	Synthetic compound contamination	Medium	[33] [1] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Transition elements & organo-metal contamination	Medium	[28] [33] [1] & EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	High	[34] [35] & EJ	Low	Low	Medium	[34] & EJ	Low	Low	Low	1
	Introduction or spread of invasive non-indigenous species	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Removal of non-target species	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Removal of target species	NR				NR				NA	NA

References

- 1 Wear SL, Thurber RV (2015). In: Power AG, Ostfeld RS, editors. Oxford: Blackwell Science Publ. 15-30.
- 2 Goffredo S, et al. (2006) *Mar Biol* 148: 923-931.
- 3 Teixido N, et al. (2011) *PLoS ONE* 6: e23744.
- 4 Caroselli E, et al. (2011) *Zoology* 114: 255-264.
- 5 Caroselli E, et al. (2012) *PLoS ONE* 7: e37848.
- 6 Bianchi CN, et al. (2014) *Mediterr Mar Sci* 15: 482-497.
- 7 Kruzic P, et al. (2016) *Mar Ecol Evol Persp* 37: 1190-1209.
- 8 Movilla J, et al. (2016) *Mar Biol* 163: 14.
- 9 Airi V, et al. (2017) *PLoS ONE* 12: e0171051.
- 10 Betti F, et al. (2017) *Mar Ecol* 38: e12439.
- 11 Gómez-Gras D, et al. (2019) *Ecol Evol* 9: 4168-4180
- 12 Franzellitti S, et al. (2018) *Mar Environ Res* 140: 444-454.
- 13 Maor-Landaw K, et al. (2017) *Sci Rep* 7: 42405.
- 14 Teixido N, et al. (2013) *PLoS ONE* 8: e53742.
- 15 Sebens K, et al. (2017). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-42.
- 16 Martí R, et al. (2004) *J Mar Biol Assoc U K* 84: 557-572.
- 17 Gatti G, et al. (2015) *PLoS ONE* 10: e0118581.
- 18 MacDonald DS, et al. (1996) *Aquat Conserv* 6: 257-268.
- 19 Milazzo M, et al. (2002) *Mar Ecol-P S Z N I* 23: 280-290.
- 20 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 21 Schiaparelli S, et al. (2007) *Mar Ecol Evol Persp* 28: 341-353.
- 22 Reichert J, et al. (2018) *Environ Pollut* 237: 955-960.
- 23 Garren M, Azam F (2011) *Isme J* 6: 1159.
- 24 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 25 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 26 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 27 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 28 Guzman HM, et al. (1991) *Coral Reefs* 10: 1-12.
- 29 Neff JM (2002) Elsevier Ltd.
- 30 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 31 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 32 DeLeo DM, et al. (2016) *Deep-Sea Res Pt II* 129: 137-147.
- 33 Jones R (2005) *Mar Pollut Bull* 51: 495-506.
- 34 Bally M, Garrabou J (2007) *Glob Change Biol* 13: 2078-2088.
- 35 Meron D, et al. (2012) *Isme J* 6: 1775-1785.

Pinna nobilis

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	High	EJ	Low	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	Low	1
	Salinity changes (decrease)	High	EJ	Low	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	Low	1
	Temperature changes (increase)	Medium	[6] [7] [8] [9]	High	High	Low	[1] [2] [3] [4] [5]	Medium	Low	Medium	2
	Temperature changes (decrease)	Medium	[8]	Medium	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	Medium	2
	Water flow (tidal current) changes	Medium	[10] [11] [12] [13]	Medium	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	Medium	2
	Wave exposure changes	Low	[10] [12]	High	Medium	Low	[1] [2] [3] [4] [5]	Medium	Low	High	3
	Changes in suspended solids (water clarity)	High	[14] [15] [13]	Medium	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	Low	1
	Habitat structure changes - removal of substratum (extraction)	NR					NR			NA	NA
	Abrasion/ disturbance at the surface of the substratum	None	[16] [14] [17] [12] [18] [9]	High	High	Low	[1] [2] [3] [4] [5]	Medium	Low	High	3
	Penetration and/or disturbance of the substratum below the surface	NR					NR			NA	NA
	Smothering and siltation rate changes (light)	High	[11]	Medium	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	Low	1
	Smothering and siltation rate changes (heavy)	High	[11]	Medium	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	Low	1
	Physical change	Low	[9] & EJ	Low	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	High	3
	Physical loss	None	[9] & EJ	Low	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	High	3
	Barrier to species movement	NR					NR			NA	NA
	Electromagnetic changes	NR					NR			NA	NA
	Death or injury by collision	NR					NR			NA	NA
	Introduction of light	NR					NR			NA	NA
Litter	Medium	[16] & EJ	Medium	Low	Low	[1] [2] [3] [19] [4] [5]	Medium	Medium	Medium	2	
Noise changes	NR					NR			NA	NA	
Visual disturbance	NR					NR			NA	NA	
Chemical	Organic enrichment	High	[20] [21]	Medium	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	Low	1
	De-oxygenation	Medium	[22] [23] [24] [6] [13] [25] [26] & EJ	Medium	Medium	Low	[1] [2] [3] [4] [5]	Medium	Low	Medium	2
	Introduction of other substance (solid, liquid or gas)	NEv					NEv			NA	NA
	Nutrient enrichment	High	[27] [12]	Medium	Medium	Medium	[1] [12] [2] [3] [4] [5]	High	Low	Low	1
	Hydrocarbon and PAH contamination	Medium	[28] [29] [30] [31] [32] [33] [34]	High	Medium	Medium	[1] [32] [34] [2] [3] [4] [5]	High	High	Medium	2
	Radionuclide contamination	NEv					NEv			NA	NA
	Synthetic compound contamination	Medium	[31] & EJ	Medium	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	Medium	2
Transition elements & organo-metal contamination	High	[35] [31] [32] [36] [37] [38] [39] [39]	Medium	Low	Medium	[1] [2] [3] [4] [5]	Medium	Low	Low	1	
Biological	Genetic modification and translocation of indigenous species	NEv					NEv			NA	NA
	Introduction of microbial pathogens	Low	[40] [41] [42] [43] [44]	High	Medium	Low	[1] [2] [3] [4] [5]	Medium	Low	High	3
	Introduction or spread of invasive non-indigenous species	Medium	[45] [46] [47] [48]	Medium	Low	Medium	[1] [2] [3] [4] [5]	Medium	Low	Medium	2
	Removal of non-target species	Low	EJ	Low	Low	Low	[1] [2] [3] [4] [5]	Medium	Low	High	3
	Removal of target species	None	[15]	High	Medium	Low	[1] [2] [3] [4] [5]	Medium	Low	High	3

References

- 1 Richardson CA, et al. (2004) *J Exp Mar Biol Ecol* 299: 1-16.
- 2 Kersting DK, Garcia-March JR (2017) *Mar Environ Res* 130: 282-292.
- 3 Andree KB, et al. (2018) *Hydrobiologia* 818: 235-247.
- 4 Wesselmann M, et al. (2018) *Sci Rep* 8: 4770.
- 5 Gonzalez-Wanguemert M, et al. (2019) *Aquat Conserv* 29: 175-188.
- 6 Basso L, et al. (2015) *Estuar Coast Shelf S* 165: 199-203.
- 7 Basso L, et al. (2015) *Estuaries and Coasts* 38: 1976-1985.
- 8 Trigos S, et al. (2015) *J Molluscan Stud* 81: 217-222.
- 9 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 10 Garcia-March JR, et al. (2007) *J Exp Mar Biol Ecol* 342: 202-212.
- 11 Coppa S, et al. (2013) *J Sea Res* 76: 201-210.
- 12 Deudero S, et al. (2015) *PLoS ONE* 10: e0134530.
- 13 Garcia-March JR, et al. (2016) *Mar Biol* 163: 12.
- 14 Katsanevakis S (2007) *Mar Biol* 152: 1319-1331.
- 15 Basso L, et al. (2015). In: Curry BE, editor. San Diego: Elsevier Academic Press Inc. 109-160.
- 16 Ayaz A, et al. (2006) *Fish Res* 79: 267-271.
- 17 Hendriks IE, et al. (2013) *Biol Conserv* 160: 105-113.
- 18 Vazquez-Luis M, et al. (2015) *Mar Freshw Res* 66: 786-794.
- 19 Tursi A, et al. (2018) *Rend Lincei-Sci Fis Nat* 29: 817-824.
- 20 Davenport J, et al. (2011) *Estuar Coast Shelf S* 92: 246-254.
- 21 Trigos S, et al. (2014) *Mediterr Mar Sci* 15: 667-674.
- 22 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 23 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 24 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 25 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 26 Thomas Y, et al. (2019) *J Sea Res* 143: 231-242.
- 27 Schiaparelli S, et al. (2007) *Mar Ecol Evol Persp* 28: 341-353.
- 28 Moore J, et al. (1997) *Amer Petroleum Inst.*
- 29 Neff JM (2002) Elsevier Ltd.
- 30 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 31 Leon VM, et al. (2013) *Sci Total Environ* 463: 975-987.
- 32 Sureda A, et al. (2013) *Mar Pollut Bull* 71: 69-73.
- 33 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 34 Capo X, et al. (2015) *Mar Environ Res* 110: 19-24.
- 35 Goldberg ED (1986) *Environ Monit Assess* 7: 91-103.
- 36 Jebali J, et al. (2014) *J Trace Elem Med Biol* 28: 212-217.
- 37 Farrington JW, et al. (2016) *Mar Pollut Bull* 110: 501-510.
- 38 Vazquez-Luis M, et al. (2016) *Sci Mar* 80: 111-122.
- 39 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 40 Darriba S (2017) *J Invertebr Pathol* 148: 14-19.
- 41 Catanese G, et al. (2018) *J Invertebr Pathol*.
- 42 Carella F, et al. (2019) *Sci Rep* 9: 12.
- 43 Lopez-Sanmartin M, et al. (2019) *PLoS ONE* 14: e0212028.
- 44 Panarese R, et al. (2019) *J Invertebr Pathol* 164: 32-37.
- 45 Box A, et al. (2009) *Comp Biochem Phys C* 149: 456-460.
- 46 Cabanellas-Reboredo M, et al. (2010) *Sci Mar* 74: 101-110.
- 47 Vazquez-Luis M, et al. (2014) *J Mar Biol Assoc U K* 94: 857-864.
- 48 Caronni S, et al. (2015) *Estuar Coast Shelf S* 161: 38-45.

Arca noae

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR					NA
	Salinity changes (increase)	High	[1] [2]	Medium	Low	Medium	[3] [4] [5] [6]	Medium	Low	Low	1
	Salinity changes (decrease)	High	[7] [2] & EJ	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Low	1
	Temperature changes (increase)	Low	[8] [9] [10]	Medium	Low	Low	[3] [4] [5] [6]	Medium	Low	High	3
	Temperature changes (decrease)	High	EJ	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Low	1
	Water flow (tidal current) changes	High	[11] & EJ			High	[3] [4] [5] [6]	Low	Low	Not sensitive	0
	Wave exposure changes	High	EJ			High	[3] [4] [5] [6]	Low	Low	Not sensitive	0
	Changes in suspended solids (water clarity)	High	[12] [6] & EJ	Low	Low	Medium	[3] [4] [5] [6]	Low	Low	Low	1
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Medium	[3] [13]	High	Medium	Medium	[3] [4] [5] [6]	Low	Low	Medium	2
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	EJ	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Smothering and siltation rate changes (heavy)	Medium	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Low	1
	Physical change	Medium	[4]	Medium	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Physical loss	None	EJ	Low	Low	Very low	[3] [4] [5] [6]	Medium	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
Introduction of light	NR				NR				NA	NA	
Litter	High	EJ	Low	Low	High	[3] [4] [5] [6]	Low	Low	Not sensitive	0	
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	Medium	[13] & EJ	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	De-oxygenation	Low	[14] [15] [16] [13] [17] [18] & EJ	Low	Low	Low	[3] [4] [5] [6]	Medium	Low	High	3
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	Low	[19] [13]	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Hydrocarbon and PAH contamination	Low	[20] [21] [22] [23] [24] [25]	Low	Low	Low	[3] [4] [5] [6]	Low	Low	High	3
	Radionuclide contamination	NEv				NEv				NA	NA
	Synthetic compound contamination	Low	[26] [13] & EJ	High	Medium	Low	[3] [4] [5] [6]	Medium	Low	High	3
Transition elements & organo-metal contamination	High	[27] [28] [29] [30] [31] [32]	Medium	Medium	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0	
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[33] [4]	Medium	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Introduction or spread of invasive non-indigenous species	Medium	EJ	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Removal of non-target species	None	EJ	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Removal of target species	None	[34] [35]	Medium	Medium	Low	[3] [4] [5] [6]	Medium	Low	High	3

References

- 1 Marin A, Belluga MDL (2005) *J Molluscan Stud* 71: 1-6.
- 2 Vlašić M, et al. (2018) *Ekol Bratislava* 37: 345-357.
- 3 Hrs-Brenko M (1980) *Aquaculture* 21: 357-363.
- 4 Bottari T, et al. (2017) *J Shellfish Res* 36: 749-753.
- 5 Ghribi F, et al. (2017) *European Zoological Journal* 84: 473-487.
- 6 Acarli S, et al. (2018) *Su Urunleri Dergisi* 35: 141-149.
- 7 Davenport J, Wong TM (1986) *Aquaculture* 56: 151-162.
- 8 Garrabou J, et al. (2009) *Glob Change Biol* 15: 1090-1103.
- 9 Bijma J, et al. (2013) *Mar Pollut Bull* 74: 495-505.
- 10 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 11 Duchêne J-C (2015). In: Rossi S et al., editors. Cham: Springer International Publishing. 1-25.
- 12 Miranda-Baeza A, et al. (2006) *Rev Biol Trop* 54: 787-792.
- 13 Mautner AK, et al. (2018) *Mar Pollut Bull* 126: 19-30.
- 14 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 15 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 16 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 17 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 18 Thomas Y, et al. (2019) *J Sea Res* 143: 231-242.
- 19 Devescovi M, Ivesa L (2007) *Mar Pollut Bull* 54: 887-893.
- 20 Neff JM (2002) Elsevier Ltd.
- 21 Moore J, et al. (1997) Amer Petroleum Inst.
- 22 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 23 Zambrano M, et al. (2012) *Gayana* 76: 1-9.
- 24 Leon VM, et al. (2013) *Sci Total Environ* 463: 975-987.
- 25 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 26 Peric L, et al. (2013) *Comp Biochem Phys B* 165: 243-249.
- 27 Viarengo A, et al. (1982) *Mar Environ Res* 6: 235-243.
- 28 Goldberg ED (1986) *Environ Monit Assess* 7: 91-103.
- 29 Farrington JW, et al. (2016) *Mar Pollut Bull* 110: 501-510.
- 30 Ivankovic D, et al. (2016) *Arch Environ Con Tox* 71: 394-404.
- 31 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 32 Erk M, et al. (2018) *Mar Pollut Bull* 133: 357-366.
- 33 Ziino G, et al. (2014) *Cah Biol Mar* 55: 389-397.
- 34 Benovic A (1997). In: MacKenzie CL et al., editors. Seattle: NOAA/National Marine Fisheries Service. 217-226.
- 35 Bello G, et al. (2013) *Mediterr Mar Sci* 14: 86-91.

Palinurus elephas

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value	
Physical	Emergence regime changes	NR				NR				NA	NA	
	Salinity changes (increase)	Low	[1] [2]	High	Low	High	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Low	1	
	Salinity changes (decrease)	Low	[1] [2]	High	Low	Medium	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Medium	2	
	Temperature changes (increase)	Medium	[1]	Medium	Low	High	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Low	1	
	Temperature changes (decrease)	Low	[11] [12]	Medium	Low	Medium	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Medium	2	
	Water flow (tidal current) changes	High	EJ	Low	Low	High	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Not sensitive	0	
	Wave exposure changes	Medium	[13]	Medium	Medium	High	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Low	1	
	Changes in suspended solids (water clarity)	High	EJ	Low	Low	High	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Not sensitive	0	
	Habitat structure changes - removal of substratum (extraction)	NR					NR			NA	NA	
	Abrasion/ disturbance at the surface of the substratum	Medium	EJ	Low	Low	High	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Low	1	
	Penetration and/or disturbance of the substratum below the surface	NR					NR			NA	NA	
	Smothering and siltation rate changes (light)	High	[14]	Low	Low	High	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Not sensitive	0	
	Smothering and siltation rate changes (heavy)	Medium	[14]	Low	Low	High	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Low	1	
	Physical change	Medium	[6]	Low	Low	Medium	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Medium	2	
	Physical loss	None					Very low	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	High	3
	Barrier to species movement	NR					NR			NA	NA	
	Electromagnetic changes	NR					NR			NA	NA	
	Death or injury by collision	NR					NR			NA	NA	
	Introduction of light	NR					NR			NA	NA	
	Litter	High	[15] [16] [17]	Medium	Low	Medium	EJ		Low	Low	Low	1
Noise changes	Medium	[18] [19] [20]	High	High	Medium	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Medium	2		
Visual disturbance	NR					NR			NA	NA		
Chemical	Organic enrichment	High	EJ	Low	Low	Medium	EJ		Low	Low	Low	1
	De-oxygenation	Low	[21] [22] [23] [24] [25] [26] [27]	Medium	Low	Medium	[23] [3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Medium	2	
	Introduction of other substance (solid, liquid or gas)	NEv					NEv			NA	NA	
	Nutrient enrichment	High	EJ	Low	Low	Medium	EJ		Low	Low	Low	1
	Hydrocarbon and PAH contamination	Low	[28]	Low	Low	Medium	EJ		Low	Low	Medium	2
	Radionuclide contamination	Low	[29]	Low	Low	Medium	EJ		Low	Low	Medium	2

	Synthetic compound contamination	Low	[30] [31] [32]	Low	Medium	Medium	EJ	Low	Low	Medium	2
	Transition elements & organo-metal contamination	Low	[33] [34]	High	High	Low	[33] [3] [4] [5] [6] [7] [8] [9] [10]	High	High	High	3
Biological	Genetic modification and translocation of indigenous species	NEv					NEv			NA	NA
	Introduction of microbial pathogens	Medium	[35] [36] [37] [38] [39]	High	Medium	Medium	[3] [4] [5] [6] [7] [8] [9] [10]	Medium	Low	Medium	2
	Introduction or spread of invasive non-indigenous species	Medium	EJ	Low	Low	Medium	EJ	Low	Low	Medium	2
	Removal of non-target species	Medium	[40] [41] [42]	Medium	Medium	Low	[3] [4] [5] [6] [7] [8] [9] [43]	High	Medium	High	3
	Removal of target species	Low	[44] [6] [45] [9] [46] [41] [47] [42]	High	High	Low	[3] [4] [5] [6] [7] [8] [45] [9] [46] [48] [43]	High	Medium	High	3

References

- 1 Green BS, et al. (2014) *Rev Fish Biol Fish* 24: 613-638.
- 2 Thabet R, et al. (2017) *Hydrobiologia* 799: 1-20.
- 3 Hunter E (1999) *Crustaceana* 72: 545-565.
- 4 Diaz D, et al. (2001) *Sci Mar* 65: 347-356.
- 5 Goni R, et al. (2003) *Mar Biol* 143: 583-592.
- 6 Goni R, Latrouite D (2005) *Cah Biol Mar* 46: 127-142.
- 7 Bevacqua D, et al. (2010) *Fish Res* 106: 543-549.
- 8 Diaz D, et al. (2011) *Mar Ecol Prog Ser* 433: 149-157.
- 9 Palero F, et al. (2011) *Biol J Linn Soc* 104: 407-418.
- 10 Whomersley P, et al. (2018) *Front Mar Sci* 5: 16.
- 11 Crisp DJ (1964) *J Anim Ecol* 33: 165-210.
- 12 Agnalt AL, et al. (2013) *Biogeosciences* 10: 7883-7895.
- 13 Spanier E, et al. (2017) *Reg Stud Mar Sci* 14: 126-131.
- 14 Rogers CS (1990) *Mar Ecol Prog Ser* 62: 185-202.
- 15 Murray F, Cowie PR (2011) *Mar Pollut Bull* 62: 1207-1217.
- 16 Taylor ML, et al. (2016) *Sci Rep* 6: 9.
- 17 Welden NAC, Cowie PR (2016) *Environ Pollut* 218: 895-900.
- 18 Filiciotto F, et al. (2014) *Mar Pollut Bull* 84: 104-114.
- 19 Celi M, et al. (2015) *Can J Zool* 93: 113-121.
- 20 Edmonds NJ, et al. (2016) *Mar Pollut Bull* 108: 5-11.
- 21 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 22 Rosenberg R, et al. (1991) *Mar Ecol Prog Ser* 79: 127-131.
- 23 Diaz RJ, Rosenberg R (1995). In: Ansell AD et al., editors. London: U C L Press Ltd. 245-303.
- 24 McMahon BR (2001) *Resp Physiol* 128: 349-364.
- 25 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 26 Ekau W, et al. (2010) *Biogeosciences* 7: 1669-1699.
- 27 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 28 Neff JM (2002) Elsevier Ltd.
- 29 Batlle JVI, et al. (2010) *Radiat Environ Biophys* 49: 67-85.
- 30 Olsvik PA, et al. (2015) *Aquat Toxicol* 167: 143-156.
- 31 Dounia D, et al. (2016) *Ecotoxicol Environ Saf* 134: 106-115.
- 32 Azad AM, et al. (2019) *Sci Total Environ* 667: 622-637.
- 33 Bellelli A, et al. (1985) *Biochim Biophys Acta* 830: 325-331.
- 34 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 35 Alderman DJ (1973) *T Brit Mycol Soc* 61: 595-597.
- 36 Davies CE, et al. (2015) *ICES J Mar Sci* 72: 128-138.
- 37 Mancuso M, et al. (2010) *J Invertebr Pathol* 104: 242-244.
- 38 Shields JD (2011) *J Invertebr Pathol* 106: 79-91.
- 39 Ross EP, et al. (2019) *J Invertebr Pathol* 163: 21-33.
- 40 Hinz H, et al. (2011) *Mar Ecol Prog Ser* 432: 91-102.
- 41 Amengual-Ramis JF, et al. (2016) *Fish Res* 179: 23-32.
- 42 Catanese G, et al. (2018) *Peerj* 6: 24.
- 43 Kleiven PJN, et al. (2019) *Proc R Soc Lond B Biol Sci* 286: 8.
- 44 Gristina M, Gagliano M (2004) *Fish Res* 67: 235-239.
- 45 Follesa MC, et al. (2011) *Aquat Conserv* 21: 564-572.
- 46 Martin P, et al. (2012) *Sci Mar* 76: 607-618.
- 47 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 48 Follesa MC, et al. (2015) *Mar Freshw Res* 66: 1-9.

Homarus gammarus

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] [2] [3] [4]	Medium	Low	Medium	[2] [5]	Low	Low	Low	1
	Salinity changes (decrease)	Low	[1] [6] [2] [7] [4]	Medium	Low	Medium	[2] [5]	Low	Low	Medium	2
	Temperature changes (increase)	Medium	[8] [9] [2] [10] [11]	Medium	Low	High	[2] [5]	Medium	Low	Low	1
	Temperature changes (decrease)	Medium	[12] [6] [8] [13] [9]	Medium	Medium	Medium	EJ	Low	Low	Medium	2
	Water flow (tidal current) changes	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Wave exposure changes	Medium	[14]	Medium	Medium	High	EJ	Low	Low	Low	1
	Changes in suspended solids (water clarity)	High	EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0
	Habitat structure changes - removal of substratum (extraction)	NR					NR			NA	NA
	Abrasion/ disturbance at the surface of the substratum	Medium	[7]	Medium	Low	High	EJ	Low	Low	Low	1
	Penetration and/or disturbance of the substratum below the surface	NR					NR			NA	NA
	Smothering and siltation rate changes (light)	High	[15]	Low	Low	High	EJ	Low	Low	Not sensitive	0
	Smothering and siltation rate changes (heavy)	Medium	[15]	Low	Low	High	EJ	Low	Low	Low	1
	Physical change	Medium	[7]	Medium	Low	Medium	EJ	Low	Low	Medium	2
	Physical loss	None	EJ	Low	Low	Very low	EJ	Low	Low	High	3
	Barrier to species movement	NR					NR			NA	NA
	Electromagnetic changes	NR					NR			NA	NA
Death or injury by collision	NR					NR			NA	NA	
Introduction of light	NR					NR			NA	NA	
Litter	High	[16] [17] [18]	Medium	Low	Medium	EJ	Low	Low	Low	1	
Noise changes	High	[19]	High	Medium	Medium	EJ	Low	Low	Low	1	
Visual disturbance	NR					NR			NA	NA	
Chemical	Organic enrichment	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	De-oxygenation	Low	[20] [21] [22] [23] [24] [25] [26]	High	High	Medium	[22] & EJ	Low	Low	Medium	2
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Hydrocarbon and PAH contamination	Low	[27]	Medium	Low	Medium	EJ	Low	Low	Medium	2
	Radionuclide contamination	Low	[28]	High	High	Medium	EJ	Low	Low	Medium	2
	Synthetic compound contamination	Low	[29] [30] [31] [32] [33]	High	Medium	Medium	[2] [5] & EJ	Low	Low	Medium	2
Transition elements & organo-metal contamination	Low	[34] [35] [36] [29] [37]	High	Medium	Low	[2] [5] & EJ	Medium	Low	High	3	
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[38] [39] [40] [41] [42] [43]	High	High	Low	[2] [5] & EJ	Low	Low	High	3
	Introduction or spread of invasive non-indigenous species	Medium	EJ	Low	Low	Medium	[2] [5] & EJ	Low	Low	Medium	2
	Removal of non-target species	Medium	[44]	Low	Low	Low	[45] [46] [47] [48] & EJ	Medium	Medium	High	3
	Removal of target species	Low	[7] [49] [50] [51] [47] [52] [53]	Medium	Medium	Low	[45] [46] [54] [50] [47] [48]	High	Medium	High	3

References

- 1 Lucu C, Devescovi M (1999) *J Exp Mar Biol Ecol* 234: 291-304.
- 2 Green BS, et al. (2014) *Rev Fish Biol Fish* 24: 613-638.
- 3 Smyth K, et al. (2014) *J Exp Mar Biol Ecol* 457: 208-214.
- 4 Thabet R, et al. (2017) *Hydrobiologia* 799: 1-20.
- 5 Ellis CD, et al. (2017) *Mar Ecol Prog Ser* 563: 123-137.
- 6 Pavicic-Hamer D, et al. (2003) *J Exp Mar Biol Ecol* 287: 79-92.
- 7 Seitz RD, et al. (2014) *ICES J Mar Sci* 71: 648-665.
- 8 Schmalenbach I, Franke HD (2010) *Mar Biol* 157: 1127-1135.
- 9 Schmalenbach I, Buchholz F (2013) *Mar Biol Res* 9: 19-26.
- 10 Small DP, et al. (2015) *Physiol Biochem Zool* 88: 494-507.
- 11 Small DP, et al. (2016) *Mar Biol* 163: 12.
- 12 Crisp DJ (1964) *J Anim Ecol* 33: 165-210.
- 13 Agnalt AL, et al. (2013) *Biogeosciences* 10: 7883-7895.
- 14 Spanier E, et al. (2017) *Reg Stud Mar Sci* 14: 126-131.
- 15 Rogers CS (1990) *Mar Ecol Prog Ser* 62: 185-202.
- 16 Murray F, Cowie PR (2011) *Mar Pollut Bull* 62: 1207-1217.
- 17 Taylor ML, et al. (2016) *Sci Rep* 6: 9.
- 18 Welden NAC, Cowie PR (2016) *Environ Pollut* 218: 895-900.
- 19 Edmonds NJ, et al. (2016) *Mar Pollut Bull* 108: 5-11.
- 20 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 21 Rosenberg R, et al. (1991) *Mar Ecol Prog Ser* 79: 127-131.
- 22 Diaz RJ, Rosenberg R (1995). In: Ansell AD et al., editors. London: U C L Press Ltd. 245-303.
- 23 McMahon BR (2001) *Resp Physiol* 128: 349-364.
- 24 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 25 Ekau W, et al. (2010) *Biogeosciences* 7: 1669-1699.
- 26 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 27 Neff JM (2002) Elsevier Ltd.
- 28 Batlle JVI, et al. (2010) *Radiat Environ Biophys* 49: 67-85.
- 29 Samuelsen OB, et al. (2014) *Aquat Toxicol* 149: 8-15.
- 30 Olsvik PA, et al. (2015) *Aquat Toxicol* 167: 143-156.
- 31 Dounia D, et al. (2016) *Ecotoxicol Environ Saf* 134: 106-115.
- 32 Cresci A, et al. (2018) *Ecotoxicol Environ Saf* 160: 216-221.
- 33 Azad AM, et al. (2019) *Sci Total Environ* 667: 622-637.
- 34 Marino-Balsa JC, et al. (2000) *Arch Environ Con Tox* 39: 345-351.
- 35 Lucu C, et al. (2009) *Comp Biochem Phys C* 149: 476-480.
- 36 Gotze S, et al. (2014) *Comp Biochem Phys C* 162: 62-69.
- 37 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 38 Shields JD (2011) *J Invertebr Pathol* 106: 79-91.
- 39 Katsanevakis S, et al. (2014) *Aquat Invasions* 9: 391-423.
- 40 Maynard J, et al. (2016) *Philos Trans R Soc B-Biol Sci* 371: 11.
- 41 Hoenig JM, et al. (2017) *Ecol Appl* 27: 2116-2127.
- 42 Davies CE, Wootton EC (2018) *B Mar Sci* 94: 959-978.
- 43 Holt C, et al. (2018) *J Invertebr Pathol* 154: 109-116.
- 44 Hinz H, et al. (2011) *Mar Ecol Prog Ser* 432: 91-102.
- 45 Moland E, et al. (2010) *Mar Ecol Prog Ser* 400: 165-173.
- 46 Moland E, et al. (2013) *Mar Ecol Prog Ser* 491: 153-164.
- 47 Sordalen TK, et al. (2018) *Evolutionary Applications* 11: 963-977.
- 48 Pere A, et al. (2019) *Sci Mar* 83: 69-77.
- 49 Ellis CD, et al. (2015) *ICES J Mar Sci* 72: 91-100.
- 50 Aspaas S, et al. (2016) *PLoS ONE* 11: e0159807.
- 51 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 52 Thorbjornsen SH, et al. (2018) *Mar Ecol Prog Ser* 595: 123-133.
- 53 Kleiven PJN, et al. (2019) *Proc R Soc Lond B Biol Sci* 286: 8.
- 54 Ellis CD, et al. (2015) *ICES J Mar Sci* 72: 35-48.

Scyllarides latus

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] [2]	Medium	Low	Medium	[3] [1]	Medium	Low	Low	1
	Salinity changes (decrease)	Low	[1] [2]	Medium	Low	Medium	[3] [1]	Medium	Low	Medium	2
	Temperature changes (increase)	Medium	[1]	Low	Low	High	[3] [1]	Medium	Low	Low	1
	Temperature changes (decrease)	Medium	[4] [5]	Low	Low	Medium	EJ	Low	Low	Medium	2
	Water flow (tidal current) changes	Medium	EJ	Low	Low	High	EJ	Low	Low	Low	1
	Wave exposure changes	Low	[6]	High	Medium	Medium	[3] & EJ	Medium	Low	Medium	2
	Changes in suspended solids (water clarity)	High	[7] [8]	Medium	Low	High	[3] & EJ	Medium	Low	Not sensitive	0
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Medium	EJ	Low	Low	High	EJ	Low	Low	Low	1
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	[9]	Low	Low	High	[3] & EJ	Medium	Low	Not sensitive	0
	Smothering and siltation rate changes (heavy)	Medium	[9]	Low	Low	High	[3] & EJ	Medium	Low	Low	1
	Physical change	Medium	EJ	Low	Low	High	EJ	Low	Low	Low	1
	Physical loss	None	EJ	Low	Low	Very low	EJ	Low	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
Introduction of light	NR				NR				NA	NA	
Litter	High	[10] [11] [12]	Medium	Low	Medium	[3] & EJ	Medium	Low	Low	1	
Noise changes	Medium	[13]	Medium	Low	High	EJ	Low	Low	NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	De-oxygenation	Low	[14] [15] [16] [17] [18] [19] [20]	Medium	Medium	Medium	[16] [3]	Medium	Low	Medium	2
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	High	EJ	Low	Low	Medium	EJ	Low	Low	Low	1
	Hydrocarbon and PAH contamination	Low	[21]	Low	Low	Medium	EJ	Low	Low	Medium	2
	Radionuclide contamination	Low	[22]	Low	Low	Medium	EJ	Low	Low	Medium	2
	Synthetic compound contamination	Low	[23] [24] [25]	Low	Medium	Medium	[3] & EJ	Medium	Low	Medium	2
Transition elements & organo-metal contamination	Low	[26] [27] [28]	Low	Low	Low	EJ	Low	Low	High	3	
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Medium	EJ	Low	Low	Medium	[3] & EJ	Medium	Low	Medium	2
	Introduction or spread of invasive non-indigenous species	Medium	EJ	Low	Low	Medium	[3] & EJ	Medium	Low	Medium	2
	Removal of non-target species	Medium	[29]	Low	Low	Low	[3] & EJ	Medium	Low	High	3
	Removal of target species	Low	[3] [30] [31]	High	Medium	Low	[3] [30]	Medium	Medium	High	3

References

- 1 Green BS, et al. (2014) *Rev Fish Biol Fish* 24: 613-638.
- 2 Thabet R, et al. (2017) *Hydrobiologia* 799: 1-20.
- 3 Spanier E, Lavalli KL (1998) *J Nat Hist* 32: 1769-1786.
- 4 Crisp DJ (1964) *J Anim Ecol* 33: 165-210.
- 5 Agnalt AL, et al. (2013) *Biogeosciences* 10: 7883-7895.
- 6 Spanier E, et al. (2017) *Reg Stud Mar Sci* 14: 126-131.
- 7 Spanier E, Almogshtayer G (1992) *J Exp Mar Biol Ecol* 164: 103-116.
- 8 Goldstein JS, et al. (2015) *ICES J Mar Sci* 72: 147-154.
- 9 Rogers CS (1990) *Mar Ecol Prog Ser* 62: 185-202.
- 10 Murray F, Cowie PR (2011) *Mar Pollut Bull* 62: 1207-1217.
- 11 Taylor ML, et al. (2016) *Sci Rep* 6: 9.
- 12 Welden NAC, Cowie PR (2016) *Environ Pollut* 218: 895-900.
- 13 Edmonds NJ, et al. (2016) *Mar Pollut Bull* 108: 5-11.
- 14 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 15 Rosenberg R, et al. (1991) *Mar Ecol Prog Ser* 79: 127-131.
- 16 Diaz RJ, Rosenberg R (1995). In: Ansell AD et al., editors. London: U C L Press Ltd. 245-303.
- 17 McMahon BR (2001) *Resp Physiol* 128: 349-364.
- 18 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 19 Ekau W, et al. (2010) *Biogeosciences* 7: 1669-1699.
- 20 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 21 Neff JM (2002) Elsevier Ltd.
- 22 Batlle JVI, et al. (2010) *Radiat Environ Biophys* 49: 67-85.
- 23 Olsvik PA, et al. (2015) *Aquat Toxicol* 167: 143-156.
- 24 Dounia D, et al. (2016) *Ecotoxicol Environ Saf* 134: 106-115.
- 25 Azad AM, et al. (2019) *Sci Total Environ* 667: 622-637.
- 26 Bellelli A, et al. (1985) *Biochim Biophys Acta* 830: 325-331.
- 27 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 28 Gotze S, et al. (2014) *Comp Biochem Phys C* 162: 62-69.
- 29 Hinz H, et al. (2011) *Mar Ecol Prog Ser* 432: 91-102.
- 30 Bianchini ML, et al. (2001) *Crustaceana* 74: 673-680.
- 31 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.

Paracentrotus lividus

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] [2] [3]	High	High	High	[4] [5] [6]	Medium	Low	Low	1
	Salinity changes (decrease)	Low	[1] [2] [5] [3]	High	High	High	[4] [5] [6]	Medium	Low	Low	1
	Temperature changes (increase)	Medium	[7] [8] [9] [10] [11] [12] [13] [14] [15] [16]	Medium	Medium	High	[4] [12] [6] [13] [15] [16]	High	Low	Low	1
	Temperature changes (decrease)	Low	[7] [12] [15] [16] & EJ	Low	Low	Medium	[17] [4] [12] [6] [15] [16]	Medium	Low	Medium	2
	Water flow (tidal current) changes	Medium	[18] [19] [20] [21] [22]	Medium	Low	High	[17] [4] [20] [6]	Medium	Medium	Low	1
	Wave exposure changes	Medium	[18] [19] [20] [23] [9] [24] [21] [25] [26]	High	High	High	[4] [20] [6] [13]	Medium	Medium	Low	1
	Changes in suspended solids (water clarity)	Low	[5]	Medium	Medium	High	[4] [6] [13]	Medium	Low	Low	1
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Medium	EJ	Low	Low	High	[4] [6]	Medium	Low	Low	1
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	Low	[5]	Medium	Medium	High	[4] [6]	Medium	Low	Low	1
	Smothering and siltation rate changes (heavy)	Low	[5]	Medium	Medium	Medium	[4] [6]	Medium	Low	Medium	2
	Physical change	Low	[18] [27] [25] & EJ	Low	Low	Low	[4] [6] [25]	Medium	Low	High	3
	Physical loss	None	[27] & EJ	Low	Low	Low	[4] [6]	Medium	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	Medium	[28]	Medium	Low	High	[4] [6]	Low	Low	Low	1
Noise changes	NR				NR				NA	NA	
Visual disturbance	NR				NR				NA	NA	
Chemical	Organic enrichment	Medium	EJ	Low	Low	High	EJ	Low	Low	Low	1
	De-oxygenation	Low	[29] [30] [31] [32] [33] & EJ	Low	Low	High	[4] [6]	Medium	Low	Low	1
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	High	[34] & EJ	Medium	Low	High	[4] [6]	Medium	Low	Not sensitive	0
	Hydrocarbon and PAH contamination	Medium	[35] [36] [37] [38] [39]	Medium	Low	Medium	[4] [6] [37]	Low	Medium	Medium	2
	Radionuclide contamination	Medium	[40] [41]	Medium	Low	Medium	[4] [6] [41] [42]	Medium	Low	Medium	2
	Synthetic compound contamination	Medium	[2] [43] [44] [45] [46] [38]	Medium	Low	Medium	[4] [6]	Medium	Low	Medium	2
	Transition elements & organo-metal contamination	Low	[2] [42] [47] [44] [48] [49] [50] [51] [52] [53] [54]	High	Medium	Medium	[4] [42] [48] [51] [53]	High	Medium	Medium	2
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[9] [55]	Medium	Medium	Low	[4] [6]	Medium	Low	High	3
	Introduction or spread of invasive non-indigenous species	Medium	[56] [57] [58] [10] [59] [60] [61] [62]	High	Medium	Low	[4] [6]	Medium	Low	Medium	2
	Removal of non-target species	High	[63] [64] [65] & EJ	High	High	High	[4] [6] [65]	Medium	Low	Low	1
	Removal of target species	None	[63] [64] [7] [66] [67] [68] [24] [69] [70] [71] [38] [65] & EJ	High	High	Low	[4] [6] [38] [65] [69]	Medium	Low	High	3

References

- 1 Basuyaux O, et al. (1998) *Bull Soc Zool Fr* 123: 141-150.
- 2 His E, et al. (1999) *Water Res* 33: 1706-1718.
- 3 Carballeira C, et al. (2011) *Mar Environ Res* 72: 196-203.
- 4 Lozano J, et al. (1995) *Mar Ecol Prog Ser* 122: 179-191.
- 5 Fernandez C, et al. (2006) *Estuar Coast Shelf S* 68: 259-270.
- 6 Pinsino A, Matranga V (2015) *Dev Comp Immunol* 49: 198-205.
- 7 Barnes DKA, et al. (2001) *J Mar Biol Assoc U K* 81: 359-360.
- 8 Shpigel M, et al. (2004) *Aquaculture* 232: 343-355.
- 9 Girard D, et al. (2012) *Mar Ecol Evol Persp* 33: 377-385.
- 10 Privitera D, et al. (2012) *Harmful Algae* 18: 16-23.
- 11 Asnaghi V, et al. (2014) *Mar Environ Res* 93: 78-84.
- 12 Bianchi CN, et al. (2014) *Mediterr Mar Sci* 15: 482-497.
- 13 Collard M, et al. (2016) *ICES J Mar Sci* 73: 727-738.
- 14 Garcia E, et al. (2018) *Mar Environ Res* 139: 35-45.
- 15 Machado I, et al. (2019) *Invertebr Biol* 138: 40-54.
- 16 Yeruham E, et al. (2019) *Aquaculture* 501: 7-13.
- 17 Byrne M (1990) *Mar Biol* 104: 275-289.
- 18 Turon X, et al. (1995) *Mar Ecol Prog Ser* 122: 193-204.
- 19 Jennings S, Kaiser MJ (1998). In: Blaxter JHS et al., editors. London: Academic Press - Elsevier Science Ltd. 201-352.
- 20 Hereu B, et al. (2004) *Mar Biol* 144: 1011-1018.
- 21 Jacinto D, Cruz T (2012). 2-9 October 2010, Göttingen, Germany. *Zoosymposia*. 231-240.
- 22 Farina S, et al. (2018) *Mar Environ Res* 139: 182-192.
- 23 Micheli F, et al. (2005) *Ecol Monogr* 75: 81-102.
- 24 Hereu B, et al. (2012) *PLoS ONE* 7: 12.
- 25 Pages JF, et al. (2013) *PLoS ONE* 8: e62719.
- 26 Bulleri F, et al. (2018) *Estuar Coast Shelf S* 201: 114-122.
- 27 Jacinto D, et al. (2013) *Mar Biol* 160: 1135-1146.
- 28 Messinetti S, et al. (2018) *Environ Pollut* 237: 1080-1087.
- 29 Herreid CF (1980) *Comp Biochem Phys A* 67: 311-320.
- 30 Siikavuopio SI, et al. (2007) *Aquaculture* 266: 112-116.
- 31 Diaz RJ, Rosenberg R (2008) *Science* 321: 926-929.
- 32 Rabalais NN, et al. (2010) *Biogeosciences* 7: 585-619.
- 33 Galic N, et al. (2019) *Sci Total Environ* 652: 736-743.
- 34 Basuyaux O, Mathieu M (1999) *Aquaculture* 174: 95-107.
- 35 Neff JM (2002) Elsevier Ltd.
- 36 Castege I, et al. (2014) *Deep-Sea Res Pt II* 106: 192-197.
- 37 Duan MN, et al. (2018) *Ecotoxicol Environ Saf* 159: 109-119.
- 38 Rocha AC, et al. (2018) *Environ Res* 161: 354-363.
- 39 Oral R, et al. (2019) *Ecotoxicol Environ Saf* 170: 55-61.
- 40 Warnau M, et al. (1996) *Mar Ecol Prog Ser* 141: 83-94.
- 41 Dorey N, et al. (2018) *J Environ Radioact* 190: 20-30.
- 42 Warnau M, et al. (1996) *Mar Environ Res* 41: 343-362.
- 43 Bellas J (2006) *Sci Total Environ* 367: 573-585.
- 44 Manzo S, et al. (2008) *Arch Environ Con Tox* 54: 57-68.
- 45 Stabili L, Pagliara P (2015) *Chemosphere* 134: 60-66.
- 46 Corinaldesi C, et al. (2017) *Sci Rep* 7: 12.
- 47 Antizar-Ladislao B (2008) *Environ Int* 34: 292-308.
- 48 Martino C, et al. (2017) *Mar Environ Res* 130: 12-20.
- 49 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 50 Bonaventura R, et al. (2018) *Mar Environ Res* 139: 113-121.
- 51 Morroni L, et al. (2018) *Ecotoxicol Environ Saf* 148: 923-929.
- 52 Ternengo S, et al. (2018) *Mar Pollut Bull* 129: 293-298.
- 53 Di Natale M, et al. (2019) *Chemosphere* 216: 48-58.
- 54 Morroni L, et al. (2019) *Water Res* 160: 415-423.
- 55 Feehan CJ, Scheibling RE (2014) *Mar Biol* 161: 1467-1485.
- 56 Boudouresque CF, et al. (1996) *Aquat Bot* 53: 245-250.
- 57 Pesando D, et al. (1996) *Aquat Toxicol* 35: 139-155.
- 58 Cebrian E, et al. (2011) *Biol Inva* 13: 1397-1408.
- 59 Tejada S, et al. (2013) *Mar Environ Res* 83: 48-53.
- 60 Felix-Hackradt FC, et al. (2018) *Hydrobiologia* 806: 187-201.
- 61 Neves RAF, et al. (2018) *Mar Environ Res* 135: 11-17.
- 62 Fernandez TV, et al. (2019) *Mar Pollut Bull* 141: 649-654.
- 63 Sala E, Zabala M (1996) *Mar Ecol Prog Ser* 140: 71-81.
- 64 Sala E, et al. (1998) *Oikos* 82: 425-439.
- 65 Medrano A, et al. (2019) *Mar Environ Res* 145: 147-154.
- 66 Guidetti P, et al. (2004) *Fish Res* 66: 287-297.
- 67 Gianguzza P, et al. (2006) *Fish Res* 81: 37-44.
- 68 Pais A, et al. (2007) *Estuar Coast Shelf S* 73: 589-597.
- 69 Pais A, et al. (2012) *J Coast Res* 28: 570-575.
- 70 Sala E, et al. (2012) *PLoS ONE* 7: e32742.
- 71 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.

Hippocampus spp.

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Medium	[1] [2]	Low	Medium	Low	[3] [4] [5] [6]	Medium	Low	Medium	2
	Salinity changes (decrease)	Medium	[1] [2]	Low	Medium	Low	[3] [4] [5] [6]	Medium	Low	Medium	2
	Temperature changes (increase)	Medium	[7] [8] [9] [10]	High	High	Low	[3] [8] [9] [4] [5] [6]	High	High	Medium	2
	Temperature changes (decrease)	Medium	[7]	High	Medium	Low	[3] [4] [5] [6]	Medium	Low	Medium	2
	Water flow (tidal current) changes	Low	[11]	Medium	Medium	Low	[3] [4] [5] [6]	Medium	Low	High	3
	Wave exposure changes	Low	[11] & EJ	Medium	Low	Low	[3] [4] [5] [6]	Medium	Low	High	3
	Changes in suspended solids (water clarity)	High	[12] & EJ	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Low	1
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Low	[13] [14] [10] [15]	Medium	Low	Low	[3] [16] [4] [5] [6]	Medium	Low	High	3
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	EJ	Low	Low	Low	[3] [4] [5] [6]	Medium	Low	Low	1
	Smothering and siltation rate changes (heavy)	Medium	EJ	Low	Low	Low	[3] [4] [5] [6]	Medium	Low	Medium	2
	Physical change	None	[14] [10]	High	Medium	Low	[3] [4] [5] [6]	Medium	Low	High	3
	Physical loss	None	EJ	Low	Low	Low	[3] [4] [5] [6]	Medium	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	High	EJ	Low	Low	High	EJ	Low	Low	Not sensitive	0
Noise changes	High	[17] [18]	Medium	High	Medium	[3] [4] [5] [6]	Medium	Low	Low	1	
Visual disturbance	Medium	[19] & EJ	Low	Low	High	[3] [4] [5] [6] [19]	Medium	Low	Low	1	
Chemical	Organic enrichment	High	EJ	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Low	1
	De-oxygenation	Low	[20] & EJ	Low	Low	Low	[3] [4] [5] [6]	Medium	Low	High	3
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	High	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0
	Hydrocarbon and PAH contamination	High	[21] [22] [23] [24] [25]	High	Low	Low	[3] [4] [5] [6]	Medium	Low	Low	1
	Radionuclide contamination	High	EJ	Low	Low	Low	[3] [4] [5] [6]	Medium	Low	Low	1
	Synthetic compound contamination	High	[22] [23] [24] [25]	High	Low	Low	[3] [4] [5] [6]	Medium	Low	Low	1
Transition elements & organo-metal contamination	High	[26] [22] [23] [24] [25] [27]	High	Low	Low	[3] [4] [5] [6]	Medium	Low	Low	1	
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Low	[28] [29] [30] [31] [32]	High	High	Low	[3] [29] [30] [4] [5] [6]	Medium	Low	High	3
	Introduction or spread of invasive non-indigenous species	High	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0
	Removal of non-target species	Low	[33]	Medium	Medium	Low	[3] [34] [4] [5] [6]	Medium	Low	High	3
	Removal of target species	None	[35] [13] [14] [10]	High	High	Low	[3] [34] [4] [5] [6]	Medium	Low	High	3

References

- 1 Lin Q, et al. (2009) *Aquaculture* 292: 111-116.
- 2 da Hora MDC, et al. (2016) *Aquaculture* 463: 1-6.
- 3 Foster SJ, Vincent ACJ (2004) *J Fish Biol* 65: 1-61.
- 4 Woodall LC, et al. (2015) *Conserv Genet* 16: 1139-1153.
- 5 Curtis JMR, et al. (2017) *J Fish Biol* 91: 1603-1622.
- 6 Woodall LC, et al. (2018) *Mar Biol* 165: 19.
- 7 Planas M, et al. (2012) *J Exp Mar Biol Ecol* 438: 154-162.
- 8 Aurelio M, et al. (2013) *Mar Biol* 160: 2663-2670.
- 9 Faleiro F, et al. (2015) *Conserv Physiol* 3: 7.
- 10 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 11 Qin G, et al. (2014) *J Exp Mar Biol Ecol* 461: 337-343.
- 12 Wenger AS, et al. (2013) *Coral Reefs* 32: 369-374.
- 13 Curtis JMR, Vincent ACJ (2008) *Conserv Biol* 22: 1225-1232.
- 14 Vincent ACJ, et al. (2011) *J Fish Biol* 78: 1681-1724.
- 15 Gristina M, et al. (2017) *Hydrobiologia* 784: 9-19.
- 16 Caldwell IR, Vincent ACJ (2013) *Environ Biol Fishes* 96: 67-75.
- 17 Anderson PA, et al. (2011) *Aquaculture* 311: 129-138.
- 18 Claassens L, Hodgson AN (2018) *J Zool* 304: 98-108.
- 19 De Brauwer M, et al. (2019) *Sci Rep* 9: 748.
- 20 Ekau W, et al. (2010) *Biogeosciences* 7: 1669-1699.
- 21 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 22 Nenciu MI, et al. (2013) *J Environ Prot Ecol* 14: 1695-1702.
- 23 Nenciu MI, et al. (2014) *J Environ Prot Ecol* 15: 1650-1659.
- 24 Tiralongo F, Baldacconi R (2014) *Acta Ichthyol Piscat* 44: 99-104.
- 25 Gristina M, et al. (2015) *Mar Ecol Evol Persp* 36: 57-66.
- 26 Uncumusaoglu AA, et al. (2012) *Fresenius Environ Bull* 21: 3418-3420.
- 27 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 28 Alcaide E, et al. (2001) *J Fish Dis* 24: 311-313.
- 29 Balcazar JL, et al. (2010) *J Antibiot* 63: 271-274.
- 30 Balcazar JL, et al. (2010) *Int J Syst Evol Microbiol* 60: 892-895.
- 31 Balcazar JL, et al. (2012) *J Antibiot* 65: 301-305.
- 32 Balcazar JL, et al. (2012) *Anton Leeuw Int J G* 102: 187-191.
- 33 Vincent ACJ, Hall HJ (1996) *Trends Ecol Evol* 11: 360-361.
- 34 Curtis JMR (2006) *J Fish Biol* 69: 1855-1859.
- 35 Salin KR, et al. (2005) *Fish Manag Ecol* 12: 269-273.

Sciaena umbra

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] [2] & EJ	Low	Medium	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Salinity changes (decrease)	Medium	[1] & EJ	Low	Medium	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Temperature changes (increase)	Medium	[7] & EJ	Low	Low	Medium	[3] [4] [5] [6] [7]	Medium	Low	Medium	2
	Temperature changes (decrease)	Medium	[7] & EJ	Low	Low	Medium	[3] [4] [5] [6] [7]	Medium	Low	Medium	2
	Water flow (tidal current) changes	High	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0
	Wave exposure changes	High	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0
	Changes in suspended solids (water clarity)	High	[8] & EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Low	[9] [10] & EJ	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0
	Smothering and siltation rate changes (heavy)	Medium	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Low	1
	Physical change	Low	[10] & EJ	Low	Low	Low	[3] [4] [5] [6]	Medium	Low	High	3
	Physical loss	None	EJ	Low	Low	Low	[3] [4] [5] [6]	Medium	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	Medium	[11] [12] [13]	Medium	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
Noise changes	High	[14] [15] [16] [17] [18]	High	Medium	High	[3] [4] [5] [14] [6] [15] [16] [17]	High	Medium	Not sensitive	0	
Visual disturbance	High	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0	
Chemical	Organic enrichment	High	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0
	De-oxygenation	Medium	[19] [20] [1]	Medium	Low	High	[3] [4] [5] [6]	Medium	Low	Low	1
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	High	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0
	Hydrocarbon and PAH contamination	Medium	[21] [22] [23] [24] [25] [26] [27] [28]	High	Medium	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Radionuclide contamination	Medium	[29] [30] [31]	Low	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Synthetic compound contamination	Medium	[32] [10] [33]	Medium	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
	Transition elements & organo-metal contamination	Medium	[34] [35] [10] [36] [37]	Medium	Low	Medium	[3] [4] [5] [6]	Medium	Low	Medium	2
Biological	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Medium	[38]	Medium	Low	Medium	[3] [4] [5] [6] [38]	Medium	Low	Medium	2
	Introduction or spread of invasive non-indigenous species	High	[39] [40]	Medium	Low	High	[3] [4] [5] [6] [40]	Medium	Low	Not sensitive	0
	Removal of non-target species	Low	EJ	Low	Low	Low	[3] [41] [4] [5] [6] [42] [43] [44]	High	High	High	3
	Removal of target species	Low	[45] [10] [46]	High	High	Low	[47] [3] [4] [48] [5] [6] [49] [42] [43] [44]	High	High	High	3

References

- 1 Ern R, Esbaugh AJ (2018) *Comp Biochem Phys A* 222: 52-59.
- 2 Olsen Z (2019) *Mar Coast Fish* 11: 86-96.
- 3 Fiorentino F, et al. (2001). 266 p.
- 4 Ragonese S, et al. (2002). 4-9 June 2001, Riviera del Conero, Italy. *SIBM*. 789–791.
- 5 La Mesa M, et al. (2008) *Aquat Living Resour* 21: 153-161.
- 6 Grau A, et al. (2009) *Sci Mar* 73: 67-81.
- 7 Pankhurst NW, Munday PL (2011) *Mar Freshw Res* 62: 1015-1026.
- 8 Wenger AS, et al. (2013) *Coral Reefs* 32: 369-374.
- 9 Dias M, et al. (2016) *Mar Biol Res* 12: 331-344.
- 10 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 11 Ayaz A, et al. (2006) *Fish Res* 79: 267-271.
- 12 Dantas DV, et al. (2012) *Environ Sci Pollut R* 19: 600-606.
- 13 Nadal MA, et al. (2016) *Environ Pollut* 214: 517-523.
- 14 Codarin A, et al. (2009) *Mar Pollut Bull* 58: 1880-1887.
- 15 Buscaino G, et al. (2010) *Mar Environ Res* 69: 136-142.
- 16 Filiciotto F, et al. (2013) *Aquaculture* 414: 36-45.
- 17 La Manna G, et al. (2016) *Mar Pollut Bull* 110: 324-334.
- 18 de Jong K, et al. (2018) *Environ Pollut* 237: 814-823.
- 19 Ekau W, et al. (2010) *Biogeosciences* 7: 1669-1699.
- 20 Altenritter ME, et al. (2018) *Mar Ecol Prog Ser* 589: 193-208.
- 21 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 22 Tornambè A, et al. (2012) *Mar Environ Res* 77: 141-149.
- 23 Herdter ES, et al. (2017) *Fish Res* 191: 60-68.
- 24 Johansen JL, Esbaugh AJ (2017) *Aquat Toxicol* 187: 82-89.
- 25 Pulster EL, et al. (2017) *Environ Toxicol Chem* 36: 3168-3176.
- 26 Khursigara AJ, et al. (2018) *Aquat Toxicol* 203: 194-201.
- 27 Magnuson JT, et al. (2018) *Ecotoxicol Environ Saf* 166: 186-191.
- 28 Johansen JL, Esbaugh AJ (2019) *Comp Biochem Phys C* 219: 35-41.
- 29 Neff JM (2002) Elsevier Ltd.
- 30 Battle JVI, et al. (2014) *Sci Total Environ* 487: 143-153.
- 31 Lacoue-Labarthe T, et al. (2018) *J Environ Radioact* 192: 426-433.
- 32 Baptista J, et al. (2013) *J Sea Res* 76: 22-30.
- 33 Anacleto P, et al. (2018) *Environ Res* 164: 186-196.
- 34 Della Torre C, et al. (2010) *Sci Total Environ* 408: 2136-2145.
- 35 Morcillo P, et al. (2016) *Chemosphere* 144: 225-233.
- 36 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 37 Maulvault AL, et al. (2019) *Environ Pollut* 245: 427-442.
- 38 Kacem H, Miquel J (2019) *Zoomorphology* 138: 185-192.
- 39 Davidson AD, et al. (2015) *Bot Mar* 58: 55-79.
- 40 Mincarelli LF, et al. (2018) *Toxicol* 156: 66-71.
- 41 Francour P, et al. (2001) *Aquat Conserv* 11: 155-188.
- 42 Consoli P, et al. (2013) *J Sea Res* 79: 20-26.
- 43 Harmelin-Vivien M, et al. (2015) *Glob Ecol Conserv* 3: 279-287.
- 44 Di Franco A, et al. (2018) *Biol Conserv* 221: 175-181.
- 45 Guidetti P, et al. (2014) *PLoS ONE* 9: e91841.
- 46 Tsagarakis K, et al. (2018) *J Appl Ichthyol* 34: 842-849.
- 47 Bell JD (1983) *J Appl Ecol* 20: 357-369.
- 48 Macpherson E, Raventos N (2005) *Mar Biol* 148: 167-177.
- 49 Martin P, et al. (2012) *Sci Mar* 76: 607-618.

Diplodus spp.

Pressure type	Pressures	Resistance	Source resistance	Quality of evidence	Applicability of evidence	Resilience	Source resilience	Quality of evidence	Applicability of evidence	Sensitivity	Sensitivity value
Physical	Emergence regime changes	NR				NR				NA	NA
	Salinity changes (increase)	Low	[1] [2]	Low	Low	Medium	[3] [4] [5] [6]	Low	Low	Medium	2
	Salinity changes (decrease)	Medium	[7] [8] [1] [9] [2]	Low	Low	Medium	[3] [4] [5] [6]	Low	Low	Medium	2
	Temperature changes (increase)	Medium	[10] [11] [1] [12] [9] [13] [14] [2]	Medium	Medium	Medium	[11] [3] [12] [4] [5] [6]	Medium	Medium	Medium	2
	Temperature changes (decrease)	Medium	[11] [12] [2]	Medium	Medium	Medium	[11] [3] [12] [4] [5] [6]	Medium	Medium	Medium	2
	Water flow (tidal current) changes	High	EJ	Low	Low	High	[3] [4] [5] [6]	Low	Low	Not sensitive	0
	Wave exposure changes	High	EJ	Low	Low	High	[3] [4] [5] [6]	Low	Low	Not sensitive	0
	Changes in suspended solids (water clarity)	High	[15] & EJ	Low	Low	High	[3] [4] [5] [6]	Low	Low	Not sensitive	0
	Habitat structure changes - removal of substratum (extraction)	NR				NR				NA	NA
	Abrasion/ disturbance at the surface of the substratum	Medium	[16] [17] [18]	Medium	Low	High	[3] [4] [5] [17] [6]	Medium	Medium	Low	1
	Penetration and/or disturbance of the substratum below the surface	NR				NR				NA	NA
	Smothering and siltation rate changes (light)	High	EJ	Low	Low	High	[3] [4] [5] [6]	Low	Low	Not sensitive	0
	Smothering and siltation rate changes (heavy)	Medium	EJ	Low	Low	High	[3] [4] [5] [6]	Low	Low	Low	1
	Physical change	Low	[16] [17] [18] [19] [20]	Medium	Low	Medium	[3] [17] [4] [5] [6]	Medium	Medium	Medium	2
	Physical loss	None	EJ	Low	Low	Low	[3] [4] [5] [6]	Low	Low	High	3
	Barrier to species movement	NR				NR				NA	NA
	Electromagnetic changes	NR				NR				NA	NA
	Death or injury by collision	NR				NR				NA	NA
	Introduction of light	NR				NR				NA	NA
	Litter	Medium	[21] [22] [23]	Medium	Low	Medium	[3] [4] [5] [6]	Low	Low	Medium	2
Noise changes	High	[24] [25] [26] [27]	Medium	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0	
Visual disturbance	High	EJ	Low	Low	High	[3] [4] [5] [6]	Medium	Low	Not sensitive	0	
Chemical	Organic enrichment	High	EJ	Low	Low	High	[3] [4] [5] [6]	Low	Low	Not sensitive	0
	De-oxygenation	Medium	[10] [28] [29] [1] [30]	High	High	High	[28] [3] [4] [5] [6]	Medium	Medium	Low	1
	Introduction of other substance (solid, liquid or gas)	NEv				NEv				NA	NA
	Nutrient enrichment	High	EJ	Low	Low	High	[3] [4] [5] [6]	Low	Low	Not sensitive	0
	Hydrocarbon and PAH contamination	Medium	[31] [32] [33] [34]	Low	Low	High	[3] [4] [5] [6]	Low	Low	Low	1
	Radionuclide contamination	Medium	[35] [36]	Low	Low	High	[3] [4] [5] [6]	Low	Low	Low	1
	Synthetic compound contamination	Medium	[37] [38] [18] [14] [39] [40] [41] [42]	Medium	Medium	High	[3] [4] [5] [39] [6]	Medium	Medium	Low	1
Biological	Transition elements & organo-metal contamination	Medium	[43] [18] [44] [39] [45]	High	Medium	High	[4] [3] [5] [6]	Low	Low	Low	1
	Genetic modification and translocation of indigenous species	NEv				NEv				NA	NA
	Introduction of microbial pathogens	Medium	[46] [47] [48] [49]	Low	Low	High	[3] [46] [4] [48] [5] [6] [49]	Medium	Medium	Low	1
	Introduction or spread of invasive non-indigenous species	Medium	[50] [51] [52] [53] [54] [55] [56]	Medium	Medium	Medium	[3] [4] [5] [53] [6] & EJ	Medium	Low	Medium	2
	Removal of non-target species	Low	[19] [20] [57]	Medium	Medium	Low	[58] [59] [60] [61]	Medium	Low	High	3
Removal of target species	Low	[18] [62] [57] [63]	Medium	Medium	Low	[64] [58] [59] [65] [66] [60] [63] [62] [61]	Medium	Medium	High	3	

References

- 1 Vinagre C, et al. (2010) *Estuar Coast Shelf S* 86: 197-202.
- 2 Sbragaglia V, et al. (2019) *Sci Rep* 9: 11.
- 3 Matic-Skoko S, et al. (2007) *J Appl Ichthyol* 23: 152-157.
- 4 Ayyildiz H, et al. (2015) *J Mar Biol Assoc U K* 95: 185-191.
- 5 Soykan O, et al. (2015) *Acta Ichthyol Piscat* 45: 39-55.
- 6 Cuadros A, et al. (2018) *PLoS ONE* 13: e0190278.
- 7 Strydom NA, Whitfield AK (2000) *Water Sa* 26: 319-328.
- 8 Fernandez C, et al. (2006) *Estuar Coast Shelf S* 68: 259-270.
- 9 Gonzalez-Wanguemert M, Perez-Ruzafa A (2012) *Mar Ecol Evol Persp* 33: 337-349.
- 10 Cerezo J, Garcia BG (2004) *J Appl Ichthyol* 20: 488-492.
- 11 Firat K, et al. (2005) *Isr J Aquacult Bamidgeh* 57: 105-114.
- 12 Pankhurst NW, Munday PL (2011) *Mar Freshw Res* 62: 1015-1026.
- 13 Madeira D, et al. (2013) *Comp Biochem Phys A* 166: 237-243.
- 14 Anacleto P, et al. (2018) *Environ Res* 164: 186-196.
- 15 Wenger AS, et al. (2013) *Coral Reefs* 32: 369-374.
- 16 Bonaca MO, Lipej L (2005) *Mar Ecol Evol Persp* 26: 42-53.
- 17 Dias M, et al. (2016) *Mar Biol Res* 12: 331-344.
- 18 Cerrano C, et al. (2017) *Aquat Conserv* 27: 303-323.
- 19 Cuadros A, et al. (2017) *Reg Stud Mar Sci* 14: 93-101.
- 20 Diaz-Gil C, et al. (2017) *Mar Biol* 164: 11.
- 21 Ayaz A, et al. (2006) *Fish Res* 79: 267-271.
- 22 Nadal MA, et al. (2016) *Environ Pollut* 214: 517-523.
- 23 Bessa F, et al. (2018) *Mar Pollut Bull* 128: 575-584.
- 24 Codarin A, et al. (2009) *Mar Pollut Bull* 58: 1880-1887.
- 25 Buscaino G, et al. (2010) *Mar Environ Res* 69: 136-142.
- 26 Filiciotto F, et al. (2013) *Aquaculture* 414: 36-45.
- 27 de Jong K, et al. (2018) *Environ Pollut* 237: 814-823.
- 28 Silkin YA, Silkina EN (2005) *J Evol Biochem Physiol* 41: 527-532.
- 29 Ekau W, et al. (2010) *Biogeosciences* 7: 1669-1699.
- 30 Blasnig M, et al. (2013) *Biogeosciences* 10: 7647-7659.
- 31 Neff JM (2002) Elsevier Ltd.
- 32 Viarengo A, et al. (2007) *Arch Environ Con Tox* 53: 607-616.
- 33 Tornambè A, et al. (2012) *Mar Environ Res* 77: 141-149.
- 34 Herdter ES, et al. (2017) *Fish Res* 191: 60-68.
- 35 Battle JVI, et al. (2014) *Sci Total Environ* 487: 143-153.
- 36 Lacoue-Labarthe T, et al. (2018) *J Environ Radioact* 192: 426-433.
- 37 Baptista J, et al. (2013) *J Sea Res* 76: 22-30.
- 38 Ben Salem Z, Ayadi H (2017) *Euro-Mediterr J Environ Integrat* 2: 7.
- 39 Bouchoucha M, et al. (2018) *Mar Pollut Bull* 126: 31-42.
- 40 Guerriero G, et al. (2018) *Emir J Food Agric* 30: 688-694.
- 41 Merciai R, et al. (2018) *Mar Pollut Bull* 136: 10-21.
- 42 Rodrigues A, et al. (2019) *Ecotoxicology* 28: 612-618.
- 43 Morcillo P, et al. (2016) *Chemosphere* 144: 225-233.
- 44 Amara I, et al. (2018) *Environ Toxicol Pharmacol* 57: 115-130.
- 45 Maulvault AL, et al. (2019) *Environ Pollut* 245: 427-442.
- 46 Golomazou E, et al. (2014) *Aquat Living Resour* 27: 99-106.
- 47 Katharios P, et al. (2015) *Bmc Veterinary Research* 11: 6.
- 48 Katharios P, et al. (2015) *Sci Rep* 5: 13.
- 49 Ali NGM, et al. (2019) *Veterinary World* 12: 316-324.
- 50 Terlizzi A, et al. (2011) *Aquatic Biology* 12: 109-117.
- 51 Gorbi S, et al. (2014) *Mar Environ Res* 96: 2-11.
- 52 Davidson AD, et al. (2015) *Bot Mar* 58: 55-79.
- 53 Felling S, et al. (2017) *Aquatic Biology* 26: 27-31.
- 54 Magliozzi L, et al. (2017) *PLoS ONE* 12: e0185620.
- 55 Mincarelli LF, et al. (2018) *Toxicol* 156: 66-71.
- 56 Aydin M, Saglam H (2019) *Thalassas* 35: 319-321.
- 57 Tsagarakis K, et al. (2018) *J Appl Ichthyol* 34: 842-849.
- 58 Francour P, et al. (2001) *Aquat Conserv* 11: 155-188.
- 59 Lloret J, Planes S (2003) *Mar Ecol Prog Ser* 248: 197-208.
- 60 Consoli P, et al. (2013) *J Sea Res* 79: 20-26.
- 61 Di Franco A, et al. (2018) *Biol Conserv* 221: 175-181.
- 62 Guidetti P, et al. (2014) *PLoS ONE* 9: e91841.
- 63 Di Lorenzo M, et al. (2014) *Mar Ecol Prog Ser* 502: 245-255.
- 64 Bell JD (1983) *J Appl Ecol* 20: 357-369.
- 65 Macpherson E, Raventos N (2005) *Mar Biol* 148: 167-177.
- 66 Martin P, et al. (2012) *Sci Mar* 76: 607-618.