



COASTAL WETLANDS

Drawdown Technical Assessment References

Aburto-Oropeza, O., Ezcurra, E., Danemann, G., Valdez, V., Murray, J., & Sala, E. (2008). Mangroves in the Gulf of California increase fishery yields. *Proceedings of the National Academy of Sciences*, 105(30), 10456–10459.

Adam Langley, J., Mozdzer, T. J., Shepard, K. A., Hagerty, S. B., & Patrick Megonigal, J. (2013). Tidal marsh plant responses to elevated CO₂, nitrogen fertilization, and sea level rise. *Global change biology*, 19(5), 1495-1503.

Armitage, A. R., & Fourqurean, J. W. (2015). Carbon storage in seagrass soils: long-term nutrient history exceeds the effects of near-term nutrient enrichment. *Carbon*, 12, 16285-16312.

Barbier, E. B., Koch, E. W., Silliman, B. R., Hacker, S. D., Wolanski, E., Primavera, J., ... & Reed, D. J. (2008). Coastal ecosystem-based management with nonlinear ecological functions and values. *Science*, 319(5861), 321-323.

Barbier, E. B., Hacker, S. D., Kennedy, C., Koch, E. W., Stier, A. C., & Silliman, B. R. (2011). The value of estuarine and coastal ecosystem services. *Ecological monographs*, 81(2), 169-193.

Barbier, E. B., Georgiou, I. Y., Enchelmeyer, B., & Reed, D. J. (2013). The value of wetlands in protecting southeast Louisiana from hurricane storm surges. *PloS one*, 8(3), e58715.

Biber, P. D., Gallegos, C. L., & Kenworthy, W. J. (2008). Calibration of a bio-optical model in the North River, North Carolina (Albemarle–Pamlico sound): A tool to evaluate water quality impacts on seagrasses. *Estuaries and Coasts*, 31(1), 177–191.

Björk, M., Short, F., Mcleod, E., & Beer, S. (2008). *Managing seagrasses for resilience to climate change*. IUCN. Retrieved from https://books.google.com/books?hl=en&lr=&id=RP79Q6brJcoC&oi=fnd&pg=PA6&dq=Managing+seagrasses+for+resilience+to+climate+change+&ots=q7_hEDxhxj&sig=27jgaUPFgmFicXHEvdHCHlc7QjU

Bouillon, S., Dahdouh-Guebas, F., Rao, A. V. V. S., Koedam, N., & Dehairs, F. (2003). Sources of organic carbon in mangrove sediments: variability and possible ecological implications. *Hydrobiologia*, 495(1-3), 33-39.

Brander, L. M., Wagtendonk, A. J., Hussain, S. S., McVittie, A., Verburg, P. H., de Groot, R. S., & van der Ploeg, S. (2012). Ecosystem service values for mangroves in Southeast Asia: A meta-analysis and value transfer application. *Ecosystem Services*, 1(1), 62-69.

Brevik, E. C., & Homburg, J. A. (2004). A 5000 year record of carbon sequestration from a coastal lagoon and wetland complex, Southern California, USA. *Catena*, 57(3), 221-232.

Bromberg, K. D., & Bertness, M. D. (2005). Reconstructing New England salt marsh losses using historical maps. *Estuaries*, 28(6), 823-832.

Cahoon, D. R., Hensel, P., Rybczyk, J., McKee, K. L., Proffitt, C. E., & Perez, B. C. (2003). Mass tree mortality leads to mangrove peat collapse at Bay Islands, Honduras after Hurricane Mitch. *Journal of Ecology*, 91(6), 1093-1105.

Cai, W. J. (2011). Estuarine and coastal ocean carbon paradox: CO₂ sinks or sites of terrestrial carbon incineration?. *Annual Review of Marine Science*, 3, 123-145.

Chapin III, F. S., Woodwell, G. M., Randerson, J. T., Rastetter, E. B., Lovett, G. M., Baldocchi, D. D., ... & Schulze, E. D. (2006). Reconciling carbon-cycle concepts, terminology, and methods. *Ecosystems*, 9(7), 1041-1050.

Chmura, G. L., Anisfeld, S. C., Cahoon, D. R., & Lynch, J. C. (2003). Global carbon sequestration in tidal, saline wetland soils. *Global biogeochemical cycles*, 17(4).

<http://onlinelibrary.wiley.com/doi/10.1029/2002GB001917/full>

Connor, R. F., Chmura, G. L., & Beecher, C. B. (2001). Carbon accumulation in Bay of Fundy salt marshes: Implications for restoration of reclaimed marshes. *Global Biogeochemical Cycles*, 15(4), 943-954.

Costanza, R., Pérez-Maqueo, O., Martinez, M. L., Sutton, P., Anderson, S. J., & Mulder, K. (2008). The value of coastal wetlands for hurricane protection. *AMBIO: A Journal of the Human Environment*, 37(4), 241-248.

Crooks, S., Herr, D., Tamelander, J., Laffoley, D., & Vandever, J. (2011). Mitigating climate change through restoration and management of coastal wetlands and near-shore marine ecosystems: challenges and opportunities.

Das, S., & Vincent, J. R. (2009). Mangroves protected villages and reduced death toll during Indian super cyclone. *Proceedings of the National Academy of Sciences*, 106(18), 7357-7360.

Deegan, L. A., Johnson, D. S., Warren, R. S., Peterson, B. J., Fleeger, J. W., Fagherazzi, S., & Wollheim, W. M. (2012). Coastal eutrophication as a driver of salt marsh loss. *Nature*, 490(7420), 388-392.

De Groot, R., Brander, L., Van Der Ploeg, S., Costanza, R., Bernard, F., Braat, L., ... & Hussain, S. (2012). Global estimates of the value of ecosystems and their services in monetary units. *Ecosystem services*, 1(1), 50-61.

DeLaune, R. D., & White, J. R. (2012). Will coastal wetlands continue to sequester carbon in response to an increase in global sea level?: a case study of the rapidly subsiding Mississippi river deltaic plain. *Climatic Change*, 110(1-2), 297-314.

Design guidelines for tidal wetland restoration in San Francisco Bay. Phillip Williams & Associates, Limited, 2004.

Donato, D. C., Kauffman, J. B., Murdiyarso, D., Kurnianto, S., Stidham, M., & Kanninen, M. (2011). Mangroves among the most carbon-rich forests in the tropics. *Nature Geoscience*, 4(5), 293-297.

Drake, K., Halifax, H., Adamowicz, S. C., & Craft, C. (2015). Carbon Sequestration in Tidal Salt Marshes of the Northeast United States. *Environmental management*, 56(4), 998-1008.

Duarte, C. M., Middelburg, J. J., & Caraco, N. F. (2005). Major role of marine vegetation on the oceanic carbon cycle. *Biogeosciences*, 2(1), 1-8.

Duarte, C. M., Dennison, W. C., Orth, R. J., & Carruthers, T. J. (2008). The charisma of coastal ecosystems: addressing the imbalance. *Estuaries and coasts*, 31(2), 233-238.

Duarte, C. M., Conley, D. J., Carstensen, J., & Sánchez-Camacho, M. (2009). Return to Neverland: shifting baselines affect eutrophication restoration targets. *Estuaries and Coasts*, 32(1), 29-36.

Duarte, C. M., Marbà, N., Gacia, E., Fourqurean, J. W., Beggins, J., Barrón, C., & Apostolaki, E. T. (2010). Seagrass community metabolism: Assessing the carbon sink capacity of seagrass meadows. *Global Biogeochemical Cycles*, 24(4).

Ellison, J. C. (2000). How South Pacific mangroves may respond to predicted climate change and sea-level rise. In *Climate change in the South Pacific: impacts and responses in Australia, New Zealand, and small island states* (pp. 289-300). Springer Netherlands.

Erfteemeijer, P. L., & Lewis, R. R. R. (2006). Environmental impacts of dredging on seagrasses: a review. *Marine Pollution Bulletin*, 52(12), 1553-1572.

Erwin, K. L. (2009). Wetlands and global climate change: the role of wetland restoration in a changing world. *Wetlands Ecology and management*, 17(1), 71-84.

Feagin, R. A., Mukherjee, N., Shanker, K., Baird, A. H., Cinner, J., Kerr, A. M., ... & Dahdouh-Guebas, F. (2010). Shelter from the storm? Use and misuse of coastal vegetation bioshields for managing natural disasters. *Conservation Letters*, 3(1), 1-11.

Food and Agriculture Organization of the United Nations (FAO). (2007). *The world's Mangroves 1980-2005*.

Fourqurean, J. W., Duarte, C. M., Kennedy, H., Marbà, N., Holmer, M., Mateo, M. A., ... & Serrano, O. (2012). Seagrass ecosystems as a globally significant carbon stock. *Nature Geoscience*, 5(7), 505-509.

- Gedan, K. B., Silliman, B. R., & Bertness, M. D. (2009). Centuries of human-driven change in salt marsh ecosystems. *Annual Review of Marine Science*, 1, 117-141.
- Gilman, E. L., Ellison, J., Duke, N. C., & Field, C. (2008). Threats to mangroves from climate change and adaptation options: a review. *Aquatic botany*, 89(2), 237-250.
- Giri, C., Ochieng, E., Tieszen, L. L., Zhu, Z., Singh, A., Loveland, T., ... & Duke, N. (2011). Status and distribution of mangrove forests of the world using earth observation satellite data. *Global Ecology and Biogeography*, 20(1), 154-159.
- Greening, H., & Janicki, A. (2006). Toward reversal of eutrophic conditions in a subtropical estuary: Water quality and seagrass response to nitrogen loading reductions in Tampa Bay, Florida, USA. *Environmental Management*, 38(2), 163-178.
- Gunawardena, M., & Rowan, J. S. (2005). Economic valuation of a mangrove ecosystem threatened by shrimp aquaculture in Sri Lanka. *Environmental Management*, 36(4), 535-550.
- Herr, D., & Landis, E. (2016). *Coastal Blue Carbon Ecosystems: Opportunities for Nationally Determined Contributions*. Retrieved from http://bluesolutions.org/dev/wp-content/uploads/BC-NDCs_FINAL.pdf
- Jones, T. G., Ratsimba, H. R., Ravaoarinosihoarana, L., Cripps, G., & Bey, A. (2014). Ecological variability and carbon stock estimates of mangrove ecosystems in northwestern Madagascar. *Forests*, 5(1), 177-205.
- Kabat P, Fresco LO, Stive MJF, Veerman C, Van Alphen JSLJ, Parmet BWAH, Hazeleger W, Katsman CA (2009) Dutch coasts in transition. *Nat Geosci* 2:450–452.
- Kathilankal, J. C., Mozdzer, T. J., Fuentes, J. D., D'Odorico, P., McGlathery, K. J., & Zieman, J. C. (2008). Tidal influences on carbon assimilation by a salt marsh. *Environmental Research Letters*, 3(4), 44010.
- Kauffman, J. B., Heider, C., Cole, T. G., Dwire, K. A., & Donato, D. C. (2011). Ecosystem carbon stocks of Micronesian mangrove forests. *Wetlands*, 31(2), 343-352.
- Kauffman, J. B., Heider, C., Norfolk, J., & Payton, F. (2014). Carbon stocks of intact mangroves and carbon emissions arising from their conversion in the Dominican Republic. *Ecological Applications*, 24(3), 518-527.
- Kennedy, H., Beggins, J., Duarte, C. M., Fourqurean, J. W., Holmer, M., Marbà, N., & Middelburg, J. J. (2010a). Seagrass sediments as a global carbon sink: isotopic constraints. *Global Biogeochemical Cycles*, 24(4). Retrieved from <http://onlinelibrary.wiley.com/doi/10.1029/2010GB003848/pdf>
- Kirwan, M. L., & Megonigal, J. P. (2013). Tidal wetland stability in the face of human impacts and sea-level rise. *Nature*, 504(7478), 53-60.
- Kirwan, M. L., Guntenspergen, G. R., D'Alpaos, A., Morris, J. T., Mudd, S. M., & Temmerman, S. (2010). Limits on the adaptability of coastal marshes to rising sea level. *Geophysical Research Letters*, 37(23).

- Koch, E. W., Barbier, E. B., Silliman, B. R., Reed, D. J., Perillo, G. M., Hacker, S. D., ... & Halpern, B. S. (2009). Non-linearity in ecosystem services: temporal and spatial variability in coastal protection. *Frontiers in Ecology and the Environment*, 7(1), 29-37.
- Kristensen, E., Bouillon, S., Dittmar, T., & Marchand, C. (2008). Organic carbon dynamics in mangrove ecosystems: a review. *Aquatic Botany*, 89(2), 201-219.
- Laffoley, D., & Grimsditch, G. D. (Eds.). (2009). *The management of natural coastal carbon sinks*. lucn. Retrieved from https://books.google.com/books?hl=en&lr=&id=NZzIOHYvO4C&oi=fnd&pg=PR5&dq=The+management+of+natural+coastal+carbon+sinks.&ots=8dA_kKqnlx&sig=UsMrrz_Ads95wwGu6vFilU1qMh0
- Larsen, L. G., & Harvey, J. W. (2010). How vegetation and sediment transport feedbacks drive landscape change in the Everglades and wetlands worldwide. *The American Naturalist*, 176(3), E66-E79.
- Lavery, P. S., Mateo, M. Á., Serrano, O., & Rozaimi, M. (2013). Variability in the carbon storage of seagrass habitats and its implications for global estimates of blue carbon ecosystem service. *PloS one*, 8(9), e73748.
- Lee, S. Y., Dunn, R. J. K., Young, R. A., Connolly, R. M., Dale, P. E. R., Dehayr, R., ... & Welsh, D. T. (2006). Impact of urbanization on coastal wetland structure and function. *Austral Ecology*, 31(2), 149-163.
- Loomis, M. J., & Craft, C. B. (2010). Carbon sequestration and nutrient (nitrogen, phosphorus) accumulation in river-dominated tidal marshes, Georgia, USA. *Soil Science Society of America Journal*, 74(3), 1028-1036.
- Lotze, H. K., Lenihan, H. S., Bourque, B. J., Bradbury, R. H., Cooke, R. G., Kay, M. C., ... & Jackson, J. B. (2006). Depletion, degradation, and recovery potential of estuaries and coastal seas. *Science*, 312(5781), 1806-1809.
- Lovelock, C. E., Ruess, R. W., & Feller, I. C. (2011). CO2 efflux from cleared mangrove peat. *PloS One*, 6(6), e21279.
- Macreadie, P. I., Allen, K., Kelaher, B. P., Ralph, P. J., & Skilbeck, C. G. (2012). Paleoreconstruction of estuarine sediments reveal human-induced weakening of coastal carbon sinks. *Global Change Biology*, 18(3), 891-901.
- Macreadie, P. I., Baird, M. E., Trevathan-Tackett, S. M., Larkum, A. W. D., & Ralph, P. J. (2014). Quantifying and modelling the carbon sequestration capacity of seagrass meadows—a critical assessment. *Marine pollution bulletin*, 83(2), 430-439.
- Matsui, N., Morimune, K., Meepol, W., & Chukwamdee, J. (2012). Ten year evaluation of carbon stock in mangrove plantation reforested from an abandoned shrimp pond. *Forests*, 3(2), 431-444.
- Mazarrasa, I., Marbà, N., Lovelock, C. E., Serrano, O., Lavery, P. S., Fourqurean, J. W., ... & Duarte, C. M. (2015). Seagrass meadows as a globally significant carbonate reservoir. *Biogeosciences Discussions*.

- McIvor, A. L., Spencer, T., Möller, I., & Spalding, M. (2013). *The response of mangrove soil surface elevation to sea level rise*. The Nature Conservancy and Wetlands International.
- McKee, K. L., Cahoon, D. R., & Feller, I. C. (2007). Caribbean mangroves adjust to rising sea level through biotic controls on change in soil elevation. *Global Ecology and Biogeography*, 16(5), 545-556.
- Mcleod, E., Chmura, G. L., Bouillon, S., Salm, R., Björk, M., Duarte, C. M., ...& Silliman, B. R. (2011). A blueprint for blue carbon: toward an improved understanding of the role of vegetated coastal habitats in sequestering CO₂. *Frontiers in Ecology and the Environment*, 9(10), 552-560.
- Miyajima, T., Hori, M., Hamaguchi, M., Shimabukuro, H., Adachi, H., Yamano, H., & Nakaoka, M. (2015). Geographic variability in organic carbon stock and accumulation rate in sediments of East and Southeast Asian seagrass meadows. *Global Biogeochemical Cycles*, 29(4), 397-415.
- Moreno-Mateos, D., Power, M. E., Comín, F. A., & Yockteng, R. (2012). Structural and functional loss in restored wetland ecosystems. *PLoS-Biology*, 10(1), 45.
- Morris, J. T., Sundareshwar, P. V., Nietch, C. T., Kjerfve, B., & Cahoon, D. R. (2002). Responses of coastal wetlands to rising sea level. *Ecology*, 83(10), 2869-2877.
- Murray, R. H., Erler, D. V., & Eyre, B. D. (2015). Nitrous oxide fluxes in estuarine environments: Response to global change. *Global change biology*. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/gcb.12923/full>
- Nicholls, R. J. (2004). Coastal flooding and wetland loss in the 21st century: changes under the SRES climate and socio-economic scenarios. *Global Environmental Change*, 14(1), 69-86.
- Nyman, J. A., Walters, R. J., Delaune, R. D., & Patrick, W. H. (2006). Marsh vertical accretion via vegetative growth. *Estuarine, Coastal and Shelf Science*, 69(3), 370-380.
- Paling, E. I., Fonseca, M., van Katwijk, M. M., & van Keulen, M. (2009). Seagrass restoration. *Coastal wetlands: An integrated ecosystems approach*, 687-713.
- Park, S. R., Kim, J. H., Kang, C. K., An, S., Chung, I. K., Kim, J. H., & Lee, K. S. (2009). Current status and ecological roles of *Zostera marina* after recovery from large-scale reclamation in the Nakdong River estuary, Korea. *Estuarine, Coastal and Shelf Science*, 81(1), 38-48.
- Pearlstein, S. L., Felger, R. S., Glenn, E. P., Harrington, J., Al-Ghanem, K. A., & Nelson, S. G. (2012). Nipa (*Distichlis spalmieri*): A perennial grain crop for saltwater irrigation. *Journal of Arid Environments*, 82, 60-70.
- Pendleton, L., Donato, D. C., Murray, B. C., Crooks, S., Jenkins, W. A., Sifleet, S., ...& Baldera, A. (2012). Estimating global "blue carbon" emissions from conversion and degradation of vegetated coastal ecosystems. *PLoS one*, 7(9).
- Poffenbarger, H. J., Needelman, B. A., & Megonigal, J. P. (2011). Salinity influence on methane emissions from tidal marshes. *Wetlands*, 31(5), 831-842.

Ruiz, J. M., Pérez, M., & Romero, J. (2001). Effects of fish farm loadings on seagrass (*Posidonia oceanica*) distribution, growth and photosynthesis. *Marine Pollution Bulletin*, 42(9), 749-760.

Salem, M. E., & Mercer, D. E. (2012). The economic value of mangroves: a meta-analysis. *Sustainability*, 4(3), 359-383.

Sale, P. F., Butler, M. J., Hooten, A. J., Kritzer, J. P., Lindeman, K. C., Sadovy, Y. J., ... & Van Lavieren, H. (2008). Stemming decline of the coastal ocean: rethinking environmental management.

San Francisco Bay Area Tidal Marshes. <http://web.stanford.edu/~sophiarc/WetlandsHistory.html>

Short, F. T., Davis, R. C., Kopp, B. S., Short, C. A., & Burdick, D. M. (2002). Site-selection model for optimal transplantation of eelgrass *Zostera marina* in the northeastern US. *Marine Ecology Progress Series*, 227, 253-267.

Sidik, F., & Lovelock, C. E. (2013). CO₂ efflux from shrimp ponds in Indonesia. *PloS one*, 8(6), e66329.

Silliman, B. R., van de Koppel, J., McCoy, M. W., Diller, J., Kasozi, G. N., Earl, K., ... & Zimmerman, A. R. (2012). Degradation and resilience in Louisiana salt marshes after the BP–Deepwater Horizon oil spill. *Proceedings of the National Academy of Sciences*, 109(28), 11234-11239.

Stein, E. D., & Cadien, D. B. (2009). Ecosystem response to regulatory and management actions: The southern California experience in long-term monitoring. *Marine Pollution Bulletin*, 59(4), 91-100.

Stocker, T.F., Qin, G.-K., Plattner, L.V., Alexander, S.K., Allen, N.L., Bindoff, F., ... S.P. Xie. (2013). Technical summary. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., Qin, G.-K., Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Syvitski, J. P., Kettner, A. J., Overeem, I., Hutton, E. W., Hannon, M. T., Brakenridge, G. R., ... & Nicholls, R. J. (2009). Sinking deltas due to human activities. *Nature Geoscience*, 2(10), 681-686.

Temmerman, S., Meire, P., Bouma, T. J., Herman, P. M., Ysebaert, T., & De Vriend, H. J. (2013). Ecosystem-based coastal defence in the face of global change. *Nature*, 504(7478), 79-83.

Valiela, I., Bowen, J. L., & York, J. K. (2001). Mangrove Forests: One of the World's Threatened Major Tropical Environments. *Bioscience*, 51(10), 807-815.

Van Slobbe, E., De Vriend, H. J., Aarninkhof, S., Lulofs, K., De Vries, M., & Dircke, P. (2013). Building with Nature: in search of resilient storm surge protection strategies. *Natural hazards*, 65(1), 947-966.

Wamsley, T. V., Cialone, M. A., Smith, J. M., Atkinson, J. H., & Rosati, J. D. (2010). The potential of wetlands in reducing storm surge. *Ocean Engineering*, 37(1), 59-68.

Warren, R.S., P.E. Fell, R. Rozsa, A.H. Brawley, A.C. Orsted, E.T. Olson, V. Swamy, and W.A. Niering. 2002. Salt marsh restoration in Connecticut: 20 years of science and management. *Restoration Ecology* 10(3): 497–513.

Waycott, M., Duarte, C. M., Carruthers, T. J., Orth, R. J., Dennison, W. C., Olyarnik, S., ...& Kendrick, G. A. (2009). Accelerating loss of seagrasses across the globe threatens coastal ecosystems. *Proceedings of the National Academy of Sciences*, 106(30), 12377-12381.

Williams, P., & Faber, P. (2001). Salt marsh restoration experience in San Francisco Bay. *Journal of Coastal Research*, 27, 203-211.