

pilot project:

adaptive strategies for
sustainable rural development

by
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author's declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including all required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

abstract

The outport is in the midst of great change. Twenty years since the moratorium on cod fishing, the province of Newfoundland and Labrador is experiencing rapid economic development in another industrial resource boom. While some outports are growing, others continue to decline. This development is based on wealth gained through exploitation of non-renewable resources, and as such, is not sustainable. Investing a portion of these short-term gains into the development of sustainable alternates will improve opportunities and resources for future generations. Pilot Project proposes that latent outport phenomena may act as supporting structures for sustainable development. The project suggests methods of identifying and expanding sustainable outport phenomena. This analysis can be distilled into five strategic tools for testing, designing and implementing sustainable rural development.

- ① ***territorial networks*** defines a diverse region, increasing individual community capacity and developing resilience by examining existing micro-regional community connections and designing new ones.
- ② ***community stewardship*** encourages a re-organization of local social structures and informal governance initiatives by defining communication pathways and aligning stakeholder interests.
- ③ ***temporal alignment*** co-ordinates the events, services and opportunities over time, between communities, by creating flexible infrastructure for supporting temporary and seasonal outport needs.
- ④ ***informal economies*** develops new modes of production by blending traditional trade and barter markets with industrial production frameworks, providing economic sustenance in the outport.
- ⑤ ***place-making*** constructs new institutions and landmarks with available resources, reorganizing the rural web of social, economic and ecological activity in the region.

Newfoundland operates at the extremes. On one hand, rural folk culture has established small-scale, informal community structures; on the other, industrial mega-projects develop according to strict legislation, market pricing, and resource extraction. The proposed strategies find new links between these extremes. Tried and true vernacular development methods are paired with newly emerging technologies and ideas about the future. Rural areas in Newfoundland have historically been used as testing grounds for heavy-handed development ideas, often with severely adverse effects on communities. This project proposes a series of micro developments: the mobilization of existing resources with small capital investment, little risk, and immediate opportunities for implementation. Sustainable rural development is conceived as a practice, an aggregative change from within the community.

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preface

The program of study for this thesis is new. It combines the principles of Sustainability from Environment and Resource Studies with design thinking from Architecture. The two subjects are inherently connected, and this type of interdisciplinary study or collaboration is crucial to tackling complex problems. As such, the work is integrative. The format of the book is structured around five strategies that emerged from an iterative process of contextual analysis, design, and research into best practices. These strategies are used to illustrate a sustainable methodology, to identify resources and examples of sustainable development within case studies of the outport, and to illustrate potential outcomes or methods of implementation.

During field research, one of the most frequent questions I was asked was where I was from. Having been born outside of the province, I was worried about the sensitivity of these communities to outsiders. In the process of doing the work, however, I found people were supportive of the research. This research confronts ideas about who should develop rural Newfoundland and Labrador, calling for collaborations among outport residents, as well as people from outside the community. I have lived in St. John's, Newfoundland for two years, and in the last year have been working to implement my research in practice. The ideas presented in this thesis can be distilled into small changes, and I want to participate in making them happen.

This thesis has three goals: to explore immediate ways of implementing sustainable development; to enhance community understanding of its principles; and to improve the quality of development in these communities. By taking an experimental approach to the identification and development of existing assets, it illustrates sustainable principles within the local context. In this way, the work seeks to engage the community in the development process. This book should be read with an open mind for developing solutions to the complex problems of the province and other rural areas with similar contexts. Bottom-up development needs to be championed.



Dories in Harbour, Oil Cans on Shore. Bay de Verde, Newfoundland. 1965.

1 the approach:



testing for development

This project starts with a story.

In 1959, Paul Kremer proposed a great challenge. He developed a competition for human powered flight, donating a 100,000 dollar prize for anyone who could design and build a working prototype. In 1977 the eventual winner of this challenge, Paul MacCready, built the Gossamer Condor, which flew a figure eight a mile long. He was the first person to claim the prize, and did so in only six months. This is how he did it:

*"The problem was the problem. MacCready realized that what needed to be solved was not, in fact, human-powered flight. That was a red herring. The problem was the process itself. And a negative side effect was the blind pursuit of a goal without a deeper understanding of how to tackle deeply difficult challenges. He came up with a new problem that he set out to solve: How can you build a plane that could be rebuilt in hours, not months? And he did. He built a plane with Mylar, aluminum tubing, and wire. The first airplane didn't work. It was too flimsy. But, because the problem he set out to solve was creating a plane he could fix in hours, he was able to quickly iterate. Sometimes he would fly three or four different planes in a single day. The rebuild, re-test, and re-learn cycle went from months and years to hours and days... So what's the lesson? When you are solving a difficult problem, re-frame the problem so that your solution helps you learn faster. Find a faster way to fail, recover, and try again. If the problem you are trying to solve involves creating a magnum opus, you are solving the wrong problem."*¹

Sustainable development is an ocean of red herrings. The concept encompasses problems that are too large, too risky, and too complex to solve using traditional methods. Traditional development processes require large investments of time, money, and material. They test land use, urban forms, and even economic development strategies over decades, or centuries. Development is a calculated risk, not a flexible inquiry. Vernacular development, as represented in urban form, building typologies, and material culture, shows evidence of centuries of iteration. Through this iterative process successful development strategies emerge. The timeline for the feedback loop of the development process, however, diminishes our ability to learn quickly. Investments need to be made in the development of new strategies to accelerate this process. This work proposes immediate, ephemeral, and easily manipulated methods paired with stable, tested vernacular knowledge. It seeks to 'prime' the context by developing strategies that prepare the community to accept and support development. These strategies are an opportunity to test ideas, prior to large community investments of community resources. These strategies will either succeed as institutions within the community, transform into new configurations, or they will fail - and quickly.

¹ "Want to solve impossible problems? Find Ways to Fail Quicker." [CoDesign](http://www.fastcodesign.com/1663488/wanna-solve-impossible-problems-find-ways-to-fail-quicker), Aza Raskin, April 20, 2012 <http://www.fastcodesign.com/1663488/wanna-solve-impossible-problems-find-ways-to-fail-quicker>

introduction

This work is structured into three examinations of the five strategies that have emerged from studying eighteen communities found along the East Coast of the Avalon Peninsula in Newfoundland and Labrador. First, each strategy is presented as a framework for sustainability-based analysis and decision-making. It is then used to determine the specific available resources to support development. Lastly, each strategy is presented as part of a handbook for immediate action where each strategy is designed to work both individually and as part of an integrated set.

Strategy 1, *territorial networks*, focuses on sustainability at a regional scale. It is about developing existing regional relationships to improve individual community capacity. By identifying the bonds between individual communities and their neighbours, micro-regional exchanges can be built into resilient webs of interactions that define new boundaries for regional management.

Strategy 2, *community stewardship*, works within existing informal community governance systems that are made of the intangible social structures, traditions, institutions and social geography of the community. This strategy is about analyzing and ‘scaling up’ the bonds between individuals and their community identity by reconnecting missing links in the social structure and developing regional identities or ‘place bonds.’

Strategy 3, *temporal alignment*, is about coordinating the occasional activities, seasonal patterns, and events between rural communities. Yearly, monthly and daily traditions act as the structural elements to local culture, becoming points of exchange between individuals, communities and nature. Temporal re-programming can impact regional equity, local opportunity, and develop sustainable aggregated change.

Fig. 1.2 Brigus South, 2010

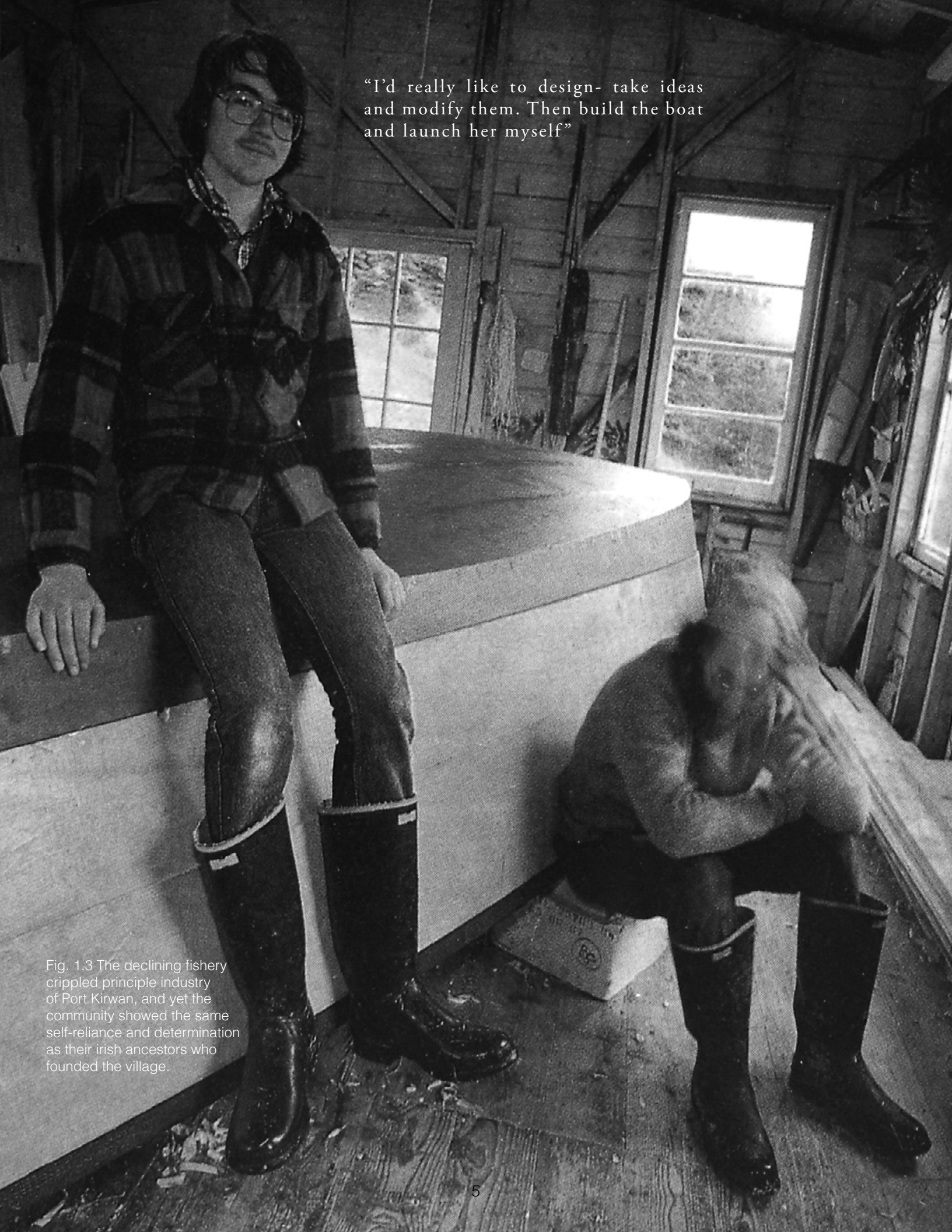


Strategy 4, *informal economies*, examines traditional trade, barter, and craft production in the rural context as a sustainable alternate to market economics. These activities supplement local incomes, provide accessible opportunity, and develop regionally-specific material cultures. Innovative production methods propose a blend of traditional materials with modern technologies and overlooked resources.

Strategy 5, *place-making*, identifies sites and builds new institutions in the regional web. Implanting support spaces in the rural web can strengthen and deepen the connections between the social, economic, and cultural capital, and its geographic context. Aligning the processes of design, construction, and maintenance as part of the living heritage of the region works to develop a new vernacular architecture for the outport.

By uncovering and scaling up local resources for supporting sustainability, specific natural, cultural, spatial, or economic structures can serve to prepare the rural community to receive larger developments. Each of the strategies focuses on a set of pre-existing assets in mutually supportive ways. The path of least resistance for adopting change in the outport is found, within the existing rules, infrastructures, and parameters. Using readily available funding structures, labour strategies, and government action plans, communities can champion their own futures, despite rural disadvantages.





"I'd really like to design- take ideas
and modify them. Then build the boat
and launch her myself"

Fig. 1.3 The declining fishery
crippled principle industry
of Port Kirwan, and yet the
community showed the same
self-reliance and determination
as their Irish ancestors who
founded the village.

design for sustainability

Sustainability is fundamentally a design process. It is a way of thinking and a method for implementing and monitoring the risks, or benefits, of change over time. Design is about visualizing, analyzing and implementing the creation of a physical object, process, or system. Design is an iterative, imaginative process which provides an opportunity to experiment, but is fundamentally about adopting material change. In practice, sustainability is commonly applied as part of a quality management system. But sustainability is not static, rather stable, and is not everlasting, rather transformative. Sustainability is about getting better than we were before, and as such it is an iterative process that requires continual stewardship and evaluation.

The broad spectrum of sustainability research forms complex and interconnected regions of inquiry. One of the challenges to implementing sustainability is a difficulty isolating topics for research. As such, this research approach has a soft focus, crossing thematic territories and traditional boundaries between disciplines. A design approach to sustainability provides skills for navigating and communicating complex understanding of difficult problems. For example, rather than focusing on social issues, or ecological degradation in rural areas, this method would encourage research that looks at the connection between the community and its environment to find mutually-supportive solutions to both problems. Pilot Project is integrative research that seeks to uncover multiple solutions for implementing and practicing sustainability through a broad analysis of context.

The ability of design to transcend disciplines is an asset for sustainability agendas. Design creates solutions using visual language and which works to overcome language barriers and knowledge gaps. It is universal in nature. The basic requirements for sustainability are based on a broad perspective. Solutions must be multi-scalar, from micro processes, to global systems. The ability to imagine and predict the impacts of development in complex scenarios is only possible with creative, iterative, and even intuitive thinking. It is far less risky to test ideas by using the imagination than by testing them in the real world. Design is a powerful tool that allows us to develop feedback loops based on critical thought and analysis. Sustainability requires these feedback loops in order to develop adaptive strategies for change.

Design thinking can help fulfill the critical need to re-imagine the world. Sustainability is as much about development and progress as it is about preservation and protection. Misconceptions of sustainability frame it as the limits to growth and change. But sustainability thinking imagines what the future could look like and develops policies, practices, and parameters that support these visions. Sustainability is a design practice, an aggregate change, with creative outcomes. Sustainable design can be seen as developing action plans that can be implemented immediately.

*"We are researching 'the world' and this is a single and seamless whole which spans both social and biophysical phenomena. This fundamental interdisciplinarity requires research methods which are potentially capable of handling both social data and scientific data."*²

2 Alex Franklin and Paul Blyton. Researching Sustainability: A Guide to Social Science Methods, Practice and Engagement. (Abingdon, Oxon: Earthscan, 2011). 55.

*"Because of the nature and breadth of 'sustainability', there is a limit to what sustainability problems and questions can be addressed using a single discipline approach."*³

3 Ibid, 6.

*"Others are specialists in generating content about what is and why it is this way, design concentrates on putting it all together to formulate [imagine] what could be."*⁴

4 Valerie Brown. Tackling Wicked Problems Through the Transdisciplinary Imagination. (London: EARTHSCAN, 2010) 245.

rural reconfiguration

“Rural development is not just about ‘new things’ being added to established situations. It is about newly-emerging and historically rooted realities that are currently reappearing as rural development experiences avant-la-lettre. Rural development policies should focus on strengthening proven constellations and supporting emergence of new ones. A particularly decisive element will be the combination of the old with the new”⁵

Rural places are found, caught in the crossfire between the old ways and the new. Our cameras carefully edit out the practical, affordable vinyl clad houses, and focus instead on the rotting but romantic wooden fishing stages clinging to the cliffs. The outports of Newfoundland are a nostalgic indulgence for urban dwellers, but there are real issues associated with outdated and neglected parts of these communities. The declining outport represents generations of underdevelopment. At a time where the old ways are failing, and these places are being rapidly developed or abandoned, new ways can be adapted from the traditions of the outport. Where the old ways are forgotten, it is not because they are no longer useful, but because they have not been adapted to meet our current needs⁶. Rural places are vital to preserving culture and tradition; they are the incubators of regional identities. As such, rural and remote territories have unique requirements for both preservation and new design. While an old shed might seem just picturesque to outsiders, that space might have no meaning to the people that live there, and might seem to be an eyesore. There must be a careful negotiation that takes place in rural development, between managing existing systems, and introducing new opportunities. Rural development is a reconfiguration; a series of adjustments and adaptations of the material, spatial and cultural realities of the community to ensure a sustainable future.

Remote and Rural areas are defined relative to urban areas, by a process of elimination. Rural, and remote areas in Canada present difficult challenges because formalized support is distributed by population density. With fewer resources to begin with, rural areas are also more resource-intensive. The logistics of transportation, infrastructure

⁵ Jan Douwe van der Ploeg, et al. [Rural Development: From Practices and Policies towards Theory](#). (Sociologia Ruralis 40.4 2000) 400.

⁶ E. J. Hobsbawm and T. O. Ranger. [The Invention of Tradition](#). (Cambridgeshire: Cambridge UK, 1983) 8.



and services must cover larger territories with smaller economic input, relying on social capital, mutual aid, and access to land, sea, and natural resources. For these reasons, rural areas provide opportunities for sustainability research because they are viable alternatives to conventional urban arrangements. The proposed strategies are designed to have minimal costs- culturally, economically, or environmentally. They are to be performed in collaboration with the community because anything you do in a small town has a large impact. Fear of change can lead to the over-protection of the existing context. Rural development must be respectful, but transformative.

Traditional development thinking is based on the addition of new things to an existing context; buildings, economic opportunities, or infrastructure. Many of the ingredients for sustainable development already exist, they just need to be continually re-arranged, supported, or adapted into new configurations that meet current and future needs. A reconfiguration occurs pre-development, aligning elements in the context to mobilize change from within the community. This can be immediate action, and can be further supported with traditional development methods once configurations have been thoroughly tested, see Fig. 1.4. *“Restructuring is a continuous process which must be based on a greater appreciation of the uniqueness of place.”* The tools required to make these changes happen are distinctly tied to the context and culture of the community. Every new self-determining development action has the potential to enhance the culture and identity of the community. *“New definitions of identity and interest have to be built on new experiences and interaction, but they can be constructed in years rather than centuries or decades.”*⁷ These new identities become part of a cultural paradigm shift towards sustainable practice. Each community has its own set of vernacular resources and tools, which are the subject of this research. The five strategies proposed in this project combine these resources into the makings for action plans, which are provided for residents of outport communities to consider, develop, adjust or merge the possibilities as they choose

7 Sheela Agarwal, [Restructuring Seaside Tourism The Resort Lifecycle](#). Annals of Tourism Research 29.1 (2001) 48.

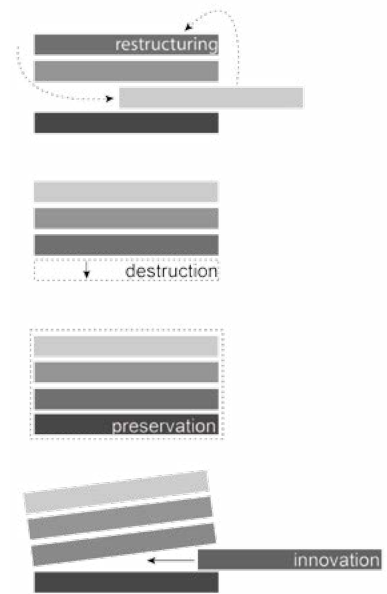


Fig. 1.4 Four development strategies for rural areas.



Fig. 1.5 Petty Harbour, 2010

potential outcomes:



Fig. 1.6 Public Restroom, National Tourist Route



Fig. 1.7 Overlook, National Tourist Route

Small changes in rural areas can have large impacts. Rural development is not solely the urbanization of rural areas. Rural development should follow the patterns of the rural form, developing the existing resources in the region such as connectivity to nature, local production, amenities, or culture. Rural developments have measurable gains, over time, for example through increased tourism revenue, capital works projects, and even rural in-migration. The case study portion of this work, located in Chapter 3 reveals some of the gains from micro developments within the study region. Integrated approaches to rural development found in places such as Norway, Iceland and other parts of the Atlantic basin are precedents that illustrate potential measurable outcomes for rural Newfoundland and Labrador.

In Norway, a strong tourist economy has seen benefit from a series of small architectural interventions along a scenic driving route. Called the National Tourist Route, eighteen driving routes with a series of look out platforms, lay-by's, service facilities and small interpretation sites have been built since 1993. The Norwegian Roads Administration has developed a national program that unites nine regions, 60 municipalities, and individual business stakeholders. At an investment of 3.4 billion NOK, approximately 600 million Canadian dollars, fifty young local architects, landscape architects and designers have worked to design these services.¹ This development strategy has worked to attract international tourism, while providing a quality transportation network to connect rural areas, develop business in rural areas, and nurture vibrant rural landscapes. The investment in local architecture and capital works is beginning to see a return as tourism continues to increase in the country. High quality amenities and services are not solely for tourist use. There have been steady increases in tourism of 2-3% per year since 2010,² but there has also been an increase in rural business development. Partners such as Innovation Norway contribute more funding to rural areas than urban counterparts.



Fig. 1.8 The Blue Lagoon Spa, Iceland, 2011



Fig. 1.9 Geysir, Iceland, 2011

In Iceland, similar investments in infrastructure, capital works, and advertisement have created a profitable rural tourism economy with which to build rural regions. Icelandair, the national airline has developed a marketing strategy that focuses on creating a transatlantic hub in the country.³ Integrating tourist services with air travel, such as providing transportation and luggage storage for stop-over travelers to access the Blue Lagoon Spa have increased value for the airline while bolstering the tourist economy in the country. Natural features and spectacular geology have contributed to Iceland's international reputation. Along the southern coast, volcanic activity, which peaked with the eruption of Eyjafjallajökull in 2010, caused massive disruptions in air traffic throughout Europe. Although this disrupted tourism in the short term, a surge of visitors came to visit the volcano in the years following. Between 2000 and 2009, a 250% increase in tourism gross value demonstrates how these efforts have impacted the national economy with the bulk of change occurring between 2006 and 2009.⁴

Lessons from both Norway and Iceland reveal potential gains and investments required to support rural development. Crucial to these approaches are large investments in infrastructure, media, and development of place specific architecture providing a marketable tourist experience. These strategies serve as inspiration and evidence for this book, reiterating the value of the rural economy.

1 Detour Architecture and Design along 18 tourist routes, Nasjonale Turistveger 2010, http://www.nasjonale turistveger.no/eKatalog/Nasjonale_turistveger2010.html#12/

2 Visit Norway Key Figures, 2011. www.innovasjon Norge.no/reiseliv

3 <http://www.iata.org/publications/airlines-international/october-2012/Pages/ceo-interview-icelandair.aspx>

4 <http://www.statice.is/Pages/1141>

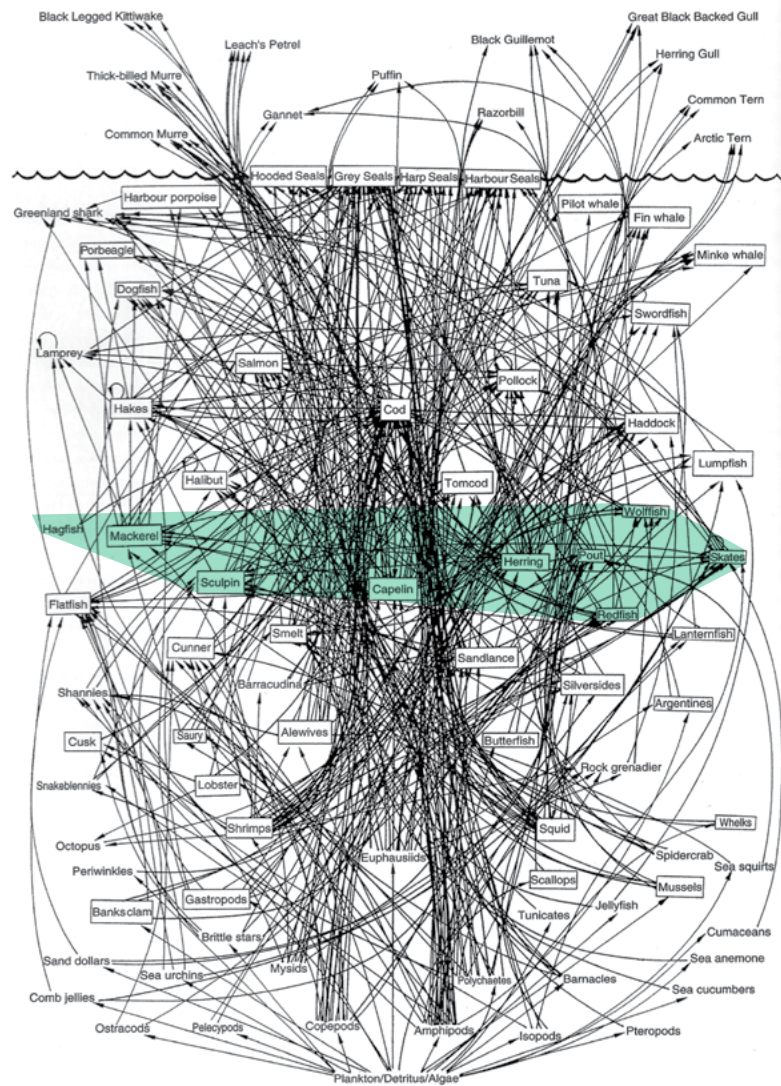


Fig. 2.1, The marine ecosystem of Newfoundland is exemplary of how spatial boundaries are delineated to msnage complex systems.

2 vernacular sustainability:

Historically, change was seen as a risk. People once lived within the safety net of tradition¹. For thousands of years, human modes of operation did not change very much. And now, change has become part of our global culture. The Brundtland Commission introduced the idea of sustainable development in 1985, and the simplest and most vague definition presented is the one legislated by the provincial government². It is a modern concept based on two ideas about change: development and sustainability. Development is traditionally seen as growth: economic, urban, or industrial. Sustainability is the capacity to create, test, and maintain the ability for complex systems to adapt.³ It is traditionally conceived as an integrated social, economic or ecological inquiry. When we think of development as part of a transformation, it is crucial to the practice of sustainability. *“Transformability is the capacity to create a fundamentally new system when ecological, social, economic and political conditions make the existing system untenable.”*⁴ Thinking about sustainable development requires thinking about complex systems that span all regions of inquiry. Complex systems of interactions are similar to the exchanges and dependencies within an ecosystem, like those in fig. 2.1. Looking at this diagram, how would you divide this system into smaller more manageable pieces? You would most likely divide them based on their relative geography such as in the green region. As such, this work has a focal system scale, in which a study region is thoroughly examined while looking outside to potential key connections outside of the region. Developing sustainability criteria and management tools is inherently tied to contextual analysis. In this chapter, the basic requirements for sustainability are defined in relation to each other. They are presented within the framework of the five development strategies, forming the criteria for analyzing the context, potential outcomes, and proposals in this work.

1 Gibson, Robert B., and Selma Hassan. Sustainability Assessment: Criteria and Processes. (London: Earthscan, 2005) viii

2 Environmental Protection Act. (St. John's, NL: 2009) <http://assembly.nl.ca/Legislation/sr/statutes/e14-2.htm#2>

3 Holling, C. S. Understanding the Complexity of Economic, Ecological, and Social Systems. (Ecosystems 4.5: 2001) 390

4 Walker, B. H., and David Salt. Resilience Thinking: Sustaining Ecosystems and People in a Changing World. (Washington, DC: 2006) 62.

placing sustainability

“One of the core concepts of sustainability is a concern with place. The impacts, negative or positive, of processes and actions on the ‘world’ or the ‘environment’ makes this implicit. Furthermore the workings and interactions of processes happen in, and affect, actual places. Research that seeks to understand this and to identify how sustainable practices are created and maintained must therefore be rooted in studies of place.”⁵

Sustainability refers to a sense of renewability and longevity. It is performed as a set of criteria to test the ability of a system to maintain and adapt the structures that define it. If we think of a community as a complex system, these structures would be geographic, economic, social, or even cultural distinctions; the makings of ‘place’. But, places are dynamic systems. Sustainability processes need to be developed with consideration of the existing structures which define it, but also acknowledging that systems can transform into entirely new structures. Sustainability is a contextual study that tests processes within their own context, but looks to broader opportunities and possible futures. Notions of sustainability must emerge from the context. Spatial and material indicators of sustainability provide baseline studies of the persistent elements within a community, revealing the arrangements that work, now, in the past, and maybe even into the future. Examining how these indicators change can teach us the ways in which outports have been able to maintain and develop. Examining the things that continue to work, teaches us what to look for in other communities and develops as a set of vernacular sustainability criteria- born from the very place itself.

“The intersections of nature, culture, history and ideology form the ground on which we stand-our land, our place, the local.” Intangible systems, such as culture, of a community have material expressions and spatial implications. Reciprocally, these intangible systems and cultures are influenced by material and spatial changes. For example, diversities in language, material cultures, food culture, and local events are indicators of regional cultural diversity, *“The peculiar play of history, geography, climate, and occupation upon the Newfoundland people is both vividly and subtly contained and made manifest in the wild artefact of Newfoundland speech.”⁷* The distinct and diverse language of Newfoundland has been derived from social enclaves, separated by wilderness and developed in the geographical specificity. Places are derived by geographic boundaries, but also from cultural considerations. As such, culture too, becomes an indicator of functional systems of sustainability. Cultural traditions outlast physical constructions (fig. 2.2), and infrastructure systems, making it an important indicator for sustainability. Our modes of consumption and operation are embedded in our culture. Through a community of practice, cultural sustainability mobilizes change from within outport culture. *“Development is about negotiating the maintenance of local identity, while engendering a new ones.”⁸* Through aggregate impacts, even small changes to everyday community practices can make big changes over time.

5 Franklin, Alex, and Paul Blyton. Researching Sustainability: A Guide to Social Science Methods, Practice and Engagement. (Abingdon, Oxon: Earthscan, 2011) 89.

6 Lippard, Lucy R. The Lure of the Local: Senses of Place in a Multicentered Society. (New York: 1997) 7

7 Story, George M. Dictionary of Newfoundland English: With Supplement. (Toronto, Univ. of Toronto: 1990) xviii

8 Lee, Jo, Arnar Arnason, Andrea Nightingale, and Mark Shucksmith. Networking: Social Capital and Identities in European Rural Development. (Sociologia Ruralis 45.4: 2005) 269-83.

Sustainability is a new idea, but its virtues have developed over a long time, by people who didn't even know they were contributing. The concept of the vernacular encompasses culturally accepted ways of making, doing and building within a region. It is authorless. Vernacular community practices have been proven over generations and refined to meet current needs, and represent efficient uses of local resources. In architecture, the vernacular could be defined by materials, tools and outcomes which are regionally distinctive, and developed in an informal manner, without the use of architects or design processes. Vernacular sustainability could expand to encompass more than the material culture of the output, including methods of communication, infrastructure, and even traditional ecological knowledge. Vernacular sustainability criteria indicate the ways that the output has found resilience and longevity. Vernacular systems are a great tool because they are already tested. They emerge over multiple generations, and their impacts can be easily studied. Sustainability can be pursued in many ways, but finding ways to introduce new methods into existing places is very difficult. There are appropriate methods for approaching sustainability within different contexts. Vernacular systems that exhibit sustainable underpinnings can be adapted to achieve community goals. The word vernacular is defined relative to language. By extracting vernacular sustainability methods, communities can open pathways of communication that promote local acceptance of new ideas.

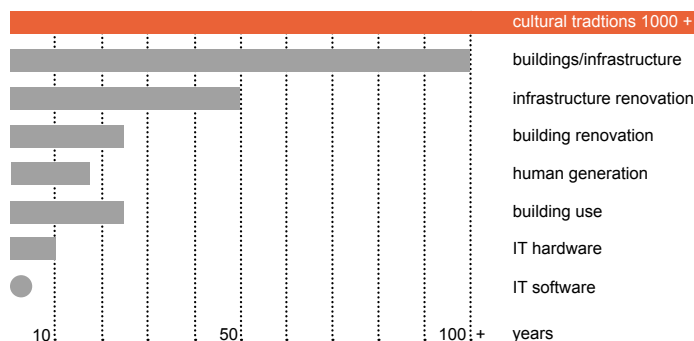


Fig. 2.2 Cultural Sustainability
The length of generations for different systems and infrastructures, in years. The longest, renewable cycle of these is culture.

analytical framework

While the outport contains resources for moving towards sustainability and local initiatives have garnered some sustainable outcomes, these might not be intentional or fully understood. Throughout the region, piecemeal efforts begin to reflect many of the requirements for moving towards sustainability, but can be supplemented and informed by more complete understandings of the essential requirements for sustainability. The generic concepts listed below exemplify these requirements within eight core criteria. These eight can supplement existing sustainability assets in the outport and form the conceptual basis for the five strategies outlined in this research.

- a. Socio-ecological System Integrity: *The ability to protect and develop connections between human and ecological system components, maintaining crucial life-support functionality.*
 - b. Livelihood Sufficiency and Opportunity: *Ensuring everyone and every community has the basic requirements for living as well as opportunities to improve the basic requirements.*
 - c. Intragenerational Equity: *The ability to manage and equitably distribute resources within the current generation, such as the gap between the rich and poor.*
 - d. Intergenerational Equity: *Evaluate and act on opportunities in ways that do not compromise the availability of opportunities and sufficiency for future generations.*
 - e. Resource Maintenance and Efficiency: *Stewardship and maintenance of renewable and non-renewable resources, as well as reductions and optimizations of resource use.*
 - f. Socio-ecological Civility and Democratic Governance: *Engaging individuals, communities, and decision-making bodies to apply sustainability principles in practice, creating collective responsibility.*
 - g. Precaution and Adaptation: *Acknowledgement of uncertainty in the design and implementation of development actions, requiring flexible approaches to address risks along the way.*
 - h. Immediate and Long-term Integration: *Meeting all the requirements for sustainability throughout project lifecycles in interconnected ways, creating mutual support systems.*
- (Criteria Adapted from Gibson, Hassan, Holtz, et. al, 2006, p. 95-114)

These concepts are difficult to understand within the context of a piece of paper, but when applied to the outport, they inspire specific approaches and more detailed development criteria. From these generic concepts of sustainability, context-specific criteria are defined in relation to applications of the five proposed strategies. The five strategies contain all of the core requirements for sustainability, as well as context-specific sustainability concepts to support the implementation of the criteria. This list was extracted from an iterative study of the requirements for sustainability, potential actions and a reading of the outport context and they contain all eight of the core generic criteria for sustainability. The concepts are defined in relation to specific applications and existing resources. These criteria will be used as indicators for selecting resources that exhibit sustainable properties. The remainder of this chapter defines these context-specific requirements in detail using sub-criteria defined for each strategy. The concepts listed below will be defined in using the following concept maps.

- ① territorial networks: (a+c+g+h) Mobility, Diversity, Complexity
- ② community stewardship: (a+b_f+g+h) Governance, Resource Management, Social capital
- ③ temporal alignment: (b+c+d+g+h) Adaptability, Practice, Resilience
- ④ informal economies : (b+e+g+h) Efficiency, Equity, Renewability
- ⑤ place making: (b+f+g+h) Vernacular Transformability, Synthesis, Integration

(Context-specific criteria)

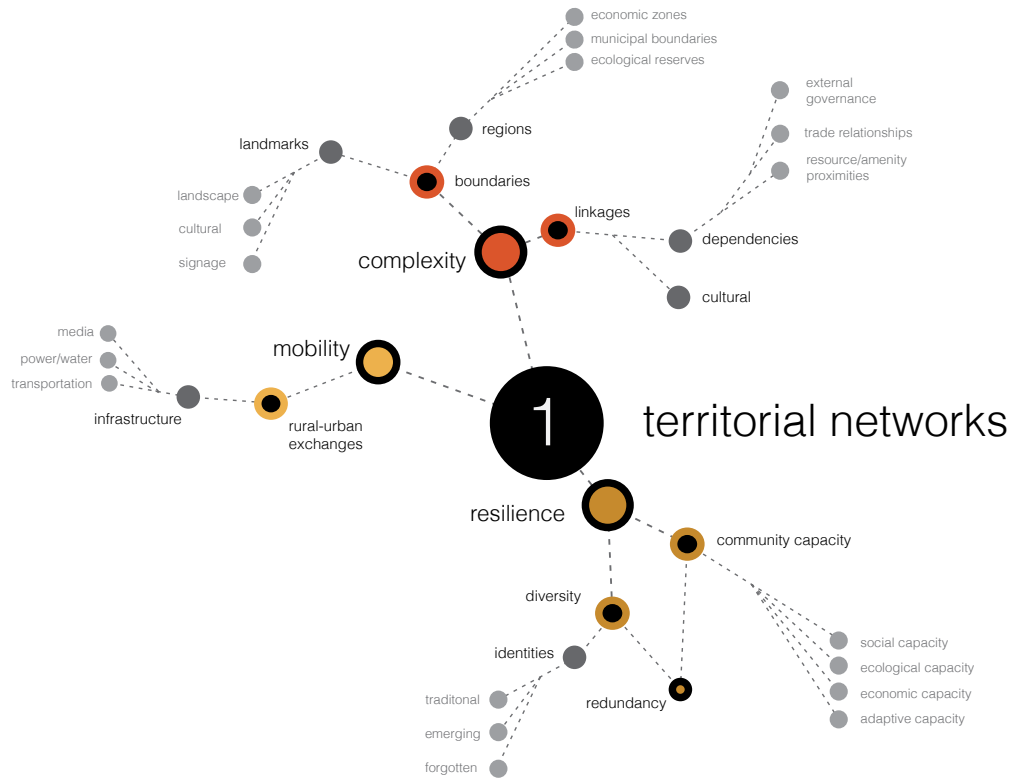


Fig. 2.3 Concept Map, Strategy 1: territorial networks

Territorial Networks is a large-scale, regional sustainability strategy. The strategy works to uncover key bonds and boundaries between communities in order to examine the integrity of regional systems. The goal of this strategy is to build strongly connected networks of mutually supportive relationships and exchanges to ensure even distribution and access to opportunities throughout the region. Analyzing the individual capacity, resources and access to large-scale transportation systems or amenities divides the system into flows of resources, and identifies dependencies. Complex interactions are broken down into individual community characteristics; heritage, governance, culture, infrastructure, environment, economies, and unique innovations. This strategy focuses on the interactions between these areas of inquiry to develop strong connections between systems to make them more resilient. Resilience is the ability of a system to recover, despite change or hardship. Supporting a regional capacity to self-organize enhances this ability by developing relationships between urban and rural spaces. It is important to develop a diverse and dispersed set of places, processes and relationships to enhance the capacity of the region. At the same time, there should be redundancy within the region, repetition of key elements to ensure that if part of the region is damaged from economic depressions, climate change impacts, or other very real threats, that the system can still function.

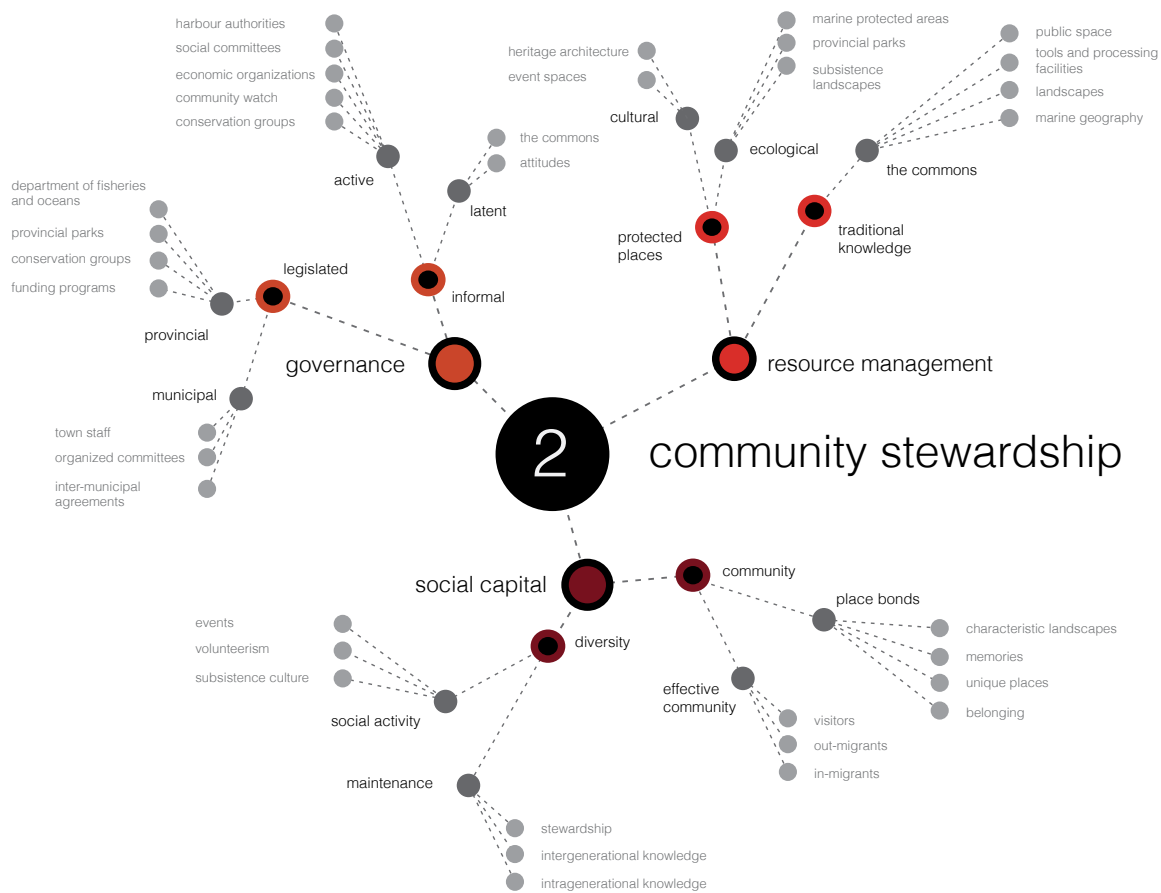


Fig. 2.4 Concept Map, Strategy 2: community stewardship

Community Stewardship is a sub-regional strategy for mobilizing multiple communities. This could be applied as a strategy across the entire region, or between just a few. This strategy seeks to bridge different parties to encourage collaboration in locally built social institutions. It takes continual management, leadership, and responsibility to care for and develop local assets. The strategy seeks to find common methods, perspectives and interests to connect practices and people between different generations as well as the current generation to ensure the continuity of stewardship. The provision of resources such as communication, motivation, or planning which are required to implement change are conceived of by expanding existing social pathways in the area. This can mobilize collaborations to achieve commonly defined goals, and develop new ones. These informal forms of governance incorporate different values, methods, and perspectives into combined knowledge for imagining a new future. By visioning as a group, communities can help develop decision-making criteria, which integrate collective action and accountability. Managing, preserving and mobilizing local community capital requires governance, which can be developed informally in social networks or through formal political frameworks. This strategy connects the local people to their economies, ecologies, and cultural landscapes to manage opportunities and develop governance structures for support.

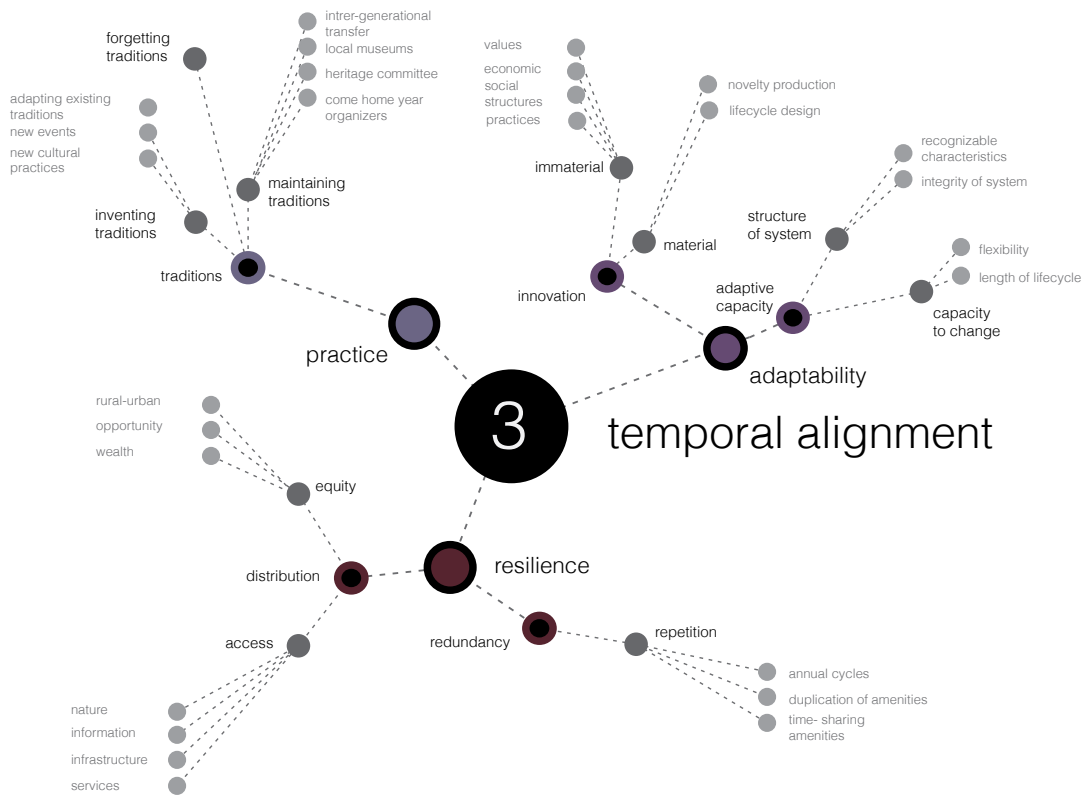


Fig. 2.5 Concept Map, Strategy 3: temporal alignment

Temporal Alignment considers the timespace of the region, examining the context as it changes over the days, seasons, years or generations. This strategy can be applied across various large spatial scales but in this context, it is proposed as a micro-regional strategy, looking to the bonds between individual communities and their neighbours. Continuity of equity requires developing the ability to distribute resources, opportunities and development, over time. The practices engrained in the culture of the community, from heritage and traditions, to new daily routines have aggregated impacts and risks. Analyzing the existing temporal context informs the pace and implementation of development strategies. Most importantly, cycles of the life in the outport can bind new traditions with the old to renew social and heritage capital. Renewability means respecting, enhancing, and monitoring the rate at which resources can replenish themselves, and being vigilant with resources that cannot be replenished. This is normally applied to physical resources, such as oil, timber, or water reserves. This strategy looks to the renewability of culture to ensure continuity of opportunity. Cultural adaptations allow communities to maintain existing traditions, while renewing new traditions. Lastly, forecasting, or the anticipation and preparation of things to come, can emerge from patterns in the analysis of the outport over time. This strategy can help develop an awareness of risks as well as opportunities associated with the timespace of the community.

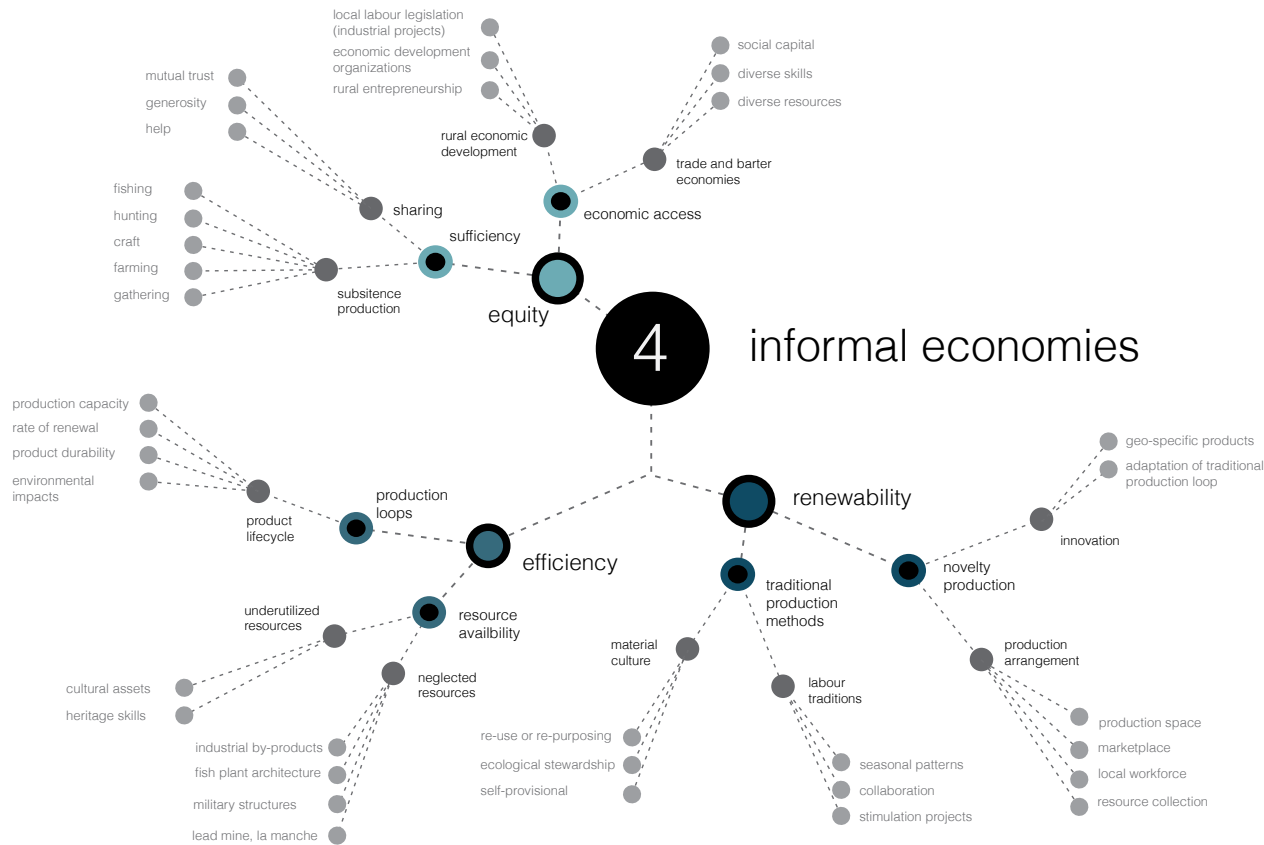


Fig. 2.6 Concept Map, Strategy 4: informal economies

Informal Economies is a small-scale community strategy for developing and distributing resources and economic opportunities. This encompasses productive landscapes, craft and manufacturing space, and market space. Sustainable economies must distribute capital and opportunities so that all members of a community have sufficient resources, without compromising the needs of those external to the community. Small-scale, self-provisional or trade and barter economies provide vital opportunities to every member of the community because they don't require large capital investments and occur outside of market rules. Equity is the fair, equal and unbiased distribution of capital. Self-provisional activities encourage equity within the community, by supplementing with affordable and accessible resources, which are often lacking in rural areas. The efficiency and renewability of production loops can be streamlined. Reductions in material and energy usage are part of the sustainable management of local resources. Local ecological knowledge, material cultures, craft techniques, and innovative production methods become tools for increasing the adaptive capacity of rural economies. Adaptive capacity is the ability of systems to be creative and quickly change to avoid risks and take advantage of opportunities. This community-scaled strategy can begin to increase regional adaptive capacity by setting up new pathways of trade between communities, and by bridging traditional methods of economic resource management with new ideas.



Fig. 2.7 Concept Map, Strategy 5: place making

Place-Making is a small scale strategy that has the power to reorganize the social, economic, and identity structures of the region. Sustainable communities are founded on their institutions; buildings and natural landmarks that are organizational elements of the complex web of rural interactions. Sustainable places are continually re-envisioned to meet community needs. As benchmarks, places and buildings allow the community to redefine their identity against those of the past. This requires the longevity of community institutions. Churches, fish plants, community centres, harbour buildings, grocery stores, bars, and natural features are some of the spaces that create a sense of place. By monitoring the way that these spaces have been adapted, the community can learn what to expect when planning for the emerging forms of their places. Proposing easily adaptable, flexible and soft-systems of construction allows for the community to set the pace for development. Using local materials can help to preserve the vernacular skills in the community and efficiently use available labour resources. Above all, places have the strength of integration. Integration is not balancing, or compromising, but combining several or all topics, strategies, and methods. This strategy has the opportunity to combine multiple considerations, opportunities, and resources within the design of new multi-functional spaces.

risk-taking

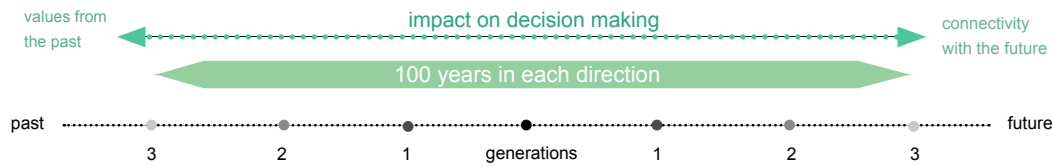


Fig. 2.8 The impact of decision making on generations

Current practice front-loads sustainability thinking into the beginning of the development process. This attempts to manage risk, by trying to anticipate all the possible impacts of a project. Seeking government or community approval for new projects requires a definite configuration of the final product. Criteria and indicators are the conventional system for determining these impacts. Criteria outline the requirements for sustainability, while indicators are the way in which we identify how these are met. For example, a criterion might be socio-ecological system integrity and an indicator might be the protection of local natural areas. They are an attempt at measuring and organizing the messy business of sustainable development. This project embodies a different process where indicators and criteria are grouped together into strategies for action before, during and after the development process.

Sustainability is not about balancing potential risks. This presumes that one interest will win over another. Instead, it is about multiple, mutually reinforcing gains.⁹ Corrective actions should be woven together into methods of analysis, action, and evaluation. These strategies are an integrated set of actions that serve multiple objectives, develop feedback, and are multi-scalar in time and space. Each strategy is founded on blending multiple sustainability criteria. While all criteria should be addressed all of the time, these strategies focus on several complementary criteria which share similar resources in the context of the output. All of general requirements for sustainability are embodied in the set of strategies.

Every development action has associated risks. The strategies manage risk using adaptation planning. Each set of criteria is strict enough for accountability, but flexible enough to encourage innovative responses to unexpected hurdles. The strategies are designed as safe-fail initiatives. If the pre-development processes don't work, or have unexpected results, then there is a need to adapt the vision of the project and try again. In this way, the project encourages risk-taking. Each of the sustainability strategies seeks to minimize risk by establishing support for developments prior to their implementation. Monitoring the development process closely indicates variations and opportunities to be incorporated into the process. Continual re-evaluation and stewardship of the developments over time create adaptive systems for maximizing potential gains. The strategies propose pre-developments, beginning with small material and economic inputs, so that fewer losses are felt if they fail or need to be adjusted. Each strategy falls in risky territory, where opposing risks must be integrated into new hybrid solutions.

⁹ Gibson, Robert B., and Selma Hassan. Sustainability Assessment: Criteria and Processes. (London: Earthscan, 2005) 131

- ① territorial networks/ Boundaries are important tools for management of finances or land ownership, but these boundaries conflict, fracturing the complex and interconnected reality of the region. Networking approaches also have limitations because it is difficult to distill and comprehend overwhelming amounts of information and responsibility is difficult to assign within a complex web. Both tools are necessary to limit the risks of mis-drawn boundaries and continue managing areas with appropriate funding and responsibility.
- ② community stewardship/ Bottom-up, informal social structures allow for local governance, but these structures are championed by key people in the community, require local volunteerism, and can easily disintegrate due to conflict. Alternatively, top-down formal governance structures can impose changes which are not useful, agreeable, or maintained by community members. Finding the common ground between these social structures is risky because further disagreements, and dissolution of existing social networks could result.
- ③ temporal alignment/ The risks of temporary developments are evident in the declining outport. Temporary financial support and seasonal work is a limit to growth in rural areas. Alternatively permanence is also a risk in the outport. Definitive and prescriptive economic or industrial developments continue to fail at making sustainable change, yet it is vital for permanent support for work, cultural practices and community needs. Adaptive responses could bridge the gap between the temporary, traditional and event structures and forms of permanence.
- ④ novelty production/ Production and natural resource extraction has been and continues to be a vital part of the household and provincial economy. This economy is full of risks; ecological degradation, or boom and bust scenarios but also provides opportunities in rural areas. Immaterial developments like the tourist economy and associated craft production for tourist consumption depend on fleeting fashion, popularity and interest from locals in making things, celebrating their culture and maintaining tradition.
- ⑤ place-making/ Making architecture is a controversial process, and making public architecture in rural areas can create a community uproar if the approach is not accepted. Rural parts of Newfoundland are underdeveloped- the risks of not making buildings can be even greater, as outports will continue to decline. Making architecture can redevelop bonds within the community, support local growth and community cohesion.

Common risks are those that apply to all communities in the region. Issues such as ineffective communication and disagreement are addressed with precaution and monitoring. Developments occur within dynamic, multi-scalar systems, which are so complex that it is impossible to predict all of the risks and impacts. Precaution is a process of planning for change by monitoring for potential risks and damages. Minimization of negative effects is not enough. Monitoring must be a continual process of the community to identify and evaluate changes. Monitoring evolves into stewardship, and is requisite for sustainable development. Choosing to make change, and choosing not to, each have their own risks. Understanding and monitoring the context is important to understand risks associated with change.



Fig. 2.9 Boat Launch, Vokey's Boat building, Trinity, Newfoundland.
 These images show the community working together to launch locally built boats. Sustainable development can be an aggregative process involving the many decision-makers, stakeholders, and individuals in the outport. How can new developments receive similar community support?

developing community instincts

“Any technical device is more than an aid: it is culturally potent. The overwhelming effects of its power dissolve not only physical resistance but also attitudes to life. Technologies shape feelings and fashion world views; the traces they leave in the mind are probably more difficult to erase than the traces they leave in the landscape.”¹⁰

There should be design criteria for developing substantive sustainability criteria and indicators. These must increasingly be seen as integrated toolsets that provide real opportunities for action, redefine cultural values and develop community instincts. Criteria are part of a technical system of sustainability that should adjust the way we understand the world, make decisions and develop our communities. A tendency towards ‘sustainability accounting’, proposes formulaic solutions (carbon calculators), which give prescriptive solutions. What accounting systems lack in creativity and public legibility, they make up for in accountability and reporting systems to meet government regulations. The five strategies could be implemented as generative criteria - sets of criteria that can be used to identify opportunities, find new possibilities, compare options and develop sustainable solutions in an exploratory manner. Expanding this further, sustainability assessment methods can become tools that are accessible to everyone. The strategies are built on broad sustainability criteria specified for the context.

The values of sustainability can be contextualized to existing places in the community, to become a medium that is easily understood by those in the community. By developing ways of explaining complex sustainability ideas, a greater number of active participants can support and mobilize sustainability efforts. *“Sustainability is something that must be practiced, ultimately by numbers of individuals within a society.”¹¹* *Community capacity is the ability, strengths and skills of the community and its members. The mobilization of these skills requires common values.* Criteria should be simple, scalable and tied to familiar landmarks within the context to teach the public about sustainability. Criteria can be heuristic tools, enabling people to make their own discoveries about their communities. The process of sustainable development can develop the instincts of the community. *“Animal instincts are modes of guidance for the individual in meeting such situations. Ethics are possibly a kind of community instinct in-the-making.”¹²* These instincts can become encoded principles, ideals and criteria of human action. By developing criteria for sustainability as a community, it is more likely that sustainability-based values will guide everyday practice.

10 Sachs, Wolfgang. Planet Dialectics: Explorations in Environment and Development. (Fernwood Pub. Halifax, N.S.: 1999) 14

11 Franklin, Alex, and Paul Blyton. Researching Sustainability: A Guide to Social Science Methods, Practice and Engagement. (Abingdon, Oxon. Earthscan: 2011) 55

12 Leopold, Aldo. The Land Ethic: A Sand County Almanac. <http://home.btconnect.com/tipiglen/landethic.html> (1948) 2



Fig 3.1 (top) Port Kirwan Harbour Community signage
 Fig 3.2 (below) Witless Bay Community signage

Handpainted signs at the entrance to the community signify the important features of the community. The towns are often represented with natural assets, or important cultural landmarks.



3 context & analysis:

“‘Who can save our rural Newfoundland towns?’ is a question regularly heard at development and planning meetings over the past two decades. The answer is now, as always, ‘Only you can save yourselves.’ In practical terms a surviving town is a sustainable town.¹”

This part of the work operates like a mathematical proof, testing the strategies as indicators for finding the social, material, and economic resources for supporting sustainable development. There is material evidence of the sustainable resources in the community. Small cues, such as the hand painted town signs become important spaces for the community to express its own resources and values. The foundations of the thesis are community case studies, which expose these observations as opportunities for change in the outport by isolating the arrangements which contribute to the longevity of the outport. Rather than focusing on weaknesses, this analysis works to reinforce existing strengths. Each support structure manifests itself in an entirely different way, no two places provide the same pattern of potentials, and opportunities. Exploratory methods or research unearthed unique places, practices and meanings which teach us about potential configurations in space and time that already work for the community. This is a regional portrait.

1 Renew/Cappahayden /Fermeuse/Port Kirwan Integrated Community Sustainability Plan, March 2010. 35.

historical context



Fig. 3.3 Sketches of the Newfoundland Landscape exaggerate the topography and show off the natural beauty of the island, Tors Cove, 1857



Fig. 3.4 The Last Strand of Shanandhitit's hair, the last Beothuk woman.



Fig. 3.5 Drying and salting cod in the early fishery, 1886. Called flakes, these structures of logs and sticks were designed for air drying the fish.

Newfoundland was once a land of mystery, exploration and discovery. Originally discovered in 1497, by John Cabot, this island was the portal to the new world. The beauty of the landscape and incredible natural resources astonished early explorers. The first Western occupants of the island were a migratory work force. Ships of English and French fisherman would arrive in productive summer months and return to their homes with the riches of the great banks: salt cod. They worked to establish 'outports' work camps from which to fish, salt and dry their precious fish. It was illegal to settle on the island until 1699. The Beothuk were the only humans with a claim to this land. They would paint their faces red with ochre to keep swarms of mosquitoes at bay. Not much is known about these people. The last surviving Beothuk woman, Shanandhitit was prompted to record all she could about her people in sketches before her death from influenza. This was the first great loss. In 1832, Newfoundland was granted representative government. This was the end of the disputes between the French and English, and disputes with Quebec about ownership of Labrador. Now the Dominion of Newfoundland was officially its own country. Thus began the first era of industrial development in Newfoundland and Labrador.

The ocean still provided the main sources of income for those that settled here. Whaling stations were located across the island, primarily founded by the Norwegians. An estimated 20,000 whales were harvested, resulting in a great bust in the industry and near extinction of Newfoundland's whale population. At the same time, the Reid company began to build the Newfoundland railway. This provided efficient transportation for

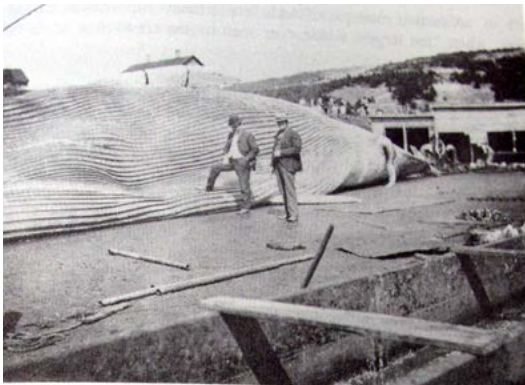


Fig. 3.6 Whale on Slipway in Aquaforte. 1904. The whaling station in Aquaforte was a Norwegian operation, and contributed to near extinction of local whale populations.



Fig. 3.7 An example of the Newfoundland Railway's Snow Plow engines for cutting through in the winter. The railway was important in the industrialization of the province, but the tracks have since been removed.

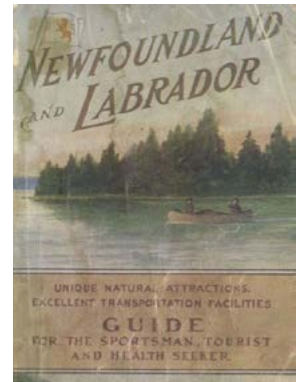


Fig. 3.8 Tourist guide, 1912. Newfoundland was an important tourist destination, hunting, fishing and health from the clean air were the main attractions.

accessing the outports and providing services which had been provided by the coastal boat service. Some train cars were even converted into classrooms to educate those in more remote areas. The train helped make Newfoundland into a tourist destination for explorers, health-seekers, hunters, and fisherman. By steamship, Newfoundland was just a few days journey from Ireland, and only forty hours from New York. Newfoundland was sold as 'the Norway of North America', and became a playground for tourists from Europe and America in the early 1900's. In 1933, independent Dominion status was voluntarily suspended. Again, governance was being administered by Great Britain.² Newfoundland lacked confidence in its ability to self govern. The economy was still dependent on foreign investment and natural resource exploitation.

In 1949, Newfoundland and Labrador became a part of Canada. Joey Smallwood, the first premier of the province stayed in office for twenty-three years, pushing a strong development scheme to reshape the province through industrialization, centralization of rural areas, and infrastructure development. The hopes and dreams of the Smallwood regime were to shape Newfoundland and Labrador into an industrial giant, with the best technology, and an efficiency that would be rivaled by Europe. He began the resettlement program to reduce costs of servicing remote areas. Some 307 communities³ with 'no great future' were given funds to leave their homes and move to bigger towns. This program is still on-going, as communities on the South Coast continue to abandon their homes. Churchill falls, the second largest underground hydroelectric facility in the world is the poster child of the promises and consequences

² Sider, Gerald M., and Gerald M. Sider. *Between History and Tomorrow: Making and Breaking Everyday Life in Rural Newfoundland*. (Peterborough, Ont.: Broadview, 2003.) 81.

³ http://www.mun.ca/mha/resettlement/rs_intro.php

modern context



Fig. 3.9 The Confederation building, completed in 1960 houses Newfoundland's government and is an important landmark in political geography.



Fig. 3.10 Transmission Lines, Churchill Falls, Labrador. In the 60's this was a major industrial project, but brings minimal revenues to Newfoundland and Labrador because of bad negotiations with Quebec.



Fig. 3.11 Aerial Photo of Sprung Greenhouse. Conceived as a farm for fresh local produce, this was a development failure, lighting up the night sky in the middle of a residential neighbourhood. It was demolished.

of this rapid industrial development. The 65 year contract with Quebec, sees 1.4 million dollar a day profits for Quebec, while Newfoundland receives only \$45,000.⁴ In 1988, the last piece of the Newfoundland railway was removed from the island, its narrow gauge tracks were not compatible with trains from mainland Canada. Newfoundland was on the brink of collapse. Unemployment rates soared, cod-stocks were dwindling and the province wasn't making enough money to sustain itself. Several last-ditch, but large-scale efforts at economic development, such as the Sprung greenhouse⁵, which promised locally grown produce, were epic failures. In 1992, the moratorium on cod fishing, marked the largest single lay-off of workers in Canadian history. The roads that were a sign of the modern-day life and prosperity were the same roads that led people away. Newfoundlanders left to seek fortune elsewhere, and the province continued to decline.

In 2008, the province of Newfoundland and Labrador became a 'have' province.⁶ This marked the first time in Canada's history that the province would not receive equalization payments from the federal government. Oil and gas exploration locally has brought high-dollar off-shore industry to the province. For the first time in a long time, there are fewer people than there are opportunities, *"We're looking at an incredible sea of change. Where we've had an oversupply of workers and not enough work, to a situation where we're going to have incredible opportunities for working people in our province."*⁷ Now, 20 years since the moratorium on the cod fishery, and in the midst of another industrial development,

4 <http://www.canada.com/montrealgazette/story.html?id=17f52755-7ede-45a5-8b2f-6a8b7d004957>

5 http://www.heritage.nf.ca/law/sprung_greenhouse.html

6 <http://www.cbc.ca/news/canada/newfoundland-labrador/story/2008/11/03/have-not.html>

7 <http://www.cbc.ca/news/canada/newfoundland-labrador/story/2011/07/13/nl-worker-shortage-report-713.html>



Fig. 3.12 Danny Williams, former premier, announces a 5 billion dollar land development near St. John's in 2010. It will be the size of Gander.



Fig. 3.13 Bull Arm is an industrial site, supporting fabrication of the gravity based structures for the offshore oil industry. The site is a major economic development, but along with other industrial projects in the province, major labour shortages are expected.



Fig. 3.14 Fogo Island was in serious decline. The shorefast foundation has developed several niche tourist and artist facilities. This new hotel will have rooms rented at \$1000/night.

the mega-projects of Newfoundland promise short-term benefits and long-term risks again. Industrial sites that support the offshore oil industry, such as Bull Arm, or mining sites, such as the nickel smelter at Long Harbour, envelope entire communities. There is also an incredible real-estate boom due to in-migration. The housing demands in St. John's are so great, that former premier, Danny Williams announced a five billion dollar real-estate development across 2,400 acres of land. The eight year gas tax funding program has prompted municipalities to complete an integrated community sustainability plan to receive funding. The new 2013 federal budget has committed to 21.8 billion dollars of gas tax funding over the next ten years, across the country. The list of existing eligible investment categories will be expanded to include: highways, local and regional airports, short-line rail, short-sea shipping, disaster mitigation, broadband and connectivity, brownfield redevelopment, culture, tourism, sport and recreation.⁸ There are 593 official communities in Newfoundland and Labrador⁹, most of which are designated within rural areas. This rural fringe has gained in importance as a cultural landscape, attracting \$879 M dollars of economic activity from tourism in 2010,¹⁰ exceeding traditional economies such as hunting, trapping and fishing. Projects such as the arts facilities on Fogo Island seek to use cultural resources for alternate forms of economic development. The history of Newfoundland has been punctuated by great successes, and great failures. Outports have thrived and suffered based on the cycles of the economy. As such, Newfoundland can be read as a testing ground for development schemes.

8 Gas Tax Agreement, Department of Municipal Affairs, Newfoundland and Labrador. www.ma.gov.nl.ca/ma/for/Wrapping_up_of_the_8_Year_Gas_Tax_Agreement_April_2013.ppt

9 <http://nl.communityaccounts.ca/faqs.asp#anch19>

10 http://www.tcr.gov.nl.ca/tcr/faq/tourism_statistics.html

Fig. 3.15 Population Cartogram and Settlement patterns of Newfoundland. The study area falls within the oldest settled communities in the province, and also show a demographic range from very small communities to urban populations in St. John's.

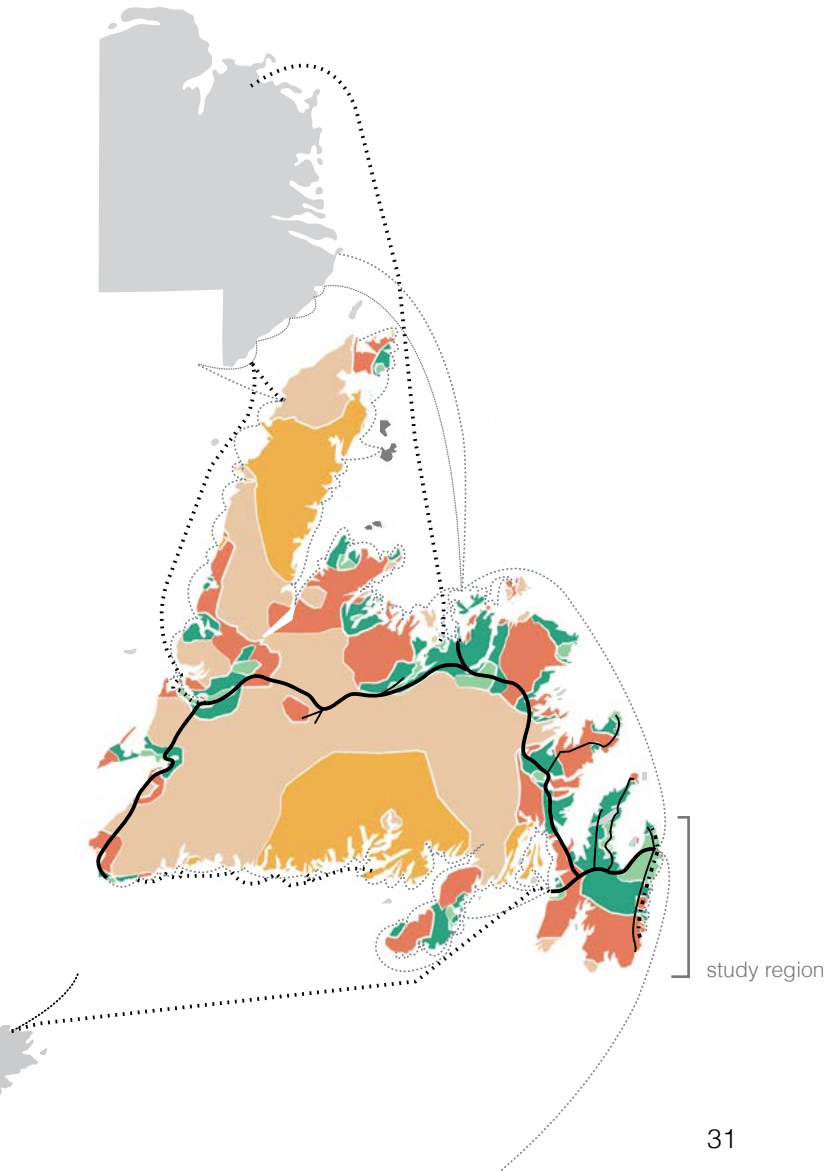
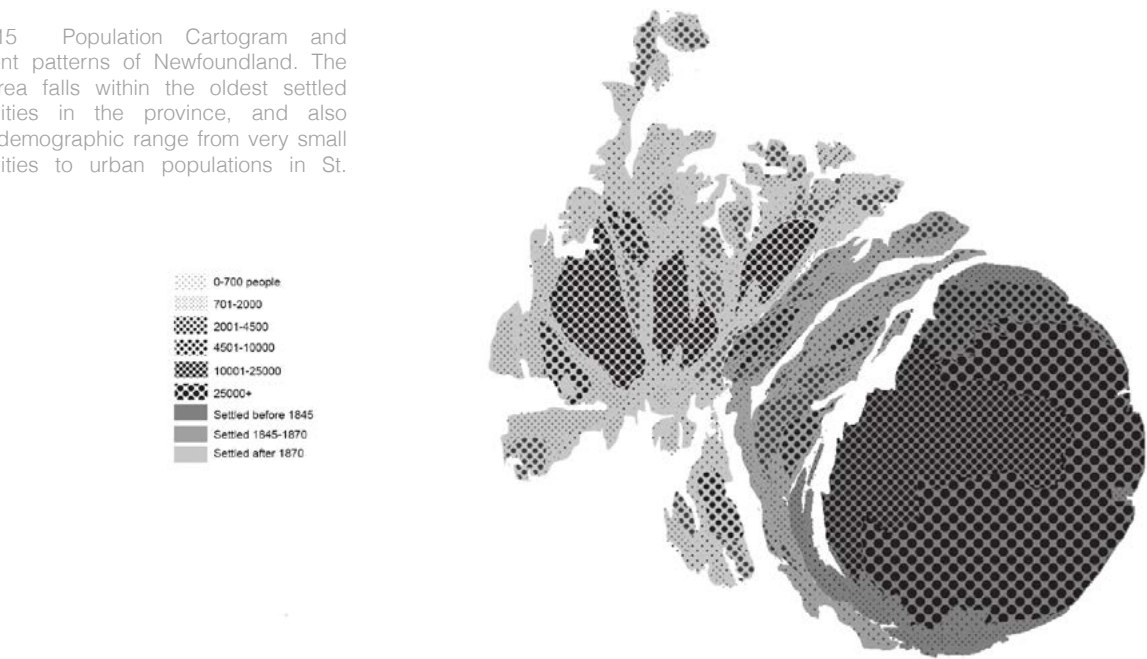


Fig. 3.16 Regional Mobility, Infrastructure and Remoteness Index. Patterns of mobility and infrastructure, old and new depict a loss of connectivity to rural areas. The study region is connected by road, trail, and heritage infrastructure.



methods of research

This research is exploratory. The project began as the study of a region extending 254 km along the shore of the Avalon Peninsula of Newfoundland. The East Coast Trail which is now a popular hiking trail, was once the only land-based connection between communities on the eastern Avalon. As a starting point, this linkage provides vital cultural connections between nearby neighbours, connecting the outports through time- between the old ways of the rural areas and transitioning to urban areas around the capital. Research of the thirty two communities along the trail began to reveal more linkages further defining the study area. The communities fall within the oldest settled areas of the province. The area was once linked to the capital by a coastal boat service, and the Trepassey train line, but now by roads and highways. The Killick Coast tourism route north of St. John's and the Irish loop to the south are popular tourist routes which connect the region. While there are many linkages throughout the study area, there is also great diversity.

The study area is full of opposing conditions. While some communities, like St. John's are highly urbanized and contain most of the provincial population, others further from the capital are remote, with small populations. While near the capital in-migration and rapid development characterize the area, in more remote areas, de-population and economic decline persist. Proximity to the capital makes nearby outports feasible areas for immediate rural development and increases their chances of success. Transposed on the landscape, these linkages boundaries, and opposing conditions have developed incredibly diverse conditions that result in unique communities. And yet, the urban form of the typical outport is consistent across the region. Each community is found, nestled in a protected natural harbour. Glacial fjords form mountainous topography that protect the communities from the wind. At the apex of these harbours, where streams meet the ocean, pockets of sediment that provide soil for gardens, sources of fresh water, and estuarine ecosystems. The urban form of rural communities grows around these climatic considerations, with fishery buildings and wharves situated along sources of fresh water. Other buildings, houses, churches, are clustered tightly around the harbour. These outport typologies form the basic rules for development, but when overlaid with regional characteristics, local culture, topographic features and available resources, each outport is unique.

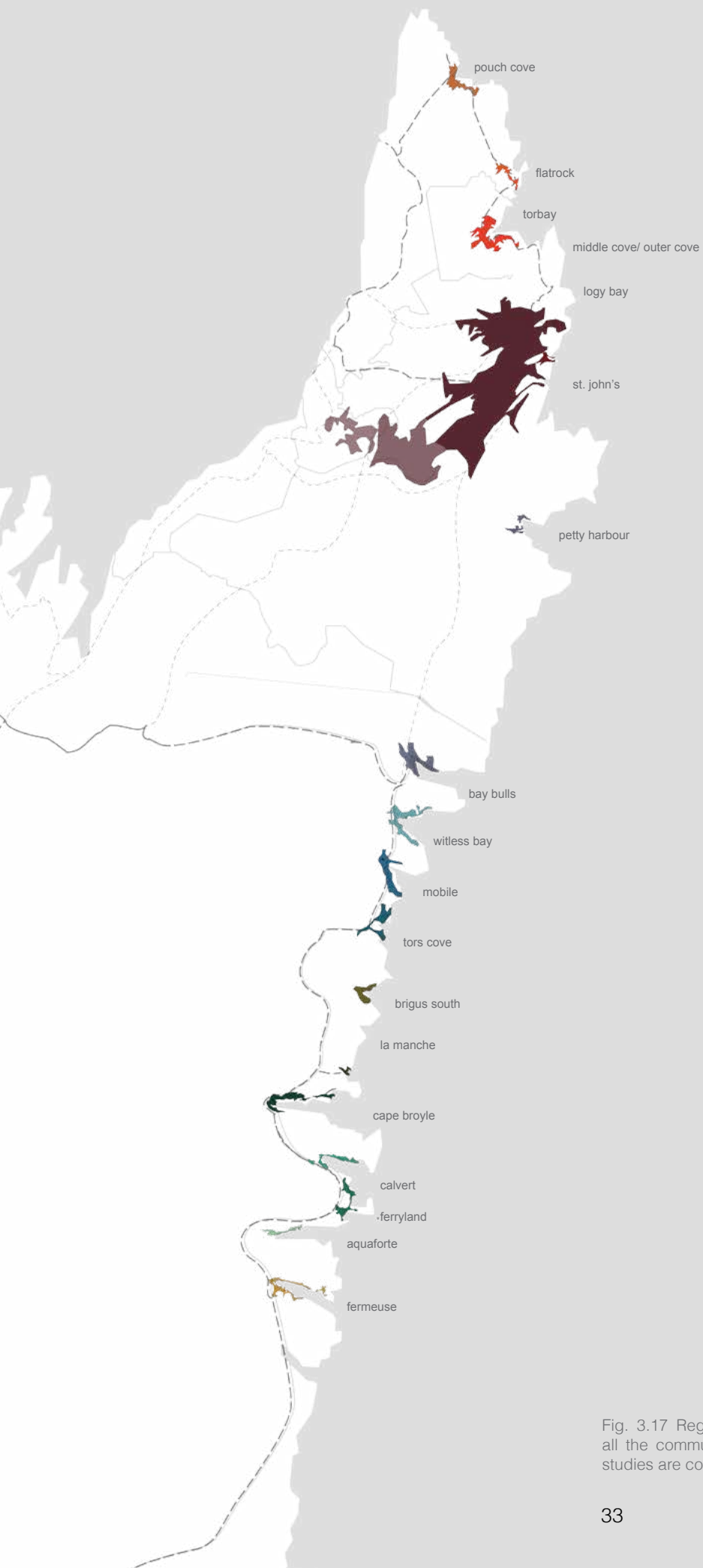


Fig. 3.17 Regional location map of all the communities for which case studies are completed.

data collection

Once the study area boundary was established along the East Coast Trail, each of the thirty-two communities was visited multiple times, during different seasons. Each time the communities were visited, photographs, sketches, thoughts and informal conversations were recorded. After the initial visits, additional resources were collected from the Centre for Newfoundland Studies at Memorial University and the provincial archives. The base maps paired with each case study were sourced and scanned from the Government of Newfoundland and Labrador, Forest and Land Survey, and have been adapted to suit the needs of the work. These data sources were supplemented with stories, folklore, and information from social media and websites from local organizations. Once the data were collected, case study content was curated using the following the contextual sustainability framework:

Diversity: Community individuality, results in a variety of resources, opportunities, and distinct identities. Resources that exhibit these traits are highlighted to show potential approaches that might work within other areas of the region.

Adaptability: Difficult social and economic challenges in the outport have forced the development of flexible systems that can change to meet current demands. Highlighted resources depict ways in which existing resource can be adapted within the outport context.

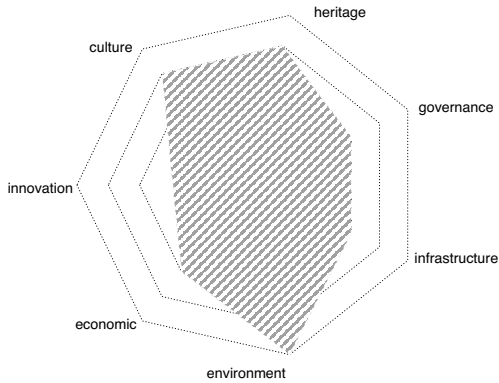
Immediacy: Social, economic, ecological and physical developments that depict the self-starting spirit of volunteerism exhibit development methods that can begin now, with little input.

Longevity: Persistent elements within the outport show proven methods that stand the test of time. The histories as well as modern arrangements of these elements are analyzed to reflect ways of creating permanence.

Innovation: New, unexpected, and surprising resources that are not reflected in common understandings of the outport are exhibited to inspire new identities and futures for the outport. These resources peak curiosity and serve as development inspiration.

Reading one individual case study reveals only a few assets, stories, and development methods of each place. When read as a regional portrait, one can imagine all of the elements overlain onto one community, illustrating the development potential of each community within the region. These case studies tell multiple stories within a larger vision for the region, and many of these individual stories have not yet been told elsewhere. The following case studies examine the elements that distinguish each outport, but also regional commonalities and opportunities. Gaining access to the informal underbelly of the outport reveals that small-scale phenomena are significant contributors to sustainable development in rural areas of Newfoundland. The informal processes, isolated instances, and distinctive features exhibited in this chapter are building blocks of the outport community.

Individual characteristics and overviews are explained within a small description and corresponding photos for each community. A categorization of local resources reveals seven key elements of the outport community: heritage, governance, infrastructure, environment, culture, innovation, and economic opportunity. These assets are charted in radar diagrams in the left corner of each study. The charts depict the diversity, strengths and weaknesses of each community and are later used to extract community and regional capacity. Case study maps identify and categorize existing traditional land use patterns that contribute to the characteristic urban form of the outport. Colour coding of sustainability criteria begin to depict the vernacular arrangements of sustainable developments in the region and associate each case study with specific sustainability goals. These case studies form a workbook to be read, added to, and redrawn based on local knowledge of community members.



pouch cove

population: 1,866
growth rate (2006-2011): 6.3%
available gas tax funding: \$321,000
<http://pouchcove.ca/site/>



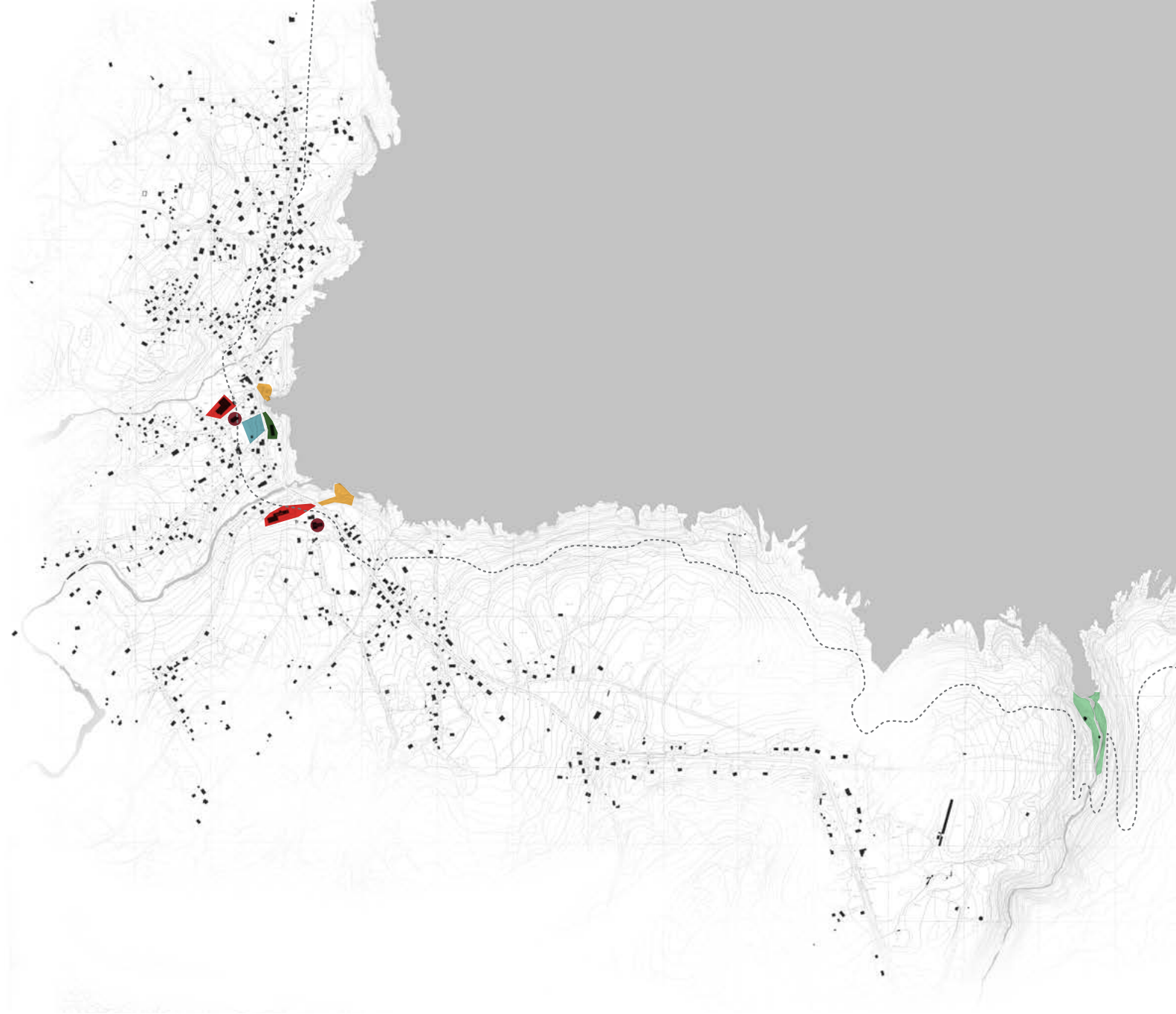
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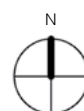
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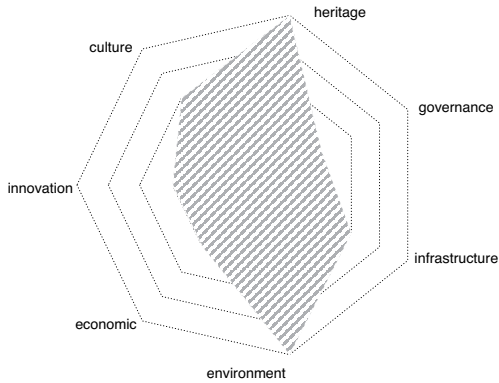
Pouch Cove was settled by outlaws. During the early migratory fishery, English fishing boats would travel community to community to retrieve all the European fisherman to take them home. It was illegal to settle here in Newfoundland. Pouch Cove became a haven for deserters because of its treacherous harbour which is unsuitable for large vessels due to strong winds and rocky cliffs. Even landing small boats was difficult. The cliffways of pouch cove were transformed by walkways, slipways, and fishing stages which became the gateway to fishing grounds to the north, near Biscayan Cove. The elaborate and delicate infrastructure of winches, pulleys, and small-scale wooden boats was essential to the economy of the town. Although these techniques were used elsewhere on the island, the slipways at Pouch Cove were unique in their rigour and effort, and represent local ingenuity. Currently only two slipways remain, each with its own winch-house. This early innovation remains as part of the fisheries heritage of the province, telling Newfoundland's early story, while continuing to support local fishing practices and harbour culture. The slipways are currently under construction for repair since damage from the hurricane in 2010.

1. Fishing Stages, Flakes and Slipways, Pouch Cove. The chaotic architecture of the shoreline allowed for access to fishing grounds.
2. Shoreline, 2011. This photo shows the great loss of vernacular structures on the shoreline.



- the slipways, winchouse and locally owned dories
- shoe cove, abandoned
- town hall/museum/firestation
- kirby's public gardens
- public school
- church
- east coast trail stiles cove path





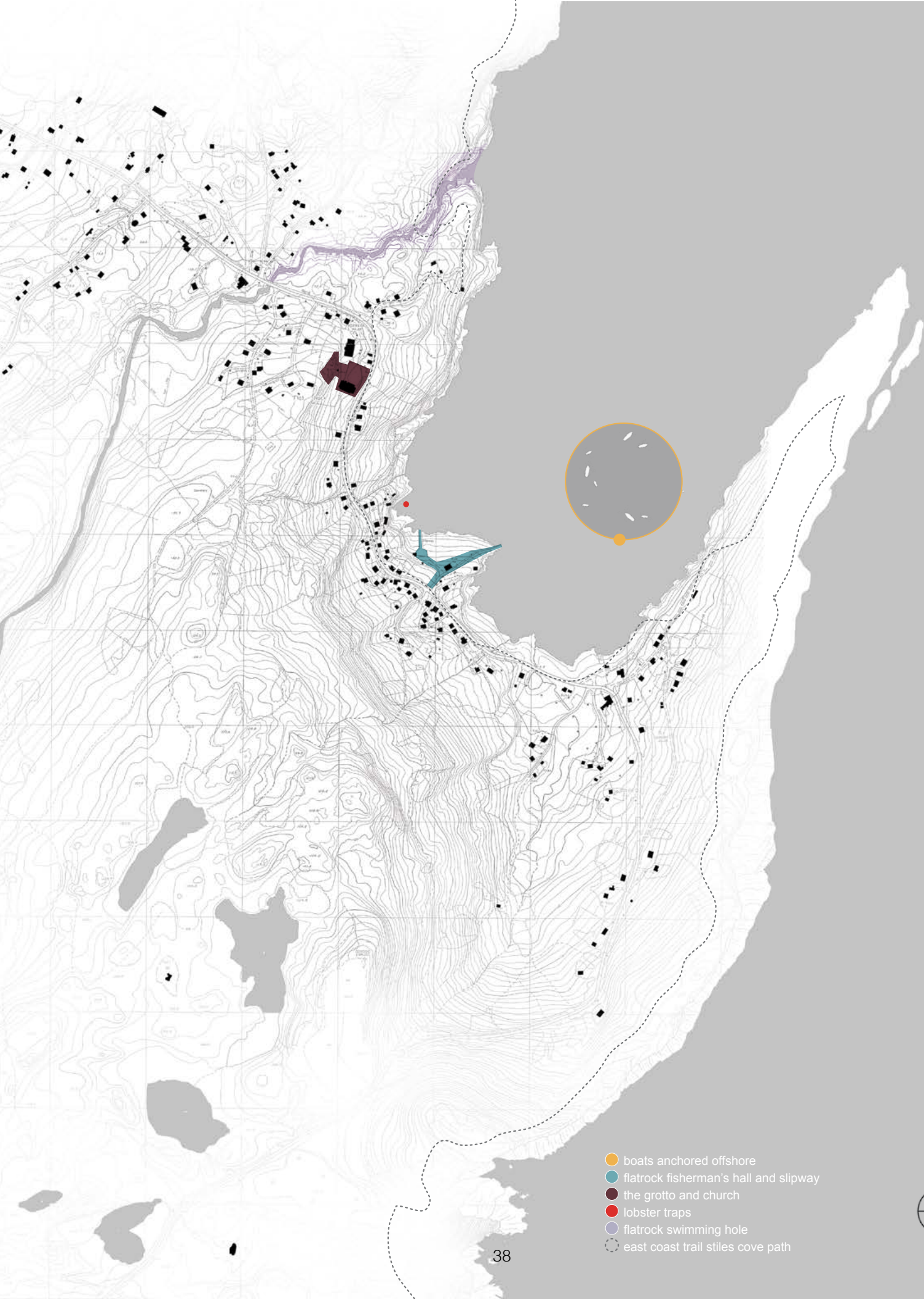
flatrock

population: 1457
growth rate (2006-2011): 20%
available gas tax funding: \$231,000
<http://www.townofflatrock.com/>



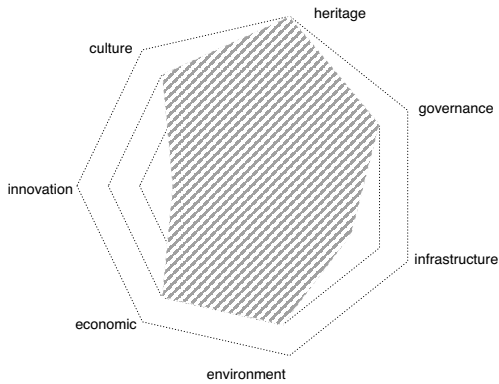
The swimming hole in Flatrock has been used as a space for leisure, since a permanent community settled there in 1762. The swimming hole takes advantage of the specific geology and hydrology of the place, following the carved out rock along a river where freshwater brings nutrients to the salt-water harbour. This estuary supports unique local wildlife such as seals, marine mammals and seabirds which come to feed in the spring and fall. Small rivers such as this one are typical along the Avalon Peninsula and contribute to the special inshore ecology along the eastern Avalon. These rivers also acted as a source of fresh water, especially attractive for cleaning fish in the early days. Having been to Flatrock a few times, I didn't even know this swimming spot existed- the location of the swimming hole is part of a local knowledge set. In the summer, the swimming hole is a place for recreation, leisure, and gathering. The swimming hole in flatrock has an especially nice natural whirlpool. This natural feature bridges between generations in the local community, and encourages local stewardship and respect of the natural environment to protect it for years to come.

1. The Grotto is a religious landmark in Flatrock. It is built directly into the landscape, and was visited by the Pope.
2. The swimming hole is a popular hiking destination, and in the summer it is full of locals going for a swim.



- boats anchored offshore
- flatrock fisherman's hall and slipway
- the grotto and church
- lobster traps
- flatrock swimming hole
- east coast trail stiles cove path





torbay

population: 7,397
growth rate (2006-2011): 17.8%
available gas tax funding: \$1,070,000
<http://torbay.ca/>



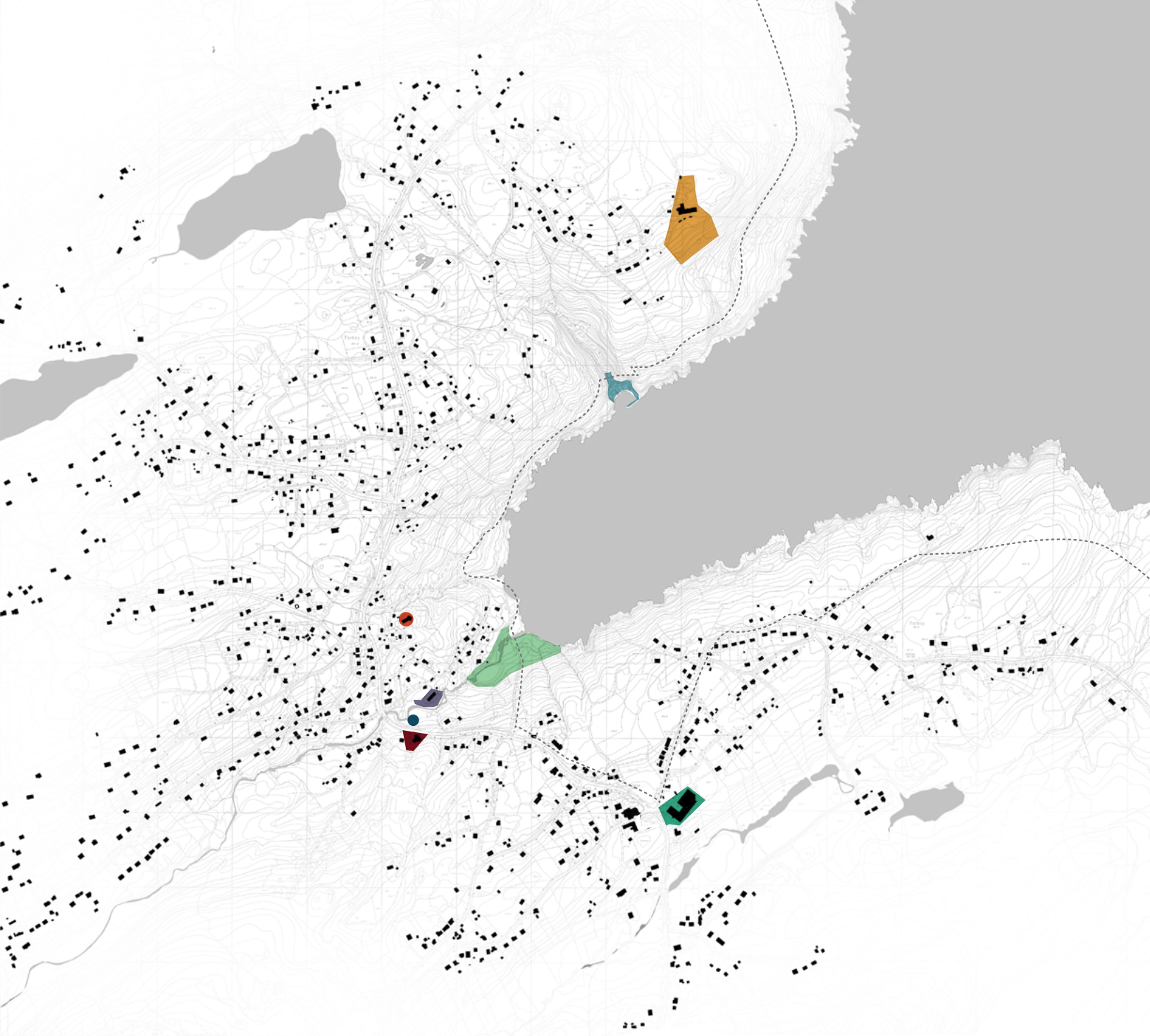
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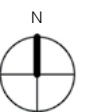
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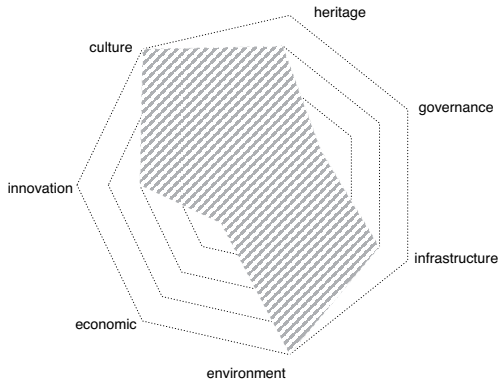
Liddy's Tavern was Newfoundland's oldest hotel. Built in the early 1800's, the six-room upstairs portion was popular to honeymooners and tourists who took the coastal boat service from St. John's. Locals were not originally let into Liddy's until 1949 when the hotel portion was closed. Since then, it has developed into a popular community bar that hosts local events such as card games, senior nights, and provides a venue for daily local gossip. The significance of the local pub within a rural community goes beyond its function as a business, and beyond the sale of food or alcohol. The pub becomes integral to the social practices of the community- it is used as a multi-functional social space which fosters local culture and encourages social interaction and develops relationships between community members. These seemingly casual social relationships create a bonded social network which develops the capacity of the community to work together. The building has been adapted so many times over the years that it is difficult to find remnants of the original architecture. Torbay also has a

1. Liddy's Tavern, 1982. The original architecture, which has been severely altered can be seen on the top floor in this photo. The extension on the right was added in the 1930's.
2. Liddy's Tavern, 2011.



- liddy's tavern and former hotel
- torbay beach
- holy trinity elementary school
- summer vegetable stand
- public wharf (small craft)
- farm
- church
- east coast trail





middle/ outer cove

population (logy-bay, middle cove and outer cove):: 2,098

growth rate (2006-2011): 6.1%

available gas tax funding: \$358,000*

<http://outercove.newfoundland.ws/>



1.

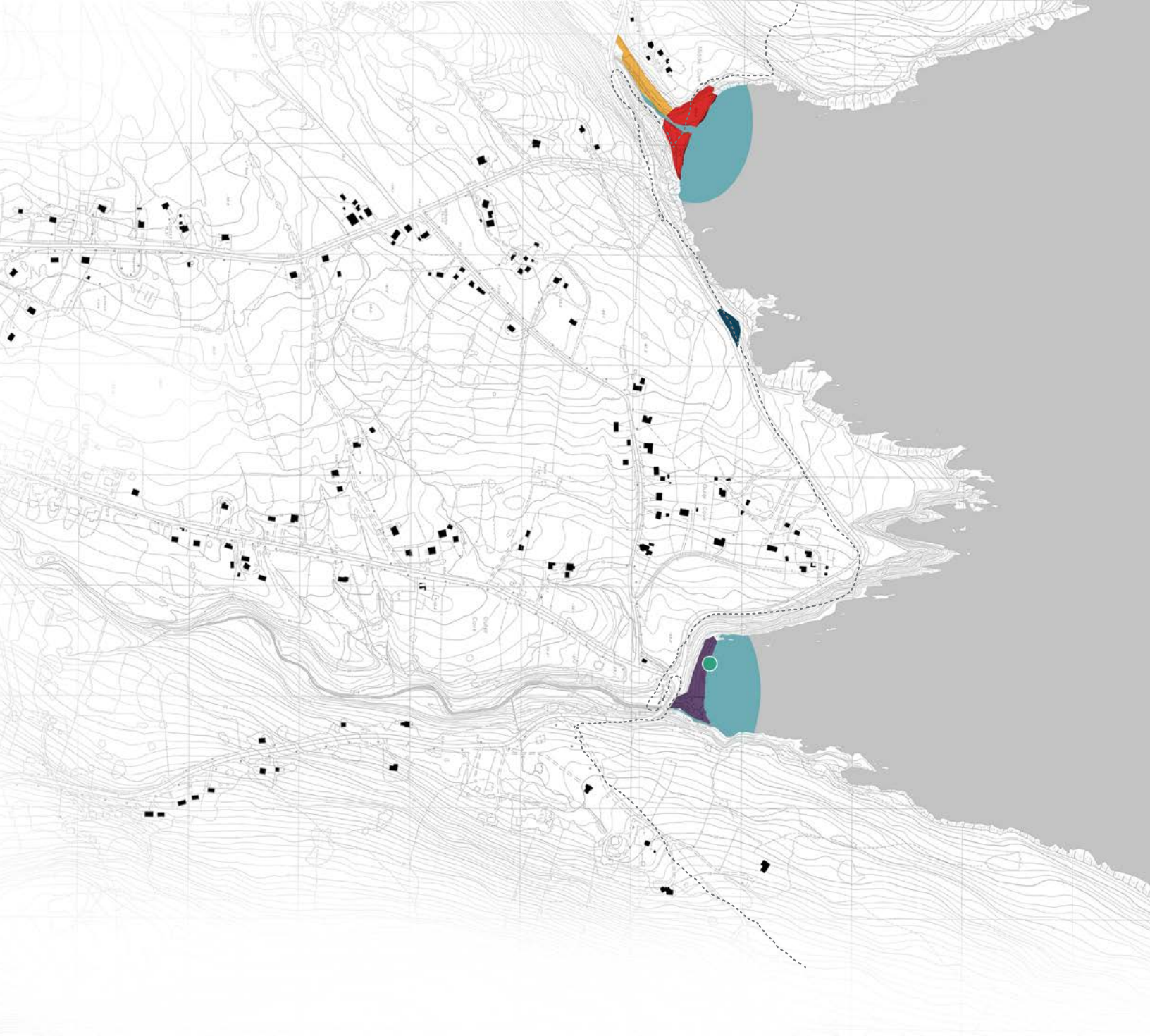


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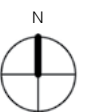
The beaches at Middle Cove and Outer Cove have been used for a variety of purposes throughout their history. Originally covered in fishing stages, the beaches provided a launching point for fisherman, with an added bonus: capelin. Capelin are a small bait fish, which are fed on by seals, whales, cod, squid, mackerel and seabirds. In June, the capelin “roll” in key locations, such as Middle Cove and Outer Cove to spawn. The capelin scull draws a few thousand visitors to the beach every year. Some of the fish are harvested by locals for food, and thousands of pounds of the fish are spread on gardens as a fertilizer. The use of capelin since the 1800's has helped enrich the soil and make the area productive for farming, with both gardens and dairy farms providing goods to St. John's until the 40's. The first trans-atlantic communications cable was landed here in 1953, making the beaches an important landmark. Middle Cove was designated as a provincial park in 1979. The beaches here have transformed as our use of them has. Considered first as physical infrastructure for the fishery, the beach now has a strong cultural meaning as it continues to bring people together in a yearly ritual to transfer traditional knowledge and appreciate our marine ecosystem.

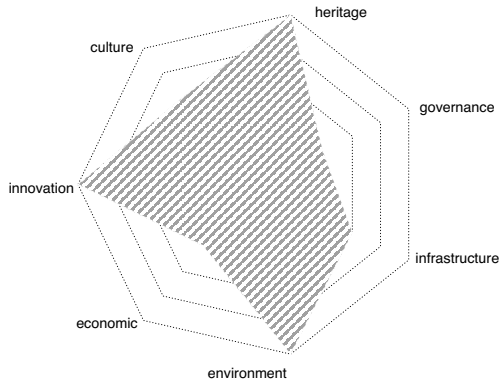
1. At the Capelin Scull, 2010.

2. Laying the Trans-Atlantic Cable, August 23, 1953.



- middle cove beach provincial park
- parking lot
- lookout
- yearly capelin scull
- transatlantic telecommunication landing site
- outer cove beach
- east coast trail





logy bay

population (logy-bay, middle/outer cove):: 2,098
growth rate (2006-2011): 6.1%
available gas tax funding: \$358,000*
<http://outercove.newfoundland.ws/>



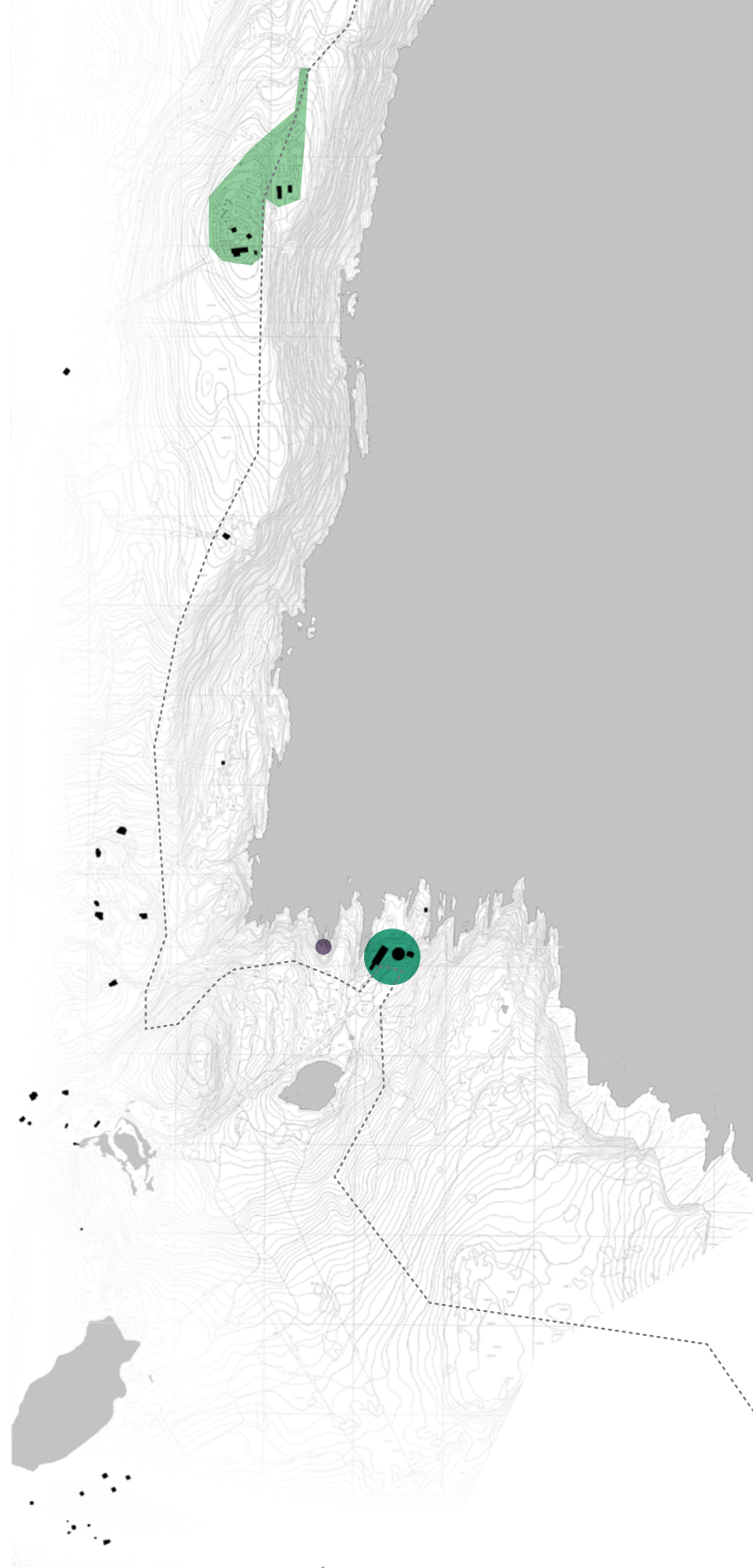
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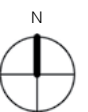
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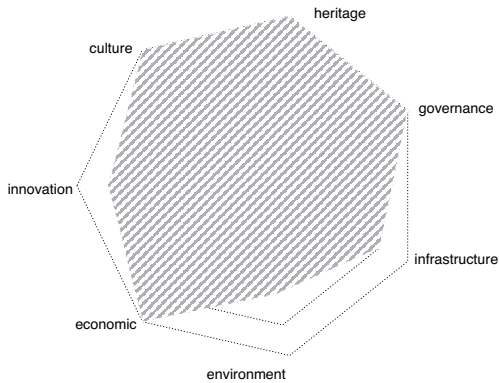
The harbour at Logy Bay was never formally developed for the fishery. Due to its proximity to St. John's, the Red Cliff Radar Station was built in 1951 for the Northeast Air Command Centre, financed by the Americans, to help local air traffic to navigate and to detect potential threats. Fighter jets could be airborne in a matter of minutes, but the station was also used to address May-Day calls and search and rescue missions. As technology advanced, the station and its 246 military and civilian employees were declared redundant the base closed in 1961. The harsh, windy environment has turned the complex to a ruin. Located along the East Coast Trail, the old radar station is a destination for hikers. The site has been reclaimed as a space for some underground activities such as graffiti, and a thriving paintball culture which has overtaken the ruins. Although this site is a landmark in the military heritage of the province, the innovation, and self-organization of local youth have proven the ability of the community to develop new social and cultural practices and re-use local infrastructure. Further along the trail, a fresh water spring believed to have health benefits was once the site of a spa at Logy Bay. The abandoned site is found at the edge of the Ocean Sciences Centre parking lot.

1. Red Cliff Radar Station, Paintball Playground, 2011
2. Spa at Logy Bay,



- ocean sciences research centre
- spa at logy bay (natural spring, closed 1850)
- ruins of former red cliff radar station (built 1951)
- east coast trail





st. john's

population: 106,172
growth (2006-2011): 5.5%
available gas tax funding: \$16,730,000
<http://www.stjohns.ca/>



1.



2.

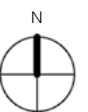
While urban areas are defined by characteristics such as density, rural areas are defined by what they are not. There are cultural and physical boundaries that divide rural areas from urban areas. The physical demarcation between rural and urban cultural identity is a landmark called the 'overpass'. *"The actual structure was built in 1959, the first overpass in Newfoundland. But it has come to symbolize a dividing line between urban and rural, the haves and the have-nots, townie and bayman. A mythical line in the sand."*⁴ Cultural boundaries have physical implications and expressions. And yet, cultural landmarks, such as Signal Hill are important connectors within communities. This World Heritage site is a tourist destination, but more importantly an asset for recreation with a scenic trail up what feels like a mountain. It is also a social space- at 2am on a friday night, it is difficult to find a place to park. The view is spectacular, providing a free place for people to sit and reflect on the city.

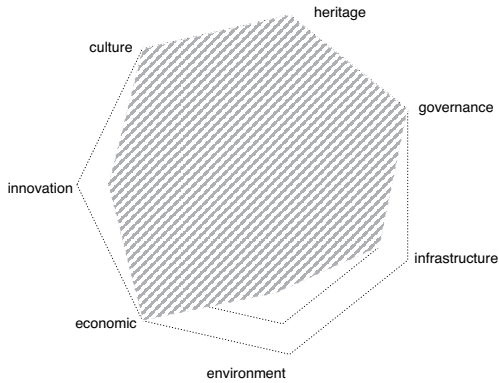
1. The overpass by Art Aubrey Smith depicts tensions between rural and urban communities in Newfoundland.

2. Overlooking the city, Signal hill, 2011



- signal hill
- fort amherst
- oceanex shipping
- dry docks
- port authority of st. john's
- the overpass
- small craft harbour
- east coast trail





petty harbour

population: 924
growth rate (2006-2011): 1%
available gas tax funding: \$182,000
<http://www.pettyharbourmaddoxcove.ca/>



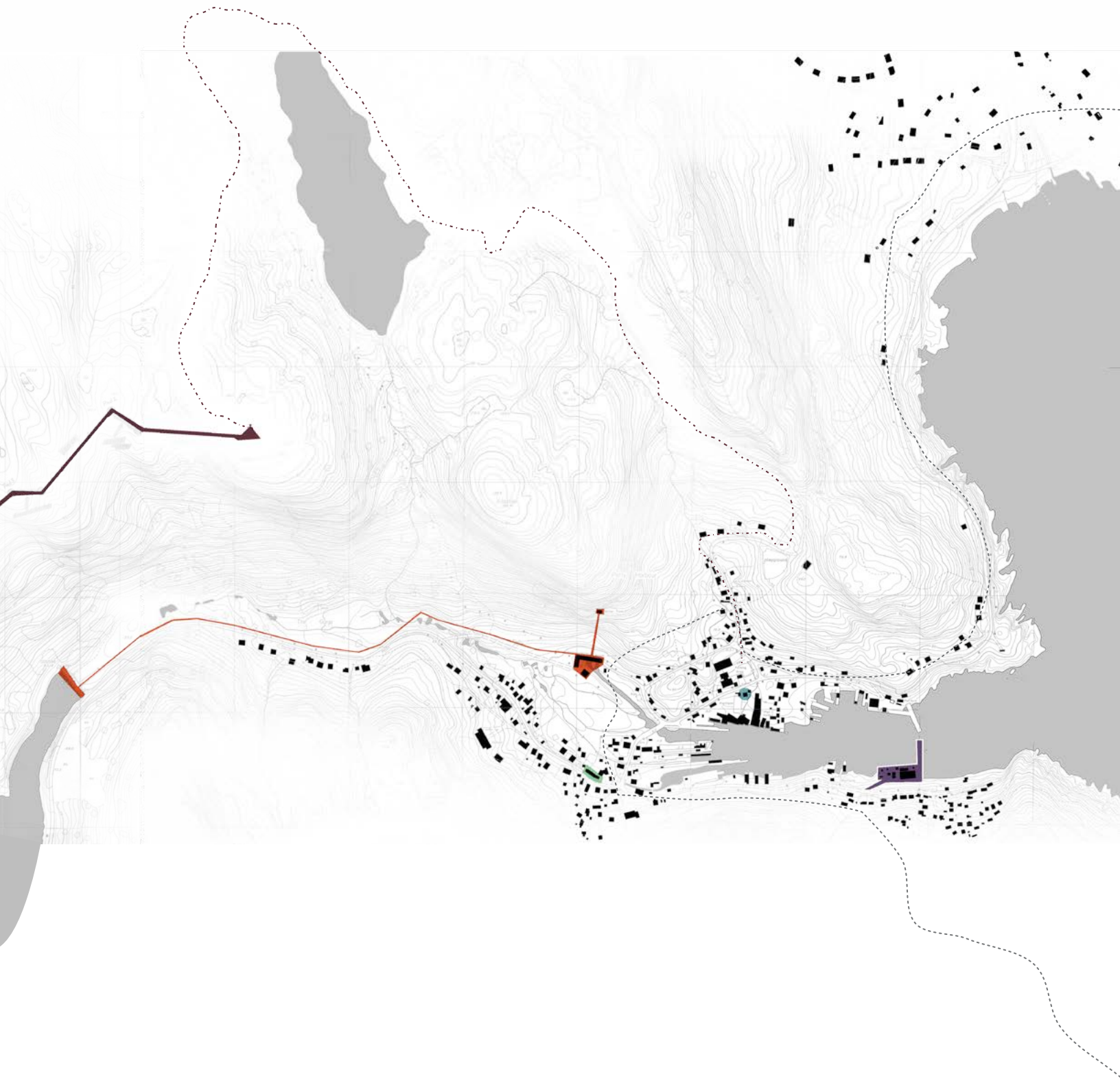
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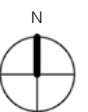
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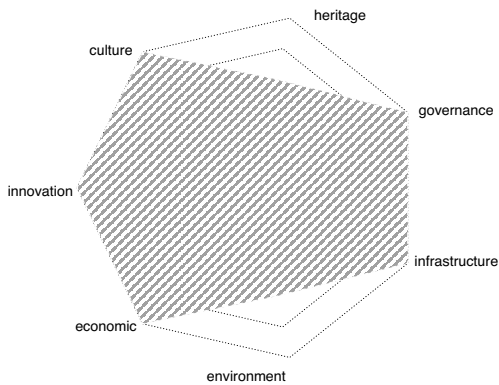
Herbie's general store was built in 1933 from locally sawn and milled lumber. In 1955, it was sold to Herbert and Margeurite Weir. Weir's general store, always known as Herbie's was a meeting place for local people and most of the local news was exchanged here. In 2001, the shop's merchandise was changed out for local crafts and folk art. The shelves hold the work of 102 craftspeople from across the province. Knitting, sewing, rug-hooking and other traditional products are sold from May 20th to December 24th and supplement incomes of many Newfoundlanders and Labradorians that are part of the informal network of the craft economy. Now conversations in the shop are to tourists. Although the shop has lost its social significance in the community, it promotes small scale production and bridges between formal and informal outport economics. Just down the road, the Petty Harbour Canvas Co. has been open for 8 years and offers a modern take on local craft culture. The company specializes in sewing canvas and heavy fabrics for boats, boat covers and other heavy-duty applications. This is an adaptation from the sewing skills required as part of local fishery knowledge and represents a hybridization of traditional production methods and modern materials and technology. Immaterial culture, such as the North Atlantic Zipline tours provide an alternate as an experience economy.

1. Herbie's Olde Shop, Petty Harbour, 2012.
2. North Atlantic Ziplines over Petty Harbour, 2011.



- petty harbour hydroelectric generation station (1910)
- petty harbour fisherman's co-op
- canvas co.
- herbie's olde shoppe
- north atlantic zipline
- east coast trail





bay bulls

population: 1283
growth rate (2006-2011): 19%
available gas tax funding: \$181,645
<http://www.baybulls.com/>



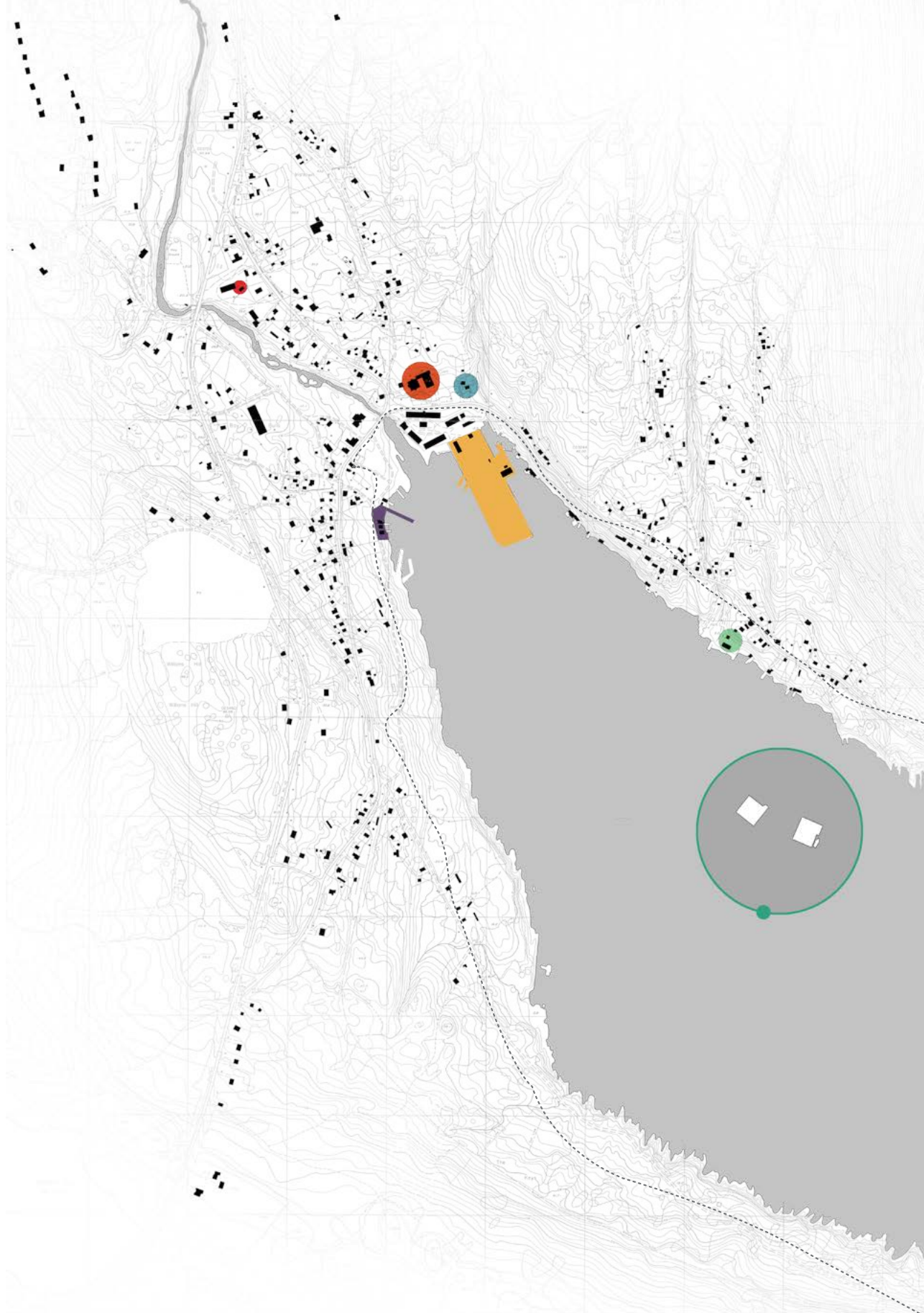
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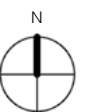
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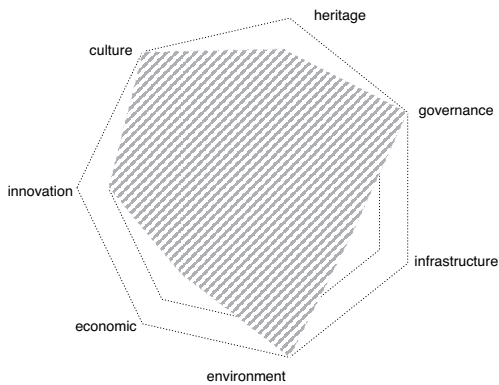
The O'Briens were a traditional fishing family. They were even stars of a CBC documentary about the fishers of Bay Bulls in the early seventies. In 1992, the moratorium put a halt to this family tradition due to mis-management of North Atlantic Cod Stocks and an abrupt stop to the fishery. Many fishers were left without prospects, but the O'Briens found a way to continue to use their fishery skills, local knowledge of the area and even their fishing boats in a new way. The idea to start the company came from researchers who suggested that people would pay local fisherman to give them tours of the Witless Bay Ecological Reserve. The O'Briens took the advice and converted their family fishing boat into a tour boat. The business has since expanded to include a second boat, restaurant, and there are plans to make an educational area for children in a neighbouring building to help share the knowledge of the local ecosystem with the younger generation. The O'Briens have become important stewards for the ecological reserve, as they work with local researchers reporting and monitoring whale and bird sightings on their four trips a day during peak season.

1. Still of Joe O'Brien from CBC documentary called "The Young Fishermen of Bay Bulls" (1972)
2. O'Briens Whale tour, May 2011



- c & w marine fabrication
- bay bulls marine terminal
- ➔ o'brien's whale and bird tours
- gatherall's whale watching tours
- nl tourism office
- elementary school
- experimental aquaculture cages (no boat traffic)
- ⋯ east coast trail





witless bay

population: 1,179
growth rate (2006-2011): 10.2%
available gas tax funding: \$207,366
<http://www.townofwitlessbay.com/>



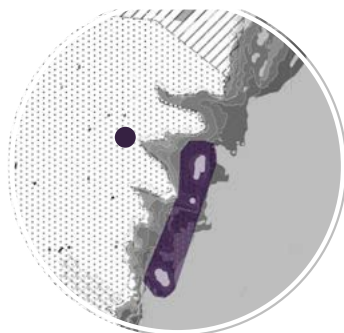
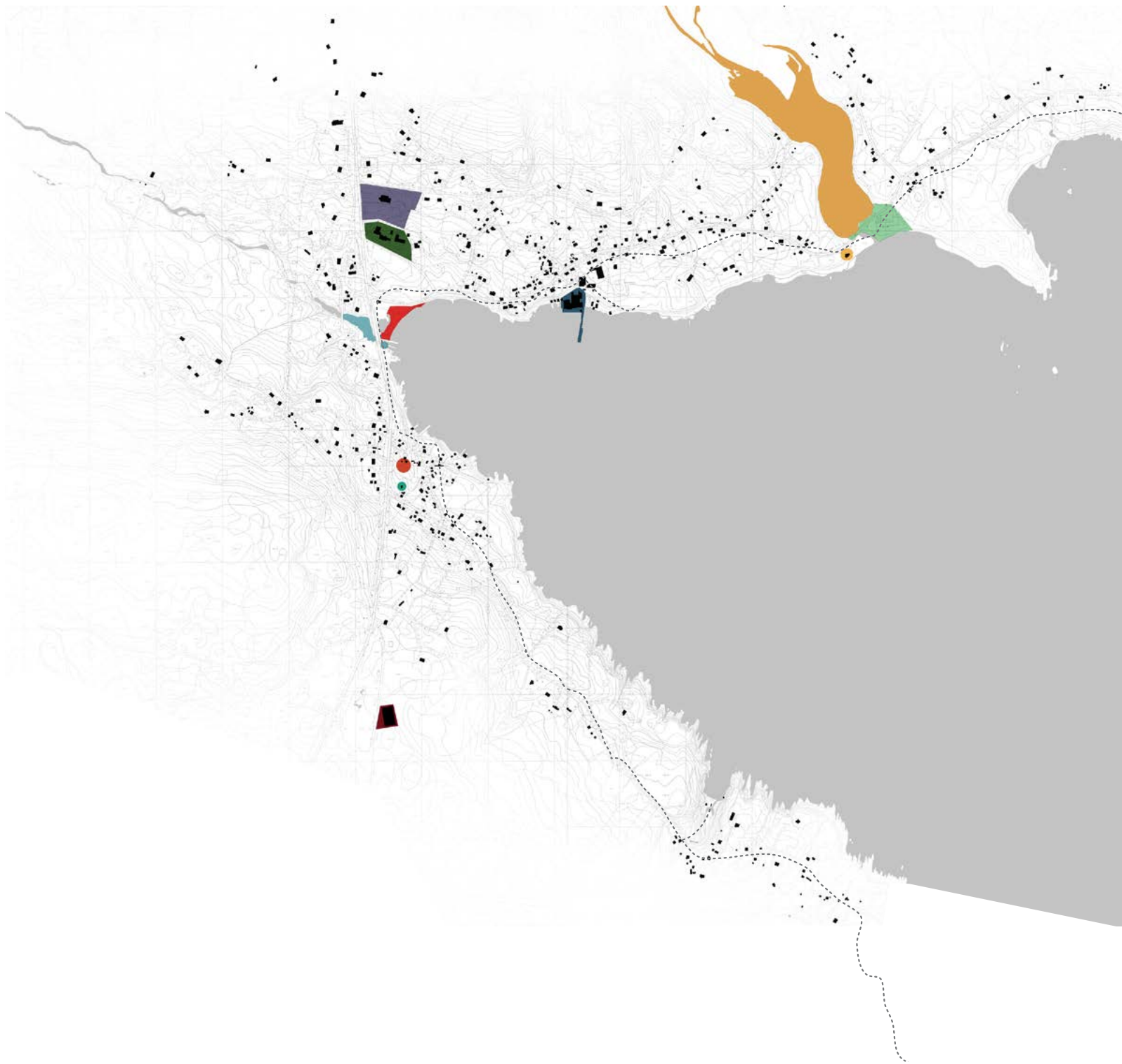
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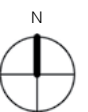
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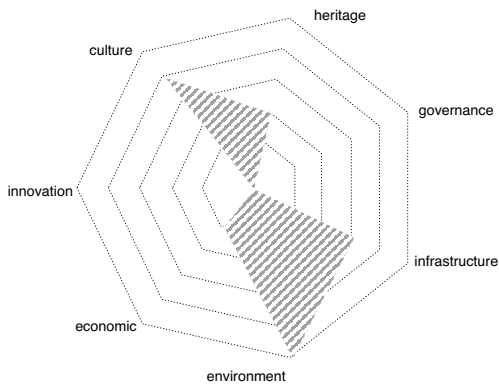
The Witless Bay Ecological Reserve was designated in 1964 to protect local seabird colonies which only land to breed in the summer months. The reserve is home to about 90,000 puffins and Newfoundland boasts the largest colony of puffins in the world. From August 20th to September 20th every year, puffin patrol hits the streets of Witless Bay and Bay Bulls. Juergen Schau saw that puffin chicks or 'pufflings' were common road kill in the area as they were attracted by lights in the nearby community and hit by cars as they travelled towards the lights. The campaign also asks local business and residences to dim their lights which confuse the birds. The patrol is mostly made up of local youth and their parents who capture lost birds and release them into the ocean the next morning. The Canadian Wildlife Service have granted the patrol permission to temporarily rehabilitate the birds until they can safely be released. Residents of Tors Cove and Mobile have also become part of the effort and the patrol saves up to 50 pufflings a year. This is a great community effort that represents local social cohesion through great community participation as well as the strong stewardship of local wildlife while providing learning opportunities for the children and families of the area.

1. Seabird Colony at Witless Bay Ecological Reserve, 2011.
2. Children of nearby communities participating in the Puffin Patrol, 2010.



- witless bay ecological reserve
- witless bay area conservation group (lower pond)
- visitors centre
- park
- public wharf, zodiac tours
- NL Parks office
- southern shore arena
- puffin patrol release point
- holy trinity convent and chapel
- st. bernards elementary school
- shawmut fisheries ltd.
- east coast trail





mobile, designated place

population: 139
growth rate (2006-2011): -37.1%
available gas tax funding: 0
<http://mobilian.tripod.com/#1912>



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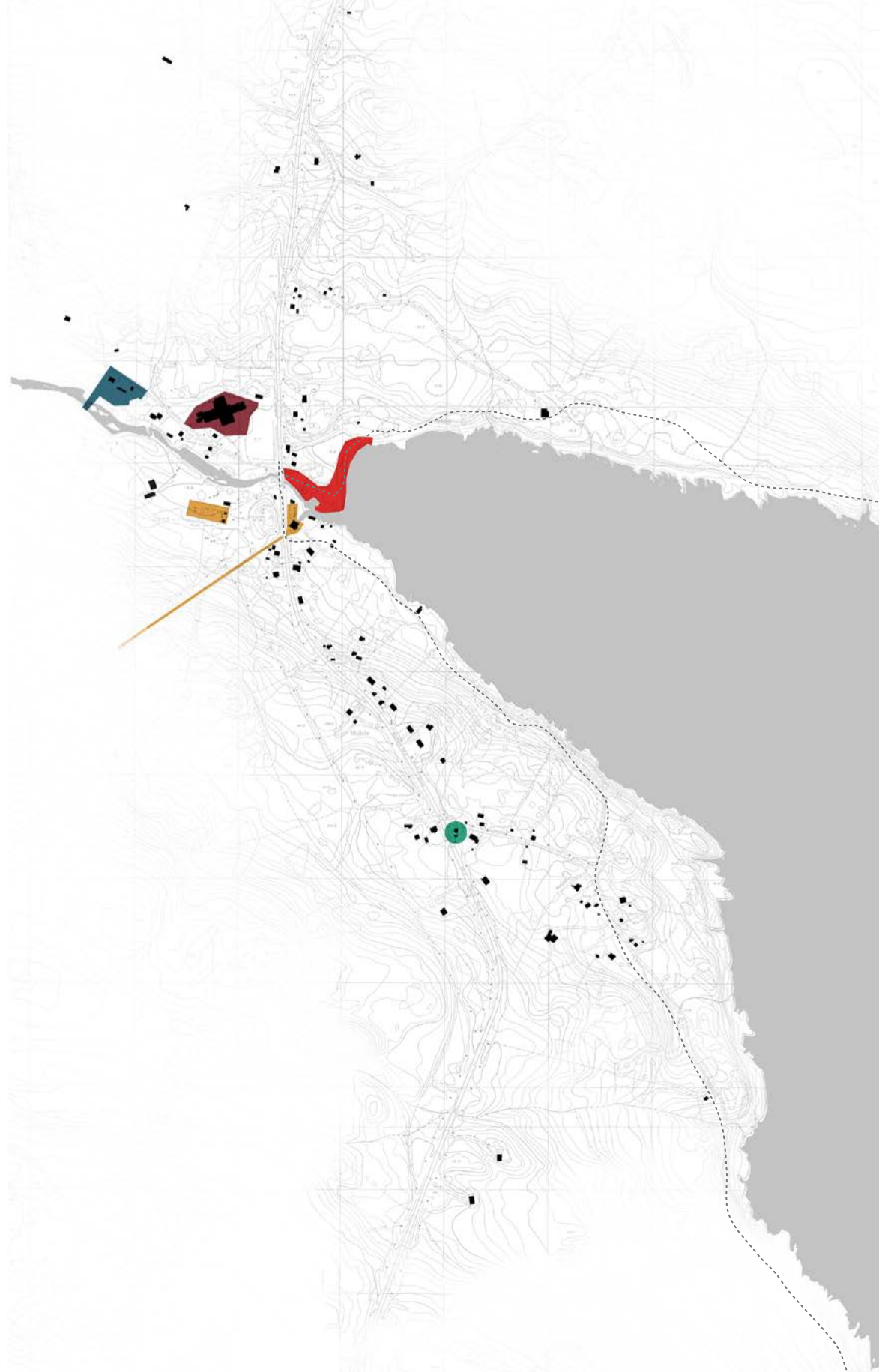


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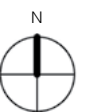
Maher's Sawmill, operated since 1912, cuts, saws, and planes local lumber and timber. The original mill captured the energy in the nearby Mobile River to run a waterwheel which powered mill equipment. Three generations of Mahers specializing in finished lumber can be found on Mill Road, just off Highway 10 near the top of the hill on the south side of the Mobile River valley. Wood cutting in Newfoundland has accounted for great degradation of local forests. 150,000 cords of wood are burned annually in Newfoundland and Labrador partially due to the high cost of heat, and also as part of traditional use. Woodpiles scattered across the outports of Newfoundland have become part of the architecture of the outport as the wood seasons and dries. Small saw mills like Maher's allow locals to use domestically cut lumber for more than just fuel- giving builders, woodworkers and craftsmen the ability to gather affordable local materials. For \$21.00, domestic woodcutting permits are granted which allow cutting 6 cords of wood. Local mills such as Maher's play an important role in the rural economy and are positioned to develop the relationship between woodcutters and their forests, increasing the capacity and educating local woodcutters to practice better stewardship of their forests. Mobile is also home to a micro hydro generating facility that produces clean electricity. Several communities along the coast also have these stations. This one produces 10.5 MW and was built in 1951.

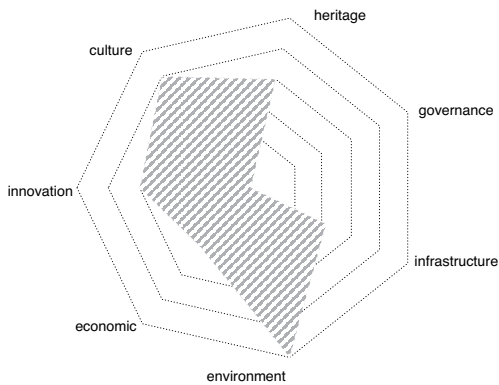
1. NL Power Micro-station in Mobile, 2010.

2. Maher's Saw Mill, 2012



- maher's sawmill
- school
- hydroelectric generating station and transformer
- beach protected within witles bay ecological reserve
- the fitness/rental/liquor hut
- east coast trail





tors cove, designated place

population: 449
growth rate (2006-2011): 13.1%
available gas tax funding: 0
<http://www.fiveisland.ca/about/tors-cove/>



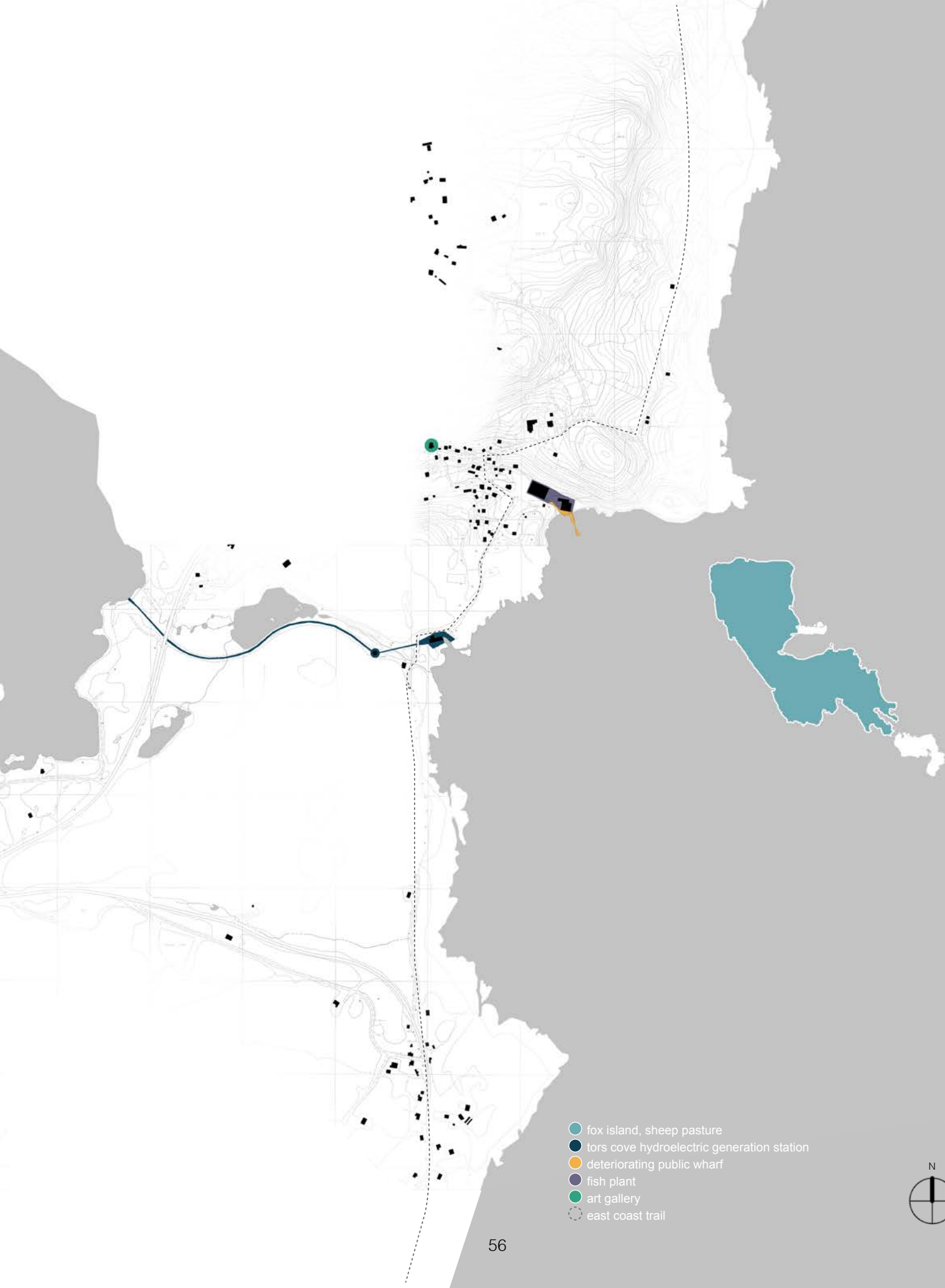
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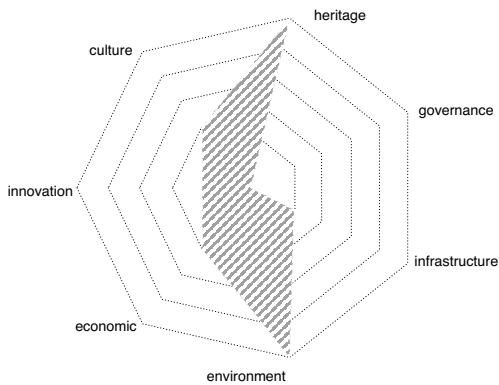
Since their appearance on the island in the late 1980's, coyotes have quickly spread throughout Newfoundland. This greatly impacted local sheepherders, who have since brought their herds to nearby islands in the spring and bring them back in the fall to avoid coyote encounters. Sheep have been farmed on the island since the 1600's and have developed into a distinct genetic base called the Newfoundland Local which have adapted to the harsh climate and local vegetation. At one point the total population of the Newfoundland was a meager 125, but with management by local farmers, researchers and rare breed organizations, the population has grown substantially. The breed is still classified as critically endangered. Sheep are especially important to the textile traditions of Newfoundland. Handspun and hand-dyed wool is knit, hooked, and felted in the winter months and has historically been practiced by women. Even today these crafts and handiworks help to supplement the household economy in the outport and tie together the social network in the outport through knitters groups. Individual and collective (Sheep Producers Association of Newfoundland and Labrador) exhibit careful stewardship over ecological heritage, which helps to preserve the culture, traditions and landscapes of the outport.

1. Sheep in Dory, near Ship Island. This is an example of how sheep are transported to islands for grazing in the summer.
2. Disintegrating Wharf at Tors Cove will begin to limit activities in the town, 2011.



- fox island, sheep pasture
- tors cove hydroelectric generation station
- deteriorating public wharf
- fish plant
- art gallery
- east coast trail





la manche

population: 0

http://www.env.gov.nl.ca/env/parks/parks/p_lm/index.html



1.



2.

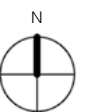
The Newfoundland government began 'resettling' over 200 small and isolated coastal communities in the 1960s. Entire populations were moved to larger centres where it was more economical to service them in exchange for payment. This was a very controversial policy, which the community of La Manche rejected. When a rogue wave from a tsunami destroyed local fishing stages and the suspension bridge which connected the two sides of the small fishing village, the provincial government refused to pay to have them rebuilt, forcing resettlement upon residents. Without connective infrastructure, residents were moved to nearby larger towns, such as Tors Cove and Bay Bulls. A new bridge was erected in 2000 in honour of the people who once lived there for generations, before the village was simultaneously destroyed and abandoned. The bridge has a span of 50 metres, and has been placed in the same location as an original bridge. Built by the East Coast Trail Association, the bridge is now a popular hiking destination for both tourists and locals. The bridge is a remarkable structure and it depicts the local ingenuity of La Manche's lost community members. La Manche has become a provincial park, protecting the unique cultural assets and ecological beauty of a lost, but not forgotten community.

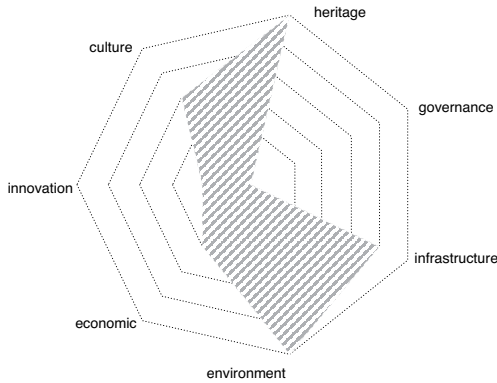
1. La Manche Suspension Bridge in its original condition in 1952.

2. Memorial Bridge, 2011.



- la manche provincial park campgrounds
- ruins of la manche village
- la manche bridge
- east coast trail



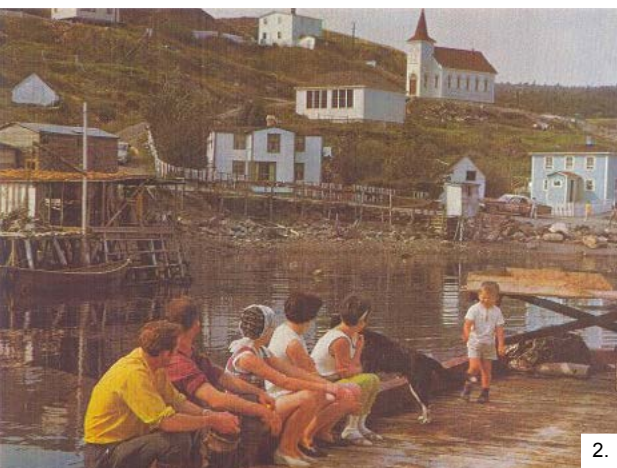


brigus south, designated place

population: 86
growth rate (2006-2011): -4.4%
available gas tax funding: 0
<http://www.brigussouth.ca/>



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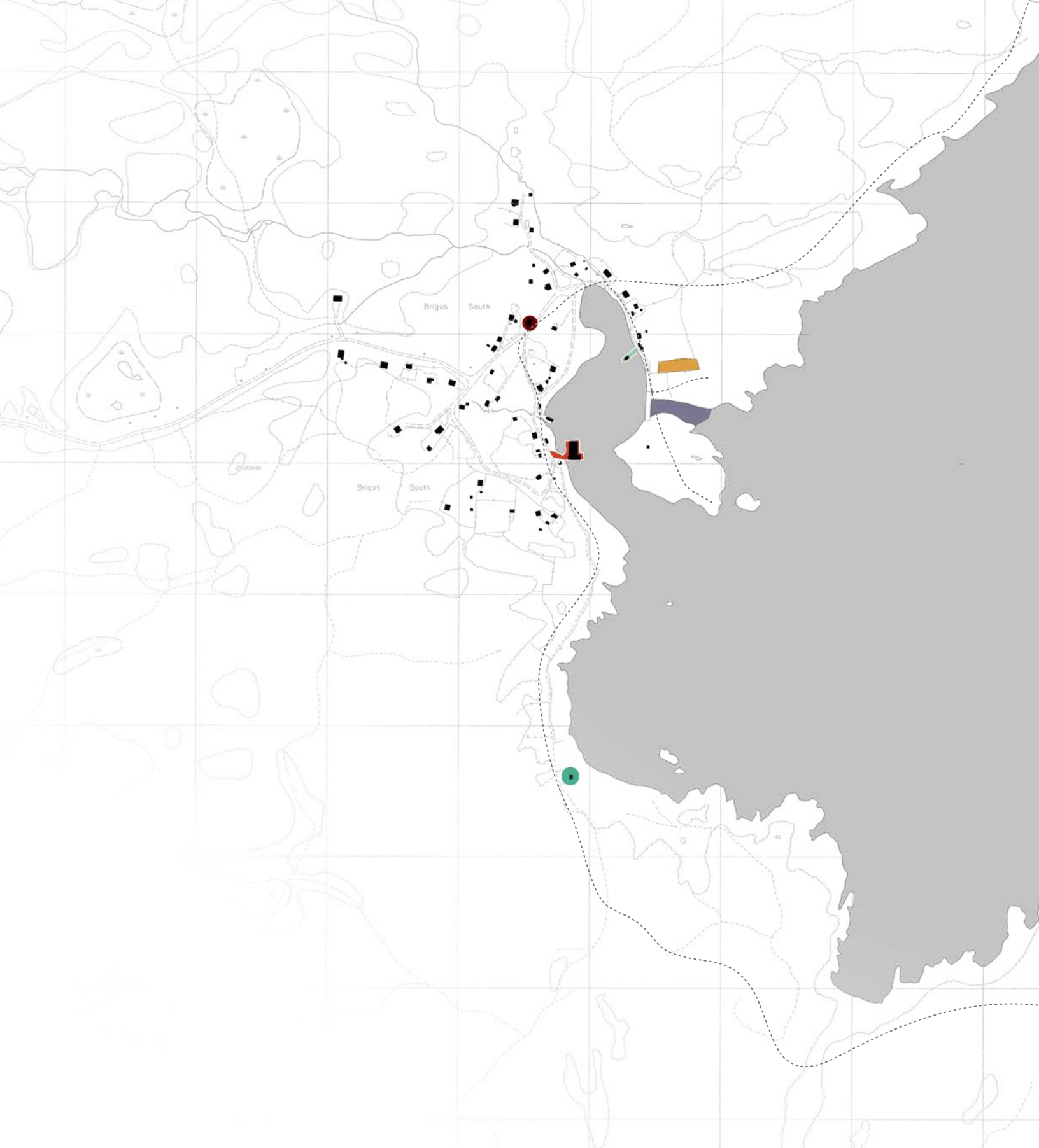


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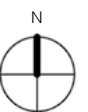
The small village of Brigus South has been used as a film set for local and national productions, including over 20 episodes of "Tales from Pigeon Inlet" and it was also used in the making of a film called "Welcome to Canada", funded by the National Film Board. Local people were cast in both productions, which used the community as the setting of the typical outport. Fishing stages, churches, sheds, and houses became the backdrop for the film and tv shows. Brigus south is scenic, small and contained, but has expanded into the cultural memory of Newfoundlanders as they watched the films. The expression of local iconography within the stories brings forward the identifying characteristics of the outport. *"The unique trait of these monologs [tales from pigeon inlet] was the use of folk talk ... incorporating vernacular language, conventionalized topics of conversation, traditional oral genres [beliefs, sayings, gossip, narrative] that people of the region think of as their own and give residents a sense of place."* The stories bring the outsider into the typological spaces and emotional meanings of the outport. This is the place of our imagination- of what Newfoundland should be like, or was like. These filming events temporarily expanded both the community and economy of Brigus South.

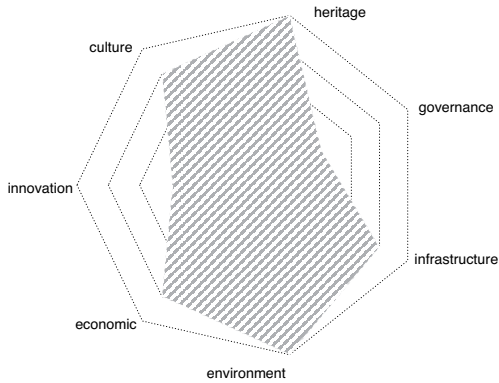
1. The cast of Tales from Pigeon Inlet, 1980.

2 View of Brigus South, late 1950's with old church in background.



- francis power's fishing stage
- site of old church
- lobster traps
- harbour authority of brigus south
- fibreglass structure
- cemetery
- - - east coast trail





cape broyle

population: 506
growth rate (2006-2011): -7.2%
available gas tax funding: \$120,245



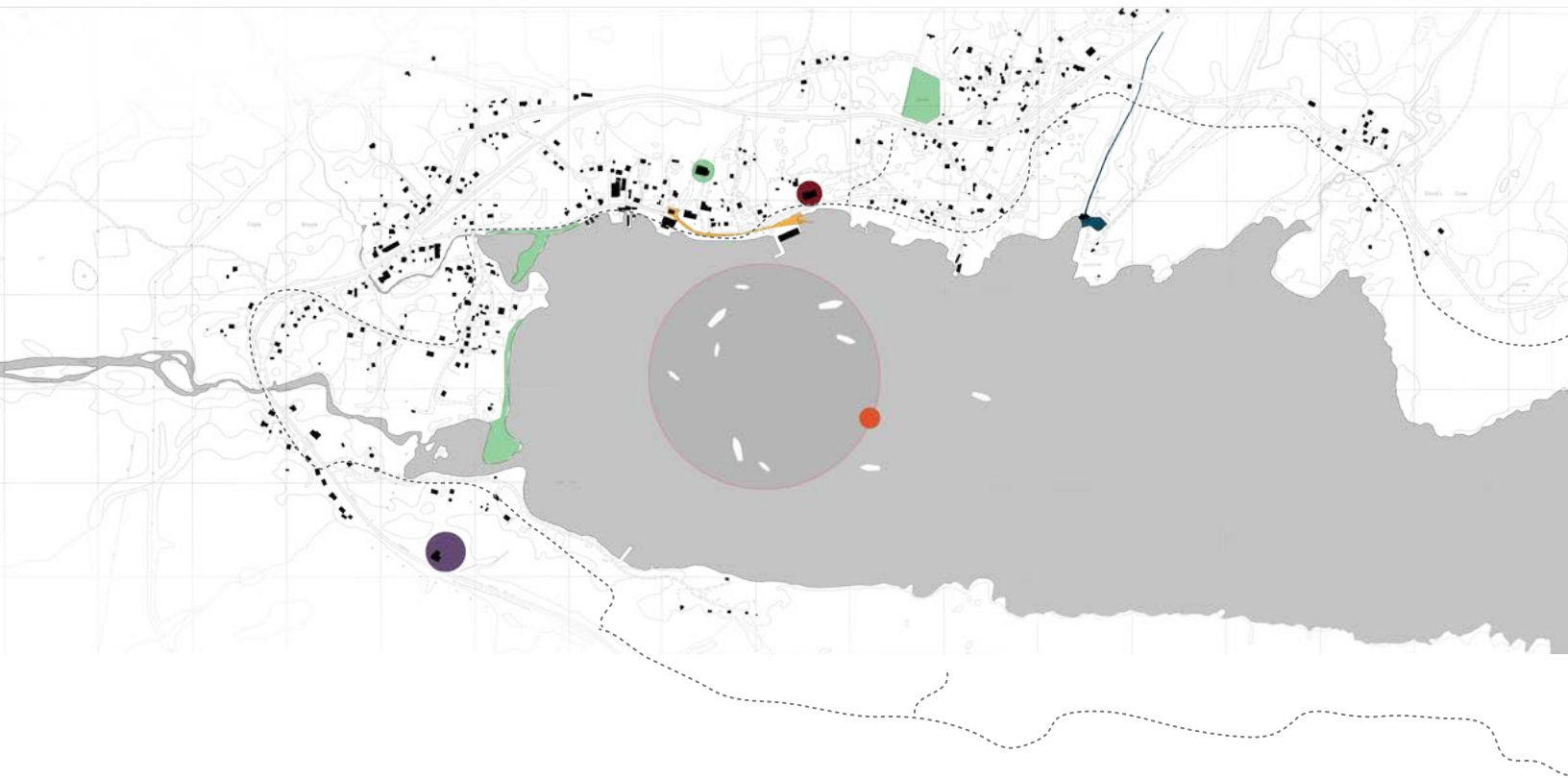
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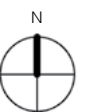
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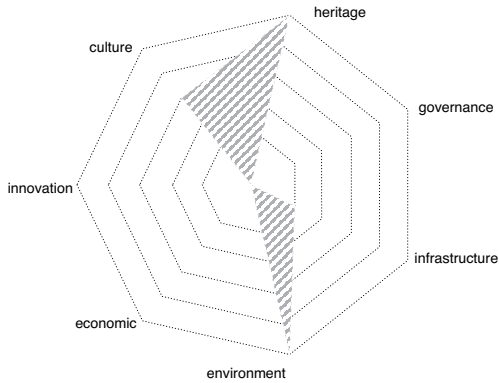
Across the province, various communities host events called "Come home Year", which invites all past and present residents of the community to come home. It is designed to bring everyone home at the same time, and the community population rises temporarily to reach its maximum. Many events were hosted; a flotilla, dances, a children's safety day, films and stories about the area, mass on the old cemetery, rug hooking, fireworks, feasts, and a hike along the east coast trail. Every event was hosted in a different part of the community- the important cultural places. These places are generally natural, or historical places, but also extend to larger spaces such as churches and community centres. The community hosts members of neighbouring communities who feel a connection to the local people, places and practices. Events this large don't happen in Cape Broyle often, only every five years. Events like this punctuate the lifecycle of the outport, exemplary of an entire effective community being brought together to celebrate their bonds to that place, to each other, and passing them on to future generations. Cape Broyle also has a growing casket manufacturing company, Dalton's caskets which was established in 1991 is starting to export off the island with funding granted by the provincial government.

1. Come Home Year Celebrations, 2005. The community is at maximum capacity for this weekend.
2. Dalton's Caskets, 2012.



- dalton's caskets
- come home year event space (2005)
- flotilla (2005)
- stan cook sea kayak
- hydroelectric generating station
- east coast trail





calvert, designated place

population: 255
growth rate (2006-2011): -18.5%
available gast tax funding: 0



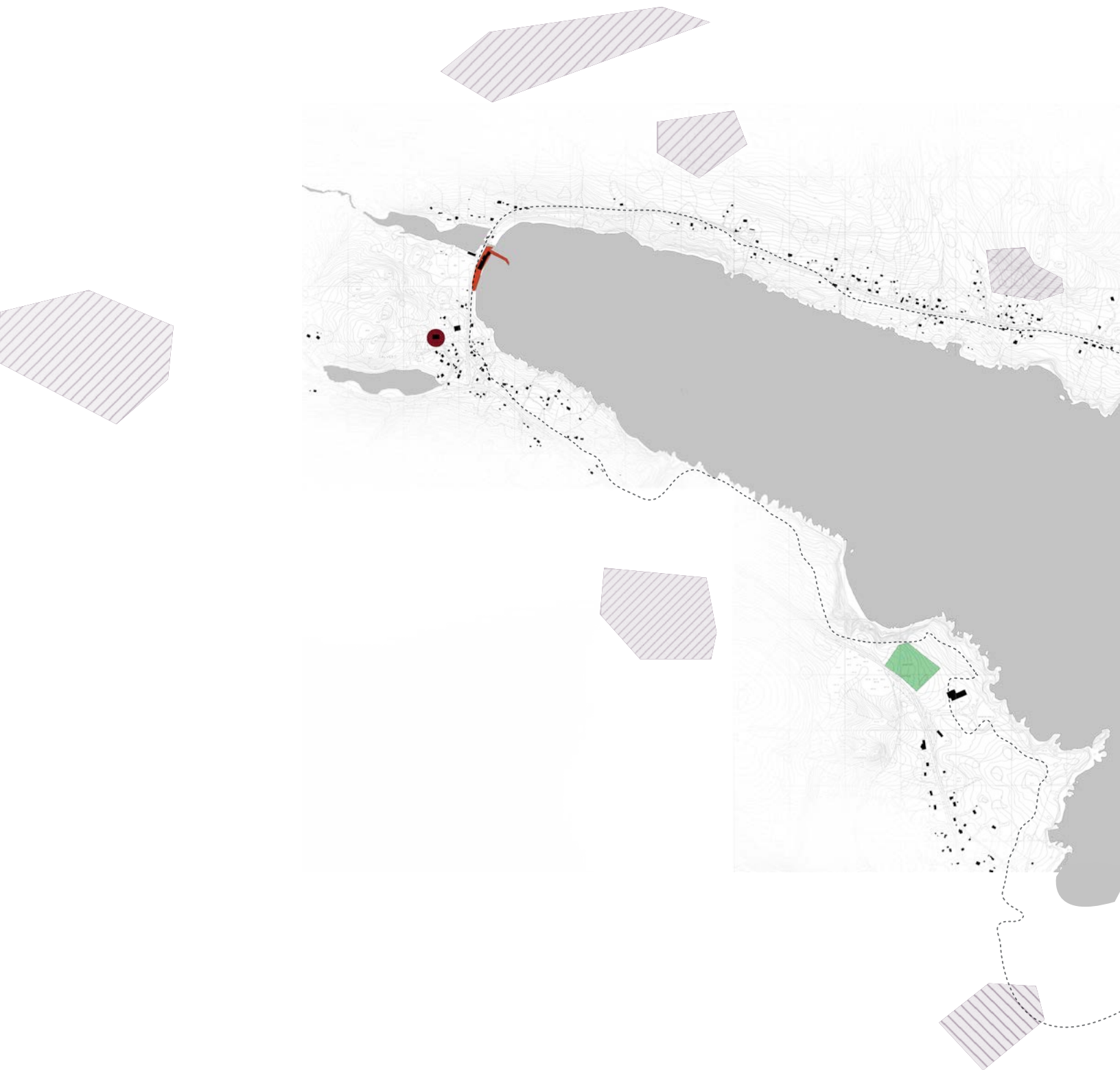
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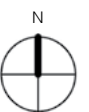
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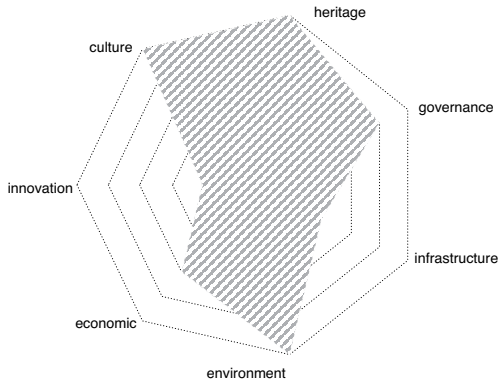
Sustenance practices occupy every landscape and ecosystem in the area. Once performed for survival, these practices are part of living heritage. Every resident in the community has the right to the common resources provided by these places. A distinct food culture has developed based on the availability of different food sources; berry picking, fishing, hunting or farming. But these daily, or seasonal practices are also social gathering places which bonds the community through heritage skills and teaches stewardship. Fishing berths were once distributed to the community by a locally organized random draw to ensure equal distribution of local resources. The shoreline in Calvert was, not long ago, covered with stages and fishing equipment. Now, the lone remnant of this community activity, the local harbour authority operates, oversees and protects the wharf. The harbour authorities program is overseen by the Department of Fisheries and Oceans, but each one is set up as a not-for-profit organization and run by local interest groups and harbour users. Over three hundred harbour authorities exist in Newfoundland and Labrador.

1. Church in Calvert, 2012. The Church was built in the late 60's and is a gathering place for several nearby communities.
2. Calvert Harbour Authority, 2010.



- calvert harbour authority and barry group processing plant
- church
- cemetery
- berry picking areas
- east coast trail





ferryland

population: 465
growth rate (2006-2011): -12.1%
available gas tax funding: \$117,590
<http://www.ferryland.com/>



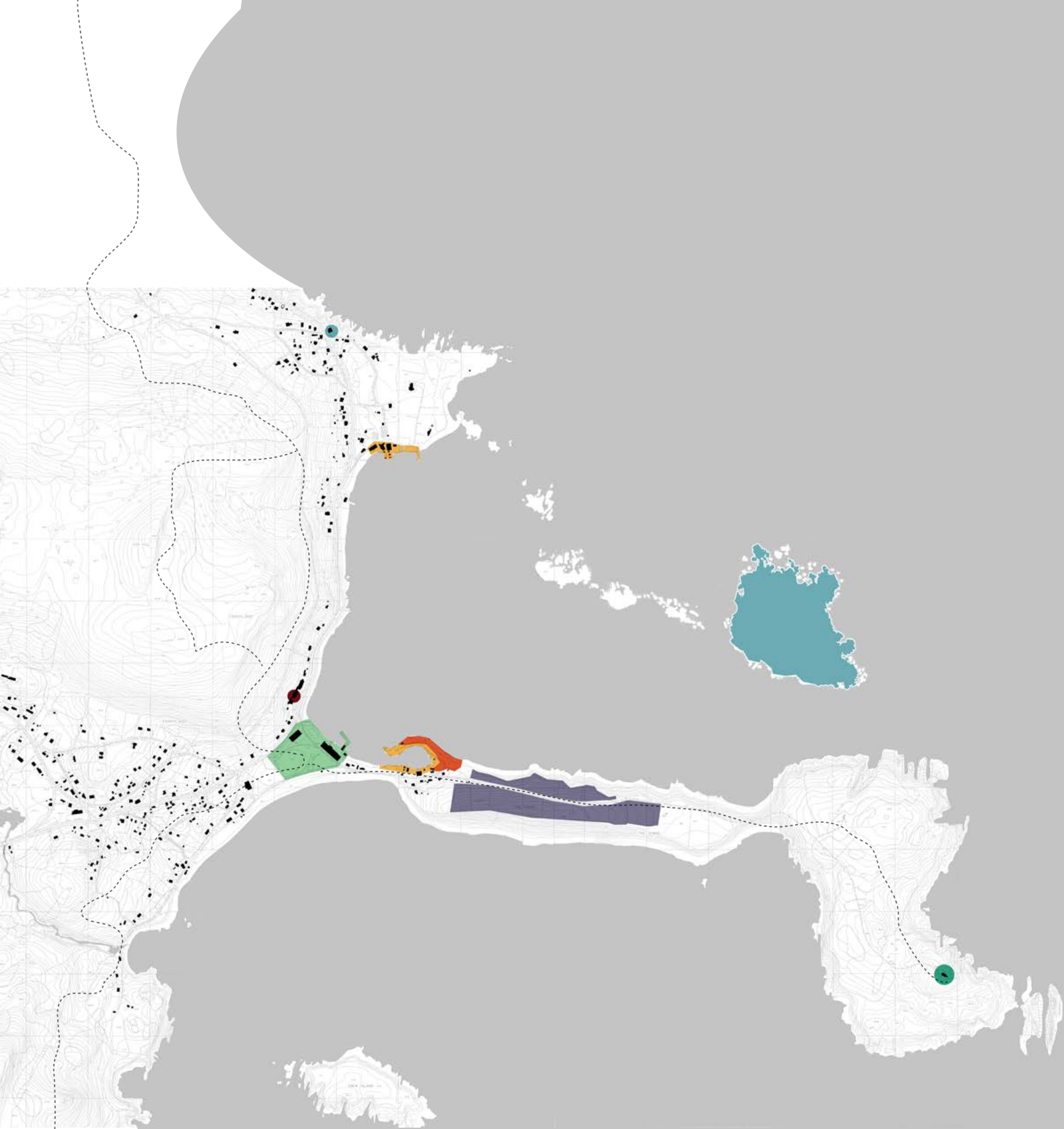
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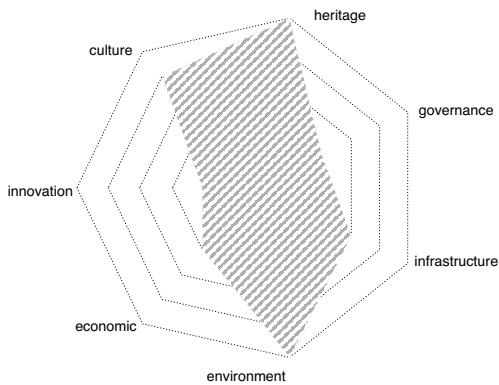
The Colony of Avalon Foundation was incorporated in 1994 as a not-for-profit, charitable organization with a mandate to investigate, interpret, preserve and develop the archaeological remains of Lord Baltimore's Colony of Avalon. The Shamrock festival was started in 1986 and taken over in 1995 by the Southern Shore Folk Arts Council who have injected a traditional Newfoundland and Irish flair. The festival draws a large crowd and a diverse group of over twenty bands or performers every year. The colony of the avalon gets over 20,000 visitors a year- heritage tourism has become a new industry to maintain a community here. The Shamrock Festival is not just music. The committee has linked events to other local attractions, such as an art exhibition, and re-enactment of Lord and Lady Baltimore's proclamation to settle in Ferryland almost five hundred years ago. Temporary populations and festivals link to extended community, and act as a regional connector for the Southern Shore which is predominantly populated by Irish descendents. An important local landmark, and one of the few stone churches left intact on the island, the Holy Trinity Church does not see much use by locals. It is cold in the winter and hot in the summer so locals prefer to use the church in Calvert.

1. Archaeological Dig, Colony of the Avalon, Ferryland.
2. Dancing, Shamrock Festival.



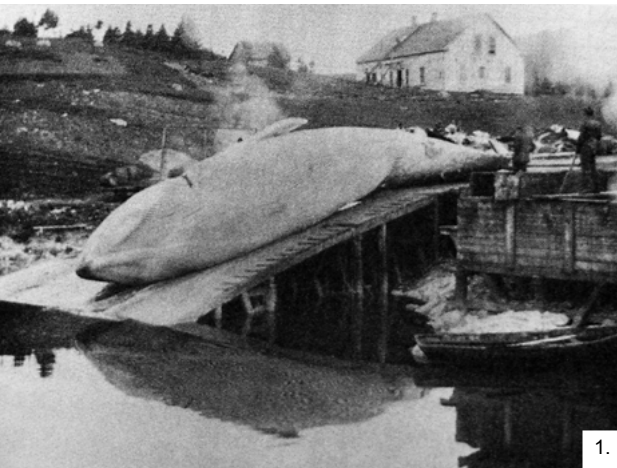
- colony of the avalon interpretation site, dinner theatre, gift shop
- holy trinity stone church
- the pool, public wharf
- colony of the avalon archaeological dig
- the downs, common pastures and gardens
- sheep pastures
- lighthouse picnic hikes
- kavanagh's irish loop restaurant
- east coast trail





aquaforte

population: 83
growth rate (2006-2011): -19.4%
available gas tax funding: \$46,898



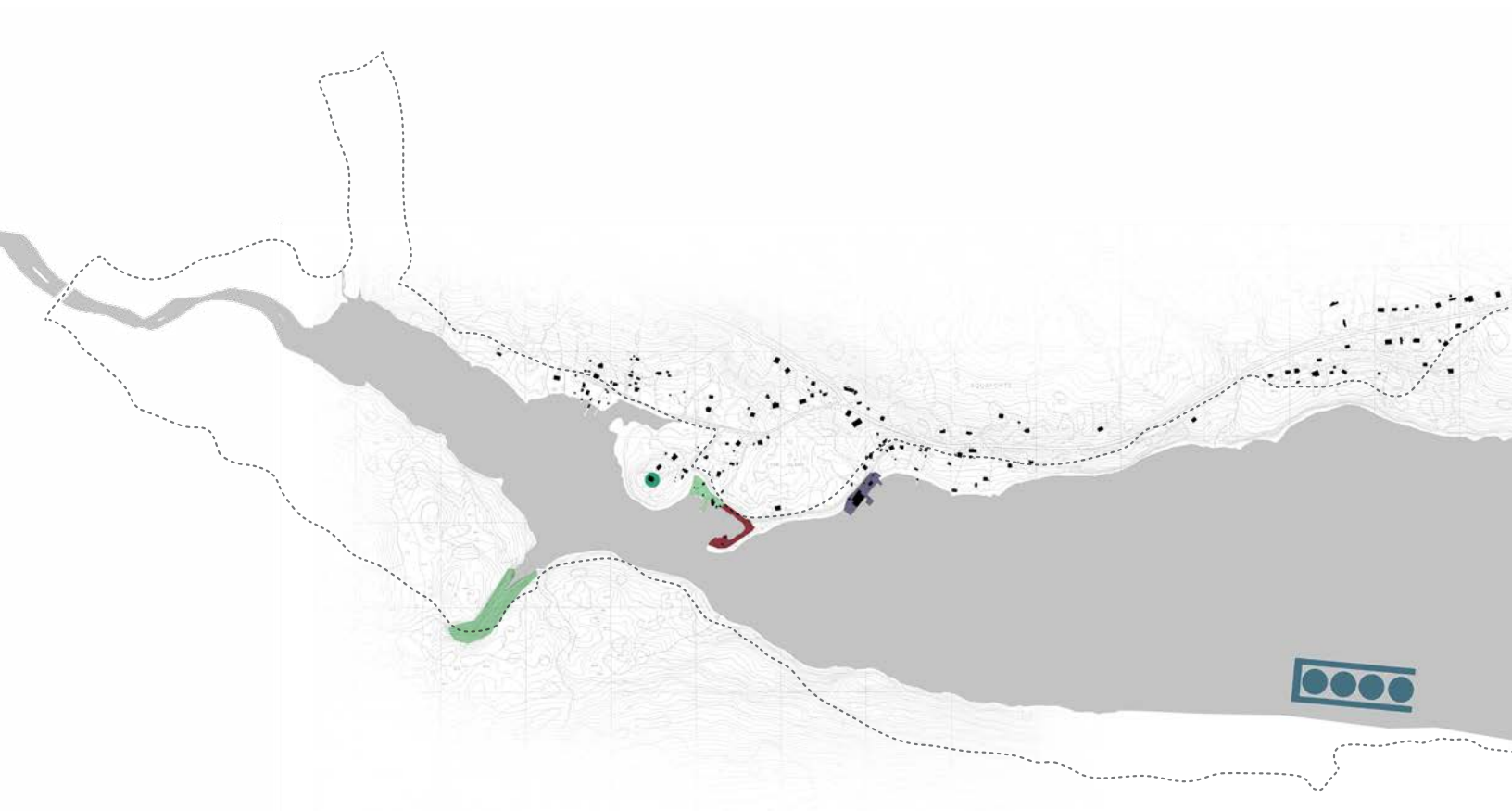
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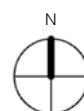
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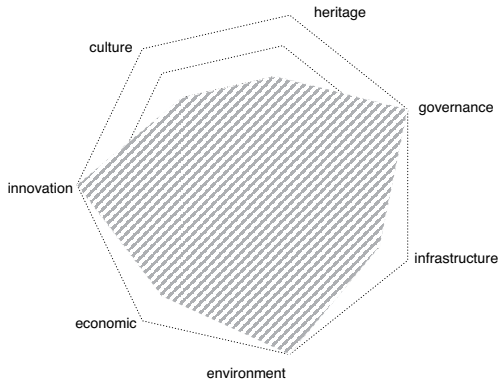
Aquaforte was one of the whaling capitals of Newfoundland. In 1902, Anders Ellefsen proposed building a new factory for processing whales. The factory employed 32 local men, but relied on Norwegian whaling steamers to bring the whales into shore. In 1904, 198 whales were processed, but declining whale populations reduced the count to only 18 in 1906. Now, Aquaforte's waters attract local kayakers for the sheltered, long harbour with beautiful coastline. Every year, the Kayaking Club of Newfoundland and Labrador meets in Aquaforte in the fall to do a group paddle along the coast of aquaforte. The beaches which were once developed for slaughtering whales are now used by those who appreciate marine natural heritage. The event is not supported well by the town. There are no local amenities or increase in services. This event represents a purely external use of the community for its natural heritage. The opportunity to expand and deepen connections between locals and the kayakers who come to explore could increase local traffic, and begin to support a new ecotourism economy in the community.

1. Whale on Slipway, Aquaforte, 1904.
2. Aquaforte Paddle, 2009.



- ellefсен heritage house (whaling)
- abandoned whaling stations
- site of aquaforte paddle
- aqua fisheries ltd.
- proposed salmon aquaculture site
- east coast trail





fermeuse

population: 323
growth rate (2006-2011): 13.7%
available gas tax funding: \$99,668



1.



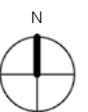
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The town of Fermeuse is home to the Sikuk, a large boat with a mechanical claw that has been developed to harvest icebergs. The boat closely approaches icebergs and the big claw bites off 1500 lb blocks of ice that is held in tanks in the boats. Icebergs are made of water that fell as snow up to 12,000 years ago and is noted for its incredible purity. The water is sold to a niche market that pays almost ten dollars a bottle for this resource. New health regulations regarding the water were developed because there were no existing regulations about iceberg water. The iceberg is not just part of the aesthetic of the province, it is a resource that is being actively tapped — hunted and tracked using carefully adapted marine technology. While this represents active production through flexible infrastructure, Fermeuse is also home to a renewable energy landscape with newly built but permanent infrastructure. Part of our modern sustenance, electricity is a requirement in the outport. Power corridors run across the province and due to dispersed communities infrastructure costs are enormous. The new wind farm in Fermeuse has 9 wind turbines which produce 27 MW, enough to power 6000 homes. Newfoundland and Labrador has made an agreement with Elemental Energy, a company from BC that owns and operates the farm. Although this increases local productivity, it does not provide active roles for locals.

1. Iceberg Harvesting Claw.
2. Windfarm, Fermeuse.



- fermeuse wind project (powers 7500 homes)
- fermeuse marine, boat yard, boat lift
- fermeuse fish products
- the sikuk iceberg harvesting boat.
- east coast trail



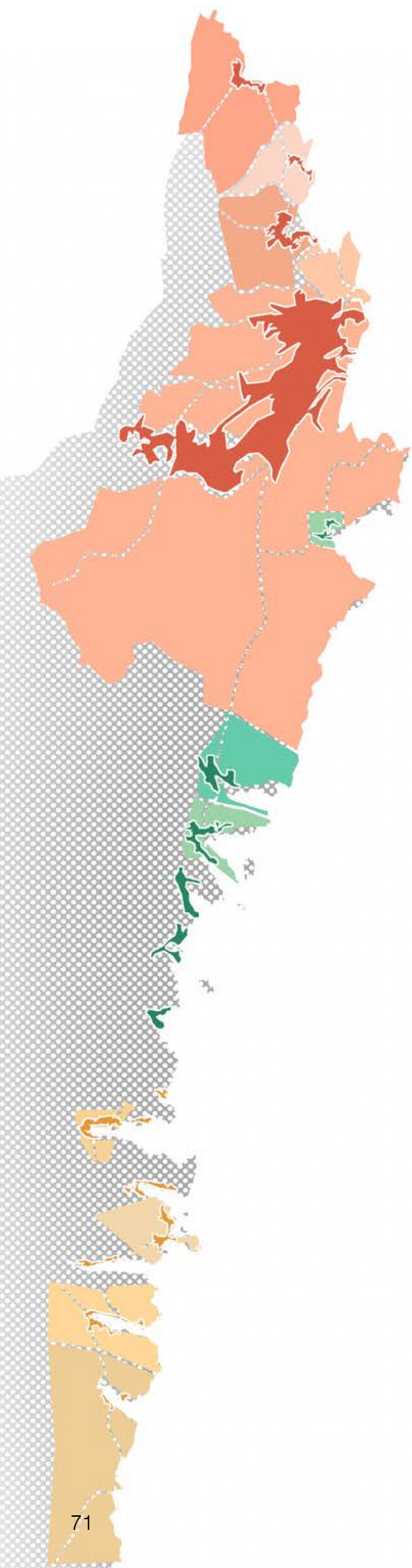
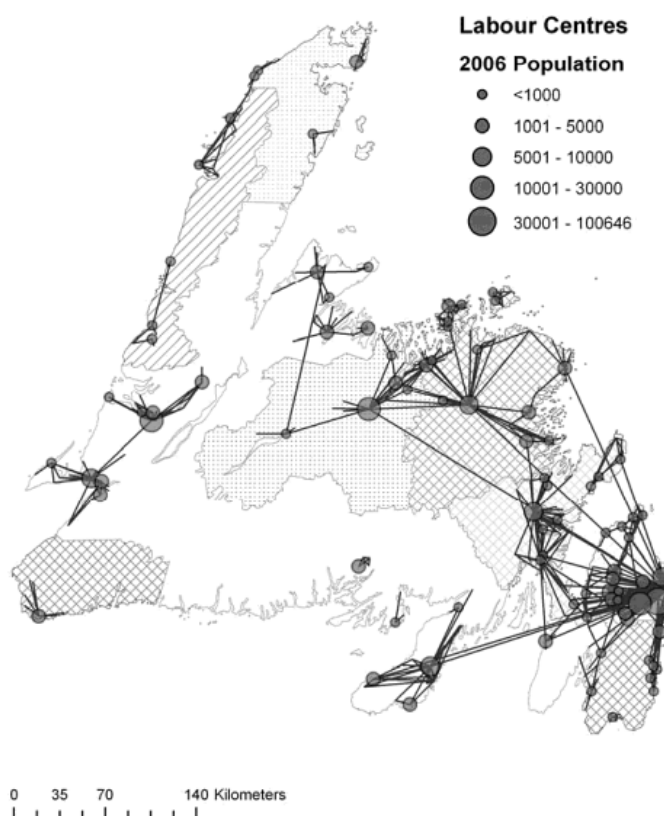


Fig. 3.18 (Above) Subregional Divisions and Urban Form. This drawing depicts sub-regional characteristics, from the growth region at the top, to the cultural archive at the bottom. Sub-regional strengths provide the basis for connectivity between nerby communities which can grow into regional strength.

Fig. 3.19 (Below) Economic Zones, Labour Flows and Commuting Patterns. Rural communities in the study area are economically and socaily intertwined with the capital city.



developing dependencies

Sustainability is often misconstrued as self-sufficiency. This would mean families could provide for themselves, communities could survive without outside resources, and regional production loops would have no need to exist. Dependencies can be seen as weakness, but mutually reinforcing dependencies in which both parties rely on exchanges form valuable social resources, and pathways. Municipalities and individuals that share services, such as common schools and other public services develop social connections accordingly. Some dependencies are still risks, like external governance arrangements for designated places. Communities that have lost their 'place status' are amalgamated with larger rural centres, and as a result, municipal status is lost.

The case studies for the region reveal key strategic dependencies that form redundancies and create resilience. These dependencies emerge from unique local attributes and diversity. The case studies focus on the distinct attributes that a community possesses to sample the possible range of activities in the region. The case studies reveal sub-regional characteristics, effective mutual dependencies, and risky dependencies. Three sub-regions exhibit the challenges of complex regions. One sub-region is growing rapidly to the north of the capital, a sub-region with strong ecological and recreational attributes lies directly south from the capital, and even further south, a declining region which holds living heritage of the region. Wildly varied conditions and concerns occur along the study area, making it possible to establish new sustainable dependencies in the region.

Sub-region 1: Growth Region

Rural out-migration has mean urban in-migration, the city of St. John's and nearby communities of Logy Bay, Flatrock, Torbay and Pouch Cove are exploding with growth. A process of rural re-development and urbanization of nearby outports is making new urban forms, developing new identities and increasing economic capacity. Over fifty percent of the provincial GDP is generated in St. John's.

Sub-region 2: Natural and Recreational Landscape

Just fifteen minutes from St. John's, the communities extending from Bay Bulls to the abandoned community of La Manche, have developed a series of ecological reserves, parks, trails, and research support for marine, coastal and terrestrial monitoring and preservation. Institutionalized protected places such as the Memorial University Aquaculture research area, La Manche Provincial Park, and the Witless Bay Ecological Reserve, are supported by small-scale local stewardship initiatives. Coastal and marine tourism is a key economic generator for these communities.

Sub-region 3: Cultural Archive

The most southern tip of the Avalon Peninsula is declining. Aging populations, unemployment, and outmigration deeply affect these areas, even only one hour from the capital city. And yet, those who choose to stay have an important role in maintaining traditions in the community. These rural areas have become a nearby living museum for the old ways of life. These communities represent a condition that is widespread across even more remote areas of the province, places with even fewer opportunities.

1 Isolated outports?

Each outport was an integral part of a sustainable network of soft infrastructures.

Fig 3.20 Bay de Verde, 1965. Small scale, locally owned Infrastructures line active harbours.



Fig 3.21 Coastal Boat Services which once serviced hundreds of outports were integrated with railway lines.



Fig 3.22 The East Coast Trail was once the only land-based connection between communities in the study area. Now, it is world renowned as a hiking trail.

While the rural condition is often understood as a disconnected and sprawling urban form, Newfoundland's rural areas are characterized by well-defined towns along natural harbours. Although they appear isolated, the open field of the ocean once hosted a diverse and resilient infrastructure that supported rural mobility. *"Newfoundlanders in places like Calvert were a highly mobile people before the advent of the automobile. With transportation by sea available to every community resident... Calvert residents in the past often traveled more than their present-day descendants. Mobility is not a recent norm introduced by modern means of travel."*

¹¹ Nearly every community had or has a working harbour. In Newfoundland declining harbour infrastructure has been a serious threat to outport culture and identity. The great industrial harbours and fish plants of the 1960's are in a state of disrepair, but local harbour authorities and new government funding are beginning to rebuild the harbour legacy. Physical infrastructure — various branches of the road, rail, trail, or coastal boat services — has helped to determine traditional patterns of land use. A 'rural web'¹² has developed. Regionally defined by traveling distances, infrastructure and a diversity of local resources or available amenities, this web increases the capacity of the individual outport. Within struggling, remote areas, economic collaborations between communities distribute resources and opportunities. Currently, 74% of municipalities in NL are sharing services.¹³ Not all of these linkages are legislated or negotiated by municipal leaders. Members of the public also develop provisional systems of travel, such as the Southern Shore taxi, which compensates for the lack of regular public transportation along rural routes.

*"Mobility is not just a matter of overcoming the costs of physical relocation, but also entails considerable challenges in the reorganization of the social ties that are integral to our welfare and identity."*¹⁴ The shape of infrastructural pathways — the southern shore highway, school bus routes, Irish tourism loop, East Coast Trails, forgotten railways, or marine routes — develop specific patterns of access and mobility which develop deeply rooted community connections and micro-regional linkages between the outports.

11 Pocius, Gerald L. *A Place to Belong: Community Order and Everyday Space in Calvert, Newfoundland*. (Athens: University of Georgia: 1991)16.

12 Woods, Michael. *Rural*. (Milton Park, Abingdon, Oxon: Routledge, 2011) 142

13 Department of Municipal Affairs, Newfoundland and Labrador. *ICSP Toolkit*. (2009)13.

14 Halseth, Greg, Sean Patrick Markey, and David Bruce. *The Next Rural Economies: Constructing Rural Place in Global Economies*. (Wallingford, UK: CABI, 2010) 4.

2 Empty Communities?

Informal social groups protect important local resources, fostering outport expansion.

Fig 3.23 Whale Watching in Bay Bulls. The local fishing community is now an ecological steward.



Fig 3.24 Cod Jigging Reel. This old fashioned technology remains as a sustainable method of fishing.



Fig 3.25 Caribou on the Avalon Wilderness Reserve, once nearly extirpated, have made a comeback. This remains the most southerly herd in the world.

The great ecological disasters of Newfoundland's boom and bust economy overshadow the small-scale ecological management strategies that have protected important natural areas. Successful ecological management strategies have re-populated the world's most southern caribou herd. The establishment of the Avalon Wilderness Reserve was an important step in beginning to set up parks and reserves across the island. Stewardship is defined by a willingness to be responsible for resources without owning them, but also the right to participate in and manage use of these resources. Currently, the provincial or federal government holds the rights to most protected places, but most of them were started by groups of local people.

The ocean was a great commons for Newfoundlanders; everyone had a right to a share in its riches. Local fishers had noticed great declines in catches since the late 1800s. In 1895, a local act was passed that limited fishery technology to hand-lining in the 500 year old fishing community of Petty Harbour. To protect local cod stocks, locals created the idea, which was essentially marine protected area. In 1961 when modern trawlers were introduced the community banded together to protect their ancient rights and a federally protected fishing area was developed. The act also protected local livelihoods and fishing heritage because hand-lining requires a larger work force and kept more locals employed. While technology is essential to managing the marine and coastal environment, changing fishery traditions have impacted the interface between fishers and their environment. This is an example of a development action that emerges from the community. Called bottom-up, or endogenous development, this is collaboration between the individuals who are ultimately affected by the proposed development. This creates long-lasting and effective change with local control, important in rural contexts that reject development ideas from outside of the community.

People from 'away', also have a key role in stewardship of important natural areas. Tourists, who flock to see whales, puffins, and other seabirds, transform these areas into economic generators for local tour operators and other tourist providers. The stunning landscape in the province, its ancient geology, unique ecosystems and coastal features, form the local identity. Individuals or groups, who elect to maintain and protect key places, also become stewards of community identity. An 'effective' community is built from those who care about the community; visitors, those who moved away, or anyone that has a bond to the place. *"Affective bonds to places can help inspire action because people are motivated to seek, stay in, protect, and improve places that are meaningful to them."*¹⁵ These place bonds are an important resource for the endogenous stewardship efforts of the community. Successful development schemes in the outport give the community a right to manage, and utilize the resources from these places.

15 Manzo, L. C. Finding Common Ground: The Importance of Place Attachment to Community Participation and Planning. (Journal of Planning Literature 20.4: 2006) 13

3 Stuck in the past?

Traditional events are adaptive resources that structure the cultural calendar of the outpost.

Fig 3.26 Mumming in St. John's. An old tradition, once feared is now embraced within the cultural identity of Newfoundlanders.



Fig 3.27 Fireworks, Quidi Vidi Lake, New Year's 2009. This venue, used for the regatta is a cultural gathering place for the city.



Fig 3.28. The Royal St. John's Regatta, 1890. This is the oldest sporting event in North America and a public holiday for the city. Annually, a crowd of 50,000 people go to this rowing race.

On a winter's day, a remote outport looks like a ghost town. There is little movement, the houses are dark, and many of the buildings look abandoned, but the community is very much alive. At key times, the outport can explode into activity. The social structure of the outport is a flexible form that expands and contracts. The timespace of the outport includes a choreographed set of daily practices, seasonal cycles, and events. These events and practices are part of the heritage of the outport. Heritage is valued objects, landscapes, traditions, and qualities that have been passed down by previous generations. Heritage is the present use of the past;¹⁶ it is the capacity for the current generation to learn from the past generations. Historical preservation efforts focus on maintaining, restoring, and recreating the old ways. Artifacts, architecture, stories, food, and cultural practices are being presented as important cultural heritage for the outport. Often times, architectural heritage is commodified for tourist use. Landmark buildings close in the fall, or require paying admission costs.

*"Heritage is as much about forgetting as it is about remembering."*¹⁷ From this analysis of the outport, the most relevant cultural history is that which is adapted into new traditions, or intangible cultural heritage that continues to be performed. The intangible parts of heritage include the stories we tell, the family events we celebrate, our community gatherings, the languages we speak, the songs we sing, knowledge of our natural spaces, our healing traditions, the foods we eat, our holidays, beliefs and cultural practices.¹⁸ Events are not often moved. They are hosted again, and again in the same spaces. The natural and built gathering places host local events and form the connective tissue between culture and geography.

The Royal St. John's Regatta has been a part of Newfoundland history for 185 years. It is the only civic holiday in North America that is controlled by a public committee and can shift dates depending on the weather. The event draws from communities outside of the capital, bridging between neighbouring municipalities, reinforcing community cohesion. In more rural areas, events such as shows and festivals form an excuse for community gatherings and socialization. In many ways, traditions become the structural elements of culture and they can have a long-lasting impact on their communities and cultures. Events are the key points of cultural transfer in the outport, promoting linkages between the generations. There has been an observed resurgence of heritage activities, traditions, crafts and stories in the outport. New events, online forums, expansion of traditional events, and higher attendance rates have been observed within the study areas. *"Many of the expressions of cultural revivals- festivals, celebrations and plays- can also be interpreted as a search for traditions and continuity in a rapidly changing world."*¹⁹ Traditions become important expressions of rural diversity.

16 Graham, Brian. *Heritage as Knowledge: Capital or Culture?* (Urban Studies 39.5-6: 2002) 5

17 Ibid. 3

18 Heritage Foundation of Newfoundland and Labrador. *Intangible Cultural Heritage. (2012)*. <http://www.heritagefoundation.ca/ich.aspx>

19 Eckman, Ann-Kristin. *The Revival of Cultural Celebrations in Regional Sweden. Aspects of Tradition and Transition.* (Blackwell Publishers, Sociologia Ruralis 39.3 :1999) 2

4 Economically Dependent?

Self-provisional activities supplement local livelihoods, nearly doubling effective incomes.

Fig. 3.29. Trout Basket by Gladys Linegar, Tors Cove. This Basket shows a blend of traditional craft and modern materials.



Fig. 3.30. The Torbay Mitten was designed for hunters, with a trigger finger. These mittens were knit out of local wool.



Fig. 3.31 Moose Hunting in Newfoundland is an important sustenance activity, providing a good source of protein at low cost.

The rural landscape of Newfoundland functions in a production mode. *“The idea of rural as a space of production and exploitation has arguably been the single most influential idea in shaping rural space, giving rise to particular landscapes, settlement patterns, forms of social organization, political structures and policies, and economics.”*²⁰ Production, such as the fishery, can become the livelihood for the entire community. These impacts of economic monocultures and their downfalls, such as the moratorium, have been counter-acted by resilient, non-market economics in the outport. Informal economic sub-systems are an essential element of local livelihoods, compensating for lack of employment and diminishing cash inputs into rural economies.²¹ Outport people have developed an informal economy that encourages non-market participation, sustainable resource use, and self-sufficiency by collaboration. It is difficult to quantify. The ability of local people to develop tertiary economic support through subsistence activity composes up to 42% of some rural incomes.²² But the other 58% must come from somewhere else. It is an important number for policy-makers, municipal leaders and developers to understand in order to maintain the outport. The trade and barter economy is founded on the capacity of individuals to develop good quality food or products, but also particular innovations that are specific to the geography and culture of the area. This economy is based on traditions of mutual aid and trust, the deep roots of social capital. Neglected and degraded local resources are often the starting point for new adaptations of rural production, further advancing the material culture and capacity of the community to be self-provisional.²³

Innovative methods of production that are deeply rooted in particular places or cultures are called novelties.²⁴ Novelties develop from deviations of traditional practices. Novelty production is *“the capacity in the region to continuously improve processes of production, products, patterns of cooperation.”*²⁵ An example of this would be the trout baskets made in Tors Cove. While traditional in form, and craft, the basket makes a jump in logic, by using modern materials, like a seatbelt as a strap. The novelty becomes a jump in logic that instills new practices and advances vernacular material culture. Local materials are not the only resource, other local capital such as existing skills, tools, and timeframes are important to developing informal economies. Novelties are based on qualitative development and improvement, rather than quantitative economic growth. *“Endogeneity specifies the origin on resources, particularly natural ones; novelty production refers to the capacity to unfold these resources further; and sustainability locates their use along the time dimension by illustrating whether or not they are being reproduced and reconstituted.”*²⁶ This logic applies to outport food, transportation, craft production techniques, architecture, and beyond. Self-provisional tactics for supplementing rural incomes are a counter-culture to urban ways of living, giving them even more value as novelties increase the clarity of community identity and develop value-added specialties.

20 Woods, Michael. *Rural*. (Milton Park, Abingdon, Oxon: Routledge, 2011) 50

21 Ommer, Rosemary E. *The Resilient Outport: Ecology, Economy and Society in Rural Newfoundland*. (St. John's, Nfld.: ISER: 2002) 36

22 Halseth, Greg, Sean Patrick Markey, and David Bruce. *The Next Rural Economies: Constructing Rural Place in Global Economies*. (Wallingford, UK: CABI, 2010) 17

23 Oostindie, Henk, and Rudolf van Broekhuizen. *The Dynamics of Novelty Production*. (2008) 7
 24 Marsden, Terry. *Unfolding Webs the Dynamics of Regional Rural Development*. (Assen: Van Gorcum: 2008)

25 Oostindie, Henk, and Rudolf van Broekhuizen. *The Dynamics of Novelty Production*. (2008) 9

26 Marsden, Terry. *Unfolding Webs the Dynamics of Regional Rural Development*. (Assen: Van Gorcum: 2008) 13

5 Moving?

Light, modular and collaborative architecture made it possible to take your house with you.

Fig. 3.32 Salvaged materials, such as shipping crates are often integrated into architectural design.



Fig. 3.33 Marine technologies, such as fibreglas on wood show promise for maintaining the properties of light, flexible wooden architecture.



Fig. 3.34 Hauling a house. Community collaborations were necessary to complete gargantuan tasks.

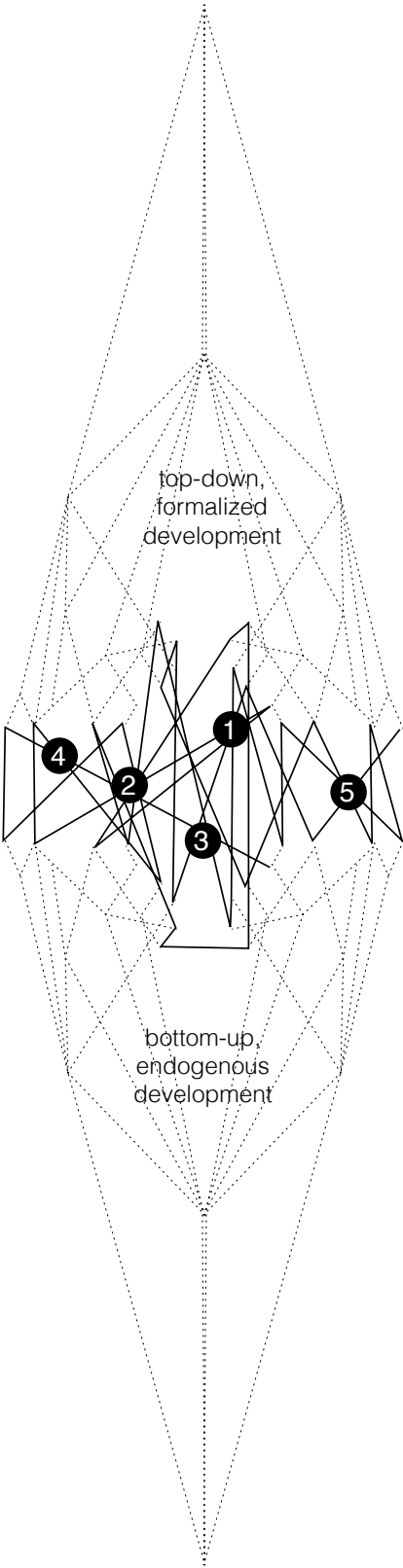
The first buildings in Newfoundland were supposed to be temporary. Migratory fisherman built summer camps from which to access inshore fishing grounds. The fishing stages, sheds, houses and outbuildings that they constructed have an easily recognizable form that constitutes the vernacular. The vernacular is an authorless architecture based on local needs and available construction materials. Regional variations in the vernacular adapt common forms and material traditions to specific geographic conditions, cultural needs, available resources, or climactic considerations. If the vernacular is being born out of regional necessity, it must be constantly changing to meet current needs. The virtues of this vernacular are inherently sustainable, having been tested and refined over generations. These virtues include the use of reclaimed or renewable materials, easily adaptable construction techniques, community collaboration, economic accessibility to everyone, and multifunctional use of public space. Traditional ways are continually adapted to reflect changing context, material availability, community needs, and available skills. *“Rural development increasingly needs to be understood as a process that takes into account the mobile as well as fixed assets in and across rural and urban spaces.”*²⁷ As the outport develops rapidly, so too does a new vernacular architecture for the community.

The temporary nature of building construction in the outport has developed into a flexible system that changes, moves, and adapts to meet the current needs of the community. A building might change function, location, or be re-built into a new form. The practices of moving entire buildings or re-configuring communities by floating, sliding, or hauling wooden structures developed strong, but adaptable architectural forms with easily manipulated materials and construction techniques. It was understood that wooden structures along the coastline would have to be rebuilt several times in a lifetime. Building components were designed to be recycled. Building construction was a collaborative act that engaged the community. At times, entire communities had to work together to achieve gargantuan tasks like launching boats or moving houses. These times were opportunities for social cohesion, and also increased individual capacity. The development of multi-functional programming is forced in rural areas, but the traditions of the ‘everything’ or general store has evolved beyond just products to include services and social space. This multi-functional architecture becomes an important part of the social infrastructure of the outport. The architecture of the urban core of the outport is an important resource for sustainability.

The original vernacular with its ochre-painted wood clapboard is part of the identity of the province, but it represents a fraction of the buildings left in the outport. Within the outport, some of the most advanced technology and material traditions are manifest in the harbour. Boat-building techniques have been adapted with modern materials, such as fiberglass, which can be applied to wooden boat forms. Although the material is not locally made and is synthetic, the techniques, equipment and workforce who are familiar with it are locally available. The diversity and adaptability of local skill sets develop new material traditions. Many such adaptations exist across the study area. A different, but representative architecture has been born from the same virtues as the old ways. Government initiatives such as make-work projects, heritage guidelines and industrial development have provided different resources to stimulate the architectural language of the outport. This is the new vernacular.

²⁷ Marsden, Terry. *Unfolding Webs the Dynamics of Regional Rural Development*. (Assen: Van Gorcum: 2008)

Fig. 4.1 The Study area for the thesis is not solely geographic. Developing linkages between formalized top down systems, and informal bottom-up realities of rural areas is a critical area for effecting sustainable change.



4 the strategies:

The five strategies are design systems with which to experiment and test methods of development. Each is an open framework for analyzing the resources, sustainable assets and opportunities in the outport. The intention is to explore, clarify, categorize and link promising and locally appropriate policies, programs, attitudes, and places, without dictating the solutions. Each strategy emerges from the virtues of local culture, blended with new ideas. The strategies are presented as catalysts for bottom-up changes that could be completed by the community. Opportunities for crucial support from top-down industrial stakeholders, political support, or funding structures are considered within each strategy. The small-scale, informal character of the outport can gain from large-scale, formalized processes and vice-versa. Developing linkages between these opposing forces might be a crucial first step in distributing the wealth from industrial boom, and fostering growth of sustainable systems. The method is to allow the development grow into the context with a series of crucial design decisions to adapt the systems for success and sustainability. Framing the synthesis of the project as transformable systems reduces risk, opens up community dialogue, and allows for immediate implementation of each strategy. This chapter is structured with descriptions of each of the five strategies, a proposed method of action, and a design proposal. Each strategy can be described as a method, a list of crucial steps, decisions, questions and analyses that might direct the development process and accelerate the development of sustainable outcomes. Illustrative proposals are included to begin to test how the strategies might be implemented and to communicate potential desired outcomes, on the ground. Each of the strategies should include preparation for regular reviews, revisions and renewals. This includes design checkpoints, for adaptability, monitoring, and ensuring consistent public engagement throughout the development process.



territorial networks:

Strategy 1, Territorial Networks, is about connectivity. It is about expanding the capacity of an individual community by developing partnerships at the personal, community and regional scale. The context of the outport is built on the rural web, a set of interdependencies developed over time between communities through patterns of trade, infrastructure, and social interaction. Historically, this web was complex; built on informal social exchanges, barter economy and mobile patterns of marine transportation. The web has lost some of its redundancies, key social resources, and the diversities of traditional self-reliance that supported sustainable land use. The area includes thirty-two of the oldest communities in Newfoundland. These communities have developed over the last two hundred years into entirely unique expressions of place. There are established resources that can be adapted and elaborated on.

This strategy imagines a renewed region, constructed of many micro-regional linkages between individuals, communities, and resource flows. This is a shifting, adaptable network, but also a strong boundary; a physical demarcation for land-use planning. To support sustainability, this boundary is proposed by analyzing existing pathways in the rural web and building on existing resources. The boundary is proposed to delineate a new tourism region. A regional identity can be reborn from inter-community collaborations and developing reciprocal relationships between urban and rural locales. The boundary is based on the geography of local landmarks, intersecting cultural geographies with management areas, ecosystems, and transportation networks. It is a soft boundary, one that is constructed over time by informal processes, and that is drawn around diversities, rather than similarities. The goal of the strategy is to solidify a diverse set of needs and assets into a resilient web of trade, cultural exchange, and a sustainable support structure for the region. To effectively analyze the desired region, enhance connectivity, and develop boundaries, the steps on the opposite page form a starting point for developing and executing the territorial network strategy. The steps outline the process taken in this work for delineating the proposed region.

a draw existing boundaries and landmarks

Research different ways in which boundaries are drawn in the study region and what they represent. Draw each: economic zones, watersheds, management areas, power grids, municipal boundaries or heritage zones. Analyze how these intersect and reinforce, or divide the study area. What landmarks or features on the ground begin to specify these boundaries? Now, draw the connectors between these areas; infrastructure, trail-ways, marine transportation, and roads. How do these elements begin to re-connect the fragmented territories of the study area? The act of drawing these boundaries, connectors and landmarks reveals a highly complex territory.

b determine regional capacity and diversity

Examine the context to determine individual community assets of heritage, social institutions, transport infrastructure, environment, economic generators, cultural practices, and innovative or unique features. Using a radar chart, these factors that form community capacity can be mapped. Finally, overlapping and comparing individual capacity, the regional capacity can be determined. While some communities may have strong economic assets, others might have great potential. Using this method, potential regional boundaries are tested to determine regional diversity, regional capacity and individual community weaknesses or assets.

c establish dependencies

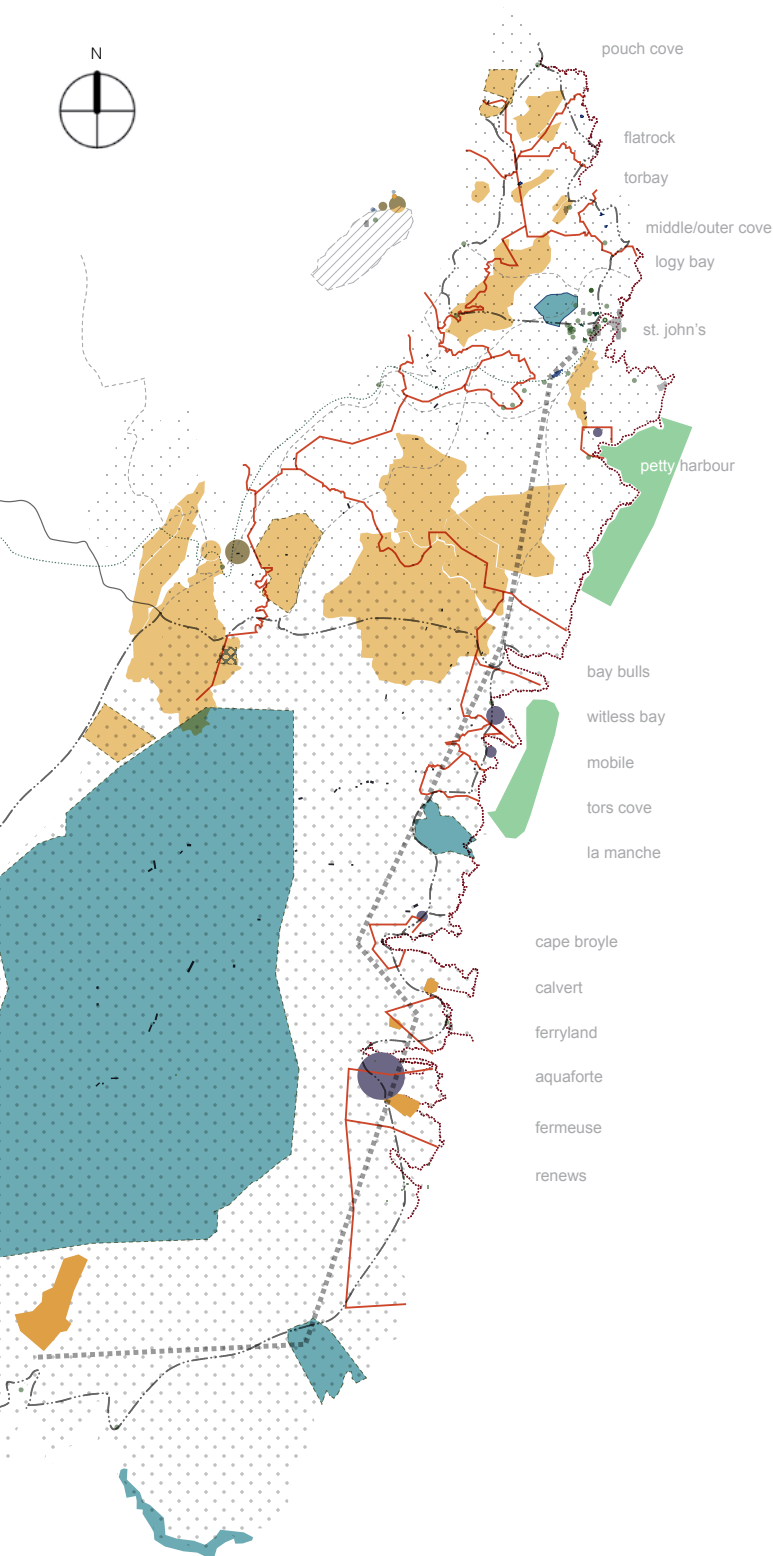
Within the boundaries, linkages and landmarks, determine key flows of resources (social, resource, economic, and cultural) within the region. Regional flows indicate dependencies of particular communities on resources found elsewhere. Within these dependencies, examine smaller mutually-dependent areas. Flows of economic resources to one area might be exchanged for cultural experiences, natural resources, or governance. Distilling these mutual dependencies indicates sub-regional dependencies between nearby communities. The patterns of smaller exchanges in the region indicate important partnerships or working relationships that can be examined as micro-regions.

d draw new boundaries based on networks

The regional rural web can be bounded for management. New boundaries established around the web should include existing systems. To do this, a geographic boundary is drawn around the elements that are identified within the region; municipalities, resources, or social groups are enveloped in the new boundary. A second line is drawn around systems that flow into and out of the region. This line indicates connections outside of the region that are important to consider for planning, and sustainable partnerships. Landmarks and other regional boundaries inform the path of the new boundary. This line is easily navigated; following deeply rooted local geography embedded in place.

e establish multi-scalar regional identities

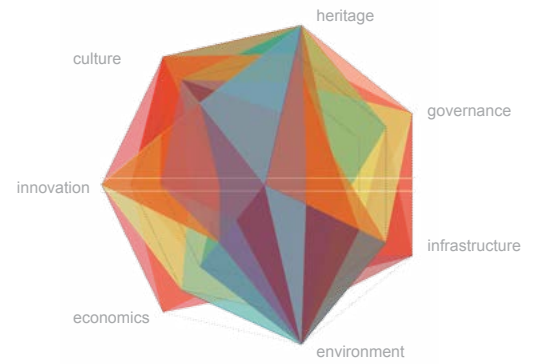
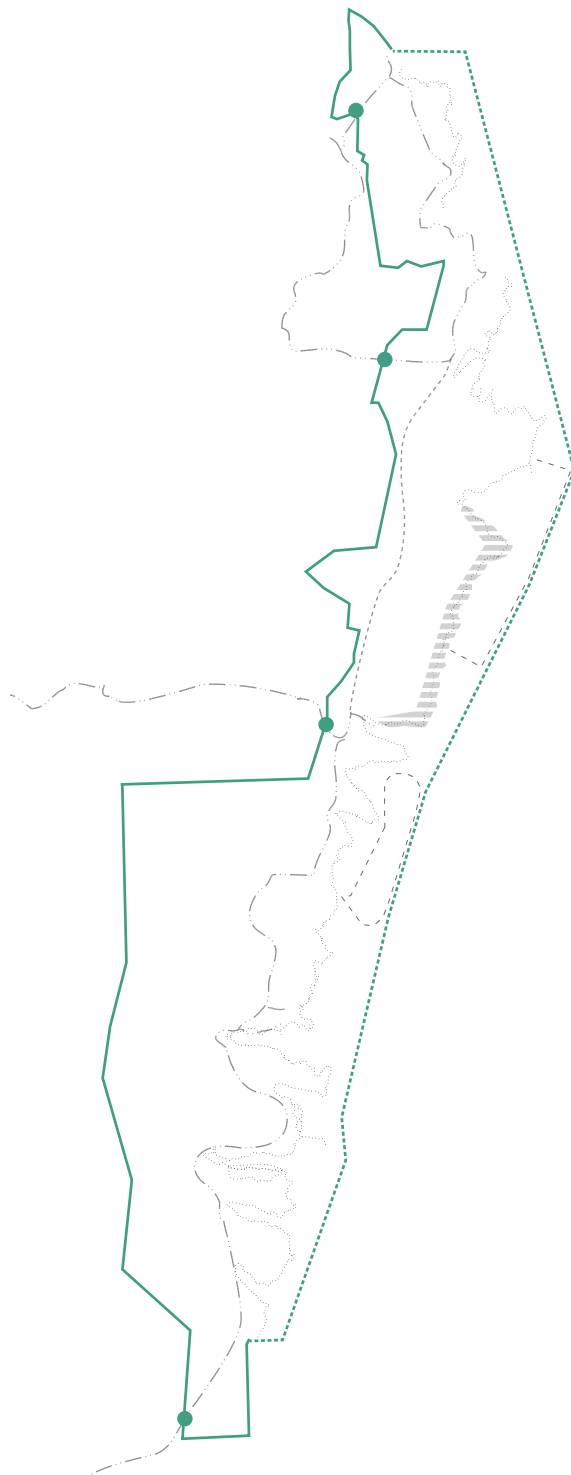
Once the region is developed it forms a new set of identifiable spatial, cultural, economic, and ecological linkages and landmarks. Culturally identifiable sub-regions, and mega-regions establish new nested identities. These identities form an opportunity for further expression, as the local can be redefined within a larger context. New signage, means of way finding, or online forums are a way of re-affirming and expressing these identities and strengthening the regional boundary.



a Fig. 4.2 Overlaying the boundaries of existing land-use planning, as well as resource availability, depicts a complex region. This drawing can be added to, increasing the depth of regional understanding and identifying more assets and considerations for sustainable development.



b Fig. 4.3 While each individual community has its own assets, weaknesses and opportunities, sustainable regions have a regional capacity that is well balanced from rural-to urban. This analysis taken from the case studies reveal individual strength and weaknesses



c Fig. 4.4 Overlaying individual community assets reveals a strong region with diversity and resilience. Multiple communities have strenght in each resource area, and weaknesses can be addressed through the design of mutually-reinforcing dependencies.

d Fig. 4.5 The regional boundary is drawn, following existing territorial boundaries. The boundary is both terrestrial and marine, encompassing regional assets in both enviornments. The boundary is both hard and soft, indicating areas outside of the region that should be considered during development, such as the Avalon Wilderness Reserve.

- entry point
- hard boundary
- ⋯ soft boundary

e Fig. 4.6 Indicated in gray on the drawing above, the 'fog forest' is being protected by the Nature Conservancy of Canada. The proposed trail markers establish a regional identity, while contributing to the science-based conservancy efforts for the area. Fog collectors provide way-finding light, local lore, and interact wth thick blankets of fog along the east coast trail, while monitoring local conditions. These also serve as gps check-in points, increasing safety on dangerous portions of the trail.



2 community stewardship:

Strategy 2, Community Stewardship, is about responsibility. It is about supporting the ability of local people to develop bonds to their homes, and to each other. The informal social network is still deeply rooted in the local geography and sense of place. This is an important attribute of rural areas which contributes to sustainable development. Social support enables local control and protection of important community resources, such as ecosystems, economic opportunity, or cultural heritage. This strategy is about expanding social support, to expand the boundaries of these resource reserves, once relevant support systems are in place. In the past, survival in the outport relied on unpredictable wild resources, such as cod, which in turn developed adaptive management strategies and informal social systems of local knowledge sharing. The latent systems of community mobilization, volunteerism, and stewardship of community resources are the building blocks of this strategy.

Top-down governance structures legislate and monitor regions of ecological or cultural significance. An existing reserve or protected place can form the nucleus of a larger territory. By bridging between informal, bottom-up efforts of communities and provincial governance structures, community stewardship initiatives expand. Existing infrastructures, research clusters, funding structures, and local knowledge grow new linkages in the social support structure expands the geographic boundary of stewardship initiatives and protected places. Regional stewardship efforts develop tertiary economies of leisure, education and tourism. A network of protected places is supported from bonds between individuals and the places that are important to them. Allowing the people that are affected by changes in local resources to take responsibility, protects sustainable rural livelihoods and identities. Community Stewardship opportunities can be identified and developed in many ways. The steps described in this work seek to identify specific places that connect multiple stewardship efforts. With analysis, stakeholder engagement, and careful expansion, this strategy can be introduced at a regional, sub-regional, or even community scale.

a identify protected places and stewardship

The protected places in a community reveal social, financial and physical parameters that combine to preserve and develop important cultural landmarks. Mapping and identifying these can help reveal some of the people, programs and assets in a community. These can be identified through collective means with programs like facebook groups, geotourism mapping, community memories, or by individual efforts. Constellations of social institutions can be identified through studies of place.

b analyze stakeholders and social structures

Having identified a key protected place, an analysis of key individuals and relationships reveals a map of the social structure that supports that place. These structures can be top-down, composed from external financial resources, legislation and government employees. Or, they can be bottom-up, derived from local volunteers, and funded by subsistence production, or tourism. Key places can be supported by both above and below- and are significant because they show linkages between these distinct social forms and create more resilient social networks.

c find common ground

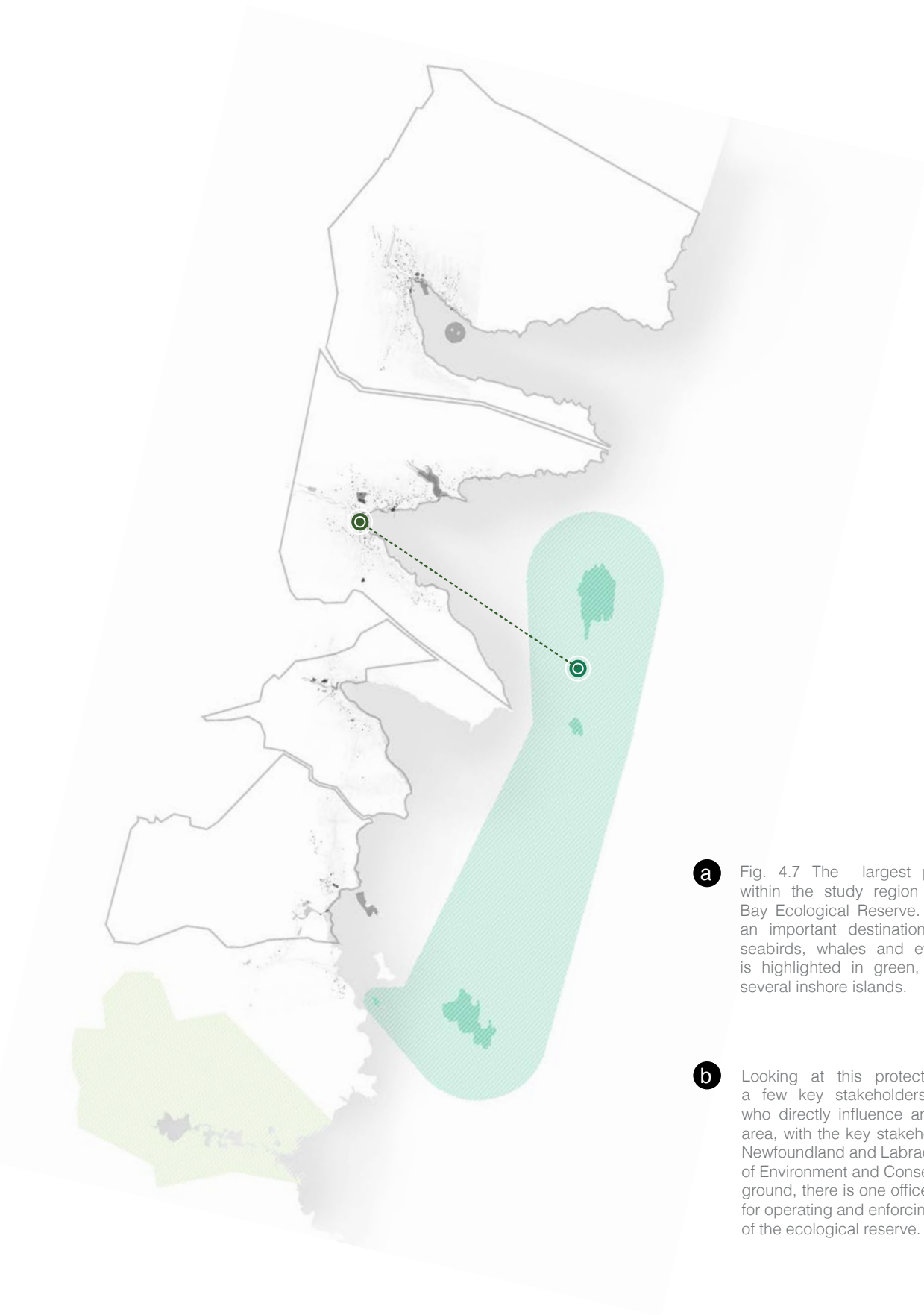
All individual stakeholders have their own interests, goals, and resources with which they support these places. What are the intersections of the interests of the stakeholders? What do they want to do? A meeting, interview, and analysis could identify new common ground, also identifying working relationships which are mutually beneficial and that can support further stewardship. At this phase, it is also important to identify peripheral stakeholders; those that might not be evident but have important input, or that could collaborate on a project - shop owners, summer residents, or investors.

d design new collaborations

Align efforts for common goals. Some developments peripherally benefit unexpected stakeholders within the local community, nearby sub-region, or effective community. Community engagement with special interest groups and stakeholders identifies social infrastructure and funding pathways that can be developed and expanded into new support for new projects or expansion of existing ones. Of particular importance in the outport, flows of new in-migrants add new skills and energy to established communities. These new collaborations will adapt existing social spaces and local institutions, networking existing assets into resilient platforms for local stewardship.

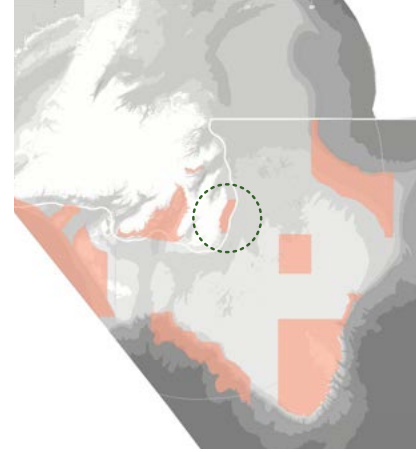
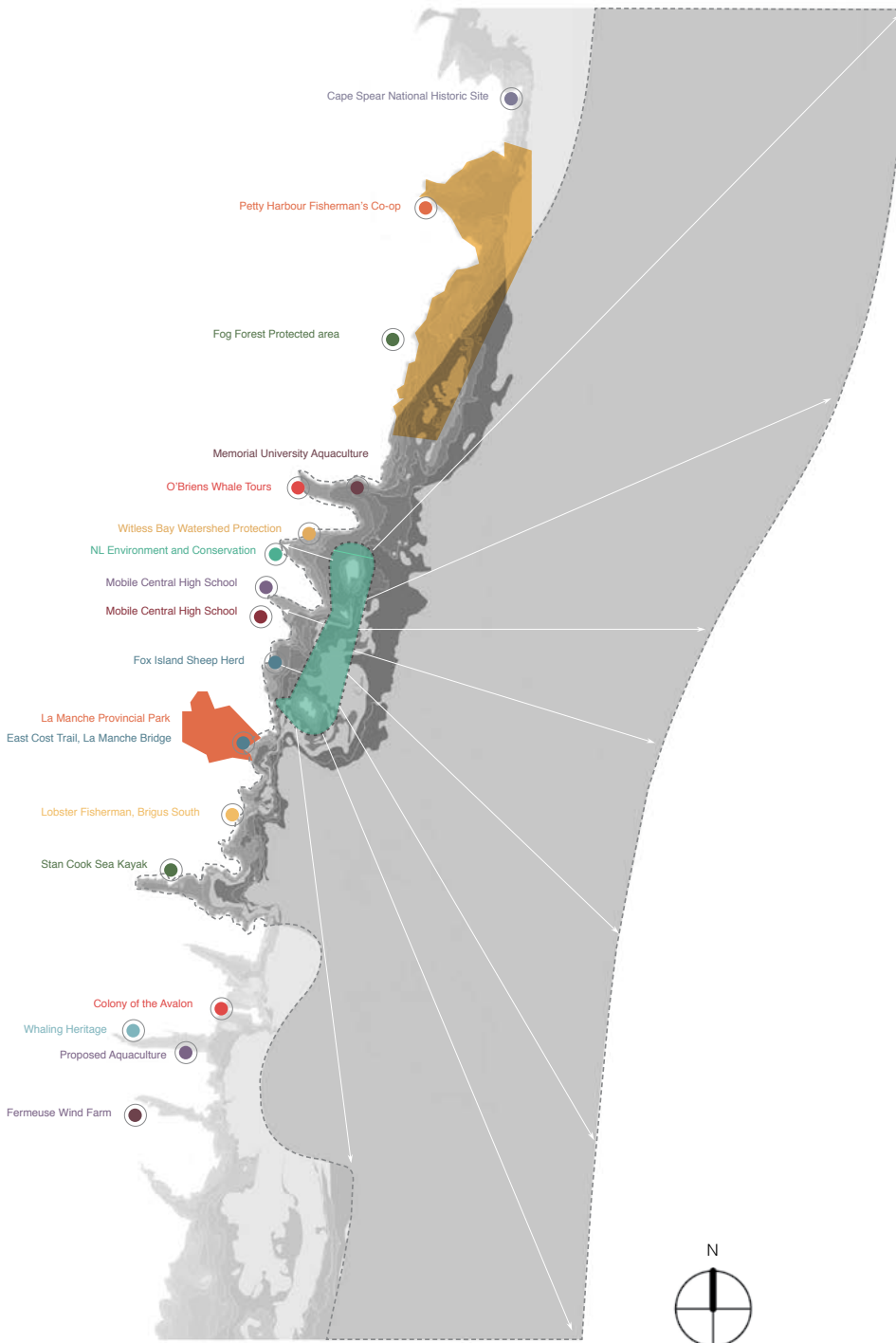
e mobilize expansions

Expanding the social network will begin to re-define the social structure through new mandates. These new designs can be reinforced by top-down systems, such as policy, land use planning, or government funds. The process of developing community stewardship should be on going and embedded within the time space of the community, supported by local traditions and event platforms. The systems established for community engagement, opportunity analysis and social maintenance develop adaptive social structures. Developing the social life in the outport makes vibrant communities with tools to continue to mobilize and expand protection, participation, and implementation of positive change.



a Fig. 4.7 The largest protected area within the study region is the Witless Bay Ecological Reserve. The reserve is an important destination for migratory seabirds, whales and even tourists. It is highlighted in green, encompassing several inshore islands.

b Looking at this protected area, only a few key stakeholders are revealed who directly influence and manage the area, with the key stakeholder being the Newfoundland and Labrador Department of Environment and Conservation. On the ground, there is one office in Witless Bay for operating and enforcing the boundary of the ecological reserve.



c Fig. 4.8 (top) The Department of Fisheries and Oceans has identified seven areas of ecological significance and value to the Grand Banks ecosystem. One of these, circled, encompasses the Witless Bay Ecological Reserve. Could the boundaries of the reserve be expanded, and is there support for this expansion?

d Fig. 4.9 (left) Highlighting the stakeholders and user groups along the coast that support local ecological stewardship reveals relevant regional resources that are not currently linked together.

e To enhance the stewardship network in the region, individual groups might be connected within a new social structure to expand local efforts into a new Marine Protected Region along the shoreline of the study area. Volunteers, organizations, researchers, tourism operators, fishers, and others might form social support and expand human capital. An expansion of local support is required so that the geographic boundary and stewardship efforts can be expanded.



temporal alignment:

Strategy 3, Temporal Alignment, is about the adaptability of the outport. The strategy analyzes the incredible capacity of the outport to adapt for events, seasonal change, or traditional practices. It is a regional alignment of existing gatherings, festivals, celebrations, or routines that expand and contract the requirements of the community. Local economies, cultures and ecologies change throughout the year. From temporary and long-term patterns of outport life emerges a unique temporal context for each outport. This support structure is about collaborating, and co-ordinating the timespace of the individual outport with its neighbours. By mapping the timespace of each community and developing a regional calendar, it is possible to examine the utilization of community amenities. If we think of development as a pattern of behaviours, rather than a static, persistent condition it is possible to provide services to rural communities as part of a time-share. Flexible, or soft infrastructures mobilize temporary facilities to support existing events and practices.

Vibrant cultural events are an opportunity for regional cohesion, drawing people from different communities together. Events and festivals temporarily grow the population of these places, expanding the outport in both temporary and lasting ways. The tourism economy is essential to survival in these areas, but it only provides seasonal opportunities. The household economy is dependent on cyclical patterns of income through tourism, unemployment and time-limited local opportunity. The rhythm of outport life with its patterned calendar of daily practices has developed from temporal linkages with natural and production cycles. Sustainable developments should nurture the changing needs of even the smallest community across daily, weekly, seasonal or annual cycles. Temporal development or alignment contributes to sustainable development by a series of really small-scale adjustments over time. The strategy develops renewable social infrastructure, opportunities, and aggregated change, which can contribute to equity across geographic regions, and between generations. To begin implementing gradual development and temporal alignment, this work proposes a series of analyses, collaborations and events. These steps begin with an analysis of regional calendars, followed by a design process for aligning, designing and reviving traditions and social and logistical support for these developments. Tourism organizations, regional organizations, or individual entrepreneurs can use this method.

a analyze regional calendars

Examine the repeated practices, seasonal trends, and events in the region. Drawing a wheel chart is useful to compare the timespace of multiple communities within the region. Each of these events provides particular opportunities for bonding the social network of the region, for amenities that are not permanent, or work for local people. Events can be legislated dates, like the opening of fishing season, traditional events, like the Shamrock festival, daily or weekly practices, or scheduled services, like public health services or recycling. Key events combine multiple community needs and are attended by other outport communities; these begin to show the flows or people within the region.

b co-ordinate and align opportunities

Using the chart described above, patterns in the regional calendar can be analyzed and co-ordinated. Combining events, grouping events into new festivals and re-aligning events to address overlapping events is part of this co-ordination. Re-structuring the regional and community calendars can help to distribute events throughout the year, and thereby distribute important opportunities like a temporary marketplace, cultural performance space, public service programs, or other temporary amenities. Co-ordination of events should happen each year.

c invent new traditions or revive old ones

Aside from restructuring the calendar, developing new traditions, events and service programs can provide new opportunities, identities, and support to remote areas. Re-introducing forgotten traditions, expanding old ones, and inventing new events can create and maintain a dynamic regional calendar. New traditions could be new social programs, events that don't rely on heritage and are appealing to youth, or events that exhibit unique local assets for research and development. Old traditions might be daily practices such as net tying, boat building, and other craft production, as well as traditions that occurred in specific places, like the tea parties at Fort Amherst, or the spa services at logy bay.

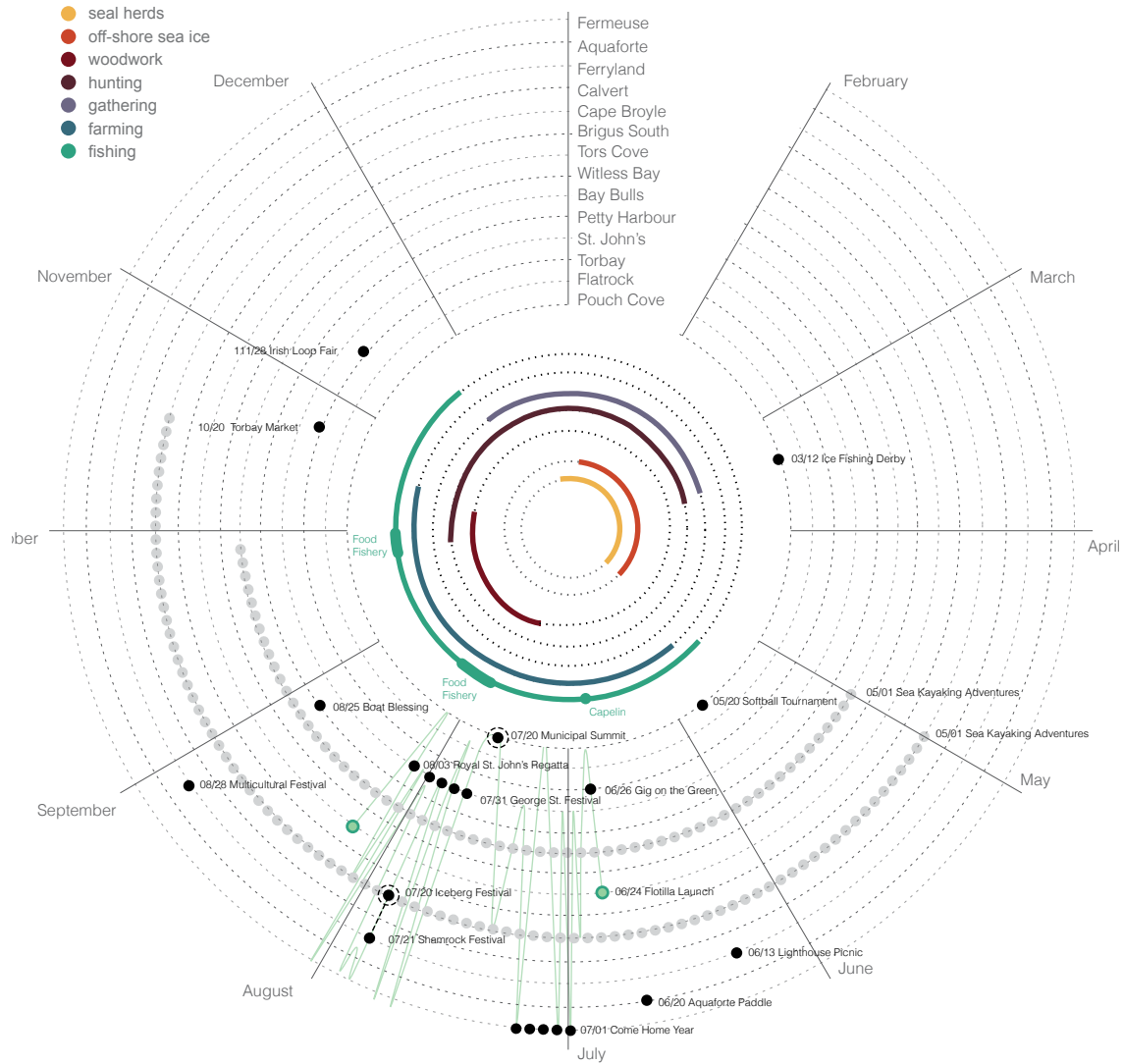
d design flexible regional support systems

Observing multiple uses of spaces, resources and temporary amenities informs a design for new infrastructures that allow for equitable distribution of resources by sharing. Rural communities don't warrant permanent services or institutions because they are not economically feasible. New designs for regional support in the outport use the context of the community calendar to develop efficient, sustainable and adaptive systems for providing local services. Wealthy urban centres can be re-connected to rural regions through designed points of transfer. For example, designing easily adaptable support is necessary to address changing needs of both urban and rural areas as populations grow, decline, or age.

e engage the community

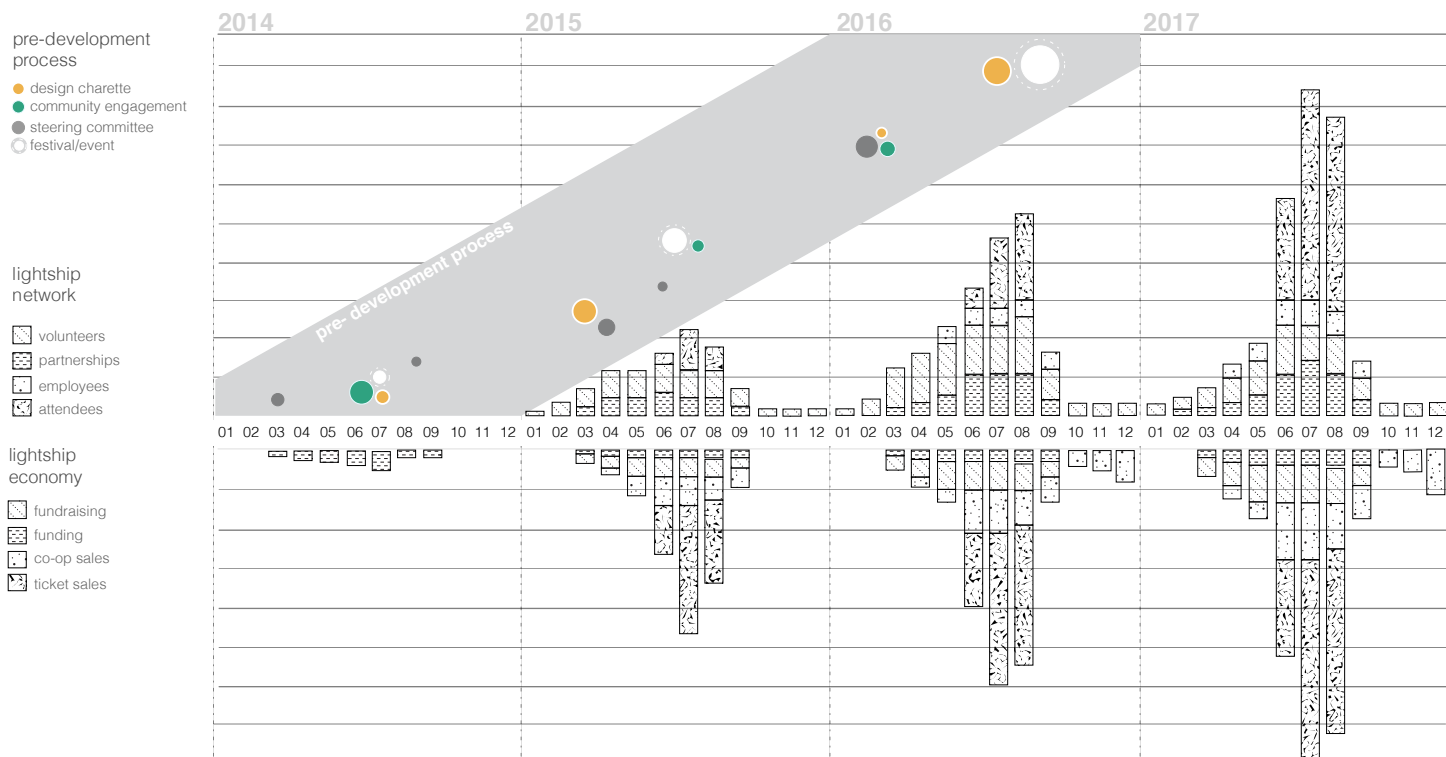
Festivals and events have temporary economic gains. Temporal development requires community members that are willing to take on new roles on a temporary or rotational basis. These systems need to be actively tracked, advertised and communicated to allow individuals to take advantage of these opportunities. Outcomes such as schedules, interfaces, programs, or services will be refined over time and through testing. Time should strengthen these arrangements through repetition, community input and alignment of new services with existing economic opportunities like selling goods, providing tours, or physical access.

a Fig. 4.10 Temporal Graph maps a variety of events throughout the region in communities with public wharfs and port authorities. Seasonal variations align with the cycles of subsistence activity in each community.



b The bulk of the cultural events in the region occur in the summer. Proposed events, like the Iceberg Festival might align with established events, providing additional attraction and increasing attendance by broadening the scope and duration of festivities in nearby communities.

c The proposed patterns of transportation (green line) within the region connect existing events, rhythms, and seasonal patterns within the busiest months of the summer. Over time, this ferry service could be expanded into the shoulder seasons, and is designed to provide public transportation and support to rural festivals and activities.



d Fig. 4.11 The schedule above predicts an ideal set of events, procedures, and outcomes within the 'lightship network'. The development of the flotilla requires immediate inputs of volunteer time, funding, and community participation, but could possibly provide positive outcomes. The desired outcome of this proposal would be economic sustainability, through increased sales of local goods, ferry tickets and event participation rates that would offset initial inputs.

e Fig. 4.12 The photograph below, depicts a changing harbour scape, in which local wharves are re-occupied. Arrivals and departures of the flotilla might become a community event in its own right, attracting and engaging individuals within the region, encouraging new relationships and exchanges.



4 informal economies:

Strategy 4, informal economics, is about accessing and sustaining local opportunities. Re-structuring existing production methods, can develop sustainable opportunities. Encouraging non-market production, and economic activity develops local entrepreneurship, regional cultural diversity, and accessibility to opportunities in remote areas. Informal trade, barter and craft economies reduce the impacts of economic decline. Regional analysis proves the importance of these alternates for sustainable development. Craft production methods are value-added operations. The availability of local resources helped to develop specific material cultures in the outport that are built on craft, innovation and the sustainable regional economic development. Disengaged, industrial production methods decrease the local economic resilience.

Analyzing wasted or under utilized resources reveals new potential economic arrangements that can bolster rural economies. Adapting existing local resources, skills, and traditional ways of making, the connections between product and place strengthen. Sustainable economies are deeply connected to specific geographies. Collaboration between informal and industrial stakeholders can develop hybrid material cultures by using modern materials or industrial by-products in traditional craft economies. They deepen the bonds between the community and their environment and create new community identities. Sustenance activity is a counter culture that disengages from the formal economy and provides production opportunity through self-sufficiency, trade, and barter. To develop the informal economy of the outport, a process of resource identification, material design, production logistics and market analysis is proposed. The steps described for this strategy might assist existing and aspiring entrepreneurs, economic development committees, or households to begin identifying sustainable and immediate opportunities within their community. Funding agencies might also use the process to enhance their support of small-scale economic development.

a

analyze the informal economy

The informal economy should be analyzed through specific local production loops. Select a particular product and analyze inputs, outputs, labour requirements, required support spaces, and marketplaces. The analysis will reveal specific economic arrangements required for production. This technique can also analyze formal industrial economies nearby. Revealing the required materials, skills and infrastructure can help to find efficiencies, alternate methods of production, and grounds for innovation. Note accessible economic opportunities within the community to reveal the infrastructures that support the informal economy.

b

identify neglected resources

Analysis of a production loop might identify under-utilized or neglected resources that can be better re-interpreted, such as available skills, by-products, and opportunities to use new technologies found elsewhere in the region. Resources from declining industries, such as the fishery which has left factories, harbour infrastructure or funding opportunities can be reestablished or adapted to suit tertiary or informal local production, rather than being neglected. Local processing of natural resources is a value-added approach to economic development for the outport.

c

design material innovations

From the identified resources, think about the potential of these resources to ensure they are used to their capacity. Collaborate with designers, artisans, and stakeholders to design new products, and processes. Innovations in local craft cultures alter specific designs of the region into new vernacular practices with slight alterations, making these cultural products applicable to today's needs while expressing local values. When designing new products, pay attention to efficiency of resources and renewability of local assets.

d

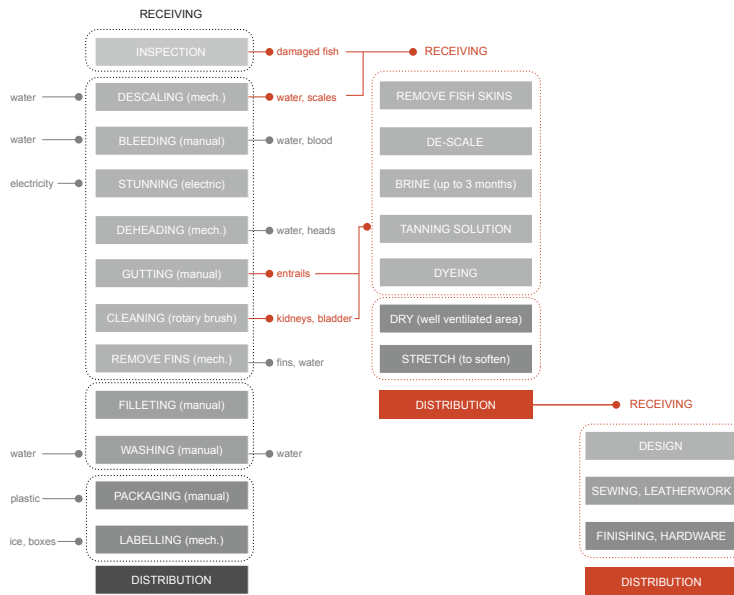
develop production loops

Design a production loop to support your product. Informal production loops are composed of key individuals, resources, and time, while more formalized production is complex and regulated. Wherever possible, integrate the small-scale subsistence production loops with resources from industrial production, developing support between informal players and large economic strength. For example, time-share industrial facilities, or transform the by-products of a local industry. This pairing will develop products that are geo-specific, adapting sustainable local material traditions into new forms with efficient technologies.

e

expand the marketplace

Local informal production is traditionally part of local trade and barter economics. These products have become tourist commodities, or successful within niche markets. Expanding the marketplace for local products without altering their local use and cost within the region is crucial to the sustainability of these economies. Markets, online sales, or craft shops increase the impact of these activities beyond subsistence to income. As part of the design of the production loop, marketplaces can be identified to ensure feasibility. Funding programs from different levels of government, should also be identified and considered.



a Fig. 4.13. Processing methods from the traditional food fishery, commercial fishery and aquaculture generally discard of fish skins to add value to their product. Using a particular method of tanning, this by-product can become a valuable commodity and is stronger than traditional leather from cows. The proposed process is a double value-added production cycle where skins are turned into leather, and then crafted into fine products.

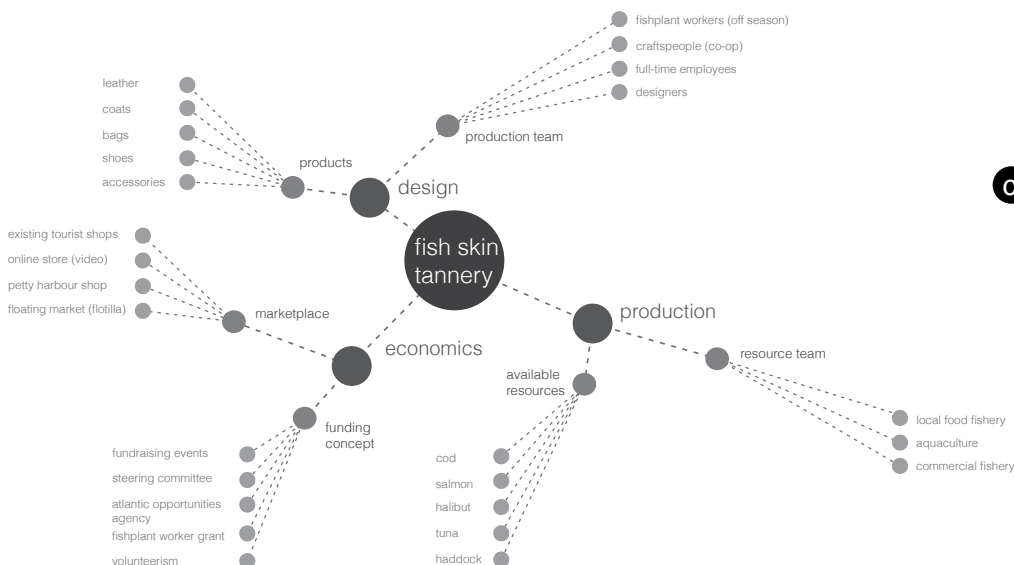


b Fig. 4.14. From left: Drying cod on the flakes, Dyeing fish skin leather, Fish Skin LeatherJacket. The traditional fishing economy of NL has increased in complexity and efficiency since it began 500 years ago. The resources for re-use in this proposal are... Fish Skin leather is stronger than cow-hide leather, and can be made of any species of fish making it a sustainable innovation alongside the changing fishery in Newfoundland and Labrador.

<http://www.lottasgarveri.se/Fishskin.html>

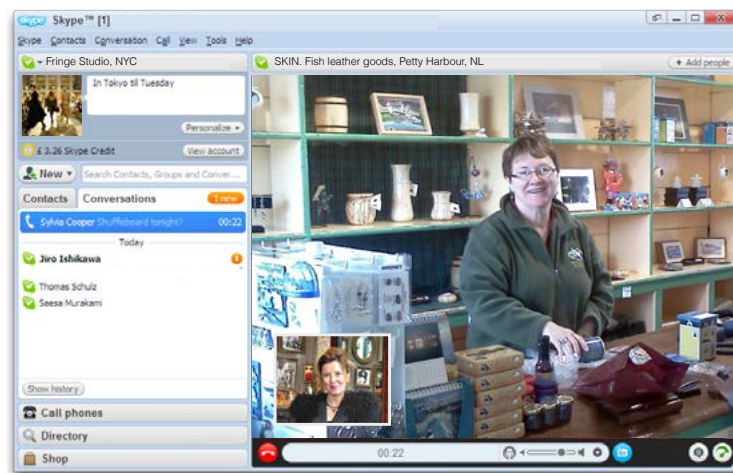
<http://www.heritage.nf.ca/society/images/>

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c Fig. 4.15 The production arrangement for the proposed fish skin tannery works to use existing resources that are readily available, such as craft skills, multiple species of fish for the skins, and existing funding arrangements. By optimizing and linking these resources, this project might be feasible within the marketplace.

- d Fig. 4.16 A new fish skin tanning facility in Petty Harbour works to give local in-shore fisherman an opportunity to contribute by selling fish skins. A processing shop provides necessary equipment for removing the skins.



- e Fig. 4.17 An expansion of the marketplace shows a live feed of the gift shop in which online customers can interact directly with shop-keepers. The experience of buying the product is an experience of place. The product is available throughout the region, a small shop facility is moved within the region to access different communities as well as deliver products and materials. The shop can also serve to provide local products to tourists.

5 place making:

Strategy 5, place making, is about immediate ways of integrating multiple ideas into urban form. The vernacular architecture of the outport is built on local collaboration, available materials and multiple practical skill sets. Rural architecture is a process of recycling, improvising, and adapting locally available materials or skill sets into specific methods of building that promise to work for the community. Place making is an activity that can re-root the rural web by aligning the processes of construction, maintenance and building occupation within the timespace, social transactions and living heritage of the region. Forgotten places or neglected places, which are still part of the cultural identity and collective memory of local people, become sites for new development.

Existing funding and social structures provide new opportunities for bottom-up development. Local employment projects, government funding, and volunteerism allow for community mobilization of sustainable development. Adaptations of vernacular architecture should use the tightly clustered, harbour-centric urban form of the existing outport. The multi-functional, flexible nature of the vernacular can host new social institutions within traditional spatial organizations. What would happen if new community institutions were built as collaborations during come home year, when the population drastically increases? Re-rooting the rural web of interactions requires new cultural landmarks and public architecture, supporting the intangible and informal ways that are latent in the outport. New public spaces contribute to a modern material culture and living heritage by using construction, building maintenance and design to synthesize sustainable visions for the future. The process of place making proposes an analysis of the characteristics that make places valuable and an analysis of available or underutilized spaces in the community. Program can be developed as part of the preceding strategies, using the social structures, material innovations, and schedules of the outport as a starting point but integrating essential community services in rural areas. The process of architecture can be a community effort, supported by municipalities, regional organizations, business people, households, and even people from away.

a

determine a site

Identify the lost, forgotten, and abandoned places are scattered along the coastline. Identifying places with embedded histories and local memory can identify areas for re-growth that follow the vernacular urban form of the outport. Some buildings that might be in acceptable condition, or that are only now beginning to close might be re-occupied with minor repair. These sites can be categorized according to available resources and original use. Most often these places were situated for particular production functions, or near natural resources that might still contribute to feasible programmatic uses.

b

identify strategies to integrate

Once potential sites are determined, choosing which site to develop requires looking at the first four strategies to find arrangements that could work in these places. Having completed the first four analyses, architecture and construction can begin to house new production facilities, social spaces, event spaces, or build community infrastructure. How can a new development integrate and amalgamate the most complimentary program within one structure? Developing a cohesive set of interconnected uses will ensure that building occupation is maximized, and that the space can be adapted to suit multiple public needs.

c

define programmatic requirements and technologies

Once building users are defined, spaces can be allocated to the site. Keeping the program as minimal as possible and incorporating flexible spaces that support multiple uses can reduce financial input and increase economic longevity. Local skill sets and readily available, affordable and local materials should be analyzed within the proximity of the site. Materials like locally sourced clapboard, fiberglass, handmade net, or scavenged materials have embodied maintenance requirements that can be seen as an opportunity to keep these material traditions alive.

d

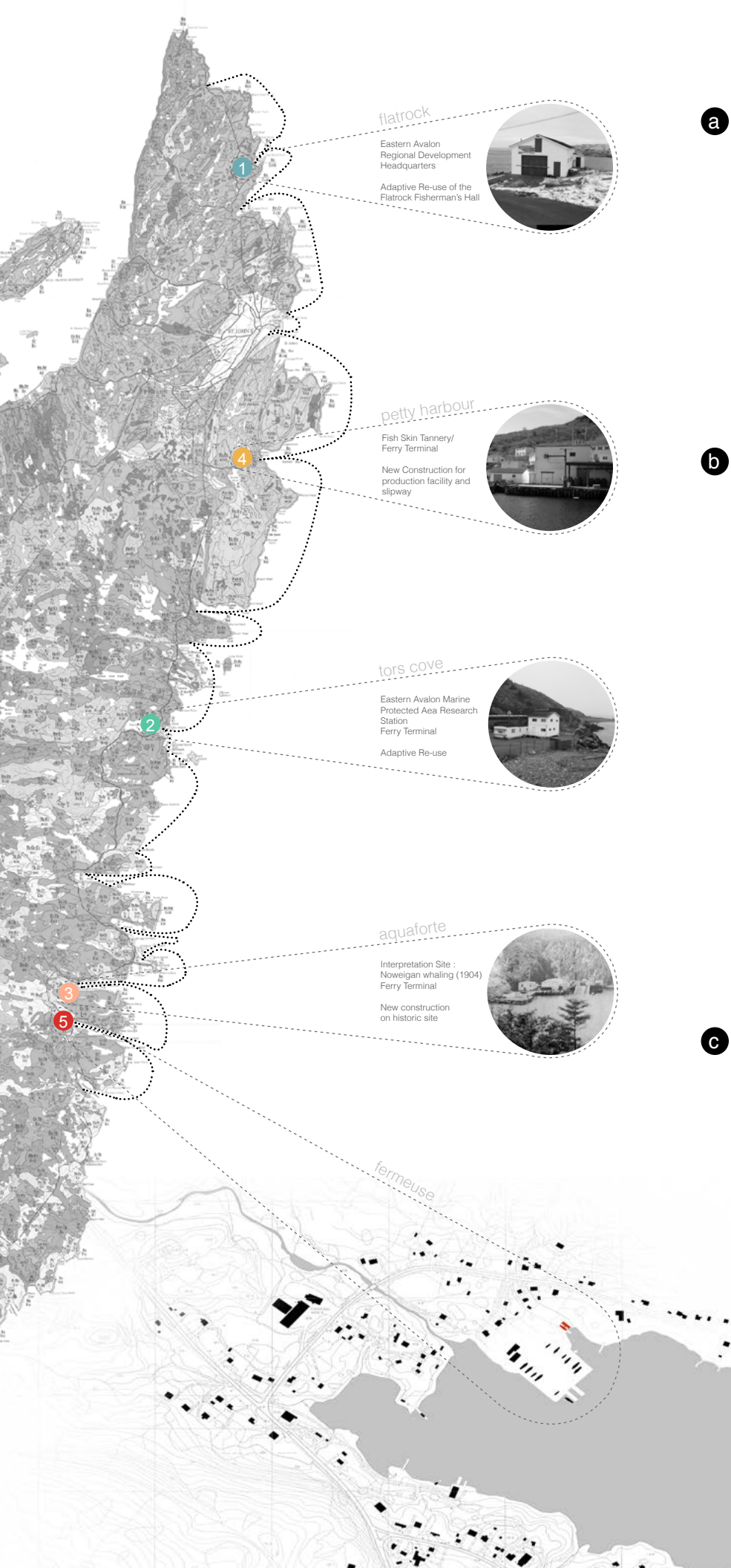
design new institutions and landmarks

Designing a new building in the outport should contribute to the form and function of the community. Every building has the opportunity to become a local institution or landmark, how will your building? Identifying and including new public functions with adaptive re-use of heritage structures will help embed new architecture into the very identity of the community. Make design decisions that use the virtues of the local vernacular. Design buildings that maximize the use of local materials and skills defined in the previous step.

e

develop supporting social arrangements

The construction of new buildings is incredibly expensive. The design of new places should react to existing development arrangements, including funding, time, and labour. Identify existing arrangements that have produced buildings in the area; make work projects, heritage funding, and collaborative construction. Although the cost of construction may seem to be the largest investment in making architecture, this investment can easily be wasted if buildings are not maintained. Stewardship of new buildings results from a feeling of local ownership that needs to be considered in building design. How could the project be designed in a way that ensures longevity as a result of community stewardship?



a

Fig. 4.18

Situated alongside, within, or in place of harbour architecture along the coast, the sites indicated in Flatrock, Petty Harbour, Tors Cove, Aquaforte, and Fermeuse are proposed stops on the seasonal coastal ferry service. Each of these sites are now underutilized, though they were once essential for the fishery.

b

The five building proposals have been programmed to support the first four strategies. If you think about the program associated with each strategy, it is possible to imagine ways that the various programs can be mutually supportive. The regional transportation function (hiking, ferry, and road) supports exchanges between rural locales and urban centres (strategy 1, territorial networks). The proposals can support strategy 2, community stewardship by encouraging local people to protect and care for local heritage and ecological assets. Strategy 3, temporal alignment is supported by maintaining the traditional daily rhythms of the harbour, and introducing new community events within the buildings. Lastly, Strategy 4, novelty production, can be supported by building technology with innovative adaptations of traditional craft culture.

c

The site plan (below) shows the configuration of the proposed building within the urban centre, alongside the east coast trail and within the functional harbour. The proposal for a new ferry terminal to support the coastal boat service is accommodated, but the building can also function as a community support space, hosting rotational services, such as medical care, production space, a digital library, blood donor clinic, or performance space.

d

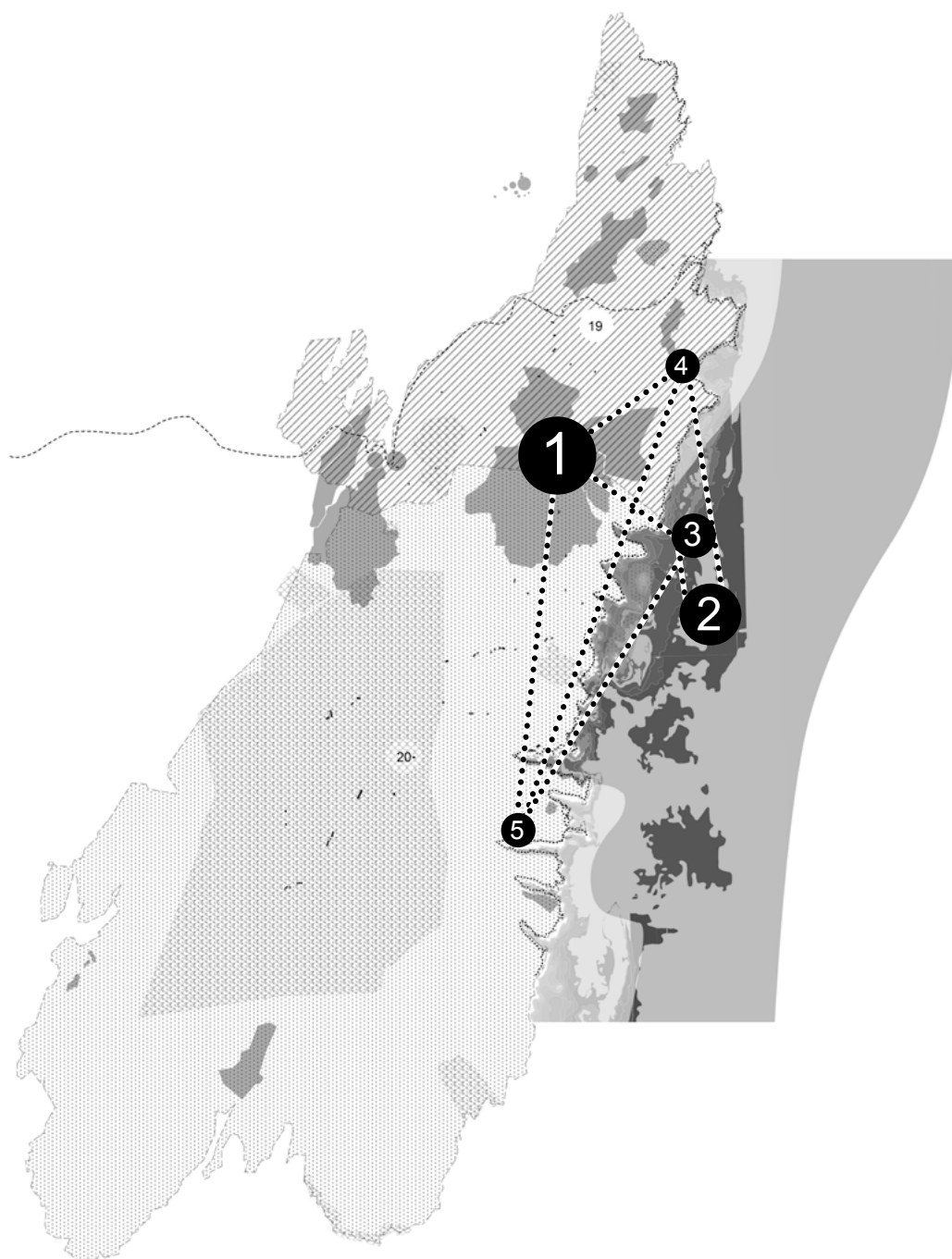
Fig. 4.19 The proposed design aligns with the vernacular, a small flexible space that the boat is dry-docked next to in winter months and expand available indoor community space. By using local materials, and local labour, intangible cultural heritage can be preserved and maintained within the envelope of the building. A landmark is built on local traditions, and using vernacular materials it embodies local culture.



e

Fig. 4.20 The equipment, materials, and skilled labour at the site is applied to the construction and maintenance of the proposed building. Initial construction will use local labour, supplemented by volunteers from the next Come Home Year event. A 50 foot retrofitted fishing boat can be easily maintained from this location. Traditional materials such as fibreglass, hand tied nets, and traditional wooden construction requires maintenance, and a network of local people that can become stewards for new architecture.

Fig. 4.21 Each of the strategies can be applied to specific areas within the region,. As a set, the strategies are integrated, each providing support to the other in specific ways through a co-ordinated implementation.



implementation and integration

As the strategies emerge from the context of the outport, they are a deeply intertwined. For instance, in the case study research the strategies are rarely found as isolated approaches, but rather multiple strategies combine to form sustainable developments. As such, the proposals for synthesis are composed of multiple strategies. A curatorial approach to the region focuses on preserving important things by developing support from peripheral assets and structures. The following examples, combining two or more of the strategies, illustrate a much wider range of possibilities.

(Strategies 1 + 3 + 5) A new tourism region is dependent on seasonal patterns in the outport, as it begins to increase opportunities in the summer by increasing the number of visitors, developing the tourism economy. The project begins developing a sense of place along the trail by expressing natural features with small installations and providing information for tourists and locals alike.

(Strategies 1 + 2) An expanded protected ecological area develops a sub-region with ecological assets, increasing diversity within the region by including Newfoundland sheep in the protected zone. Mobilizing social structures to extend capacity for monitoring within a larger ecologically significant marine area re-introduces traditional stewardship of local resources by local people in areas which are not currently doing this.

(Strategies 1 + 2 + 3 + 4) A seasonal flotilla re-connects the region by providing transportation according to traditional coastal boat services. This provides the opportunity for communities in the region to collaborate, visit and build economic relationships. This flotilla, although seasonal would be reliable transportation for goods as well as people, providing opportunities for production relationships between individuals scattered along the coast.

(Strategies 2 + 3 + 4 + 5) A new fish skin tannery forms new social co-operations between industrial and subsistence producers, providing economic opportunities for harvesting alongside fishing seasons, but also value-added production throughout the year. New processes emerge from local resources to provide modern and innovative craft services. Over time, this production loop would develop support space, such as this proposed building in Petty Harbour.

(Strategies 1 + 2 + 3 + 4 + 5) A ferry terminal and community centre integrates all of the strategies within the region. As a ferry terminal, the building would provide support for the flotilla, developing a new temporal rhythm in the outport calendar. It would provide regional connectivity between rural and rural areas, as well as rural-urban connections. The building is designed to support community activities, its flexible configuration provides more enclosed space in the winter, providing a flexible space for community gathering, craft production, or public services.

Fig.5.1 Sunrise, Twilingate, NL



Fig.5.2 Youth Jumping Ice Pans, South Brook, NL.

5 emergent futures:

Newfoundland has not yet learned all it can from its past mistakes. This year marks 20 years since the moratorium on cod fishing; it also marks the first time that Newfoundland and Labrador has become a 'have' province. Unfortunately, this success is still being built on a boom and bust natural resource economy. A strong economy can support the development of self-sustaining systems for continued prosperity. This means the time for positive change in the outport is now. Finding a way forward requires collaboration between informal folkways and institutionalized ways to effect immediate, but gradual changes. Starting now, allows time for re-design, adjustment and adaptation of development strategies to ensure that material changes are effective and sustainable.

In this time of transition from old ways into new outport identities, there is much to learn from the skills, culture and resilience of the outport and its people that is rapidly disappearing. In order to maintain the sustainable, vernacular systems that already exist, implementation of these strategies needs to begin while traditional knowledge is still available. Knowledge transfer between the older generations and new ones is requisite for cultural sustainability. Aging populations in rural areas hold valuable skills and knowledge that we can collect, renew, and mobilize before the old ways are lost.

conclusions & predictions

Learning the lessons that the outport can teach about sustainability identifies five systems that can be modified to support sustainable development. The five strategies in this work contribute to sustainability as new methodologies- finding potential and opportunity for change in the context of the outport. The outport is in a time of transition. Rural or remote areas hold important cultural, ecological, and economic knowledge that creates small-scale, diverse, and sustainable systems of interaction. These systems have been fine-tuned over generations, allowing rural communities to survive despite economic depression, out-migration, and lack of local services. Simultaneously, urban, industrial, or sub-urban communities show great promise. Rapidly developing areas meet the current needs of the new generations, with new technologies, economic opportunities and new cultural traditions.

The new ways and the old are embedded in the very geography of the province, each with its own assets and vulnerabilities. Transitional strategies incorporate the valuable characteristics of the past with a vision of the future in ways that can be implemented immediately. Working to identify opportunities that intersect the social, territorial, economic, temporal and spatial structures, the strategies build linkages between the top-down and bottom-up development methods. Identifying resources, sustainable qualities and methods of implementation contributes to an evolutionary design process that imagines big changes as a result of small-scale decisions, re-adjustments and attitude changes. Most importantly, these strategies are tools for imagining, testing and measuring the risks and benefits of rural development. Each strategy can fail with minimal impacts to the community. This work contributes to the application of sustainability thinking by adjusting the processes and tools for the design, implementation, and evaluation of sustainable development. Instead of focusing on the end results of sustainable development, Pilot Project focuses on the first steps to change. These first steps are considered within an understanding of the value of traditional resources and the core requirements for moving towards more sustainable future. Each of the strategies that form these steps is presented in brief, in each case summarizing the character of the strategy, proposing specific actions, and reflecting on potential outcomes and impacts.

- 1 As the outports have declined, so too have regional systems of mobility, trade and social interaction. territorial networks are analyzed to identify existing relationships, linkages, and dependencies to identify areas for new ones. These linkages are geographically embedded proximities, trade relationships, resource dependencies, which encompass the regional capacity. A resilient rural web of interactions is aggregated from multi-scalar collaborations and exchanges in the social, economic and ecological layers of the outport. Historically embedded connections perpetuate existing opportunities, reveal forgotten pathways, and adapt into identities.

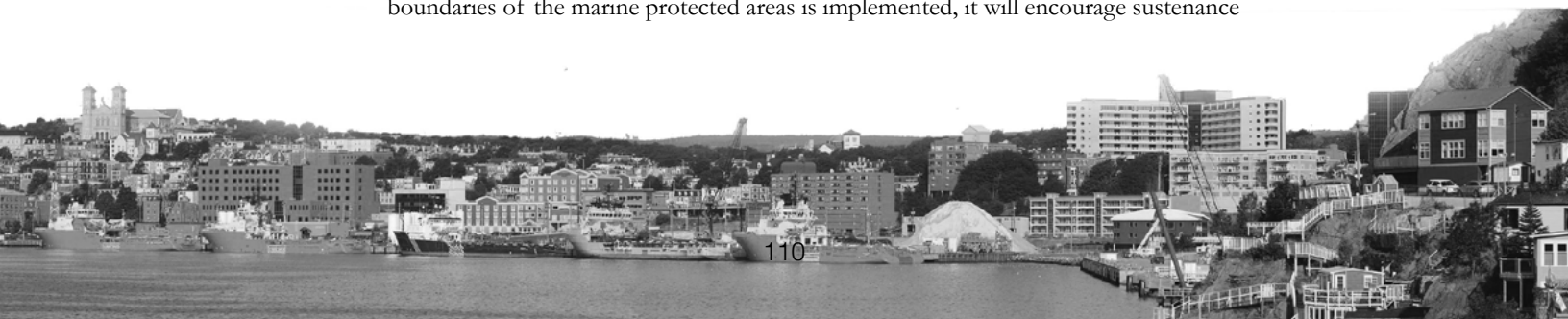
Fig. 5.3 St. John's, 2013



The proposed outcome is a re-identification and development of a new tourist region along the east coast trail. The strategy bridges diverse community capacities, making sustainable rural developments at many scales; between individuals, communities, sub-regions, and existing management areas. Changes in the region exhibit growing support for this approach as new town signs, websites, transportation links, and agreements begin the process of re-identification. If the proposed regional boundary works, it develops a new regional identity by establishing complex regional relationships. If it does not work, the rural web will continue to degrade, with relationships being built between rural and urban centres, but not as a woven set of rural relationships along the coastline. Identities are not resource intensive, but rather focus on a restructuring of regional practices, thereby increasing support for future changes, with little risk. Developing sustainable rural areas requires collaborations across multiple scales. Sustainable development of the region requires diversity, rather than similarity, exhibiting the unique and innovative features of the outports.

- 2 The social structures of Newfoundland and Labrador have proven to be effective support systems. As rural out-migration, and conversely rapid development change these structures, new structures for community stewardship need to be invented. community stewardship is a product of place bonds; cultural connections to the ecological resources, heritage architecture or traditional practices that develop protected places, and resource management techniques. The stewards of these resources should be those who use the resources, giving control to those that might be impacted by effects of developments. Once these social resources are developed, the scope of stewardship initiatives, and the monitoring of protected areas can be expanded accordingly.

One proposal for the region is an expansion of the Witless Bay Ecological Reserve, a collaboration to extend into a much larger offshore protected region, designated by the Department of Fisheries and Oceans as an ecologically significant area. Existing social support for the ecological reserve is both informal social groups supported by government initiatives, and top-down legislated boundaries and policies. Diversifying social support to nearby communities, harbour authorities, fishing industry, and individuals grows the capacity of the social network to implement and manage an enlarged area, over time. New forms of media increase the ability for communication between rural areas. Social media and new community websites have drawn a community of out-migrants, tourists, and researchers that contribute and monitor protected areas from afar. This 'effective' community expands the capacity of the community and positions rural areas within a global network. If the proposal for extending the boundaries of the marine protected areas is implemented, it will encourage sustenance



culture and local monitoring, developing tertiary economies of tourism, and protecting important natural resources. If it does not work, new possibilities might emerge from the collaborations of stakeholders, but there are risks of conflicts in any social network. Sustainable rural development requires mobilization. People who care about the future of their communities to encourage adaptations of development schemes can establish informal stewardship networks to manage their local resources.

- 3 The ocean is ever changing. Seasonal changes, daily tides, and yearly ecological events perfectly encapsulate the requirements for the outport to adapt. **temporal alignment** presents the unique time cycles of the outport as an area for rural reconfiguration. An analysis of mobile as well as fixed assets in the outport is crucial to determine the impacts and opportunities of rural development. Events, traditions, or daily practices help individual communities by bonding the social network. Traditions are key points of knowledge transfer between generations, are the sites of cultural adaptations, and provide a forum for bonding the social network. By analyzing the calendars of communities in the region, this strategy proposes coordination and support for daily, events and opportunities. The timespaces of the region are not replicated year to year, calling for flexible support systems that can meet the adapting needs of the outport.

The proposal for acting on this strategy is a flotilla, a fleet of boats, which can temporarily provide access between rural and urban areas. The flotilla is conceived of as a co-op that uses locally owned vessels and develops transportation routes according to regional events and tourist needs. Developing linkages across multiple timescales, the flotilla can change and grow to accommodate large yearly events, while also preserving daily community and harbor traditions. If the proposal is successful, it develops material expression. This might be a series of small ferry terminals along the coastline, adaptations of local fishing vessels, or a system for scheduling, and coordinating events in the outport. If the flotilla does not succeed, new events will still be created, other forms of transportation will continue to serve the outport, and harbour usage will continue to decline. Events in rural areas have grown in the past few years. Higher attendance, new festivals, and social committees foster a cultural revival that increases the quality of public life. Sustainable rural development needs to consider the pace and timing of development. Seeing the impacts of temporary or ritualized events on the community requires time.

- 4 Traditional artisanal production, subsistence activities, and trade or barter markets develop unique cultural and material identities throughout the region. This sub-system has been essential to the survival of the outport during economic decline. **informal economies** is about replenishing informal economic capital by developing accessible opportunities, inventing new production methods and strengthening self-sufficiency in the outport. These activities are intangible cultural heritage, or living heritage of the

Fig. 5.4 Bay Bulls, 2011



outport. While efficient industrial systems provide immediate economic gains, they come with great risks and require foreign investment. Developing linkages between efficient industrial production methods and the informal economy develops the capacity of the outport to self-sustain, increasing local opportunities and creating new production loops. Underused, wasted and neglected resources such as traditional skills, natural resources and industrial by-products provide the elements for developing a modern informal economy. Developing this economy is deeply tied to outport identities because material methods of production are regionally distinctive.

A new fish skin leather tannery would exemplify a modern adaptation of the vernacular economy. Fish skins are waste products of the fishery that can be collected from individual fisherman, co-ops, and fish plants in the region. The tannery would bridge between different scales of production, providing opportunities that establish new material cultures. Efficient use of resources, adaptations of local skill sets, and this new material culture would make this production loop sustainable culturally, ecologically, and economically. If the proposal is successful, new material identities will emerge and the good ideas will spread to other places, local incomes will be supplemented, and this business will be profitable. If the project is a failure, some economic investment will be lost, the production facility will adapt to support a different function, and intangible heritage will continue to be lost. Public knowledge of the importance of local products is beginning to change consumer choices, and a cultural revival is making Newfoundland's products popular. Sustainable rural development is a process of integrating economic considerations with resource stewardship and sufficient cultural and economic opportunities.

- 5 The vernacular architecture of Newfoundland is not just shelter. It is the integration of community collaborations, construction technologies and a support structure for local organizations. Buildings are sculpted from volunteerism, available materials and skills, and creative ways of making things work. **place making** is a strategy for construction and land development that engages the first four strategies, embedding intangible assets within the architecture of public space. Sustainable traditions of building can adapt to engage modern social assets, technologies, and new ideas that develop the vernacular. The act of building emerges from socio-economic configurations that promise to maintain the adaptability and longevity of physical space. As such, working within tight economic constraints, funding programs, and proven social arrangements contributes to the sustainability of local buildings and institutions. Siting new developments in forgotten, neglected, or abandoned landmarks, new architecture integrates modern identities within traditional rural ethnography.



A proposed ferry terminal could be programmed with necessary community amenities that could include a library, social space, or even medical facilities. While the rural economy forces closure of public spaces and programs in the winter, this proposal seeks to expand community amenities in the winter by expanding indoor space. Typologies of the fishing stage, and the sixty-five foot fishing trawler are combined. The boat, which could serve as part of the coastal flotilla in the summer, is designed to connect to the terminal to provide additional public space in the winter. The proposed construction effort could be co-ordinated between local boat builders, economic development projects, tourism funding, and a Come Home Year celebration for Fermeuse. If the proposal is successful, the building will meet current and future needs and maintenance will preserve intangible culture through material traditions. The facility would provide amenities, bring new opportunities, and become a new landmark in the rural web. If the proposal fails, the building will remain as long as it has purpose, or it will become another ruin in the outport landscape. As the outport has become more economically viable new buildings are rapidly constructed. At the same time, the architectural heritage is being collected on community websites. These cultural and economic resources are key ingredients for architecture in the outport. Sustainable rural development is a process of integrating adaptive forms into permanent institutions that develop distinct rural and urban forms.

These strategies will intertwine and grow together over time. Readings of the context show that successful examples of vernacular sustainability combine multiple strategies. Combinations of physical and intangible developments are the configurations that last. Evaluating the potential for the strategies to expand, as well as to have adverse effects is an important process for managing risks and opportunities as they emerge. The set of strategies can be paired with yet more strategies, which have yet to be invented or identified. This project is not complete. Other departures for development might be inter-municipal agreements, cultural events and rural-urban exchanges to stimulate regional connectivity. The foundations for implementing the five strategies are growing. Integrated community sustainability planning and gas tax funding provide support for change. Increasing real estate prices in 'town' have made the communities just outside the capital cheaper alternatives. These communities have exploded with new developments. For generations, new developments in rural areas were mandated, but now people are choosing to live in rural areas. Development can present more of a risk than non-development or decline as communities are rapidly rebuilt and traditional forms of sustainability are disappearing. Underdevelopment preserves the old ways, giving rural places great significance as strongholds, and residual repositories of the lessons of the vernacular sustainability.



limitations

The methods in pilot project focus on supporting the intangible and informal processes. This limits research because informal culture is difficult to quantify, statistics are not readily available and most of this activity is 'off the record'. As an outsider to many of these communities, I have had to base my research on the physical evidence of these processes and stories. Written, oral, and video resources prepared by community councils such as the integrated community sustainability plans, researchers that interviewed local people, and community generated media are the sources for this work. Community engagement processes could begin to dissolve this barrier for future research. Some of the communities lack updated mapping information and those with designated place status lack statistical information. While historical information is vital to understanding the outport, thinking about development requires recent history. In declining parts of the study area it is really difficult to understand the modern history and current events because emphasis has been put on the oldest heritage of the province. The rapidly changing rural context must continue to be studied because the impacts of current developments are still unknown. Another limitation to the success of this work is that economic successes in Newfoundland most often rely on risky behaviour. The risks of the mono-resource economy are real. It will be difficult to develop tertiary opportunities because industrial economies have immediate and measurable economic gains.

One of the greatest limitations in this work is insufficiency of direct community contact so far. Interactions with community members can further refine the strategies, but also inform the practices of the community. Convincing communities to take this approach is a daunting task that requires tangible proof of success to become a widespread practice. Testing the strategies requires buy in from local municipal leaders, citizens and stakeholders. How can these bottom-up structures operate without undermining or disobeying federal, or provincial policies and programs? While the work is conceptual, the strategies are designed to work within the real parameters of the region. The methods need to be implemented to see what opportunities and risks they present. This is especially important to get support. Proposals for sustainability-enhancing projects need to establish strong grounds for expecting tangible benefits in order to garner financial support (investors and government), planning approval, or to pass environmental assessment. Knowing the risks of development strategies is also vital because regulatory processes are in place to ensure that developments don't harm the environment. These processes provide the most difficult limitation to the work. The concept of pilot project is about flexible development processes, which evolve over time. As such, it is difficult to forecast how the projects will adapt. Phasing each evolution of the design is important to meet development regulations. If these methods are successful, new ways of accounting for risk and decision making that support them will need to be developed gradually within existing federal, provincial, and municipal development processes.

Fig. 5.5 Port Kirwan, 2011





Fig. 5.6 (top), 5.7 Community participation can be supported using existing events and social forums, such as the traditional Newfoundland Shed party, or Come Home year.

directions for future research

This work asks: how do you engage a community in creating sustainable development? The role of this document is as a catalyst for beginning to ask questions, explore new ideas, and provoke reactions that translate to action. While the strategies described in this work come from an outsider, they draw from and are intended to respect the traditions, resources and opportunities of the communities, and they are of no practical value unless they are found useful, at least as a basis for further exploration by people in the communities. Bottom-up initiatives require leadership and community initiatives require direction. This document is designed to inspire even better ideas, challenge pre-conceptions and propose action that can be championed by any willing community.

Crucial to the implementation of sophisticated sustainability frameworks in the outport is public understanding. This work attempts to do this by incorporating design and visual communication as a method for illustrating desired outcomes. The next phase of the project is to share the work with communities across the island. Pieces of the work, such as the case studies are elements that can form the background work for community engagement exercises, where people can contribute by filling in information on the maps, as well as by contributing photos and text, if communities consent. Sharing, discussing, adjusting and experimenting with the ideas are the desired outcomes of this work. By discussing the project with the public, stake holders, community groups, government representatives, and funding agencies specific alignments and measurable benefits can be examined and implemented.

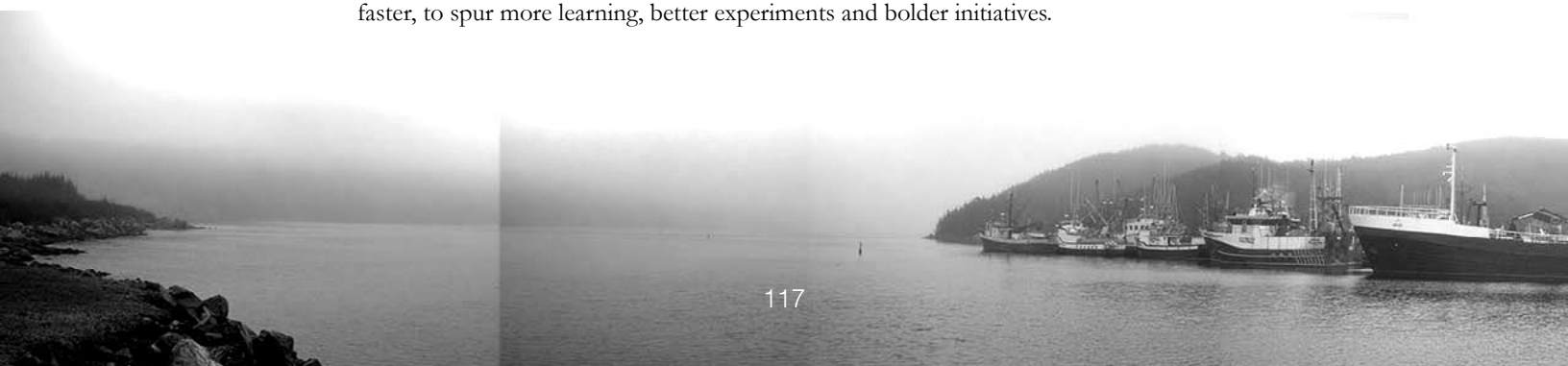
The illustrative proposals in this work can be further refined, tested and used as examples for pursuing local sustainable development. Presenting the proposals at the end of this work, such as the flotilla or fish skin tannery to stakeholders or funding agencies can begin to get these or other developments started. This direction for implementation would serve to immediately test these development strategies and form further case studies for communicating the process of sustainable development, step by step. Prior to implementation, and throughout the process of business case study, site selection, social organization, and construction, public engagement sessions should be held within communities hosting the development. In specific ways, I have tried to make the ideas accessible, but there is plenty of work left to understand the impacts of this work when it is implemented. This work can be used as a catalyst for change, a direction that can be critiqued, discussed, and tested.

developing tools

Tools are designed for quite specific functions. But if you were to use a tool, it might make you think of new functions, or other tools that expand your capacity. In the same way, existing frameworks and processes for sustainable development inspire new tools and adaptations, which enhance the outcomes. Tools and technologies change the way we interpret the world and the way we imagine the future. As such, new tools for implementing sustainability form innovative outcomes. Adapting the methods and frameworks for understanding, measuring and synthesizing change are crucial to effecting change. Sustainability theory is a complex idea that requires complex support structures for positive transitions. The goal of this work is to contribute to community efforts to make changes for the better.. Implementing the theories of sustainable development requires new ways of teaching, identifying and practicing sustainability to increase the ability for people to identify opportunities on their own. The pilot project toolset for communicating, inventing and building sustainable developments, might inspire new tools, enhancing the ability to translate sustainability theory to practice.

Sustainability is a practice, not a fixed end. Subtle changes aggregated over time are sustainable because they provide opportunities to monitor progress and continually adapt to address impacts. Sustainable development requires a community of practice; it is not a solitary endeavour. Getting people to engage in such a paradigm shift is a great challenge. Communication of sustainable ideals requires a flexibility to learn in different ways, and a variety of media to help access diverse populations. Communication to non-specialists is central to achieving this goal. These ideas must be effectively communicated to everyone, because sustainability offers a set of objectives and understandings to guide actions for positive change. The ways of making opportunities accessible and enhancing community control is a key area of future research. Communities in the region should be thinking about the impacts of current developments, the potential risks and opportunities, and ways of finding their own support structures.

Pilot project contributes methods for explaining sustainable development using outpost communities as places for testing new ideas and systems, to see what works and what fails. Each of the strategies is a comment on the form, scale, pace, cost, and mobilization of sustainable rural developments. These parameters of sustainable rural development emerge as methods and frameworks. Future work is about testing the strategies in Newfoundland, but also adapting this method to different contexts. Will different support structures emerge? The method of these strategies can be used in other rural fishing communities - places with strong cultural assets, and with similar physical structure and geography. Testing will reveal how these might fail, physical implications, and opportunities. From these tests, the strategies can be altered to fail faster, to spur more learning, better experiments and bolder initiatives.



Developments are really just investments. Development is not solely about building new things, but is the manipulation of the systems and spaces that are already working in a community. Developments require maintenance to take advantage of opportunities that arise, so stewards must be trained. Pilot project proposes developments that are not necessarily policy, or physical construction. Developments can be intangible, they can emerge as paradigm shifts, unwritten codes of conduct and new attitudes. The new best practices will be absorbed into actions. Just as social media have been distinguished from traditional forms of media, sustainable development is seen as a specific approach that is not used in all projects. The terms social, or sustainable qualify the approach. But now, as all media are becoming social media, perhaps all development approaches will aim to enhance sustainability. There should be no need to qualify development approaches; there has been enough discussion. All developments should deliver positive contributions to sustainability.

Many current pre-development processes are predictive. Environmental assessment, for example analyzes existing conditions and project potential impacts. Outcomes from these processes are written reports that direct development actions. There are opportunities lost in these frameworks. The resources used to complete these reports (researchers, consultants, local stakeholders, and money) are significant in comparison to local capabilities. Pilot project contributes the five strategies as stand-alone methods of development, but also as potential amendments to pre-development processes that take advantage of the resources associated with planning large industrial projects. The project seeks to develop alternatives to the industrial economy with a sustainable focus. The strategies build on local resources and traditions with innovative and flexible options that are more likely to have lasting and resilient results. Could pre-development processes include synthesis, and would this prepare communities to sustain vernacular cultural, economic, and physical assets, despite economic booms? In places where sustainability is merely discussed, implementing sustainable support structures can prepare communities for rapid changes and increase local capacity. The goals of sustainable development are shifting targets. Sustainable visions are incremental and represent current capabilities, but as technology develops, resources deplete, and attitudes change, so should the scope and reach of sustainability agendas. There is no definite solution to protecting the character of and expanding the opportunities for Newfoundland's coastal communities, but there are alternative options for communities to consider. It is important to implement creative learning tools for sustainable development, because in essence, sustainability is about innovation.



Fig. 5.8 Fermeuse, 2011

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