Divided We Drown:
Exploring Cross-Municipal Cooperation for Climate Resilience in Cape Ann

Final Governance Report
Prepared by Diane Davis with Sam Potter and Clara de Castro
August 30, 2025

Abstract

This report discusses the financial, political, and social barriers and enablers to cross-municipal cooperation in the face of increasing climate disaster. Building on a literature review as well as findings drawn from fieldwork and interviews with residents and officials across the four municipalities that comprise Cape Ann, it lays the groundwork for a series of recommendations about region-based strategies that can be piloted or activated through horizontal mobilization of key stakeholders across municipalities to help foster resilience in the face of climate precarities confronting Cape Ann. Our aim is to provide evidence for how and why working both within and across existent municipal borders will make it easier for residents and authorities in Cape Ann to manage and recover from the livability disruptions set in motion by extreme weather events associated with rising sea levels and the increased frequency and intensity of tropical storms and hurricanes. Beyond showing how and why cross-municipal efforts may help to more equitably distribute the benefits and burdens of adapting to or mitigating climate change, we will argue for the importance of cross-municipal cooperation in the infrastructural development and management of water and sewage infrastructure. In addition to reflecting on other successful region-based initiatives already undertaken in other parts of Massachusetts, ranging from those unfolding around the Ipswich River to recent developments in Cape Cod, we assess who in each of the four municipalities would or would not support cooperative efforts around water infrastructure. Such analysis builds on a deeper understanding of the socio-economic composition, ecological landscape, financial capacities, and local political dynamics within each municipality, using this information to identify barriers or enablers for shared action around water infrastructure. In terms of deliverables, we a) identify organizations, agencies, issues, locations, events, cultural identities, or historical references that might serve as fertile starting points for robust and productive conversations about the importance of regional cooperation and how to get it; and b) offer a proposal for how to jump-start conversations across municipalities, built on a commitment to bringing move voices into the picture, including youth, that allow for frank and deliberative dialogue about what has separated municipalities in the past and how they may work more collaboratively in the future. Our aim here is not to impose or offer top-down policy recommendations about how to act regionally so much as to offer a set of strategies that will help a larger number of Cape Ann residents collectively ponder whether cross-municipal connectedness around water challenges could or should be a high priority, and to offer some ideas about how to best inspire Cape Ann residents to work together to secure their future through bottom-up commitments and dialogues.

1. Introduction

The challenges of accelerating climate risk are seemingly ever more urgent and will require new ways of mobilizing action in order to foster resilience in the face of growing climate precarity. While Cape Ann and other coastal cities and regions are particularly vulnerable, recent disastrous flooding combined with other storm related damage in Texas and North Carolina shows that climate crisis is a reality for many. And while each city or region may have their own ecological specificities, there is much to be learned from successful efforts in the US and elsewhere as we collective seek to prepare for disasters and foster resilience by mitigating the most egregious vulnerabilities and precarities that will destroy livelihoods, homes, and communities. As already addressed by the Office for Urbanization's (OFU) ongoing project titled *The Future of the American City: The Case of Cape Ann*, the future of Cape Ann is very much at risk by a cascading set of ecological occurrences that accelerate sea level rise, speed up coastal erosion,

and produce a wide range of water-related challenges that hold the potential to negatively impact lives and livelihoods of residents in each of the four municipalities that comprise Cape Ann. In response, OFU has also identified a critical array of green and grey infrastructure priorities as well as landscape ecology interventions that can help forestall some of the most disastrous effects of flooding, storms, and other climate-related weather events.

Beyond the landscape and design interventions that will help foster ecological resilience, OFU has further recognized the importance of building robust community engagement and public awareness in order to strengthen the social capital needed to further advance and expand citizen support for these measures. Finding financial resources for carrying this agenda forward is also critical, not just because proactive interventions may require new revenues, but also because climate disasters themselves are costly both for individual residents, whose property and personal losses may limit local tax revenues, for communities as a whole if there are no funds to rebuild their neighborhoods, and for the authorities who are under ever increasing pressures to recover from recent disasters even as they need new funds to adapt or mitigate future ones. Yet all three of these approaches will themselves require closer attention to existent governance structures and the ways that authorities are able to respond to hard-hit communities, keep them involved in activities to foster resilience, and/or mobilize the financial resources necessary to both recover from the past and prepare for the future.

In this paper we focus on governance, starting from the assumption that governance must be understood as more than just top-down decision-making by elected officials and government bureaucrats. Governance involves a *relationality* between citizens and authorities, and as such is a more relational concept than is often recognized in the public policy world where technocratic aims are seen as critical to problem-solving. With a focus on the ways that stronger relations between citizens and policy decision-makers in the domain of climate governance, the findings and conclusions drawn from this report are intended to be placed in dialogue with the other expert-written papers and together provide the basis for further conversations within and between Cape Ann residents and OFU. But more than its focus on relationality, this white paper differs from – but hopefully complements -- the other governance report in its focus on an expanded territorial scale of governance that encompasses all four municipalities of Cape Ann. Think of this as a call for regional governance, and what we later qualify as *"regionalism from below."* Our claim is that a regional scale of citizen action will lay the groundwork for a more equitable, efficient, and proactive approach to the environmental challenges and disasters that are bound to increase over time.

1.1 Thinking With and Beyond the Municipality

Accordingly, in the context of the seven objectives laid out by OFU, our focus will thus be on the "models and best practices for regional and cross-municipality governance," on the ways that such model and best-practices can "leverage shared or enhanced technical capacities and staffing, effective communication and information sharing, and most effective responses," and somewhat

less so on the "governance practices and public policies that most effectively communicate the risks associated with extreme weather events and ecological degradation for individuals and institutions, community and civic leadership, and the business community (OFU, 2024)" As shall be clear below, rather than identifying the existent problems with finding funding and technical support from state and federal government agencies, we also offer some suggestions about alternative ways to generate fiscal resources to foster resilience in Cape Ann.

To reiterate, however, we are less concerned with focusing only on *local* (meaning municipal) government structures, policies, and procedures; on the existing barriers to effective *local* governance across the four municipalities that encompass Cape Ann (Gloucester, Rockport, Manchester-by-the-Sea, Essex); or on what might best practices in fostering l*ocal* government efforts to include the public in their decisions. Although these topics will be directly addressed in another report, our focus is on regional governance rather than local/municipal governance capacities. It stems from a search for the most resilient, equitable, and effective territorial scale of governance for addressing climate crisis. Traditional urban planning and governance approaches often assume that strengthening local community activism and putting citizens in dialogue with elected municipal authorities and their planning staff is one of the best ways to produce both legitimacy, equitable outcomes, and policy consensus. We do not challenge the benefits of localism. Citizens are more likely to become active advocates for their futures if they can rely on neighbors and others with a good understanding of their daily precarity to join hands; and with strong community activism local authorities can be held accountable in ways that generate further solidarity and policies that strengthen democratic deliberation. But we caution against assuming that action at the very local level – from a single neighborhood to a single district to a single municipality -- will always generate the social capital, political pressures, financial resources, and community activism that will be needed to address climate related problems like flooding and hurricanes that themselves flow across formal jurisdictions.

The desire to think of a larger territorial scale for action, built on cross-municipal cooperation, is perhaps best justified by a closer understanding of how water operates, with the fluidity and capacity to wreak damage precisely because it readily transcends municipal borders. In a recent discussion of massive destruction in the US East coast, the problem was framed as follows: "Water does not obey geographic boundaries, and neither does land subsidence…We need to take a shared approach to resiliency to protect not just the emergency evacuation routes, but also the significant infrastructure and destinations" that are not localized but that span coastal communities (Rojanasakul and Hernandez 2024). Likewise, recent work on urban flooding in coastal locations has shown that those places most able to foster spatial flood resilience relied on active collaboration across space and across plans. This was made possible by building "governance networks" that facilitated dialogue across existing institutional boundaries, often with the aim of fostering a "network of plans" to accommodate the various flood challenges that ebbed and flowed across a regional space (Meerow et al. 2024). These findings not only build on prior work suggesting that a "resilience agenda could increase collaboration by acting as a

`boundary object' that brings different actors and interests into governance networks that would otherwise have remained isolated" (Brand and Jax 2007). It also acknowledges recent research suggesting that "governance networks composed of more diverse actors lead to better, presumably more resilient outcomes," primarily because "polycentric and multilevel governance" offers unique capacities to foster socio-ecological resilience (Lebel et. al, 2006, Betsill and Bulkeley, 2007; Biggs et al., 2012). This occurs because "plans developed by multiagency committees are of higher quality" (Woodruff and Regan 2018) and because broadening -- and not merely deepening -- participation in decision-making is often seen as a means for achieving environmental justice (Agyeman et. al. 2016)

This is not to say that efforts undertaken within or on behalf of individual municipalities are irrelevant or inconsequential, either in governance terms or with respect to community engagement. The actions of individual citizens and municipal authorities in Gloucester, Manchester-by-the-Sea, Rockport, and Essex will remain critical in advancing consciousness, knowledge, and action to address the threats and realities of extreme weather events. Strong local participation is also assumed to be a means for advancing procedural justice. But we also suggest that overly localized efforts can only go so far in addressing both the class, social, and other inequalities between the four municipalities that comprise Cape Ann. And beyond equity concerns, some of the most fundamental anticipatory and adaptation challenges that Cape Ann will require if all of its municipalities are treated equally will inevitably need broad swathes of political support and considerable fiscal resources, particularly when it comes to introducing or adapting water infrastructures to manage and prepare for ongoing climate disasters.

One final reason for focusing regionally is that it allows a means for addressing the often insensitive or self-serving climate efforts conceived by either state or federal agencies or coalitions of powerful private stakeholders, which by their very nature often fail to ground themselves in the everyday experiences of a majority of Cape Ann residents when advocating for a particular policy. We see cross-municipal collaboration and/or a Cape Ann wide dialogue as particularly effective way of splitting the difference from overly top-down and overly bottom-up processes, using networks of advocates from all parts of Cape Ann to mobilize widespread social, political and economic support for undertaking policies and interventions that have the potential to safeguard multiple municipalities. This strategy builds around the assumption that by unifying around the idea of Cape Ann as a resilient micro-region, and building on historically shared sense of purpose to do, it will be possible to reduce the divisions within and between the four municipalities that continue to thwart concerted action on both climate preparedness and contemporary water challenges, thus reinforcing rather than reducing climate precarity.

2.0 Rationale for Taking a Cross-Municipal Approach to Climate Governance

The urgency to rethink the territoriality of governance arrangements in the contemporary era is on the rise in academia, owing to a range of challenges related to urbanization and the attendant sprawl of urban areas beyond formal jurisdictional borders, all of which has accelerated in the

past several decades. Some scholars have argued that recent urbanization patterns have also led to greater spatial and social inequality which, when combined with the ascendance of neoliberalism, has reduced fiscal capacities to address local residents' needs (Carrión 2019). The latter has resulted both from the increasing role of private sector actors in urban servicing and from the mismatch between the decentralization of authority to localities on one hand, and the fiscal resources that can be generated at the localized scale, on the other. Both concerns have raised new questions about the extent to which community-based approaches should remain the preferred pathway forward, particularly for natural resource management, leading to calls for `delocalization.' Defined as the development of complex, cross-scalar social dynamics wherein local communities become connected to or are influenced by a variety of external forces," scholars are pushing for delocalization because they have found that traditional community-based strategies are experiencing formidable challenges and limited outcomes in terms of livelihoods, decentralization and sustainability (Ohja et. al. 2016, p. 275). In the search for alternative forms of political association that reflects a "shared political and cultural imagination" while also emphasizing "interactions among actors within and between spatial scales and levels of political organization," proponents of delocalization identify four key developments that have problematized traditional community-based strategies, thus calling for new forms of action: "changing economic values of natural resources (economic capital), circulation of knowledge and ideas from outside local communities (cultural capital), formation of differentiated and conflicting associations between specific groups within local communities and external actors (social capital), and (challenges to) modes and mechanisms of political legitimacy and regulatory practice (political capital (Carrion 2009: 277).

2.1 Can 19th Century Governance Institutions Confront 21st Century Problems?

To the extent that recent transformation in urban, political, economic, and ecological conditions lead us to question whether 19th century governance institutions, built on the longstanding embrace of local, community-based forms of action, are up to the task of responding to 21st century problems, in this report we focus on the region. After all, there is growing evidence that the challenges of climate change may require a more expanded territorial scale for action with respect to natural resources than a local community or even single municipality can provide. The ecological disasters and challenges facing Cape Ann and myriad other locations, for example, neither begin nor end at the neighborhood or even municipal level. Damages and precarities associated with water know no political boundaries; and even if coastal municipalities are more likely to be more exposed to certain types of climate disasters than will impact inland municipalities, life and livelihood impacts of such damages will reverberate within and between municipalities in different ways that combined hold the potential to impact Cape Ann as a whole. As one scholar put it, "enhancing resilience to flooding is not just a collective action problem but a cooperation problem, where actors have conflicting interests and goals and must navigate various types of interdependence (Lubell and Robbins 2022). The operative word here is cooperation; and it needs to be fostered not assumed, particularly when asking citizens to move

outside the comfort zones of their neighborhoods or municipalities and work with residents in other municipalities.

Tasked with addressing the governance challenges that could help enable residents of Cape Ann to forestall the worst effects of climate change, we will propose a range of ideas for fostering cross-municipal cooperation, built around shared territorial and institutional responsibility for Cape Ann's future habitability, with the principal agenda being a strengthening of collaborative governance networks, projects, and plans at a scale larger than the municipality. Again, such `regional' networks are not top-down creations, nor do they stay focused on a single municipality, but are understood to be more horizontal ways of engaging a wide range of constituents who are directly or indirectly impacted by climate crises. For some, collaborative governance networks are comprised of "the actors (e.g. government officials, nongovernmental organizations, private companies) that are involved in managing a particular issue (i.e. flooding) within a defined area" (Hileman and Lubell 2018). In the context of Cape Ann, understood as a place with an already well-established historical presence and a nomenclature that is recognized across Massachusetts and the US more generally, our aim is to help identify an array of actors and organizations whose networking activities at a Cape Ann regional scale might help overcome inter and intra-municipal tensions and foster regional unity of purpose in the service of climate resilience.

In arguing for a more regional approach, we directly build on several principles and findings from the Office for Urbanization's Cape Ann work so far. Of nine guiding principles (see Appendix A), we are most attuned to warnings about the need to act regionally, by the recognition that climate resilience requires attention to both coastal and inland locations, by the concerns that property –and thus property markets more generally -- are being challenged by ecological disasters, and by OFU's claim that the negative impacts of climate crisis on water and other related infrastructures will require a system-wide response. All these assessments, warnings, and challenges give life to the idea that cross-municipal collaboration will be critical to each individual municipality's future as well as to the longer-term identity and functioning of Cape Ann as an imagined community with an identity and presence that long predates the current crisis moment. But perhaps the most important rationale for taking a regional approach is the fact that the impacts of future climate disasters will not stop at municipal boundaries. Even if ongoing damage to coastal areas will threaten employment and destroy homes more directly than might be experienced by those living and working inland, regional employment and regional property markets will suffer. After all, those employed in the arts and fishing activities in the coastal municipalities of Rockport and Gloucester may not all live there, and displacement produced by insufficient coastal preparation could directly impact inland municipalities, further requiring a more regional approach.

As sea levels rise and flood risks increase, questions will continue to emerge about which adaptation measures are required to prepare for the coming climate changes, and at what scale.. People may have to move out of private homes, away from the coastline, away from wetland

zones, or be otherwise displaced by various natural hazards. Regionally-expansive governance structures that are able to operate at a larger scale than the neighborhood or municipality can anticipate the array of challenges that will arise, and how to change current residents' relationships to the environment without being seen as collateral damage. Land will erode, water will continue to rise and conquer, people will adapt or retreat, but equity and environmental justice should remain as the guide for action.

One way to conceive of this challenge is to adopt the philosophical ethic of shared interests – or what is sometimes called `commoning' -- and to link questions of the commons to system and design thinking in ways to advance environmental justice. Fundamentally, climate change is ecological and operates systemically, with complex interactions between nature and human activity at a variety of scales. Systems thinking is dynamic and based on cycles and interchanges, as is water, which flows through increasingly porous landscapes that make a mockery of formal political boundaries. In such settings, one response would be to "design complexity to confront complexity," to borrow the words of famed theorists of the commons Elinor Ostrom (1990), who has in recent years sought to reveal the design principles in long-enduring irrigation conditions and institutions (Ostrom 2000). The complexity at hand, however, is social and institutional as much as hydrological, meaning that it will be important to find a productive `hook' for bringing people together to collaboratively design a shared future in the face of water-dominated climate precarity.

A second principle that informs the search for new territorialities of governance is the notion of the `right to the city.' Beyond Henri Lefebvre's desire to enable justice by ensuring that all a city's residents have equal access to the social goods that make life worth living, and beyond David Harvey's claim that rights to the city are rights to inhabit a city built on one's own desire, recent works have linked right to the city discourses to ecological challenges. In the words of Fernando Carrión, "the right to the city is the right to change and reinvent the city in a context of respect for the rights of nature." (2009: 275). In the context of Cape Ann, the struggle to live in and with nature, particularly with respect to its water ecologies, has been part of everyday lifestyles, culture, and governance for centuries. But as climate change challenges past equilibriums and produces new tensions about how to preserve or live with nature while also securing work, shelter, and basic services needed for existence, questions are emerging about whose survival or preservation will be prioritized and at whose expense.

These challenges are driving conflicts and disagreements among residents both within and between municipalities. Yet it is also true that some residents of Cape Ann have long seen themselves as part of a single "imagined community," at least historically. We believe there exists historical precedents beyond the present climate disaster that can and should be mobilized to unite Cape Ann municipalities around the common ecological challenges that are impacting the present and will most likely dominate the future. That OUF's project has already been framed with Cape Ann nomenclature, and that hundreds of organizations that operate in the four municipalities also adopt the Cape Ann nomenclature, makes eminently clear that Cape Ann is

already understood to be place whose existence resonates in the minds of its varying residents, even if there are differences of opinion with respect to which aspects of its history, economy, culture, and landscape – let alone water problems -- most clearly define Cape Ann as a region.

In upcoming we will discuss the uses of history and other techniques, including the formation of a water commons association and creation of new projects and programs -- to mobilize Cape Ann residents around a regional conversation. Suffice it to say, however, that there is a long, storied history in which unity and division among the different populations and towns in Cape Ann has ebbed and flowed. When extreme crisis or a disaster hit, either politically or economically, some residents rallied in support of each other. At the same time, across the long sweep of time since the incorporation of Gloucester in 1642 one common thread has been the uneasy relation between the history of the different towns in the region, each of which has their own historical society, and the sense that their fate has been tied to each other. Beyond advocating for more cross-municipal cooperation and new governance networks that link the four municipalities to each other, our aim is to marshal academic, case study, and documental material from Cape Ann's history to help lay the groundwork for regional cooperation around a series of tangible projects, processes, and priorities that would further strengthen cooperative resolve.

2.2 Regional Planning: Evidence from the US and Elsewhere

Although regional governance institutions with juridical decision-making authority are few and far between, regional thinking is hardly new. There is a long line of scholars who have advanced theories of geography and territory that operate between and beyond existing administratively defined local boundaries. Some are statedly more ecological than others, while most proposed designs attempt to balance relationships between the rural and the urban. In the late 19th century US concern with the western states brought government studies of arid regions (Powell 1879). Much of the mid-twentieth century writing on regions, especially those informed by policy and economics scholarship, conceived of regions as appendages to cities. They also focused more attention on the eastern parts of the city where consumption centers drove urban, state, and national economic growth. Perhaps the most important example was the Regional Planning Association (RPA), founded in 1923 to address barriers to growth in the New York-New Jersey region. As one of the US's most durable regional planning associations, one which interfaced with elected officials but remained autonomous as a civic organization, the RPA was responsible for establishing an array of policy priorities that still persist today, including support for greenbelts and a commitment to protecting hinterlands, wilderness, and rural areas surrounding cities.

But as urbanization has continued, the RPA has stayed the urban course by advocating for mega-regions that contain large metropolises. In this context, the EPA has stepped into its role as advocating for a regionalism embedded in nature, at least until recently. Although the EPA has focused on key questions relevant to Cape Ann such a water quality, air pollution, and radiological health, its federal status and its mandate to focus more on relations with states and

their biggest cities, rather than cross-municipal coordination, has led to efforts to create `federal regions' as well as an array of `regional cities' (Philadelphia, Chicago, and Seattle) intended to streamline relations between federal and state officials in the implementation of national environmental policies (Williams 1993). To the extent that these moves were identified as a response to the decentralizing tendencies of President Richard Nixon's "New Federalism," the approach to regionalism embodied in the EPA has merely reinforced a top-down governance logic, despite the fact that the agency attached a laboratory to each of its regional headquarters in recognition of distinct differences in ecology and priority among the regions.

In contrast to the US, in the global south regional planning has long been a mainstay of development theory, with national governments identifying political and institutional practices to moderate the growth of large cities and invest in jobs and infrastructure in rural areas in order to stem the tide of outmigration. More recently, an embrace of regionalism has accelerated in Europe, with much of the focus on the importance of regional planning and regional bodies to address water challenges (CEMR 2024). Recent work by Zimmerman (2023) argues that water infrastructure was central to the successful regionalization of the Ruhr Valley in Germany, where management of water supply generated new forms of prosperity. Other scholars have argued that the regionalization of water infrastructure has been central to the "co-constitution" of new regional political alliances that overcame conflicts between nations in Africa (Sayan and Nagabhatia 2024). And recent work by Rudiger Bollens and others (2016), applied to places as distinct as Europe and Latin America, highlights the ways that "hydrosocial territories" can serve both political and environmental aims by creating new reciprocities and arrangements that foster water sharing for collective consumption.

In the history and theory of governance in the US, support for regionalism has been limited, particularly as compared to the rest of the world. Some of this has to do with our system of federalism, which enshrines power across three scales: local (municipality), state, and federal government. The enduring political support for this scalar allocation of authority has been breached very infrequently in the US, with perhaps the most significant foray into regionalism in the US first emerging during the New Deal with the foundation of the TVA in 1933 and the second most important being that proposed by the EPA. Even in the contemporary era of massive urbanization, the reterritorialization of standard governing authority has been difficult, with efforts to create metropolitan bodies few and far between. In the US efforts to think at territorial scales larger than the city emerged much later, and mostly in the form of metropolitan planning (Mitchell, Miller, and Deal 2000) -- primarily in recognition of the relationality between cities and expanding suburban growth and the infrastructural investments that urban sprawl required. Some of this has been framed with a focus on industrial ecology or sustainability more generally, with the latter jumpstarting research on the geography of sustainability transitions (Truffer and Coenen 2012) and less so on questions of fostering resilience in the short and medium-term. To the extent that regional nomenclature in the US in recent years has been focused on metropolitan areas, it has not captured significant attention in the least urbanized parts of the US. Having said

that, one recent effort at enabling “infrastructural regionalism” in the US recently emerged in rural Montana (Gansauer and Haggerty 2023), and not unlike other parts of the American west used water management as the key entry point for overcoming fissures between towns and cities. In the US East coast, when a new territoriality for water management is invoked it is more likely to refer to watersheds or basins or coasts.

2.3 State-level Regional Authorities: Pros and Cons

In Massachusetts efforts to establish either metropolitan or regional bodies that combine municipalities have been advanced in recent years, owing to the expanding footprint of cities and towns. Yet most are fraught with conflict and tension, leading to the establishment of organizations with minimal powers. Some such bodies, such as the Metropolitan Area Planning Council (MAPC) do have a mandate to foster cooperation, but they often remain highly suspect in the eyes of municipalities. If they offer resources and advice, they are more likely to be seen favorably, but if they impose mandates, they are eyed with suspicion. These regional planning commissions took hold in Massachusetts after state law allowed counties to dissolve themselves, eliminating what many viewed as an “unnecessary third layer of government.” At their best, these bodies can step into former county roles: running collective-purchasing programs, commissioning water- and waste-management studies, preparing climate-resilience plans for inland rivers, and financing rural-road maintenance. By pooling dues and staff capacity, a regional body can underwrite consulting and engineering contracts that would be prohibitively expensive for any single municipality.

The regional bodies are voluntary, and their authority never exceeds the combined powers of their constituent towns. In other words, successful initiatives rely on consensus rather than top-down mandate. Governance is unwieldy: large boards drawn from each member community often disagree over priorities, and there are concerns that the regional planning bodies merely replicate the costs and opacity that doomed the old counties. A few urban-area councils folded after roughly two decades amid disputes over major infrastructure bills, a cautionary tale for any similar venture on Cape Ann. The Hampshire Council of Governments, for example, dissolved in 2019, transferring its residual functions to the Pioneer Valley Planning Commission. Even so, the regional planning commission model remains the state’s primary forum for inter-municipal collaboration, offering a regional lens on planning and resource management and a structured way for public and private partners to work together. Having said this, some of the best examples of regional cooperation in Massachusetts and elsewhere in the US or other federal systems have emerged around water bodies. One particular example is the Ipswich River, where longstanding efforts led by Bruce Tarr and others in the state legislature have produced cross-jurisdictional cooperation. It is noteworthy that in many examples from both the US and around the world, river cooperation is among the most common forms of collaboration.

But not all water bodies are alike, and a river can bring cooperation because the nature of water flowing from upstream to downstream requires cooperation along its transect if individual

communities will be able to protect themselves. A seminal paper examining the socio-natural and trans-local struggles for water justice, and which holds many suggestions for how to generate cross-jurisdictional cooperation around riverine identities, was a joint effort produced by scholars in thirty different countries (Boelens, et. al. 2022). The specificities of river ecologies may explain why so many examples of water cooperation stem from efforts to manage rivers or watersheds.

In Cape Ann, rivers are part and parcel of a much more complex water picture that is in constant flux, flowing differentially within, below, and across space. While coastal flooding hurts some municipalities more than others, the fact that higher income residents are more likely to experience damage from flooding may disincentivize lower-income residents from joining together in the struggle over coastal regulations. Water problems as experienced by residents in areas further from the coastline may be less about incessant flooding and more about concerns with storm evacuation, drinking water, and sewage. And despite the fact that the latter concerns can be exacerbated by flooding, or that sewage overflow can impact coastal activities such as fishing and recreation, there is considerable variation in how principal climate problems are framed by residents across all the municipalities in Cape Ann.

2.4 Water in the Cape Ann Region: Tensions between Coastal and Inland Priorities

Preliminary interviewing and field research in Cape Ann suggests that there may exist both water-related and socio-economic barriers to comprehensive or systematized cross-municipal cooperation. The four cities that have historically (though not unanimously) been considered to comprise the Cape Ann region (Essex, Gloucester, Manchester-by-the-Sea, and Rockport) host distinctive industries, identities, ecologies, land use patterns, fiscal resource capacities, population demographics, and economic as well as social histories. In some of these municipalities, neighborhood-level activism is more vibrant than in others, and in some municipalities skepticism and mistrust of any more scaled up authority – whether the municipality or even the state – is greater than in others, pushing residents in some municipalities to want to act locally. These differences hold the potential to undermine efforts to think regionally. Likewise, within and across the four municipalities there are myriad yet distinct organizations that operate at very different scales and around very different concerns, further dividing civil society in ways that make regional action around climate concerns more difficult. To the extent that the majority of these organizations articulate their reasons for existence on the basis of work and/or social conditions rather than climate, they may also be more committed to struggle over tackling other more current problems rather than their municipality's – or the Cape's -- longer-term ecological future.

Complicating this picture is the fact that the country scale of governance – that in effect has served as a stand-in for regional conversation and collaboration in other parts of Massachusetts (and across the US) -- was eliminated several years back, with one consequence being the strengthening of municipal-level institutions and their direct vertical oversight by the state. Not

only does this reduce municipal authorities' willingness and capacities to cooperate horizontally, the strengthening of municipal autonomy that occurred in the aftermath of the county's disappearance has helped further disenfranchise citizens from their own municipal leaders, at least in Gloucester, thus fueling suspicion of non-local efforts to manage climate or other policies from above, whether at the municipal, regional, or state level. Finally, even the few regionally-cast organizations that identify climate concerns as central, including Town Green and the Cape Ann Climate Coalition, have not yet articulated a regional presence and remain divided along many of the demographic, industrial, and social identities noted earlier. In a recent revision of its Charter, Town Green explicitly stated that its members could not be affiliated with other regional bodies, such as CACC. So even among those organizations that see themselves as regional and/or concerned with climate and justice issues in Cape Ann, there is tension.

Despite these barriers, the dynamics of which will be elaborated in greater detail below, there are signs of hope. For example, in the listing of organizations that are key stakeholders in climate policymaking or action for Cape Ann, prepared by OUF, 26 span at least 2 different municipalities (and in this group 8 have Cape Ann in their name), 11 are multi county, and 5 identify at the county level (in this case Essex County) – suggesting that despite the formal absence of county government there still is a sense of county identity that transcends individual municipalities. Accordingly, we will nonetheless argue that thinking at a larger regional scale, built around efforts to foster cross-municipal cooperation in Cape Ann, must not only be part of any successful climate resilience measures, but that it is in fact the best way to equitably and effectively reduce precarity for each municipality, individually, as well as for the Cape Ann "imagined community" as a whole. Just as significantly, with the absence of county government we believe that there might be considerable support for new forms of bottom-up regional cooperation to both fill in the gap and to provide an alternative `institutional space' for inserting building bottom-up regionalism to equitably distribute the costs and benefits of cross-municipal cooperation over water challenges. The fact that at present some of the major water infrastructural priorities may be too onerous for individual municipalities to finance or manage adds a further rationale for pursuing cross-municipal cooperation.

Through fieldwork and interviews with residents, businesses, and other stakeholders, we have identified the financial, political, and social factors that must be brought into any conversation about creating a shared responsibility for Cape Ann's future. Risks faced by one neighborhood or municipality could present common ground for cooperation with others, although it may also be that certain risks are so uniquely configured that they frustrate any hope for implementing the recommendations made in previous studies. Likewise, one must remember that the different ecologies represented across Cape Anne are themselves embedded in natural cycles as much as shifting urban economic or productivity dynamics, meaning that any fixed territory or region for governing ecological conditions may produce more problems than it solves. This is especially so if a regional body were to become institutionally and politically entrenched in prior power

relations that stand in the way of accommodating new ecological conditions. It is for precisely this reason that we turn to the notion of regionalism from below.

2.5 Regionalism from Below

As shall be clear shortly, there is not dearth of conflict and division that have problematized efforts to advance certain climate adaptation policies – particularly with respect to water – across much of Cape Ann. There are longstanding tensions between the fishing community in Gloucester and the wealthy residents of Manchester by the Sea. Imagining a regional body that unites these warring factions may be ill-advised. Beyond the class fissures that seem to be appearing within both intra-municipal and regional organizations, trust in prior decision-making authorities seems to be at an all-time low, and this includes EPA and other federal authorities operating at regional scales to curtail the fishing industry. Building on the prior assessment of the ways that federalism in the US has limited regional cooperation in ways that distinguish it from Europe and other parts of the world, it is important that any focus on regions in the context of Cape Ann must take into account both the general institutional barriers of federalism as well as the specificities of our locational focus in northeastern, coastal Massachusetts. For all these reasons, some residents may find that the concept of region may be suspect, in large part because many federal or state programs that are developed through quasi-regional nomenclatures (such as EPA regional guidelines or Massachusetts coastal regulations) have not been well received in Gloucester and potentially other areas of Cape Ann.

Likewise, any effort to generate horizonal cooperation across municipalities must also acknowledge the fact that existing formal governance approaches are seen as not working, particularly among the Cape's most disadvantaged residents. It is not just that local government initiatives are siloed by discipline or purview, or else constrained by administrative resources. The existing regional planning organizations enabled by Massachusetts law are likewise too broad in their scope, detached from the complexities of local affairs, and lack significant cross-boundary authority beyond what is politically feasible within each of their voluntary member municipalities. And as mentioned above, most private initiatives, however well-intentioned or deep-pocketed, are largely conceived of in boardrooms. To us, this suggests that at each of these three decision-making scales there is a persistent assumption that things just need to be calibrated correctly from above – the money gotten just right – and plans will fall into place and each municipality will not only take steps toward an ideal adaptation strategy but begin cooperating with their neighbors in unforeseen ways on contentious issues of property, cost-sharing, and investment, painting over difficult histories seemingly overnight.

These approaches ignore that Cape Ann is stitched together not by only impersonal agreements between organizations or tensions with government agencies, but also by relationships between neighbors who share a material future tied to the land and water. And while neighborhood and community-based relationships are key to mobilizing bodies to make claims, while also giving residents a discursive venue to express their concerns or opposition to the current state of affairs,

very localized organizations have usually been created to advocate and not to compromise. The challenge then is to build on extremely localized activism (within each of the municipalities) in ways that bring them together not just to share knowledge and concerns, but also to make tough decisions. One might say that what is needed is needed is a democratic innovation from below, that builds on the democratic sentiments embodied in neighborhood or community organizations but links them in collective problem solving. This is no easy task, particularly in a time and setting where risks are widely acknowledged but not uniformly experienced. For now, we can remain agnostic on this, because as viewers from the outside it is not our place to say definitively whether collaboration over Cape Ann's future or cross-stakeholder, cross-municipal co-production of problem-solving measures in the water sector is even possible. But we do believe that any framing of regionalism must take into account the principles of justice and shared natural resource decision-making that are identified through such languages of the commons, that that privilege citizens' agendas and a broadly cast, albeit delocalized community sentiment in any discussion of future actions.

Stated somewhat differently, any "innovation from below" that has a chance of succeeding can only begin by starting a conversation to which everyone is invited. In our investigation of the various potential pathways for new solutions to the governance component of Cape Ann's future, we found strong evidence that these kinds of conversations – particularly those that bring together varied industries and interests – are *extremely difficult to have*. Yet that is exactly why we suggest pursuing them; and in rejecting a focus on the low-hanging fruit (standard community engagement practices at the neighborhood or siloed community level) we will need new languages, concepts, and motivating principles.

In the context of Cape Ann, and most particularly in Gloucester, there is serious mistrust of top-down actions taken by governing authorities, for reasons that are discussed in the next section. Accordingly, in this report we qualify our use of the term regionalism to accommodate the political, institutional, and cultural realities of the context. In addition to emphasizing the importance of dialogue and collaboration across municipalities in the service of a shared future, we coin the concept "regionalism from below" to signal our interest in building on local, bottom-up actors and initiatives in the formation of any deliberative dialogue at a scale larger than the municipality. This also means that the proposed strategies offered below are intended not as blueprints for the establishment of yet another fixed and formal layer of government, so much as a convening mechanism for mediating differences through dialogue. To the extent that any "regionalism from below" conversations would involve citizens, organizations, and authorities from all four municipalities – but as equal partners convened horizontally and not vertically– the question of how to discuss let alone implement any proposed actions would be part of the conversation. The main objective, then, is to break down silos within and between individual municipalities in the service of protecting Cape Ann as an historically and territorially expansive "imagined community," and provide a forum where residents in all four municipalities are

considered equal citizens with rights to make claims about a collective future.[1] One of its objectives will be to consider other concepts or unifying ideas/ideals, including such possibilities as a Cape Ann water commons -- or something conceived as a water assembly, forum, or charter -- might produce further support for cross-municipal cooperation.[2]

2.6 Institutional, Legal, and Governance Logics for a Regional `Commons'

Beyond focusing on the ways that water has been central to Cape Ann's past and future identity, one other entry point for imagining alternative territorial scales for governance action can be found in recent legal innovations. One fruitful precedent that allows a centering of environmental action in the context of expectations, procedures, and priorities that extend beyond the local and apply to a more regional level can be seen in the establishment of environmental law courts and tribunals, domestically in Vermont and Hawaii and internationally with over 1,000 such courts around the world. Although state courts represent a scale of governance that does not always elicit trust among all Cape Ann residents, it nonetheless provides examples of situations where the flexibility and expertise to introduce a regional approach allowed new ways for navigating climate governance within the US federal system. This occurs because state judges are given the authority to address the technicalities and sociological issues that arise in climate-related lawsuits, particularly those related to coastal issues and processes of systematic domestic relocation. At present, Massachusetts only has land courts or its superior court, as well as EPA regulators, to address such issues, and they neither operate at a regional scale nor do they have the environmental expertise as environmental law courts. If state environmental courts were to materialize in Massachusetts, they would address issues such as insurance-driven property relations that change the value of the property drastically because of increasing flood risks that were unknown at the time of the sale in ways that local municipalities could not. But in their absence a regional forum could elect to address these questions, although it would be a significant challenge to manage the tensions between legal regulations, climate change or water specialists with scientific expertise, and residents' own understandings of environmental precarities.

Having said that, in the absence of environmental courts with both the flexibility and expertise to offer rulings on such questions the state will continue to impose its vision. The Massachusetts state government published that, "under a state of Emergency, the Governor is authorized to issue executive orders to meet the needs of a threat, emergency, or disaster. These Orders are to be treated as law and may override existing law for the course of the disaster." The ability to override previous ruling may even put civil liberties at risk by design. Some have even argued

[1] The concept of imagined community is drawn from the work of political scientist Benedict Anderson, who applied this to studies of nationalism and argued that the rise of the print media linked citizens to each other in a common imaginary despite the large territorial scale of distance that divided them in their everyday lives. For more on how the notion of imagined communities could be applied to scales smaller than the nation-state, see Davis (2023).
[2] For a range of possible concepts and organizing rubrics to generate solidarity over water struggles, see *The San Francisco Charter for Regenerative, Just, and Resilient Water Systems,* The Water Alliance, 1993.

that when a drastic climate disaster takes place and the state government calls a state of emergency these circumstances, the result is often human rights violations that highlight the ever-present racial and socio-economic disparities. Either way, negotiations, lawsuits, disagreement, and other conflicts are inevitable companions to the coming hardships that come from forced relocations after an emergency is declared. The implementation of various strategies to alleviate some of the coming hardships must be accompanied with structures to be responsive to unforeseen consequences. This is especially relevant when the future relocation effort is considered.

In light of the recent Chevron decision, courts are now tasked to make determinations on the regulation that used to be under the powers of the EPA. Eliminating federal-level regulations and oversight could provide new opportunities to streamline cross-organizational coordination and arbitrate disagreements within the state. Any regional body could be in a good position to advance knowledge and policy action that might mediate between municipal and state visions of effective and just climate change action. But more significantly, one need not wait for formal changes in the jurisdictional powers of the courts to address the `missing middle' between municipal and state regulatory authority, or to utilize federal laws and resources to foster regional resilience. What one needs is the institutional vision to form an alternative governance mechanism that both recognizes and confronts the multiplicity of rules, actors, and issues at stake in the struggle to confront climate precarities. And this is where recent writing on both adaptive governance and critical institutionalism can help.

2.7 How to Create a New Institutional Vision: From Adaptive Governance to Hydrosocial Territories

Adaptive governance emerged in the context of writings on how to manage ecosystems across landscapes and seascapes (Folke 2006). In keeping with its basis in the new ecology, adaptive governance was founded upon a number of core principles that included "the need to live with change and uncertainty, to foster adaptive capacity, to understand human and natural systems as intrinsically coupled, and to consider resilience as the central desirable attribute" (Cleaver and Whaley 2018). As with our cross-municipal cooperation aims, it built on a desire to form governance arrangements capable of addressing a broad range of ecosystem services by coordinating multiple interests across multiple levels (Olsson et al. 2004*b,* Brunner et al. 2005, Folke et al. 2005). Some proponents went on to argue that the networks of actors that emerged and evolved in any adaptive governance system would need to "capitalize on windows of opportunity" (Cleaver and Whaley, ibid); while others argued that such networks promoted social learning, power sharing, and flexible institutions capable of accommodating and responding to change and uncertainty arising from both environmental and social sources (Folke et al. 2005, Armitage et al. 2007, Berkes 2007).

But beyond sounding to good to be true, and being called out for their uncritically optimistic tone, these views were often viewed as being too replicative of traditional institutional hierarchies and processes. Various scholars argued for the need to pay more attention to the

process, power, and meaning dimensions of adaptive governance. For Chaffin and colleagues (2014), adaptive governance interventions cannot proceed on the basis of normative lists but "should be preceded by an explicit analysis of relevant power and politics ... that may be precipitating environmental and social injustices stemming from the marginalization of minority cultures, religions, worldviews, and environmental ethics" (Cleaver and Whaley 2018). These critiques fueled calls for more imaginative and emancipatory ways of adapting governance, particularly as it relates to natural resource management and including from one of its original proponents. Calling itself critical institutionalism (CI), this body of work "explores how institutions dynamically mediate relationships between people, natural resources and society. It focuses on the complexity of institutions entwined in everyday social life, their historical formation, the interplay between formal and informal, traditional and modern arrangements, and the power relations that animate them" (Cleaver and de Koning, 2015). Beyond taking an approach to ecological resource management that is consistent with an embrace of the commons and an eye to social justice, CI builds directly with quests of climate-related precarity. In the words of Van Laerhoven and Ostrom (2007, 5): "Regarding the future, we think that scholars must embrace the challenge of finding ways to deal more explicitly with complexity, uncertainty and institutional dynamics."

More importantly, critical institutionalists "question the underlying rational choice assumptions of much institutional thinking. Instead, they emphasize the multi-scalar complexity of institutions entwined in everyday social life; their historic formation dynamically shaped by creative human actions; and the interplay between the traditional and the modern, formal and informal arrangements. From this perspective rules, boundaries and processes are 'fuzzy'; people's complex social identities, unequal power relationships and wider political and geographical factors shape resource management arrangements and outcomes. Institutions are not necessarily designed for a particular purpose but borrowed or adapted from other working arrangements. People's motivations to cooperate in collective arrangements are a mix of economic, emotional, moral and social rationalities informed by differing logics and world-views" (Cleaver and de Koning, 2015, 4). Stated simply, institutions are dynamic in that they operationalized by human actions, and there is no simple relationship between worldviews, institutional form, and outcomes

What conceptual insights and action strategies drawn from critical institutionalism can do for Cape Ann, then, is help inform a new regional governance institution or body that actively accommodates these principles to move beyond mere adaptive governance. Doing so will require new processes and strategies that depart from an overreliance on formal practices, building on all networks, ideas, and resident capacities to deploy what critical institutionalists call "a *process of bricolage*, where those involved piece together new arrangements from the resources hand," including those drawn from "legal forum shopping" or other legal and institutional precedents (Cleaver and Whaley, 2015, 48). How such a process of bricolage will unfold in the search for an alternative governance mechanism structured around the notion of regionalism from below in

Cape Ann is hard to know. But there are examples elsewhere that could be explored as models. Work drawn from a collective of scholars studying riverhood, noted earlier, gives a clue. This collective has documented myriad efforts to unite citizens around water justice, coming to the conclusion that the most successful examples built on "legal, cultural and institutional pluralism despite the often strongly uniform state-centric and market-based legal frameworks in which they are nested." They further argued that in the process they had to consider "water rights, principles and authorities, of different sources and backed by different powers, (who) coexisted and interact(ed) in the same hydro-territorial arenas" (Boelens, et. al. 2022, 10).

Moreover, success was built on a "dynamic mixture, entwining local, national, and global rules" as well as cultural norms of place and history. Beyond "absorb(ing) and reconstruct(ing) outside rules and norms to shape grounded local law" participants also defended "non-commodity water institutions as their pillars – even when they strategically engaged the market."And despite the "simultaneous presence of internal injustices and struggles," the larger aim was to establish "collective control through context-grounded institutionalizations." (Ibid: 10). This is precisely the vision we have in mind for Cape Ann, but as unfolding regionally in the form of cross-municipal networks of activism and collaboration.

3.0 Eco-Political Realities in Cape Ann: Organizational Diversity, Decentralization, and Jurisdictional Tensions in the Face of Shared Water Challenges

Although we have identified a range of possible pathways forward, based on the theory and practice of water cooperation (via adaptive governance) and other forms of linking citizens to each other on alternative territorial scales (hydrosocial territories) with an embrace of shared responsibilities (the commons), how these proposals will land in Cape Ann is unclear. Despite the fact that the future of Cape Ann has become more uncertain as extreme weather events threaten the livability of this coastal community in North Shore Massachusetts, there are many barriers to cooperation deriving from the socio-economic as well as ecological differences within and between coastal and inland communities. Yet if one thinks from an ecosystem perspective, there is both need and urgency to cooperate across municipalities; and because the tapered 'cape' landform does not have obvious socio-political boundaries, the constellations of towns that comprise Cape Ann have a shared fate beginning from their entangled history. In recent years, frequent storms and the risks of sea level rise also unite the towns' futures as well, at least if one takes infrastructure as one's starting point. Physical infrastructure such as sewage pipes, electrical wires, bridges, and roadways cross and connect beyond individual municipal boundaries in a network that pre-dates the current intermunicipal conflicts that are inhibiting their repair. Both are highly susceptible to damage from climate disasters, with the likelihood of sewage spillover, downed power lines, and flooded roads.[3]

A key case that illustrates both the inter-dependencies and the tensions between the towns is the proposed upgrade of the Gloucester Wastewater Treatment Facility. It is the last facility in Massachusetts without a secondary treatment system, and the EPA has decided not to provide a

subsequent extension. During heavy rain events, excess water overwhelms the system, triggering an overflow pipe that discharges untreated wastewater directly into the ocean. This contamination leads to beach closures, commercial fishing and clamming restrictions, and widespread ecological and economic impacts. There is even a higher rate of reported stomach viruses in areas facing sewage overflows.[4] Although the wastewater and drinking water systems are distinct, both are endangered by the same fluvial forces. The sea level rise causes flooding, saltwater intrusion, and infrastructural strain that highlight the shared vulnerability. In other words, the consequences of neglected water systems in one municipality influences the livability of the others. Even so, there are still significant political barriers to substantive intermunicipal cooperation.[5]

3.1 Mandated Cooperation: Barrier vs. Enabler?

Currently, there is a consent decree in place by the EPA that requires Gloucester to install a secondary treatment system and increase capacity and places responsibility on the municipality of Gloucester. As per the regulatory standards, the EPA charges the municipality in which the pipe is located with the responsibility of the $200 million upgrade.[6] However, 49% of the town of Essex utilizes the Gloucester wastewater treatment facility.[7] Only 7% of Rockport utilizes the Gloucester treatment facility.[8] Sewage treatment plants are in Rockport, Gloucester, and Manchester-by-the-Sea. However, each of these systems overflow and are overflowing more and more. Additionally, there are emergency drinking water pipes and other pipes that are also at risk in the advent of a flood. Despite these shared infrastructures, intermunicipal contracts, such as Essex's agreement with Gloucester, do not currently define responsibility for future capital expenses; and this is currently developing into a significant legal dispute. The drinking water supply runs through a different system. However, the threats to the systems, both drinking and wastewater, share the same event such as a flood.

In addition to wastewater, emergency drinking water systems link towns such as Rockport and Gloucester, further complicating the patchwork of municipal obligations. The financial structure for infrastructure investments often misaligns with the geography of service delivery, and this reveals a disconnect between physical networks and governance arrangements. Stormwater, wastewater, and drinking water systems are administratively separate and funded depending on municipal boundaries, despite the fact that the contamination of the public system should politically be salient for all. Flooding leads to combined sewage overflows and saltwater intrusion that threaten drinking water, recreation waters, and fishing waters – all of which are protected under the Clean Water Act. In response, some residents rely on septic systems and well water, thus using only on the micro-grid infrastructure within their property; and while these strategies may help individual families or even neighborhoods, they may reduce support for larger scale collective action or collaboration.

Whatever the logic, such remedies have contributed to collective inaction regarding the repair and operation of necessary utilities for livability. While political tensions between rich and poor

populations about who should pay for water are also part of the explanation, they are nothing new. More significantly, these systems are particularly at risk not just because of extreme weather events but also because in recent years governance processes have failed to adapt to the emergent ecological conditions. Influenced by recent developments in urban planning theory and praxis, community input is invited for many issues, but because communities are divided from within – by income, degrees of education, organizational capacity – these meetings have either been seen as performative or they have produced stalemate with respect to moving forward. Moreover, recent decisions made by Massachusetts state authorities about Gloucester's fishing status, coastal plans, and other priorities\have created antagonism that emerges in the context of municipal meetings and drives further skepticism about top-down decision-making with respect to Cape Ann's future. While a general problem, the municipality of Gloucester is particularly angered by such decisions.[11]

Compounding this has been the influence of state-level decision-making. The abolition of Massachusetts counties in the 1990s left coastal municipalities increasingly dependent on state and federal funding to maintain critical infrastructure. Yet these same higher levels of government also impose regulatory frameworks that may not align with local needs. A striking example is the state's designation of New Bedford as the only industrial fishing port in a recent state Department of Conservation and Recreation Statement. This is an act that undercuts Gloucester's economic base and contradicts its zoning priorities. Another was the imposition of a state TOD requirement (MBTA Communities Law) that produced housing and land use requirements on Gloucester that would directly impact the port area and was seen as disrupting land and real estate costs to the detriment of current Gloucester homeowners and renters. The consequences of such top-down decisions are felt daily in Cape Ann particularly among those employed in the strained fishing industry. Historically there have been intense antagonisms between the regulations and the cultural significance of the fishing industry. Additionally, many of the existent state regulations fail to account for ecological impacts or regional interdependencies.[12]

3.2 Distrust of Governance in Cape Ann

These dynamics have led to a profound sense of disenfranchisement. In Cape Ann, and Gloucester especially, there is growing skepticism toward centralized planning processes. The absence of meaningful self-determination is seen as a core factor behind both ecological degradation and financial decline. The gap between local needs and state decisions has widened, and the local governance lacks the tools and often the legal authority to respond to the novel concerns while maintaining the livability of Cape Ann.

How current governance institutions and urban planning practitioners have been working in an extremely water-challenged Cape Ann thus highlights a series of tragic ironies. The first is that water is the core identity of Cape Ann, but also its existential threat. Although everyone relates to water differently, the fact remains that everyone relates to it. If there is such thing as a unified

Cape Ann identity, it involves water. A second is that governing and planning authorities, businesses, private citizens, and even regional organizations all acknowledge the fragmentation around climate but are reluctant or unable to break out of it because they are mobilized around other fights that appear just as urgent as the Cape's water challenges. With Rockport's economy focused on arts and tourism its residents are often not as willing to fight for water policies that would address only Gloucester's fishing community, despite the fact that consuming fish and renting Airbnb's on the water in Manchester by the Sea and Essex all bring gains to Rockport, and vice-versa. Within the four municipalities, moreover, Gloucester appears to see itself as being most hurt by prior policy decisions, although its fishing industry and its residents both would be served by more concerted attention to water infrastructure, particularly the sewage system.

The challenge is to find a way to talk about water that creates unity rather than division, both within and across municipalities. Water is past and present – and must be part of the future. This past-present frame is already part of the DNA of Cape Ann. Historic impulses are everywhere, from heritage industries like fishing, farming, and shipbuilding to neighborhood historical societies, and cultural festivals like St. Peter's Fiesta in Gloucester. Each municipality is, moreover, uniquely intertwined with art traditions that formally engage the Cape's waterscapes. But our interviews suggest to us that it must be more than this. It must be about habitability and material concerns in the present and moving forward. And to do this, questions of class inequality, immigrant tensions, and the recognition of renters as equally important as property owners as well as the historic preservation of the fishing and art industry must be laid on the table for open discussion. The question is not just how to do this, but how to reframe the meaning of a Cape Ann identity in ways that will move beyond the fissures created by organizations whose reason for being is to preserve just one of those identities or histories.

For the project on Cape Ann, current proposals for sea walls and other infrastructure improvements and investments also hold the potential to generate disunity. Each planned intervention will create distributive differences. One concern is that those properties that are more easily protected by a convenient curve in the coastline will be better prepared for the rising sea levels. And to the extent that such proposals will have a direct impact on property values or the likelihood that a current resident can continue to remain in Cape Ann means that there is much more at stake than the region's ecological resilience. This pushes some residents to question whether a particular fortification strategy has been identified because of assumptions that some residents' properties are more valuable than others. More questions arise immediately when the unfolding and site-specific climate change condition is considered. Some have asked whether leaving such differences to the insurance companies to decide the amount individuals will be financially compensated if climate damage incurs is part of the problem. Others wonder whether leaving landscape architects to determine the most cost-efficient way to protect the most value means residents lose their autonomy to impact the Cape's future. Both in Gloucester and across the Cape, there are differences of opinion regarding who should have the power to

determine who or what should be protected, and whether concerns of the present should prevail over future priorities. To the extent that there are different degrees of planning and/or environmental expertise, some residents have focused more on the justice implications embedded in plans to foster Cape Ann resilience, leading a few to raise questions about the civil rights repercussions of relocation plans or the power insurance companies wield over coastal communities like Cape Ann.

The Cape Ann research team has outlined general procedures for land swaps and other land exchange and compensation programs to attempt to provide compensation for relocation and for the loss of personal assets after a flood event. The research group has taken stock of the available land near to the coastline and within the jurisdiction of the municipality and conducted a preliminary allocation plan for people to be relocate to another parcel of land. The relocation parcels are determined to be settled at a density that the researchers see fit building types such as ADUs. While this seems like a productive first step, given the aforementioned concerns that permeate a wide range of constituencies in Cape Ann, it is important to recognize that there may inevitably be conflict when flood agencies or coastal management organizations decide that it is time for a more aggressive approach to incentivize relocation. One way to address this is to develop an alternative institutional mechanism, like a regional forum, that can show itself to be responsive to the changing conditions and provide a pathway for individuals to collectively air and address these concerns.

Despite the intense cross-municipal political conflicts over water issues in Cape Ann, coupled with the ongoing tensions between municipalities and the Massachusetts state authorities, we believe that thinking regionally is not out of the question. There already exist examples of regional collaboration – even if not around water. Regional agreements or other forms of service and infrastructure collaboration among various municipalities in Cape Ann include a regional school district shared between Manchester-by-the Sea and Essex, the Cape Ann Transit and other cross- municipal collaboration. The cost-sharing challenges of these are not trivial, and thus most of these programs are still intensely fought despite some pre-existing collaborative partnerships. The challenge, then, is not only technical but institutional, with the question being: how can responsibility, regulatory mandates, and political will align with the reality of a collaborative regional governance arrangement.

3.4 Treading Water: A Fragmented and Overlapping Organization Landscape

This is no easy task. There are over 200 different civic organizations that claim purview over the public life of Cape Ann, with a very large proportion of these organizations refer to Cape Ann in their title, mission, or statement of purpose.

As noted earlier, in addition to a shared concern with water and considerable antagonism to top-down authority structures, civil society in Cape Ann is extraordinarily active. There are scores of organizations that act on behalf of a wide range of groups. Just like the municipalities, these organizations can reproduce their own silos, particularly when they have been operating for

decades. Another challenge is the fact that while there are overlapping networks within and across organizations and municipalities, there is also considerable fragmentation. This does not by itself foreclose the search for collaboration across municipal boundaries. Indeed, the Essex County Community Foundation (ECCF), a private foundation, launched an initiative this spring to prioritize county-wide coalition building as a first step for climate resilience efforts. However, there is evidence that some of the climate conversation is being driven by coalitions that were formed for non-climate purposes. For example, while the ECCF initiative reflects positive momentum from the philanthropic sector in recognizing that wide conversation is key to climate action, it also reflects a tendency to see the ability to convene stakeholders and start conversations through the funding of projects (to "build capacity," as the philanthropic sector understands it) for identity purposes. This is further evidence of some organizations' need to be at the center of any conversation that begins rather than an equal partner in horizontal collaboration.

However, some of the most "regionally" active organizations, whether ECCF, Town Green, or even the CACC, can act in an exclusionary more than inclusionary manner. That is, some of these cross-town organization are actively carving out new alliances only with some municipalities or organizations and not others, thus reinforcing social fragmentation along with a more inclusive overlapping across space. All this suggests that although the landscape of a very active local civil society in Cape Ann may be an important resource, the existence of so many organizations can both facilitate and impede cross-municipal collaboration. Accordingly, it is worth taking a deep dive into the nature of the silos that exist within and across Cape Ann civil society, with the aim of identifying potential points of shared interest or new discursive framing that may lay the groundwork for cross-municipal collaboration.

Interviews suggest the following social bases for organizational or identity formation contribute to siloing within the population: culture, class, occupation/industry (arts, fishing, shipbuilding), religion, newcomer status. Complicating matters is the fact that some of these identities are identified with some municipalities more than others. And with respect to water, a single municipality can host different ecologies, thus problematizing cross-municipal cooperation. In such settings, it is worth understanding the degrees of overlap and fragmentation of social and/or ecological identities, and asking what conversations, strategies, or policy priorities might overcome fragmentation or boundary-making? One way to jumpstart such an endeavor is to turn everyone's attention to water, no matter their identity or location, and to consider whether the challenges of water (with rising sea levels and aging infrastructure) can blur the lines of separation. But so far this has been easier said than done. To the extent that the existent "regional" climate organizations or coalitions claiming the Cape Ann mantle do not act on behalf of all four municipalities, or if they engage only some industries or socio-cultural groups, cooperation will be limited. The question, however, is why. And this is where class and economic inequalities – as well as their connections to social identities and municipal politics – must be addressed if a truly horizontal conversation were to be developed.

Much of this has to do with mistrust. Interviews among a variety of Cape Ann stakeholders suggest that certain decisions happen largely in boardrooms, others are political and interpersonal, and sometimes it is a combination of both. Either way, many residents assume that decisions come from those with influence. If the elections or the money or activist coalition-building play out just right, then things will fall into place. Only then have residents begin cooperating in unforeseen ways on contentious issues of property, of cost-sharing, on investment, and with their neighbors and elected officials, painting over difficult histories seemingly overnight. Accordingly, there is considerable table setting work that needs to be done in order to generate new collaborative relationships and to challenge longstanding decision-making powers – both horizontally and from below – if there is to be sufficient support for shared climate adaptation strategies that benefit all of Cape Ann residents and not merely those who have controlled decision-making in previous years.

In thinking about which procedures processes will best enable cooperation, it will be critical to identify the groups that have the most distrust of current governance arrangements – not just because their skepticism of how things work now may reduce support for another governance alternative, but also because they may have the most to gain from challenging old practices. And among the four municipalities that comprise Cape Ann, organizations in Gloucester are most likely to share this paradox, owing to emergent critiques and distrust of local authorities over the designation of a rival city as a working port and with state and federal authorities for recent dictates about transit-oriented development and restrictions on coastal fishing, respectively. Yet even beyond degrees of distrust emanating from Gloucester, the more urban nature of this particular municipality raises another challenge for regional cooperation: how to produce partnerships between a primarily "urban" municipality -- replete with industry, services and housing, such as Gloucester– and more rural or `leisure' municipalities with less industrial infrastructure, more greenspace, and primarily residential land use, such as Manchester-by-the-Sea. The existence of these differences in degrees of urbanity, built on a continuum of land-use complexity and variations in production and consumption that can impact water demand and management, can combine with the class and social differences to make cooperation difficult.

In what follows we offer a few ways in which we think these differences might be transcended, not merely by ensuring that all of Cape Ann's municipalities are equally involved in the conversation so as to move away from any extreme dichotomization set in motion by the tensions between particular constituencies noted above. We also highlight several strategies whose aim is to generate knowledge co-production, which we define as enabling and learning from the various understandings of what unites (or divides) Cape Ann residents, and showcasing these multiple ways of joining together around a shared fate. The first set of strategies involves a return to history, in order to identify the extent to which there may be cultural and social reference points that can lay the groundwork for current efforts at cross-municipal cooperation.

4.0 Knowledge Co-production through Narratives: Learning from History

We found in our conversations with residents and members of civic organizations that people are more willing to refer to a common "Cape Ann" identity when talking about the past as opposed to the present. This past-present frame is already part of the DNA of Cape Ann. It is evident in historic industries, formal painting styles that are nurtured by painters on the Cape, and a network of historical societies and amateur historians interested in topics as broad as the arc of the shipbuilding industry in New England or as specific as one Gloucester neighborhood's experience of the Blizzard of 1978. In this section, we dive into this history to identify discourses that might sustain a shared mission or sense of Cape Ann unity. We trace a series of transition periods on Cape Ann, focusing on economic conditions and social crises. Ultimately, we find a recurring dynamic between local interests and external pressures. We also highlight the importance of examining the intersection of social life, material welfare, and local governance on Cape Ann, and briefly survey a few historical moments that could frame today's climate conversations.

4.1 Trade, Patriotism, and Regional Identity

Like many historic New England regions, Cape Ann bears the marks of its early history. At the opening of the nineteenth century, three municipalities comprised the modern-day region: Gloucester, Ipswich, and Manchester. (As discussed later, the towns of Essex and Rockport were later incorporated out of land from Ipswich and Gloucester, respectively.) While competition and disagreement persisted among these municipalities after the American Revolution, concern for the health of the fishing industry generally united the towns politically. This industry, together with other staples of the "blue economy" such as shipbuilding and merchant trade, benefited as the United States expanded. That unity was tested in 1807, when the Jefferson administration, seeking to assert American neutrality in the Napoleonic wars, enacted a sweeping embargo prohibiting all foreign trade (Am. Battlef. Trust 2024). The Cape Ann municipalities bitterly opposed the Embargo Act and resorted to clandestine trade to keep the fishing economy alive (Pringle 1892, 96).

This regional self-preservation should not have been surprising to the national government. As Cape Ann historian James Pringle notes, local fishermen had experience shifting to clandestine trade and privateering from the Revolutionary period, when these economic avenues helped undermine Britain's hold on its colonies (Pringle 1892, 66). Now, however, these extralegal industries conflicted with national policy. If economic sacrifice under the embargo became a badge of loyalty to the national cause, the continuing appeal of privateering and clandestine trade signaled a growing tension between that national cause and Cape Ann's regional interests.

A second disruption arrived with the War of 1812. Under Britain's naval blockade of the Atlantic seaboard, privateering from Cape Ann became once again an industry sanctioned, albeit tacitly, by a national war effort. The war imposed severe burdens on Cape Ann as the British staged naval attacks around the peninsula and the blockade devastated trade (Babson 1860, 511). But although privateering was the only venture on the seas available on Cape Ann during the war,

this dangerous venture was undertaken by few fishermen (Ibid., 516). The end of the war was therefore celebrated locally as the return of both peace and prosperity. But while the return of a shared regional economy was something to be celebrated, the national government had clearly communicated a belief that the regional livelihood was subordinate to the national interest, first through the Embargo Act and then through a war that devastated the coastal economy.

The weakening of Cape Ann's identification with a national political agenda in this key historical moment should not be underestimated. As Pringle notes, the early American government produced little controversy in Cape Ann until 1807 (Pringle 1892, 96). By the Revolutionary period, loyalty to the "old home" was "well nigh extinguished," and local interests were strongly identified with independence (Ibid., 67). In the lead-up to war, the residents sympathetic to Britain were either ostracized or joined a loyalist exodus to Nova Scotia and New Brunswick (Ibid., 72).

The early nineteenth-century translation of Cape Ann's economic interests into a regional identity that resisted full-fledged support for patriotic projects speaks to the strength of those interests. Still, we must remember that while economic opposition to the national government appears to have occurred uniformly across Cape Ann, this coalition could only last so long as external political conditions allowed, and local interests remained aligned. The Hartford Convention of 1814 illustrates this point. Elite delegates from across New England assembled a platform for shared regional grievances. For a time, moderate and radical factions seriously debated a proposal for the New England states to secede, based on many of the same economic damages felt on Cape Ann (Am. Battlef. Trust 2024). Thus, in the first decades of the 1800s, the Cape Ann municipalities had not only a common enemy in the Embargo Act and the War of 1812, but also a powerful coalition that was actively organizing New England's interests against the national government. When the war and the embargo ended, the Hartford Convention's platform, which involved a shaky compromise between its twenty-six delegates, suddenly lacked an antagonist and fell apart. In the relatively peaceful years that followed, regions like Cape Ann had neither existential threats to rally against nor unifying political currents to tap into, and local politics were largely free to play out on the ground.

4.2 Poverty, Law, and Intermunicipal conflict

Indeed, this post-crisis dynamic soon took place on the Cape Ann. The incorporation of the Ipswich parish of Chebacco as the Town of Essex in 1819 opened a period of municipal disputes that changed the region's political geography (Perley 1912, 25). In 1840, the Sandy Bay parish of Gloucester separated to form the Town of Rockport (Ibid., 101). Through the 1830s, Sandy Bay had been a relatively inaccessible enclave sustained by quarrying and a small-scale fishing industry, while neighborhoods around Gloucester Harbor urbanized (Babson 1860, 543). In a large municipality like Gloucester, semi-rural areas like Sandy Bay and dense urban centers were bound together in one civic body (Brown 1974, 44). Tensions had long simmered between

Gloucester and Sandy Bay, which had previously attempted to secede in 1818 and 1827 (Babson 1860, 545).

Contemporary sources indicate that poor relief and tax rolls were a particular point of contention. In nineteenth-century Massachusetts, this kind of "municipal divorce" was common as rural communities seceded from urbanizing areas (Harris 2023). As a combination of population growth, disruptive wars, and inflation led to an increase in poverty, a growing population of the "strolling poor" moved from town to town in search of work or relief (Jones 2017, 152). While there is some evidence of compassion, the history of the Massachusetts laws regarding the welfare of the poor suggests an early "NIMBY"-ism anxious about threats to social order and public expenses at the municipal level. Responsibility for this population was a consistent point of inter-municipal strife on Cape Ann (Harris 2023). As discussed below, exposure to this crisis depended on the local dynamics at play in each of the municipalities.

Until 1794, Massachusetts poor laws -- civil statutes governing the support of out-of-work "paupers" -- entitled the poor to a minimum level of subsistence from a municipality so long as they had lived there for three months and had not been formally warned to leave. As noted in Jones (2017), this created an incentive for municipalities to keep a "watchful eye" on transient people who might fall on local tax rolls (180). This incentive was especially strong for urban seaports like Gloucester and Ipswich that attracted the out-of-work. Officials in these areas therefore funneled transient men into the "warning" system as quickly as possible. Even so, Gloucester and Ipswich's poor rolls grew as many out-of-town paupers evaded warnings and local workers endured the ebb and flow of the fishing and shipbuilding cycles (Harris 2023). Poor rolls also grew in rural areas, where officials lacked the capacity to issue timely warnings, making those areas responsible for new poor relief even as the urban poor increased (Jones 2017, 180).

In 1794, Massachusetts enacted a new version of its poor laws. The new statute abolished the warning system, clarified that municipalities must provide at least temporary relief to the poor within their jurisdiction, and granted new procedural rights to the poor (Ibid., 152). At the same time, it allowed municipalities to sue each other to recover the costs of relief provided to transient paupers who were legal residents of another town. This combination of expanded protections for the poor and new avenues for municipal cost recovery embodied a "new conception of poverty" that balanced the needs of the poor and municipal budgets (Ibid., 190).

In practice, however, the law created an incentive for municipal secession rather than regional collaboration on the poverty crisis. Less urbanized areas on Cape Ann objected to bearing financial responsibility for a crisis they believed they had not produced (Harris 2023; Calkins 2017). In the new provisions for intermunicipal cost-recovery, these communities saw a way to insulate themselves from the burdens of urbanization. For even though rural areas of Gloucester or Ipswich would have had fewer resources to manage their poor relief obligations if they were severed from their urban cores, at least under secession, they would be able to sue their

neighbors over the cost of any future paupers. Moreover, under Massachusetts Home Rule, the state was largely agnostic about secession so long as neither town would be insolvent after the split. The enabling legislation for the Gloucester–Rockport separation, for example, simply stipulated a division of assets and liabilities and the joint use of landings, water privileges, and access to clam flats (Massachusetts 1840).

Immediately following the war, these interests aligned on Cape Ann, as both the Chebacco parish in Ipswich and the Sandy Bay parish in Gloucester moved to secede from their parent municipalities (in 1819 and 1818, respectively) (Harris 2023). A wave of similar secessions followed through the middle decades of the century in Massachusetts, building on a long-standing tradition of subdivision on the grounds of religious and political self-determination (Brown 1974, 35). For Essex and Rockport, the new poor laws and mounting costs of poor relief introduced a new, local dimension to this regional impulse. In Sandy Bay, moreover, it is possible that residents saw self-determination as a way to reject any imagined regional community: in voting for the town's new name, "Rockport" only narrowly beat out "Cape Ann" ("Rockport Town Warrant" 1839). The timing of these splits also adds nuance to our earlier observation that the development of a regional spirit on Cape Ann during the War of 1812 was possible only through a delicate alignment of external forces and local interests. For if a new incentive for municipal splits had existed since the new poor laws in 1794, the fact that the wave of secessions did not begin until after the War of 1812 suggests that the large-scale political and economic exigencies of that period helped keep municipal ties intact on Cape Ann.

The nineteenth-century poverty crisis was itself another external political and economic emergency on Cape Ann. While the municipal secessions suggest that cooperation was impossible, we should remember that each municipality was in fact responding to the same external forces as its neighbors. Across Cape Ann, the specter of growing poverty came from outside the community, whether in the form of an unruly transient population, legal damages sought by a neighboring town, or the vulnerability of a local industry to economic cycles. Why, then, did intermunicipal antagonism flourish in the presence of a common threat? The answer lies in the legal mechanism intended to balance the interests of paupers and municipal budgets. In exchange for improved welfare standards, the 1794 poor laws made it easier for towns to use the legal system to take responsibility for the fewest possible costs of the poverty crisis (Jones 2017, 190). Municipalities were thus asked to allocate the *costs* of a regional threat rather than work together on a regional solution. Moreover, the avenue provided for this allocation – intermunicipal lawsuits – required towns to not merely ignore but actively undermine the interests of their neighbors. This fiasco stands in stark contrast to Cape Ann's wartime interests earlier in the century, when external forces and local interests had instead aligned, and allowed the municipalities to assert their regional economic priorities in concert.

4.3 Telling Old Stories to Produce New Conversations

With an eye to Cape Ann's present threat from climate change, we would like to underscore our belief in using the shared histories of the region as a starting point for any new climate conversation or democratic innovation. While the stories of war and poverty detailed above do not contain ready-made solutions for regional cooperation in the climate change era, they nevertheless clarify the nature of today's problems. In these two distinct transition periods on Cape Ann, municipal concerns revolved around an important nexus of social life, material welfare, and local governance (in one, the wartime blue economy; in the other, social and fiscal stability). In both cases, this became an object of negotiation between local livelihoods and external forces. Success hinged on the alignment of these two scales. Threats to the blue economy around the War of 1812 were able to smooth over municipal differences only so long as national and international politics allowed, while the shared threat of the poverty crisis did not translate to regional cooperation because the legal system prevented it.

As an all-encompassing threat, the climate crisis has multiplied this dynamic across modern-day Cape Ann. At nearly every nexus of social, material, and governance concerns on Cape Ann (be it, fishing, housing, art, or tourism), success hinges on an alignment between local and external scales. For example, as detailed in this report, Cape Ann's water and sewage infrastructure is a contested intersection of state policy, national trade, and local social life. One does not need to look long at Cape Ann's history to understand that these issues have been constantly renegotiated. Ever since Massachusetts stipulated the terms of the nineteenth-century municipal splits on Cape Ann, political bodies above the region have played various roles in mediating shared resources, infrastructure, and outside interference. In 1930, state permission was required for Gloucester to sell its water to Rockport (Massachusetts, 1930). In another arrangement, Essex County paid for half of a new highway between Rockport and Gloucester in 1920 (Massachusetts, 1920). And in 1966, the Massachusetts legislature answered protests from both Gloucester and Rockport over the development of a large Boston University marine research center in Lane's Cove by rescinding the land it had provided for the project (*House Action Expected on Research Station* 1965).

Likewise, the current controversies over the impact that climate retreat or MBTA-mandated zoning changes will have on local character have a parallel in an earlier period (Brinker, 2024). In the urban renewal period of the late twentieth century, zoning officials in Gloucester and Rockport rejected a number of large proposed developments that would have injured neighborhood character (*Cape Ann Land Development Corp. v. Gloucester* (1976); *Garfield v. Board of Appeals of Rockport* (1969)). As lawsuits over these decisions played out, popular support received by the administrators indicates an alignment against another external force that threatened social life: the efforts of developers to alter the urban fabric for material gain. Here, there is also an echo of the nineteenth-century poverty crisis, as the municipalities were fighting essentially the same fight against developers, but within the confines of their own zoning law.

Finally, as regards the livelihoods threatened by climate change, a regional conversation might start by locating previous existential threats to community life and using them for cross-

municipal dialogue and reflection An economic example appears in 1927, when the Cape Ann granite industry collapsed. What combination of local interests and external forces appeared as each municipality navigated this transition? Is there anything about that dynamic that might be made relevant to the fate of today's fishing industry? A look at the 1918 influenza pandemic or the Blizzard of 1978 also could produce similarly fruitful questions about the dynamics of deadly and destructive external forces. The history of the New Deal on Cape Ann may also be constructive, as this period of national projects produced a number of physical artifacts still standing today (Gloucester Sites – Living New Deal).

4.4 Channeling Dialogue

The point here is that we can use a deeper dive into history to move beyond ships and fish to identify other discourses that could generate a shared mission or Cape Ann unity. One issue seems to be civic-minded patriotism, while other unifying threads are woven around previous shipping challenges, climate disasters, health crises, and other political events that challenge or reinforce the revolutionary, bourgeois, or artistic legacies of Cape Ann. At times the existence of a *national crisis* has helped forge unity within Cape Ann, as with the sending of military regiments from Cape Ann for service elsewhere, which helped bring residents together in a common mission. At other times *local crises* laid the groundwork for unity, as in the mobilization of nurses and hospital services during epidemics. At times, evidence that these crises brought Cape Ann together was memorialized in the form of celebrations between cities, the embrace of shared artistic endeavors, or efforts to highlight production and consumption connectivities. This is true, for example, in the ways the Essex maritime museum highlights the historical ties that connected shipbuilding in Essex and fishing in Gloucester, and how they each accommodated each other's priorities at different moments in time. At the same time, our historical analysis has shown that there have been instances of disunity, with some evidence that in times of peace tensions between industries and organizations was greater than in times of war or other significant crises.

One way to help channel such memories into collaborative efforts to protect Cape Ann's future is to adopt what has been called place-framing, but to introduce an historical dimension to it. Building on work by Feola et. al. (2023), who argue that taking a geographical perspective is crucial to understanding sustainability transitions and transformation, but who also suggest that sustainability transitions and transformation are most successful when they focus on the relationship between imaginaries of the future and its performativity in the present, we suggest taking the plural histories of how water defined life in Cape Ann as a starting point for conversation. When this methodology was applied in Colombia, the authors identified three distinct assemblages of future visions, collective memories and place frames that spoke to urban development, recovering tradition, and cultural revitalization. As such, place framing was an exercise through which collective memories and future visions were connected and co-constituted in a spatio-temporal 'dialogue', subsequently impacting the socio-material processes of sustainability transitions and transformation. We suggest that this methodology might be used

to bring together organizations that may have concerns or different views of the present but could conceivably unite around a shared past and a desired future.

5.0 Knowledge Co-Production Through Arts: Viewing Life, Livelihood, Identity, and Property through Water Imaginaries

Water is the core identity of Cape Ann, but also its existential threat. Water as central to fishing and art. What does this mean for the historically constructed elements of a Cape Ann identity? Well, perhaps the Cape's common style (even if it varies slightly by neighborhood, as Karen mentioned) indicates that even if you can't agree on the built history of a contested region, you might be united "*by the view."* Which is arguably constructed by the patriotic undercurrents of a painting style. This is probably not as strong as it appears. For example, today's views from the Cape are extremely political. Are we really sharing the same view if some are obstructed, threatened, or retreating?[14] Despite such tensions, the cultural values expressed by residents of Gloucester, Rockport, Manchester, and Essex converge around the water. People speak of the view both from the sea as they approach the harbor and from the land looking out toward the ocean. These reciprocal perspectives have long inspired both artists and fishermen that have entwined aesthetic and working traditions. The artistic spirit of Cape Ann is deeply rooted in its maritime culture, and together they have produced the lived and imagined experience of the region.

Both Plein Aire painting and maritime culture developed in tandem. There is no Cape Ann style painting without the relationship to the water as there is not fishing industry without the water either. The painting culture is highlighted by the quintessential Cape Ann images which features a variety of seafaring themes as well as clear white light and characteristic New England architecture. The ocean's visual presence is a binding element across Cape Ann. But the politics of "fortification" or "retreat" complicate this unity. Water is not just a boundary, but it is a medium through which lives, economies, and histories flow. Although each municipality relates to water differently, what emerges from our interviews is that water functions as a latent political unifier.

This unifying potential is visible in the institutional landscape as well. Creative county initiatives are often the same entities funding maritime organizations. For instance, Maritime Gloucester received a grant from the Essex County Community Foundation (ECCF), linking arts, maritime heritage, youth programming, and community development. These overlapping missions offer the foundation for a broader coalition that could legitimate cross-sector and cross-municipal coordination around shared ecological and cultural goals.[15] At the same time, we find that some of the most active climate coalitions were not formed in response to climate threats but emerged from arts, philanthropy, and cultural institutions. ECCF, for example, plays a pivotal role in convening diverse organizations that might otherwise operate in parallel. These coalitions reveal the porous nature of Cape Ann's civic infrastructure that illuminate where missions overlap, boundaries blur, and water becomes a catalyst for unexpected forms of alliance.

Beyond focusing on the ways to connect all of these water problems to each other as a way of forging cross-municipal action, we also suggest that the sense of crisis that permeates debates about Cape Ann's ecological and habitational future today shares much in common with earlier political or economic crises. Examples will include the regional sense of patriotism on Cape Ann during WWI into the Cold War era as well as fishing developments during Cold War and in the present when the international fishing boundary moved from 13 miles to 200 miles offshore.

6.0 Knowledge Coproduction by Generating Regional Participatory Exercises

Planning theorist John Friedmann defines the job of a planner as translating knowledge to action. In this final section we offer a set of process-based proposals that might jumpstart citizen cooperation at a regional scale in order to advance some of the more specific proposals focused on history and the arts. We work under the assumption that these proposals hold the potential to jumpstart a regional conversation among residents, and we have identified themes or activities that would give all of Cape Ann's residents an opportunity to share their particular views about how to produce a resilient and adaptative Cape Ann that speaks equally to the inter-connected fate and future of all four municipalities. Beyond emphasizing what it takes to produce shared knowledge that is truly inclusive and built upon diverse interests, experiences, and challenges, suggest that all conversations somehow address the notion of *habitability* in Cape Ann.

Habitability is not just about housing; it is about everything it takes to have a decent life where precarity and threats to home, work, and health are minimized. Habitability is clearly impacted by climate change, but in the effort to manage water infrastructure myriad other priorities must also be addressed, including class and employment differences, housing tenure and security, and health related water challenges. And to the extent that the the inter-relationality of ecologies, work and housing conditions, and social inequalities will impact habitability, albeit perhaps differently across the municipalities, we suggest starting to discuss them in a regional forum of sorts that could lay the groundwork for a trans-municipal network of collaborators. With a region-based forum, there will be plenty of opportunities for existent organizations to continue their local or specific demands. But the logic of the forum and its purpose aligns more with definitions of a so-called `*delocalized community*,' where "the spatial community becomes much less relevant, (particularly) as it is internally divided and embedded in larger networking processes" (Ojha et. al. drawing on Bourdieu, 1984; 1989). That is, by ensuring that different actors sharing the same physical space are purposefully connected to diverse social networks that operate outside a localized community domain, the possibilities for region-wide cooperation can increase.

As noted earlier, Cape Ann already hosts an array of organizations that exist and/or hold the potential to operate regionally, that is within all of Cape Ann's municipalities simultaneously, Key to making these and other local and delocalized organizations become a network of collaborators will be the fact they all will participate equally in "the exchange of, and contestation for, four important types of capitals or resources that are being generated and

circulated" across all the municipalities of Cape Ann (economic, social, cultural, and political capital). And beyond just ensuring that any and all organization operating within the four municipalities of Cape Ann could be invited, critical attention must be paid to articulating the main themes, key issues, and strategic priorities that would get these plural voices into the same room. The overall goal of any such regional participatory body – whether called a commons, a forum, or an assembly - will be to offer a format for articulating shared concerns about Cape Ann's future and for identifying critical priorities for action that can benefit residents no matter where they live. Discussing how actions in one neighborhood or site can positively impact other locations and constituencies in Cape Ann will be central to this deliberative process.

5.1 Cape Ann Hydrosocial Identity Formation Activities

Given what we have learned from history and from the range of organizations we have surveyed and contacted, we suggest that efforts be made to generate and/or strengthen a shared sense of the past in Cape Ann, but with the hope that this forms the basis for cross-municipal, cross-class, and inter-generational cooperation about the present and the future. In order to insure that a focus on the past is not seen as an invitation to forget about the future, we suggest that a focus on the past and present emergence of hydrosocial identities be undertaken by Cape Ann's youth, whether in the context of school activities, summer camps, and other organizational or community contexts. With youth frequently identified as more cognizant of and committed to addressing the current climate crisis and its water implications for their lives and that of their families and communities, and given the possibility that youth may be less connected to the work and housing grievances of their parents, bringing youth from across the entire region together to jointly participate in classes, workshops, or exhibitions that link ecology to culture may provide new opportunities to mobilize a new generation charged with protecting Cape Ann's present and future.

5.3 Curated Arts Exhibition

Building on the above recommendation, one other related proposal would be to develop a GSD-Cape Ann collaboration structured around a curated arts exhibition of works produced by Cape Ann residents, with opening in both places and aselected curation of paintings to a) highlight the connectivities between fishing, art, water, light and b) to demonstrate history of common struggle to preserve, protect, promote Cape Ann.

5.3 Cape Ann Regional Infrastructure Forum

While the above proposals may pull people together, which is an important first step, they may not allow discussion of the more contentious water management and infrastructure conditions that are dividing Cape Ann's municipalities. Thus they could be either complemented or followed by the formation of a regional infrastructure forum. As noted above, there are already some programmatic activities shared by municipalities in Cape Ann, not to mention myriad ecologically-oriented region-wide organizations that are focused on climate change adaptation,

mitigation, and consciousness raising. might be to build on the model set by more traditional drop-in community meetings, We suggest a new forum that would include these organizations but invite a much wider array of individuals and organizations that have not worked together before, with the forum held in rotating locations across the four municipalities.

[N.B.:Members of this team would be willing to pilot a few efforts at convening such meetings to see whether a shared conversation might emerge. To get things started, one might pose a series of general questions to participants, including the following: Do the risks faced by you, your neighborhood, your community, or your municipality present any common ground for cooperation? Or are your risks so uniquely configured in each neighborhood and municipality that they frustrate any hope for implementing the recommendations made in previous studies? In the face of climate change, do you think Cape Ann residents should work together, and how might this best happen? How do you define Cape Ann? Do you think it really exists? And to what degree do you believe identifying the unique character of Cape Ann would be an insurmountable barrier?]

However, beyond highlighting its more expansive and plural membership, we suggest that this forum devote itself to infrastructural issues, which are closely related to efforts to ensure Cape Ann's resilience in the face of water challenges but that can be addressed without the ideological or political baggage that sometimes accompanies climate action rhetorics. More significantly, discussing the wide array of infrastructures that unite or divide Cape Ann's municipalities offers another way of generating network thinking that by its very nature does not stop at municipal boundaries. And given what was noted earlier about the centrality of water and sewage infrastructure to the shared fate of several municipalities in Cape Ann, we suggest that after building a community of participants in a Regional Infrastructure Forum the members devote their attention to the costs and benefits as well as the industrial, commercial, and residential impacts of existent water and sanitation infrastructures to find new avenues for cooperation.

5.4 Constructing a Strategic Plan through Future Visioning

One other standard strategy that could be used in tandem with the prior suggestion is to create cross-municipal collaboration or regionally-networked decision making is to mount a series of "Future Visioning" exercises, inviting organizations and individuals from all four municipalities to engage in a single workshop. What has been called a normative future visioning (NFV) methodology builds on five action principles. "First, by invoking desired futures, NFB approaches open a safe space for stakeholders to identify the political judgments behind risk root causes…. Second, the normative focus alongside the longer temporal lens offered by NFB can bring a critical lens or lenses onto the assumed trajectories of development and risk. Third, inter/transdisciplinary applications of NFB methods can bring political alongside technical barriers and opportunities into transparent adaptation planning and action. Fourth, through providing a focus on the future and on normative perspectives NFB approaches could help bridge between the administrative functions of urban planning and risk management/climate adaptation.

Fifth, inclusive NVF methodologies can be used to directly consider participation and power including how best to incorporate socio-cultural differences into future visioning (Pelling et. al., 2023 p.2)."

5.5 Cape Ann Water Commons (CAWC)

Beyond the standard planning techniques such as visioning, we also suggest a more activist-oriented strategy that keeps the issue of Cape Ann's water future connected to citizens and their efforts to mobilize together around a shared fate. This could be accomplished by organizing a water-focused forum of sorts, intended to produce a manifesto or another written document that takes a position on how and why cross-municipal unity over water is worth pursuing. As with the previous recommendation focused on a water infrastructure forum, a Cape Ann Water Commons could serve as a site for discussing investments, conflicts, and water inequalities that already exist while also soliciting citizen views of how to overcome these tensions. To differentiate this proposal from the former two, however, we suggest highlighting the notion of the commons. The main issues at stake would both material and philosophical, capable of speaking to the shared history of the past, present, and future while also offering an environmental justice lens to questions of water. We suggest a targeted conversation about how to identify new ways to divide the costs and benefits of a more equally shared water precarity e would be a good starting point, as well as reflection on the importance of citizen autonomy and cooperation in order to push back on top-down decision making made in the name of efficiency or a market logic. The larger aim of the CAWC would be to generate regional solidarity from below, and thus reduce divisions, mistrust, and feelings of non-recognition in ways that should allow more open space for climate adaptation measures intended to foster resilience in Cape Ann as a whole.

One more principle behind this initiative is its recognition that localities with poorer residents and limited power cannot be forced to rely only on their own actions to face water crises and other natural hazards, even when sociological logics such as a cultural commitment to the land motivate their efforts at self-preservation and even when municipal planners convene meetings to hear their views. A focus on a Cape Ann Water Commons starts from the assumption that water ties everyone together in some way, no matter where they sit in the larger Cape Ann landscape.

Any emergent statement or manifesto that would come from this organization should be built on an embrace of meaningful transparency about the distributional impacts of any alternative water actions for the future, with serious attention must paid to the real world consequences of new forms of action. Whose life would be altered if a shared regional water initiative were to materialize? What happens when the sea destroys a downtown and a community applies for a rebuilding grant; will it be supplied, or will some higher official declare the people to retreat? We are arguing that in order to center habitability concerns in the search for a shared water future, one must recognize that conflict is more likely than consensus. Only after conflict resolution principles are put in place can regional coordination around shared water challenges move forward. Various ground rules can be agreed upon so that cooperation or dialogue does not

unravel when representatives come and go, further solidifying the cooperation and the place of vulnerable stakeholders as valid in the position.

One of the first tasks of any such body would be to make visible to itself and to all of Cape Ann the unequal distribution of water risks, using this knowledge as a basis for coming together as a regional water commons. Different codes could be designed depending on FEMA flood risk tier systems as well as by accessing community level input and engagement with residents about their own experiences with water. Such an exercise raises the possibility that formal or official data do not capture the lived experiences and the challenges to habitability that many residents face. It also builds on the assumption that it is important to recognize the different levels of vulnerability within and across the municipalities, using that information to identify actions that protect the greatest number of Cape Ann residents as an initial priority. Differences in vulnerability will exist within the same town but there may be similar conditions shared in other towns. Historically, the state-run environmental law court provides the oversight to manage this coordination and settle disputed to avoid organizational gridlock. But by separating the codes depending on flood plain depth or sea level rise, the hazard specific code could be more effective than forming a code that responds to the variety of issues within a particular domain. [N.B.: These experimental code design requires a judiciary that is capable of evaluating and determining the legality of such speculative political arrangements, thus suggesting that in the formation of CAWC relying on members with knowledge of land and environmental law will be as important as having diverse participation that can reflect the complex socio-economic demographics of Cape Ann.]

5.6 Mobilizing the Water-Energy Nexus

Finally, in recognition of the important work of the other teams involved in this project, we are cognizant that financing more resilient and inclusive water and sewage infrastructure will continue to be a key priority for Cape Ann's municipalities. While most of the above recommendations are focused on knowledge production, dialogue, and other forms of collective engagement, there is pressing need to think about ways that any new conversations about water or a shared future might lead to new opportunities to generate revenues to foster both ecological resilience and citizen cooperation over time. Along these lines, one idea that emerged during conversations with potential stakeholders included the prospects of tying new water and sewage infrastructures to electricity generation or other means of producing public or collective revenues through projects that can also address water urgencies. In addition to linking water to energy production in ways that the latter could be distributed across all the municipalities, and by so doing produce benefits in the form of lowered electricity rates and/or more electricity, there may be scope to consider cooperative ownership arrangements, perhaps even at the regional scale, to reinforce the distribution of benefits for all of Cape Ann, no matter the municipality that hosts the water-energy project. There currently exists a considerable amount of innovation in the production of small-scale electricity grids connected to waste treatment plants, including in other Massachusetts cities like New Bedford. While beyond the scope of this report, such a possibility

could be pursued for Cape Ann through other activities already under way at Harvard's Salata Institute and in the Cambridge area.

BIBLIOGRAPHY

Agyeman, Julian, David Schlosberg, Luke Craven, & Caitlin Matthews. 2016. "Trends and Directions in Environmental Justice: From Inequity to Everyday Life, Community, and Just Sustainabilities." *Annual Review of Environment and Resources* Vol. 41:321-340.

American Battlefield Trust. 2024. "The Hartford Convention: Political Dissent during the War of 1812." May 23. https://www.battlefields.org/learn/articles/hartford-convention.

Armitage, D., F. Berkes, and N. Doubleday, eds. 2007. *Adaptive co-management: collaboration, learning, and multi-level governance*. UBC Press, Vancouver, British Columbia, Canada.

Babson, John J. 1860. *History of the Town of Gloucester, Cape Ann, Including the Town of Rockport*. Procter Brothers.

Berkes, F. 2007. Adaptive co-management and complexity: exploring the many faces of co-management. Pages 19-37 *in* D. Armitage, F. Berkes, and N. Doubleday, editors. *Adaptive comanagement: collaboration, learning, and multi-level governance*. UBC Press, Vancouver, British Columbia, Canada.

Betsill, M. and H. Bulkeley. 2007. "Looking back and thinking ahead: A decade of cities and climate change research. "*Local Environment* 12 (5):447–56. doi: 10.1080/13549830701659683.

Biggs, R., M. Schl€uter, D. Biggs, E. L. Bohensky, S. Burn Silver, G. Cundill, V. Dakos, T. M. Daw, L. S. Evans, K. Kotschy, et al. 2012. "Toward principles for enhancing the resilience of ecosystem services." 2012. *Annual Review of Environment and Resources* 37 (1):421–48. doi: 10.1146/annurev-environ-051211- 123836.

Boelens, Rudiger et. al. 2022. "Riverhood: Political Ecologies of Socionature Commoning and Translocal Struggles for Water Justice." *The Journal of Peasant Studies*, https://doi.org/10.1080/03066150.20222.2120810

Boelens, Rudiger, Jaime Hoogesteger, Eric Swyngedouw, Phillipus Wester, & Jeroen Vos. 2016. "Hydrosocial territories: A political ecology perspective." *Water International* 41(1):1-14 DOI: 10.1080/02508060.2016.1134898

Brand, F. S., and K. Jax. 2007. "Focusing the meaning (s) of resilience: Resilience as a descriptive concept and a boundary object." *Ecology and Society* 12 (1):1–23. http://www.ecologyandsociety.org/vol12/iss1/art23/. doi: 10.5751/ES-02029-120123.

Brown, Richard D. 1974. "The Emergence of Urban Society in Rural Massachusetts, 1760-1820." *The Journal of American History* 61 (1): 29–51. https://doi.org/10.2307/1918252.

Brunner, R. D., T. A. Steelman, L. Coe-Juell, C. M. Cromley, C. M. Edwards, and D. W. Tucker. 2005. *Adaptive governance: integrating science, policy, and decision making*. Columbia University Press, New York, New York, USA.Calkins, Peggy. 2017. “Guide to the Rockport Separation Papers, 1818-1862.” Gloucester City Archives.

Carrión, Fernando. 2019. “The Right to the City and Multilevel Governance in Latin America.” Available at https://works.bepress.com/fernandeo_carrion/756Political

Cleaver, Francis and Jessica de Koning. 2015. “Furthering Critical Institutionalism.” *International Journal of the Commons*, Vol. 9, no 1 March 2015, pp. 1–18.

Cleaver, Francis, and Luke Whaley. 2018. “Understanding process, power, and meaning in adaptive governance: a critical institutional reading.” *Ecology and Society* 23(2):49. https://doi.org/10.5751/ES-10212-230249

Council of European Municipalities and Regions (CEMR). 2024. Water Resilience: Enhancing Sustainability and Adaptation through Effective Governance and Cooperation with Municipalities and Regions. UN Habitat. https://www.ohchr.org/en/calls-for-input/2025/call-input-non-state-actors-democratic-water-governance-under-human-rights

Davis, Diane E. 2023. Urban Sovereignty in a time of crisis: Pandemic governance and the ethics of care.” In Raul Acosta, Eveline Durr, Mortz Ege, Ursual Prutsch, Clemens van Loyen, and Gordon Winder (eds.), Urban Ethics as a Research Agenda: Outlooks and Tensions in Multidisciplinary Debates. Routledge Press.

Feola, Giuseppe, Michael K. Goodman, Jaime Suzunaga, & Jenny Soler. 2023. “Collective memories, place-framing and the politics of imaginary futures in sustainability transitions and transformation.” *Geoforum 138*

Folke, C. 2006. Resilience: the emergence of a perspective for social-ecological systems analyses. *Global Environmental Change* 16(3):253-267. http://dx.doi.org/10.1016/j.gloenvcha.2006.04.002

Folke, C., T. Hahn, P. Olsson, and J. Norberg. 2005. Adaptive governance of social-ecological

Friedmann, John. 1975. Agropolitan Development: Towards a New Strategy for Regional Planning in Asia. University of California Press.

Gansauer, Grete and Julia Haggerty. 2024. “Beyond city limits: Infrastructural regionalism in rural Montana, USA.” *Territory, Politics, Governance* 12/6: 746-764.

Harris, Gordon. 2023. “1793 and 1818: The ‘Burden of the Poor’ Divides Ipswich into 3 Towns, Ipswich, Hamilton and Essex.” *Historic Ipswich*, October 21. https://historicipswich.net/2023/10/21/burden_of_the_poor/

Hileman, J. and M. Lubell. 2018. “The network structure of multilevel water resources governance in Central America.” *Ecology and Society* 23 (2):26799107. doi: 10.5751/ES-10282-230248.

House Action Expected on Research Station. 1965. February 7. MBLWHOI Library Archives. https://archives.mblwhoilibrary.org/repositories/2/archival_objects/71490.

Jones, Douglas Lamar. 2017. “The Transformation of the Law of Poverty in Eighteenth-Century Massachusetts.” *Colonial Society of Massachusetts* 62: 152–90.

Lebel, L., J. M. Anderies, B. Campbell, C. Folke, S. Hatfield-Dodds, T. P. Hughes, and J. Wilson. 2006. Governance and the capacity to manage resilience in regional social-ecological systems. *Ecology and Society* 11 (1):1–21. http://www.ecologyandsociety.org/vol11/ iss1/art19/. doi: 10.5751/ES-01606-110119.

Living New Deal. n.d. “Gloucester Sites - Living New Deal.” Accessed August 26, 2025. https://livingnewdeal.org/us/ma/gloucester-ma/.

Lubell, M and M. Robbins. 2022. “Adapting to sea-level rise: Centralization or decentralization in polycentric governance systems?” *Policy Studies Journal* 50 (1):143– 75. doi: 10.1111/psj.12430

Massachusetts. 1840. An Act to Incorporate the Town of Rockport. In Acts and Resolves Passed by the General Court, ch. 8. Boston: Secretary of the Commonwealth. https://archives.lib.state.ma.us/entities/archivalmaterial/4c89e8ef-80ec-438e-9164-015aad00b366

Massachusetts. 1920. An Act Relative to the Construction by the County of Essex of a Highway between the Town of Rockport and the City of Gloucester. In Acts and Resolves Passed by the General Court, ch. 457. Boston: Secretary of the Commonwealth. https://archives.lib.state.ma.us/entities/archivalmaterial/46853505-b537-4799-8028-576e0d7268aa

Massachusetts. General Court. House. 1930. House No. 1371. An Act Authorizing the City of Gloucester to Sell Water to the Town of Rockport. Boston: Massachusetts General Court. https://archives.lib.state.ma.us/bitstreams/52ed0dd4-ff9a-463a-99b0-affffb24f178/download

Massachusetts. General Court. Senate. 1966. Senate Bill 0036: An Act Reconveying Public Rights to Certain Land of Lane’s Cove Pier Company and Other Rights in the City of Gloucester to the Commonwealth and Repealing an Act Authorizing Said City to Convey Such Rights to Trustees of Boston University. In 1966 Senate Documents. Boston: Commonwealth of Massachusetts, Senate. https://archives.lib.state.ma.us/entities/archivalmaterial/2862fd8f-2908-47cd-bf8c-0044bdc5345e

Meerow, Sarah, Bryce Hannibal, Sierra C. Woodruff, Malini Roy, Melina Matos & Philip C. Gilbertson. 2024. “Urban Flood Resilience Networks: Exploring the Relationship between Governance Networks, Networks of Plans, and Spatial Flood Resilience Policies in Four Coastal Cities.” *Annals of the American Association of Geographers* DOI: 10.1080/24694452.2023.2284299 Meerow, et. al. 2004

Mitchell-Weaver, Clyde, David Miller, & Ronald Deal. 20000. “Multilevel Governance and Metropolitan Regionalism in the USA.” Urban Studies 37 no 5/6:851-76.

(Mitchell, Miller, and Deal 2000)

Office for Urbanization. 2024. *Developing Local Capacity for Managing Extreme Weather Events Across Community Engagement, Governance, Finance, and Infrastructure.* Module I: Governance and Policy.

Ohija, Hemant, Rebecca Ford, Rodney J. Keenan, Digby Race, Dora Carias Vega, Himlal Baral, & Prativa Sapkota. 2016. “Delocalizing Communities: Changing forms of Community Engagement in Natural Resources Governance,” *World Development* 87 (November): 274-290.

Olsson, P., C. Folke, and T. Hahn. 2004. Social-ecological transformation for ecosystem management: the development of adaptive co-management of a wetland landscape in Southern Sweden. *Ecology and Society* 9(4):2. http://dx.doi.org/10.5751/ES-00683-090402

Ostrom, Elinor. 2000. Reformulating the Commons. *Swiss Political Science Review* 6(1): 29-52.

Ostrom, Elinor and Roy Gardner. 1993. “Coping with Asymmetries in the Commons: Self-governing irrigation systems can work.” *Journal of Economic Perspectives* 7/4: 93-112.

Ostrom, Elinor. 1990. *Governing the commons: the evolution of institutions for collective action*. Cambridge University Press, Cambridge, UK. http://dx.doi.org/10.1017/CBO9780511807763

Pelling, Mark, Thaisa Comelli, Marco Cordova, Sibel Kalaycloglu, Jonathan Menoscal, Rachana Upadhyaya, and Matthias Garschagen. 2023. Normative Future Visioning for City Resilience and Development.” *Climate and Development.* DOI:10.1080/17565529.2023.2223564.

Perley, Sidney. 1912. *The Indian Land Titles of Essex County, Massachusetts*. With The Library of Congress. Salem, MA: Essex Book and Print Club. http://archive.org/details/indianlandtitles00perl.

Powell, John Wesley. 1879. Report on the Arid Regions of the United States: With a more detailed account of the lands of Utah. Washington: Government Printing Office.

Pringle, James R. (James Robert). 1892. *History of the Town and City of Gloucester, Cape Ann, Massachusetts*. With University of California Libraries. Gloucester, Mass. : Published by the author. http://archive.org/details/historyoftowncit00priniala.

Sayan, Ramazan Caner & Nidhi Ngabhatla. 2024. “The Co-constitution of Regional Politics and Massive Infrastructures in the Transaqua water project.” *Territory, Politics, Governance* 12/6: 765-782.

“Rockport Town Warrant.” 1839. Sandy Bay Historical Society. https://usingessexhistory.org/documents/town-warrant-rockport-march-1839/.

Rojanasakul. Mira and Marco Hernandez. 2024. “The East Coast is Sinking.” *New York Times,* February 14, 2024.

Truffer, Bernhard and Lars Coenen. 2012. “Environmental Innovation and Sustainability Transitions in Regional Studies.” *Regional Studies* 46: 1-21.

Whittington, Dale and Maya Chandrasekaran. 2025. “The economics of a circular urban water system.” *Environmental Research Letters*. DOI 10.1088/1748-9326/ade904

Williams, Dennis. 1993. “Why are our Regional Offices and Labs Located Where they Are?” https://www.epa.gov/history/why-are-our-regional-offices-and-labs-located-where-they-are-historical-perspective-siting#

Woodruff, S.C., Regan, P. 2019. “Quality of national adaptation plans and opportunities for improvement. *Mitigation and Adaption Strategies for Global Change”* 24: 53–71. https://doi.org/10.1007/s11027-018-9794-z

Van Laerhoven, Frank and Elinor Ostrom. 2007. “Traditions and Trends in the Study of the Commons.” *International Journal of the Commons*, 1/1: 3-28.

Zimmerman, Karsten. 2023. “Water Infrastructure as a Driver of Regionalization in the Ruhr, Germany.” *Territory, Politics, Governance* 12/6: 765-782.

APPENDICES

Appendix A Observations taken from the 2022 OFU Compound Vulnerabilities Report.

1. *No single strategy can eliminate coastal flooding impacts.*
    a. Strategies must work synergistically to reduce losses. Comprehensive coastal adaptation lies at the intersection of communication, accommodation, avoidance, resistance and resource allocation.
2. *Adaptation strategies must be both regional and equitable.*
    a. Regional agencies must consider the scale and impact of all proposed strategies to ensure that no adaptation strategies protect some communities at the expense of others.
3. *Coastal adaptation strategies must align with inland adaptation.*
    a. Sea level rise creates new shorelines in low-lying, formerly non-coastal areas. As people move inland, increases in impermeable surfacing can lead to higher runoff and oversaturated ground. This can exacerbate long-term flood risks.
4. *The resources to hold shorelines are, and will continue to be, limited.*

    a. The tools we use to measure coastal risk are based on population density, not landscape morphology. As the rate of sea level rise increases and coastal storms become more severe, funding to armor the coast will be directed to large population centers. Smaller communities will have less funding to defend the coast and their pace of retreat will increase relative to larger cities.
5. *Adaptation faces psychological, institutional, and practical barriers.*
    a. A comprehensive vision for adaptation can ameliorate these barriers. This vision should prioritize equity, leadership, and follow a clear plan that is communicated to residents. This vision must include critical infrastructure, cultural resources and other factors that influence adaptation decisions.
6. *Sea level rise and flooding are public health issues.*
    a. The health consequences of sea level rise exceed the immediate loss of life associated with storm surge and flooding during severe storm events. It can also result in respiratory issues that arise from waterlogged buildings, the spread of communicable diseases from sewage runoff and mosquito breeding, and long-term mental health impacts.
7. *Climate change causes cascading infrastructure failures that require a system-wide response.*
    a. The breakdown of one piece of a complex infrastructural web causes disruptions elsewhere, which diminishes critical response systems. This diminishes the community's capacity to respond adaptively.
8. *The rules of property ownership are changing to respond to sea level rise.*
    a. Retreat strategies are part of a multi-jurisdictional legal framework. There are three primary considerations that arise in a retreat context: the regulation of private land uses and acquisition limitations, the duty to maintain public infrastructure and the potential for negligence claims, and possibilities for cross-jurisdictional or regional governance structures**.** Governments must balance financial limitations, safety, and environmental benefits with private property rights.
9. *Climate adaptation should enhance the public realm.*
    a. The elevation of the first floor in buildings, not street elevations, govern whether properties are in or out of flood zones. This prioritizes individual property over public property and encourages rebuilding in the same places with elevated building structures, creating an unsustainable cycle of repetitive loss and redevelopment that cannot be financed long-term.