

Eelgrass Habitat Suitability Index Model

Funding Source

no official endorsement implied



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Eelgrass Habitat Suitability Index
Model - Advisory Group
Participation



<https://forms.office.com/r/aERsPKJeDW>

Project Team



Jamie Vaudrey

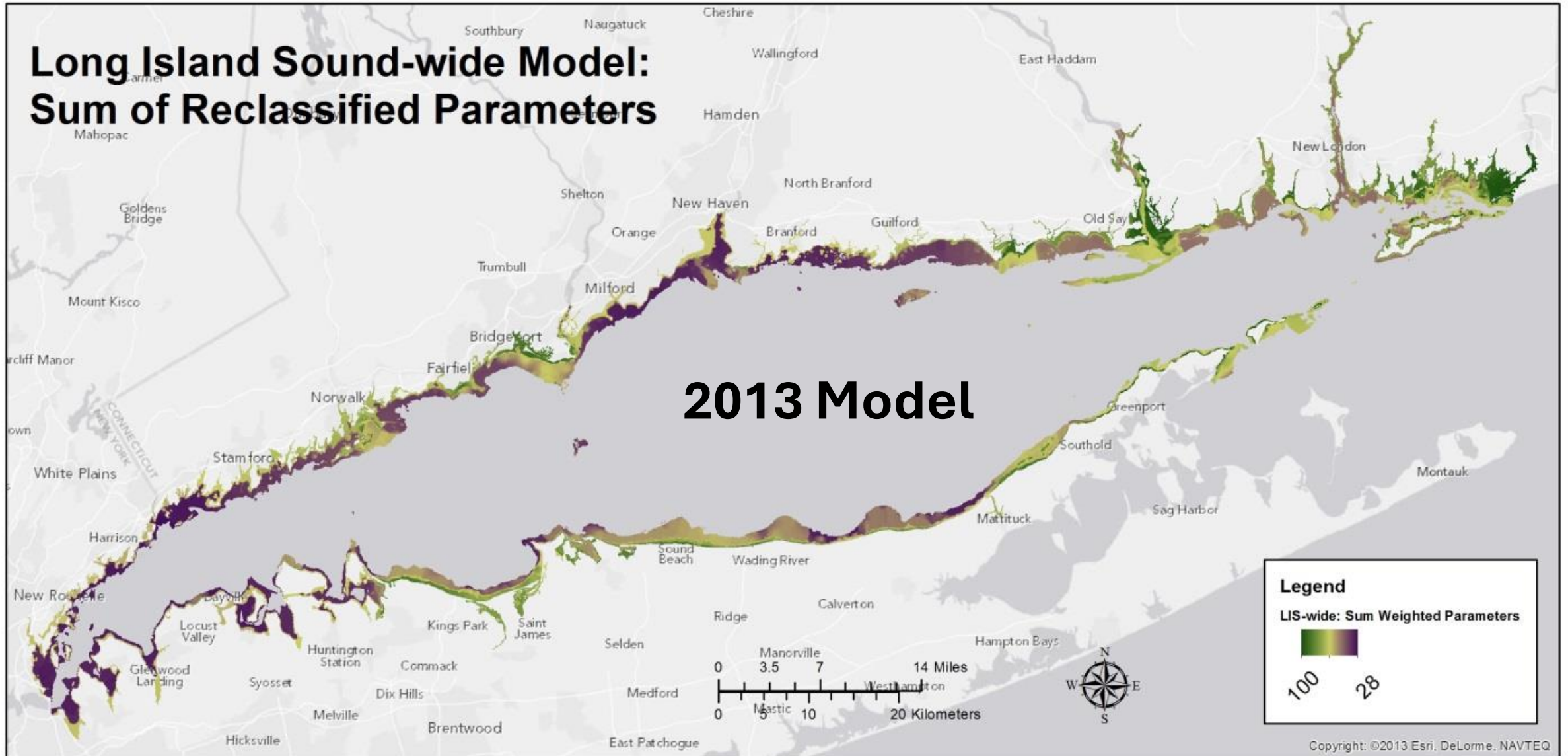
Cornell Cooperative Extension
Suffolk County

Christopher Pickerell

Lorne Brousseau

Michael Sautkulis

Stephen Schott



Vaudrey, Eddings, Pickerell, Brousseau, Yarish. (2013). Development and application of a GIS-based Long Island Sound Eelgrass Habitat Suitability Index Model. Final report submitted to the NEIWPC and the Long Island Sound Study. 171 p. + appendices.

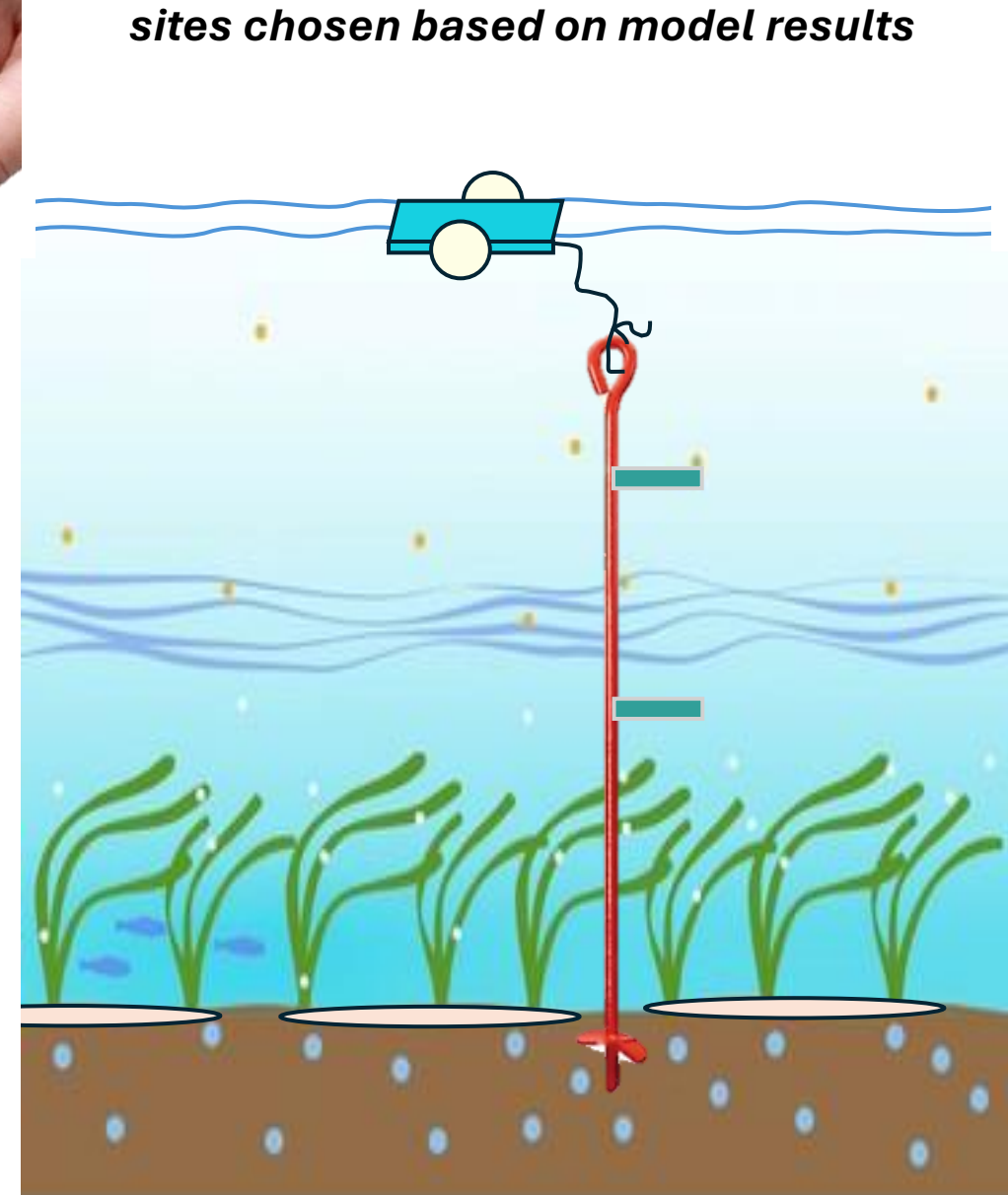
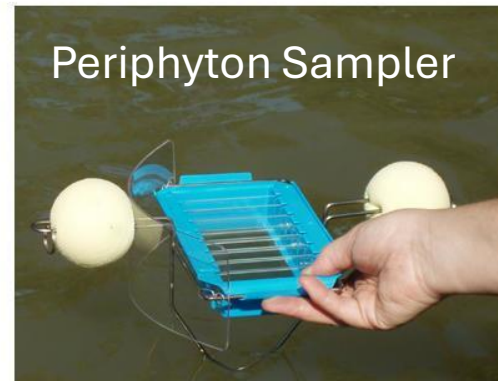
Data Type	New Sources to be Added
Bathymetry	<ul style="list-style-type: none"> ➤ USGS model of depth in LIS: USGS_CoNED_TBDEM1m ➤ NOAA’s nearshore topobathymetric LiDAR mapping is ongoing with an update in very shallow areas soon to be released. The mapping has been completed and has entered the quality assurance process (Tim Battista and Stephen White (NOAA), pers. comm.). https://legacy.seasketch.org/#projecthomepage/5272840f6ec5f42d210016e4 ➤ Vaudrey & O’Donnell (2022) results for CT using shallow water depth profiles to assess eelgrass potential habitat will be extended to NY.
Temperature	<ul style="list-style-type: none"> ➤ Save the Sound’s Unified Water Study provides temperature data from more than 50 embayment sections in Long Island Sound, 2018 to present. ➤ Satellite products for temperature will be evaluated for their potential for use in LIS. https://ocean.weather.gov/sst/newSST/GOES_SST.php ➤ Review Ben Lawton’s (LISS ORISE Fellow, 2024) temperature updates to EHSI
Sediment Characteristics	<ul style="list-style-type: none"> ➤ The LIS Blue Plan, released in 2019, includes sediment data. https://maps.cteco.uconn.edu/projects/blueplan/ ➤ The LIS Benthic Mapping initiative (2013 – present) includes sediment data from a variety of zones within LIS. https://lismap.uconn.edu/ ➤ USDA NRCS has continued to map subaqueous soils in LIS. Data from the entire coast of CT to a depth of 3 m (NAVD88) will be released around October 2024 (Jacob Isleib (NRCS), pers. comm.). There is currently subaqueous soil data available in CT for the Thimble Islands area, Niantic and Jordan Cove, and Little Narragansett Bay, available via Web Soil Survey. ➤ CT DEEP & LISS have sponsored a project to relate nutrient fluxes to sediment sulfide and other sediment characteristics (C. Tobias (UConn) pers. comm.). These data could be used to estimate sediment sulfide from grain size and organic carbon.
Water Clarity	<ul style="list-style-type: none"> ➤ Save the Sound’s Unified Water Study provides water clarity data from more than 50 embayment sections in Long Island Sound, 2018 to present. ➤ Bio-Optical model developed for Peconic Estuary (O’Toole, 2020)
Wave Exposure	<ul style="list-style-type: none"> ➤ A data product does not exist for wave exposure, but Shin et al. (2021) will be evaluated as a potential source of information. ➤ The work of O’Toole (2020) will be reviewed to assess potential methods.
Hardened Shorelines	<ul style="list-style-type: none"> ➤ Shoreline Construction Lines from ENC Direct https://encdirect.noaa.gov/arcgis/rest/services/encdirect/enc_harbour/MapServer/85

Task	month >>																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
A. QAPP development & submission, revision & approval (UConn)	x	x	x	x																			
B.1. Incorporate new data sources (CCE-GIS)					x	x	x	x															
B.2. Add additional data sources identified by TAC (CCE-GIS)							x	x	x														
B.3. Develop a preliminary model using existing and new data (CCE-GIS)					x	x	x	x	x	x	x	x											
C.1. Field Work (CCE-FIELD)													x	x	x							x	x
C.2. Assess skill of model at a subset of sites where sufficient data are available (existing or collected as part of this project) (UConn)																x	x	x					
D.1. Identify scenarios to run in the predictive model (UConn)															x								
D.2. Develop predictive model (CCE-GIS)																x	x	x	x				
D.3. Run scenarios using model (CCE-GIS)																		x	x	x	x		
E. Develop interpretive materials (CCE-GIS)																		x	x	x	x	x	x
F.1. Establish a Technical Advisory Committee (TAC) (UConn)	x																						
F.2. TAC Meetings (UConn) – see letters in table footnote for purpose		a					b				c			d							e		
F.3. Reports (UConn)			x			x			x		x			x			x			x			

Field Work

3 sites in CT, 3 sites in NY

- light/temperature at 2 depths per site
 - light attenuation coefficient
- periphyton sampler per site
 - degree of epiphytes
- sediment organic content
- sediment grain size
- test plot of eelgrass planted in fall 2025, eelgrass survival assessed in spring 2026



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Technical Advisory Committee – Draft Meeting Timeline

MONTH 2	Project kick-off meeting
MONTH 7	Preliminary model data source review
MONTH 12	Preliminary model review
MONTH 15	Predictive model scenarios final review
MONTH 21	Final review

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