

# Barriers to Understanding: Channel-Port aux Basques and Managed Retreat

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## Abstract

On the 24th of September 2022, Hurricane Fiona decimated the small town of Channel-Port aux Basques. When the storm settled the federal government announced funding to help communities adapt to increasingly hostile weather through armour stones (large rocks along the coastline). However, when Fiona struck there were already armour stones in Channel-Port aux Basques and they did not protect nearby homes or the surrounding coast. Armour stones have conflicting evidence on their effectiveness. A local NGO found that residents of Channel-Port aux Basques know about the risks of building these barriers. For countless communities, barriers would not be the adaptation method of choice, so why are they so common? The federal and provincial governments have control of disaster funding, not local governments. They have become path dependent on barrier building, making better choices such as managed retreat left unconsidered. Managed retreat is a process of the government buying properties built too close to the shore and municipalities zoning areas to stay undeveloped. The process is delicate but has shown great success in low density areas such as Channel-Port aux Basques. Residents of communities affected by natural disasters are not properly consulted on decisions that affect their town's future. Through collaborative planning better policy decisions can be made to help coastal communities adapt to climate change.

*Keywords:* Climate change adaptation, Managed Retreat, Channel-Port aux Basques, Newfoundland and Labrador

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## Introduction

On the 24<sup>th</sup> of September 2022, Hurricane Fiona decimated the small town of Channel-Port aux Basques. Over 100 houses were ravaged by the storm, some ripped from their foundation and swept into the sea (Chughtai & O'Neill-Yates 2022). When the hurricane struck, some residents were still awaiting funding to rebuild from 2021 storm floods (Mullin 2022). The town had survived plenty of storms in the past, however, Hurricane Fiona provided insight into a dark future marked by climate change. Extreme weather is becoming increasingly common making preparation a necessity. Rebuilding is becoming more than giving folks a place to live. Some community members received insurance money, and the

provincial government provided emergency funding, but more proactive planning was needed (Government of NL 2022). A new federal green infrastructure program aimed at helping climate adaptation looked to be promising, but the prescriptive nature of the program is inadequate to meet the specific challenges of Port aux Basques' exposed coastline (Government of NL 2024). The federal funding focused on coastal erosion prevention & protection compelled the use of armour stones, which have conflicting rates of success (Yirenkyi 2024), but more importantly for Channel-Port aux Basque, there were already armour stones in the town when Fiona struck, and they did not protect nearby homes or the surrounding coast.



Figure 1: A map of the island of Newfoundland, Port aux Basques is the red dot (Eb Canada Travel n.d.).

In the following article, I argue that a better tool for climate adaptation in municipalities is strategic zoning and buy-back programs as a part of a managed retreat from the coast. This process has been more successfully modeled than hard barrier building but requires a drastic change in perspective on climate change and intensive community collaboration (Yirenkyi 2024). Planning for managed retreat requires economic and social balancing but is more stable long-term (Batterson & Liverman 2010). Allowing the residents of coastal towns agency in their own protection measures will lead to better policy choices. The federal government's bias towards the status quo has led to decision-making that ignores critical variation in coastal communities and the value of local knowledge and furthermore will not aid the longevity of Channel-Port aux Basques, something those living in the community are passionate about.

### The Case of Channel-Port aux Basques

Communities in Newfoundland and Labrador do not have the economic resources (due to a small tax base) to implement adaptation plans that suit their needs, making them rely on Provincial and Federal funding (Forecast NL. 2022). These funding programs and their

limitations are often crafted without community consultation and assume a common solution to different communities' issues—such as funding for armour stones across NL.

Sharing responsibility in preventative methods is essential to easing harm, but disaster resources are often undistributed until after tragedy strikes (Thistlethwaite & Henstra 2017). In the 1980s flood mapping for NL communities was funded; however, these maps did not account for sea level rise and updates have been sparse (Batterson & Liverman 2010). The lack of mapping makes the Provincial “flood standard” guidelines obsolete as areas that should be forbidden from development are unaccounted for.

Municipal governments face a lack of connection between themselves and the levels of government they receive funding from; there is little support for expert partnership forcing them to adhere to the path other governments are on. Post-Hurricane Fiona, Channel-Port aux Basques highlighted key issues in a community outreach session: “Increased coastal erosion, impact on infrastructure, preparedness for higher intensity and frequency of storms, frequency and severity of flooding, public awareness and understanding of climate change” (The Harris Centre 2023:18). Some of these issues could be addressed by the 2024 funding of coastal barriers. However, the issue of awareness and preparedness, one not completely unique to Port aux Basques, is not being addressed.



*Figure 2: Port aux Basques after the state of emergency was lifted post-Hurricane Fiona (King 2022).*

For a community committed to never having a disaster like this occur again, there is not a lack of motivation for climate education, just a lack of support (Chughtai & O'Neill-Yates 2022). Those affected by the hurricane have already retreated from the shore, moving rebuilding efforts further inland. The residents of the town have been deeply supportive of one another in the traumatic process of readjustment (Kennedy 2023). If the town was consulted in the administration of funding it is unlikely that only one key issue would be given support. While some retreat has occurred in Channel-Port aux Basques the prioritisation of hard barriers shows an inflexibility of those allocating adaptation support.

### Moving Beyond Path Dependency

While Hurricane Fiona gave an opportunity for quick policy change, funding for anything other than reconstruction took two years to pass. The fact that the funding was allotted for an adaption method already in use lends itself to path dependency literature. Pierson uses economic terms to illustrate the phenomenon as a perception of increased yield in making choices aligned with a particular policy and a loss in changing from the original decision (2000). The history of these choices creates a bias towards keeping the status quo despite alternatives being more effective choices. Pierson specifically mentions environmental protections as vulnerable to this process as it becomes increasingly difficult to change course. Path dependency can be understood as an institutional routine. The “routine” is not necessarily the most efficient or effective method, but its familiarity leads to its constant usage.

In researching climate adaptation in rural Australia, Barnett et al. found that path dependency creates limits to how much adaptation can occur (2015). The trade-offs needed to adapt become increasingly difficult to manage as more of a community's limited

assets are linked to a particular policy. This overdependence is caused primarily by state or territory governments rather than municipalities (Barnett et al. 2015). As the primary resource holders state and territory governments invest in policies their party has previously supported to create “stability.” They create trade-offs that are politically easier for them regardless of the community's needs. Justice frameworks used by Barnett et al. require the decision of what assets to lose in adaptation to be the stakeholders' or community's explicitly, in this case, change is more likely to occur by prioritising new local perspectives. They found that local decision-makers want to collaborate with experts to create change, so their community's future is preserved, but are rarely let into the decision-making process.

The process of path dependency leaves out on-the-ground perspectives that may disagree with what has been committed to. The financial and political efforts already put into barrier building are not hindered by the failures of hard barriers because of the perceived sunk cost. Municipal governments are often left implementing provincial regulations and policies which are outdated for the reality of their local area (Lemmen et al. 2016). Climate adaptation is a highly local process with consequences left on the shoulders of municipalities (Forecast NL. 2022). Municipalities and their citizens want a system that allows them to have input on their future, but their opportunities are limited if they receive any at all. Pierson mentions “exogenous shocks” as a way of creating divergence from a political path, but Hurricane



*Figure 3: Channel-Port aux Basques Service Map, Armour stones placed before 2022 are in the area circled in red (Town of Channel-Port aux Basques n.d.).*

Fiona did not cause a shift in government ideas of climate adaptation. Although maybe it did shift ideas within Channel-Port aux Basques. In community outreach sessions held by the Harris Centre of Regional Policy and Development,” the government was critiqued for reactive approaches and clinging to the status quo. The message from participants in the session was clear, a new way of viewing and financing adaptation is needed – as one participant—said, we need to “try to build it better, not just to the way it was before” (2023: 14). Path dependency is standing in the way of innovative adaptation in the community. Because barrier building is already familiar to the Federal government they are neglecting the need for change residents feel.

### **A Critique of the Hard Barrier Solution**

Unfortunately, new solutions were not what was being offered through government funding options. On February 20th, 2024, \$4.3 million in funding was announced to help municipalities in Newfoundland and Labrador adapt their coastline to the changing climate through the installation of hard barriers (Gov. NL 2024). This seemingly generous and timely funding program offered by the government was arguably more a reflection of path dependency than a viable solution for communities like Channel-Port aux Basques. Aside from the limited data to support the effectiveness of hard barriers such as armour stones, they can also lead to biodiversity loss by trapping coastal ecosystems and are irreversible, making it an expensive mistake if done incorrectly (Lemmen et al. 2016). Furthermore, federal reports show that flood maps and municipal regulations in NL are outdated and inaccurate, making it entirely possible that mistakes in barrier building will be made. Lastly, and perhaps most critically, in Channel-Port aux Basques there were already

armour stones in place before Fiona hit and they did not protect the shoreline (Yirenkyi 2024). Clearly, armour stones were not the solution Channel-Port aux Basques was looking for.

Interestingly, hard barriers have proven themselves functional for one purpose though, promoting continued coastline development as The Harris Centre found during extensive community consultations held in the area:

You can visibly see properties going into the ocean, because these areas were newly protected by the sea fences people built on this area, but it is no longer safe from the impacts of climate change (without creating the seawalls years ago, people would have never lived there in the first place). After creating a market for land, the town is now faced with a dilemma – should it invest more money to protect these areas when it may not be a suitable area to live further in the future? (2023: 6)

The public input in The Harris Centre report illustrates a unique consequence of hard barrier building. The path of barrier creation reinforces a psychological block people have in risk perception to natural disasters (Greenlees & Cornelius 2021). Coastal hardening projects enable developers to build in unsustainable areas thus encouraging residents to perceive less risk even after a disaster. People do not want to live in fear and thus try to maintain normality by returning to “before.” However, the consistency in which funding is focused on redevelopment without expertise or education sessions has dire consequences as Greenlees & Cornelius found through interviews, “They’ll take their chances, and they know they’ll be fine, and the government will swoop in and build them a new house, so why not enjoy the beach in their view?” (2021: 506). The illusion of protection further incentivises the path as

the feeling of safety gives decision-makers political favour regardless of the reality.

Low-income communities are especially at risk in this process as even if they perceive great risk in being near the coast, they do not have the means to move without a funded managed retreat in place. Without educational dialogue involving the risks of various adaptation measures, many may not even know if they are in an at-risk zone or if options other than barriers exist (The Harris Centre 2023). This is not to say that hard barriers never work, there are climate models of sea level rise that show their effectiveness (Yirenkyi 2024). However, the models combine them with other options, especially in long-term scenarios where they may not hold. Funding them as the sole adaption measure is just “kicking the can down the road,” a policy mistake for community longevity. The process of path dependency in this sector creates problems that put lives in danger. In avoiding the difficult task of disaster planning with a community, governments both ignore better options, and leave residents in the dark about the realities of natural disasters.

### **Barriers to Managed Retreat Implementation**

If the barriers funded by the federal government are not the answer though, what is? I would argue that despite the associated difficulties, managed retreat is a better option for Channel-Port aux Basques. In urban areas managed retreat is an impossible task as the density of housing makes a buyback program (government purchase of housing to vacate the area) too expensive and re-zoning efforts would be null as there is little coast left to develop (Lemmen et al. 2016). Channel-Port aux Basques, however, has little density and homes destroyed by Fiona are already being built further inland, making it the perfect candidate for this adaptation method.

Adaptation is deeply personal to communities, especially close-knit communities like Channel-Port aux Basques; there is no one-size-fits-all but enabling communities to identify local

issues and potential solutions goes a long way in gaining support (Ensor & Berger 2009). Cultural barriers to adaptation are rarely considered in broad solution decision making. In those cases, Ensor & Berger found that widely applied solutions are implemented with less success because they are culturally inappropriate: “In particular, cultures that lack a tradition or history of adaptation (to climate or other environmental challenges) require an approach that builds from existing social forms and is sympathetic to local notions of well-being” (2009: 231). In Channel-Port aux Basques, street names are highly important as they are often named after the families that live there, such as “Warren’s Road” (Streets of Canada n.d.). Family lineage is a significant value in the town making movement from ancestral places difficult. Luckily, resilience is also a strong value in Channel-Port aux Basques, which can, with time and care, be connected to climate adaptation. With a mindfully executed managed retreat process, including community participation, deliberation and decision-making, adaptation to the increased risks of climate change can become part of the community's own story of resilience.

The current approach of barrier building does not have to consider community values, making it easy to apply and continue without seeing immediate consequences. Unlike strategies of managed retreat, in barrier building community longevity is not considered which puts towns repeatedly at risk. Re-zoning without community consultation is economically and socially dangerous as citizens tend to feel lost in the process (Greenlees & Cornelius 2021). An approach centered on community values could lead to success because it becomes a source of honour as citizens are continually involved in the process alongside local implementors and funding bodies (Ensor & Berger 2009). Residents of Channel-Port aux Basques supported one another through the disaster but those affected continue to be deeply afraid of the coast,

something that was instilling a sense of pride (Chughtai & O'Neill-Yates 2022). Through culturally informed education and collaboration that pride can be renewed through community adaptation.

### **Current Plans and Community Collaboration**

Current plans by the Channel-Port aux Basques municipality do contain managed retreat on a small scale (Yirenkyi 2024). Homes and infrastructure that have been washed away by Hurricane Fiona are being rebuilt away from the coastline and a coastal zone management plan is in development. There was some financial support from the provincial government for the movement of undamaged homes in the disaster zone, but it is very little compared to the \$4.3 million given federally to barrier building. The provincial plan was more imposed on residents than made in collaboration with them causing various issues in its implementation (Mullin 2023). The rezoning caused a housing crunch in the area because inland development was not completed for the “move-out” date. Supports for those moving had high requirements making it inaccessible for many. A full managed retreat plan must be better funded, communicated, and partnered. Managed retreat is a delicate process that should be well thought out to mitigate the financial and emotional consequences of abandoning a beloved home. However, it is often considered a “last resort” and is only on the table after major disasters (Lemmen et al. 2016). If managed retreat was considered an option equivalent to any other would there be fewer cases of the process gone wrong? Thistlethwaite & Henstra (2017) observed the use of public participation geographic information systems (PPGIS) to show municipalities and residents digital scenarios of changing risks depending on the instrument employed. Using these accessible mapping systems, potential lot buyers were able to witness the risk through modelling and make choices in line with managed retreat. Visuals

make it easier to understand risk, and it can be cheaper and more attainable for municipalities to run online or at community hubs (Thistlethwaite & Henstra 2017). Through an agent-based modelling approach, Yirenkyi found that transdisciplinary adaptation measures which included community outreach and education were more successful than those without (2024). This modelled approach made use of barriers (specifically sea walls) on the coast but did not prioritize them, rather, used them in combination with methods that show more longevity like managed retreat. When adaptation policies are implemented without a varied approach locals are left out in the process creating less effective policy. Education and collaboration are the key to successful adaptation, and it is considered highly important to Channel-Port aux Basques (The Harris Centre 2023). If planned collaboratively locals are more receptive to managed retreat and, “success will see the approach to adaptation become a shared community value or attitude” (Ensor & Berger 2009: 231). This is not to say that the community will want to rush away from their homes if given the chance but if given the time to process the risk and tools to collaboratively plan a retreat it is possible to find success. A managed retreat should be well thought out, slow, and invested in the future of the community.

Newfoundland and Labrador communities should be given more credit for knowing the disadvantages of hard barriers and be listened to when they ask for a better plan (The Harris Centre 2023). They should have the power and information to choose the method most applicable to them or multiple methods as Yirenkyi modeled (2024). Managed retreat is a difficult long-spanning process that is backed by a variety of research methods. It is emotionally and financially difficult but with community collaboration and provincial & federal support it is the more long-term option to prevent a disaster like Fiona from occurring ever again.

## Conclusion

Coastal communities are stuck fortifying themselves from the oceans they once cherished. Funding for adaptation before more disasters strike is a good thing, however a broad adaptative solution for many different communities is inadequate. Through community outreach sessions it is evident that people in Channel-Port aux Basques and surrounding communities know the risks of hard barrier solutions and their ability to create future problems (The Harris Centre 2023). This knowledge does not come from theory;

they can observe the issue happening in their home with the current barriers installed. Hurricane Fiona continues to be a source of stress in the lives of many making proactive measures essential to wellbeing (Kennedy 2023). The government adherence to barriers and leaving retreat as a last resort is a substandard path that can be broken by allowing more agency to communities. Ultimately, the people of Channel-Port aux Basques care about the future of life near the water, and how it looks should be up to them.

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