

Using Contextual Information to Extrapolate the Reasons Behind Severe Environmental Ignorance in New London During the Era of Urban Renewal

At the beginning of my research, I wanted to place the environmental impact of urban renewal in New London into the historical context of this era. Specifically, how did the lack of wetlands knowledge and protective legislation exacerbate their destruction both before and during the era of urban renewal? Also, is the apparently deliberate ignorance of environmental concerns during urban renewal in New London connected to this widespread lack of knowledge? After learning that there is very little information on the environmental concern in New London, it became evident that New London destroyed a majority of its wetlands both before and during the era of urban renewal because they were unaware of their environmental benefits. Towards the end of urban renewal, how did new wetlands knowledge emerge, and how did it reverse the previous perceptions of the importance of wetlands? In hindsight, with this knowledge, what impact did the construction of I-95 have on the wetlands along Winthrop Cove and the Thames River? At the end of urban renewal, the state of Connecticut reversed its previous stance on wetlands and implemented new policies to protect them. How did the new wetlands knowledge during the late 1960s lead to the creation of the Connecticut Tidal Wetlands Act in 1969 and the Inland Wetlands and Watercourses Act (IWWA) of 1972? What impact did these policies have on development techniques and processes? The lack of wetlands knowledge and protective legislation prior to the late 1960s allowed for extremely degrading activities to occur both before and during the era of urban renewal in New London and across the United States. After the 1960s, newfound knowledge pertaining to wetlands helped establish much-needed protective legislation and policies.

In urban areas, planners are constantly trying to find a beneficial balance between developed land and open space. While developed areas provide opportunities to live, work and socialize, open space benefits the natural environment and provides opportunities to recreate and relax. However, prior to the late 1960's, this balance between developed land and open space was heavily in favor of developed land. Joan Maloof, the executive director of the Old Growth Forest Network, explained the causes and ecosystemic problems associated with this imbalance. In an interview with CityLab, she stated that ““when developers or governments are looking for the next place to put a project..., they get out the maps and look for the ‘blank’ spaces’.... ‘And guess where the forests are?’”¹ This quote demonstrates how developers have historically targeted forests instead of attempting infill development. On top of forests, other natural ecosystems, such as wetlands, were also consistently targeted as sites for future development projects.

Historically, wetlands have arguably been the most abused environmental resource in the United States.² Contrary to forests, a majority of people did not know the benefits of protecting wetlands. On one hand, forests have been known to absorb various air pollutants and greatly increase recreational opportunities. On the other hand, the benefits of wetlands were not as clear, which led them to become a very misunderstood environmental asset. William Niering perfectly explained this dichotomy between various natural environments when he described how,

Open space designated for recreational purposes is infrequently questioned by the public. However, when attempting to set aside unmanaged areas, whether it be

¹ Meier, Allison C., *The Ancient Forests that have Defied Urbanization* (Citylab, 2018).

² “*Our Wetland Heritage*” by William Niering, Box 3, Folder 5, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center for Special Collections and Archives, Connecticut College, New London, CT.

*wetland or upland, we often encounter public apathy and general lack of understanding as to the real values of these areas to society.*³

Due to the lack of direct anthropogenic benefits and recreational opportunities, wetlands protection was rarely supported by the general public. This sentiment was further exacerbated by the belief that wetlands impeded food production, restricted travel, and acted as mosquito breeding grounds, which connected them to the spread of deadly diseases.⁴ This connection made most people in the United States support wetlands filling and destruction in order to create more developable land.

In 1849, the federal government of the United States formalized these sentiments and encouraged individual states to destroy their wetlands by passing the first Swamp Land Act, which granted all wetland areas in Louisiana to the State for reclamation.⁵ In 1850, the second Swamp Land Act extended the same grants to 12 other States, and in 1860, the third Swamp Land Act applied them to two more states.⁶ By the time these Acts were implemented, the federal government directly promoted the destruction of wetlands in 15 states, and set a nationwide standard that prioritized development over wetlands protection. These Acts remained in effect until the late 1960s, after a majority of the urban renewal efforts in New London were completed. The Swamp Land Acts and widespread negative sentiments against wetlands resulted in a massive amount of wetlands destruction in the United States. In the 17th century, the continental United States had approximately 221 million acres of wetlands; by the 1980s, only

³ *Subtle Values of Wetlands*, Box 12, Folder 16, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center for Special Collections and Archives, Connecticut College, New London, CT, 3.

⁴ *Proceedings from the Wetlands Conference at Storrs, CT in 1973*, Box 2, Folder 11, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center for Special Collections and Archives, Connecticut College, New London, CT, 146.

⁵ Gregory J. Allord and Thomas E. Dahl, *History of Wetlands in the Conterminous United States*, (United States Geological Survey, 1994), 4.

⁶ Allord and Dahl, *History of Wetlands*, 4.

103 million acres remained.⁷ The Swamp Land Acts influenced other related policies for more than a century; in 1954, for example, the Watershed Protection and Flood Prevention Act directly increased the filling of wetlands near flood-control projects throughout the United States.⁸ After learning about wetlands in this national context, I wanted to learn how it was connected to wetlands destruction in New London.

When New London was first founded, John Winthrop Jr. chose the location of the Old Town Mill based on the water power from Briggs Brook.⁹ The mill was entirely dependent on this water power to operate, so John Winthrop Jr. most likely prioritized the health of Briggs Brook in order to ensure that his mill was operating efficiently. However, as new technologies were created and water power no longer directly impacted the operating capacity, the well-being of the Brook became much less important. Instead of protecting Briggs Brook, New London began to prioritize other forms of development. A description of the Old Town Mill's history, located in New London Landmarks, perfectly sums up this change in prioritization:

*The mill, initially on the northern edge of the community, is now surrounded by urban fabric. A parking lot to the north occupies the location of the former mill pond. The surrounding areas on the east and west are of mixed residential and commercial character, while to the south are railroad tracks leading to piers on the river. The Old Town Mill stands alone as a reminder of the very early days of New London.*¹⁰

This quote shows how a parking lot was prioritized over the former mill pond, railroad tracks were prioritized over an unobstructed brook, and how residential and commercial development

⁷ Allord and Dahl, *History of Wetlands*, 1.

⁸ Allord and Dahl, *History of Wetlands*, 8.

⁹ *Old Town Mill Description and History*, 1984, Subject Binders BB.2 Historic Districts, New London Landmarks, New London, CT, 1

¹⁰ *Old Town Mill*, New London Landmarks, 1.

surrounded this historical landmark. When we visited the Old Town Mill and observed the surrounding area, the Brook was small enough to step over and seemed to have almost all of its previous water power. This shows how, once environmental assets were no longer directly connected to economic prosperity, New London has consistently chosen urban development over environmental protection.

In New London there is also a record of coastal land modification along Winthrop Cove and the Thames River dating back to 1720.¹¹ Since the Revolutionary War, New London has built substantial bulkheads and wharves along the Thames River in order to improve business and residential opportunities.¹² Filling the Cove and River were often the first step in the construction process of these wharves and bulkheads, which resulted in a significant decrease in their size. The Bank Street Waterfront Study completed by the Federal Railroad Administration also mentions Bream Cove, which used to be located in modern-day downtown New London; this cove has since been filled in entirely, and we were unable to find any other examples of its existence.¹³ This further shows how New London has historically destroyed its wetlands and other water resources. It also helps us to infer the reasons why the impacts of destruction and construction during urban renewal on wetlands were not considered in any plans.

Despite the lack of evidence pertaining to environmental concern in New London during the era of New London, we are able to use the statewide and nationwide contexts to support the idea that New London did not pay any attention to its environmental assets, including tidal and inland wetlands. Although Connecticut was not one of the 15 states included in the Swamp Land Acts, the state was still actively filling and reclaiming its wetlands; between the 1780s and the

¹¹ Artimel, Jance and Heintzelmen-Muego, Andrea, *Bank Street Waterfront Study - New London, CT*, 1984, New London Custom House Museum, New London, CT.

¹² Artimel and Heintzelmen-Muego, *Bank Street Waterfront Study*, III-12.

¹³ Artimel and Heintzelmen-Muego, *Bank Street Waterfront Study*, II-B.1.

mid-1980s, Connecticut lost more than half of its wetlands.¹⁴ This practice was carried out by municipalities throughout the state, including New London. In Connecticut, many municipalities also used a common process known as “making land.” This process consisted of tearing down unnecessary stone walls and using the rocks to fill in nearby wetlands.¹⁵ Calling this process “making land,” leads us to believe that wetlands were not even considered land at this time, but they were also not considered water because they were still suitable for reclamation and development. Considering wetlands as neither land nor ocean, and classifying them as mosquito breeding grounds, made them very vulnerable to development.

We can further speculate that New London targeted wetlands for urban renewal projects because they were considered useless during this time. Historical data also shows that between 1955 and 1965, within the era of urban renewal, Connecticut destroyed 2,179 acres, or 12.8% of its remaining wetlands.¹⁶ New London most likely contributed to this statewide wetland destruction because of the amount of development that occurred during this time period. These development methods are consistent with previous methods and seems to be primarily caused by the prevalence of negative sentiments towards wetlands. Wetlands were still considered useless land that could be easily reclaimed for development without any risk of public opposition. Therefore, New London’s long history of disregarding its environmental assets, including its wetlands, most likely explains the lack of environmental concern during the era of urban renewal. Due to this, New London unknowingly hurt its future climate resiliency and caused irreversible problems within its natural ecosystems.

¹⁴ Allord and Dahl, *History of Wetlands*, 1.

¹⁵ “Introduction: Connecticut’s Inland Wetlands and Watercourses Act,” accessed October 31, 2019, https://www.ct.gov/deep/cwp/view.asp?a=2720&Q=434010&depNAV_GID=1907.

¹⁶ *Statistics of Wetlands in Connecticut*, 2001, Box 8, Folder 2, Arboretum at Connecticut College Records, 1931-2014, Linda Lear Center for Special Collections and Archives, New London, CT, 1.

Towards the end of urban renewal, newfound scientific evidence began to reconceptualize wetlands away from mosquito breeding grounds towards key components of a healthy ecosystem. This knowledge primarily emerged during the late 1960s and rapidly spread throughout Connecticut and the United States. William A. Niering, a past professor at Connecticut College, was one of the leading international experts in wetlands during the second half of the 20th century and was integral to promoting the importance of wetlands throughout the United States. Throughout his career, Niering presented at numerous conferences, published countless papers, spread the benefits of protecting wetlands to anyone who was willing to listen. During our research, we diligently looked through Niering's collection in the Linda Lear Center for Special Collections and Archives at Connecticut College. This collection provided us with much-needed information on Niering's work and prepared us to meet with environmental experts currently working at Connecticut College. Above all, however, this collection helped us understand the devastating consequences of wetlands destruction that New London and other cities throughout the United States were facing due to their overwhelming prioritization of anthropogenic development.

Prior to the late 1960's, there was very little distinction between various types of wetlands in the United States. However, once more scientific knowledge became widespread, the discrepancies between different types of wetlands became more prevalent. In Connecticut wetlands can be categorized into four major groups: marshes, swamps, bogs, and floodplains.¹⁷ Even though these groups differ based on their vegetation, elevation level, and creation processes, they all play fairly similar roles in our ecosystems. For the sake of simplicity and coherence, I will be using the more generic term of wetland to describe them all. One of the

¹⁷ *Ecological Role of Inland Wetlands*, Box 2, Folder 11, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center for Special Collections and Archives, Connecticut College, New London, CT, 101.

major roles that wetlands play is flood control. Wetlands act as large storage basins that minimize erosion and reduce the destructive capabilities of severe floods. According to Niering, one-acre of wetland, when flooded to a depth of one foot, can hold approximately 330,000 gallons of water.¹⁸ Therefore, if a one-acre wetland is filled, it will result in 330,000 gallons of water quickly flowing downstream and aggravating future flooding problems. Flood control is of particular importance in urban areas such as New London because of the high ratio of impervious surfaces which further increase the risk of severe flooding.

Another benefit of wetlands is their natural water purification capabilities. Since they have water constantly flowing through them, their dense vegetation increases their ability to store nutrients and reduce the concentration of pollutants in the water.¹⁹ A study of the Tinicum Marshes on the outskirts of Philadelphia showed that these marshes had the ability to remove 63% of nitrates and 57% of phosphates in the water within three to five hours.²⁰ This is extremely beneficial for both humans and animals because wetlands help increase the availability of potable water; they also help reduce the need for large scale water treatment plants. Another anthropocentric benefit of wetlands is their ability to help absorb the amount of carbon dioxide in the atmosphere. Due to their character, wetlands have a large amount of undecomposed organic matter within their soil which makes them very effective carbon sinks. As long as the wetlands remain protected, the carbon dioxide will not be able to escape into the atmosphere. However, when wetlands are drained and reclaimed, almost all of their stored carbon dioxide is released into the atmosphere.

¹⁸ "Our Wetland Heritage", Box 3, Folder 5, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center.

¹⁹ *Inland Wetlands Conference at Connecticut College in 1987*, Box 3, Folder 7, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center for Special Collections and Archives, Connecticut College, New London, CT, 1.

²⁰ *Ecological Role of Inland Wetlands*, Box 2, Folder 11, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center, 105.

From a biological perspective, wetlands also are extremely productive ecosystems and are essential to the survival of a diverse range of flora and fauna. Wetlands are a self-sustaining biological system that experts still do not completely understand due to their complex web of interconnected processes.²¹ They are extremely efficient at converting solar energy and producing oxygen, and produces biomass that competes with the biomass of tropical rainforests, which are considered the most productive ecosystem in the world.²² The biomass provides the necessary components to sustain such a large amount of biodiversity, including endemic species of orchids, carnivorous plants, birds, and other animals that are all reliant on wetlands for their mere existence.²³ As this scientific knowledge became more well known, it completely reversed the previous assumptions of wetlands as useless mosquito breeding grounds. It also helped us better understand the impacts that urban renewal in New London had on its environment.

The construction of I-95 arguably had the largest environmental impact on New London during the era of urban renewal because it was built directly over a section of Briggs Brook and its associated wetlands. This almost completely cut off the above ground connection between Brandegee Lake and the Connecticut College Pond from Winthrop Cove, and it most likely eliminated all of the remaining wetlands in this area. Currently, there are no designated wetlands along this section of I-95 or East New London. (Figure 1) Although water is still able to flow underground beneath I-95, the rate of water flow was greatly reduced and now has very minimal water power. This reduced the amount of nutrients entering Winthrop Cove and the Thames River, and it increased the likelihood and severity of flooding south of I-95 due to a larger

²¹ *Ecological Role of Inland Wetlands*, Box 2, Folder 11, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center, 108.

²² *Inland Wetlands Conference at Connecticut College*, Box 3, Folder 7, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center, 1.

²³ *Ecological Role of Inland Wetlands*, Box 2, Folder 11, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center, 108.

percentage of impervious surface. Since scientific knowledge supporting the beneficial aspects of wetlands was not well known until the late 1960s, Connecticut and the entire United States did not reverse its previous stance on wetlands until after the era of urban renewal. However, this reversal in Connecticut happened rather quickly due to two major protective policies being passed: The Connecticut Tidal Wetlands Act of 1969 and the Inland Wetlands and Watercourses Act (IWWA) of 1972.

The Connecticut Tidal Wetlands Act in 1969 was the first statewide policy that protected wetlands rather than promote their destruction. The purpose of this legislation was to preserve Connecticut's wetland resources by regulating indiscriminate dredging and filling of tidal wetlands.²⁴ This made it more difficult for developers to fill in areas along the coast and reduced the risk of future tidal wetland filling and destruction. Although this legislation was very effective and protected all tidal wetlands in Connecticut, it did not protect inland wetlands which accounted for the vast majority of Connecticut's wetlands. Inland wetlands were not protected until the IWWA of 1972 was passed. This act recognized the important role of wetlands and promoted their benefits to both the natural environment and the built environment. At the time, the IWWA was one of the most comprehensive wetland regulatory laws in the nation because it delegated the jurisdiction over wetland activities to each municipality.²⁵ The IWWA was much stricter than the Tidal Wetlands Act because it required a permit, provided by municipalities, to conduct any activity including excavation, deposition, obstruction, alteration, or pollution within

²⁴ *Legislative Background for Wetlands*, Box 17, Folder 1, William A. Niering Papers, 1942-2000 Series II, Linda Lear Center for Special Collections and Archives, Connecticut College, New London, CT, 4.

²⁵ Doug Cooper, *Save that Swamp! 10 Years of Wetlands Protection in Connecticut* (Connecticut Department of Environmental Protection, 1984), 3.

a wetland or watercourse.²⁶ It also recommended that sites located within a 100-year flood zone should not be developed due to their increased risk of flood.²⁷

Due to the original consensus of wetlands, the urban renewal movement in New London was unaware of their importance and, therefore, targeted them for development. This outcome was prevalent throughout the United States both during and before the era of urban renewal since the federal government promoted wetlands destruction as a means to create more developable land. The actions taken by New London were most likely a direct result of past sentiments and policies that emphasized the negative qualities of wetlands. However, as experts such as William Niering began to understand the crucial role that wetlands play and spread this knowledge throughout the nation, sentiments towards wetlands became much more positive. This led to a rapidly successful movement to protect the remaining wetlands in Connecticut. In order to further this research, a future project could calculate the exact amount of wetland loss that New London experienced during urban renewal. This calculation could then be used to evaluate the economic, environmental, and social consequences of this loss.

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²⁶ Cooper, *Save that Swamp!*, 4.

²⁷ Cooper, *Save that Swamp!*, 5.

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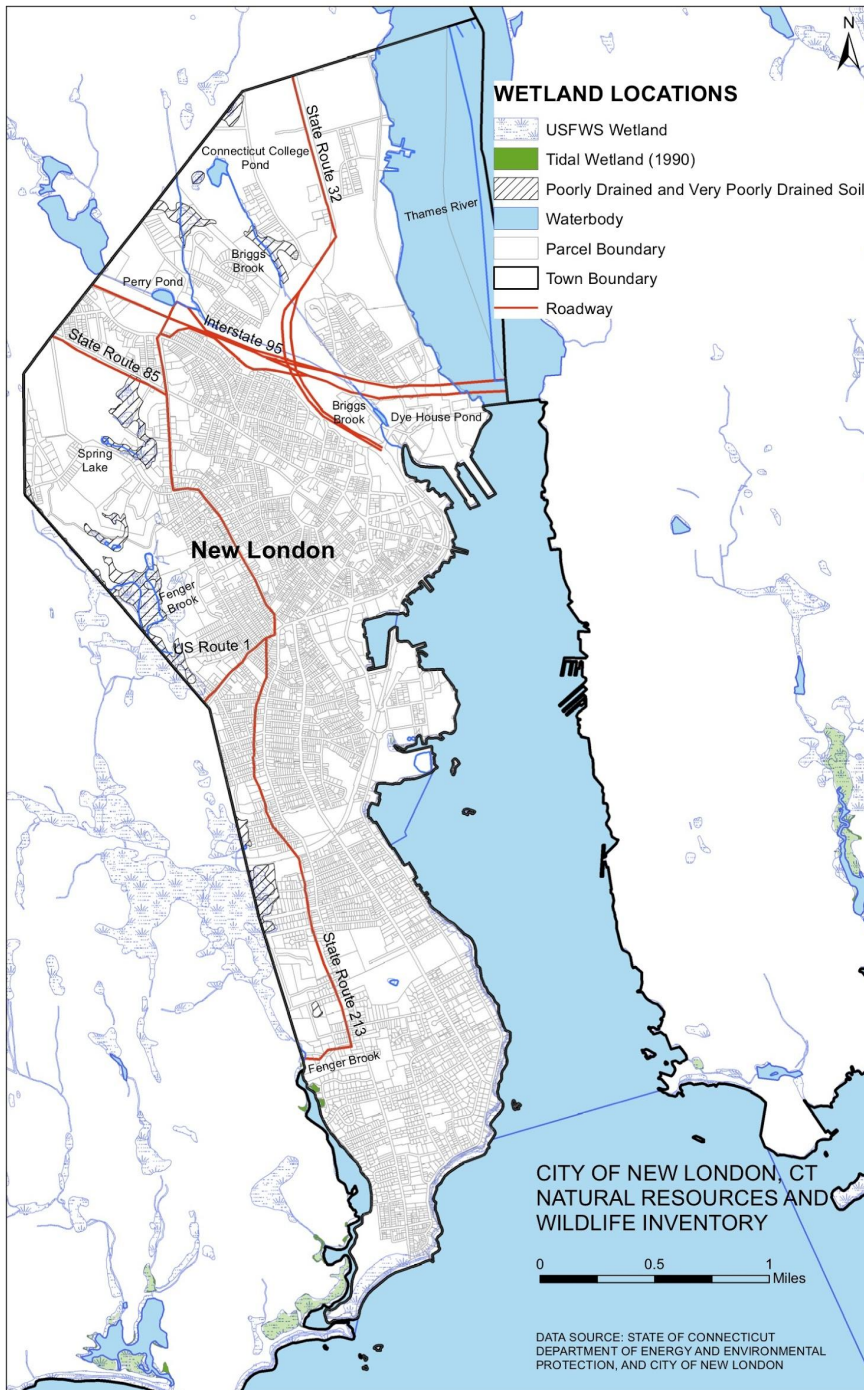


Figure 1. Wetland locations in New London, CT