



Research

Local understandings and global challenges: exploring sense of place in sustainability transitions

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ABSTRACT. The sustainability transitions literature acknowledges the importance of place for building a more sustainable world. Although some researchers have studied place analytically and made contributions toward developing sustainable communities across the globe, and others have directly discussed the structural aspects of places, the sustainable transitions literature has not fully reconciled place specifics with their implications for sustainability. This research explores how members from the small community of Campobello Island, New Brunswick, Canada, link their sense of place to their understanding of sustainability and considers the implications of this for sustainability transitions. Through an interdisciplinary, mixed methods approach, this work develops three propositions regarding sustainability as it relates to sense(s) of place. First, we found that within the Campobello community, sustainability was linked directly to individuals' senses of place, place identities, and place attachments. Second, we found that there were slight variations in islanders' concepts of sustainability related to these place-related constructs. Third, we found that although this community's sustainability conversations were dominated by place-specific rather than global sustainability discourse, this was not always the case. As a result, the importance of more deeply exploring the normative nature of sustainability transitions is intensified. Understanding how place specifics connect with views of sustainability in a small island community allows us to deeply explore the role of place in sustainability transitions.

Key Words: *place attachment; place identity; sense of place; sustainability; sustainability transitions*

INTRODUCTION

Since the publication of *Our Common Future* (Holdgate 1987), the idea of “sustainable development” has become widely known and adopted in many forms. As the urgency of global social and ecological challenges mounts, local understandings of what sustainability means and ideas of how we might enable sustainability transitions are also proliferating (Gladwin et al. 1995). The idea of sustainability as a “wicked problem” (Pryshlakivsky and Searcy 2012, Sun and Yang 2016) reveals how different stakeholders have different ways of defining complex sustainability issues and potential solutions to unsustainable practices. Although sustainability can be a usefully contested concept (Dobson 1999, Kurucz et al. 2013), sustainability conversations that enable positive change require a shared understanding of what sustainability means both locally and globally (Rockström et al. 2009, United Nations [UN] General Assembly 2015). The fundamental meanings of sustainability, as held by community members who live in and interact with different places, influence whether local and global sustainability goals can be achieved (Dale et al. 2008, Chapin and Knapp 2015, Vodden et al. 2015, Grenni et al. 2020). In short, “our common future” requires a more nuanced understanding of sustainability and place relations if we hope to make positive progress toward sustainability goals.

The small community of Campobello Island is working toward the achievement of local and global sustainability goals. The island, situated in the Bay of Fundy in the province of New Brunswick, Canada, has about 800 year-round residents. In the summer months, the community sees an influx of visitors and seasonal residents, doubling its population (Jacobs and Burga 2018). Geographic isolation, diverse social networks, and

dependence on the natural environment and regional economy are prominent aspects of life in this community, particularly for the year-round residents (Jacobs and Burga 2018). Like many similar small island communities, Campobello Island needs to foster a sustainable local economy to ensure its survival (Vodden et al. 2015). This journey includes global challenges but also local, place-specific issues unique to their elements of periphery (Vodden et al. 2015). The features of this context present a unique and rich opportunity for deeply understanding how sense of place relates to sustainability. They are also an opportunity for advancing our understanding of the critical role played by place-related concepts in sustainability transitions. The following section will introduce key concepts, highlight how these concepts interact in previous literature, and reiterate the importance of expanding this area of research.

Connections between sense of place and sustainability transitions

Introducing sense of place in a sustainability context

There are several definitions of sense of place, few of which blend multiple perspectives on sustainability (see Grenni et al. 2020). Stedman's (2002) conceptualization of sense of place, and its connections specifically to environmental sustainability, is central in these discussions. Departing from Stedman, sense of place is the interaction of place identity, place attachment, and place meanings (Masterson et al. 2017). This concept provides insight into place-related sustainability behavior and attitudes (Uzzell et al. 2002, Stedman 2002, 2003, Davenport and Anderson 2005, Chapin and Knapp 2015). Another perspective relevant to the discussion of sustainability, from anthropology, equates sense of place with human experience in and of places (Feld and Basso 1996). People experience their place through their senses and

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continuously co-create meaning through this sensual exchange with the environment and people around them (Tuan 1977, Feld and Basso 1996, Greider and Garkovich 2010). A sense of place perspective implies that place-related sustainability behavior and attitudes are developed and change through people's feelings about the locations with which they are familiar and concerned.

Defining sustainability transitions and examining the community level

Sustainability transitions are defined as “major shifts in established industries, socio-technical systems, and societies toward more sustainable modes of production and consumption” (Sustainability Transitions Research Network, <https://transitionsnetwork.org>). A sustainability transition occurs on several spatial levels, including at the individual and community level (Hansen and Coenen 2015). Any “one size fits all” approaches to sustainable development miss, however, critical details of the operational or local community level (Uzzell et al. 2002, Dale et al. 2008, Hansen and Coenen 2015, Horlings and Kanemasu 2015, Vodden et al. 2015, Bergstrom and Harrington 2019).

Communities situated in unique places may articulate a guiding place identity for sustainability planning, but overly dominant senses of place and identity can limit the focus of sustainable initiatives (Dale et al. 2008). Furthermore, if diverse place identities and senses of place exist in a single location, different local sustainability goals and priorities may be formulated (Stedman 2002, Lin and Lockwood 2014a, Chapin and Knapp 2015, Grenni et al. 2020). For the successful and long-term sustainability of communities, local values must be shared with decision makers, and stakeholders must be involved in development discussions (Bergstrom and Harrington 2019).

Aspects of place are influencing sustainability transitions

Local economic activity, industry specialization, and social practices set the context for sustainability innovations (Stedman 2002, Hennessey and Beazley 2014, Hansen and Coenen 2015, Masterson et al. 2017, Köhler et al. 2019). More specifically, mass export of resources, small populations, and rurality can influence the focus and implementation of sustainability initiatives (Murphy and Smith 2013, Horlings and Kanemasu 2015, Köhler et al. 2019). The boundaries of a space or geography must be considered when creating a sense of place in sustainability initiatives (Dale et al. 2008, Chapin and Knapp 2015).

Further, some aspects of place, including sense of place, can both inhibit and contribute to sustainability or a transition to a sustainable system (Dale et al. 2008, Hennessey and Beazley 2014, Chapin and Knapp 2015, Hansen and Coenen 2015, Köhler et al. 2019). When discussing future planning and place management, sense of place has been found to influence the attitudes of community members toward changes to the local physical environment (Davenport and Anderson 2005). A shared vision for the future of a place among the community can mobilize people to become involved in local concerns (Parkhill et al. 2015, Bergstrom and Harrington 2019). Commitment to environmental protection initiatives may require more focus on leveraging place identity and values rather than economic incentives (Hennessey and Beazley 2014). Preserving place identities, sense of place, and place attachments within communities increases the social well-being of communities (Khakzad and Griffith 2016), and although these contributions of place to sustainability initiatives have been observed, the sense of place of community members can also

work against notions of sustainability (Dale et al. 2008, Chapin and Knapp 2015). Horlings and Kanemasu have observed lack of collaboration among community members and differing interpretations of sustainability as weakening local efforts (Horlings and Kanemasu 2015).

A need to study intellectual place-related concepts in sustainability transitions

Connections between sustainability transitions and technological place factors (such as location, resource access, geography, and consumption) have in previous work demonstrated the importance of place-related concepts in transitions (McCauley and Stephens 2012, Hansen and Coenen 2015, Frantzeskaki et al. 2018). The sustainability transitions literature has been less focused on intellectual place-related concepts, such as identity, sense of place, and place attachment. Studying place-specific views of sustainability and their different meanings throughout different places would contribute to the further development of this literature (Romero-Lankao and Gnatz 2013, Köhler et al. 2019). This paper is focused on deepening our understanding of the role of these concepts in sustainability transitions, by exploring how community members' sense of place links to their understanding of sustainability in the Campobello Island context.

METHODS

To explore the connections between sense of place and sustainability, a mixed grounded theory (MGT) approach was used. MGT is a combination of mixed methods research and grounded theory creation. It allows for the generation of a theory from both qualitative and quantitative data (Chun Tie et al. 2019, Johnson and Walsh 2019). Because the study of intellectual place-related concepts in the sustainability transitions literature is still emerging, the exploratory and inductive nature of MGT was an ideal method for answering our research questions. We were able to use this method to represent the perspectives of participants holistically and to develop our theoretical propositions for how community members' sense of place links to their individual concepts of sustainability. The specific MGT sequence used in this research is aligned with the concurrent qualitative and quantitative grounded theory approach (following Walsh 2014, Johnson and Walsh 2019).

At the outset of the project, an initial literature review was conducted to identify sensitizing constructs of sense of place, place attachment, place identity, sustainability, and community. We built on the idea of a sensitizing construct, “a broad term without definitive characteristics” (Charmaz 2014:30), which did not restrict our inquiry but rather provided a rough frame with which we started our investigation (van den Hoonaard 1995). This approach contrasts with traditional quantitative methods that require systematically defining and linking key terms prior to methods development and analysis (Charmaz 2014). The relevance and specificity of these constructs become defined through participants' responses and theoretical sampling in the analysis phase (Charmaz 2014).

The interview protocol consisted of 14 questions focusing on understanding participants' perspectives related to sense of place and sustainability on Campobello Island. Using grand tour questions, we were able to provide a loosely guided and flexible space for participants to share their experiences freely (Fox et al.

2010, Charmaz and Bryant 2011, Charmaz 2014). This elicited descriptive answers (see Appendix 1 for the interview protocol; Gladwin et al. 1995, Davenport and Anderson 2005, Hansen and Coenen 2015, Cobigo et al. 2016). The survey was developed through compiling and adapting three different survey instruments from similar tools published in academic journals (Uzzell et al. 2002, Ardoin et al. 2012, Lin and Lockwood 2014b, Gericke et al. 2019). This combined survey instrument included demographic questions, participatory mapping questions, and Likert scale questions (see Appendix 2 for survey instrument). Our goal in the interviews and surveys was to collect information on community members' sense of place and sustainability definitions rather than their thoughts on how their community perceived these constructs. The survey was created and administered through Qualtrics and went through several iterations based on discussion among authors and feedback from a Campobello Island community-appointed research liaison.

Data collection

Data collection occurred over a two-month period in fall of 2020. Convenience, purposeful, and snowball sampling were used to elicit participants after a discussion with the community research liaison. Using purposeful and snowball sampling, we were able to include participants from each major socioeconomic group in the analysis. Socioeconomic groups included year-round residents (with further subdivisions) and seasonal residents as defined by participants in this work and previous work (Jacobs and Burga 2018). The purpose of this sampling was to yield in-depth understanding and insights rather than to make empirical generalizations, and reaching theoretical saturation determined how large the sample became (Charmaz 2014). Once new ideas about sustainability and sense of place were no longer emerging from the analysis, data collection stopped.

An introductory Facebook post was made on the community discussion board describing the research and providing links to the anonymous Qualtrics survey, a confidential interview sign-up sheet, and researcher contact information. A second post was made two weeks later reminding community members of the research taking place. Participation was voluntary and participants were not restricted from participating in both forms of data collection. Confidential, semi-structured interviews took place primarily over the phone, although a few were conducted through Zoom videoconferencing. Each interview was on average 40 minutes in length. As participants were interviewed, they were asked if they knew of any other community members who would be interested in participating in the study. A total of 22 surveys were completed and 16 semi-structured interviews were conducted. Ethical approval for this research study was granted by the University of Guelph, certificate #20-04-014.

Data analysis

The data analysis followed coding practices identified and described by Charmaz (2014) and Chun Tie et al. (2019). Specifically, data analysis started while data collection was occurring, and qualitative and quantitative data analysis took place concurrently. Similar to Walsh's (2014) methodology, the survey data contributed to the final theoretical propositions because it was used for constant comparative analysis between qualitative and quantitative data. The quantitative data were not used to confirm qualitative exploration, as in other forms of MGT (Johnson and Walsh 2019). Interviews were coded with NVivo 12

Plus. The first level of coding for qualitative data included line-for-line coding as described by Charmaz (2014). Codes were created from actions rather than topics and kept as close to the data as possible with the labels they were assigned (Charmaz 2014). All iterations of coding were done by Carson Balestreri, the lead author. As survey responses were submitted, a brief exploration of the survey data (quantitative) was conducted by using Microsoft Excel and Qualtrics. An exploration of the quantitative data included creating charts, considering response frequencies across demographics, and generating heat maps from participatory mapping questions. Collection and exploration of this quantitative data were not intended to provide statistical analysis but rather to support the constant comparative analysis (Johnson and Walsh 2019). The constant comparative method was used across and within data types to develop and refine codes throughout several iterations (Chun Tie et al. 2019). Although memoing occurred throughout the research project, it was specifically valuable for bridging the data from one stage to another.

Once theoretical saturation was reached, data collection was concluded. In this method, theoretical saturation demonstrates analytical credibility by ensuring that enough data have been collected to address the research question (Charmaz and Bryant 2011, Charmaz and Thornberg 2021). During first stage coding, some codes were reorganized during iterations (Chun Tie et al. 2019). The final iteration of the first stage coding from qualitative data resulted in 506 first stage codes. These codes were grouped into common categories during the second stage of coding. An exploration of the quantitative survey data across demographic groups was conducted because of trends found in the qualitative data. This comparative and reflexive process resulted in a compilation of second level codes. Appendix 3 is an example of this process.

The coding process between the second and third stages involved several iterations. Through comparative analysis, theoretical sensitivity, and further memoing, second stage codes grounded in the data were taken to another level of abstraction. This involved compiling second level codes into third level codes (See Appendix 4 for an example of this process). In the final iteration, a narrative was identified that relied on both qualitative and quantitative data. The narrative demonstrated how community members' sense of place links to their concepts of sustainability. The propositions highlight key insights from the study and guide future research in the sustainability transitions literature. Theoretical sampling ensured that relevant literature was consulted when developing propositions (Charmaz and Bryant 2011). The results and the emergent narrative are provided in the following sections.

Research setting: Campobello Island

Campobello Island's physical location is a source of both celebration and contention for the broader Campobello community. Despite being Canadian territory, Campobello is connected to Lubec, Maine, United States by the Franklin Delano Roosevelt Bridge (see Fig. 1). Campobello Island does not have a year-round connection to the Canadian mainland; seasonal ferries run in the summer months when rough weather or economic hardships are not present. Those traveling to Canada from the island on roadways must pass through Maine. The small population of 800 permanent residents on the island live an

international life and carry their passports with them daily. The island population in the summer months doubles when seasonal residents visit their secondary residences or rental properties. The population of permanent residents has declined over recent decades as the numbers of Atlantic fishers have declined. Campobello Island is traditionally a fishing community and a vacation spot for American visitors. Famous visitors included the Roosevelts who built their summer home on Campobello. To this day, its local economy remains dominated by fishing and tourism. Many year-round residents take on other local and regional seasonal jobs as additional sources of income. One third of the island is park land, featuring the Herring Cove Provincial Park and, just south of it, the Roosevelt International Park. These are two major conservation areas and tourist attractions in the region. In addition, the island is surrounded by the Bay of Fundy, featuring the highest tides in the world and rich marine life. Other facilities featured on Campobello Island include: the Campobello Island Consolidated School, Welshpool Hall, the Canadian Whale Institute, Campobello Village Mart (grocery store), the Campobello Health Centre, Campobello Public Library, Head Harbour Wharf, two Canada Post offices, several places of worship, and several locally owned restaurants. There are no banks, gas stations, or emergency services on the island. Access to these services and additional goods involve traveling by road to the United States or by sea to a New Brunswick mainland port (see Fig. 2 for the island relative to Canada and the United States). Many year-round residents hold dual citizenship through being born in surrounding hospitals in the United States. This small island community features a beautiful natural landscape, internationally significant local history, and people with a strong sense of place and sustainability concerns. Campobello Island provides an exceptional context for understanding the role that sense of place has in sustainability transitions.

Fig. 1. Campobello Island. Map retrieved 28 November 2022 from <https://www.google.com/maps/place/Campobello+Island/>.

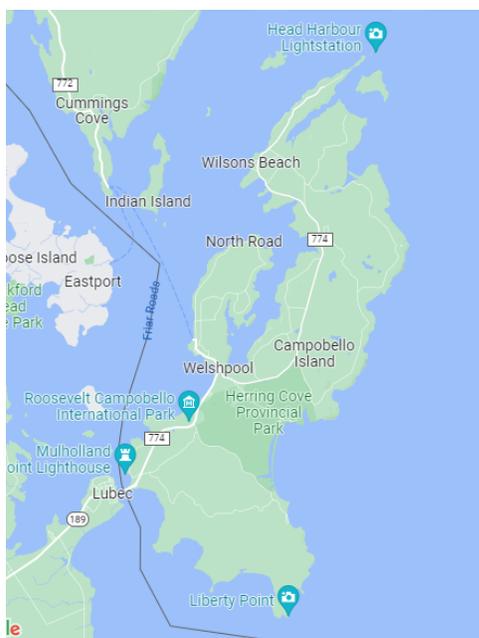
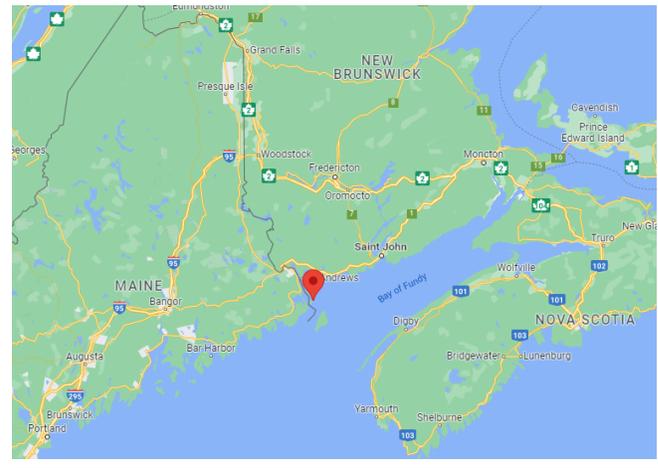


Fig. 2. Campobello Island (red marker) relative to Canada and the United States. Map retrieved 28 November 2022 from <https://www.google.com/maps/place/Campobello+Island/>.



RESULTS

The following key findings have emerged from our mixed grounded theory analysis: contrasting and complementary senses of place, two place identities, divergent physical place attachments, and a strong place-specific view of sustainability. The results section below provides insight into these themes using qualitative and quantitative data. Additional quotations supporting the findings can be found in Appendix 5.

Contrasting and complementary senses of places

The first main finding of this research is that sense of place within the Campobello community is cultural and variable. The place world of Campobellians, for example, frequently extends beyond the physical boundaries of the island itself. Indeed, some of the places that contribute to community members' sense of place at Campobello include the American mainland (Machias, Eastport), other island communities in the Bay of Fundy (Grand Manan, Deer Island), and Canadian mainland coastal communities (Saint Stephens, Saint Andrews, Saint John, Saint George).

Further, there are competing ideas about what defines the culture of the Campobello community, and these ideas are tied to community members' senses of place. On the one hand, community members report the culture of Campobello to be cooperative, full of pride, and giving. On the other hand, they also report that the community sometimes can be unhelpful, divided, and unpleasant. The following quote illustrates one year-round resident grappling with the supportiveness and unsupportiveness they experience in the community:

We don't seem to be good at supporting each other. [For example,] business-wise, you know, like if someone starts a business. [We aren't good at] really supporting that business and helping them to grow. That's the crazy part of it, [in other instances] like they'll give you, [pause] they'll do so much for you when you're in need. (Year-round resident, participant 14)

Community members also discussed the importance of social ties on Campobello. These discussions revealed that definitions of community mainly derive from social conditions rather than location. For example:

For me, the biggest thing is that it's like [community], it's made and created by people interacting with each other or not interacting with each other, which I guess is really vague, but I think that's how I think about it. (Seasonal resident, participant 6)

So like basically a community is a group of a group of individuals that have common interest or have common needs or within a common place. My community or the community of Campobello Island. (Year-round resident, participant 11)

Community members discuss several social compositions of the community, such as the diverse groups among year-round residents, the existence of a dual national identity (Canadian and American), having close island and regional family ties, and some year-round versus seasonal resident tensions. Despite Campobello Island's apparent physical isolation, senses of place among community members are not homogeneous. Furthermore, social ties transcend geographical boundaries when place is sensed.

Place identities on Campobello Island

A second key finding was the identification of two islander identities (seasonal and year-round identities) within the Campobello community. With two place identities in one location, we observe two main groups with differing characteristics and connections to different symbolic meanings of place (following Ryden 1993, Stedman 2002, Davenport and Anderson 2005).

The year-round islander identity is solely rooted in the "local" place. A year-round islander is said by participants to share personal characteristics with the island's landscape. One year-round resident describes how islanders' attitudes change as the seasons do:

The seasons still control your lives here so lobstering comes in, there's the whole mood and atmosphere that goes on with that and that all ties up around Christmas time... (Year-round resident, participant 11)

Year-round islanders have also been described by participants as "kind," "smart," and "open to new ideas," but they are "skeptical" about the success of local initiatives. Furthermore, islanders are family oriented, with the local school representing community support and commitment.

In contrast to the year-round residents, Campobello's seasonal residents derive their identity from local and non-local places. Further, they identify with and are identified by a strictly summer-time association with Campobello. Perhaps most interesting is that seasonal residents are largely defined by the year-round residents. For example, one year-round resident reflects that the COVID-19 pandemic changed the residency and character of the island because the seasonal residents did not come:

... [W]e're missing our seasonal people and it's not what they do for the economy. It's the fact that they do have friends here. They do have - they obviously have to have

some mindsets that are the same or have the same kind of ideas and goals, or they probably wouldn't be missed nearly as much as they are. (Year-round resident, participant 16)

Seasonal residents are described by participants as respectful of year-round residents and perceived as "knowledgeable," "affluent," and "older in age." Their involvement in the community is limited by their time on the island. As a result, there is a view held by both types of residents that the seasonal residents are not part of the Campobello community. This distinction is illustrated in the following quote:

I got opinions about a lot of things, but I really don't think I got any right to speak up as a seasonal resident because I don't have to live with the consequences of the people who live there year-round do and that's one of the reasons I've stayed out of a lot of the controversy in all areas. (Seasonal resident, participant 1)

The broader Campobello community is represented by two groups of people: year-round residents and seasonal residents. The seasonal resident identity is characterized by seasonality and being rooted in multiple locations occupied throughout a calendar year. Year-round resident identity is characterized by local rootedness and, by extension, the experience of all the seasons on the island. These two identities reflect different symbolic identities related to temporariness and permanence in place, and they are two identities that, as discussed next, make it difficult to overcome different approaches to sustainability.

Divergent attachments to Campobello Island

Seasonal and year-round residents are attached to Campobello Island in similar and some different ways. Drawing on Lin and Lockwood's (2014a) scheme of place attachment, we find Campobello Islanders are connected locally, emotionally, and functionally. Indeed, there is agreement among year-round and seasonal residents that Campobello is a beautiful place and community members feel connected to the physical landscape. Recreational activities involving the natural environment (such as hikes and bike rides) and general appreciation for the natural environment is shared. For example, both seasonal residents and year-round residents reflect on the enjoyment they get from watching the remarkable tides in the Bay of Fundy:

But you know there's something to be said with, you know, just these - watching the power of the ocean, while you're sort of in the comfort of your, of your home. You know in a in a comfortable setting. It's, it's, it's pretty it's pretty amazing. (Seasonal resident, participant 10)

In the Bay of Fundy, Atlantic Ocean... It's probably the one of the most scenic places in the world. You can go walk in the beach for beach glass. You can just go walk in the beach for peace and quiet. You can and people do. They just go and certain beaches, you know that you're not going to meet anybody. (Year-round resident, participant 18)

Year-round and seasonal residents also discussed their differing forms of attachment. Year-round residents report an attachment to place that also has a deep level of dependence based on seasonality and temporal factors. In many cases, year-round residents have multi-generational connections to Campobello.

This is displayed in the view of the winter season as driven by local traditions, describing the long-term changes in relationship between the Roosevelt Campobello International Park and the community, and the evolving realities faced by year-round residents because of the island's isolation. One year-round resident explains the dependence and influence place has had throughout generations:

Well, they are Islanders, right? They spent most of their time on the water. Everything is related to that water. They travel, before they had a bridge there, everything was by boat. (Year-round resident, participant 2)

Distinctly, seasonal residents report an attachment to place where the landscape of Campobello Island actively has a positive impact on them. These impacts are mainly emotional, but a few are also physiological and spiritual. One seasonal resident described how being on the island changes her husband's personality for the better:

My husband is kind of, it's kind of, I, I, I lost the words to describe it. He's not a very outgoing person, [personal information redacted]. But as soon as he goes on the island and stays there, he changes into a person who even waves to the strangers on the road. (Seasonal resident, participant 4)

Ultimately, we observed a nuanced set of place attachments to Campobello Island among the Campobello community, representing both shared and divergent values.

A place-specific view of sustainability on Campobello

The study also identified place-specific views of the relationship between sustainability and community. Perhaps not surprisingly, very few participants quoted the academic definition of sustainability: to meet the needs of current generations without compromising the needs of further generations (World Commission on Environment and Development 1987). Instead, sustainability, according to community members, is addressing several economic and social challenges that endanger current and future generations' ability to live on the island in a way that maintains their place attachments, identities, and culture. This is an extremely gentle balance between continuing and improving life locally on Campobello Island. One resident reflected about the lack of local economic diversification:

There's really little opportunity for young families to, to put down roots. I'm not saying there's no opportunity, but there's little opportunity. (Year-round resident, participant 12)

Another year-round resident discussed the biophysical characteristic of isolation that affects the local economy:

...[E]verything cost more. Trying to be [pause] self-sustaining [pause] it will cost you more [on Campobello Island]. Will people pay the price? I don't know. (Year-round resident, participant 18)

Community members identified local infrastructure challenges, including the lack of opportunities (both professional and recreational) for youth on the island, issues with access to and from the island/mainland, issues accessing goods and services,

and housing options for older year-round residents. Community members also expressed several social challenges. A seasonal resident reflected on the social concern of loss of identity:

I have spoken with many islanders expressing my concerns and listening to theirs, the island - I'm worried that the island will lose its identity. In other words, that it will become a purely service oriented island to people from away... (Seasonal resident, participant 8)

Community members expressed additional social challenges. These included frequent disagreement about what the community needs, mass resistance to change, few examples of collaboration between year-round and seasonal residents, and a general uncertainty about the future of Campobello.

There was a secondary focus that sustainability also involves "environmental sustainability," protecting and preserving the environment. Year-round residents were concerned with this environmental sustainability more indirectly through the local economic system. An example of this is found in a discussion regarding how fishermen on Campobello act to ensure that their practices are environmentally sustainable:

The small lobsters go back in, the egg bearing females go back and they're notched in the tail and that takes so many years to grow out and you're not - it's illegal to hold them. and we have a ghost gear program that goes on every summer. And there's boats that spend so many weeks towing gravels for ghost gear to clean that up. and what were some of the other things [pause] Certain length of lines for whale protocol and a lot of environmental stipulations as well. (Year-round resident, participant 17)

Further, seasonal residents were concerned with the preservation of the landscape itself and how local actions influence the global context:

...and an environmental sustainability. Like in the environmental side, I mean were. We're globally we're in deep doodoo. We haven't really taken - Haven't really figured things out. You know, if environmentalists are running around telling, us recycle, recycle plastic and put it in your bin and go through all this effort. When in reality, 90% of that plastic ends up in either Southeast Asia or our landfill... I think that there's you know - [pause] are the lobster walking North into the into the Gulf of Saint Lawrence? Certainly, the whales have gone there in the last years. So that's all the water temperature, and that comes down - [pause] that loops back to environmental sustainability globally. (Seasonal resident, participant 9)

DISCUSSION

This research explores how community members' sense of place links to understandings of sustainability. Our findings suggest that there are multiple places, identities, and attachments in this one location that relate to different views of sustainability. Based on these findings, we have developed three propositions for how community members' sense of place is connected to their concept of sustainability. In making these connections, we advance new understandings of the sustainability transitions literature.

Proposition 1: The dominant notion of sustainability within a community is linked directly to community members' place identity, sense of place, and place attachment.

When discussing sustainability, it is evident that not only were community members' place identities, senses of place, and place attachments providing the context for the discussion, they were also confirming what ought to be sustained. One participant articulated:

Well sustainability means, to me, to maintain what we currently have. And sit with a guide and a goal. To have like a strategic plan for growth in the long run. (Year-round resident, participant 16)

With this understanding of how the community defines sustainability, we confirm the speculations of Köhler et al. (2019) that the crux of a sustainability transition may differ across contexts. Communities situated in rural and economically deprived areas may prioritize access to services over addressing climate change in local sustainability agendas (Köhler et al. 2019). A "strategic plan for growth in the long run" on Campobello would primarily be focused on addressing economic and social challenges without becoming "over-engineered" (year-round resident, participant 11) and thereby losing senses of place, identities, and attachments. We observed additional variations among community members' place attachment, identity, and senses of place. This distinction was important and leads to our second proposition connecting sense of place to sustainability.

Proposition 2: Variations in members' understanding of sustainability are related to how a community member articulates their place identity.

We found that those Campobellians who articulated a seasonal resident identity possessed environmental sustainability concerns. This is consistent with Stedman's research in which he found that seasonal residents held strong place attachments that were driven by environmental concerns, whereas year-round residents' attachment to their places was driven by social interactions (Stedman 2006). The scale and possession of these attachments are a result of identities being rooted in local and non-local places as well as Campobello's active and positive impact on residents (Stedman 2006, Lin and Lockwood 2014a). Year-round residents possess a secondary concern for environmental sustainability, but this concern is still derived from the local place. We believe that this could be because those articulating an islander identity possess a multi-generational and deeper dependence-based place attachment to Campobello Island. This proposition further supports previous work showing that diverse place identities and senses of places in a single location may result in different local sustainability goals and priorities being formulated (Stedman 2002, Lin and Lockwood 2014a, Chapin and Knapp 2015, Grenni et al. 2020). A broader observation regarding sustainability discourse in this place leads to the final proposition generated from our research.

Proposition 3: Although place-specific (rather than global) views of sustainability dominate the community's sustainability discourse, this is not always the case.

When discussing sustainability with participants, local meanings and challenges were important and dominated discussion, rather than global-level terms, challenges, and goals. What primarily motivates Campobello's view of sustainability are these

intellectual place concepts explored. Despite most of the discussion being focused on the local, there were a few participants who described sustainability in a broader and global sense. In the quote provided above by a seasonal resident (participant 9), global in addition to local examples were provided when discussing the impacts of a global concept such as climate change. In the other example, a year-round resident defined sustainability in a way that is thinking globally and acting locally:

Um, (pause) Leaving no, mark in this world. Being gentle on the world... we're trying to absolutely have as little impact on our environment as possible and make choices that ensure that those that follow have the same opportunity. (Year-round resident, participant 13)

The focus on a place-specific view of sustainability could be an example of overly dominant senses of place confining the focus of sustainable initiatives (Dale et al. 2008). Although senses of place transcend geographical boundaries, Campobello's discussion of sustainability was primarily confined to the island. In a few cases, we observed community members thinking about sustainability globally and relating it back to their local actions. Highlighting this discrepancy is valuable to the sustainability transitions literature because it intensifies the need to explore the normative nature of sustainability transitions more deeply. Ultimately, acting locally while thinking globally is required for addressing overarching sustainability challenges (Rockström et al. 2009, UN General Assembly 2015).

With regard to sustainability, this work further confirms the importance of place-based approaches to sustainable development, especially within communities similar to Campobello (Dale et al. 2008, Hansen and Coenen 2015, Horlings 2015, Vodden et al. 2015, Grenni et al. 2020). This work contributes to the sustainability transitions literature by adding to Köhler et al.'s (2019) speculation about certain economies/communities having a different sustainability orientation. Any sustainable initiative or transition that occurs would need to be tailored to this community for success (Murphy and Smith 2013, Hennessey and Beazley 2014, Horlings 2015). Greater consideration of place identity, place attachment, and senses of place are specific components of place that the sustainability transitions literature must consider when exploring how local understandings of sustainability link to global objectives in small island communities.

CONCLUSION

This research has identified how sense of place is linked to concepts of sustainability within the community of Campobello Island. This work responds to the call for tailored sustainability initiatives rather than a "one size fits all" approach to sustainable development (Uzzell et al. 2002, Dale et al. 2008, Hansen and Coenen 2015, Horlings and Kanemasu 2015, Vodden et al. 2015, Bergstrom and Harrington 2019). This work also explores intellectual place concepts, including sense of place, place attachment, and place identity, which have rarely been discussed in the sustainability transitions literature (Köhler et al. 2019). We confirm Köhler et al.'s (2019) speculations that normative place-specific views of sustainability could have a role in sustainability transition orientations. In addition, an interesting and somewhat paradoxical occurrence was observed where discussions of sustainability were primarily confined to the island, although

senses of Campobello transcended geographical boundaries when sensing place. Furthermore, this work provides the foundation for understanding how to orient sustainability transitions in other communities. It provides valuable insight into interactions between sense of place and sustainability for other geographically and culturally special places (Vodden et al. 2015). As the number of communities with seasonal and year-round living situations grow throughout North America (Stedman 2006), this work also provides valuable insight to the differences among place attachments and identities that can be leveraged toward successful sustainability transitions.

Despite these contributions, there are limitations to this study. First, data collection occurred during the COVID-19 pandemic. Travel restrictions were in effect during interview data collection, restricting physical access to the island that had been previously gained by the research team in April 2019. Recruitment was carried out through the communities' online Facebook page, and those who did not have access to Facebook during the data collection period missed the opportunity to participate. Planning of the time, date, and contents of the recruitment posting was deliberate to maximize a diversity of stakeholder views and potential for participation. Additional methods appropriate to this work, mainly field work, were not possible because of travel restrictions, although perceptions of Campobello gained through previous field work conducted by members of the research team on the island did inform our data analysis and interpretation of findings. Additional methods can suggest opportunities for comparison that may be fruitful areas of future research focus.

Our findings suggest that conducting a comparative analysis between communities to provide further insight into place-specific views of sustainability across the globe is important. Future research exploring more deeply the three propositions developed in this study will help to enhance our understanding of concepts of place beyond geography and location in the sustainability transitions literature. On Campobello Island, community leaders, aspiring entrepreneurs, and activists can draw on these insights to inform their sustainability activities within the community. Campobello community members have demonstrated their sustainability leadership potential for other communities situated in similar contexts. Ultimately, this research intensifies the need for further exploration of the place-specific, normative nature of transitions (Köhler et al. 2019).

Sustainability conversations that enable positive change require a shared understanding of what sustainability means, both locally and globally (Rockström et al. 2009, UN General Assembly 2015). The fundamental meanings of sustainability, as held by community members who live in and interact with different places, impact whether local and global sustainability goals can be achieved (Dale et al. 2008, Chapin and Knapp 2015, Vodden et al. 2015, Grenni et al. 2020). Practically, this work contributes to global sustainability goals by demonstrating how sustainability and place relations in other communities need to be more deeply considered to better understand their role in facilitating or limiting opportunities for sustainability transitions. The community of Campobello Island has shown the world that a more nuanced understanding of sustainability and place relations is required if we hope to make positive progress toward sustainability goals.

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Data Availability:

Regarding data/code availability, our qualitative data include confidential and personal information of identifiable community members. None of the data/code are publicly available because the community of Campobello Island has 900 people, and the release of data would compromise the confidentiality agreements that we made with the participants. Upon specific request, we would be able to review the data, remove all possible identifiers and, if it does not violate the terms of the REB certificate, share with those making the request. Ethical approval for this research study was granted by the University of Guelph, certificate #20-04-014.

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Appendix #1: Interview protocol (developed using Gladwin et al. 1995, Davenport and Anderson 2005, Hansen and Coenen 2015, Cobigo et al. 2016).

1. How long have you been a part of the Campobello Island Community?
2. What are some of the roles you have played or currently play in the community?
3. How would you define community?
Probe: Do you think the community you are a part of can be defined this way?
4. How would you describe the culture of the community?
5. Can you tell me about some historical events that have influenced common community activities?
Probe: How has the place you lived in influenced the culture of the community?
6. What does sustainability mean to you?
Probe: Does the community share the same idea of sustainability?
7. Do you find that the community as a whole shares any common goals or values? Probe: Can you think of an example when members of the community came together to work together on something? To achieve a common goal?
8. What are some community practices that you think allow for future generations of the community to live well?
9. What community practices do you think prevent future generations of the community to live well or prosper?
10. What do you enjoy the most about this place?
11. What do you enjoy the most about being a part of your community?

Appendix #2: Survey (elements and questions adapted from (Uzzell et al. 2002, Ardoin et al. 2012, Lin and Lockwood 2014b, Gericke et al. 2019).

Preliminary Questions

Q1 Do you live on Campobello Island Year-Round?

- Yes
- No

Q2 Please select all situations/positions that apply.

- I work in the fishing industry
- I work in the tourism industry
- I own a small business
- I am retired
- I am a seasonal resident
- I am a student
- I visit Campobello Island
- I live near Campobello Island
- I am from away
- Other: please specify _____

Q3 Which map best captures the scale that comes to mind when you think about the word 'community'?

- Google maps image: Canada and USA
- Google maps image: Atlantic Region
- Google maps image: Bay of Fundy Region
- Google maps image: Campobello Island
- None of these maps capture my sense of community.

Q4 Please mark on this map the general areas you frequently spend time throughout the year (Up to 10 clicks).

- Google maps image: Bay of Fundy Region

Q5 Please mark on this map the general areas you frequently spend time throughout the year (Up to 10 clicks).

- Google maps image: Campobello Island

Sense of Place questions (adapted from Ardoin et al 2012).

Q6 Please indicate the degree to which you agree/disagree with the following statements (strongly Agree, Agree, Slightly Agree, Neither agree nor disagree, Slightly Disagree, Disagree, Strongly Disagree):

1. I am interested in the plants and animals that live in this area.

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2. I have an extensive network of family and/or friends here.

3. I have a good job here.

4. I think the landscape here is beautiful.

5. The lifestyle in this area generally reflects my beliefs and values.

6. I feel like this place is a part of me.

7. This place is the best place for what I like to do.

8. I identify strongly with this place.

9. I get more satisfaction out of living here than anywhere else.

10. I am very attached to this place.

11. Living here says a lot about who I am.

12. I am willing to invest my time and effort to make this a better place.

13. I am willing to make financial sacrifices for the sake of this place.

14. Because of my lifestyle, this place is important to me.

15. Most of my friends are, in some way, connected to my life here.

16. I identify with the physical landscape of this place.
17. I like the range of outdoor activities that are available to me here.
18. I hope future generations will feel attached to this place.
19. I want to preserve the local environment so that it remains in good condition for future generations.
20. Rate your connection to the land and natural features that make up this place (Very Connected, Moderately connected, Slightly connected, Neutral, Slightly disconnected, Moderately disconnected, Very Disconnected).
21. Rate your connection to the people and the culture of this place (Very Connected, Moderately connected, Slightly connected, Neutral, Slightly disconnected, Moderately disconnected, Very Disconnected).

Sustainability Related questions (adapted from Gericke et al. 2019).

Q7 Please indicate the degree you agree/disagree with the following statements (strongly Agree, Agree, Slightly Agree, Neither agree nor disagree, Slightly Disagree, Disagree, Strongly Disagree):

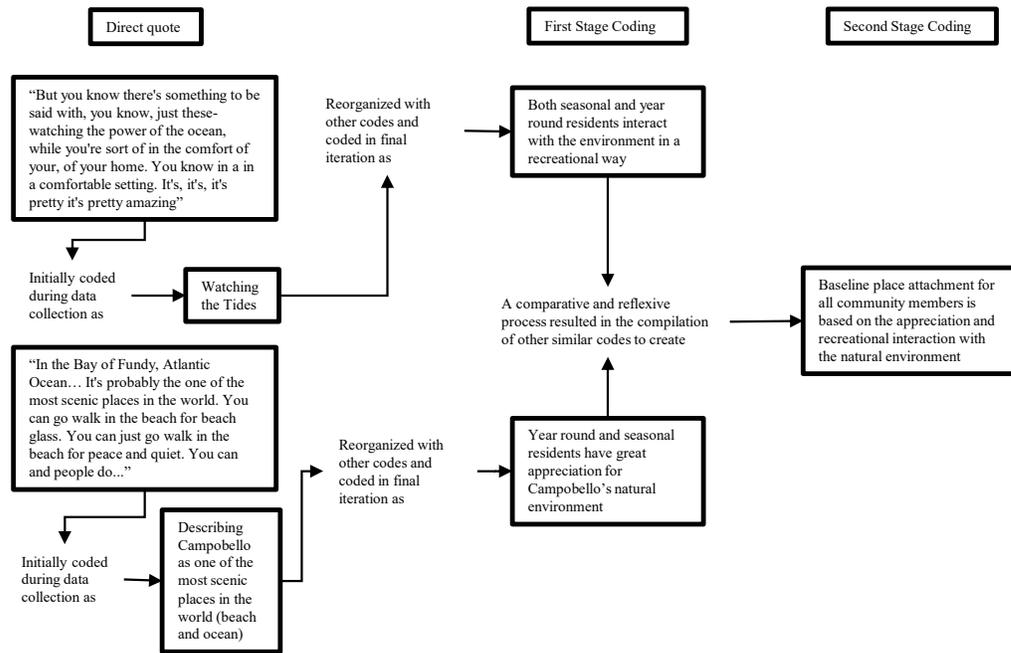
22. I think that using more natural resources than we need threatens the well-being of people in the future.
23. I do not think that we need stricter laws and regulations to protect the environment.
24. I think it is OK that each one of us uses as much water as we want.

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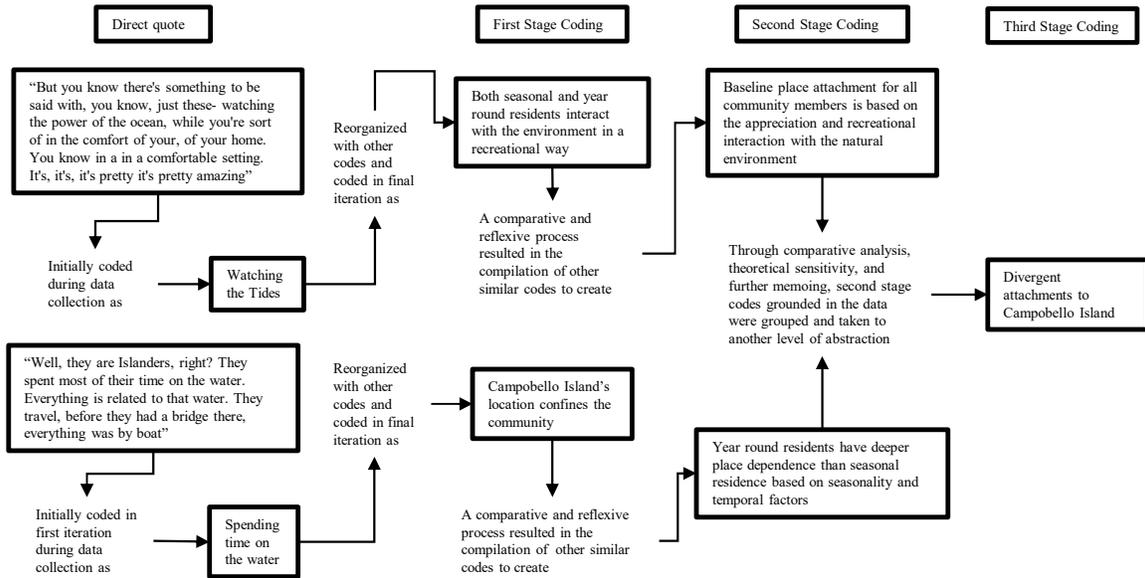
25. I think that it is important to take measures against problems which have to do with climate change.
26. I think it is important to reduce poverty.
27. I recycle as much as I can.
28. I always separate food waste before putting out the garbage when I have the chance.
29. I have not changed my personal lifestyle in order to reduce waste.
30. I support an aid organization or group.
31. I often make lifestyle choices that are not good for my health.
32. I do things which help poor people.

33. I think that companies have a responsibility to reduce the use of packaging.
34. I pick up garbage when I see it in a public place.
35. When I use a computer or mobile device to chat, I always treat others respectfully.
36. I show the same respect to men and women, boys and girls.
37. I often purchase second-hand goods over the internet.
38. I avoid buying goods from companies with a bad reputation for looking after their employees and the environment.
39. I think people who pollute air, land, or water should pay for the damage they caused to the environment.
40. I think that the government should make all its decisions on the basis of sustainable development.
41. I think that everyone ought to be given the opportunity to acquire the knowledge, values and skills that are necessary to live sustainably.

Appendix #3 A visual example of the coding process from direct quote to second stage coding.



Appendix #4 A visual example of the coding process from direct quote to third stage coding.



Appendix #5: Proof quotes.

Corresponding result section	Proof quote example
Contrasting and complementary senses of places > Diverse groups of year-round residents.	“If you look at the uh when it was settled, British. Some Irish. And of course, American influences. So, it it's a mixed bag, right? And they all have their different style, right? Which connects to the different culture.” (Year-round resident, Participant 02).
Contrasting and complementary senses of places > Existence of a dual national identity	“...it's not strictly a Canadian point of view it's this Canadian American heavily influenced blend in this area so it's a special little strange place.” (Year-round resident, Participant 11)
Contrasting and complementary senses of places > Close regional and family ties	“There are definitely deep family ties both sides of the border...” (Year-round resident, Participant 13).
Contrasting and complementary senses of places > Year-round vs seasonal tensions	“I learned from that and other kinds of experiences of mine is that there is always, always natural tension between seasonal people and fulltime residents.” (Seasonal resident, Participant 01).
Place identities on Campobello Island > participants describing year-round residents as kind	“but their [islanders] ability to want to help out people, their kindness. I love their kindness...” (Year-round resident, Participant 15).
Place Identities on Campobello Island > participants describing year-round residents as smart.	“...but they [fishermen living on Campobello] are very smart people, you don't survive in that business without having tenacity and brains and creativity and I just love being exposed to that and reminded of that.” (Seasonal resident, Participant 01).
Place Identities on Campobello Island > participants describing year-round residents as open to new ideas but skeptical of success.	“I mean, some of them are very, very open to them and they get very excited, but other ones get very apprehensive to new ideas. Probably been burned a few times like I get it...” (Year-round resident, Participant 16).
Place Identities on Campobello Island > participants describing year-round residents as family oriented, with the local school representing community support and commitment.	“...the school is fiercely supported and there's a lot of attention paid to our youth people still slipped through the cracks and things still go wrong, of course, but there is a lot of attention on our school in a lot of focus on the youth so. I think that's a positive sign.” (Year-round resident, Participant 11).

Place identities on Campobello Island > seasonal residents are described as knowledgeable.	“And also there is one good thing about human resources on that Island is that among the American seasonal residents there is vast pool of knowledge.” (Seasonal Resident, participant 04).
Place identities on Campobello Island > seasonal residents perceived as affluent.	“You don't become a seasonal resident unless you've actually done something right. You gotta, you gotta get the money to get that way, you know it's not your first home. It may not be your second summer home. Maybe second summer home. I suspect a lot of these people, it's the second vacation property...” (Seasonal resident, Participant 09).
Divergent attachments to Campobello Island > winter season as driven by local traditions.	“...for me anyway, it always seems more like what life used to be like here in the wintertime. Is everybody is - that part of the Island hasn't really changed right?” (Year-round resident, Participant 11).
Divergent attachments to Campobello Island > describing the long-term changes in relationship between the Roosevelt Campobello International Park and the community.	“I think the park has been doing an amazing job these past couple years. With bring in the park into the community and trying to make it as a whole instead of 'park versus Campobello'. So yeah, I think there are making some really positive changes there.” (Year-round resident, Participant 14).
Divergent attachments to Campobello Island > The landscape impacting seasonal residents emotionally.	“Everything is, when I'm there [Campobello Island], everything seems happier like keep the way I feel happier... there's a personal joy... I think like I it's the fresh air, the trees, the water, the sound of the waves.” (Seasonal Resident, Participant 06).
Divergent attachments to Campobello Island > The landscape impacting seasonal residents physiologically.	“...as soon as I cross the, the, the bridge, and you just automatically relaxed” (Seasonal resident, Participant 04).
Divergent attachments to Campobello Island > The landscape impacting seasonal residents spiritually.	“...The- Almost spiritual side of it. [personal information redacted] ... Campobello, it's my church.” (Seasonal Resident, Participant 03).
A place specific view of sustainability on Campobello > issues with access to and from the Island/mainland.	“Well, I mean this whole year-round ferry debate with Campobello is obviously it's a stick in some people and its a push for others in the right, [pause] in one direction. Whether it's the right direction or not. That causes for- I, I think, [pause], anything major like that

	though does cause a rift.” (Year-round resident, Participant 16).
A place specific view of sustainability on Campobello > issues accessing goods and services.	“You know, some people have said well you know I “I ordered a _____ from Saint John and I was told, they don't deliver it to Campobello but anywhere else in the country they deliver it”. (Year-round resident, Participant 12).
A place specific view of sustainability on Campobello > housing options for older year-round residents.	“There's, I don't think, there's any real way the aging community can stay here... yeah, no I know I would. I would love to stay 'cause again, it's beautiful and it's quiet and it's its home...” (Year-round resident, Participant 14).
A place specific view of sustainability on Campobello > disagreement about what the community needs.	“... we, as a community, love to argue with each other.” (Year-round resident, Participant 15).
A place specific view of sustainability on Campobello > mass resistance to change.	“So I mean that's difficult because there are. There's so many years of certain things, like certain lines that people have followed. Sadly, they don't divert from it because that's the way their family voted before that was their opinions on this or.” (Year-round resident, Participant 16).
A place specific view of sustainability on Campobello > few examples of collaboration between year-round and seasonal residents.	“There are so many human resources...there's a- [pause] I'm sure all of these people that who are seasonal residents will volunteer their knowledge and their lifelong experiences...” (Seasonal resident, Participant 04).
A place specific view of sustainability on Campobello > a general uncertainty about the future of Campobello.	Well, I want my community to survive, and I am fearful that at this point it may not. I'm not sure what it will look like. In the end. But I really want Campobello to survive...” (Year-round resident, Participant 15).