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State Wetlands Protections and Climate Change Adaptation:
A Comparative Study of New York, Connecticut, and Rhode Island

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Introduction

Wetlands provide critical ecological and social benefits to the Northeast United States. In addition to providing habitats for many plant and animal species and destinations for recreational activities, wetlands protect people and infrastructure systems from flooding. As climate change raises sea levels and increases the frequency and severity of storms, wetlands will play an increasingly critical role in limiting damage from floods. However, development activities often require filling in wetlands or altering them in ways that diminish their value for flood mitigation. State wetland protections are therefore an important piece of the Northeast's climate change adaptation strategy.

Wetlands are ecosystems that are either permanently or seasonally flooded by water and support aquatic vegetation. The Northeast is home to both freshwater and tidal wetlands, which provide important protection from flooding, and will be affected by climate change. Climate change is expected to cause wetland migration and increase flooding in the floodplains surrounding wetlands. Therefore, effective protection strategies must adapt to migrating wetlands and limit development in surrounding floodplains.

In this issue brief, I examine the regulations that protect freshwater and tidal wetlands in three states: New York, Connecticut, and Rhode Island. As New York considers how to strengthen its wetland protections, it can draw lessons from Connecticut's and Rhode Island's regulatory approaches. I first provide background on the regulatory structure of wetland protections in each state. Then I analyze

two important features of each state's wetland regulations that determine the strength and effectiveness of protections: the legal definition of "wetlands," which determines which lands receive protections, and the criteria used in development permitting decisions. Tidal and freshwater wetlands are generally regulated under different laws, so I examine each separately. Finally, I conclude with general lessons for New York to consider in strengthening its regulations to accommodate wetland migration and to better protect against development in floodplains. In the Appendix, I provide a table that summarizes and compares the key features of wetland regulations in each state.

Regulatory Background

New York, Connecticut, and Rhode Island use regulatory permitting systems to limit development in wetlands. In all three states, tidal wetlands and freshwater wetlands are governed by different statutes and regulated separately. New York primarily regulates wetlands at the state level. The New York Department of Environmental Conservation (DEC) and the Adirondack Park Agency run the Tidal Wetlands and Freshwater Wetlands Programs, which are promulgated under the state's Tidal Wetlands and Freshwater Wetlands Acts, passed in 1973 and 1975, respectively.

Connecticut regulates wetlands at both the state and municipal levels. The Connecticut Department of Energy and Environmental Protection (DEEP) administers the Tidal Wetland Regulations under Connecticut's Tidal Wetlands Act, first passed in 1969. DEEP's regulatory authority applies at and below elevations of one foot above the local extreme high water line,[1] while areas of higher elevation (but below the coastal boundary[2]) are regulated by municipalities under the 1980 Connecticut Coastal Management Act (CCMA). Freshwater wetlands are regulated entirely at the municipal level under the 1972 Inland Wetlands and Watercourses Act. One hundred seventy Connecticut municipalities administer local permitting processes, while DEEP provides them with training and regulatory and technical assistance.

Rhode Island wetlands are regulated at the state level. The state legislature created the Coastal Resources Management Council (CRMC) in 1971 and gave it broad authority to manage coastal resources, including tidal wetlands. The CRMC regulates tidal wetlands through its Coastal Resource Management Program (CRMP). A different agency, the Rhode Island Department of Environmental Management (RIDEM), regulates freshwater wetlands through its Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act. Rhode Island also distinguishes a third category of wetlands, "freshwater wetlands in the vicinity of the coast," which the CRMC regulates through its Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast. These rules resemble the freshwater wetland rules, so this brief does not focus on them separately.

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[1] The local extreme high water line is defined by DEEP as "the elevation of the one year frequency tidal flood at a particular location as shown on the most recently adopted U.S. Army Corps of engineers tidal flood profile." CONN. AGENCIES REGS. § 22a-30-2(3)(h) (2021).

[2] The coastal boundary is a line defined by statute as the furthest inland of three options: (1) the 100-year frequency coastal flood zone as defined by the National Flood Insurance Act, (2) 1,000 feet from the mean high water line, or (3) 1,000 feet from the inland boundary of tidal wetlands. CONN. GEN. STAT. § 22a-94(b) (2021).

	New York		Connecticut			Rhode Island	
	Tidal	Freshwater	Tidal		Freshwater	Tidal	Freshwater
Governing Statute	Tidal Wetlands Act	Freshwater Wetlands Act	Tidal Wetlands Act	Coastal Management Act	Inland Wetlands and Watercourses Act	Unnamed statute	Freshwater Wetlands Act
Managed by	Dept. of Env. Conservation (DEC) and Adirondack Park Agency	DEC and Adirondack Park Agency	Dept. of Energy and Env. Protection (DEEP)	Municipalities	Municipalities	Coastal Resources Management Council (CRMC)	Dept. of Env. Management (RIDEM)
Scope of authority	All tidal wetlands	All freshwater wetlands	Areas at and below one foot above extreme high water line	All other areas below the coastal boundary	All freshwater wetlands	All tidal wetlands	Freshwater wetlands not in the vicinity of the coast

Tidal Wetlands

Definition and Inclusion of Floodplains

The legal definition of wetlands determines the extent of regulatory authority in wetland areas, and each state defines tidal wetlands differently. New York relies on a statewide inventory mapping system, while Connecticut and Rhode Island use definitions that depend on whether an area can support certain types of vegetation. New York's definition, which relies on inventory maps that are infrequently updated, may hinder regulators' efforts to protect wetlands that migrate inland as sea levels rise. New York's coverage of areas that experience temporary inundation is also limited compared to Connecticut and Rhode Island. Connecticut has particularly expansive coverage of wetland and coastal floodplain areas, but like New York it relies on certain tidal metrics that may not be updated frequently enough to track changes in sea level and storm surges.

New York's tidal wetlands definition is not well suited to wetland migration, although the inclusion of areas adjacent to wetlands may help adapt to more frequent inundation. New York's Tidal Wetlands Act defines wetlands as areas that border on or lie beneath tidal waters, and all banks, bogs, meadows, flats, and tidal marshes that are subject to tides, and that support or are capable of supporting certain species of vegetation.[3] The Act instructs the DEC commissioner to create and maintain an inventory of tidal wetlands in the state to provide the legal basis for identifying wetlands.[4] Accordingly, the DEC identifies tidal wetlands using the New York State Official Tidal Wetlands Inventory, which is a set of maps that delineate and classify state tidal wetlands based on aerial

[3] N.Y. ENV'T CONSERV. § 25-0103(1) (2021).

[4] N.Y. ENV'T CONSERV. § 25-0201(1) (2021).

photographs.[5] The wetlands that are included on the inventory maps are comprised of specific classifications defined by tide and vegetation (examples include coastal fresh marshes and intertidal marshes).[6] Floodplains are not an included classification on the inventory maps.

The drawbacks of the inventory maps include their inflexibility and limited coverage. The DEC created the inventory maps in 1974, shortly after the passage of the Tidal Wetlands Act, and they have not been updated since. While this poses a barrier to regulating wetlands that have shifted since 1974, DEC staff can use more recent wetland surveys to assess specific permit applications;[7] however, the 1974 maps provide the legal definition of the state's tidal wetlands and would be used to resolve disputes. The DEC has authority to update the inventory maps, as the Tidal Wetlands Act instructs the commissioner to readjust the inventory from time to time to reflect natural and other changes to wetlands, [8] but updating the state-wide inventory may require substantial time and resources (including a public review and comment period), so inventory updates may not keep up with the pace of wetland migration and changes in flooding patterns.

Although the identification of wetlands in the inventory maps is inflexible and does not include floodplains, areas adjacent to wetlands are partially protected. New York's Tidal Wetlands Program covers adjacent areas extending up to 300 feet landward from the wetland boundary, although a set of provisions limits the size of adjacent areas—for example, the adjacent area is reduced if there is an existing fabricated structure like a road or seawall obstructing it.[9] Adjacent areas may also be reduced based on the area's elevation above sea level, and they are limited to a size of 150 feet in New York City.[10]

Connecticut's tidal wetlands definition likely better equips the state to accommodate migration and more frequent inundation. Additionally, another statute covers some coastal floodplain areas that are not part of the state's tidal wetland statute. Rather than instructing regulators to create an inventory, Connecticut's Tidal Wetlands Act simply establishes a legal definition—it specifies that tidal wetlands include any area in or bordering tidal waters whose surface is at or below an elevation of one foot above local extreme high water, and where any plant in an enumerated list of species is capable of growing.[11] Although the statute does not define local extreme high water, DEEP defines it as the elevation of the one-year frequency flood, as shown on a tidal flood profile created by the US Army Corp of Engineers. DEEP's jurisdiction under the Tidal Wetlands Act cannot extend more than one foot above the extreme high water line, which means that it cannot regulate areas that are subject to less frequent inundation. However, the Connecticut Coastal Management Act provides regulatory coverage upland of the extreme high water line up to the coastal boundary line. The coastal boundary line is defined using one of three metrics (depending on which of the three extends furthest inland): (1) the 100-year frequency coastal flood zone as defined by the National Flood Insurance Act,

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[5] N.Y. COMP CODES R. & REGS. tit. 6, § 661.4(hh) (2021).

[6] *Id.*

[7] Conversation with DEC staff, February 17, 2021.

[8] N.Y. ENV'T CONSERV. § 25-0201(6) (2021).

[9] N.Y. COMP CODES R. & REGS. tit. 6, § 661.4(b)(1) (2021).

[10] *Id.*

[11] CONN. GEN. STAT. § 22a-29 (2021).

(2) 1,000 feet from the mean high water line, or (3) 1,000 feet from the inland boundary of a tidal wetland.[12] Municipalities, rather than DEEP, regulate development between the extreme high water line and the coastal boundary line.

Connecticut's statutory definitions of wetlands and coastal areas allow for regulatory coverage to shift as wetlands migrate and storm surges grow in size and frequency. This flexibility may have different implications for areas regulated by DEEP versus areas regulated by municipalities. Tidal wetland areas regulated by DEEP can shift to account for sea level rise if the extreme high water line moves upland. Meanwhile, expanding storm surges may create greater areas of coverage for municipalities under the Coastal Management Act, since the coastal boundary depends on the 100-year frequency flood zone. Critically, the flexibility of these regulations depends on the underlying metrics that DEEP and municipalities use, and whether these regulatory bodies regularly update the metrics they use to identify coverage areas. For example, DEEP relies on a US Army Corp tidal flood profile to determine the extreme high water line, so its regulatory coverage of wetlands will reflect changing sea levels only to the extent that it receives updates to the tidal flood profile.

Rhode Island's tidal wetlands definition is also likely more flexible than New York's, and its coverage of adjacent areas may be more flexible as well. Tidal wetlands are defined as salt marshes bordering on the state's tidal waters (whether or not the tidal waters reach marshes through natural or artificial watercourses) and uplands that are contiguous to salt marshes and are necessary to preserve their integrity.[13] Like Connecticut, Rhode Island uses a list of plant species to determine what areas qualify as salt marshes; however, under Rhode Island law one or more plant species must *actually* grow in the area, as opposed to just being capable of growing there.[14] This requirement may reduce Rhode Island's ability to regulate development in wetlands that are unhealthy or in need of rehabilitation. Regulatory authority extends to adjacent contiguous areas of 200 feet from the wetland's borders, or to the area necessary to carry out effective resource management programs (as determined by the CRMC), which may provide some flexibility for regulating adjacent floodplains.[15]

Protecting Tidal Wetlands from Development

Each state establishes criteria that must be used in permitting decisions for proposed development in tidal wetlands and surrounding areas. New York's permitting criteria are described more broadly than those in Connecticut and Rhode Island, which leaves permit issuers with greater discretion. New York's criteria also include more lenient requirements for considering adverse impacts and alternatives to development. New York does require permit issuers to consider the wetland's value for preventing flooding; however, unlike Connecticut and Rhode Island, New York has no specific requirement that proposed development does not increase flood potential, and no systematic consideration of how sea level rise should affect permitting decisions.

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[12] CONN. GEN. STAT. § 22a-94(b) (2021).

[13] 46 R.I. GEN LAWS § 23-6(2)(iii)(E) (2021).

[14] *Id.*

[15] 46 R.I. GEN LAWS § 23-6(2)(iii) (2021).

New York's standards for issuing permits, described in the Tidal Wetlands Program's regulatory text, are based on a list of general criteria. To receive a permit, a development activity must be "compatible with the policy of the [Tidal Wetlands Act]" to preserve and protect wetlands, and the activity cannot have an "undue adverse impact" on the present or potential value of the wetland area.[16] The regulation does not define adverse impacts or explain what qualifies as "undue." Rather, it lists a set of factors that should be considered as part of the value of a wetland area, including wetlands' capacity for flood, hurricane, and storm control, as well as marine food production, wildlife habitat, and absorption of silt and organic material.[17] New York's use of a wetland value consideration in permitting decisions suggests that wetlands that are more effective in providing services like flood control, or that are closer to areas where flood control is in greater demand, may receive stronger permitting protections. Healthy wetlands are likely to provide more valuable services and may therefore receive greater protections than unhealthy wetlands. The regulation also includes a set of development restrictions for specific activities that do not depend on the discretion of the permitting process. Such activities are quite narrow, including, for example, a rule that all structures greater than 100 square feet must have a minimum 75-foot setback from the edge of any wetland.[18]

Connecticut's wetland regulations create stricter permitting criteria, which require a finding that there is no technically feasible alternative that would minimize adverse impacts and include specific requirements for the prevention of flooding. The Tidal Wetlands Act requires DEEP to give due regard to a specific set of considerations when establishing permit criteria. Included in the required considerations are "preservation of wetlands" and "prevention of flooding and other natural disasters."[19] In its Tidal Wetland Regulations, DEEP establishes a set of permit criteria based on the required considerations. DEEP's criteria include requirements that "there is no alternative for accomplishing the applicant's objectives which is technically feasible and would further minimize adverse impacts" to the wetland area.[20] The permit issuer also must make a determination that a proposed activity is consistent with a need to protect life and property from natural disasters like flooding. This requirement specifies that proposed activities should not increase flood potential on adjacent or adjoining properties or result in significantly increased flooding upstream or downstream of its location.[21]

Connecticut's Tidal Wetland Regulations provide further guidance by including a sample list of activities that are generally compatible and incompatible with the permitting criteria. Activities that are generally incompatible—suggesting they are unlikely to receive a permit—include dredging; filling; installation of utilities; and construction of solid fill docks, shoreline stabilization structures (armoring), dwellings, and commercial and industrial use facilities.[22] Activities that are generally compatible include installation and relocation of docks and piers that do not significantly interfere

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[16] N.Y. COMP CODES R. & REGS. tit. 6, § 661.9(b)(1) (2021).

[17] *Id.*

[18] N.Y. COMP CODES R. & REGS. tit. 6, § 661.6(a) (2021).

[19] CONN. GEN. STAT. § 22a-30 (2021).

[20] CONN. AGENCIES REGS. § 22a-30-10 (2021).

[21] *Id.*

[22] CONN. AGENCIES REGS. § 22a-30-11 (2021).

with the wetland.[23] A limited set of activities are not regulated, including state conservation, mosquito control, and navigation activities.[24]

The Connecticut Coastal Management Act (the statute that creates municipal regulatory jurisdiction above the extreme high water line) provides separate permitting guidelines and explicitly requires consideration of sea level rise. Under the CCMA, municipalities must require permit applicants to submit a coastal site plan, and must determine that the project is consistent with the CCMA's goals and policies, including that the project avoids or minimizes "adverse impacts" to coastal resources.[25] The CCMA specifies a list of adverse impacts; relevant examples include "increasing the hazard of coastal flooding through significant alteration of shoreline configurations" and "degrading tidal wetlands."[26] The law allows for permitting of shoreline armoring only when "necessary and unavoidable" to protect certain types of structures constructed before 1995.[27] It also gives municipalities the power to use downzoning, setbacks, and special-use zones to regulate development.[28] Additionally, the state legislature added an amendment to the CCMA in 2012 that requires municipalities to consider the potential impact of sea level rise when planning for coastal development.[29]

Rhode Island's regulations prohibit most forms of development in tidal wetlands, granting little discretion to permit issuers and explicitly requiring consideration of sea level rise in planning and management. Rhode Island's regulatory scheme for tidal wetlands is a detailed, complex system that proscribes quite specifically which development activities are allowed in which coastal areas. The Coastal Resource Management Program (CRMP) identifies ten categories of coastal features, one of which is coastal wetlands, and six categories of water types based on type of use, such as low intensity use and high intensity boating. It creates a ten-by-six matrix of coastal features and water use types and places limits and requirements on activities for each coastal feature-water type combination.[30] The CRMP provides a list of types of development activity, such as constructing residential structures and filling, removal, and grading land, and specifies requirements for each activity type based on the coastal feature-water types.[31] In coastal wetlands, most activities beyond minor disturbances are prohibited, including structural shoreline protections (i.e. armoring).[32] Any activities within 200-feet of wetlands require permits.

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[23] *Id.*

[24] CONN. AGENCIES REGS. § 22a-30-5 (2021).

[25] CONN. GEN. STAT. §§ 22a-105, 22a-106(b) (2021).

[26] CONN. GEN. STAT. § 22a-93(15) (2021).

[27] CONN. GEN. STAT. § 22a-109(a) (2021).

[28] CONN. GEN. STAT. § 22a-103(c) (2021); Jessica Grannis, Julia Wyman, Meagan Singer & Jena Shoaf, *Coastal Management in the Face of Rising Seas: Legal Strategies for Connecticut*, 5 SEA GRANT L. & POL'Y J. 59, 67 (2012).

[29] CONN. GEN. STAT. § 22a-92(5) (2021); Grannis *et al.* at 65.

[30] 650-20 R.I. CODE R. § 00-1.1.5 (2021).

[31] *Id.*

[32] *Id.*

Two other elements of the CRMP provide additional protections for wetlands. The CRMP includes a policy that the Coastal Resource Management Council must offset past losses in coastal wetlands by restoring disturbed wetlands and encouraging the building of new wetlands.[33] Second, the CRMP explicitly acknowledges sea level rise and requires the Council to consider it in planning and management.[34] The Council's goal is to provide a maximum coastal buffer zone width to accommodate the upland migration of coastal wetlands.[35] The state maintains a mapping system called the Sea Level Affecting Marshes Model (SLAMM), which identifies upland parcels that provide areas for wetland migration, and the Council uses the SLAMM maps for adaptation planning and wetland restoration purposes.[36]

Freshwater Wetlands

Definition and Inclusion of Floodplains

Each state differs in how it defines freshwater wetlands and the extent to which that definition covers floodplains. New York defines freshwater wetlands based on whether they contain certain species of aquatic or semi-aquatic vegetation, and the definition does not cover surrounding floodplains. Both Connecticut's and Rhode Island's definitions explicitly cover floodplains, but they differ in how they identify wetlands: Rhode Island uses vegetation and Connecticut uses soil type. Again, New York relies on maps to identify freshwater wetlands, but its freshwater wetland maps are updated more frequently than its tidal wetland maps.

New York's freshwater wetlands definition provides flexibility for wetland migration, but it does not fully accommodate more frequent inundation. New York's Freshwater Wetlands Act defines wetlands based on whether the land contains aquatic or semi-aquatic vegetation of specific types, such as wetland trees, shrubs, and emergent vegetation.[37] The Act instructs the DEC to identify and create maps of all freshwater wetlands that are 12.4 acres or larger or are found to have unusual local importance.[38] The DEC, in collaboration with the Adirondack Park Agency, maintains a set of maps identifying New York's freshwater wetlands; these maps were originally created between 1984 and 1986 and, unlike New York's tidal wetland inventory maps, they have undergone regular amendments to reflect changes in wetland boundaries and improvements in scientific identification.[39] The Act permits the DEC to amend maps on a regional basis as needed, so the DEC has updated its maps at different times in different areas.[40] All map updates are subject to a public

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[33] 650-20 R.I. CODE R. § 00-1.2.2.C.1 (2021).

[34] 650-20 R.I. CODE R. § 00-1.1.10 (2021).

[35] 650-20 R.I. CODE R. § 00-1.2.2.C.1 (2021).

[36] *Id.*

[37] N.Y. ENV'T CONSERV. § 24-0107(1) (2021).

[38] N.Y. ENV'T CONSERV. § 24-0301(1) (2021).

[39] *Freshwater Wetlands Mapping*, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (June 25, 2021), https://www.dec.ny.gov/lands/5124.html.

[40] *Recently Amended or Filed Freshwater Wetlands Maps*, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (June 25, 2021), https://www.dec.ny.gov/docs/wildlife_pdf/wtamddt5.pdf

notice and comment process.[41] Frequent map updates could help accommodate long-term trends in wetland migration, and they also could reduce the risk that wetland classifications are tied to a single year or season that may not be representative—for example, if maps are created during an unusually dry year, they may not cover the full extent of wetlands in other years. While regular updating New York's freshwater wetland maps has clear benefits, it may also result in loss of regulatory authority in wetlands that shrink below the required size or those that can no longer support vegetation.

A potential drawback of New York's definition is that it depends on the presence of certain species of wetland vegetation. This definition does not cover surrounding floodplains that may be only occasionally inundated and thus incapable of supporting such species. The DEC also regulates adjacent areas of 100 feet, but these adjacent areas do not consider elevation, which is an important determinant of the extent of floodplains, and thus are unlikely to fully cover floodplains.[42]

Connecticut's freshwater wetlands definition explicitly includes floodplains, and thus better accommodates more frequent inundation. Connecticut's Inland Wetlands and Watercourses Act defines freshwater wetlands based on soil type, and it includes any soil types that are poorly drained, very poorly drained, alluvial, and floodplain.[43] Using soil definitions allows for coverage of areas that during winter or times of drought do not have surface water present or do not support wetland vegetation.[44] The explicit inclusion of floodplain soils covers areas that are temporarily but not permanently inundated, and may help Connecticut to regulate areas that become more frequently inundated due to climate change. The Inland Wetlands and Watercourses Act authorizes municipal wetland agencies to provide for the manner in which wetland boundaries are determined and amended or changed, and the state does not maintain freshwater wetland maps.[45] Relying on definitions rather than inventories or maps creates flexibility to better accommodate wetland migration; however, this scheme may be more difficult to administer and enforce if it relies on landowners surveying their own land.

Rhode Island's freshwater wetlands definition also explicitly includes floodplains and accommodates more frequent inundation. The Rhode Island Freshwater Wetlands Act defines wetlands by feature (such as marshes, bogs, and swamps) and ability to support wetland vegetation.[46] In its freshwater wetland regulations, RIDEM explicitly includes floodplains, as well as areas subject to flooding, areas subject to storm flowage, and areas of land within fifty feet of wetland features (not accounting for elevation).[47] Floodplains are defined by statute as land adjacent to a flowing body of water that is

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[41] N.Y. ENV'T CONSERV. § 24-0301(4) (2021).

[42] N.Y. COMP CODES R. & REGS. tit. 6, § 664.2(b) (2021).

[43] Connecticut uses the National Cooperative Soils Survey to identify which soil types fit each designation. CONN. GEN. STAT. § 22a-38(15) (2021).

[44] *How are Inland Wetlands and Watercourses Defined in Connecticut?* CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION (June 25, 2021),

https://portal.ct.gov/DEEP/Water/Inland-Wetlands/How-Are-Inland--Wetlands-and-Watercourses--Defined.

[45] CONN. GEN. STAT. § 22a-41a (2021).

[46] 2 R.I. GEN LAWS § 1-20(8) (2021).

[47] 250-150 R.I. CODE R. § 15-1.4.34 (2021).

likely to be covered with water in a 100-year frequency storm.[48] Because, like Connecticut, Rhode Island relies on a legal definition of freshwater wetlands rather than a map or inventory, regulatory coverage may be more flexible than in New York.

Protecting Freshwater Wetlands from Development

Each state establishes a set of permitting guidelines for development in freshwater wetlands. New York separates wetlands into classes that determine the strictness of permitting criteria, with wetlands that provide the greatest flood protection receiving the strongest protection. Connecticut and Rhode Island don't establish different protection levels; rather, all wetlands have strict permitting guidelines comparable to the strictest guidelines in New York. Connecticut and Rhode Island require permit issuers to consider factors that may be important to preserving the overall flood protection capacity of wetlands, such as the long-term impacts of development and the cumulative impact of incremental reductions in wetlands.

New York's Freshwater Wetlands Program provides varying levels of protection depending on the wetland's characteristics. Wetlands that provide more valuable flood protection are better protected. The program specifies four classes of wetlands with different permitting standards, essentially creating four levels of wetland protection.[49] Wetland classes are determined based on the benefits they provide. This classification considers numerous factors, including the presence of specific plant and animal species. Another factor is a wetland's effects on flooding of nearby infrastructure: wetlands that are tributaries to bodies of water that could cause flooding if the wetland is modified, filled, or drained are better protected if the flooding would threaten a substantially developed area versus an undeveloped area.[50] Wetlands that protect against flooding in substantially developed areas are in the most protected class, Class I.[51]

In New York, more valuable wetlands have more stringent permitting criteria. In Class I, the DEC may issue a permit "only if it is determined that the proposed activity satisfies a compelling economic or social need that clearly and substantially outweighs the loss of or detriment to the benefit(s) of the Class I wetland."[52] The DEC is unlikely to approve permits for the majority of activities that reduce the value of Class I wetlands.[53] In less valuable wetlands, the DEC has greater latitude to approve permits. For the least protected class, Class IV, the permitting criteria require only that the proposed activity is the only practical way to achieve the applicant's objectives.[54] For all classes of wetlands,

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[48] 2 R.I. GEN LAWS § 1-20(7) (2021); 250-150 R.I. CODE R. § 15-1.4.30 (2021).

[49] N.Y. COMP CODES R. & REGS. tit. 6, § 664.5 (2021).

[50] *Id.*

[51] N.Y. COMP CODES R. & REGS. tit. 6, § 664.5(a)(5) (2021).

[52] N.Y. COMP CODES R. & REGS. tit. 6, § 663.5(e) (2021).

[53] N.Y. COMP CODES R. & REGS. tit. 6, § 663.5(f) (2021).

[54] N.Y. COMP CODES R. & REGS. tit. 6, § 663.5(e) (2021).

applicants may increase their likelihood of receiving a permit by proposing mitigation activities in the vicinity of the proposed project.[55]

Connecticut imposes specific permitting guidelines on municipal permitting agencies and, unlike New York, applies the same criteria to all wetlands—agencies can only issue a permit for development on wetlands if there is no feasible or prudent alternative that would reduce the environmental impact.[56] Each of the 170 Inland Wetland Agencies issues regulations and permits, while DEEP provides a model regulation that municipalities may use.[57] In making this finding, the Agency must consider an enumerated set of factors. These include—among others—the relationship between the short-term and long-term impacts of the proposed activity; irreversible losses; and the effects on safety, health, or the reasonable use of property.[58] Agencies are also permitted to review proposed development in upland areas that may affect wetlands and most municipal agencies require permits for activities in upland areas.[59]

Rhode Island also imposes specific permitting criteria, consistent for all wetlands, that require avoidance and minimization of impacts and require addressing the project's impact on flood water storage functions. RIDEM requires permits for any significant alterations to wetlands. Applicants must show that, to the maximum extent possible, they have avoided or reduced all impacts.[60] Applicants must also address the wetland's functions in temporarily storing flood waters, evaluate the project's impact on those functions, and provide compensatory flood storage.[61] Unlike in New York and Connecticut, Rhode Island's permit review also includes consideration of the cumulative impacts of incremental alterations to freshwater wetlands, which may be considered significant even if a proposed alteration is considered insignificant.[62]

Conclusion

While all three states follow different approaches to defining wetlands and protecting them from development, Connecticut and Rhode Island's regulatory programs provide examples that New York could draw from to improve its protections for migrating wetlands and areas that provide important flood protection.

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[55] N.Y. Comp Codes R. & Regs. tit. 6, § 663.5(g) (2021).

[56] Conn. Gen. Stat. § 22a-41 (2021).

[57] DEEP's model regulation has not been updated since 2006. *Inland Wetlands and Watercourse Model Municipal Regulations*, Connecticut Department of Energy and Environmental Protection (June 25, 2021), https://portal.ct.gov/-/media/DEEP/water/wetlands/modelregsfinalof4theditionpdf.pdf.

[58] Conn. Gen. Stat. § 22a-41 (2021).

[59] Connecticut Department of Energy and Environmental Protection, Upland Review Area Regulations (June 1997), https://portal.ct.gov/-/media/DEEP/water/wetlands/uplandreviewdocumentjune1997PDF.PDF.

[60] 250-150 R.I. Code R. § 15-1.10.B.4 (2021).

[61] 250-150 R.I. Code R. § 15-1.10.B.5.d.3 (2021).

[62] 250-150 R.I. Code R. § 15-1.4.A.4 (2021).

Connecticut and Rhode Island, which use flexible and expansive legal definitions for wetlands, may provide stronger protections for migrating wetlands and floodplains. New York's tidal and freshwater wetland definitions, which are tied to specific inventory maps, are inflexible if the maps are not updated often, but allowing for regional map updates (which the Freshwater Wetlands Act does) may enable more frequent updating. Because Connecticut and Rhode Island do not rely on maps, but rather define wetlands based on the extreme high water line, soils, or vegetation, they may be able to regulate migrating wetlands more nimbly; however, definitions that are tied to specific metrics like inventory maps may have other important benefits like administrability, enforcement, and transparency.

Connecticut and Rhode Island's wetland laws also more effectively enable the states to regulate development in adjacent floodplains. Connecticut's regulatory authority over all lands within the coastal boundary allows municipalities to limit development in flood risk areas and enables protections to expand as flood zones spread. Both Connecticut and Rhode Island's freshwater wetland statutes explicitly provide regulatory authority over the surrounding floodplains. New York has regulatory authority over areas adjacent to wetlands, which may provide some protection for floodplains; however, its wetland regulations strictly limit the extent of those adjacent areas. Rhode Island's tidal wetlands law, which extends regulatory authority beyond the boundaries of the wetland to the area "necessary to effectively manage the wetland resource," provides an example of a more flexible way to include adjacent areas. While expanding the state's regulatory authority to fully cover floodplains would likely require the state legislature to pass new laws, New York may be able to regulate larger adjacent areas without new legislation.

Permitting guidelines also play an important role in determining the strength of wetland and floodplain protections, and Connecticut and Rhode Island's guidelines likely provide stronger protections against development. While New York's tidal wetland permitting guidelines give broad discretion to permit issuers, Connecticut and Rhode Island provide prescriptive guidelines that reduce permitting discretion by identifying the types of development activities that generally are not permitted, requiring showings that no technically feasible alternatives are available, and requiring mitigation or compensatory flood storage.

New York could better target protections against sea level rise and flooding by adding permitting guidelines that require permit issuers to integrate broad considerations about long-term wetland management into individual permitting decisions. For example, Connecticut's permitting guidelines include consideration of the long-term benefits of wetlands, Rhode Island's guidelines require considering the cumulative impact of incremental changes to wetlands, and both states require consideration of the impact of sea level rise. Adding these considerations to permitting guidelines would not require legislative reform, but rather could be promulgated and implemented through regulatory action.

Appendix

	New York	Connecticut	Rhode Island
		Tidal Wetlands	
How wetlands are defined	A set of maps delineate and classify all state wetlands based on aerial photos[63]	Areas at or below an elevation of one foot above the local extreme high water line[64]	Salt marshes and freshwater/brackish wetlands contiguous to salt marshes or physiographical features[65]
Inclusion of floodplain in definition	Not fully included. Includes adjacent areas of up to 300 feet from the wetland boundary[66]	Not included in wetlands regulation but covered under a separate statute[67]	Not fully included. Includes adjacent areas of 200 feet from the wetland boundary[68]
Minimum size	None	None	None
General development permit criteria	Cannot have an undue adverse effect on the value of affected wetland area[69]	No technically feasible alternative that would minimize adverse impacts[70]	Prescribes what activities are permitted according to water type and coastal feature[71]
Armoring allowed?	Unclear (subject to agency discretion)	Generally incompatible with permit criteria[72]	Prohibited[73]

[63] N.Y. COMP CODES R. & REGS. tit. 6, § 661.4(hh) (2021).

[64] The local extreme high water line is defined as "the elevation of the one year frequency tidal flood at a particular location as shown on the most recently adopted U.S. Army Corps of engineers tidal flood profile." CONN. AGENCIES REGS. § 22a-30-2(3)(h) (2021).

[65] 650-20 R.I. CODE R. § 00-1.1.2.A.30 (2021).

[66] Adjacent areas may be reduced based on elevation. N.Y. COMP CODES R. & REGS. tit. 6, § 661.4(b)(1) (2021).

[67] See Tidal Wetlands Section for more detail. CONN. GEN. STAT. § 22a-94 (2021).

[68] Adjacent areas do not account for elevation. 46 R.I. Gen Laws § 23-6(2)(iii) (2021).

[69] N.Y. COMP CODES R. & REGS. tit. 6, § 661.9(b)(i) (2021).

[70] CONN. AGENCIES REGS. § 22a-30-10 (2021).

[71] 650-20 R.I. CODE R. § 00-1.1.5 (2021).

[72] CONN. AGENCIES REGS. § 22a-30-11 (2021).

[73] 650-20 R.I. CODE R. § 00-1.1.5 (2021).

	New York	Connecticut	Rhode Island
Freshwater Wetlands			
How wetlands are defined	Land that contains aquatic and semi-aquatic vegetation[74]	Defined by soil type[75]	Defined by feature and ability to support wetland vegetation[76]
Inclusion of floodplain in definition	Not fully included. Includes adjacent area of 100 feet from the wetland boundary[77]	Included. Floodplain is one of the included soil types[78]	Included. Area subject to flooding is one of the included features[79]
Minimum size	12.4 acres generally[80]	None	None
General development permit criteria	Wetlands categorized into classes with varying levels of protection[81]	No feasible/prudent alternative that would cause less or no environmental impact[82]	Impacts must be avoided and minimized to the maximum extent possible[83]

[74] N.Y. ENV'T CONSERV. § 24-0107(1) (2021).

[75] CONN. GEN. STAT. § 22a-38 (2021).

[76] 650-20 R.I. CODE R. § 00-1.4 (2021).

[77] Adjacent areas do not account for elevation. N.Y. COMP CODES R. & REGS. tit. 6, § 664.2(b) (2021).

[78] CONN. GEN. STAT. § 22a-29 (2021).

[79] 650-20 R.I. CODE R. § 00-1.4.A (2021).

[80] There is an exception for "wetlands of unusual local importance." N.Y. COMP CODES R. & REGS. tit. 6, § 664.2(f) (2021).

[81] N.Y. COMP CODES R. & REGS. tit. 6, § 664.5 (2021).

[82] CONN. GEN. STAT. § 22a-41 (2021).

[83] 250-150 R.I. Code R. § 15-1.10.B.4 (2021).