Annotated bibliography for *submerged aquatic vegetation* compiled and summarized by The Pew Charitable Trusts

Bradley, M., & Paton, S. (2018). Tier 1 2017 Mapping of *Zostera marina* in Long Island Sound and Change Analysis. Retrieved from https://longislandsoundstudy.net/wp-content/uploads/2019/03/LIS_2017_report_eelgrass_FINAL.pdf

- Overview of remotely derived mapping data and methodologies for Long Island Sound SAV.
- Comprehensive survey of SAV (primarily eelgrass) and examines broad trends of eelgrass populations in the region.

Florida Fish and Wildlife Conservation Commission. (2019). Reports of Seagrass Integrated Mapping and Monitoring (SIMM) Program. Retrieved from https://myfwc.com/research/habitat/seagrasses/projects/active/simm/simm-reports/

- Overview of the stressors affecting seagrass ecosystems, monitoring and mapping efforts throughout Florida, and a statewide summary of seagrass status

Kelly, N. M., Fonseca, M., & Whitfield, P. (2001). Predictive mapping for management and conservation of seagrass beds in North Carolina. *Aquatic Conservation: Marine and Freshwater Ecosystems,* 11(6), 437-451. Retrieved from https://doi.org/10.1002/aqc.494

- This research extends techniques of predictive mapping from their application in terrestrial environments to marine landscapes by investigating the relationship between seagrass and hydrodynamics in Core Sound, North Carolina.
- This method provides for an inexpensive way to scale-up from high-resolution data to a coarser scale that is often required for conservation and management.

Kennish, M. J. Barnegat Bay-Little Egg Harbor Estuary: Ecosystem Assessment. Rutgers University Institute of Marine and Coastal Sciences. Retrieved from https://doi.org/doi:10.7282/T3GB27MM

- History of protective actions and detrimental events on Barnegat Bay-Little Egg Harbor estuary, 1995 to 2010, as well as a list of anthropogenic effects on the estuary.
- Includes maps of eelgrass decline, altered riparian zones, and summary of needed management actions to reduce nitrogen load.

Kennish, M. J., Haag, S. M., & Sakowicz, G. P. (2008). Seagrass Demographic and Spatial Habitat Characterization in Little Egg Harbor, New Jersey, Using Fixed Transects. *Journal of Coastal Research*(55 (10055)), 148-170. Retrieved from https://doi.org/10.2112/SI55-0013.1

- Assessment of the demographic characteristics and spatial habitat changes of *Zostera marina* beds over an annual growing period and to determine the species composition, relative abundance, and potential impacts of benthic macroalgae on seagrass habitat in the system.
- Nutrient enrichment, elevated turbidity levels, and prop scarring are anthropogenic factors that may significantly influence seagrass beds in Little Egg Harbor during the growing season.

Orth, R. J., Luckenbach, M. L., Marion, S. R., Moore, K. A., & Wilcox, D. J. (2006). Seagrass recovery in the Delmarva Coastal Bays, USA. *Aquatic Botany*, 84(1), 26-36. Retrieved from https://doi.org/10.1016/j.aquabot.2005.07.007

- Analysis of recovered seagrass populations along the Delmarva Peninsula and the conditions that supported them.
- Continued recovery will depend on maintaining good water quality to avoid eutrophication.
- Seeds and seed dispersal play an important role in the recovery and expansion of these beds.

Paling, E. I., Fonseca, M., van Katwijk, M. M., & van Keulen, M. (2009). Seagrass restoration. Coastal wetlands: An integrated ecosystems approach, 687-713. Retrieved from https://www.google.com/books/edition/_/xpgnDQAAQBAJ?hl=en&gbpv=1&pg=PP1&dq=Coastal+wetlands:+An+integrated+ecosystems+approach

- Summaries of drivers of seagrass loss, restoration methods, and policy issues relevant to mitigation around the world, including the United States.

Rezek, R. J., Furman, B. T., Jung, R. P., Hall, M. O., & Bell, S. S. (2019). Long-term performance of seagrass restoration projects in Florida, USA. *Scientific Reports*, 9(1), 15514. Retrieved from https://doi.org/10.1038/s41598-019-51856-9

- Analysis of 33 seagrass restorations ranging in age from 3 to 32 years to compare seagrass percent cover, species diversity, community structure, and methodological success in restored and contemporary reference seagrass beds.
- Restored seagrass beds in Florida, once established, often exhibit long-term persistence. Highlights the benefit of identifying and surveying historic restorations to address knowledge gaps related to the performance and long-term fate of restored seagrass beds.

Short, F. T., Kopp, B. S., Gaeckle, J., & Tamaki, H. (2002). Seagrass Ecology and Estuarine Mitigation: A Low-Cost Method for Eelgrass Restoration. *Fisheries Science*, 68(sup2), 1759-1762. Retrieved from https://www.jstage.jst.go.jp/article/fishsci1994/68/sup2/68_sup2_1759/_pdf

- Analysis of novel eelgrass transplanting method and the site conditions required for success.
- Successful tests were carried out in New Hampshire and Massachusetts, proving reliability, reduction of costs, and ease of implementation for citizen volunteers.

Society for Ecological Restoration. (2007). Boston Harbor Eelgrass Restoration. Retrieved from https://www.ser-rrc.org/project/usa-massachusetts-boston-harbor-eelgrass-restoration/

- An eelgrass restoration program implemented by the Massachusetts Division of Marine Fisheries is underway in Boston Harbor as a partial mitigation for assumed impacts to marine resources resulting from the HubLine gas pipeline construction which transits the Harbor.
- Under the auspices of this project, transplanting and seeding activities were conducted at several sites around the harbor.
- Website provides full documentation for all stages of the project.

Society for Ecological Restoration. (2003). Potomac River Eelgrass Restoration. Retrieved from https://www.ser-rrc.org/project/usa-maryland-potomac-river-eelgrass-restoration/

- As part of a larger effort to restore vital submerged aquatic vegetation (SAV) habitat in Chesapeake Bay–primarily eelgrass (*Zostera marina*)–three sites in the Potomac River were chosen for replanting.
- Despite a large quantity of distributed seeds and initial indicators of success, long-term survival rates for newly established seedlings proved disappointing. Poor water quality and ineffective seed storage procedures are thought to be the primary factors in the low success rate.
- Website provides full documentation for all stages of the project.

Virginia Institute of Marine Science. (2020). SAV Monitoring & Restoration. Retrieved from https://www.vims.edu/research/units/programs/sav/index.php

- Summary of monitoring and restoration efforts of SAV in Virginia Chesapeake Bay waters, as well as current threats to restoration and techniques used locally and internationally.