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Am I Welcome in This Space? A Case Study on Cultural Ecosystem Services Provided by Rural Greenspace and their Implications For Social Cohesion & Equity in Nova Scotia

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Abstract

This case study of Wolfville, Nova Scotia, used narrative inquiry to (a) examine the role of cultural ecosystem services (CES) from rural greenspace interaction on the health, wellbeing, and social inclusion of underrepresented populations; (b) identify specific factors that may contribute to CES in rural greenspace; and (c) explore the differences in rural greenspace experiences between the four population groups in this rural, small-town, Canadian context. Although originally part of a larger study on community resilience, this article focuses on the social and equity-related findings that are lacking in the greenspace planning literature and are applicable to other rural Canadian towns. Four participant groups from underrepresented populations in Wolfville (youth, university students, individuals with disabilities, and seniors) participated in a series of focus groups and participant-generated photography and audio-narrative methods. These methods were chosen to increase engagement from groups that are often under-consulted in community planning and decision-making. The findings suggest that although greenspace has important implications for increasing social cohesion, equity, and health and wellbeing in Wolfville and other rural Canadian municipalities, the benefits of CES are not equitably distributed across population groups. Participant interactions in local greenspace varied depending on age and ability, largely due to societal attitudes that impacted whether residents felt welcome or able to access greenspace. Three specific factors were identified which may contribute to CES in rural greenspace: an implicit code of conduct that facilitates positive social encounters, the inclusion of diverse cultural beliefs and worldviews in greenspace infrastructure and available activities, and increasing opportunities for community co-design of local greenspace. Recommendations are provided for rural communities to improve the equitable distribution of CES provided by local greenspace.

Keywords: greenspace, cultural ecosystem services, place-attachment, social cohesion, rural, equity, accessibility

Suis-je le-la bienvenu-e dans cet espace ? Une étude de cas sur les services écosystémiques culturels fournis par les espaces verts ruraux et leurs implications pour la cohésion sociale et l'équité en Nouvelle-Écosse

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Résumé

Cette étude de cas de Wolfville, en Nouvelle-Écosse, a utilisé une enquête narrative pour (a) examiner le rôle des services écosystémiques culturels (SEC) issus de l'interaction des espaces verts ruraux sur la santé, le bien-être et l'inclusion sociale des populations sous-représentées ; (b) identifier les facteurs spécifiques qui peuvent contribuer au SEC dans les espaces verts ruraux ; et (c) explorer les différences dans les expériences d'espaces verts ruraux entre les quatre groupes de population dans ce contexte rural et de petite ville canadienne. Bien qu'il fasse initialement partie d'une étude plus vaste sur la résilience des communautés, cet article se concentre sur les conclusions sociales et liées à l'équité qui font défaut dans la littérature sur la planification des espaces verts et qui sont applicables à d'autres villes rurales canadiennes. Quatre groupes de participants issus de populations sous-représentées de Wolfville (jeunes, étudiants universitaires, personnes handicapées et personnes âgées) ont participé à une série de groupes de discussions et à des méthodes de photographie générées par les participants et de narration audio. Ces méthodes ont été choisies pour accroître l'engagement des groupes qui sont souvent sous-consultés dans la planification et la prise de décision communautaires. Les résultats suggèrent que même si les espaces verts ont des implications importantes pour accroître la cohésion sociale, l'équité, la santé et le bien-être à Wolfville et dans d'autres municipalités rurales canadiennes, les avantages du SEC ne sont pas équitablement répartis entre les groupes de population. Les interactions des participants dans les espaces verts locaux variaient en fonction de l'âge et des capacités, en grande partie en raison des attitudes sociétales qui influaient sur le fait que les résidents se sentaient les bienvenus ou capables d'accéder aux espaces verts. Trois facteurs spécifiques ont été identifiés qui peuvent contribuer au SEC dans les espaces verts ruraux : un code de conduite implicite qui facilite les rencontres sociales positives, l'inclusion de diverses croyances culturelles et visions du monde dans les infrastructures des espaces verts et les activités disponibles, et des opportunités accrues de cocréation communautaire des espaces verts locaux. Des recommandations sont fournies aux communautés rurales pour améliorer la répartition équitable des SEC fournis par les espaces verts locaux.

Mots-clés : espaces verts, services écosystémiques culturels, attachement au lieu, cohésion sociale, rural, équité, accessibilité

Definition of Terms

Greenspace: Any natural space (e.g., trails, parks, meadows, gardens etc.) used for recreational, social, spiritual, or conservation purposes.

Cultural Ecosystem Services (CES): Non-material benefits derived from nature, including spiritual, aesthetical, educational, and recreational values. Examples include a sense of identity, increased social cohesion, improved mental and physical health, and relaxation.

Greenspace Interaction: Any engagement with greenspace, including both passive and active activities. Examples of active activity include walking, biking, and running. Passive activity examples include reading, studying, socializing, and eating.

Greenspace Attachment: Emotional bonds that are formed between an individual and a natural space due to repeated interaction.

Social Cohesion: The social glue that binds a community together or the belief held by citizens of a given nation-state that they share a moral community, which enables them to trust each other (Larsen, 2013).

1.0 Introduction and Literature Review

The importance of greenspace on our physical, psychological, and social health has sparked new interest in recent years, given increasing social isolation, growing environmental challenges, and increased awareness of the social determinants of health (Benachio et al., 2019; Jennings et al., 2016; McCunn, 2020; Murphey, 2019; Scannell & Gifford, 2017; Warnick, 2016). Access to quality greenspace accrued even more importance during the COVID-19 pandemic, given the increased challenges to health and wellbeing (Kleinschroth & Kowarik, 2020; Slater et al., 2020).

There is a substantial amount of research that examines the numerous benefits of greenspace for human wellbeing and quality of life, also known as ecosystem services (ES) (Evans et al., 2022; Tieskens et al., 2022; Walsh et al., 2022). While ecosystem services are often broadly defined as the direct and indirect benefits to human health and wellbeing provided by greenspace, some scholars argue that there are distinct sub-categories of ES (Jennings et al., 2016). This study uses the framework provided by the Millennium Ecosystem Assessment and Common International Classification of Ecosystem Services (Haines-Young & Potschin, 2018). This framework uses four sub-categories of ecosystem services: (1) provisioning services (e.g., material or energy outputs such as food, water, and other resources), (2) regulating services and (3) maintenance services (e.g., carbon sequestration, flood control, biological diversity), (4) and cultural services (e.g., aesthetic value, recreational opportunities, spirituality).

With this holistic framework in mind, greenspace in this study is operationally defined as any natural space (e.g., trails, parks, meadows, gardens, etc.) used for recreational, social, spiritual, or conservation purposes. While most studies focus exclusively on greenspace that is open to the public (Westgate, 2018), this study included private greenspace in addition to public greenspace to reflect the specific context of the rural case study community, which included significant privately owned greenspace. While there is yet to be an established definition of the term ‘greenspace,’ this study’s definition is relatively consistent with other studies, such as the definitions provided in Taylor & Hochuli’s meta-analysis of over 125 journal articles (2017).

There is a plethora of research that examines the contributions of provisioning, regulatory, and maintenance ecosystem services to human health and wellbeing, such as the ability of greenspace to mitigate urban heat effects, regulate air pollution, provide flood control, and increase access to locally grown food (Evans et al., 2022; Tieskens et al., 2022; Walsh et al., 2022). However, less is known about the influence of cultural ecosystem services (CES) partly due to their intangible and unquantifiable nature (Jennings et al., 2016; Kosanic & Petzold, 2020). CES are non-material benefits derived from nature, including spiritual, aesthetical, educational, and recreational values (Kosanic & Petzold, 2020). For example, greenspace can provide aesthetic surroundings that encourage residents to socialize with fellow community members, be more physically active, and maintain good mental health (Jennings et al., 2016). While research indicates that CES are equally important to health and well-being, the lack of data and analysis of CES makes it difficult to consider them in policymaking and greenspace management practices (Kosanic & Petzold, 2020; Vrbičanová et al., 2020).

An important aspect of CES are the social impacts derived from greenspace interaction. Research suggests that greenspace may provide opportunities to increase levels of social cohesion, otherwise known as the 'social glue' that binds a community together (Heckert & Kondo, 2018; Padilla, 2018; Stoltz & Schaffer, 2018; Westgate, 2018). Research has demonstrated the positive role of social cohesion on physical and psychological health (Clarke et al., 2023; Wan et al., 2021; Wilson et al., 2024). The presence of positive social cohesion has been linked to lower levels of stress and mental illness and lower rates of obesity, cardiovascular disease, and stroke, to name a few (Jennings & Bamkole, 2019). Conversely, several longitudinal studies have found that individuals with low levels of local trust and poor social networks tend to be less healthy (Clarke et al., 2023; Jennings & Bamkole, 2019; Wan et al., 2021). While it is clear that social cohesion is important for resilient and healthy communities, the specific ways in which greenspace can support social interactions and social cohesion are not well-understood (Clarke et al., 2023; Jennings & Bamkole, 2019; Wan et al., 2021).

Several studies have attempted to identify specific factors of greenspace interaction that may lead to increased social cohesion (Clarke et al., 2023; Jennings & Bamkole, 2019; Wan et al., 2021). A systematic literature review conducted by Clarke et al. (2023, p. 1) found that one of the most impactful ways to enhance social cohesion in greenspace is by "having physical space and amenities for social gatherings that cater to various demographics." In addition, Clarke et al. (2023, p. 1) found that some of the most impactful ways to enhance social cohesion include reducing crime, improving maintenance, accessibility, and perceptions of safety, and increasing efforts to be "inclusive of diverse users including cultural activities and community engagement spaces." Jennings et al. (2024, p. 8) indicated the importance of considering the "availability, quality and fit to cultural preferences" of greenspace that is linked to leisure participation, which may enhance social cohesion. These findings are consistent with other studies that conclude that greenspace amenities and utilities are key factors in fostering social cohesion, including the size of the greenspace, which impacts the number of visitors and the diversity of activities (Cardinali et al., 2024).

Another important factor of social cohesion enhanced through greenspace interaction is through place attachment. Greenspace attachment, defined in simple terms as the emotional bonds created between an individual and a specific

greenspace through repeated interaction, is a strong predictor of enhanced social cohesion, although the social aspect of place attachment "is still in its infancy" (Fonsenca et al., 2019, p. 231). Developing strong emotional attachments to natural spaces has been shown to increase community ownership, management, and environmental stewardship behaviour (Boulton et al., 2018; Byrne, 2012; Rushing et al., 2019). However, like social cohesion, the specific factors that lead to an emotional attachment with natural spaces and their implications for health remain unclear (Zhang et al., 2015).

While there have been several studies on the relationship between greenspace and social cohesion, much of this research has occurred in disciplinary silos, making it difficult to conceptualize this relationship (Qi et al., 2024). Furthermore, while there is a recognition that greenspace must cater to the needs of diverse users, there have been relatively few studies that focus exclusively on historically underrepresented populations such as ethnic and racialized populations, youth, and individuals with mental and physical disabilities (Jennings et al., 2024; Qi et al., 2024). Furthermore, several studies have indicated that the social meaning of greenspace and the social interactions that occur within greenspace are not always taken seriously by researchers and decisionmakers, impeding the recognition of greenspace as key public health tools (Jennings et al., 2024; Ward Thompson et al., 2016). Particularly when it comes to historically underrepresented populations, increasing the quality, accessibility, and user experience of greenspace could reduce health and wellbeing disparities (Jennings et al., 2024; Qi et al., 2024).

Understanding the social importance of greenspace and specific factors that can increase social cohesion is particularly important, given that CES are not equitably distributed (Ciolfe, 2017; Pettebone & Meldrum, 2018; Rigolon, 2016). The Urban Environment and Social Inclusion Index (UESI), developed by Data-Driven Yale, is one example of a framework that aims to assess the correlation between environmental performance indicators (i.e., tree cover, urban heat island, water stress, etc.) with demographic indicators (income and population). Several studies have used the UESI to map the distribution of greenspace in North American cities and have found that the ratio of parks to residents decreases in disadvantaged regions compared with wealthier regions (Westgate, 2018).

Furthermore, research demonstrates that disparities in park distribution and access occur particularly in neighbourhoods that are comprised of low-income and racial/ethnic populations (NRPA, 2018; Tooke et al., 2010; Wen et al., 2013; Westgate, 2018). The distribution of street trees and vegetation is significantly linked to socio-demographics, with a negative effect in neighbourhoods with new immigrants, low-income individuals, and visible minorities (Tooke et al., 2010; Wen et al., 2013; Westgate, 2018). These studies highlight the critical need to better understand the role of CES for human health and wellbeing, particularly for disadvantaged and vulnerable groups that are already disproportionately impacted by climate change and anthropogenic actions (Intergovernmental Panel on Climate Change [IPCC], 2023; Jennings et al, 2016; Kosanic & Petzold, 2020; Tooke et al., 2010).

In addition, most of the research on CES provided by greenspace to date has been conducted in large urban centers, with little information available for rural areas (Campbell et al., 2016; Driscoll et al., 2015; George & Reed, 2015). While our societies are becoming increasingly urbanized, the last Canadian census demonstrated that rural populations continue to increase (Statistics Canada, 2021). Furthermore, rural communities generally have access to fewer resources and health

services than urban centres (Mental Health Commission of Canada, 2021). A report authored by the Mental Health Commission of Canada (2021) discussed how the COVID-19 pandemic highlighted the health disparities between rural and urban communities, with evidence showing that there is "a growing lack of access to adequate and timely services and supports" in rural areas (p. 1). High-quality greenspace that fosters social cohesion and other CES could provide a cost-effective tool for rural communities to address these growing health disparities.

While it is generally accepted that there is greater availability of greenspace in rural areas compared to urban areas, there are few studies that examine how rural greenspace differs from urban greenspace (Dennis, & James, 2017; Edge et al., 2023; Wolff et al., 2020). The development of quality greenspace in densely urban areas has been prioritized on a global scale, due in part to recent frameworks such as the Sustainable Development Goals (Edge et al., 2023; Tate et al., 2024). However, this prioritization has caused a knowledge gap when it comes to the design and management of rural greenspace, given different place-based attributes such as accessibility, density, level of diversity, etc. (Edge et al., 2023).

Furthermore, many rural communities are grappling with complex climate challenges while having limited financial and human capital and lower access to services compared to urban centres (Fletcher et al., 2020). Research suggests that CES provided by greenspace contributes to increased resilience in rural communities and promotes a collective response to change, potentially increasing adaptive capacity to climate change and other stressors (Csurgó & Smith, 2021; Fletcher et al., 2020). These findings highlight the importance of understanding what high-quality and accessible greenspace means in a rural context, as it could significantly enhance the health, wellbeing, and resilience of rural residents (Csurgó & Smith, 2021; Fletcher et al., 2020).

This study aims to address current gaps in the literature by furthering the understanding of rural greenspace CES through a case study in rural Nova Scotia, Canada, with a focus on traditionally underrepresented populations. Specifically, this study aims to:

1. Examine the role of cultural ecosystem services (CES) from rural greenspace interaction on the health, wellbeing, and social inclusion of underrepresented populations, including youth, university students, individuals with physical and mental disabilities, and seniors.
2. Identify specific factors that may contribute to CES in rural greenspace.
3. Explore the differences in rural greenspace experiences between the four population groups in Wolfville, Nova Scotia.

1.1 Case Study Context

The case study locale was Wolfville, Nova Scotia, a rural town in the Annapolis Valley bordering the Minas Basin, best known for its agriculture and tourism industry. Wolfville hosts Acadia University, a small, liberal arts institution. Wolfville's population recently surpassed 5050 (Hoffman, 2022), with students being the largest age demographic (20–24 years old). Wolfville is also an appealing retirement destination and the second largest age group is between sixty-five and sixty-nine (Statistics Canada, 2017). Although the University distinguishes Wolfville from other similar-sized rural communities and gives it an appearance of

affluence, the annual income of Wolfville's population is stratified into two groups of earners: those who make less than the national median income of $53,362 per year and those who make significantly more (Statistics Canada, 2016).

As a coastal community, Wolfville is at increased risk of flooding due to climate-induced sea level rise. Extreme rainfall, high tides, and storm surges increase the risk and intensity of local flooding. A Flood Risk Mitigation Plan was completed in 2021 and projected that sea levels will rise 1.6 meters by 2100. Without mitigation, projected sea level rise rates would cause a significant portion of the downtown area to flood permanently. While the Town of Wolfville completed a Climate Action Plan in 2021, which includes flood risk mitigation, implementing the plan will require significant funding, expertise, and regional collaboration.

The Town of Wolfville has a number of parks and trails that are typically viewed as greenspace, most notably the Millennium Trail, Reservoir Park, and Acadia's Woodland Trails. However, this study expanded the definition of greenspace beyond municipal parks and trails (see Figure 1) to include any natural space used for recreational, social, spiritual or conservation purposes. This expanded definition of greenspace allowed the researcher to examine:

1. the differences between rural and urban greenspace,
2. the accessibility of greenspace in the case study community, and
3. the personal significance of natural spaces from community members' perspectives.

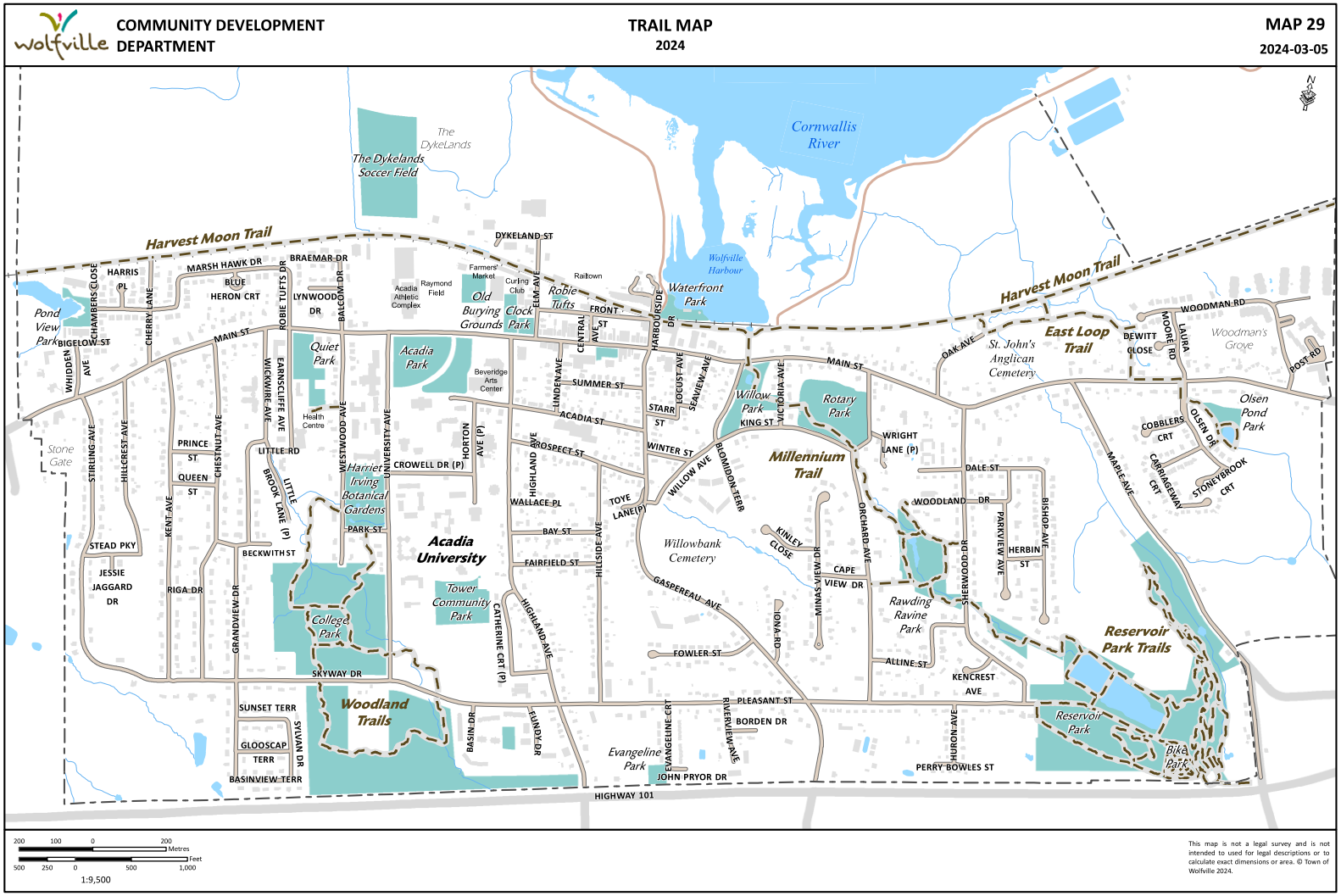
Private greenspace was also included in this study to account for context-specific reasons: several study participants owned land in which they spent a considerable amount of time, the Covid-19 pandemic caused municipal closures or limited access to several parks and trails therefore necessitating the use of private greenspace, and university-owned greenspace inhabits a "grey" zone when it comes to private versus public property, necessitating a broader definition of local greenspace.

2.0 Methods

This qualitative case study was informed by critical narrative inquiry to deeply examine the experiences of under-represented demographic groups and their interaction with local greenspace in the town of Wolfville, Nova Scotia. Narrative inquiry is often chosen to give voice to marginalized populations whose perspectives are not always considered (Bochner & Riggs, 2014; Pino Gavidia & Adu, 2022). As a researcher engaging with narrative inquiry, one becomes an "intermediary in knowledge co-construction" (Pino Gavidia & Adu, 2022, p. 1), helping to reveal the meaning behind the stories. This methodology was appropriate for this case study which used facilitated focus group discussions using a semi-structured interview format to engage in deep and personal conversations with participants.

The objectives of the focus groups were two-fold: (1) examine the role of CES on the health, wellbeing, and social inclusion of each underrepresented population by having each focus group communally define greenspace, as it pertains to their lived experiences and (2) identify specific factors that may contribute to CES in rural greenspace and explore the differences in rural greenspace interaction between the four population groups by having participants reflect on the factors, including barriers and privileges, that influence their interactions with local greenspace and their implications for social cohesion.

Figure 1: Wolfville's Green Space Network map.



Source: The Town of Wolfville Community Development Department (March 5, 2024). *Trail Map* [Map]. Copyright by the Town of Wolfville, 2024.

Critical narrative inquiry, within social constructionism, is one of two paradigms informing narrative inquiry. The critical paradigm is rooted in the philosophy that the social world is shaped by power relations informed by social and historical contexts, forming social reality (Pino Gavidia & Adu, 2022). Social constructionism emphasizes knowledge as subjective, informed by social interchange (Sommers-Flanagan, 2015). Critical narrative inquiry has become an increasingly utilized methodology in response to growing awareness about marginalized communities whose lived experiences and realities are acutely shaped by historical, economic, and political values (Pino Gavidia & Adu, 2022). Since this study aimed to centre the social experiences of underrepresented populations in the case study community (youth, university students, individuals with physical and mental challenges and seniors) who already faced barriers to inclusion in community decision-making, the critical narrative inquiry approach acknowledged the social hierarchies and power structures that informed the lived experiences of study participants.

Narrative inquiry places "people, meaning, and personal identity at the centre" through personal storytelling and by acknowledging that our individual identities are shaped by living in relation to others (Bochner & Riggs, 2014, p. 195). Narrative inquiry counters the idea that an individual has a fixed personal identity and instead promotes the notion that one's identity is an ever evolving and dynamic process, influenced greatly by the narratives that govern our communities, cultures, and societies (Bochner & Riggs, 2014). This methodology allowed the researcher to gain rich, personal insights into the experiences of underrepresented populations in the case study community about their interactions with local greenspace as individuals and with other community members. Narrative inquiry is often used as a method to study social identity, social justice, and other social concepts, like social cohesion, as it examines "the way a story is told through the positionality of the actor/storyteller", thereby providing special insights into the complexities of social community structures (Barkhuizen & Consoli, 2021; Fernandez, Harris, & Rose, 2021; Riley & Hawe, 2005, p. 226).

This study used focus group discussions as the primary form of data collection in addition to participant-generated data methods as a secondary form of data. Study participants engaged in a series of two homogenous focus group discussions (sorted by age and self-identification to one of the four population groups), followed by one final knowledge sharing and idea generation session which brought all four population groups together. Homogeneity in focus groups often allows for more robust and detailed discussions as participants feel more comfortable sharing their experiences due to shared or similar experiences with other focus group participants (Woźniak, 2014). Narrative inquiry has been used in several qualitative studies on greenspace and social cohesion, including participant-generated photo-narration and audio-recording methods similar to the ones used in this study (Campbell, 2023; Fernandez et al., 2021; Peters et al., 2010; Pipitone & Jović, 2022).

In addition to the focus groups, two participant-generated data methods were incorporated into the design: photo elicitation and participant-led audio (Ritchie & Lewis, 2003). Participant-led audio is increasingly used in on-site, locational storytelling (Rishbeth, 2014). This method is particularly appropriate for identifying "unexpected findings" and representing "diverse voices" (Rishbeth, 2014, p. 102). It allows participants to have an active role in the data-generation process, as participants self-direct their recordings in their own localities where they take on the role of 'expert' (Rishbeth, 2014; Stevenson & Holloway, 2016). Participants were asked to engage in reflexive tasks between focus group discussions where they were instructed to use

photography and audio recordings to answer specific prompts about their local greenspace interaction. Both the photography and audio recordings were designed to engage participants in deeper reflection outside of focus group discussions and to record their experiences while interacting with local greenspace in their everyday life. These reflexive exercises were not only helpful in generating discussions during the focus groups, but they also allowed the participants to co-create data and knowledge throughout the research process (Olmos-Vega et al., 2023).

2.1 Participants & Recruitment

All of the eighteen participants (n=18) lived near Wolfville's greenspaces, most within town boundaries. Participants were recruited through email solicitation to relevant community organizations, through personal and professional connections, and snowball sampling. Snowball sampling is a recruitment method that is commonly used in qualitative research whereby research participants are asked to assist researchers in identifying other potential participants (Parker et al., 2019). Snowball sampling is particularly effective when recruiting vulnerable or marginalized groups (Naderifar et al., 2017).

There were five participants each in the youth, university student and senior groups. The group with individuals with physical and mental disabilities consisted of three individuals and three staff members who regularly worked with them (see Table 1). The inclusion criterion for seniors was anyone over the age of sixty years old. Youth participants were sixteen to eighteen years old. The university students had to be currently or recently (within the last two years) attending Acadia University on-campus. For the group of individuals with physical and mental disabilities, the researcher worked with the L'Arche Homefires organization to identify individuals within their organization who were able to participate in small groups with the help of their support person and who were able to physically engage with local greenspace. L'Arche Homefires is the local branch of a Canada-wide social service organization that seeks to empower persons with disabilities and foster communities of inclusion through programming and residential services. Due to COVID-induced scheduling challenges, this group only participated in one session rather than two. Modifications to the tasks and focus group prompts for this group were made when necessary to allow for the full participation of participants in this group.

Table 1. *Participant Groups and Inclusion Criteria*

Participant Group	**Number of Participants (n=18)**	**Inclusion Criteria**
Youth	5	16-18 years
Seniors	5	>60 years
University students	5	Attending Acadia University or recently graduated (< 2 years)
Individuals with disabilities	3	Active members of l'Arche Homefires identified by staff members

Note. Acadia University is the local university situated in the case study community. L'Arche Homefires is the local branch of a nation-wide social service that provides inclusive housing and community programming for individuals with mental and physical disabilities in Canada.

2.2 Ethics and Consent

All participants were given a consent form to read, review, and sign prior to commencing the study. Modifications to the consent forms were made to ensure that the participants with disabilities were able to consent to participate in the study. In recognition that this study required a significant commitment from participants, all participants were offered $50.00 compensation.

This study was approved by the Acadia University Research Ethics Board (REB 21-09) on March 4, 2021.

2.3 Data Collection Methods

Data was collected in May, June and July of 2021. The case study consisted of two focus groups for each population group (except the group of individuals with disabilities) and a final session that brought together all four groups. Findings from the final session are omitted as it only pertains to Wolfville greenspace planning and has little value for a broader audience. A summary of the data collection methods is provided in Table 2.

Table 2. *Summary of Data Collection Methods*

Participant Engagement	**Methods**	**Objective(s)**	**Data Collected**
Focus Group 1	Semi-structured focus group discussion; participant generated photo-narration	To communally define greenspace in the study community (*Prompt: What is your definition of greenspace in Wolfville?)*	Participant-generated photographs, focus group transcripts
Focus Group 2	Semi-structured focus group discussion; participant generated audio-narration	To identify factors that influence greenspace interactions and implications for CES (*Prompts: (a) Where are you (i.e., which greenspace), (b) What are you doing in the space that you are currently in? (c) Tell me a story about why this greenspace is important or valuable to you and d) What does this greenspace mean to the Wolfville community?)*	Participant-generated audio recordings, focus group transcripts

At the outset, each participant (on-line or in-person) was met individually to explain the study, obtain consent, and provide instructions for the first photography task and focus group.

The first focus groups were facilitated online through a virtual conferencing platform (Zoom) due to COVID-19 restrictions. The goal of the first focus group was to establish a working definition of greenspace, as defined by the participants themselves. Although participants were given the definition of greenspace as "any natural space used for recreational, social, spiritual, or conservation purposes" at the outset, focus group participants were encouraged to define "greenspace" in their own words with the photographs that they took themselves. Participants came to the first group with 3-4 photographs that attempted to answer the question: *What is your definition of greenspace in Wolfville?* Each participant shared their photographs and discussed why they had taken them. Through discussion and dialogue, each group came to a shared understanding of greenspace as it pertained to their everyday lives. The photo-narrative method was used as a way to encourage participants to reflect on their everyday greenspace interactions through personal stories and connections with each photographed area.

The group consisting of individuals with disabilities and their support person only participated in one focus group that was held in-person, due to scheduling challenges. This focus group session was modified to include both the L'Arche member and their support person and focused on the accessibility of local greenspace.

The participant-generated definition of greenspace in Wolfville helped guide the second participant task and the discussion points for the second group. Before participants left the first group, they were given instructions on how to prepare for the second one.

Participants were given approximately two weeks to complete the second task before reconvening. Each participant was asked to complete 3–4 short audio recordings while they were using greenspace in Wolfville. Participants were encouraged to narrate their experience in a location of their choice. They were asked to provide their location, how they were using the space, their relationship to the space, and the community's relationship to the space, plus other comments as they saw fit. Participants recorded using their mobile phones or digital recorders. This locational story-telling technique was chosen to provide intimate access to the experience being researched (Worth, 2009).

Discussion questions for the second group were used to enable participants to share their recording experiences and to generate discussion around factors, including barriers and privileges, that influence their greenspace interactions and the potential implications for social cohesion.

2.4 Data Analysis

The focus group discussions were audio-recorded, transcribed verbatim, and returned to the participants for review. A transcription software called Fireflies.ai was used to assist the transcription process. Once participants approved the transcripts, they were coded and analyzed for common themes with a coding software called ATLAS.ti (Balomenou & Garrod, 2015; Guillemin & Drew, 2010). Thematic analysis is a common method used in qualitative research that identifies patterns or themes (Braun & Clarke, 2006). This study engaged in inductive

thematic analysis, whereby patterns and themes were allowed to surface naturally during the analysis, without any preconceived frameworks (Braun & Clarke, 2006). This method of analysis was deemed essential for this study, which aimed to give a voice to underrepresented community members using the participants' narratives, rather than identifying themes through the lens of existing theory.

Each focus group transcript went through two rounds of coding; the first round identified key phrases or words, while the second round grouped and consolidated codes together (Balomenou & Garrod, 2015; Guillemin & Drew, 2010). A sample of the inductive thematic analysis process is provided in Table 3. Code groups were consolidated into thirteen themes and mind maps generated for these themes. The participant-generated photographs from the first focus group were collected and reviewed multiple times and linked with relevant commentary in the focus group discussions and relevant code themes. The participant-generated audio recordings were orally analyzed and incorporated into relevant themes.

Table 3. *Sample of Coded Transcript and Output (Themes)*

Transcript Excerpts	**Code(s)**	**Theme(s)**
If you're, for example, a white, straight male just sitting down here [in a local park], there is a bunch of connotations that you might be doing something that you shouldn't be	Stereotypes/racism affects greenspace accessibility; socially acceptable times of day to use greenspace; some people more welcome in greenspace than others	Societal attitudes impact greenspace interaction

Note. The transcript extracts in the table above were taken from the full-length transcription of the second focus group with university students, Lavallée, 2021.

3.0 Results

While the findings from the original study were more extensive, this article focuses on the social and equity-related implications of CES provided by local greenspace in the case study community. The results are categorized into themes and sub-themes that relate to the overall finding of the importance of greenspace as a key social space in the community (see Figure 2). Each theme is described below. The results are summarized according to each theme in Table 4.

Figure 2. Finalized thematic map demonstrating three themes.

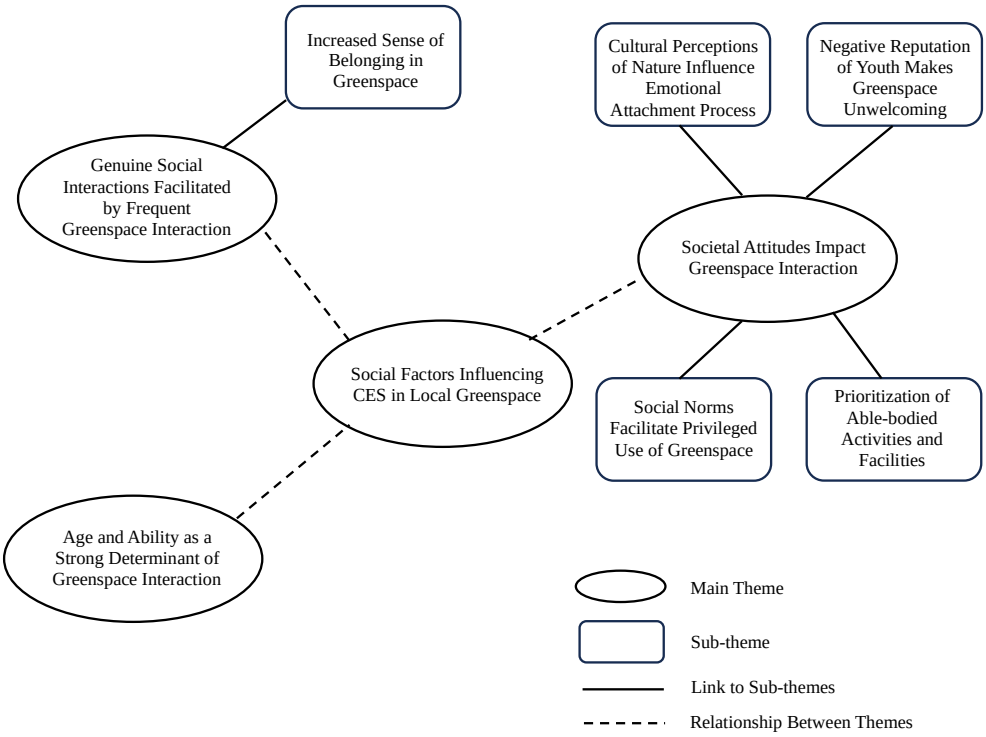


Table 4. *Summary of Results Categorized by Theme*

Theme	**Findings**	**Examples**
Frequent greenspace interaction facilitates genuine social interactions	Being in greenspace versus other parts of Wolfville influences social interactions with other community members. Group definitions of greenspace often included social aspects. Greenspace interaction reminds people of their insignificance, leading to increased self-reflection and a change in mindset. Implicit code of conduct in greenspace consistent across all groups.	Local greenspace increases "community empathy," more "mutual respect" for others while interacting with greenspace, and increases the desire to "offer a hand to help." "A place for communities to share and to take care of together," a place to interact "with community members we might not have met." "It's easier to be in that type of mindset because we realize that with all this greenspace, we can literally visualize how… insignificant we are... It's kind of hard to just self-reflect when you don't have something that's reminding you that it's not always about what you want." All local residents "develop courtesy because we all share the same trail or space;" feeling safer in greenspace because people "using greenspace are generally not impaired by drugs or alcohol;" people seem "more responsible" in greenspace than in other public places.

Table 4 continued

Age and ability as a strong determinant of greenspace interaction	Ability of greenspace to chronicle life. Historical significance of greenspace encourages pride amongst senior participants. Greenspace as an essential social space for youth and university students. Importance of accessibility in local greenspace. Cultural perceptions of nature influence emotional attachment process.	Willow Park is meaningful because "it is a place to enjoy time together" with family and grandchildren; senior participants particularly expressed gratitude for greenspace that served as a "measure" of their lives. Seniors appreciated the preservation of greenspace that "has a lot of history," including local history such as the spot that marks the "expulsion of the Acadians;" feelings of pride at being "part of the heritage of local greenspace." Local greenspace facilitates intergenerational social connections; provides opportunities to "be with community members;" social interactions in greenspace felt "homey" a provide a sense of comfort and belonging. Despite challenges in accessible infrastructure, members of the L'Arche community visit local greenspace "four time a week" or "daily." Youth, university, and senior participants valued local greenspace for learning about the cultural history of the land, including the Acadians and the Mi'kmaq; recognition that learning about the history of the land is something that "children don't get in school" and requires immersion in nature; cultural activities such as "July 1st," "Mud Creek Days," and "Deep Roots concerts" increased social cohesion among community members.
Societal attitudes impact greenspace interaction	Ambiguity of private versus public greenspace. Negative reputation of youth makes greenspace unwelcoming. Prioritization of Able-bodied Activities and Facilities. Social norms facilitate privileged use of greenspace. Separation between nature and daily life disadvantages those with work and family commitments.	Although rural areas are surrounded by greenspace, there is a lack of clarity as to what is considered publicly accessible, "I think Nova Scotians depend… on trespassing to like go to a greenspace. 'Cause it's all around us. It's just not ours;" expressed need to trespass due to COVID-19 lockdowns; community members feel a sense of collective ownership over dykelands, even though they are private property; private property signs "don't mean anything to us anymore." University and youth participants felt uneasy about using certain greenspaces "too early" or "too late;" afraid that other community members would think that they were "there to cause trouble;" felt that their age group has a "reputation" for being "destructive;" felt "left out of the planning" process when it comes to local greenspace.

	Participants with disabilities felt that their full participation in greenspace was limited due to accessible infrastructure and design; those in wheelchairs felt inhibited from getting "up close and personal" to nature; "We don't usually get too close. We can't get too close. We just sit on the benches;" strong desire for more "accessible events" so they could "show up and get more involved with other people."
	"Greenspaces are prioritized for those people who already have resources;" those with "monetary wherewithal" are able to engage frequently and diversely with greenspace; could not afford "good winter hiking gear" which inhibited winter greenspace use; guilt felt at using greenspace "because they're not working," feeling that greenspace can only be used when people are "not working" or not pre-occupied with "family commitments."
	"But there are a lot of people, like probably 90% of the population who their job is inside. And then they have to go pick up their kids. They have to go do these things. They have to get on a bus because of these time demands. And that's really, really challenging because it shouldn't be, oh, if I want to be outside, I should feel guilty because I'm not working, because being outside is like 90% of your mental health;" greenspaces "aren't designed to be used while we're at school or working;" youth and university participants expressed that they cannot do schoolwork easily outdoors because of the lack of "wifi" and the ability to "plug in a laptop."

Note. All text in quotation marks are direct excerpts from focus group transcripts, Lavallée, 2021.

3.1 Frequent Greenspace Interaction Facilitates Genuine Social Interactions

One of the most interesting findings was that participants expressed that being in greenspace versus being in other parts of Wolfville influenced how they interacted with community members. Participants expressed how local greenspace increases "community empathy", and that frequent greenspace interaction has a particular ability to "bond people together." This was true for both active (i.e., walking, biking, hiking) and passive (i.e. sitting, socializing, picnicking) forms of greenspace interaction. Furthermore, participants expressed that being in greenspace led to more successful social encounters when compared to other public spaces, such as cafés or libraries.

Participants noted a shared etiquette when frequenting greenspace that affects people's behaviour. While there were differences between the age groups as to what was deemed appropriate behaviour in greenspace, the recognition that an implicit code of conduct exists in greenspace was universal across groups. Participants expressed that

this implicit code of conduct contributed to the successful and meaningful social encounters they had with other community members while using greenspace.

Participants expressed that their meaningful social encounters in greenspace helped increase their sense of belonging in the community. The ability of greenspace to facilitate meaningful experiences with others was evident through the stories shared by participants when they reflected on their photographs and audio recordings. Eleven of eighteen participants attributed the presence of others to the importance of the greenspace they photographed. An example is included in Figure 3.

*Figure 3***.** Participant photograph of Willow Park with corresponding quote identifying social importance for participant.

There, you kind of see, kids, adults, and people hanging out, hanging around there, especially during COVID, people just get really stuck up in doors and they just kinda want to go out…under social distancing measures, obviously. Yeah, it's a good place to hang out (Description of photograph during focus group discussion by participant identified as Daniel, May 21, 2021).

3.2 Age and Ability as Strong Determinants of Greenspace Interaction

Participants' age and ability were significant factors that influenced their day-to-day greenspace interactions, including the purpose(s) of their interactions and the activities in which they regularly engaged. In addition, participants felt that the differences they experienced in greenspace due to their age and abilities were reflective of societal attitudes, which, in turn, impacted their ability to form emotional attachments to greenspace.

Senior participants particularly expressed deep feelings of attachment to local greenspace for the ways in which the space chronicled their "adult life" and served as a reminder that human life is ephemeral. An example of the value of greenspace as a way to chronicle time is depicted in Figure 4. Although seniors expressed pride at knowing and often being part of the heritage of local greenspace, they acknowledged that greenspace has to continually evolve to meet the needs of the current generation. Senior participants wanted greenspace that facilitates inter-generational socialization to ensure that historical places are preserved while also meeting current community needs. In contrast, youth and university students expressed how greenspace had strong social meanings, acting as essential spaces for socialization with peers and other community members. They also provide a needed escape from the demands of school and work. L'Arche participants expressed how important greenspace is to their daily lives even when faced with significant accessibility barriers. L'Arche participants expressed a strong desire for improved accessible greenspace design, and more accessible events so that they could feel better connected with the community.

Figure 4. Participant photograph of a backyard garden with corresponding quote identifying the value of greenspace as a chronicle of time for participant.

In the background there, you can see, a wooden angel carved by our artist and neighbor… and [the angel] stands watch over our garden, uh, lovely that she carved it out of a piece of wood. So of course, it's like all things, slowly, slowly deteriorating, but it makes it all the more precious (Description of photograph during focus group discussion by participant identified as Stanley, May 25, 2021).

3.3 Societal Attitudes Impact Greenspace Interaction

This theme had four sub-themes that are discussed in sequence.

3.3.1. Cultural perceptions of nature influence emotional attachment process. Participants felt that their emotional attachments to local greenspace were influenced by cultural perceptions of nature. Youth, university, and senior participants identified the value of local greenspace for learning about the cultural history of the land, particularly concerning the Acadians and Mi'kmaq. Senior, youth, and university participants alike shared stories of attending cultural events in greenspace that had a lasting impression on them. Although participants expressed deep appreciation for cultural events that took place in local greenspace, they wanted more emphasis on local Indigenous history.

Another factor that was found to affect emotional attachments to greenspace was the ambiguity in knowing what private versus public greenspace was in Wolfville. Youth expressed that there is a lack of clarity as to what is considered publicly accessible, necessitating the practice of trespassing. This issue was further compounded by the greenspace restrictions imposed by the COVID-19 lockdown, which caused a significant increase in resentment among participants when it came to accessing restricted greenspace on the local university campus.

3.3.2. Negative reputation of youth makes greenspace unwelcoming. The university and youth groups both expressed that their negative reputation among the public made them feel unwelcome in local greenspace. Furthermore, youth and university participants felt that the negative connotations with their age group "left them out of the planning," leading to greenspace design that did not account for their interests and needs. Youth participants wanted more consultation in the greenspace planning process to address the need for more targeted greenspace design.

3.3.3. Prioritization of able-bodied activities and facilities. The participants with disabilities placed the most emphasis on their challenges in accessing greenspace. They felt that their full participation in local greenspace was limited due to the structural barriers of current local greenspaces that were not designed to account for people with physical and mental disabilities. They expressed frustration at having to spend more time or energy to use greenspace on a daily basis because greenspace is frequently not accessible. Although this group faced numerous barriers to greenspace usage, it was prioritized as part of their regular routines, and they visited numerous times a week. They wanted to use greenspace and feel valued as members of the community within it.

3.3.4. Social norms facilitate privileged use of greenspace. Similarly, youth, university, and senior participants expressed concerns that "greenspaces are prioritized for those people who already have the resources," such as those with the ability to purchase recreation equipment like "bikes." Those with a "social economic advantage" were also perceived as having a greater ability to form attachments to greenspace as they had the "monetary wherewithal" to engage frequently and diversely with greenspace. It is clear that access to local greenspace is not currently seen as equitable, particularly by the younger groups.

A second and strongly linked social attitude that emerged was the tendency for humans to deny their essential need for nature on a regular basis. Consequently, greenspace is perceived separately from daily life and, thus, can only be used when

people are “not working” or not preoccupied with “family commitments.” Youth and university participants perceived greenspace as a place that was only to be used during leisure time because they “aren’t designed to be used while we’re at school or working”. Youth and university students in particular expressed their concern that local greenspace disadvantages those with little free time as a consequence of belonging to a lower socio-economic group. An example of a local greenspace that was perceived as accessible even amidst the routines and errands of daily life according to one participant is included in Figure 5.

Figure 5. Participant photograph of the garden at the local post office with corresponding quote identifying the value of accessible greenspace that can fit into daily life.

It brings me to my second photo… which is at the post office. I kind of felt like that actually has a really nice green space now. They have some really nice trees and they also have like, like a really nice grass lawn. I really like this as a green space because it's not where, like I typically would associate green space with a space. I think this one's really accessible because many people can come here every single day and then enjoy nature as they're getting the mail (Description of photograph during focus group discussion by participant identified as Chara, May 21, 2021).

4.0 Discussion and Conclusions

The findings suggest that participants in all the groups benefitted from important cultural ecosystem services from regular greenspace interaction. However, these CES did not benefit all studied populations equally. The results of the study are discussed as they pertain to the three research areas below.

Local greenspace in Wolfville was highly valued as a social gathering space more than other public areas in the community. Participants relied on greenspace as free, public space to gather for community events and to meet others. Greenspace can help people feel connected to the "larger social system", as described by architect Christopher Alexander (1977, p. 337) in his landmark book, *A Pattern Language.* Alexander argues that public commons are integral to maintaining the social health of a community, as they are places where daily exchanges and interactions occur. Extensive research has demonstrated the importance of the social aspects of CES provided by greenspace in increasing social cohesion (Clarke et al., 2023; Wan et al., 2021; Wilson et al., 2024). These findings were reflected in participants' responses, where greenspace, more than any other public space in Wolfville, was felt to encourage genuine and positive interactions among residents that led to a greater sense of belonging, social inclusion, and increased mental health.

Although greenspace was found to play an important social role in Wolfville, greenspace access is not equitable, even in a rural community that appears to have an abundance of greenspace. Not all study participants felt welcome in local greenspace due to negative societal attitudes such as stereotypes. Youth and the participants with disabilities in particular felt that societal attitudes inhibited them from interacting with greenspace in the ways in which they wanted. Youth participants felt that they were often regarded with suspicion when using greenspace due to negative and harmful stereotypes about their age group. Similarly, individuals with disabilities felt restricted in their ability to access greenspace due to inaccessible infrastructure such as a lack of paved pathways or wheelchair accessible benches. Both youth and individuals with disabilities felt a decreased sense of belonging in the community compared with the other groups.

These findings speak to greenspaces being socially constructed spaces that portray societal values that have the power to exclude and marginalize certain populations (Byrne, 2012; Rushing et al., 2019). There is a perception in Western society that improving the accessibility of natural spaces makes them less wild (Byrne, 2012). This perception leads to the prioritization of the conservation of the kinds of natural spaces that Western culture reveres: greenspace that is wild, pristine, and tranquil, above accessible greenspace (Byrne, 2012). The conservation of 'wild' greenspace can reinforce inequities, as these spaces are typically associated with higher-income neighbourhoods and individuals with the financial and physical means to access them, further perpetuating the inequities of greenspace accessibility (NRPA, 2018; Tooke et al., 2010; Rigolon, 2016; Wen et al., 2013; Westgate, 2018). Senior participants were quick to point out that they benefited directly from human intervention in natural spaces, as they felt strong attachments to their yards. On the other hand, youth and university student participants felt that lack of economic privilege restricted their ability to access wilderness, as they did not have transportation, equipment, or leisure time.

These findings suggest that exclusivity is inherent in Anglo-normative ideals of nature, or in other words, white, Western socially accepted perceptions of nature

(Rushing et al., 2019). These findings suggest that only those with higher societal privilege are able to access wild natural spaces, while also disproportionately benefitting from human-made greenspace. Local greenspaces in Wolfville were perceived to reflect social norms that excluded youth, prioritized able-bodied usage, and required privilege to access. This emphasizes the need for more consultation with underrepresented populations to ensure that greenspace does not further perpetuate harmful social norms and meaningfully addresses the needs of all people in a rural community.

These findings have important implications for Wolfville and other rural communities that may not have the same municipal budget for accessible infrastructure or changes to greenspace amenities and services as urban municipalities. Suppose community members with disabilities are unable to spend as much time in greenspace as other residents. In that case, it may influence their opportunities to build their social networks and experience a sense of community belonging as residents who do not face these barriers. If some groups feel restricted from accessing important social spaces within the community, this will likely impact the social cohesion felt within the entire community and will continue to increase health disparities in rural Canada (Jennings et al., 2024; Mental Health Commission of Canada, 2021; Qi et al., 2024). As rural communities in Canada become increasingly diverse demographically and face disproportionate impacts of climate change, it is more important than ever to foster social cohesion to ensure an inclusive, healthy, and resilient community (Fonseca et al., 2019; IPCC, 2023; Jennings et al., 2016; Kosanic & Petzold, 2020; Tooke et al., N., 2010).

4.1 Specific Factors That May Contribute to CES in Rural Greenspace

The results from this study identified three factors that may contribute to CES in rural greenspace:

1. Implicit code of conduct facilitates positive social encounters
2. Inclusion of diverse cultural beliefs and worldviews in greenspace infrastructure and available activities
3. Increasing opportunities for community co-design of local greenspace

Participants felt that there were more genuine social interactions in greenspace due to an implicit code of conduct: when using greenspace people are more respectful, more helpful, and feel a collective ownership of greenspace. These positive interactions with others while using greenspace are consistent with other findings that demonstrate that greenspace can encourage residents to socialize with fellow community members and provide opportunities for social cohesion (Clarke et al., 2023; Jennings et al., 2016; Wan et al., 2021; Wilson et al., 2024). However, it is still unclear how community engagement in the ownership and maintenance of greenspace can affect the use of greenspaces for health benefits (Caperon et al., 2022).

While all participants felt that frequent greenspace interaction led to more genuine social encounters, not all participants felt that their worldviews or values were reflected in the current greenspace infrastructure and available activities. For example, youth's desire to use greenspace for socializing, rather than for physical activity, does not align with Anglo-normative ideals about nature as quiet and private (Rushing et al., 2019). This societal belief about nature may influence the ways that youth's relationship with nature is perceived by adults; youth participants often felt

excluded from the planning process because adults believed that they were not interested in the outdoors or were reckless and destructive towards nature. These findings align with previous studies that found that having amenities, activities, and physical space that cater to various demographics and cultures are one of the most impactful ways to increase social cohesion (Cardinali et al., 2024; Clarke et al., 2023; Jennings et al., 2024).

All of the participant groups did not see greenspace in Wolfville as meeting the needs of marginalized groups equitably. However, the exclusivity of greenspace can be addressed, at least in part, through the co-design of local greenspace with underrepresented populations. The collaborative process of co-design draws on the knowledge and preferences of local stakeholders in addition to research and best practices from experts (Caperon et al., 2022; Padilla, 2018). Co-design was seen as contributing to reducing inequities in CES in rural municipal greenspace through four areas: co-designing educational opportunities in greenspace, facilitating accessible infrastructure, providing opportunities to memorialize nature, and designing greenspace as a network. These areas will be expanded upon in the recommendations section.

4.2 Differences in Rural Greenspace Experiences Between the Four Study Groups

Although participants articulated that rural greenspace offered more opportunities for social interaction than greenspace in urban areas, it was unclear whether this is related to the meaningful differences between the settings or were just their perceptions. However, rural greenspace is important for two prominent reasons: (1) it fulfills a social purpose not fulfilled by other communal spaces and (2) people seem to behave in ways that foster social cohesion and intergenerational connection in greenspace more than in other communal spaces. For rural Canadian communities that often lack financial and infrastructural resources relative to urban areas, local greenspace may play an even greater role in the social wellbeing and health of a community than was previously understood (Driscoll et al., 2015; George & Reed, 2015; Mental Health Commission of Canada, 2021). The findings from this study warrant more research on the differences between the social importance of greenspace in rural versus urban settings.

5.0 Recommendations

First, educational opportunities in greenspace that can facilitate people developing broader cultural understandings of nature are important. Participants suggested that greenspace should educate about local Indigenous history through more cultural events and interpretive signage while increasing collaboration with local Indigenous communities. This finding expands on current literature that points to the lack of research on the socio-spatial determinants of greenspace equity, such as park features like programming and signage (Boulton et al., 2018). These findings suggest that park features may play an important role in improving greenspace equity by offering broader perspectives of nature. More research is needed to understand the ways that park amenities and infrastructure contribute to greenspace equity and if this translates to increased social cohesion (Clarke et al., 2023; Jennings & Bamkole, 2019; Wan et al., 2021).

Secondly, the findings suggested that accessible infrastructure must be more than paved pathways and accessible benches. It must also address socio-economic

differences in greenspace users. For example, youth and university participants suggested outdoor workspaces with Wi-Fi and charging outlets for greenspace so that they could better incorporate nature into their daily lives outside of leisure time. Equipment loaning programs and increased public transit to greenspace were also suggested as ways to address socio-economic disparities with access. This is particularly pertinent as rural communities across North America grapple with increasing socioeconomic divides between populations and a widening disparity in terms of access to services (Csurgó & Smith, 2021; Fletcher et al., 2020; Mental Health Commission of Canada, 2021).

While youth and university participants and those with disabilities felt unwelcome in greenspace due to social attitudes and inaccessible infrastructure, senior participants felt unwelcome when local greenspace emphasized human intervention and infrastructure. Senior participants favoured conserving greenspace in their community more than other participants because they valued greenspace for chronicling time. The idea that history is witnessed by greenspace was particularly important to the senior participants, who expressed gratitude for the preservation of greenspace with historical significance and expressed pride at knowing and often being a part of the heritage of local greenspace. While senior participants recognized that greenspace must continually adapt to meet evolving needs, they were resistant to changing greenspace compared to younger residents. However, research suggests that providing opportunities to memorialize nature (through living memorials etc.) could result in more wide-spread support of green infrastructure (Block, 2018; Cloke & Pawson, 2008; Heath-Kelly, 2018) if those residents who attach meaning to greenspace for its' ability to chronicle time feel recognized.

While it is challenging to design a greenspace that can accommodate the needs of diverse users and continues to meet evolving needs, looking at greenspaces as a connected network offers a novel way to address these challenges. There is a growing need to analyze greenspace as "networked socio-ecological entities" that perform collectively (Torabi et al., 2020, p. 1), instead of expecting one greenspace to serve the needs of an entire community. Torabi et al. (2020) argues that "a whole network of parks could be designed to provide a diversity of services to the community" (p. 2). A network approach to greenspace would ensure that parks are more ecologically sustainable and less fragmented, while also allowing communities to access more diverse facilities and benefit from more CES. While the traditional approach to greenspace design is to incorporate as many functions as possible in one locale, this approach often disregards development impacts on the natural environment as well as the unique advantages that each place has to offer (Torabi et al., 2020). While a boggy area may not be well suited for a sports field, a sandy lot in another part of the community may provide the ideal spot for a baseball pitch. A single greenspace does not necessarily have to provide the facilities that four greenspaces can offer—if such spaces are designed in a collaborative, networked fashion. However, this networked approach necessitates communication with the community and collaboration with local government authorities, further reinforcing the importance of co-design (Torabi et al., 2020). While a small, rural community may not have the same resources as a large city, it may be easier to adopt such changes on a smaller scale.

In summary, it is clear that CES provided by greenspace in the study community plays a vital role in the social, physical and mental wellbeing of underrepresented populations. Future research is warranted on the complex relationships between

rural greenspace, equity, and social cohesion. This study provides three recommendations for rural, Canadian communities to increase the accessibility and equity of CES provided by local greenspace:

1. Rural municipalities should prioritize free, public spaces, including indoor ones & winterized outdoor spaces, due to their important role in fostering social cohesion.
2. Rural municipalities should increase co-management of local greenspace with populations that are typically excluded from the planning process to increase the accessibility and equity of local greenspace.
3. More research is needed to determine the factors that contribute to genuine social interactions in greenspace to figure out how to replicate these types of beneficial social interactions in other communal spaces for increased health and wellbeing benefits.

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