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| CV header |  Dr Carolyn J. Lundquist | https://one.niwa.co.nz/download/attachments/15761512/NIWA_colour_Hor.jpg?api=v2 |

**Present position and institution**

Principal Scientist – Marine Ecology, National Institute of Water & Atmospheric Research

Associate Professor – School of Environment, University of Auckland

PO Box 11115, Hamilton, 3251, New Zealand

**Specialist expertise**

* Scenarios and models of biodiversity and ecosystem services
* Marine spatial planning and biodiversity modelling
* Social-ecological systems
* Coastal and estuarine ecology, including mangroves, seagrass and shellfish restoration
* Disturbance/recovery dynamics and connectivity in marine ecosystems
* Climate change impacts on marine systems

**Professional experience**

**Summary of experience**

Principal Scientist and Associate Professor with >20 years post-graduate experience in ecological research and consultancy projects assessing the impacts of human activities on marine ecosystems. Her publication record includes >120 peer-reviewed publications and >100 technical reports. She regularly leads large, multi-disciplinary research projects for MBIE, NIWA SSIF, National Science Challenges and central and regional government organisations.

Example projects

* IPBES (United Nations). Co-chair, Task force on global biodiversity models and scenarios framework. (2016-2023)
* Sustainable Seas National Science Challenge (NSC) ($71 million). Programme leader, social-ecological systems (2014-2019); Project leader, spatial decision-support tools (2014-2024)
* Decision-support tools to inform marine spatial planning and identification of significant ecological areas. Project leader, commercial, NSC and NIWA SSIF (since 2005)
* Marine biodiversity, connectivity and health. Project leader, NIWA SSIF (since 2010)
* Coastal wetland research including mangrove and seagrass ecosystems and ecosystem services. Project leader, commercial, MBIE and NIWA SSIF (since 2010)

**Academic qualifications**

2000 PhD Ecology, University of California at Davis (USA).

1993 BS Biology, University of California at Los Angeles (USA).

**Professional positions held**

2016- Principal Scientist - Marine Ecology, NIWA Hamilton (80%).

2018- Associate Professor – Institute of Marine Science, University of Auckland (20%).

2012-2018 Senior Lecturer– Institute of Marine Science, University of Auckland (20%).

2000-2016 Scientist - Marine Ecology, NIWA Hamilton.

**Selection of publications**

**Refereed Publications**

Jefferson, T.; Palomares, M.L.D.; **Lundquist**, C.J. (2022) Safeguarding seafood security, marine biodiversity and threatened species: can we have our fish and eat it too? Frontiers in Marine Science 9:826587.

Stephenson, F.; Rowden, A.; Brough, T.; Petersen, G.; Bulmer, R.; Leathwick, J.; Lohrer, A.M.; Ellis, J.I.; Bowden, D.; Geange. S.W.; Funnell, G.; Freeman, D.; Tunley, K.; Tellier, P.; Clark, D.; **Lundquist**, C.; Greenfield, B.; Tuck, I.; Mouton, T.L.; Neill, K.; Mackay, K.; Pinkerton, M.H.; Anderson, O.; Gorman, R.; Mills, S.; Watson, S.; Nelson, W.; Hewitt, J. (2022) Development of a seafloor community classification for the New Zealand region using a gradient forest approach. Frontiers in Marine Science 8:792712.

Bulmer, R.H., Stephenson, F., Lohrer, A.M., **Lundquist**, C.J., Madarasz-Smith, A., Pilditch, C.A., Thrush, S.F., and Hewitt, J.E. (2022) Informing the management of multiple stressors on estuarine ecosystems using an expert-based Bayesian Network model. Journal of Environmental Management 301: 113576.

Stephenson, F.; Leathwick, J.R.; Geange, S.; Moilanen, A.; Pitcher, C.R.; **Lundquist**, C.J. (2021) Species composition and turnover models provide robust approximations of biodiversity in marine conservation planning. Ocean & Coastal Management 212: 105855.

Watson, R.T.; Sebunya, K.; Levin, L.A.; Eisenhauer, N.; Lavorel, S.; Hickler, T.; **Lundquist**, C.; Gasalla, M.; Reyers, B. (2021) Post-2020 aspirations for biodiversity. One Earth 4, 893-896.

Parsons, D.M.; Hartill, B.W.; Broekhuizen, N.; McKenzie, J.R.; Stephenson, F.; Petersen, G.L.; **Lundquist**, C.J. (2021) Integrating multi-disciplinary data sources relating to inshore fisheries management via a Bayesian network. Ocean & Coastal Management 208: 105636..

Delabre, I.; Rodriguez, L.O.; Smallwood, J.; Scharlemann, J.P.W.; Alcamo, J.; Antonarakis, A. S.; Rowhani, P.; Hazell, R.J.; Aksnes, D.L.; Balvanera, P.; **Lundquist**, C. J.; Gresham, C.; Alexander, A.E.; Stenseth, N.C. (2021) Actions on sustainable food production and consumption for the post-2020 global biodiversity framework. Science Advances 7(12): eabc8259.

Stephenson, F.; Hewitt; J.E.; Torres, L.G.; Mouton, T.L.; Brough, T.; Goetz, K.T.; **Lundquist**, C.J.; MacDiarmid, A.B.; Ellis, J., Constantine, R. (2021) Cetacean conservation planning in a global diversity hotspot: dealing with uncertainty and data deficiencies. Ecological Applications. Ecosphere 12(7):e03633.

Thrush, S.F.; Hewitt, J.E.; Gladstone-Gallagher, R.V.; Savage, C.; **Lundquist**, C.; O’Meara, T.; Vieillard, A.; Hillman, J.R.; Mangan, S.; Douglas, E.J.; Clark, D.E.; Lohrer, A.M.; Pilditch, C. (2021) Cumulative stressors reduce the self-regulating capacity of coastal ecosystems. Ecological Applications 31(1): e02223.

Jefferson, T.; Costello, M.J.; Zhao, Q.; **Lundquist**, C.J. (2021) Conserving threatened marine species and biodiversity requires 40% ocean protection. Biological Conservation 264: 109368.

Le Heron, E.; Le Heron, R.; Taylor, L.; **Lundquist**; C.J.; Greenaway, A. (2020) Remaking ocean governance in Aotearoa New Zealand through boundary-crossing narratives about ecosystem-based management. Marine Policy 122: 10422.

Rosa, Isabel M.D.; Lundquist, Carolyn J.; Ferrier, Simon; Alkemade, Rob; Drummond de Castro, Paula. (2020) Increasing capacity to produce scenarios and models for biodiversity and ecosystem services. Biota Neotropica 20(suppl. 1): e20201101.

**Lundquist**, C.J. Hashimoto, S.; Schoolenberg, M.; members of the IPBES task force on scenarios and models. (2020) Transformative scenarios for biodiversity conservation and sustainability. Conservation Letters 2020:13:c12713.

Pereira, L.; Davies, K.; den Belder, E.; Ferrier, S.; … **Lundquist**, C. (2020) Developing multi-scale and integrative nature-people scenarios using the Nature Futures Framework. People and Nature 2: 1172-1195.

Hillman, J.R.; **Lundquist**, C.J.; O’Meara, T.A.; Thrush, S.F. 2020. Loss of large animals differentially influences nutrient fluxes across a heterogeneous marine intertidal soft-sediment ecosystem. Ecosystems 24(2): 272-283.

Norrie, C.R.; Dunphy, B.J.; Roughan, M.; Weppe, S.; **Lundquist**, C.J. (2020) Spill-over from aquaculture may provide a larval subsidy for the restoration of mussel reefs. Aquaculture Environment Interactions. 12:231-249.

Bulmer, R.H.; Stephenson, F.; Jones, H.F.E.; Townsend, M.; Hillman, J.R.; Schwendenmann, L.; **Lundquist**, C.J. (2020) Blue carbon stocks and cross-habitat subsidies. Frontiers in Marine Science 7:380.

Zhao, Q.; Stephenson, F.; **Lundquist**, C.; Kaschner, K.; Jayathilake, D.; Costello, M.J. (2020) Where Marine Protected Areas would best represent 30% of ocean biodiversity. Biological Conservation 244: 108536.

Suyadi; Gao, J.; **Lundquist**, C.J.; Schwendenmann, L. 2020. Aboveground carbon stocks in rapidly expanding mangroves in New Zealand: regional assessment and economic valuation of blue carbon. Estuaries and Coasts 43:1456-1469.

Hamilton, D. J.; Bulmer, R. H.; Schwendenmann, L.; **Lundquist**, C. J. (2020). Nitrogen enrichment increases greenhouse gas emissions from emerged intertidal sandflats. Scientific Reports 10(1): 6686. 4

Davies, K.K.; Fisher, K.T.; Couzens, G.; Allison, A.; van Putten, E.I.; Dambacher, J.M.; Foley, M.; **Lundquist**, C.J. (2020) Trans-Tasman Cumulative Effects Management: A Comparative Study. Frontiers in Marine Science – Global Change and the Future Ocean 7:25.

Stephenson, F.; Goetz, K.; Sharp, B.; Mouton, T.; Beets, F.L.; Roberts, J.; MacDiarmid, A.B.; Constantine, R.; **Lundquist**, C.J. (2020) Modelling the spatial distribution of cetaceans in New Zealand waters. Diversity and Distributions 26(4): 495-516.

Hillman, J. R., F. Stephenson, S. F. Thrush, and C. J. **Lundquist**. (2020) Investigating changes in estuarine ecosystem functioning under future scenarios. Ecological Applications 30(4): e02090.

Hunt, H.L.; Pilditch, C.A.; Gladstone-Gallagher, R.; **Lundquist**, C.J. (2020) Spatial and temporal variation in the dispersal of clam populations on intertidal flats. Journal of Experimental Marine Biology and Ecology 524: 151291.

Hillman, J. R., **Lundquist**, C. J., Pilditch, C. A., & Thrush, S. F. (2020) The role of large macrofauna in mediating sediment erodibility across sedimentary habitats. Limnology and Oceanography 65(4), 683-693.

Stephenson, F.; Leathwick, J.; Francis, M.; Lundquist, C. (2020) A New Zealand demersal fish classification using Gradient Forest models. New Zealand Journal of Marine and Freshwater Research 54(1): 60-85.

Foley, M.M.; **Lundquist**, C.; Couzens, G.; Davies, K. (2019) The implications of uncertainty on cumulative effects management. Resource Management Journal. November 2019: 22-27.

Davies, K.; Couzens, G.; **Lundquist**, C.; Fisher, K. (2019) Partnerships and processes for cumulative effects management Resource Management Journal. November 2019: 5-10.

Allison, A.; Fisher, K.; **Lundquist**, C.; Davies, K. (2019) Knowledge and information needed to inform cumulative effects management in Aotearoa New Zealand. Resource Management Journal. November 2019: 16-22.

Stephenson, F.; Bulmer, R.; Meredyth-Young, M.; Hewitt, J.; **Lundquist**, C. (2019) Effects of benthic protection extent on recovery dynamics of a conceptual seafloor community. Frontiers in Marine Science 6:607.

Collier, K.J.; Pilditch, C.; **Lundquist**, C.J. (2019) Mountains-to-the-sea conservation: an island perspective. Aquatic Conservation: Marine and Freshwater Ecosystems. 29: 1383-1390.

Norrie, C.R.; Dunphy, B.J.; Ragg, N.L.C.; **Lundquist**, C.J. (2019) Comparative influence of genetics, ontogeny and the environment on elemental fingerprints in the shell of Perna canaliculus. Scientific Reports 9(1): 8533.

Li, M.; **Lundquist**, C.J.; Pilditch, C.A.; Rees, T.A.V.; Ellis, J. (2019) Implications of nutrient enrichment for conservation and management of seagrass Zostera muelleri meadows. Aquatic Conservation: Marine and Freshwater Ecosystems 29:1484–1502.

Rowden, A.A.; Stephenson, F.; Clark, M.R.; Anderson, O.F.; Guinotte, J.M.; Baird, S.J.; Roux, M,J.; Wadhwa, S.; Cryer, M.; **Lundquist**, C.J. (2019) Examining the utility of a decision-support tool to develop spatial management options for the protection of vulnerable marine ecosystems on the high seas around New Zealand. Ocean and Coastal Management 170: 1-16.

Suyadi; Gao, J.; **Lundquist**, C.J.; Schwendenmann, L. (2019) Land-based and climatic stressors of mangrove cover change in the Auckland Region, New Zealand. Aquatic Conservation: Marine and Freshwater Ecosystems 29:1466–1483.

Asaad, I.; **Lundquist**, C.J.; Erdmann, M.V.; Costello, M.J. (2019) An interactive atlas for marine biodiversity conservation in the Coral Triangle. Earth Syst. Sci. Data 11: 163-174.

Schwartz, M.; Belhabib, D.; Biggs, D.; Cook, C.; Fitzsimons, J.; Giordano, A.; Glew, L.; Gottlieb, S.; Kattan, G.; Knight, A.; **Lundquist**, C.; Lynam, A.; Masuda, Y.; Mwampamba, T.; Nuno, A.; Plumptre, A.; Ray, J.; Reddy, S.; Runge, M. (2019) A vision for documenting and sharing knowledge in conservation. Conservation Science and Practice. 1: e1.

Hewitt, J.E.; **Lundquist**, C.J.; Ellis, J. (2019) Assessing sensitivities of marine areas to stressors based on biological traits. Conservation Biology 33 (1): 142–151.

Hewitt, J; Faulkner, L.; Greenaway, A.; **Lundquist**, C. (2018) Proposed ecosystem-based management principles for New Zealand. Resource Management Journal. November 2018: 10-13.

Suyadi; Gao, J.; **Lundquist**, C.J.; Schwendenmann, L. (2018) Characterizing landscape patterns in changing mangrove ecosystems at high latitudes using spatial metrics. Estuarine, Coastal and Shelf Science 215: 1-10.

**Lundquist**, C.J.; Bowden, D.A.; Cartner, K.J.; Stephenson, F.; Tuck, I.; Hewitt, J.E. (2018) Assessing benthic responses to fishing disturbance over broad spatial scales that incorporate high environmental variation. Frontiers in Marine Science 5: 405.

Asaad, I.; **Lundquist**, C.J.; Erdmann, M.V.; Costello, M.J. (2018) Designating spatial priorities for marine biodiversity conservation in the Coral Triangle. Frontiers in Marine Science 5:400.

Hillman, J.R.; **Lundquist**, C.J.; Thrush, S.F. (2018) The neglected dimension: Connectivity in ecosystem processes. Frontiers in Marine Science 5:364.

Townsend, M.; Davies, K.K.; Hanley, N.; Hewitt, J.E.; **Lundquist**, C.J.; Lohrer, A.M. (2018) The challenge of implementing the marine ecosystem service concept. Frontiers in Marine Science 5 :359.

**Lundquist**, C.J.; Jones, T.C.; Parkes, S.M.; Bulmer, R.H. (2018) Changes in benthic community structure and sediment characteristics after natural recolonisation of the seagrass *Zostera muelleri*. Nature Scientific Reports 8 (1), 13250.

**Lundquist**, C.J. (2018) One size does not fit all: Do taxonomic biases in marine connectivity studies reduce effectiveness of marine conservation? Aquatic Conservation: Marine and Freshwater Ecosystems 28(5):1026-1029.

Norrie, C.; Dunphy, B.; Ragg, N.; **Lundquist**, C. (2018) Ocean acidification will interact with ontogeny to shape the trace element composition of bivalve shell. Limnology and Oceanography Letters 3 (5): 393-400.

Stephenson, F.; Leathwick, J.R.; Geange, S.W.; Bulmer, R.H.; Hewitt, J.E; Anderson, O.F.; Rowden, A.A.; **Lundquist**, C.J. (2018) Using Gradient Forests to summarize patterns in species turnover across large spatial scales and inform conservation planning. Diversity and Distributions 24:1641–1656.

Asaad, I.; **Lundquist**, C.J.; Erdmann, M.V.; Costello, M.J. (2018) Delineating priority areas for marine biodiversity conservation in the Coral Triangle. Biological Conservation 222:198-211.

Davies, K.; Murchie, A.A.; Kerr, V.; **Lundquist**, C. (2018) The evolution of Marine Protected Area planning in Aotearoa New Zealand: reflections on participation and process. Marine Policy 93: 113-127.

Reed, S.E.; Thomas, S.L.; Bednarek, A.T.; DellaSala, D.A.; Evans, M.C.; **Lundquist**, C.; Mascia, M.B.; McPherson, T.Y.; Watson, J.E.M. (2018) Roles for scientific societies to engage with conservation policy. Conservation Biology 32 (3): 513–515.

Davies, K.K.; Fisher, K.; Foley, M.; Greenaway, A.; Hewitt, J.; Le Heron, R.; Mikaere, H.; Speirs, R.; Ratana, K.; **Lundquist**, C. (2018) Navigating collaborative networks and cumulative effects for Sustainable Seas. Environmental Science and Policy 83:22-32.

Davies, K.; Fisher, K.; Foley, M.; Greenaway, A.; Hewitt, J.; Le Heron, R.; Mikaere, H.; Ratana, K.; Speirs, R.; **Lundquist**, C. (2017) From the mountains to the seas: developing a shared vision for addressing cumulative effects in Aotearoa New Zealand. Regions Magazine. 308 (4): 15-18.

Robinson, N.M.; Nelson, W.A.; Costello, M. J.; Sutherland, J.E.; **Lundquist**, C.J. (2017) A systematic review of incorporation of marine-based species distribution models (SDMs) with recommendations for best practice. Frontiers in Marine Science 4:421.

Rosa, Isabel M.D.; Pereira, Henrique M.; Ferrier, Simon; Alkemade, Rob; Acosta, Lilibeth A.; den Belder, Eefje; Fazel, Asghar M.; Fujimori, Shinichiro; Harfoot, Mike; Harhash, Khaled A.; Harrison, Paula A.; Hauck, Jennifer; Hendriks, Rob J.J.; Hernández, Gladys; Jetz, Walter; Karlsson-Vinkhuyzen, Sylvia I.; King, Nicholas; Kok, Marcel T.J.; Kolomytsev, Grygoriy O.; Lazarova, Tanya; Leadley, Paul; **Lundquist**, Carolyn J.; Márquez, Jaime García; Meyer, Carsten; Navarro, Laetitia M.; Nesshöver, Carsten; Ngo, Hien T.; Ninan, Karachepone N.; Palomo, Maria G.; Pereira, Laura M.; Peterson, Garry D.; Pichs, Ramon; Popp, Alexander; Purvis, Andy; Ravera, Federica; Rondinini, Carlo; Sathyapalan, Jyothis; Schipper, Aafke M.; Seppelt, Ralf; Settele, Josef; van Vuuren, Detlef. (2017) Multiscale scenarios for nature futures. Nature Ecology and Evolution 1(10): 1416-1419.

Bulmer, R. H.; Schwendenmann, L.; Lohrer, A.M.; **Lundquist**, C.J. (2017) Sediment carbon and nutrient fluxes from cleared and intact temperate mangrove ecosystems and adjacent tidal flats. Science of the Total Environment. 599-600: 1874-1884.

Suyadi; Gao, J.; **Lundquist**, C.J.; Schwendenmann, L. (2018) Sources of uncertainty in mapping temperate mangroves and their minimization using innovative methods, International Journal of Remote Sensing 39(1): 17-36,

Gladstone-Gallagher, R.V.; Sandwell, D. Lohrer, A.M.; **Lundquist**, C.J.; Pilditch, C.A. (2017) Quantifying macrodetritus fluxes from a small temperate estuary. Marine and Freshwater Research 68: 2289–2305.

Gladstone-Gallagher, R.V.; Needham, H.R.; Lohrer, A.M.; **Lundquist**, C.J.; Pilditch, C.A. (2017) Site-dependent effects of bioturbator-detritus interactions alter soft-sediment ecosystem function. Marine Ecology Progress Series 569: 145–161.

Jonsson, B.G.; Báldi, A; **Lundquist**, C. (2017) The Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES)—A Global Model for Biodiversity. Reference Module in Earth Systems and Environmental Sciences. Elsevier. Pp. 1-6.

Hunter, M.L., Jr. , Acuña, V., Bauer, D., Bell, K., Calhoun, A., Felipe-Lucia, M.R., Fitzsimons, J., Gonzalez, E., Kinnison, M., Lindenmayer, D., **Lundquist**, C.J., Medellin, R., Nelson, E., Poschlod, P. (2017) Conserving small natural features with large ecological roles: a synthetic overview. Biological Conservation 211:.88-95.

**Lundquist**, C.J., Bulmer, R.H., Clark, M.R., Hillman, J., Nelson, W.A., Norrie, C.R., Rowden, A.A., Tracey, D.M., Hewitt, J.E. (2017) Challenges for the conservation of marine small natural features. Biological Conservation 211: 69–79.

Bulmer, R. H.; Lewis, M.; O’Donnell, E.; **Lundquist**, C.J. (2017) Assessing mangrove clearance methods to minimise adverse impacts and maximise the potential to achieve restoration objectives. New Zealand Journal of Marine and Freshwater Research 51:1:110-126.

Asaad, I.; **Lundquist**, C.J.; Erdmann, M.V.; Costello, M.J. (2017) Ecological criteria to identify areas for biodiversity conservation. Biological Conservation 213: 309-316 http://dx.doi.org/10.1016/j.biocon.2016.10.007

Rouse, H.L.; Bell, R.G.; Hicks, D.M.; **Lundquist**, C.J.; Blackett, P.; King, D. (2017) Coastal adaptation to climate change in Aotearoa-New Zealand. New Zealand Journal of Marine and Freshwater Research. 51:2:183-222.

Stokes, D.J.; Bulmer, R.H.; **Lundquist**, C.J. (2016) Addressing the mismatch between restoration objectives and monitoring needs to support mangrove management. Ocean and Coastal Management. 134: 69-78.

Norrie, C.R.; Dunphy, B.J.; Baker, J.; **Lundquist**, C.J. (2016) Local-scale variation in trace elemental fingerprints of the estuarine bivalve Austrovenus stutchburyi within and between estuaries. Marine Ecology Progress Series 559:89-102.

Bulmer, R. H.; Schwendenmann, L.; **Lundquist**, C.J. (2016) Allometric models for estimating aboveground biomass, carbon and nitrogen stocks in temperate *Avicennia marina* forests. Wetlands 36(5): 841-848.

Cigliano, J.A.; Bauer, A.L.; Draheim, M.M.; Foley, M.M.; **Lundquist**, C.J.; McCarthy, J.-B.; Parsons, E.C.M.; Patterson, K.W.; Wright, A.J. (2016) The Kraken in the aquarium: questions that urgently need to be addressed in order to advance marine conservation. Frontiers in Marine Science 3:174.

Hewitt, J.; Thrush, S.; **Lundquist**, C. (2017) Scale-dependence in ecological systems. Encyclopedia of Life Sciences. John Wiley & Sons, Ltd., Chichester.

Bulmer, R. H.; Schwendenmann, L.; **Lundquist**, C.J. (2016) Carbon and nitrogen stocks and below-ground allometry in temperate mangroves. Frontiers in Marine Science 3:150.

Jackson, S.E.; **Lundquist**, C.J. 2016. Limitations of biophysical habitats as biodiversity surrogates in the Hauraki Gulf Marine Park. Pacific Conservation Biology 22:159-172.

Thrush, S.; Lewis, N.; Le Heron, R.; Fisher, K.; **Lundquist**, C.; Hewitt, J. (2016) Addressing surprise and uncertain futures in marine science, governance and society. Ecology and Society 21(2): 44.

Gladstone-Gallagher, R.V.; Lohrer, A.M.; **Lundquist**, C.J.; Pilditch, C.A. (2016) Effects of detrital subsidies on soft-sediment ecosystem function are transient and source-dependent. PLoSOne 11(5): e0154790.

**Lundquist**, C.J.; Fisher, K.; Le Heron, R.; Lewis, N.; Ellis, J.; Hewitt, J.; Greenaway, A.J.; Cartner, K.J.; Burgess-Jones, T.C.; Schiel, D.R.; Thrush, S.F. (2016) Science and societal partnerships to address cumulative impacts. Frontiers in Marine Science 3 (2): 1-12.

Le Heron, R.; Lewis, N.; Fisher, K.; Thrush, S.; **Lundquist**, C.; Hewitt, J.; Ellis, J. (2016) Non-sectarian scenario experiments in socio-ecological knowledge building for multi-use marine environments: Insights from New Zealand's Marine Futures project. Marine Policy 67: 10-21.

**Lundquist**, C.J.; Báldi, A.; Dieterich, M.; Gracey, K.; Kovacs, E.; Schleicher, J.; Skorin, T.; Sterling, E.; Jonsson, B.-G. (2015) Engaging the conservation community in the IPBES process. Conservation Biology 29: 1493-1495.

Bulmer, R. H.; **Lundquist**, C.J.; Schwendenmann, L. (2015) Sediment CO2 efflux from intact and cleared temperate mangroves. Biogeosciences 12: 6169-6180. https://doi.org/10.5194/bg-12-6169-2015

Hewitt, J.E.; Wang, D.; Francis, M.; **Lundquist**, C.J.; Duffy, C. (2015) Evaluating demersal fish richness as a surrogate for epibenthic richness in management and conservation. Diversity and Distributions 21:901-912.

Parsons, E.C.M.; Favaro, B.; Aguirre, A.A.; Bauer, A.L.; Blight, L.K.; Cigliano, J.A.; Coleman, M.A.; Côté, I.M.; Draheim, M.; Fletcher, S.; Foley, M.M.; Jefferson, R.; Jones, M.C.; Kelaher, B.P.; **Lundquist**, C.J.; McCarthy, J-B.; Nelson, A.; Patterson, K.; Walsh, L.; Wright, A.J.; Sutherland, W.J. (2014) Seventy-one important questions for the conservation of marine biodiversity. Conservation Biology 28 (5): 1206–1214.

Townsend, M.; Thrush, S.F.; Lohrer, D.; Hewitt, J.E.; **Lundquist**, C.; Felsing, M.; Carbines, M. (2014) Overcoming the challenges of data scarcity in mapping marine ecosystem service potential. Ecosystem Services 8:44-55 2014.

Gladstone-Gallagher, R.V.; **Lundquist**, C.J.; Pilditch, C.A. (2014) Response of temperate intertidal benthic assemblages to mangrove detrital inputs. Journal of Experimental Marine Biology and Ecology 460:80-88.

Gladstone-Gallagher, R.V.; **Lundquist**, C.J.; Pilditch, C.A. (2014) Mangrove (*Avicennia marina* subsp. *australasica*) litter production and decomposition in a temperate estuary. New Zealand Journal of Marine and Freshwater Research 48:24-37.

Pratt, S.J.; **Lundquist**, C.J.; Nelson, W.; Gemmill, C.E.C. (2013) A new record of Percursaria percursa (Ulvaceae, Ulvales) on the North Island, New Zealand. New Zealand Journal of Botany 51:1:71-74.

McClanahan, T.R.; Donner, S.D.; Maynard, J.E.; MacNeil, M.A.; Maina, J.M.; Baker, A.C.; Alemu I, J. B.; Beger, M.; Campbell, S.J.; Darling, E.S.; Eakin, C.M.; Graham, N.A.J.; Heron, S.F.; Jupiter, S.D.; **Lundquist**, C.J.; McLeod, E.; Mumby, P.; Paddack, M.J.; Selig, E.R.; van Woesik, R. (2012) Prioritizing key resilience indicators to support coral reef management in a changing climate. PLoS ONE 7(8):e42884.

Ross, P.M.; Hogg, I.D.; Pilditch, C.A.; **Lundquist**, C.J.; Wilkins, R.J. (2012) Population genetic structure of the New Zealand estuarine clam Austrovenus stutchburyi (Bivalvia: Veneridae) reveals population subdivision and partial congruence with biogeographic boundaries. Estuaries and Coasts 35:143-154.

Broekhuizen, N.; **Lundquist**, C.; Hadfield, M.; Brown, S. (2011) Dispersal of oyster (Ostrea chilensis) larvae in Tasman Bay inferred using a verified particle-tracking model that incorporates larval behavior. Journal of Shellfish Research 30:643-658.

**Lundquist**, C.J.; Ramsay, D.; Bell, R.G.; Swales, A.; Kerr, S. (2011) Predicted impacts of climate change on New Zealand’s biodiversity. Invited submission to special issue in Pacific Conservation Biology 17:179-191.

Matheson, F.E., **Lundquist**, C.J., Gemmill, C.E.G., Pilditch, C.A. (2011) New Zealand seagrass – more threatened that IUCN review indicates. Biological Conservation 144: 2749–2750.

Mieszkowska, N.; **Lundquist**, C.J. (2011) Biogeographical patterns in limpet abundance and assemblage composition in New Zealand. Journal of Experimental Marine Biology and Ecology 400: 155-166.

**Lundquist**, C.J.; Botsford, L.W. (2011) Estimating larval production of a broadcast spawner: the influence of density, aggregation, and the fertilization Allee effect. Canadian Journal of Fisheries and Aquatic Research. 68: 30–42.

**Lundquist**, C.J.; Thrush, S.F.; Coco, G.; Hewitt, J.E. (2010) Interactions between disturbance and dispersal reduce persistence thresholds in a benthic community. Marine Ecology Progress Series (invited special issue on Threshold Dynamics in Marine Coastal Systems) 413: 217–228.

Hewitt, J.; Thrush, S.; **Lundquist**, C. (2010) Scale-dependence in ecological systems. Encyclopedia of Life Sciences (invited contribution). http://www.els.net/ [DOI: 10.1002/9780470015902.a0021903]

Costello, M.J.; Livingston, M.; McLay, C.; McCrone, A.; **Lundquist**, C. (2010) Climate change and long-term data are the hot topics at Auckland conference on “Climate and Oceans”. New Zealand Journal of Marine and Freshwater Research. 44 (1): 77-80.

Ross, P.M.; Pilditch, C.A.; Hogg, I.D.; **Lundquist**, C.J. (2009) Phylogeography of New Zealand’s coastal benthos. New Zealand Journal of Marine and Freshwater Research 43:1009-1027.

**Lundquist**, C.J.; Oldman, J.W.; Lewis, M.J. (2009) Predicting suitability of cockle restoration sites using hydrodynamic models of larval dispersal. New Zealand Journal of Marine and Freshwater Research 43: 735-748.

Kingsford, R.T.; Watson, J.E.M.; **Lundquist**, C.J.; Venter, O.; Hughes, L.; Johnston, E.L.; Atherton, J.; Gawel, M.; Keith, D.A.; Mackey, B.G.; Morley, C.; Possingham, H.P.; Raynor, B.; Recher, H.F.; Wilson, K.A. (2009) Major conservation policy issues for biodiversity in Oceania. Conservation Biology 23:4:834-840.

Pinkerton, M.H.; **Lundquist**, C.J.; Duffy, C.A.J.; Freeman, D. (2008) Trophic modelling of a New Zealand rocky reef ecosystem using simultaneous adjustment of diet, biomass and energetic parameters. Journal of Experimental Marine Biology and Ecology 367: 189-203.

**Lundquist**, C.J.; Pinkerton, M.H. (2008) Collation of data for ecosystem modelling of Te Tapuwae o Rongokako Marine Reserve. Science for Conservation Series 288. 103 p.

Bryan, K.R.; Tay, H.W.; Pilditch, C.A.; **Lundquist**, C.J.; Hunt, H.L. (2007) The effects of seagrass (Zostera muelleri) on boundary-layer hydrodynamics in Whangapoua Estuary, New Zealand. Journal of Coastal Research SI50:668-672.

**Lundquist**, C.J.; Cigliano, J.A. (2007) Big blue gets its due. Conservation Biology 21:2:560-561.

Thrush, S.F.; Hewitt, J.E.; Gibbs, M.; **Lundquist**, C.; Norkko, A. (2006) Functional role of large organisms in intertidal communities: community effects and ecosystem function. Ecosystems 9:1029-1040.

Lohrer, A.M.; Thrush, S.F.; **Lundquist**, C.J.; Vopel, K.; Hewitt, J.E.; Nicholls, P.E. (2006) Deposition of terrigenous sediment on subtidal marine macrobenthos: response of two contrasting community types. Marine Ecology Progress Series 307:115-125.

**Lundquist**, C.J.; Thrush, S.F.; Hewitt, J.E.; Halliday, J.; MacDonald, I.; Cummings, V.J. (2006) Spatial variability in recolonisation potential: influence of organism behaviour and hydrodynamics on the distribution of macrofaunal colonists. Marine Ecology Progress Series 324: 67-81.

Petuha, E.T.; **Lundquist**, C.J.; Pilditch, C.A. (2006) Estimating spatial scale of post-settlement transport of Macomona liliana on an intertidal sandflat. New Zealand Journal of Marine and Freshwater Research 40:487-502.

Stephens, S.A.; Broekhuizen, N.; MacDiarmid, A.B.; **Lundquist**, C.J.; McLeod, L.; Haskew, R. (2006) Modelling transport of larval New Zealand abalone (*Haliotis iris*) along an open coast. Marine & Freshwater Research 57: 519-532.

**Lundquist**, C.J.; Granek, E.F.; Bustamante, R.H. (2005) Implementation and management of marine protected areas. Conservation Biology (Invited Special Section on Implementation and Management of Marine Protected Areas) 19: 1699-1700.

**Lundquist**, C.J.; Granek, E.F. (2005) Strategies for successful marine conservation: integrating socio-economic, political, and scientific factors. Conservation Biology (Invited Special Section

Lohrer, A.M.; Thrush, S.F.; Hunt, L.; Hancock, N.; **Lundquist**, C. (2005) Rapid reworking of subtidal sediments by burrowing spatangoid urchins. Journal of Experimental Marine Biology and Ecology 321: 155-169.

Thrush, S.F.; **Lundquist**, C.J.; Hewitt, J. (2005) Spatial and temporal scales of disturbance to the seafloor: a generalised framework for active habitat management. American Fisheries Society Symposium 41:639-649.

**Lundquist**, C.J.; Pilditch, C.A.; Cummings, V.J. (2004) Behaviour controls post-settlement dispersal by the juvenile bivalves *Austrovenus stutchburyi* and *Macomona lilian*a. Journal of Experimental Marine Biology and Ecology, 306: 51-74.

**Lundquist**, C.J.; Botsford, L.W. (2004) Model projections of the fishery implications of the Allee effect in broadcast spawners. Ecological Applications, 14(3): 929-941.

**Lundquist**, C.J.; Thrush, S.F.; Oldman, J.W.; Senior, A.K. (2004) Limited transport and recolonization potential in shallow tidal estuaries. Limnology and Oceanography 49: 386-395.

Wing, S.R.; Botsford, L.W.; Morgan, L.E.; Diehl, J.M.; **Lundquist**, C.J. (2003) Physical forcing of larval supply to marine metapopulations; crab and sea urchin settlement in the northern California current. Estuarine, Coastal and Shelf Science 57: 859-972.

**Lundquist**, C.J.; Diehl, J. M.; Harvey, E.; Botsford, L.W. (2002) Factors affecting implementation of recovery plans. Special Section in Ecological Applications 12:3:713-718.

**Lundquist**, C.J.; Botsford, L.W.; Morgan, L.E.; Diehl, J.;M.; Lee, T.; Lockwood, D.R.; Pearson E.L. (2000) Effects of El Niño and La Niña on local invertebrate settlement in northern California. California Cooperative Oceanic Fisheries Investigations Reports 41: 167-176.

Morgan, L.E.; Wing, S.R.; Botsford, L.W.; **Lundquist**, C.J.; Diehl, J.M. (2000) Spatial variability in red sea urchin (Strongylocentrotus franciscanus) recruitment in northern California. Fisheries Oceanography 9: 83-98.

Agrawal, A.A.; Rudgers, J. A.; Botsford, L.W.; Cutler, D.; Gorin, J.B.; **Lundquist**, C.J.; Spitzer, B.W.; Swann, A.L. (2000) Benefits and constraints on plant defense against herbivores: Spines influence the legitimate and illegitimate flower visitors of yellow star thistle, *Centaurea solstitialis* L. (Asteraceae). Southwestern Naturalist 45:1-5.

Morgan, L.E.; Botsford, L.W.; **Lundquist**, C.J.; Quinn J.F. (1999) The potential of no-take reserves to sustain the red sea urchin (*Strongylocentrotus franciscanus*) fishery in northern California. Bulletin of Tohoku National Fisheries Research Institute, Special Issue 62: 83-94.

**Books/Book chapters**

**Lundquist**, C.J.; Pereira, H.; Kim, H.; Rosa, I. Looking ahead: a different way to imagine our future with nature. (2020) In WWF Living Planet Report 2020 - Bending the curve of biodiversity loss. Almond, R.E.A., Grooten M. and Petersen, T. (Eds). WWF, Gland, Switzerland. 159 pp.

Asaad, I.; **Lundquist**, C.J.; Erdmann, M.V.; Costello, M.J. (2020) The Coral Triangle: The Most Species Rich Marine Region on Earth. Pages 539-546 in M. I. Goldstein, and D. A. DellaSala, editors. Encyclopedia of the World's Biomes. Elsevier, Oxford. Reference Module in Earth Systems and Environmental Sciences.

Le Heron, R.; Blackett, P.; Logie, J.; Hikuroa, D.; Le Heron, E.; Greenaway, A.; Glavovic, B.; Davies, K.; Allen, W.; Simmonds, N.; **Lundquist**, C. (2018) Participatory processes for implementation in Aotearoa New Zealand’s multi-use/user marine spaces? Unacknowledged and unaddressed issues. In Heidkamp, C.P. and Morrissey, J. (eds) Towards coastal resilience and sustainability, Routledge, London. p. 111-130.

Horstman, E.M.; **Lundquist**, C.J.; Bryan, K.R.; Bulmer, R.H.; Mullarney, J.C.; Stokes, D.J. (2018) The dynamics of expanding mangroves in New Zealand. In C. Makowski and C.W. Finkl (eds). Threats to mangrove forests: hazards, vulnerability and management, Coastal Research Library v. 25, pp. 23-51. Springer International Publishing.

**Lundquist**, C.J.; Morrisey, D.J.; Gladstone-Gallagher, R.V.; Swales, A. (2014) Managing mangrove habitat expansion in New Zealand. In: Hakeen K (ed). Mangrove Ecosystems in Asia: Current Status, Challenges and Management Strategies. Springer-Verlag. p. 416-438.

Thrush, S.F., Townsend, M.;, Hewitt, J.E.; Davies, K.; Lohrer, A.M.; **Lundquist,** C.; Cartner, K. (2013) The many uses and values of estuarine ecosystems. In Dymond, J. R. (ed): Ecosystem Services in New Zealand – Condition and Trends. Manaaki Whenua Press, Lincoln, New Zealand, pp. 226-237

**Lundquist**, C.J. (2011) Habitats Nga Nohonga Field Identification Guide. Appendix 03, p1-6 In: Swales, A.; Rickard, D.F.T.; Craggs, R.J.; Morrison, M.A.; Lundquist, C.J.; Stott, R.; Fitzgerald, J.J; Ahrens, M.J.; Davies-Colley, R.J.; Matheson, F.E.; Bell, R.G.; Humes, A.C.; Felsing, M.; Hewitt, J.E.; Ovenden, R.; Crump, M.E.; Smith, M.A. Nga Waihotanga Iho: Estuary Monitoring Toolkit for Iwi. NIWA Information Series No. 79. Wellington, New Zealand. 610 p.

**Lundquist**, C.J. (2011) Shellfish Te Kaimoana Field Identification Guide. Appendix 06, p1-10 In: Swales, A.; Rickard, D.F.T.; Craggs, R.J.; Morrison, M.A.; Lundquist, C.J.; Stott, R.; Fitzgerald, J.J; Ahrens, M.J.; Davies-Colley, R.J.; Matheson, F.E.; Bell, R.G.; Humes, A.C.; Felsing, M.; Hewitt, J.E.; Ovenden, R.; Crump, M.E.; Smith, M.A. Nga Waihotanga Iho: Estuary Monitoring Toolkit for Iwi. NIWA Information Series No. 79. Wellington, New Zealand. 610 p.

**Lundquist**, C.J. (2011) Habitat Mapping Te Mahere Kainga Koiora. Module 03, 60 p. In: Swales, A.; Rickard, D.F.T.; Craggs, R.J.; Morrison, M.A.; Lundquist, C.J.; Stott, R.; Fitzgerald, J.J; Ahrens, M.J.; Davies-Colley, R.J.; Matheson, F.E.; Bell, R.G.; Humes, A.C.; Felsing, M.; Hewitt, J.E.; Ovenden, R.; Crump, M.E.; Smith, M.A. Nga Waihotanga Iho: Estuary Monitoring Toolkit for Iwi. NIWA Information Series No. 79. Wellington, New Zealand. 610 p.

**Lundquist**, C.J. (2011) Shellfish Te Kaimoana. Module 06, 45 p. In: Swales, A.; Rickard, D.F.T.; Craggs, R.J.; Morrison, M.A.; Lundquist, C.J.; Stott, R.; Fitzgerald, J.J; Ahrens, M.J.; Davies-Colley, R.J.; Matheson, F.E.; Bell, R.G.; Humes, A.C.; Felsing, M.; Hewitt, J.E.; Ovenden, R.; Crump, M.E.; Smith, M.A. Nga Waihotanga Iho: Estuary Monitoring Toolkit for Iwi. NIWA Information Series No. 79. Wellington, New Zealand. 610 p.

**Conference proceedings**

Davies, K.; Fisher, K.; Foley, M.; Greenaway, A.; Hewitt, J.; Le Heron, R.; **Lundquist**, C.; Mikaere, H.; Ratana, K.; Speirs, R. (2016) Navigating collaborative networks and cumulative effects for Sustainable Seas. IGU Commission on the Dynamics of Economic Spaces. Proceedings, Coastal Transitions conference: March 30 – April 2 2017, New Haven CT.

Lewis, M.; **Lundquist**, C.J.; Oldman, J. (2008) Modelling larval dispersal in an enclosed estuary. 5th Asia-Pacific DHI Software Conference, March 2008, Auckland, New Zealand (in CD-ROM). 13 p.

Petuha, E.T.; **Lundquist**, C.J.; Pilditch, C.A. (2005) Predicting restoration potential of shellfish beds in estuaries. P 39-40 in Cooke, P.; Pavlinic, S.; and Hobden, B.J. (eds). AWIS 5th National Conference ‘Science Fever’ Programme and Abstracts. Hamilton, New Zealand. 45 pp.

**Lundquist**, C.J.; Pinkerton, M.; Freeman, D.; Duffy, C. (2005) Assessing trophic impacts of marine reserves: can no-take reserves impact sustainability of neighbouring traditional fisheries? Conference Proceedings: IMPCA 1 (International Marine Protected Areas Congress), Geelong, Australia.

**Technical reports**

**Lundquist**, C.; Cummings, V.; Hansen, L.; Mielbrecht, E. (in press) State of knowledge: Climate change and New Zealand’s Seafood Sector. Summary report to support technical report prepared for project ZBD201409. 12 p.

**Lundquist**, C.; Brough, T.; McCartain, L.; Stephenson, F.; Watson, S. (2021) Guidance for the use of decision-support tools for identifying optimal areas for biodiversity conservation. NIWA Client report No.2020347HN, prepared for Department of Conservation (project DOC19207). 124 p.

Stephenson, F.; Rowden, A.; Brough, T.; Leathwick, J.; Bulmer, R.; Clark, D.; **Lundquist**, C.; Greenfield, B.; Bowden, D.; Tuck, I.; Neill, K.; Mackay, K.; Pinkerton, M.; Anderson, O.; Gorman, R.; Mills, S.; Watson, S.; Nelson, W.; Hewitt, J. (2021) Development of a New Zealand Seafloor Community Classification (SCC). Client report #2020243HN prepared for Department of Conservation (DOC), Project: DOC19208. 87 p.

Hale, R.; Wadhwa, S.; Anderson, T.; Anderson, O.; Hupman, K.; Stephenson, F.; **Lundquist**, C.; Schnabel, K.; Neill, K. (2021) Seafloor habitats and fish, invertebrate and marine mammal diversity in the Horizons Region coastal marine area Client report #2021069NE prepared for Horizons Regional Council, NIWA Project: ELF21305.

McCartain, Lisa; Brough, Tom; Watson, Stephanie; Lundquist, Carolyn. (2021) Assessment of Southland Marine Significant Ecological Areas. Prepared for Ministry of Business, Innovation and Employment Envirolink Fund to Environment Southland. NIWA Client Report No: 2021175HN, Project # ELF20216/ELF21204/ENS20201. 112 p.

Connolly, J.D., **Lundquist**, C.J., Madarasz-Smith, A. & Shanahan, R. (2020) Hawke’s Bay EBM case study - Part 1: System mapping to understand increased sedimentation and loss of benthic structure in the Hawke’s Bay. Report prepared for the Sustainable Seas National Science Challenge. Hamilton, New Zealand: Deliberate. 91 p.

Pinkerton, M.; May, K.; **Lundquist**, C.; Stephenson, F.; Watson, S. (2020). MACA. Baseline data report in support of application under Marine and Coastal Area (Takutai Moana) Act 2011. NIWA Client report #2020XXXWN prepared for Maungaharuru-Tangitū Trust. Project #MAU20301.

Cummings, V.J.; **Lundquist**, C.J.; Dunn, M.R; Francis, M.; Horn, P.; Law, C.; Pinkerton, M.H.; Sutton, P.; Tracey, D.; Hansen, L.; Mielbrecht, E. (2021). Assessment of potential effects of climate-related changes in coastal and offshore waters on New Zealand’s seafood sector. New Zealand Aquatic Environment and Biodiversity Report No. 261. 153 p.

**Lundquist**, C.; Stephenson, F.; McCartain, L.; Watson, S.; Brough, T.; Nelson, W.; Neill, K.; Anderson, T.; Anderson, O.; Bulmer, R.; Gee, E.; Pinkerton, M.; Rowden, A.; Thompson, D. (2020) Evaluating Key Ecological Areas datasets for the New Zealand Marine Environment. NIWA Client report No.2020109HN, prepared for Department of Conservation (project DOC19206). 120 p.

**Lundquist**, C.; Tablada, J.; Watson, S. (2020) Evaluation of biodiversity protected by Sea Change Tai Timu Tai Pari – Marine Protected Area Proposals. NIWA Client report No.2020244HN, prepared for Department of Conservation (project DOC20206). 145 p.

**Lundquist**, C.; Watson, S.; McCartain, L.; Stephenson, F. (2020) Key ecological areas of the Hawke's Bay Coastal Marine Area NIWA Client report No.2020042HN, prepared for Hawke's Bay Regional Council (project HBR20201). 91 p.

Schoolenberg, M.; Okayasu, S.; Krijgsman, A.; Dutra de Aguiar, A.P.; Hashimoto, S.; **Lundquist**, C.; Pereira, L.; Peterson, G.; Alkemade, R.; Armenteras, D.; Cheung, W.; Chimère Diaw, Mariteuw; Durán, A.P.; Gasalla, M.; Halouani, G.; Harrison, P.; Karlsson-Vinkhuyzen, S.; Kim, H.; Kuiper, J.; Miller, B.; Takahashi, Y.; Pichs, R. (2020) Report on the Workshop ‘New Narratives for Nature: operationalizing the IPBES Nature Futures Scenarios’. PBL Netherlands Environmental Assessment Agency, The Hague. 41 p.

Okayasu, S.; Schoolenberg, M.; den Belder, E.; Pereira, L.; Peterson, G.; Cheung, W.; **Lundquist**, C.; Pereira, H.; Acebey Quiroga, S.V.; Cuadros, I.; Davies, K.; Dutra de Aguiar, A.P.; Eddy, T.; Ferrier, S.; Fisher, K.; Gasalla, M.; Giles, E.; Harmackova, Z.; Hirsch, Ti.; Jyothis, Sathyapalan; Karlsson-Vinkhuyzen, S.; Kim, H.; Kolomytsev, G.; Kuiper, J.; Palomo, M.G.; Pichs-Madruga, R.; Saito, O.; Satterfield, T.; Scholes, B.; Stephenson, F.; Sumaila, R.; Alava, J.J.; Angkiriwang, P.; Clarke, T.; du Pontavice, H.; Lam, V.; Chen, O.L.; Maharaj, R.; Oyinlola, M.; Palacios, J.; Pierce, J.R.; Sweet, T.; Wabnitz, C. (2019), Report on the workshop ‘From visions to scenarios for nature and nature’s contributions to people for the 21st century’. PBL Netherlands Environmental Assessment Agency, The Hague. 47 p.

Douglas, E.; **Lundquist**, Ca.; Luttrell, J.; Ramsay, D. (2019) Opportunities for nature-based solutions to support adaptation in the Pacific region. NIWA Client Report No. 2019316HN prepared for New Zealand Ministry of Foreign Affairs and Trade, NIWA Project No.

Bulmer, R. H.; **Lundquist**, C. J. (2019) Whangamata mangrove removals: Stage 3B 1-year sampling. Prepared for Waikato Regional Council. 2019332HN

Thompson, D.R.; **Lundquist**, C.J.; Nelson, W.A.; Nodder, S.; Francis, M.P.; Hupman, K.; Watson, S.; Woelz S. (2019) Sites and habitats of significance within the Waikato Region's coastal marine area. NIWA Client Report, 2019245WN prepared for Waikato Regional Council (project EVW19302). 123 p.

Stephenson, F.; **Lundquist**, C.J. (2019) A preliminary biodiversity optimisation for the Wellington region. Client report #2019227HN prepared for Greater Wellington Regional Council (Project: WRC19206).

**Lundquist**, C.J.; D.J. Hamilton, D.R.; Thompson. (2019) Assessment of West Coastal Region coastal sites against indigenous ecological significance criteria. NIWA Client report No.2019210WN, prepared for Envirolink and West Coast Regional Council (project ELF19302). 114 p.

**Lundquist**, C. (2019). Chapter 18 (Biodiversity) in Ministry for Primary Industries (ed.) Aquatic Environment and Biodiversity Annual Review 2018: A summary of environmental interactions between the seafood sector and the aquatic environment. Compiled by the Fisheries Science Team, Ministry for Primary Industries, Wellington New Zealand. 704 p.

Okayasu, S.; Schoolenberg, M.; Alkemade, R.; den Belder, E.; Pereira, H.; **Lundquist**, C.; Cheung, W.; Rondinini, C.; Halouani, G.; Kim, H.; Miller, B.; Hirsch, T.; Abbasov, R.; Arneth, A.; Chimère Diaw, M.; Eddy, T.; Harfoot, M.; Hasegawa, T.; Hickler, T.; Hill, S.; Humpenöder, F.; Johnson, J.; Kok, M.; Leadley, P.; Leclere, D.; Navarro, L.; Ohashi, H.; Peterson, G.; Schipper, A.; Shin, Y.; Stehfest, E.; Visconti, P.; van Vuuren, D. (2019) Report on the workshop ‘Global Modelling of Biodiversity and Ecosystem Services’. PBL (Netherlands Environmental Assessment Agency), The Hague. 58 pp.

Davies, K.K.; K. Fisher; C. Lundquist; G. Couzens. (2019) Collaboration on Cumulative Effects: Workshop Summary Report. Sustainable Seas National Science Challenge Project SUSS18201. 36 p.

Greenaway, A.; Bingham, K.; Blackett, P.; Faulkner, L.; Glavovic, B.; Gillespie, A.; Hall, J.; Hewitt, J.; Inglis, G.; Iorns-Magallanes, C.; James, G.; Le Heron, R.; Logie, J.; **Lundquist**, C.; Margaret, T.; McMahon, E.; Peart, R.; Reynolds, F.; Severinsen, G., Stephenson, J.; Taylor, L.; Te Whenua, T. (2018) Advancing ecosystem-based management in Aotearoa New Zealand through current governance arrangements. A discussion paper produced for Cross Programme 1.1, Sustainable Seas National Science Challenge.

Bulmer, R.; **Lundquist**, C. (2018) Whangamata Stage 3B mangrove removal monitoring: Three months post removal. NIWA Client Report prepared for Waikato Regional Council.

SPRFMO (2018) A proposal for a revised Bottom Fishing Conservation and Management Measure for SPRFMO. South Pacific Regional Fisheries Management Organisation, 7th Meeting of the Commission. The Hague, The Netherlands, 23 to 27 January 2019. Meeting document: COMM 7 – Prop 03.1. 28 p.

Stephenson, F.; Rowden, A.; Anderson, T.; Hewitt, J.; Costello, M.; Pinkerton, M.; Morrison, M.; Clark, M.; Wadhwa, S.; Mouton, T.; **Lundquist**, C. (2018) Mapping key ecological areas in the New Zealand marine environment: Data collection. NIWA Client Report #2018332HN prepared for Department of Conservation Project #DOC18204. 155 p.

Davies, K.K.; Bingham, K.; Couzens, G.. Fisher, K.; Foley, M.; Cahill, J.; Faulkner, L.; Hewitt, J.; Luke, A.; Lawson, L.; Livingston, M.; **Lundquist**, C.; Lundquist, D.; Iorns Magallanes, C.; Mikaere, H.; Noble, J.; Roughton, L.; Urlich, S. (2018) A Preliminary Report on CE Management and Governance in Aotearoa New Zealand. Sustainable Seas National Science Challenge Project SUSS18201.

Bulmer, R.; **Lundquist**, C. (2018) Whangamata Stage 3A mangrove removal monitoring: Twelve months post removal. NIWA Client Report #2018215HN prepared for Waikato Regional Council.

**Lundquist**, C. and 74 international co-authors. (2018) New visions for nature and nature’s contributions to people for the 21st century. IPBES Technical report submitted as Information document #IPBES-6-INF-15 supporting the 5th IPBES Plenary (March 2018). 14 pp.

Cummings, V.; **Lundquist**, C.; Dunn, M.; Horn, P.; Law, C.; Pinkerton, M.; Tracey, D.; Sutton, P. (2018) Progress Report 3: Climate change risks and opportunities in the marine environment. Report prepared for the Ministry of Primary Industries project ZBD2014-09. 25 p.

Rowden, A.A.; **Lundquist**, C.J.; Hewitt, J.E.; Stephenson, F.; Morrison, M. (2018) Review of New Zealand’s coastal and marine habitat and ecosystem classification. NIWA Client Report # 2018115WN prepared for Department of Conservation DOC17310. 89pp.

Schoolenberg, M.; den Belder, E.; Okayasu, S.; Alkemade, R.; **Lundquist**, C.; Pereira, H.; Chettri, N.; Cheung, W.; Ferrier, S.; Hauck, J.; Hendriks, R.; Karlsson-Vinkhuyzen, S.; Kim, H.; Kolomytsev, G.; Kuiper, J.; Leadley, P.; Metzger, J.P.; Ninan, K.N.; Palomo, G.; Pereira, L.; Pichs, R.; Popp, A.; Ravera, F.; Rondinini, C.; Rosa, I.; Sathyapalan, J.; van Vuuren, D. (2018) Report on the Workshop ‘Next Steps in Developing Nature Futures’. PBL (Netherlands Environmental Assessment Agency), The Hague. 27 pp.

**Lundquist**, C. and 74 international co-authors. (2017) New visions for nature and nature’s contributions to people for the 21st century. NIWA Science and Technology Series Report No. 83. Wellington, New Zealand, 123 pp.

Cryer, M.; Nicol, S.; Geange, Sh.; Rowden, A.; **Lundquist**, C.; Stephenson, F. (2017) Report from a series of stakeholder workshops to gather and document stakeholder views on the nature and content of a revised conservation and management measure for bottom fisheries in the SPRFMO Area SC5-DW05. 5th Meeting of the Scientific Committee, Shanghai, China, 23 - 28 September 2017.

Bellingham, M.; Lloyd, K.; **Lundquist**, C.; Quinn, J.; Roper-Lindsay, J.; Davis, A.; Fuller, S. (2017) Assessing significant ecological values. Technical report prepared for Environment Institute of Australia and New Zealand Inc. New Zealand Chapter. 19 pp.

**Lundquist**, C., Carter, K., Hailes, S., Bulmer, R. (2017) Guidelines for Managing Mangroves (Mānawa) Expansion in New Zealand. NIWA Information Series No. 85. National Institute of Water & Atmospheric Research Ltd.

**Lundquist**, C.; Cartner, K. (2017) Visions for nature and nature’s contributions to people for the 21st century Client report #2017422HN prepared for Ministry for Business, Innovation and Employment. Project #CAT18201. 18pp.

Bulmer, R.; **Lundquist**, C. (2017) Whangamata Stage 3A mangrove removal monitoring: Three months post removal. NIWA Client Memo prepared for Waikato Regional Council. 17pp.

Bulmer, R.; **Lundquist**, C. (2017) Whangamata Stage 2B mangrove removal monitoring: Twelve months post removal. NIWA Client Report 2017240HN prepared for Waikato Regional Council project, project EVW17215, 22pp.

Cummings, V., **Lundquist**, C. (2017) Progress Report 2: Climate change risks and opportunities in the marine environment. Report prepared for the Ministry of Primary Industries project ZBD2014-09. 50 p.

Parkes, S.M, **Lundquist**, C. (2017) Central Waitematā Harbour ecological monitoring: 2000-2017. Prepared by the National Institute of Water and Atmospheric Research Ltd, NIWA for Auckland Council. Auckland Council Technical Report TR2018/010, NIWA client report: 2017150HN, 75 p.

Tuck, I.D.; Hewitt, J.E.; Handley, S.J.; **Lundquist**, C.J. (2017) Assessing the effects of fishing on soft sediment habitat, fauna and process. New Zealand Aquatic Environment and Biodiversity Report No. 178, 147 p.

**Lundquist**, C.; Martin, T.; Mayhew, I. (2017). Whangamata Mangrove Removal Consent #122986 Environmental Monitoring Management Plan – 2017. Waikato Regional Council Internal Series 2017/01. 37pp.

McBride, G., Reeve, G., Pritchard, M., **Lundquist**, C., Daigneault, A., Bell, R., Blackett, P., Swales, A., Wadhwa, S., Tait, A., Zammit, C. (2016) The Firth of Thames and Lower Waihou River. Synthesis Report RA2, Coastal Case Study. Climate Changes, Impacts and Implications (CCII) for New Zealand to 2100. MBIE contract C01X1225. 50 p.

**Lundquist**, C.; Harhash, K.A.; Armenteras, D.; Chettri, N.; Mwang’ombe Mwamodenyi, J.; Prydatko, V.; Acebey Quiroga, S.; Rasolohery, A.; Sangha, K.; Gomez, R.; Santos-Martín, F.; Awatere, S.; Davies, K. 2016. Building capacity for developing, interpreting and using scenarios and models. In IPBES (2016): The methodological assessment report on scenarios and models of biodiversity and ecosystem services. S. Ferrier, K. N. Ninan, P. Leadley, R. Alkemade, L. A. Acosta, H. R. Akçakaya, L. Brotons, W. W. L. Cheung, V. Christensen, K. A. Harhash, J. Kabubo-Mariara, C. **Lundquist**, M. Obersteiner, H. M. Pereira, G. Peterson, R. Pichs-Madruga, N. Ravindranath, C. Rondinini and B. A. Wintle (eds.), Secretariat of the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services, Bonn, Germany, pp. 225-253.

IPBES (Intergovernmental Science-Policy Panel on Biodiversity and Ecosystem Services). 2016. Summary for policymakers of the methodological assessment of scenarios and models of biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. S. Ferrier, K. N. Ninan, P. Leadley, R. Alkemade, L.A. Acosta, H. R. Akçakaya, L. Brotons, W. Cheung, V. Christensen, K. A. Harhash, J. Kabubo-Mariara, C. **Lundquist**, M. Obersteiner, H. Pereira, G. Peterson, R. Pichs-Madruga, N. H. Ravindranath, C. Rondinini, B. Wintle (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany. 32 p.

Davies, K.; Fisher, K.; **Lundquist**, C.; Couzens, G. (2016) Cumulative effects workshop, 26 October 2016: Summary Report. Internal report for Sustainable Seas MBIE Contract #C01X1515, Project #SUSS16204.

Davies, K.; Fisher, K.; **Lundquist**, C. (2016) Planning for cumulative effects in a complex world, 17 August 2016: Workshop summary Report. Internal report for Sustainable Seas MBIE Contract #C01X1515, Project #SUSS16204.

Bulmer, R.; **Lundquist**, C. (2016) Whangamata Stage 2B mangrove removal monitoring: Three months post removal. Technical memorandum prepared for Waikato Regional Council project.

Bulmer, R.; **Lundquist**, C. (2016) Pilot study of carbon and nutrient storage in New Zealand estuaries. Client report # HAM2016-074 prepared for Waikato Regional Council project #WRC16204. 19p.

Cummings, V., Horn, P., Law, C., **Lundquist**, C., Williams, M. (2016) Progress Report 1: Climate change risks and opportunities in the marine environment. Report prepared for the Ministry of Primary Industries project ZBD2014-09. 50 p.

Bulmer, R.; **Lundquist**, C. (2016) Whangamata mangrove removal monitoring: Summary of 36 months post-removal sampling. Client report # HAM2016-027 prepared for Waikato Regional Council project #EVW13215. 58 p.

Pinkerton, M.H.; MacDiarmid, A.; Beaumont, J.; Bradford-Grieve, J.; Francis, M.P.; Jones, E.; Lalas, C.; **Lundquist**, C.J.; McKenzie, A.; Nodder, S.D.; Paul, L.; Stenton-Dozey, J.; Thompson, D.; Zeldis, J. (2015) Changes to the food-web of the Hauraki Gulf during the period of human occupation: a mass-balance model approach. New Zealand Aquatic Environment and Biodiversity Report No. 160. 346 p.

Bulmer, R.; **Lundquist**, C. (2015) Whangamata mangrove removal monitoring: Summary of 24 months post-removal sampling. Client report # HAM2015-062 prepared for Waikato Regional Council project #EVW13215. 64 p.

**Lundquist**, C.; Davies, K.; McCartain, L. (2015) Best practice guidelines for marine protected area network design and evaluation. NIWA Client report #HAM2015-051 prepared for Ministry for the Environment, project #MFE15206. 87 p.

Parkes, S., **Lundquist**, C. (2015) Central Waitemata Harbour Ecological Monitoring: 2000-2014. Prepared by the National Institute of Water & Atmospheric Research for Auckland Council. Auckland Council Technical Report 2015/006.

**Lundquist**, C.J.; Julian, K.; Costello, M.; Gordon, D.; Mackay, K.; Mills, S.; Neill, K.; Nelson, W.; Thompson, D. (2015) Development of a Tier 1 National Reporting Statistic for New Zealand’s Marine Biodiversity. New Zealand Aquatic Environment and Biodiversity Report No. 147. 61 p.

Rowden, A.A.; Clark, M.R.; **Lundquist**, C.J.; Guinotte, J.M.; Anderson, O.F.; Julian, K.A.; Mackay, K.A.; Tracey, D.M.; Gerring, P.K. (2015) Developing spatial management options for the protection of vulnerable marine ecosystems in the South Pacific Ocean region. New Zealand Aquatic Environment and Biodiversity Report No. 155. 76 p.

Bulmer, R.; Lundquist, C. (2014) Whangamata mangrove removal monitoring: Summary of 12 month post-removal sampling. Client report #HAM2014-078 prepared for Waikato Regional Council project #EVW13215.

Townsend, M.; Clark, D.; Lohrer, D.; Ellis, J.; **Lundquist**, C.; Hewitt, J.; Thrush, S. (2014) An Ecosystem Services Matrix for New Zealand’s coastal marine environment. Prepared by the National Institute of Water & Atmospheric Research for Department of Conservation. 53 p.

**Lundquist**, C.J., Smith, B. (2014) Review of ecological significance criteria for the Auckland marine region. Prepared by the National Institute of Water & Atmospheric Research for Auckland Council. Auckland Council Working Report 2015/001.

**Lundquist**, C.J., Hailes, S.F., Carter, K.R. & Burgess, T.C. (2014) Ecological status of mangrove removal sites in the Auckland region. Prepared by the National Institute of Water & Atmospheric Research for Auckland Council. Auckland Council Technical Report 2014/033.

Rowden, A.A.; **Lundquist**, C.J.; Baird, S.; Woelz, S. (2014) Developing spatial management options for the central crest of Chatham Rise. Prepared by the National Institute of Water & Atmospheric Research for Chatham Rock Phosphate Ltd. 54 p.

Bulmer, R.; **Lundquist**, C. (2013) Whangamata mangrove removal monitoring: Summary of baseline and 3 month post-removal sampling. Client report #HAM2013-114 prepared for Waikato Regional Council project #EVW13215.

**Lundquist**, C.J.; Pritchard, M.; Thrush, S.F.; Hewitt, J.E.; Greenfield, B.L.; Halliday, N.J.; Lohrer, A.M. (2013) Bottom disturbance and seafloor landscapes: Development of a model of disturbance and recovery dynamics for marine benthic ecosystems. New Zealand Aquatic Environment and Biodiversity Report No. 118. 58 p.

Duffy, C.; **Lundquist**, C. (2013) Identification of significant marine ecosystems in the New Zealand Territorial Sea and Exclusive Economic Zone. Report prepared for the Department of Conservation.

Bulmer, R.; **Lundquist**, C. (2013) Whangamata Mangrove Removal Monitoring: April 2013 update. Interim report to Waikato Regional Council, 19 April 2013.

Thrush, S.F.; Cartner, K.J.; Hewitt, J.E. **Lundquist**, C.; Lohrer, D.; de Juan, S. (2012) Design criteria and research needs for soft sediment Marine Protected Areas. NIWA Client Report #HAM2012-139 prepared for Department of Conservation. Project #DOC12213. 65 p.

**Lundquist**, C., Hailes, S., Cartner, K., Carter, K., Gibbs, M. (2012) Physical and ecological impacts associated with mangrove removals using in situ mechanical mulching in Tauranga Harbour. NIWA Technical Report #137. ISSN 1174-2631 (print); ISSN 2253-5985 (online). 106 p.

Townsend, M.; Thrush, S.F.; Wadhwa, S.; Lohrer, D.; **Lundquist**, C.; Hewitt, J.E. 2012. Mapping ecosystem services in the Hauraki Gulf: Preliminary report. NIWA Client Report prepared for Auckland Council. Project #ARC12250

**Lundquist**, C.; Broekhuizen, N. (2012) Predicting suitable shellfish restoration sites in Whangarei Harbour – Larval dispersal modelling and verification. Client report prepared by NIWA for the Ministry of Science and Innovation Envirolink Fund to Northland Regional Council. Project #ELF12202, Report #HAM2012-024.

Halliday, J.; Townsend, M.; **Lundquist**, C. (2012) Central Waitemata Harbour Ecological Monitoring: 2000-2012. Project #ARC12271, Report #HAM2012-054.

**Lundquist**, C.; Tracey, D.; Hourigan, T.; Cummings, V.; Butler, E.; Clark, M.; Dunn, M.; Ardron, J.; Costello, M. (2012) Marine Conservation Think Tank IMF Workshop Reports. NIWA Client Report #HAM2012-023 prepared for Ministry for Science and Innovation, Project #MSI12202. 53 p.

**Lundquist**, C. (2012) Predicting impacts of increasing rates of disturbance on functional diversity in marine benthic ecosystems. Progress Report, Project #ZBD2009-25, prepared for the Ministry of Fisheries, January 2012. 15 p.

Thrush, S.F.; Hewitt, J.E.; **Lundquist**, C.; Townsend, M.; Lohrer, A.M. (2011) A strategy to assess trends in ecological integrity of New Zealand’s marine ecosystems. Client report prepared by NIWA for the Department of Conservation, Project #DOC12203 (HAM2011-140).

**Lundquist**, C.; Ramsay, D. (2011) Anticipated Climate Change Impact on the Coastal Protection Role Provided by Coastal Ecosystems in the Pacific and East Timor. Client report prepared by NIWA for the Department of Climate Change and Energy Efficiency, Canberra, Australia, Project #GAU11201 (HAM2011-017).

Compton, T., **Lundquist**, C., Hewitt, J. (2011) Critical assessment of the Regional Estuary Monitoring Programme (REMP). Client report prepared by NIWA for Waikato Regional Council, Project #EVW11205 (HAM2011-029).

**Lundquist**, C. (2011) Predicting impacts of increasing rates of disturbance on functional diversity in marine benthic ecosystems. Progress Report, Project #ZBD2009-25, prepared for the Ministry of Fisheries, January 2011. 8pp.

**Lundquist**, C.; Townsend, M.; Halliday, J.; Clearwater, S.; Cartner, K. (2011) Upper Waitemata Harbour Ecological Monitoring Programme: 2005-2010. Prepared by the National Institute of Water and Atmospheric Research for Auckland Regional Council. Auckland Regional Council TR2010/059. Project #ARC10223 (HAM2010-128).

Sagar, P.; **Lundquist**, C.; Hewitt, J. (2010) Monitoring plan to investigate benthic invertebrate community composition and substrate characteristics in relation to foraging areas of shorebirds within the Firth of Thames Ramsar site. NIWA Client Report: CHC2010-085 prepared for the Department of Conservation. NIWA Project: DOC10205. 20pp.

Townsend, M.; **Lundquist**, C.; Hewitt, J. (2010) Central Waitemata Harbour Ecological Monitoring 2000 - 2010. Prepared by NIWA for Auckland Regional Council. Auckland Regional Council Document Type 2010/###. [note Mike removed all co-authors]

**Lundquist**, C. (2010) Predicting impacts of increasing rates of disturbance on functional diversity in marine benthic ecosystems. Progress Report, Project #ZBD2009-25, prepared for the Ministry of Fisheries, January 2010. 4pp.

Hewitt, J.; **Lundquist**, C.; Bowden, D. (2010) Oceans 2020 Chatham Rise and Challenger Plateau Data Analysis. Objective 6: Biodiversity measures. NIWA Client Report prepared for the Ministry of Fisheries (ZBD2007-01).

Matheson, F.E.; Dos Santos, V.M.; Inglis, G.; Pilditch, C.; Reed, J.; Morrison, M.; **Lundquist**, C.; van Houte-Howes, K.; Hailes, S.; Hewitt, J. (2009) New Zealand seagrass: a general information guide. NIWA Information Series No. 72. Wellington, New Zealand. 13 p.

Oldman, J. W.; **Lundquist**, C.; Reeve, G. (2009) Tauranga Harbour Pipi Larval Dispersal Modelling. NIWA Client Report: HAM2009-011 prepared for Heybridge Development Limited (HDL08201).

Townsend, M.; **Lundquist**, C.; Halliday, J. (2008) Central Waitemata Harbour Ecological Monitoring. NIWA Client Report: HAM2008-083 prepared for Auckland Regional Council (ARC08271).

Miller, A.; **Lundquist**, C.; Dare, J. (2008) Upper Waitemata Harbour Ecological Monitoring: 2005—2008. NIWA Client Report: HAM2008-087 prepared for Auckland Regional Council (ARC08223).

**Lundquist**, C.; Leathwick, J. (2007) Submission on Marine Protected Areas Draft Classification Standard. NIWA Client Report #HAM2007-129 prepared for WWF-New Zealand, project #WWF08201.

Hewitt, J.; **Lundquist**, C.; Halliday, J.; Hickey, C. (2006) Upper Waitemata Harbour Ecological Monitoring Programme – results from the first year of monitoring, 2005-2006. NIWA Client Report: HAM2005-008 prepared for Auckland Regional Council (ARC06223).

Halliday, J.; Hewitt, J.; **Lundquist**, C. (2006) Central Waitemata Harbour Ecological Monitoring: 2000—2006. NIWA Client Report: HAM2005-007 prepared for Auckland Regional Council (ARC06217).

**Lundquist**, C.; Pinkerton, M.; Grieve, J.; Chiaroni, L. (2006) Ecosystem Modelling of the Te Tapuwae o Rongokako Marine Reserve and its Environs. NIWA Client Report: HAM2005-044 prepared for the Department of Conservation (DOC05280).

Oldman, J.; **Lundquist**, C.; Cryer, M. (2005) Shellfish dispersal characteristics within Bream Bay and Whangarei Harbour. NIWA Client Report #HAM2005-035 prepared for Mighty River Power.

**Lundquist**, C.; Chiaroni, L.; Halliday, J.; Williston, T. (2004) Identifying Areas of Conservation Value in the Waikato Conservancy’s Coastal Marine Environment. NIWA Report #HAM2004-039 prepared for the Department of Conservation.

Hewitt, J.; **Lundquist**, C,; Hancock, N.; Halliday, J.; Chiaroni, L. (2004) Waitemata Harbour Ecological Monitoring programme – summary of data collected from October 2000 – February 2004. NIWA Report #HAM2004-056 prepared for Auckland Regional Council.

**Lundquist**, C.J.; Vopel, K.; Thrush, S.F.; Swales, A. (2003) Evidence for the physical effects of catchment sediment runoff preserved in estuarine sediments: Phase III (macrofaunal communities). NIWA Report #HAM2003-051 prepared for Auckland Regional Council.

Lohrer, A.M.; Hewitt, J.E.; Thrush, S.F.; **Lundquist**, C.J. Nicholls, P.E.; Liefting R. (2003) Impact of terrigenous material deposition on subtidal benthic communities. NIWA Report #HAM2003-055 prepared for Auckland Regional Council.