Eelgrass Policy, Legislation, and Recommendations in Connecticut, Neighboring Regions and Programs

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2 Preservation and Restoration of Eelgrass- Policy, Legislation, and Recommendations in Neighboring Regions and Programs

2.1 Local EPA Estuary Programs and NOAA National Estuarine Research Reserves

2.1.1 Long Island Sound Study

Source: Long Island Sound Comprehensive Conservation and Management Plan, 2015 (https://longislandsoundstudy.net/wp-content/uploads/2015/09/CCMP_LowRes_Hyperlink_singles.pdf)

Eelgrass Reference in the LISS CCMP (2015):

- Eelgrass (*Zostera marina*), a rooted underwater plant with ribbon-like strands that forms meadows ecologically important for fish and shellfish, increased by 4.5 percent between 2009 and 2012, and 29 percent between 2002 and 2012 (Tiner et al. 2013). Additional actions to control nitrogen runoff from streets, landscaping, and farms, along with further wastewater treatment facility (WWTF) upgrades, are underway to reach defined reduction goals by 2017, with further improvements to water quality expected.
- THEME 1 - CLEAN WATERS AND HEALTHY WATERSHEDS - Challenges and Solutions: Document the economic and ecosystem consequences of nitrogen pollution from hypoxia, eelgrass and wetland loss, and increased vulnerability to acidification.
- THEME 1 - CLEAN WATERS AND HEALTHY WATERSHED - Water Clarity: Improve water clarity by 2035 to support healthy eelgrass communities and attainment of the eelgrass extent target.
- THEME 2 - THRIVING HABITATS AND ABUNDANT WILDLIFE - Ecosystem Targets: Restore 350 acres of coastal habitat by 2020 and a total of 3,000 acres by 2035 from a 2014 baseline, including eelgrass extent - restore and maintain 2,000 additional acres of eelgrass by 2035 from a 2012 baseline of 2,061 acres. (a technical explanation of coastal habitat ecosystem targets can be found on pages 61-66 of the CCMP, including background on the goal to restore and maintain an additional 2,000 acres of eelgrass habitat).
- SOUND SCIENCE AND INCLUSIVE MANAGEMENT - Challenges and Solutions: Increase the capacity of Long Island Sound to assimilate nutrients without harmful effects by restoring wetlands, eelgrass, and harvesting, (aquaculture), of shellfish and seaweed.
- LISS AND PARTNER KEY ACCOMPLISHMENTS, 1994–2014 - IMPROVED WATER QUALITY: Increased the area of eelgrass beds, a rooted underwater plant sensitive to water quality conditions, by 4.5 percent between 2009 and 2012 and 29 percent between 2002 and 2012.
- TECHNICAL EXPLANATION OF ECOSYSTEM TARGETS -water clarity: Improve water clarity by 2035 to support healthy eelgrass communities and attainment of the eelgrass extent target. Water clarity is one of the major factors affecting eelgrass health and therefore extent. For most, LIS water clarity is correlated with phytoplankton levels and measured using standard light penetration techniques (e.g., Secchi disk, photosynthetically active radiation sensors). For the purposes of this goal, “improved” is defined as an increase in the overall numeric criterion for water clarity in the Long Island Sound water quality report card (under

development) by at least half letter grade (e.g., B to B+) between the initial 2015 report card evaluation and the evaluation conducted in 2035 (page 63).

Summary:

To increase eelgrass extent and support healthy eelgrass communities, the Long Island Sound Study goals are to improve water clarity by 2035 and reduce nitrogen pollution in the Sound. With a total goal of 4,061 acres of eelgrass extent as measured by aerial imagery, the Study will restore and maintain an additional 2,000 acres of eelgrass by 2035 from the 2,061 baseline as recorded in 2012. The target goal will be achieved with water quality protections, reductions in land-based input of nutrients, and replanting efforts. The LISS developed The Habitat Restoration and Stewardship Work Group, which tracks and identifies areas for eelgrass restoration projects.

2.1.2 Peconic Estuary Program

Source: Peconic Estuary Partnership Comprehensive Conservation and Management Plan, 2020 (https://indd.adobe.com/view/publication/201ca273-3278-44ee-b907-a8308ec3d4a5/3jqh/publication-web-resources/pdf/PEPCCMP2020_FullDocumentforPublishOnline.pdf)

Eelgrass Reference in the Peconic Estuary Program CCMP (2020):

- Objective H: Restore and protect key habitats and species diversity in the Peconic Estuary and its watershed. Action 30: Monitor and protect existing eelgrass beds; where appropriate, restore and expand eelgrass beds.
- Milestones in Peconic Protection 2000-2019
    - 2000 Habitat Restoration: Since 2000, more than two dozen projects have restored shorebird habitat, wetlands, grasslands, beaches, shellfish, diadromous fish habitat, and eelgrass beds.
    - 2009 Bullhead Bay Eelgrass Sanctuary: The sanctuary protects the estuary's westernmost eelgrass bed, which provides habitat for fish and shellfish.
- CCMP 2020 planning process long-term goal: Healthy ecosystem with abundant, diverse wildlife- habitats and wildlife of the Peconic estuary face several key threats that have led to the loss and degradation of eelgrass beds, marshes, pine barrens, and diadromous fish habitat. PEP's actions in CCMP 2020 will build scientific understanding and support decision-making to address these threats.
- Action 30: Monitor and protect existing eelgrass beds; where appropriate, restore and expand eelgrass beds. PEP's partners recently developed a Seagrass Bio-Optical and Habitat Suitability Model to better understand the specific light and temperature requirements for eelgrass in the Peconic Estuary. Results from this model will be used to

identify potential sites for eelgrass restoration or enhancement. To protect existing eelgrass, BMPs and management areas will be developed and implemented.

- PRIORITIES FOR RESEARCH AND MONITORING: HEALTHY ECOSYSTEM:
  - Research on eelgrass habitat in the Peconic Estuary, including studies of eelgrass traits, population genetics, and groundwater influences on eelgrass health, including potential positive (cooling effect) and negative (pesticide/herbicide) impacts.
  - Research on the distribution and value of submerged aquatic vegetation (SAV) habitats other than eelgrass, such as widgeon grass (*Ruppia*).

Summary:

The goals of the Peconic Estuary Partnership are to restore and protect key habitats and species diversity in the Peconic Estuary and its watershed including monitoring, protecting, restoring, and enhancing eelgrass beds. Since 2000 there have been ongoing eelgrass restoration projects in the estuary, including the protection of the westernmost eelgrass beds through the Bullhead Bay Eelgrass Sanctuary project in 2009. The PEP has been utilizing tools such as the Seagrass Bio-Optical and Habitat Suitability Model to understand light and temperature requirements of eelgrass in the Peconic estuary, and established 2020 goals to build scientific understanding and support decision-making to address threats to eelgrass beds. Specific research and monitoring priorities will include impacts to eelgrass habitats by groundwater, pesticides, and cooling effects, as well as research into eelgrass traits and population genetics.

2.1.3 South Shore Estuary Program

Source: Long Island South Shore Estuary Reserve Comprehensive Management Plan, 2022 (https://dos.ny.gov/system/files/documents/2022/09/2022-sser-cmp.pdf)

Eelgrass Reference in the South Shore Estuary Program CMP (2022):

Action 3.8.5: Maintain regular inventory of eelgrass distribution and identify, conserve, and monitor key locations. The inventory of eelgrass distribution should be regularly updated and periodically, coordinated with the timing and methods used to survey eelgrass in Long Island Sound and the Peconic Bays. Benthic mapping from aerial imagery and surface level verification along with other emerging technology and methodology of the estuary's seagrass beds will determine eelgrass distribution and abundance. Periodic monitoring will provide the basis for evaluation of eelgrass loss or impairment trends in relation to management. Locations within the Reserve that possess adequate conditions for healthy eelgrass based on temperature, sediment quality and water quality should be identified, protected and monitored. The role of nutrient loading and temperature tolerance ranges in eelgrass decline needs to be researched to be better understood, along with research on carbon storage capacity and carbon sequestration provided by seagrass beds.

CURRENT EFFORTS:

- Suffolk County Water Quality Protection and Restoration and Land Stewardship Initiatives (WQPRP) – Drinking Water Program: The WQPRP provides funding to protect and restore water resources throughout the County, including the Reserve. This includes both surface and groundwater. Currently, the County is funding nine projects within the Reserve totaling about $3 million including stormwater improvements, septic upgrades on County parklands, habitat restoration of various shellfish species and eelgrass and the Mud Creek Watershed Aquatic Ecosystem Restoration Plan.
- Shinnecock Bay Restoration Program (ShiRP) The Shinnecock Bay Restoration Program was created in 2012 by the Stony Brook University School of Marines and Atmospheric Sciences and the Institute for Ocean Conservation-Science at Stony Brook University to return Shinnecock Bay to a thriving part of the South Shore Estuary. The ShiRP Program is focused on public education, eelgrass restoration, and community oyster gardening to help reduce harmful algal blooms and restore shellfish populations in the Shinnecock Bay.
- NYS Seagrass Protection Act: The Seagrass Protection Act, passed by the NYS Legislature in 2012, directs the designation of seagrass management areas and subsequent development of a seagrass management plan. The NYS Seagrass Coordinator at NYSDEC along with municipalities and stakeholders will develop conservation planning efforts for seagrass across coastal waters and the bays within the Reserve. These bays are priority areas considering they contain the greatest amount of eelgrass remaining in New York State.
- SAV Mapping in the Reserve Aerial: Related benthic habitat mapping (mapping of the bay bottom) of submerged aquatic vegetation that includes eelgrass (Zostera marina) and widgeon grass (Ruppia maritima) was completed in the Spring of 2020 for the Reserve to update previous maps completed in 2002. This was a joint project between Long NYSDOS, Governor's Office of Storm Recovery and NOAA. Continued monitoring of eelgrass and widgeon grass (Ruppia maritima) is needed to inform conservation, management, and restoration priorities in the Reserve.
- Cornell Cooperative Extension of Suffolk County: The Cornell Cooperative Extension (CCE) of Suffolk County provides a multitude of operational and educational programs that benefit the aquaculture industry within Suffolk County. The CCE Seagrass Program restores and monitors eelgrass meadows through volunteer participation efforts. To facilitate restoration, CCE transplants adult shoots. CCE has a bay seeding program that is enhanced by the Suffolk Project in Aquaculture Training which educates volunteers to grow and seed shellfish. In addition, the Suffolk County Marine Environmental Learning Center provides interested individuals with the educational tools to begin their shellfish farming businesses.

Summary:

The South Shore Estuary Program focuses on estuary protection and eelgrass restoration, with a goal to maintain an eelgrass distribution inventory to identify key locations for conservation. This project is perpetuated by periodic surveys in LIS and the Peconic Bays, utilizing

benthic mapping from aerial imagery and surface level verification. The program works with other groups such as the Shinnecock Bay Restoration program to reduce harmful algal blooms and the Cornell Cooperative Extension of Suffolk County to organize volunteer programs to restore and monitor eelgrass beds through adult shoot transportation and seeding programs. Much of the South Shore Estuary Program's work also involves the 2012 NYS Seagrass Protection Act, which directs the designation of seagrass management areas, as well as the development of a seagrass management plan across coastal waters and the bays within the Reserve.

2.1.4 Narragansett Bay Estuary Program

Source: Comprehensive Conservation and Management Plan: Narragansett Bay Estuary Program, 2012
(https://static1.squarespace.com/static/5eea260cea828333324dba1c/t/5f85eb96a782b87e8affc375/1602612134638/NBEP+CCMP+2012.pdf)

Eelgrass Reference in the Narragansett Bay CCMP (2012):

- Eelgrass was once widespread in the Bay but it is now mostly limited to the lower part of the Bay where water quality is better. Eelgrass is sensitive to nutrient loads as well as increased temperature. There were significant losses in the middle decades of the last century due to a wasting disease that affect the plant; that, coupled with increasing pollution, had a serious impact on eelgrass in the Bay. A 2007 study of the Bay's eelgrass beds revealed that 404.3 acres were remaining
- Over the late 1990s and into the next decade, there had been a concerted effort to restore eelgrass to Narragansett Bay. Historical records indicated that, at one time, the Bay had hundreds of acres of eelgrass beds. The most recent assessment of eelgrass extent in the Bay (Bradley, et. al. 2007) measured just over 400 acres of eelgrass. Eelgrass restoration began in 1995 with a Greenwich Bay transplant project organized by NBEP. Since that time, partners in eelgrass restoration have included the University of Rhode Island, Save The Bay, RIDEM, R.I. CRMC, NBEP and NOAA. Eelgrass seeding was attempted in 2001 by URI using federal funding; several seeding projects followed but with germination rates of less than 10%, this method was discontinued. Hand transplanting of eelgrass shoots became the preferred method with Save The Bay leading efforts to plant and monitor eelgrass at several locations in the Bay. The long-term results have been mixed and eelgrass advocates now feel we should be focusing on improving water quality that will promote natural growth of eelgrass beds.
- After centuries of losing and degrading vital habitats, we now pursue restoration of wetlands, eelgrass beds, fish runs and other habitats, fully integrating habitat restoration into our concept of ecosystem management

Summary:

Due to factors including poor water quality and wasting disease, the Narragansett Bay Estuary, which once had a widespread eelgrass population, is now limited to a 400-acre bed in the lower part of the bay. The Narragansett Bay Estuary Program has worked alongside many partners, including the Greenwich Bay transplant project, to restore eelgrass population in the bay since 1995. Other partners include The University of Rhode Island, Save The Bay, RIDEM, R.I. CRMC, NBEP and NOAA. Efforts for restoration have included seeding and planting by hand, with Save the Bay specifically helping to lead shoot transplanting projects. Water quality improvement will be the next issue addressed in the restoration of habitat within the Narragansett Bay.

2.1.5 Connecticut National Estuarine Research Reserve

Source: Connecticut National Estuarian Research Reserve Management Plan, 2022 (https://coast.noaa.gov/data/czm/media/ctnerr-fmp.pdf)

Eelgrass Reference in the CT NERR Management Plan (2022):

- 10.1 Priority Restoration Areas/Descriptions: Restoration activities and locations that may host future efforts during the first five years includes tidal marsh restoration and eelgrass restoration in Mumford Cove, on the eastern side of Bluff Point.
- Table 11-2: Proposed CT NERR Research and Monitoring Objectives—R2, S5, T1: Collaborate in ongoing coastal restoration efforts (eelgrass, shellfish, and salt marshes) and assess the ecological effects of restoration (e.g., vegetation composition, extent, and faunal use) by serving as a reference site for the other impacted areas.
- 15.2.2.3 Gaps:
  - Research and Monitoring: Long-term monitoring in a variety of coastal habitats – marsh, eelgrass, etc.
  - Goals-Supporting Research & Monitoring: Long-term monitoring establishes baseline for sensitive habitat in coastal CT, including marshes and eelgrass beds.
- 15.2.4.3 What are the most pressing research issues?
  - Monitoring:
    - Sentinel species – birds, eelgrass, blue crab, flounder, etc.
    - Eelgrass loss
  - Climate change – ecosystem integrity:
    - Sentinel species – birds, eelgrass, blue crab, flounder, etc.
  - Ecosystem Services:
    - Eelgrass loss in Poquonnock Cove
- 15.2.5.3 Potential Focus Areas
  - Habitats/ecosystems/biodiversity
    - Restore eelgrass and other SAV areas
- 15.2.6.2 Stewardship Action Items
  - Conservation/restoration/mitigation in saltwater areas

        - Oyster and eelgrass restoration
        - Eelgrass restoration
    - 15.2.6.3 Public Access Issues/Actions
        - Concerns in Saltwater areas
            - Protect eelgrass and marsh grass from personal watercraft
    - Collaborators: Conn College is doing eelgrass research

Summary:

The CT NERR focuses on collaboration between groups working on ongoing restoration projects, reviewing the ecological effects of restoration, and developing long-term monitoring projects to establish a baseline understanding of sensitive habitat in coastal CT. Within the first five years of the development of the CT NERR, projects will likely focus on tidal marsh restoration and eelgrass restoration in Mumford Cove, including on the eastern side of Bluff Point. The CT NERR will also address public access issues including the protection of eelgrass and marsh grass from personal watercraft.

2.2 Neighboring States

2.2.1 New York State

New York State Law and Regulations (From Report of the New York State Seagrass Task Force p. 20-21)

New York State does not currently have any regulations or laws specifically protecting seagrass, however many laws, mandates and regulations apply to areas where seagrass may be found. These regulations either indirectly or directly affect seagrass beds, but do not adequately protect seagrass or seagrass habitat.

Environmental Conservation Law (ECL):

- 6NYCRR Part 49: Shellfish Management- Gives NYSDEC authority to develop regulations on manner and method of taking and gear restrictions for harvest of hard clams, soft clams, razor clams, oysters and scallops.

- ECL Article 13 restricts the use of mechanical harvest on public or unleased underwater land except for the taking of certain species defined in law. Both the ECL and 6NYCRR are generally resources based and should be amended to afford protection of seagrass habitat that may be impacted by shellfish harvesting activities.

- ECL Article 25 & 6NYCRR Part 661: Tidal Wetlands Land Use Regulations- Gives NYSDEC jurisdiction over tidal wetlands up to 6 feet below Mean Low Water (MLW), which includes some, but not all of the seagrass habitats in NY. It does not give the DEC authority to restrict activities that may negatively affect seagrasses.

- 6NYCRR Part 46: Public Use of State-Owned Tidal Wetlands – This regulation protects tidal wetlands, requiring permits for use and outlines public-use criteria, however this is exclusive of seagrass.

- ECL Article 15 & 6NYCRR Part 608: Protection of Waters, Article 15- Provides authority for docking rules and regulations, water quality, and disturbance of tidal wetlands by filling water with materials. Seagrass is not mentioned in this act.

- 6NYCRR Part 617: State Environmental Quality Review (SEQR)- Process requires that any project or activity proposed by the state or other local government agency undergo an environmental impact assessment to identify and mitigate the significant environmental impacts of proposed projects. New York State Coastal Management Program Policies require the protection of habitats that support commercially and recreationally important species (see Table 2) and habitats that are essential to the survival of a large portion of a fish or wildlife population. New York State Navigation Law requires that boaters maintain three feet of depth (low water mark) when navigating shallow areas. This helps reduce boat-induced damage in seagrass habitats, but is not a habitat based management tool.

2.2.2 Rhode Island

- RI Coastal and Estuarine Land Conservation Plan w/ regulations*: http://www.crmc.ri.gov/regulations/CELCP.pdf
- Title 650 Coastal Resources Management Council: Chapter 20-Coastal Management Program*: https://risos-apa-production-public.s3.amazonaws.com/CRMC/REG_12984_20230713145031502.pdf
    - Exact wording "Proposed aquaculture leases may not be sited where eelgrass (*Zostera marina*) or widgeon grass (*Ruppia maritima*) exists."

From RI Coastal Resources Management Council page on Submerged Aquatic Vegetation - The goal of CRMC is to preserve, protect, and where possible, restore SAV habitat. The following activities under CRMC jurisdiction are required to avoid and minimize impacts to SAV habitat under Section 300.18 of the RI Coastal Resources Management Program (RICRMP):

- Residential, Commercial, Industrial, and Public Recreational Structures, Section 300.3
- Recreational Boating Facilities, Section 300.4
- Sewage Treatment and Stormwater, Section 300. 6
- Dredging and Dredged Materials Disposal, Section 300.9
- Filling in Tidal Waters, Section 300.10
- Aquaculture, Section 300.11
- Activities undertaken in accordance with municipal harbor regulations, Section 300.15

From Title 650 – Coastal Resources Management Council Chapter 20: Coastal Management Program

- The Council's goal is to preserve, protect and where possible, restore SAV habitat. In cases where the Council determines that SAV may be altered or grants a special exception to a

prohibition listed in § 1.3.1(R)(2) of this Part, the Council shall require the mitigation of all impacts to SAV. Such activities requiring mitigation include, but are not limited to, marina expansions, dredging, filling in tidal waters, construction of commercial docks and/or structures and any other activity determined by CRMC that has not significantly or appropriately avoided impacts to SAV. Permanently lost or significantly altered SAV shall be replaced through the restoration of an historical SAV habitat or the creation of a new SAV habitat at a site approved by the Council. The ratio of restoration to loss shall be 2:1.

- Activities under CRMC jurisdiction, including residential, commercial, industrial, and public recreational structures (§ 1.3.1(A) of this Part), recreational boating facilities (§ 1.3.1(D) of this Part), sewage treatment and stormwater (§ 1.3.1(F) of this Part), dredging and dredged materials disposal (§ 1.3.1(I) of this Part), filling in tidal waters (§ 1.3.1(J) of this Part), aquaculture (§ 1.3.1(K) of this Part), and activities undertaken in accordance with municipal harbor regulations (§ 1.3.1(O) of this Part), shall avoid and minimize impacts to SAV habitat.
- Floats, and float and platform lifts (including grate-type structures) associated with residential docks are prohibited over SAV as defined herein (See § 1.1.2(A)(157) of this Part).
- Boat lifts having the capacity to service vessels larger than a tender (vessels greater than twelve (12) feet long and greater than one thousand two hundred (1,200) lbs) are prohibited over SAV.
- The long-term docking of vessels at a recreational boating facility shall be prohibited over SAV.

Long Island Sound Blue Plan

The LIS Blue Plan provides an inventory of the natural resources and uses of Connecticut's LIS and establishes a spatial plan to guide future use of the Sound's waters and submerged lands, including eelgrass habitat. The purpose of the Blue Plan is to facilitate a transparent, science-based decision-making process for the preservation of Long Island Sound's ecosystems and resources and the protection of traditional uses, while maximizing their compatibility and minimizing conflicts between them now and in the future. Organizational teams and working groups were developed to create and identify criteria for Ecologically Significant Areas (ESAs), which include areas where Submerged Aquatic Vegetation (SAV) is or has been found in the past. The Blue Plan identifies policies that regulatory agencies use in decision making under their existing authority.

2.2.3 Connecticut

CT Coastal Management Act – CCMA

CGA Chapter 444 Sections 22a-90 to 22a-113j

Regulates any work in tidal, coastal, and navigable waters and tidal wetlands under CCMA. This includes the preservation of eelgrass beds as well as the encouragement of natural eelgrass rehabilitation. The only exception outlined to this is in instances where the environmental benefit of an action taken in the habitat would be more valued in its effects on marine biota, waterfowl, and commercial and recreational finfisheries. This act is administered by the Department of Energy and Environmental Protection and approved by the National Oceanic and Atmospheric

Administration (NOAA) under the federal Coastal Zone Management Act. Regulations are administered under the following acts within the Coastal Management Program [1]:

CGA Sections 22a-90 – 22a-112: Tidal, coastal, and navigable waters and tidal wetlands under CCMA

22a-92: "Policies concerning coastal land and other resources within the coastal boundary are: (A) To manage estuarine embayments so as to ensure that coastal uses proceed in a manner that assures sustained biological productivity, the maintenance of healthy marine populations and the maintenance of essential patterns of circulation, drainage and basin configuration; to protect, enhance and allow natural restoration of eelgrass flats…[2]"

CGA Sections 22a-359 – 22a-363f: Structures Dredging and Fill statutes

*22a-361: "*The commissioner may waive or reduce any fee payable pursuant to subdivision (1) of this subsection for (A) a tidal wetlands or coastal resource restoration or enhancement activity, (B) experimental activities or demonstration projects, (C) nonprofit academic activities, or (D) public access activities in tidal, coastal or navigable waters " "sand, gravel or other material shall be offered for the purposes of an appropriately authorized beach nourishment or habitat restoration project [3]."

22a-363b: "The following activities may be eligible for a certificate of permission… open water marsh management, tidal wetland restoration, resource restoration or enhancement activity, as defined in subsection (a) of section 22a-361, including beach nourishment, and conservation activities undertaken by or under the supervision of the Department of Energy and Environmental Protection…[4]"

2002 (P.A. 02-50) CT General Statutes Title 26 Chapter 495 Sec. 26-316A-363B

Requires the Commissioner of Energy and Environmental Protection to adopt regulations to protect and restore eelgrass. Projects include the protection of existing eelgrass beds from degradation, the development of a restoration plan, and the monitoring of the effectiveness of measures to restore and protect eelgrass [5].

Connecticut House Bill 6480 Special Act 23-7

An act by the Senate and House of Representatives requiring that those with environmental knowledge within the co-chairpersons and ranking members of the joint standing committee of the General Assembly create a working group on the restoration of eelgrass along the CT State

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[1] Arthur J. Rocque, Jr. . "Connecticut Coastal Management Manual." (2000).

[2] Conn. Gen. Stat. Sec. 22a-92

[3] Conn. Gen. Stat. Sec. 22a-361

[4] Conn. Gen. Stat. Sec. 22a-363b

[5] Conn. Gen. Stat. Sec. 26-316

shoreline. Members must consist of individuals from a wide range of groups including academia and aquaculture. The group is required to develop strategies for eelgrass restoration utilizing studies from neighboring states, with a report of this work shared with the joint standing committee of the General Assembly by February 1st, 2024 [6].

Long Island Sound Blue Plan

The LIS Blue Plan provides an inventory of the natural resources and uses of Connecticut's LIS and establishes a spatial plan to guide future use of the Sound's waters and submerged lands, including eelgrass habitat. The purpose of the Blue Plan is to facilitate a transparent, science-based decision-making process for the preservation of Long Island Sound's ecosystems and resources and the protection of traditional uses, while maximizing their compatibility and minimizing conflicts between them now and in the future. Organizational teams and working groups were developed to create and identify criteria for Ecologically Significant Areas (ESAs), which include areas where Submerged Aquatic Vegetation (SAV) is or has been found in the past. The Blue Plan identifies policies that regulatory agencies use in decision making under their existing authority.

Specifically Related to Eelgrass and Aquaculture Interactions (From in 2019 Guide to Marine Aquaculture Permitting in CT):

- Avoid activity in protected habitats (e.g. eelgrass, turtle grass, salt marsh). Aquaculture activity in any eelgrass bed, including harvest, is strictly prohibited. The following conditions will be regularly implemented by the USACE:
    - Aquaculture gear may not be located over or within 25 feet of beds of submerged aquatic vegetation (SAV), nor shall such beds or vegetated marsh areas be damaged or removed;
    - Routine lease activity including gear maintenance, washing, etc. shall not occur within 25 feet of the edge of SAV beds;
    - Every year at the onset of the growing season (May 15 through June 15) that gear will be placed at the authorized gear location(s) near SAV, the permittee shall conduct a visual assessment of the gear area (see Joint Federal Agency SAV Survey Guidance-Tier 1), at low tide, for eelgrass. If eelgrass is present, the outer boundary of the bed should be marked with buoys of a different color than the shellfish aquaculture gear markers, and the gear shall be installed or relocated such that it is placed a minimum of 25 feet away from the seasonal boundary of the eelgrass. Buoys that mark the SAV area shall be relocated each year, as needed, to maintain the 25-foot offset and ensure compliance[7].

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[6] Senate and House of Representatives. An Act Establishing a Working Group on the Restoration of Eelgrass General Assembly, 6480.

[7] Getchis, T.L., Carey, D.H., Kelly, S., Rose, C.M., Romero, K. and D. Gonyea. A Guide to Marine Aquaculture Permitting in Connecticut. (Groton, Connecticut: 2019).

3 Additional State Permitting Reports Related to Eelgrass and Aquaculture

Note: many of the aquaculture documents linked below include reference to eelgrass/seagrass/SAV. An * is included to represent documents with specific reference.

3.1 Connecticut

- 2022 Comprehensive Review of CT Aquaculture Laws: https://seagrant.uconn.edu/wp-content/uploads/sites/1985/2022/10/2022_Review-of-CT-Aquaculture-Laws-FINAL_clickable-table-of-contents.pdf
- 2019 Aquaculture Permitting Guide*: https://portal.ct.gov/-/media/DOAG/Aquaculture/Aquaculture-permitting-and-guidance/2019-Guide-to-Marine-Aquaculture-Permitting-in-CT.pdf

3.2 New York

- NYS Seagrass Task Force 2009 Report*: https://dos.ny.gov/system/files/documents/2020/04/nys-seagrass-task-force-report.pdf

3.3 Rhode Island

- RI Coastal and Estuarine Land Conservation Plan w/ regulations*: http://www.crmc.ri.gov/regulations/CELCP.pdf
- Title 650 Coastal Resources Management Council: Chapter 20-Coastal Management Program*: https://risos-apa-production-public.s3.amazonaws.com/CRMC/REG_12984_20230713145031502.pdf
    - Exact wording "Proposed aquaculture leases may not be sited where eelgrass (*Zostera marina*) or widgeon grass (*Ruppia maritima*) exists."

3.4 Massachusetts

- MASS CZM Aquaculture White Paper and Strategic Plan*: https://www.mass.gov/files/documents/2016/08/nm/aquaculture-white-paper-and-plan_0.pdf
- MASS Division of Marine Fisheries 2010 to 2016 HubLine Eelgrass Restoration Final Report*: https://www.mass.gov/doc/hubline-hub3-2010-2016-eelgrass-restoration-final-report-2018-0/download

3.5 New Jersey

- Guide to Developing Aquaculture in NJ: https://www.nj.gov/agriculture/seafood/Guidebook%20to%20Developing%20Aquaculture.pdf
- Barnegat Bay Restoration, Enhancement, and Protection Strategy*: https://www.nj.gov/dep/barnegatbay/docs/BarnBay-REPS.pdf

3.6 Multi-State

- NOAA State-By-State Summary of Shellfish Aquaculture Leasing and Permitting*: https://media.fisheries.noaa.gov/2021-09/Report-State-by-State-Summary-of-Shellfish-Aquaculture-Leasing-Permitting-Requirements-2021.pdf
- Best Practices for the East Coast Shellfish Aquaculture Industry*: http://www.crmc.ri.gov/aquaculture/BestPractices_ECSAI.pdf
- State-By-State Shellfish Aquaculture Permitting Information 2017: https://cdn.coastalscience.noaa.gov/page-attachments/research/State-by-State_Shellfish_Aquaculture_Permitting_Oct17.pdf
- NOAA Evaluation of U.S. Shellfish Aquaculture Permitting Systems: https://media.fisheries.noaa.gov/dam-migration/evaluation_of_us_shellfish_aquaculture_permnitting_systems.pdf