

Threat/Driver	Scale of Impacts (km ²)	Taxon	Region	Temperate/tropical	Measured as	Source
Environmental						
Hydrological	1	<i>Halodule wrightii</i>	Indian River Lagoon, Florida,	temperate	areal cover (photography), quadrats (shoot density)	Morris & Virnstein 2004
Dune migration	1	<i>Cymodocea nodosa</i>	Alfacs Bay, Spain	temperate	transects, aerial photography	Marba & Duarte 1995
Fish farms	0.001 - 0.100	<i>Posidonia oceanica</i>	Mediterranean	temperate	transects, cover and shoot density	Delgado et al. 1999
Propeller Scarring	0.001 - 0.100	<i>Zostera marina</i> , <i>Ruppia maritima</i> , <i>Thalassia testudinum</i> , <i>Halodule wrightii</i> , <i>Syringodium filiforme</i>	Western Atlantic, USA	temperate/tropical	areal cover (photography), quadrats (shoot density, percent cover)	Orth et al 2001, Dawes et al. 1997, Kenworthy et al. 2002
Moorings	0.001 - 0.100	<i>Posidonia spp</i> , <i>Amphibolis spp.</i>	Rottneest Island, Australia	temperate	underwater surveys, areal cover (photography)	Walker et al. 1989, Hastings et al. 1995
Clam dredging	0.01 - 1.00	<i>Zostera marina</i> , <i>Ruppia maritima</i>	Chincoteague Bay, Virginia, Maryland, USA	temperate	areal cover (photography)	Orth et al. 2002
Mussel dredging	0.01 - 1.00	<i>Zostera marina</i>	Maine, USA	temperate	areal cover (photography), shoot density and underwater video	Neckles et al. 2005
Dredging	0.10 - 1.00	<i>Posidonia sinuosa</i>	South Western Australia	temperate	transects: cover and shoot density	Gordon et al. 1994
Sewage inputs	10	<i>Posidonia oceanica</i>	Western Mediterranean	temperate	observations	Hemminga & Duarte 2000
Eutrophication (light)	10 - 100	<i>Posidonia sinuosa</i> and <i>P. australis</i>	Cockburn Sound, Australia	temperate	areal cover (photography), shoot density, productivity	Cambridge & McComb 1984, Kendrick et al. 2002.
Sediment deposition	10 - 100	<i>Heterozostera tasmanica</i>	Westernport Bay, Australia	temperate	aerial photography, shoot density	Bulthuis et al. 1984
Turbidity/Eutrophication	10 -100	<i>Zostera marina</i>	Denmark	temperate	areal cover	Fredericksen et al. 2004 a,b
Global - Rising sea temperature	100	<i>Zostera marina</i>	France	temperate	cover (areal photography)	Glemarec et al. 1997

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Eutrophication (N), suffocation by macroalgae	1000	<i>Zostera marina</i>	Massachusetts, USA	temperate	areal cover, shoot density biomass and productivity	Hauxwell et al. 2001, Short and Burdick 1996
Eutrophication (N)	10-100	<i>Zostera marina</i>	Rhode Island, USA	temperate	cover (aerial photograph)	Short et al. 1996
Global Sea Level/submarine erosion	10,000	<i>Posidonia oceanica</i>	Mediterranean, Spain	temperate	shoot population decline rates	Marba & Duarte 1997
Tide, light and fisheries	100 -1000	<i>Zostera marina</i>	Dutch Wadden Sea	temperate	areal cover (photography)	DeJonge & DeJonge
Turbidity/eutrofication	100 -1000	<i>Zostera marina</i> , <i>Ruppia maritima</i>	Chesapeake Bay, USA	temperate	areal cover (photography)	Orth & Moore, 1983
Eutrophication	no scale	<i>Zostera marina</i>	Baltic Sea, Finland	temperate	biomass in plots over time	Boström et al. 2002
Vessel grounding	0.1	Tropical, mixed (<i>Thalassia hemprichii</i> , <i>Enhalus acoroides</i> , <i>Syringodium isoetifolium</i> , <i>Halodule uninervis</i> , <i>Cymodocea serrulata</i> , <i>Halophila ovalis</i>)	Philippines	tropical	transects: cover, shoot density	Olesen et al. 2004
Vessel grounding	0.1	<i>Thalassia testudinum</i> , <i>Halodule wrightii</i> , <i>Syringodium filiforme</i>	South Florida, USA	tropical	areal cover (photography), shoot density, biomass	Whitfield et al. 2002
Fishfarms	0.001 - 0.100	<i>Posidonia oceanica</i>	Mediterranean	temperate	transects, cover and density	Holmer et al. 2003
Thermal pollution	0.01 - 1.00	<i>Thalassia testudinum</i>	Biscayne Bay, Florida, USA	tropical	transects: biomass and productivity	Zieman & Wood 1975

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Turbidity, sedimentation	0.100 - 10	Tropical mixed (<i>Thalassia hemprichii</i> , <i>Enhalus acoroides</i> , <i>Syringodium isoetifolium</i> , <i>Halodule uninervis</i> , <i>Cymodocea serrulata</i> , <i>C. rotundata</i> , <i>Halophila ovalis</i>)	Philippines	tropical	transects, cover and shoot density	Terrados et al. 1998
Dredging	10	<i>Thalassia testudinum</i> , <i>Halodule wrightii</i> , <i>Syringodium filiforme</i>	Laguna Madre, Texas, USA	tropical	areal cover (photography), transects	Onuf 1994
Propeller Scarring	10 - 100	<i>Thalassia testudinum</i> , <i>Halodule wrightii</i> , <i>Syringodium filiforme</i>	South Florida, USA	tropical	areal cover (photography)	Sargent et al. 1995
Dredging and filling	10 - 100	<i>Thalassia testudinum</i> , <i>Halodule wrightii</i> , <i>Syringodium filiforme</i>	Boca Ciega Bay, Florida, USA	tropical	cover (aerial photography), biomass	Taylor and Saloman 1968
Coastal upwelling (nutrients)	10 -100	<i>Halodule uninervis</i> , <i>Halophila ovalis</i>	Indian Ocean, Oman	tropical	transects, cover, and shoot density	Jupp et al. 1996
Eutrophication (N)	10 -100	<i>Thalassia testudinum</i> , <i>Halodule wrightii</i>	Tampa Bay, Florida, USA	tropical	areal cover (photography)	Lewis 1987
Sediment resuspension	10-100	<i>Zostera capricornii</i> , <i>Halodule uninervis</i> , <i>Halophila ovalis</i>	Morton Bay, Australia	tropical	areal cover (photography), transects	Abal & Dennison. 1996, Abal et al. 1998

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Hydrological	100 - 1000	<i>Halodule wrightii</i>	Laguna Madre, Texas, USA	tropical	areal cover (photography), shoot density	Quammen and Onuf 1993
Hydrological	100 -1000	<i>Thalassia testudinum</i>	Florida Bay, USA	tropical	areal cover, shoot density	Robblee et al. 1991

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Biological						
Burial by bioturbation	0.001	<i>Zostera noltii</i>	Wadden sea, Netherlands	temperate	shoot density, biomass	Philippart 1994
Limpet grazing	0.001	<i>Zostera marina</i>	Monterrey Bay, California, USA	temperate	leaf growth, productivity, carbon allocation	Zimmerman et al. 1996
Introduced species (<i>Caulerpa taxifolia</i>)	0.01	<i>Posidonia oceanica</i>	Mediterranean, France	temperate	transects: cover and shoot density, species composition	Meinesz & Hesse 1991
Urchin grazing	0.1	<i>Posidonia australis</i>	Botany Bay, Australia	temperate	areal cover (photography)	Larkum & West 1990
Cownose rays	0.001 - 0.100	<i>Zostera marina</i>	Chesapeake Bay, USA	temperate	areal cover	Orth 1975
Anemone smothering	0.001 - 10	<i>Zostera marina</i>	San Diego, California, USA	temperate	shoot density, leaf growth	Williams & Heck 2001
Water fowl herbivory	0.1 - 1.0	<i>Zostera noltii</i>	Wadden Sea, Netherlands	temperate	biomass	Nacken & Reise 2000
Brown Tide	10	<i>Zostera marina</i>	Long Island Bays, USA	temperate	areal cover, shoot density	Dennison 1989
Wasting disease (<i>Labyrinthula zosteraea</i>)	1000 - 10000	<i>Zostera marina</i>	North Atlantic, USA, Europe	temperate	areal cover, shoot density	Rasmussen 1977, den Hartog 1987, 1989
Wasting disease (<i>Labyrinthula zosteraea</i>)	10-100	<i>Zostera marina</i>	Great Bay Estuary, NH, USA	temperate	areal cover (photography)	Short et al. 1986
Urchin Grazing	1.00	<i>Syringodium filiforme</i>	Florida Keys, USA	tropical	transects: cover and shoot density, species composition, seedling recruitment	Peterson et al. 2002
Dugong Grazing	0.001 - 0.010	<i>Zostera capricornii</i> , <i>Halophila ovalis</i>	Moreton Bay, Queensland, Australia	tropical	shoot density, above and below ground biomass	Preen 1995
Urchin Grazing	10-100	<i>Thalassia testudinum</i> , <i>Halodule wrightii</i> , <i>Syringodium filiforme</i>	South Florida, USA	tropical	transects: cover and shoot density, species composition	Rose et al. 1999, Camp et al. 1973
Brown Tide	10-100	<i>Halodule wrightii</i>	Laguna Madre, Texas, USA	tropical	transects, biomass	Onuf 1996, 2000

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Turtle Grazing	0.01	<i>Thalassia testudinum</i>	St. Croix, Virgin Islands, USA	tropical	production, biomass, leaf turnover	Zieman et al. 1984

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Extreme Events						
Heat Waves (high water temperatures)	0.01	<i>Zostera marina</i>	Baltic Sea, Germany	temperate	shoot density, biomass	Reusch et al. 2005
Ice scour	0.1	<i>Zostera marina</i>	Nova Scotia, Canada	temperate	transects, quadrats (biomass)	Robertson and Mann 1984
Floods - Pulsed turbidity	1000	<i>Zostera capricornii</i> , <i>Halodule</i> spp., <i>Halophila</i> spp.	Hervey Bay, Queensland, Australia	tropical	transects, percent cover, shoot density	Preen et al. 1995, Longstaff & Dennison 1999
Hurricanes, cyclones	not reported	Tropical mixed	Queensland, Australia	tropical	transects, standing crop	Birch & Birch 1984

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