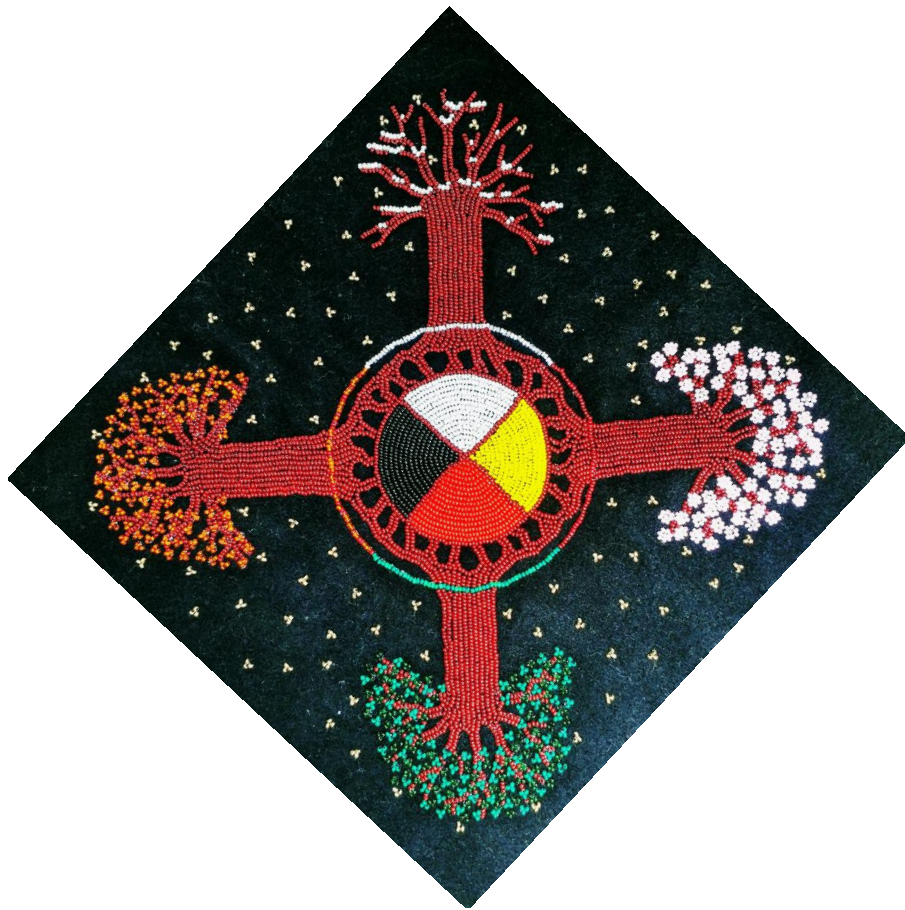


KEY FACTORS INFLUENCING FIRST NATION YOUTH PERSPECTIVES ON
FOREST MANAGEMENT AND CAPACITY DEVELOPMENT IN NORTHERN
ONTARIO, CANADA

by

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Partial Fulfillment of the Requirements for the
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Lakehead University

July 2018

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ABSTRACT

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First Nation youth often play a central, though indirect, role in Ontario's forest sector as the beneficiaries of capacity-building arrangements, employment opportunities and cultural-retention initiatives. Correspondingly, recent peer-reviewed literature has emphasized the need to engage First Nation youth directly regarding the forestry-related issues that affect them. Such steps will help to ensure that forest policy and youth-focused capacity development initiatives fully realize their intended benefits and remain relevant into the future. Despite this imperative, the direct engagement of First Nation youth remains a major outstanding gap in the research. This exploratory study endeavoured to fill the current knowledge gap by directly engaging First Nations youth participants in the First Nations Natural Resources Youth Employment Program through semi-structured interviews and focus group activities. Using inductive, qualitative grounded theory analysis, four key perspective-influencing factors were identified: relationship; natural and socioeconomic cycles; intergenerational equity; and the resource trap. These explanatory factors indicate that participants' thought processes and worldviews are deeply grounded in and affected by the unique historical experiences, sociocultural traditions and contemporary lived realities of their First Nation communities. Forest sector relationships, policies and capacity development initiatives in Ontario could thus be supported through the adoption of several specific policy directions, including: mandating comprehensive social impact analysis as a component of forest management planning; including specific funding for education and employment supports within broader capacity development initiatives; and supporting additional opportunities for culturally-rooted, land-based, experiential learning for First Nation youth.

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1. INTRODUCTION

First Nation youth often play a central, though indirect, role within Ontario's forestry sector as the beneficiaries of capacity-building arrangements (Wyatt et al. 2013), employment opportunities (Zurba and Trimble 2014), and cultural-retention initiatives (Booth and Muir 2013). Despite their significant effects on youth, these outcomes are typically negotiated by only a small group of non-youth community decision makers (Wyatt et al. 2010), such as elected representatives and economic interests (Reed 2010). This, in itself, is not necessarily problematic, as large groups of stakeholders can be effectively represented by a single individual when values and beliefs are shared consistently across the group (Kumar and Kant 2007). However, recent studies have suggested that the interests and perspectives of First Nation youth potentially differ substantially from traditional community decision makers. These may include differences in socio-ecological worldviews (Miller and Davidson-Hunt 2013), natural resource-related language use (Stevenson 2006), and the acceptance of decision support tools such as conventional maps and digital landscape representations (Lewis and Sheppard 2006).

Although there remains some disagreement that age alone affects forestry-related values (Kumar and Kant 2007), the evidence suggesting that differences in perspectives do exist between generations opens the possibility that capacity-building arrangements and other initiatives, though well-intentioned, may ultimately be undesirable or even harmful to youth, as they are created on youths' behalf, but without their direct input.

To achieve long-term success, forestry-related enterprises must remain aligned with community values as they evolve over time (Nikolakis and Nelson 2015). Forest managers must, therefore, involve all sectors of the community in decision making (Booth 1998) and continually monitor and incorporate the diversity of interests and views within communities to ensure that resource development remains inclusive and beneficial to all (Natcher and Hickey 2002). Understanding the needs, interests, perspectives and aspirations of First Nation youth is an important first step in ensuring that these “inheritors of collaboration” become engaged and competent resource managers, willing to maintain relationships and institutions within the forestry sector (Zurba and Trimble 2014, p. 86).

Despite the well-established imperative to engage First Nation youth in forestry-related issues, the actual inclusion of First Nation youth perspectives remains a major outstanding gap in the research. Indeed, to this point, no previous studies have sought to engage First Nation youth directly to gather their knowledge and perspectives related to Ontario’s forestry regime, including its related capacity development efforts.

This exploratory grounded theory study endeavoured to fill the current knowledge gap by directly engaging participants in the First Nations Natural Resources Youth Employment Program (FNNRYEP) to answer the central research question: What underlying factors influence First Nation youth perspectives on forest management and capacity development opportunities (e.g. education and employment) in Ontario? Semi-structured interviews, focus group activities and inductive qualitative analysis were thus utilized to explore the following four objectives derived from the central research question:

1. Gather perspectives of First Nation youth related to forest resource development and determine the factors that influence those perspectives.
2. Assess the level of awareness that First Nation youth possess regarding forestry-related education and career opportunities as well as the factors that influence their preferences for various options.
3. Document perceived barriers to education and employment, as well as strategies to overcome those barriers.
4. Evaluate how the First Nations Natural Resources Youth Employment Program (FNNRYEP) influences participants' perspectives on the forest sector and its associated capacity development (i.e. education and employment) opportunities.

Although the proposed study was primarily inspired by my own personal research interests, it is also firmly grounded within the theoretical foundation of the current academic literature (Creswell 2013). Hierarchies of knowledge often exist within forestry-related decision-making frameworks, privileging information that has been derived through acceptable standards of scientific rigor and objectivity (Kayahara and Armstrong 2015). This results in forms of cognitive imperialism (Martin 2012), in which personal experiences of individuals, including First Nations, are often subordinated and labeled as anecdotal. Furthermore, hierarchies of credibility (van den Hoonaard 2015) also exist within many First Nations communities in which the perspectives of numerous demographic groups, including youth, are often subordinated to both Elders and elected leaders (Reed 2010).

All Indigenous peoples deserve to have a say in the decisions that affect them and in any claims of knowledge about them (Graveline 2000; Ontario Federation of Indian Friendship Centres 2012). Through providing First Nation youth with an

opportunity to share their knowledge and perspectives, this research sought to undermine existing hierarchies by engaging with a group that has traditionally been marginalized in both the forest industry and in their own communities. By understanding the perspectives of and underlying influences on First Nation youth, conditions can ultimately be created in which they are effectively and meaningfully supported in becoming fully informed and empowered partners within Ontario's forestry sector, and leaders of positive and transformative change within their own lives and within their communities.

2. LITERATURE REVIEW¹

2.1 LITERATURE REVIEW INTRODUCTION

The topic of “aboriginal forestry” has been the focus of significant interest and study in recent years, which has resulted in a growing body of peer-reviewed literature examining the involvement of Indigenous peoples (First Nation, Métis, and Inuit) within Canada’s forest resource sector. Far from being uniform or static, these roles have evolved over time within the context of ever-changing national (Young and Duinker 1998) and provincial (Griffith et al. 2015) forest policy regimes. These changes have resulted in a large and diverse range of participatory mechanisms being utilized by Indigenous communities across the country. Through an examination of 302 published articles and reports describing current Indigenous participation in forestry in Canada, Wyatt et al. (2013) identified five distinct types of participatory arrangements, with thirty-four different sub-types, including: treaties, agreements and MOUs; management and planning roles; influence on decision making; forest tenures; and economic roles. Fortier et al. (2013) demonstrated that these approaches were not employed evenly across Canada, or even regionally within particular provinces, which likely reflect the differences in forest policy that exist both across and within individual provinces (e.g. Ontario’s Area of the Undertaking versus the Far North).

¹ This chapter was previously published as a journal article. Robitaille, P.A., C. Shahi, P.A. Smith and N. Luckai. 2017. Growing together: A principle-based approach to building collaborative Indigenous partnerships in Canada’s forest sector. *Forestry Chronicle* 93(1): 44-57.

Additionally, rather than participating in the forest sector through only one specific type of arrangement, many Indigenous communities engage in multiple forms of participation simultaneously, highlighting the fact that various participatory mechanisms likely influence the implementation of others (e.g. holding a forest tenure and owning a sawmill), and that each mechanism likely offers different benefits to communities (Fortier et al. 2013). In light of these insights, it has been suggested that government attitudes and policies need to better encourage a diversity of options and arrangements for Indigenous participation in forest resource management and development, rather than a “one-size-fits-all” approach to Indigenous engagement (Wyatt et al. 2013, p. 29).

To further refine our understanding of the subject and of the underlying factors that influence meaningful Indigenous participation in forest resource management, many studies have sought to gain insights into specific arrangements employed within particular communities (e.g. Bull et al. 2014; O’Flaherty et al. 2008; Beaudoin et al. 2015) or the factors that contribute to the success of individual participatory mechanisms (e.g. Berkes 2010; Fraser et al. 2006; Takeda and Ropke 2010). Additional studies have examined the concept of “aboriginal forestry” in a broader, more abstract manner, attempting to define its central characteristics and offering methods of evaluating how effectively it is being achieved (e.g. Parsons and Prest 2003; Wyatt 2008). While such studies are of immense theoretical value and contribute greatly to our understanding of the subject, their focus on either case-specific processes or broad, philosophical discussions may ultimately limit their value to forest managers who are required to develop comprehensive forest management and community engagement strategies, drawing on a variety of disparate tools and engagement techniques.

This current gap within the literature has been discussed in many recent peer-reviewed studies, which have expressed that, while the need for meaningful Indigenous participation in forest management is well-established, little work has been done to articulate the common set of factors that are necessary to ensure its successful achievement, regardless of the particular mechanism through which the community decides to engage (Booth 1998). Indeed, there remains a strong need to elaborate on how meaningful Indigenous participation can be achieved (Klenk et al. 2013).

As Wyatt et al. (2013) suggest, a useful starting point may be to examine forest resource development as a social phenomenon occurring between resource managers, policy makers, and Indigenous communities. Using this perspective, there is a strong need to identify requisites for successful relationships, which can then be used to develop tools, guidelines and methods for achieving effective joint management (Sherry 2005). As proposed by McGregor (2002), one potential method to achieve this objective is to examine approaches that participants have deemed “successful” or “unsuccessful” and derive the common sets of factors that contributed to each outcome.

Through a systematic review of recent peer-reviewed literature, this chapter aims to fill the current knowledge gap by identifying principles and practical advice that can be adopted by resource managers, policy makers, and Indigenous communities wishing to engage in forest resource management or development on more equitable and mutually-beneficial terms. Through understanding and implementing these lessons, Indigenous and non-Indigenous actors can ultimately begin to work more effectively toward “the development of a ‘co-existence’ relationship,” (McGregor 2011, p. 307) and toward providing Indigenous communities with the tools they need to successfully

identify and take advantage of the opportunities facing them within Canada's forest sector (Nikolakis and Nelson 2015).

2.2 LITERATURE REVIEW METHODOLOGY

Guided by the research question, "What practical steps can be taken to facilitate more effective Indigenous–non-Indigenous collaborative arrangements in Canada's forest resource sector?" a three-phase systematic review (Berrang-Ford et al. 2011) of peer-reviewed literature was conducted.

The first phase began in February, 2016 and involved a keyword search of the Web of Science online database. Given the scope of this review paper, and recognizing the broad nomenclature used to describe Indigenous participation in Canada's forest resource sector, the keyword search utilized the following search terms: "aboriginal," "first nation*," "indigenous," "forest*," "natural resource*," "plan*," "consult*," and "manage*." Expanders (i.e. "*") were applied to many of the search terms to reflect the diversity of permutations that could exist within the literature (e.g. consult, consultant, consultation, etc.). Exclusion criteria were applied to limit search results to studies conducted within Canada, published in the English language, having "article" as the document type, and covering the subject areas of forestry, ecology, environmental studies, environmental sciences, sociology, anthropology, political science, planning development, social sciences interdisciplinary, or economics. This phase resulted in a list of 236 articles.

Articles retrieved during the first phase were then subjected to a title and abstract review to determine whether each would be included in the final list of articles to receive comprehensive review and analysis. During this second phase, articles were excluded which were not directly related to Canada's forest sector and Indigenous community participation within it. This process resulted in a final bibliography of 77 articles.

In the third phase, a systematic document review was conducted for the remaining 77 articles, using a questionnaire developed to standardize the review process. Using this questionnaire, the following information was identified from within each article: publication year, study location, Indigenous partners, purpose, research questions, methodology, results, conclusions, and suggested areas of future research.

Analysis of the information obtained during the systematic document review was then conducted using an iterative, inductive approach (Creswell 2014). In the first iteration, the authors identified participatory mechanisms or factors that had been cited as having contributed to either successful or unsuccessful Indigenous participation in Canada's forest sector. In the second iteration, identified factors were categorized into thematic groups (e.g. factors relating to traditional knowledge and land use studies). In the final iteration, related thematic groups were combined to form general principles, representing broad patterns emerging from the review.

2.3 LITERATURE REVIEW RESULTS

As summarized in Table 1, five broad principles, with twenty-three supporting mechanisms, emerged from the literature analysis. These principles include: building

respectful relationships; broad community engagement; bridging knowledge and value systems; flexible and holistic management systems; and clear and relevant measures of success. Within the following subsections, each principle will be examined in greater detail, with specific focus on: the role of each principle in achieving more meaningful and equitable Indigenous participation in Canada’s forest resource sector; concrete steps that can be used to help ensure each principle’s successful implementation; and factors that have historically prevented each principle from being achieved.

Table 1: Principles and mechanisms for developing collaborative relationships in Canada’s forest sector

Principle	Building Respectful Relationships	Broad Community Engagement	Bridging Knowledge and Value Systems	Flexible and Holistic Management Systems	Clear and Relevant Measures of Success
Underlying mechanisms	<ul style="list-style-type: none"> • Recognition of Aboriginal and treaty rights • Understanding biases and stereotypes • Well-defined and accepted roles • Forums for knowledge exchange 	<ul style="list-style-type: none"> • Targeted engagement of marginalized groups • Transparent guidelines for determining which individuals are engaged • Including individuals with land-based experiential knowledge • Culturally-relevant forms of information sharing 	<ul style="list-style-type: none"> • Common definitions of “values” • Using modern technology to support tradition • Representing landscapes in ways that communities see them • Adequate funding and support for values collection • Community control of information 	<ul style="list-style-type: none"> • Incorporating social and cultural considerations • Understanding available management options • Accommodating preferred practices • Creating culturally recognizable landscape patterns • Mechanisms to influence decision making 	<ul style="list-style-type: none"> • Recognizing limitations of current criteria and indicator frameworks • Community-derived criteria and indicators • Monitoring at the finest resolution possible • Transparent guidelines for aggregating data across spatial scales • Forest certification as a tool in partnerships

2.3.1 Building Respectful Relationships

Because collaboration within the forest sector is, at its core, a social phenomenon (Wyatt et al. 2013), it follows that building respectful relationships between Indigenous communities, forest managers and government policy makers must serve as a prerequisite for any type of collaborative arrangement or partnership to be successful over the long term. Indeed, the benefits of respectful relationships have been highlighted

in numerous peer-reviewed studies. Through a case study of the Wolf Lake First Nation's pursuit of resource-based development initiatives, VanSchie and Haider (2015) note that successful partnerships between First Nations, governments and industry could be used as a tool to not only meet industry's and government's regulatory objectives, but to also advance First Nations' economic, social and ecological agendas. Furthermore, such partnerships can also help to address conflicts as they arise (Berkes 2010), facilitate collaborative learning (Fraser et al. 2006) and better understandings of each partner's goals and challenges within forest management (Merkel 2007), which individuals can later bring back to their respective organizations to facilitate cross-cultural adaptive learning networks (Davidson-Hunt 2006).

Despite the importance of this principle, a number of factors have historically served to hinder these relationships from forming, ultimately making it difficult for any type of meaningful collaboration to occur. Of central importance to understanding these relationship breakdowns is what has been described as a jurisdictional "tangle" (Smith 2015, p. 25) or "catch 22" (McGregor 2011, p. 302), whereby Canada's constitution places jurisdiction over lands and resources with the provinces, while responsibility for Indigenous peoples lies with the federal government. As the administrators of forest policy and management regimes, the provinces are ultimately responsible for both interpreting and implementing constitutionally-protected Aboriginal and treaty rights, as they pertain to forest management. However, as Teitelbaum and Wyatt (2013) note, within the context of forest certification, forest managers, and the auditors who inspect them, may be unclear about the intricacies of Aboriginal rights as they relate to forest management, which can make it difficult to meet their formal regulatory requirements. Furthermore, the authors add that the complex interplay between government and

industry roles in engaging with Indigenous peoples can serve to slow or even stall any progress in building successful relationships between the groups. Ultimately, as Smith (2015) contends, the only path that can lead to the meaningful reconciliation of Indigenous and non- Indigenous interests in forest management is ensuring that Indigenous and treaty rights are incorporated fully into government forest policy regimes. Within the context of Manitoba's forest policy regime, Griffith et al. (2015) contend that until new actors, such as Indigenous peoples, are provided meaningful opportunities to participate in legislative development, existing actors, particularly provincial governments and forest industry representatives, will continue to exert their influence and unilaterally shape forest policy.

On a more practical level, the combination of Canada's jurisdictional framework and ineffective forest policy regimes has resulted in "command-and-control" forms of top-down forest governance, which are often rejected by Indigenous communities and regarded as inappropriate and counter-productive for learning and developing agreements (Greskiw and Innes 2008, p. 1941). Indigenous community representatives often have little formal training in forest management, which results in even greater power imbalances in resource governance and, ultimately, a diminished ability to derive meaningful community benefits from development (Wyatt et al. 2015). To compound this issue, limitations imposed on First Nation governance structures by the Indian Act make it difficult to develop the appropriate institutional structures necessary to counteract these imbalances (Nikolakis and Nelson 2015). As a consequence, Indigenous communities may eventually be forced to "play within the rules" of state-sponsored governance arrangements, simply to access the tools and benefits communities need to participate in the forest sector (Stevenson 2006, p. 172).

Recent literature has provided a variety of mechanisms that can be employed to help counteract the effects of systemic power imbalances and aid in the formation of more respectful partnerships within the forest sector. As a positive initial step, any forest manager or community wishing to engage in some form of partnership should endeavour to examine their own values and biases, as well as their perceptions of the other groups with which they hope to engage. In studying the factors that help facilitate common understandings and stronger relationships in forest governance, both Lee and Kant (2006) and Kumar and Kant (2007) demonstrated that, while there are some differences in the ways that Indigenous people, forest industry groups, and governments view and approach forest resource development, many strong similarities exist. Additionally, in studying how participants perceived each other's values, it was demonstrated that perceptions are often based on stereotypical views of particular groups, which do not often reflect the true views held by individuals within that group (Lee and Kant 2006). In light of these insights, it becomes clear that groups must work to build strong relationships and use them to develop management strategies that meet the objectives of all parties, rather than imposing systems and practices that the dominant group finds acceptable and expedient (Kayahara and Armstrong 2015). Using the example of vegetation management, Wyatt et al. (2011b) reinforce this notion by asserting that since no universal Indigenous perspective exists, forest managers must consider how their values and perceptions compare to the broader public's and begin to work more collaboratively with communities to develop mutually-acceptable strategies that meet each party's objectives and concerns. Studying working group effectiveness in forest co-management, Natcher et al. (2005) add that success in partnerships often lies in a group's ability to embrace differences in knowledge and cultural experience and value

the contributions of others. This acceptance ultimately helps to build and strengthen relationships by facilitating the emergence of group identity and trust among individuals and groups.

Once forest managers recognize their biases and fully accept the need to respect and value Aboriginal rights, interests, and perspectives, forums can be created that facilitate meaningful knowledge exchange and provide a venue for a genuine relationship to manifest itself. In creating such forums, the literature offers a variety of suggestions that should be incorporated—or at the very least considered—to help ensure that they remain open, transparent, collaborative, and inclusive spaces (Hvenegaard 2015), and allow for meaningful dialogue while accepting that differences in viewpoints will inevitably occur between partnering groups. One such prerequisite for any cross-cultural relationships is the need for each group to have well-defined roles within the collaborative arrangement and to be forthright and transparent about their interests and objectives in the partnership (MacKinnon et al. 2001), with clear criteria to determine whether each group is achieving its desired outcomes (Mabee and Hoberg 2006). Through the recognition and respect of each group's unique needs, as well as shared values within the group, disparate actors can help to form a stronger team dynamic and ultimately work to more effectively achieve a shared vision for future action (Berkes 2010) and overcome disagreements and crises as they arise (Grewkiw and Innes 2008). In doing so, groups can collectively translate shared values and vision into mutually-beneficial outcomes, which will serve to further strengthen trust and confidence in the group, support reciprocity among members (Hvenegaard 2015) and provide further incentives to continue to invest in the relationship (Berkes 2010).

These collaborative arrangements and the governance processes that support them need to be viewed as flexible structures, “with untold possibilities and permutations” (Caine 2013, p. 354) that are able to evolve to meet the current needs of the group or the individual actors within them (Hvenegaard 2015). In many instances, this will not only require the initial baseline information from independent and unbiased third-party sources (Fraser et al. 2006) and sufficient financial resources to establish such collaborative processes (Hvenegaard 2015), but also ongoing leadership (Treseder and Krogman 1999) and political support (Weber et al. 2012), including champions (Hvenegaard 2015) and technical support staff (Beaudoin et al. 2015) within each organization to maintain an ongoing understanding of, and commitment to, the partnership agreement.

Once collaborative relationships and decision-making processes are established, it may be useful to solidify them through more formalized arrangements, such as memoranda of understanding (Grainger et al. 2006), that can be incorporated into co-management structures, as this step can help bring increased clarity and transparency to the relationship (Merkel 2007). That said, as Klenk et al. (2013) emphasize through their study of the Prince Albert Model Forest, unofficial modes of dialogue should always be maintained, as they can help to build and maintain better understandings of partners’ perspectives and continue to support group objectives.

Finally, in building meaningful relationships, partners must always remain cognizant that trust and confidence among groups takes time to build (Cheveau et al. 2008), especially in the face of so many historical and systemic issues. Similarly, the devolution of forest governance to locally-based collaborative co-management structures will also take time (Berkes 2010). However, once such arrangements and the

relationships that underlie them are fully established, opportunities for more meaningful Indigenous community engagement in forest management can ultimately be achieved.

2.3.2 Broad Community Engagement

Despite the imperative to incorporate a wide range of values and perspectives into forest management planning, a growing body of evidence is suggesting that attempts to engage communities in meaningful forms of dialogue may often fall short of this objective. Through a review of forest sector advisory committees across Canada, for example, Reed (2010) concluded that only 7% of participants self-identified as Indigenous, and that other demographic groups such as lower socioeconomic classes and women were also vastly underrepresented in forest governance, with the latter representing only 18.7% of board members. When Indigenous communities are represented, it is predominately by elected community leadership (Wyatt et al. 2010) or economic interests, leading both Reed (2010) and Booth (1998) to conclude that processes need to be developed that engage the entire community, rather than being dominated by community elites. Through a review of Model Forest governance, Klenk et al. (2013) have echoed this sentiment and contend that it is very difficult to adequately represent a diverse community through only a single representative, and that without mechanisms to ensure responsiveness to community needs, there is a risk that certain groups may be over- or under-represented in decision making.

To further illustrate this need, recent studies have demonstrated that the interests and perspectives of individual community members may vary considerably from the

community leadership tasked with making forestry-related decisions or the Elders that often guide them. Miller and Davidson-Hunt (2013), for example, have acknowledged that the worldviews of Indigenous youth may vary considerably from older generations. Stevenson (2006) has echoed this insight, observing that the use of the term “conservation” is much more prevalent among Indigenous youth than it is among Elders. Similarly, Lewis and Sheppard (2006) have demonstrated that generational differences exist in the ways that youth and Elders interact with, and accept, various support tools, such as maps and landscape visualization software that are used in forest resource decision making. Because traditional outcomes of forest development, such as capacity-building arrangements (Wyatt et al. 2013), employment opportunities (Zurba and Trimble 2014), or cultural-retention initiatives (Booth and Muir 2013) are often targeted towards Indigenous youth, these differences in perspectives may result in such opportunities being unbeneficial or undesirable to youth, as they are created on youths’ behalf, but without their direct input. Furthermore, any collaborative arrangements developed without the direct input of youth run the risk of becoming irrelevant over time, as younger generations enter community leadership roles (Zurba and Trimble 2014).

While Indigenous youth offer a strong illustrative example, the need for distinct consultation has been demonstrated for other demographic groups as well. Kumar and Kant (2007), for example, have demonstrated that rises in income may result in changes to personal forest-related value systems. Wyatt et al. (2010) have also suggested that the formality of the language used in community engagement meetings can often serve as a barrier for Indigenous participation, in general, deterring the inclusion of a broad range of participants, including Indigenous women, and the interests they represent. Given the

current “interest-based,” economically-driven model of inclusion in many current systems, those with predominately social interests are unlikely to be considered stakeholders and, therefore, to participate (Reed 2010, p. 47). Wyatt et al. (2010) have suggested that while the general population is currently typically only engaged regarding specific topics under consideration, community members will participate in forest management planning and decision making when the opportunity is provided. The question, therefore, becomes: How can we encourage and facilitate a broader range of participation in Indigenous communities?

The current literature offers a variety of mechanisms and insights that can be helpful in ensuring that the objective of engaging and incorporating a broad range of community interests and perspectives into forest resource governance is successfully achieved. The first step is to identify the individuals who represent unique perspectives or interests in forest management within the community. While many tools are available to accomplish this objective, a logical initial approach may be to map flow diagrams of the environmental pathways affected by forest management, as such mapping will enable the identification of the stakeholder groups that will likely be affected the most by resource development (Fraser et al. 2006). However, while being directly affected by the effects of forest management is certainly grounds for engagement in planning and decision making, it is not the only environment-related factor that should be considered. Through working with Anishinaabe First Nations in northwestern Ontario, Davidson-Hunt (2006) has suggested that through lived experience individuals become more attuned to the signs and signals of the land, which allow them to identify what is normal or mundane and provide a baseline with which to measure abnormal change. Within the Anishinaabe worldview, these skills represent responsibilities gifted by the Creator that

cannot be delegated to other persons or represented through abstract knowledge (Davidson-Hunt 2006). Consequently, these individuals must also be provided with a distinctive role in forest management, as they can provide invaluable insights which can support the interests of other affected stakeholders. As Stevenson (2006) adds, when such knowledge holders are not directly engaged in decision making, there is a large risk of decontextualizing information that cannot be adequately expressed through Western analytical techniques.

More broadly, entire communities can be engaged in open and transparent forms of stakeholder identification, which empower them to determine the range of values and perspectives they believe should be included and the individuals best suited to represent them. Examining expert selection in the context of traditional knowledge collection, Davis and Wagner (2003) demonstrated that eliciting recommendations from a wide range of community members as to who they believe should be consulted, and using those recommendations to systematically engage respected individuals, yielded a more appropriate and acceptable list of participants than simply assuming that those with the most experience in a subject were best suited to represent community interests. Similarly, in documenting traditional fire-related knowledge in the Pikangikum First Nation, Miller et al. (2010) noted that allowing Elders to identify individuals with extensive and highly-respected knowledge yielded positive results. No matter who is engaged, it is important to ensure that the processes used to identify them are transparent and systematic, so that they remain acceptable and defensible in the eyes of community members and resource managers alike (Davis and Wagner 2003).

Once engaged, forums need to be created where participants feel comfortable sharing and discussing their knowledge and experiences in ways that are meaningful and

relevant to them, whether it be through formal discussion or culturally-relevant media, such as artistic representations of knowledge (Miller et al. 2010). Ultimately, such processes that engage a wide range of community interests and perspectives not only serve as the basis for cross-cultural (Mabee and Hoberg 2006) and intergenerational (Miller et al. 2010) learning, but also build trust (Natcher et al. 2005) and foster more effective group decision making and truly transformational and equitable change (Griffith et al. 2015).

2.3.3 Bridging Knowledge and Value Systems

As important as it is to identify and reconcile the diversity of values and perspectives within communities, it is equally important to develop and implement mechanisms to bridge the differences in knowledge and value systems that exist between Indigenous and non-Indigenous partners within forest resource governance structures. Indeed, many studies have suggested that cultural differences in perspectives and worldviews between forest managers and Indigenous peoples often cause these groups to value and prioritize different types of knowledge within forestry-related contexts (O’Flaherty et al. 2008). These differences can become problematic during forest management and planning processes, as the views of minority groups, such as Indigenous peoples, may be superseded by those of more dominant actors such as industry or government (Reed 2010). Similarly, numerous researchers have demonstrated that fundamentally different philosophies on human-ecosystem interactions can hinder effective collaboration within culturally-diverse groups (e.g.

Smith 2015). As Natcher et al. (2005) contend, non-First Nations often demonstrate individualistic behaviour, valuing economics over the cultural consequences of forest resource development. Conversely, studies conducted in partnership with First Nations from across Canada have clearly demonstrated that Indigenous peoples throughout the country view themselves as partners in sacred relationships with the natural world, which must be maintained through respect, reciprocity, and cultural protocols (e.g. Miller and Davidson-Hunt 2013). As a result of such differences in worldviews, each group will ultimately view acceptable harvesting practices in fundamentally different ways (Parsons and Prest 2003). To compound the issue, these differences may also make it difficult to readily perceive the types of values that hold importance within other belief systems (Castleden et al. 2009), thereby highlighting a need to develop concrete mechanisms to bridge worldviews and develop common understandings. While it may not be possible to fully integrate two distinctly different knowledge systems, such processes may be ultimately useful in finding agreement on important issues and facilitating productive working relationships (MacKinnon et al. 2001).

Traditional land use and occupancy studies (TLUOS) and traditional knowledge studies are tools that have long been used by Indigenous communities to both codify “knowledge systems” (Davis and Wagner 2003, p. 465) held within communities and convey Indigenous interests and worldviews to non- Indigenous resources managers in ways that are able to be incorporated into Western planning frameworks. Recognizing the value of these tools in bridging knowledge and value systems, many studies have focused on identifying aspects that can lead to their successful development and implementation. As a first—and critical—step, care should be taken to develop common understandings of what each partnering group means by the term “values”. As Sopic et

al. (2009) explain, Indigenous peoples typically define values as holistic landscape features, incorporating historical, cultural, spiritual, and social components—not simply as physical points on a map. In many cases, the value of such features lies within the maintenance of certain landscape conditions, such as aesthetic attributes (Lewis and Sheppard 2005). Because of these differences in worldviews, narrow definitions found within Western planning frameworks can be confusing, leading to questions such as, “Is value a culture or tradition, or a place where someone goes?” (Sapic et al. 2009, p. 793). It must also be recognized that the very concept of defining values may be antithetical to Indigenous belief systems (Sapic et al. 2009) and that maps alone may not be able to fully express Indigenous knowledge systems that are often oral or non-verbal in nature (O’Flaherty et al. 2008). Therefore, it may be useful to combine land use maps with more abstract values mapping (Cheveau et al. 2008) and address both how and why values are used in certain ways, as well as the institutions that regulate their use (MacKinnon et al. 2001).

In eliciting such values from Indigenous community members, a variety of techniques have been developed to help better ensure that individuals are able to fully express their knowledge and experiences. Working with the Cheam Band in British Columbia, Lewis and Sheppard (2006) observed that, in many cases, abstract symbolism associated with traditional mapping exercises made it difficult for participants to fully engage in forest planning exercises. Through 3D landscape visualization techniques, however, the authors found that all age groups were able to be meaningfully engaged in activities and had a much higher confidence in the effectiveness of plans developed using landscapes represented in such a manner. The effectiveness of using visualization technologies and photo-elicitation to gather Indigenous community values in similar

studies (e.g. Sapic et al. 2009) can be used to support two general conclusions. Firstly, landscapes should be presented to communities in ways that are meaningful and relevant, reflecting ways that individuals see them (Lewis and Sheppard 2006). Secondly, modern technologies can—and should—be used to support traditional knowledge collection by making such visualizations possible.

Additionally, once values are elicited from community members, care should be taken to ensure that each is ground truthed and accurately mapped for resource management purposes. Not only does this practice help to ensure that values are properly protected (Mabee and Hoberg 2004), but also helps to alleviate the frustration that many resource managers feel regarding the accuracy of values information (MacKinnon et al. 2001). To help ensure that this information is collected and incorporated in ways that are meaningful to both resource managers and Indigenous communities, adequate funding must be provided to undertake the work (Higgins 1999) and independent technical assistance should be made available to communities to help collect and administer data, standardize collection methods, and help underfunded communities with insufficient capacity with best practices, data storage, and confidentiality (MacKinnon et al. 2001). While mutually agreeable methods and processes must eventually be embedded within organizational structures (Rathwell et al. 2015), to the greatest extent possible, values mapping should be conducted locally and led by the community (McGregor 2002), with individuals being compensated for their time and knowledge at a similar rate to other consultants within the forest industry (Merkel 2007).

Additionally, communities must be allowed to retain intellectual property rights for TLUOS information (Robinson and Ross 1997) and the ability to determine what

information is shared, and how that sharing takes place (McGregor 2002). This may be difficult, however, as in many cases funders may expect access to TLUOS data (MacKinnon et al. 2001). It is important, though, to ensure that Indigenous values data remain confidential, to protect communities from encroachment, damage, or theft of their values (Mabee and Hoberg 2004) and foster long-lasting relationships based on mutual respect. Indeed, it has been demonstrated that when cultural values are classified and governed by communities, increased efficiency and effectiveness can be achieved in cross-cultural forest management consultations (Mabee and Hoberg 2004).

Finally, values identification and mapping should focus on current, rather than historical, uses (MacKinnon et al. 2001) and be seen as an ongoing process because cultural uses of areas and the values associated with them can evolve over time (Mabee and Hoberg 2004). To accomplish this, technical capacity to conduct these studies should be widespread within communities (MacKinnon et al. 2001) and supported by continued funding for data collection and monitoring (Mabee and Hoberg 2004).

With such information, derived through broad and comprehensive community engagement, common understandings can be developed between resource managers and Indigenous communities, allowing community members to be more effectively engaged in the entire cycle of forest management planning (Wyatt et al. 2011b). Additionally, resource managers can focus on using this information to develop mutually-acceptable strategies that meet community values and interests, using Western scientific methods as a support tool (Kayahara and Armstrong 2015). As it is well accepted within the literature that education and “knowledge alone is a poor predictor of acceptability” of forest management practices (i.e. aerial herbicide spraying), having tools to effectively engage Indigenous communities and elicit community values will ultimately allow

resource managers to provide a range of management options to communities, with information about the advantages and disadvantages of each, so that solutions both meet silvicultural objectives and respond to public interests and concerns (Wyatt et al. 2011b, p. 283).

2.3.4 Flexible and Holistic Management Systems

Once a wide and representative range of values is collected from Indigenous communities in ways that are meaningful to both resource managers and the communities themselves, processes must be developed to translate them into decision-making frameworks and forest management plans. This may prove to be a difficult task, however, as current forest management systems largely reflect Western worldviews (McGregor 2011) with strong colonial legacies (Bouman et al. 1996) and the assumption that ultimate authority rests with provincial governments (Mabee and Hoberg 2006). Consequently, there remains a strong need to develop processes that incorporate Indigenous values and interests—derived through broad community engagement—into forest management, as well as provide communities with meaningful opportunities to occupy a more influential role in forestry-related decision-making frameworks.

A reasonable first step in accomplishing this objective may be to reconsider the range of values and objectives that managers are willing to address through forests management, because current systems may not adequately reflect the range of outcomes that Indigenous communities desire. Numerous studies have demonstrated that Indigenous communities routinely express that the limited scope of current forest

management plans (Maclean et al. 2015) and the guidelines that inform them (Sapic et al. 2009) may make them inappropriate for protecting the full range of community values and objectives in a holistic and culturally-relevant manner. Indeed, many communities contend that forest management planning must be expanded to recognize the relationships between the land and Indigenous peoples (Booth 1998), encompassing practices such as the traditional harvesting of both wild game (Booth and Muir 2013) and plants (Lewis 2008), as well as other aspects of the “bush economy” (Robinson and Ross 1997, p. 600). To illustrate this point, through household surveys of the Yukon’s Little Salmon Carmacks First Nation, Natcher et al. (2004) demonstrated that 100 percent of community households used both berries and trees for a variety of purposes and that non-timber forest products provide both nutritional and medicinal benefits, but also contribute to overall community well-being. Furthermore, other forms of resource-based development, such as tourism and outfitter services, may be more in line with community development values (VanSchie and Haider 2015). Consequently, forest managers must consider the full range of forest products and values within management plans, rather than simply those of greatest importance to commercial forest operations.

The literature also provides a variety of practices that have been shown to help reconcile current forest management systems with Indigenous values at the operational level, which ultimately allow communities to derive a more holistic range of meaningful benefits. While these practices may serve as a basis for discussion, it must be recognized that since no universal Indigenous perspective on forest management exists (Wyatt et al. 2011b), local communities must always be engaged to tailor management practices to fit relevant social, cultural, and economic conditions. With this consideration in mind, it is worth noting that Indigenous communities often prefer some form of forest

management, such as “conservation-forestry” (Nikolakis and Nelson 2015, p. 644) that incorporates community objectives and ecosystem services, to a no-development scenario, as strict conservation may be contrary to Indigenous value systems that promote respectful use and interdependency with the natural world (Lewis and Sheppard 2005). It is imperative, however, to consider the holistic, landscape-level nature of many Indigenous values (Sapic et al. 2009), which indicates that because of the desire for some form of forest management, trade-offs between environmental protection and resource development will inevitably need to occur (Mabee and Hoberg 2004).

In many cases, it has been demonstrated that partial-cut scenarios, with high tree retention, may serve as an acceptable balance between development and values protection, as they help to maintain the intrinsic qualities and naturalness of cultural sites while still allowing communities to derive a range of meaningful economic benefits (Lewis and Sheppard 2005). Indeed, through a study utilizing photo-elicitation to evaluate various forest management scenarios, Lewis (2008) concluded that while most participants were generally comfortable with some form of resource based economic development, practices that were able to maintain “culturally recognizable forms of land stewardship” (p. 57), such as berry patches, were considered most acceptable.

Alternatively, concentrating harvesting operations in areas with few or no identified values may also produce a desirable balance between conservation and development, lowering overall harvesting costs by allowing the practice of clearcut silvicultural systems (Jacqmain et al. 2012) and concentrating limited monitoring and protection resources on high-value cultural areas (Beaudoin et al. 2015). This strategy could be paired with intensive silvicultural techniques and enhanced growing stock to increase

site productivity and further limit the amount of area managed using less culturally-appropriate methods (VanSchie and Haider 2015).

Concurrently, forest tenures and management policies must allow for more flexibility in harvesting and silvicultural regulations, to allow Indigenous communities to derive greater economic benefits while still maintaining biodiversity objectives (Booth 1998). Using mathematical modelling, both Krcmar and VanKooten (2008) and Krcmar et al. (2006) demonstrated that with only a slight relaxation of even-flow, sustained yield policies, Indigenous communities may be able to accelerate harvest levels in early years, allowing them to enhance short-term economic performance and reinvest profits in long-term professional and technical capacity building, without significantly affecting long-term harvest volumes. However, such a strategy would increase annual harvest level variability, which may ultimately negatively affect long-term employment opportunities for community members. Consequently, the example serves to illustrate that while no single strategy can likely meet all community objectives simultaneously, they provide options for Indigenous communities to help them make more informed decisions about how to best achieve their long-term visions for community development.

To support the implementation of culturally-relevant forest management practices and ensure that community objectives are being considered and incorporated into planning processes, frameworks must also be developed through which Indigenous communities are able to exert meaningful influence into forestry-related decision making. This topic has been the focus of significant study within the literature, ranging from theoretical methods of Indigenous participation in the forest sector (Wyatt 2008) to analyses of collaborative arrangements currently employed by Indigenous communities

across Canada (e.g. Fortier et al. 2013) to case study reviews of specific collaborative arrangements and the decision-making frameworks that underlie them (e.g. Morton et al. 2012). Collectively, these studies provide insights into a number of factors that should be considered when designing processes that allow for meaningful Indigenous influence in forestry-related decision making.

While legislative changes would be required for true equality to be achieved (Mabee and Hoberg 2006), the willingness of all parties to participate, be open-minded, and committed to working towards deriving mutual benefits (i.e. forming respectful relationships) may serve as a basis for increasing Indigenous influence in forestry-related decision making. With these respectful relationships in place, partners should endeavour to jointly develop continuous management and decision-making processes that allow for participation from all parties throughout the planning cycle (Wyatt et al. 2010). To the greatest extent possible, frameworks should allow all participants to have an equal role in decision making (Maclean et al. 2015). Even without formal recognition of Aboriginal or treaty rights, or legislative imperatives, commitment to these principles will help to ensure more equitable planning and management processes. Issues may arise, however, when multiple communities—with distinct values and objectives—participate within the same management board. As Mabee and Hoberg (2006) observed within the context of the Gwaii Haanas National Park, although First Nations and government had equal representation on the co-management board, each First Nation had only a single representative, which ultimately perpetuated existing power imbalances.

To counteract such forces, it may, therefore, be necessary to develop distinct decision-making processes with individual Indigenous communities (Wyatt et al 2010).

Such processes must allow not only for discussion of current forest management issues, but also those of a more historic nature, which may still be manifesting themselves within current management systems (Takeda and Ropke 2010). One such process, explored by Morton et al. (2012) in British Columbia, was a two-tiered system, in which the public, Indigenous communities, and government representatives were all given an opportunity to provide input during the first stage of consultation, with direct government to First Nation, nation-to-nation, discussions at the second tier. While this two-tiered system increased the total length of the planning process and would have benefitted from more clearly defined and transparent roles for each party, as well as public review of tier-two outcomes, overall it was shown to successfully increase Indigenous involvement in forest planning without reducing overall stakeholder approval (Morton et al. 2012). It was, therefore, suggested that such a process may prove useful in other jurisdictions wishing to provide more meaningful opportunities for Indigenous participation in resource-related decision making.

Finally, it must be recognized that Indigenous participation in forest management planning and decision making is often constrained by over-extended community leadership (Mabee and Hoberg 2006) and a lack of technical support staff (Greskiw and Innes 2008). It is, therefore, imperative that adequate financial and human resources are provided to enable Indigenous communities to engage effectively (Wyatt et al. 2010). In the short-term, this could involve employing shared technical advisors to provide consistent and independent information to all parties, so that each can approach management decisions from a common understanding (Takeda and Ropke 2010). In the long-term, however, this ultimately involves investing in building widespread professional literacy within all partnering groups (Stevenson 2006), so that every party

has the technical and professional capacity necessary to communicate their interests and perspectives effectively and play an equal role in management and decision making (Higgins 1999).

Ultimately, failure to provide opportunities for Indigenous communities to derive satisfactory outcomes may result in the pursuit of more adversarial approaches to inclusion in resource-based decision making (Wyatt et al. 2015). Processes that respect and incorporate Indigenous values and perspectives into forest management, however, have the ability to not only improve the quality of current management practices (Wyatt et al. 2011a), but also to develop innovative new practices that are more acceptable to both Indigenous and non-Indigenous forest users, who often share many of the same goals (Jacqmain et al. 2012). Once such participatory processes are developed, however, there still remains a need to develop additional safeguards to ensure that community values and objectives are truly being met through forest management.

2.3.5 Clear and Relevant Measures of Success

While criteria and indicator (C&I) frameworks have become a useful tool for protecting Indigenous values and addressing important issues (Adam and Kneeshaw 2011), recent evidence has suggested that current generic frameworks, such as the Canadian Council of Forest Ministers (CCFM) C&I, may not be effective for evaluating the impacts on the unique and diverse needs and values of many Indigenous communities. Through household surveys of two First Nations, for example, Natcher et al. (2009) observed that community members felt insecure about future access to

traditional territories under current tenure frameworks, with growing concerns about their ability to meet their subsistence needs. Similarly, in a review of the John Prince Research Forest, Sherry (2005) concluded that current CCFM C&I do not adequately meet First Nation communities' process needs, including incorporation of way of life, values, beliefs, land ethics, and knowledge systems. Likewise, in a study of 13 New Brunswick First Nations, Wyatt et al. (2015) found that current forest management frameworks are largely failing to meet community expectations for deriving forestry-related benefits. Where this ultimately becomes an issue is when communities feel that their ability to meet their needs is becoming restricted, they may opt for more short-term benefits and adopt practices that are unsustainable in the long-term (Natcher et al. 2004). These examples ultimately serve to illustrate Smith's (1998) insight that indicators of sustainable forest management are relevant only when they can be measured at the local level. Almost two decades later, it is clear that there remains a pressing need to develop more locally-relevant evaluative frameworks, such as C&I, that can accurately reflect the values and objectives of individual communities and help ensure that their objectives are achieved.

Fortunately, a large number of case studies exist which offer lessons into the unique components of Indigenous community-based C&I as well as best practices to ensure that they are able to be integrated into forest management and remain relevant at a number of planning levels. Of primary importance, and for reasons already discussed within this paper, evaluative frameworks must be rooted in a process of broad community engagement, reflecting the diverse range of needs and values that exist within Indigenous communities (Kant and Brubacher 2008). Christensen et al. (2010) suggest that community dialogue should be supported by historical research to help

communities better understand the linkages between forests, people, and social change. With that in mind, several elements have been identified within the literature that are known to be underrepresented in current C&I frameworks, which warrant explicit consideration in community-based discussions. In addition to not fully incorporating Indigenous land ethics and knowledge systems into management systems (Sherry 2005), current C&I often lack mechanisms to translate TLUOS information into decision-making ability (Robinson and Ross 1997). Additionally, current C&I often lack mechanisms to adequately address important social aspects of communities, such as capacity building, health, and well-being (Sherry 2005), cultural preservation (Gough et al. 2008), and ensuring equal opportunities for all community members to participate in forest management planning (Natcher and Hickey 2002). Ultimately, because of a lack of emphasis on community-specific issues within current C&I frameworks, forest managers often fail to consider and accommodate these unique community needs (Gough et al. 2008).

To exacerbate this issue, current C&I frameworks often include and rely on evaluative components that are of little or no relevance to Indigenous communities. Citing C&I developed in partnership with the Tl'azt'en First Nation in British Columbia, Karjala and Dewhurst (2003) note that community-based indicators exclude some conventional elements, such as evaluating success through measuring timber yields. Similarly, Wyatt et al. (2015) note that in many cases, success in forest management is reported in economic benefits, even though those aspects may be of only relatively minor importance to the communities directly affected by forest management practices. Indeed, through their work with the Essipit Innu First Nation, Beaudoin et al. (2016) illustrate that social and cultural benefits are often viewed by Indigenous

communities as being equally important to economic outcomes, leading to the conclusion that “forestry is not the finality” (p. 517), but rather a means of achieving more important objectives, such as fostering respectful relationships between humans and the forest. Because of these distinct differences in values and desired benefits, there remains a strong need to incorporate mechanisms into locally-derived C&I frameworks which allow unique community needs to be reconciled with broader-scale regional, provincial, and national objectives.

To assist in this reconciliation of disparate objectives, several studies have suggested that the data used to evaluate forestry success on multiple planning scales should be collected at the finest possible resolution (Fraser et al. 2006), but then made available to inform more broad-scale decision-making processes (Gough et al. 2008). Building on this point, Fraser et al. (2006) suggest that this process is facilitated best when there is little separation between decision makers and those who develop evaluative frameworks, and when local-level data are both collected and aggregated using transparent methodologies (Karjala et al. 2004). Additionally, to better facilitate the inclusion of more abstract community values, such as traditional land ethics and worldviews, C&I should be expanded to include both qualitative and spatial evaluative metrics (Karjala et al. 2004). Using these mutually agreed-upon cross-scale and cross-cultural methods, planning partners can engage in meaningful dialogue, while developing effective management plans (Karjala and Dewhurst 2003) that respectfully accommodate differences without necessarily needing to resolve them (O’Flaherty et al. 2008).

In addition to community-based C&I frameworks, forest certification systems (e.g. Forest Stewardship Council, Sustainable Forestry Initiative, Canadian Standards

Association) are another tool commonly used by Indigenous communities to help achieve their objectives in forest management (Smith 1998). While, overall, forest certification has been shown to increase Indigenous community satisfaction with forest management practices by more effectively meeting expectations (Kant and Brubacher 2008), auditors often choose to allow continual improvement toward formal company requirements, rather than requiring companies to meet standards outright (Teitelbaum and Wyatt 2013). Consequently, while Indigenous issues may serve as an important influence within forest certification systems, in many cases they are not ultimately a barrier to companies receiving certifications on their products. In light of this insight, forest certification may be best implemented as a tool used to strengthen existing relationships between Indigenous communities and industry partners, allowing each group to leverage that relationship, and the processes that underlie them, towards deriving mutual benefit (Beaudoin et al. 2015).

Finally, no matter the mechanisms employed to measure success within forest management, clear strategies must be developed to translate community interests and goals into concrete outcomes (Beaudoin et al. 2015). These strategies must also be accompanied by community-led monitoring programs which continually track progress towards achieving the desired goals (Smith 1998) while remaining flexible enough to allow for evolution in response to changing community issues and self-improving feedback (Natcher and Hickey 2002). These processes must also be supported by strong governance systems (Troster et al. 2008) with sufficient financial and technical resources for initial implementation (Treseder and Krogman 1999) and long-term capacity building (Kant and Brubacher 2008). Additionally, timber allocations must be large enough to ensure that the costs of equipment (Booth and Skelton 2011), forest

certification requirements (Smith 1998) and maintaining robust monitoring programs are able to be covered. Ultimately, the combination of community-based measures of success and developing robust means of achieving them will not only enable communities to derive meaningful benefits for their members, but also for entire communities—and the individuals within them—to become engaged and empowered by the process itself.

2.4 LITERATURE REVIEW CONCLUSION

While the principles and tools presented in this review may be implemented individually or in various combinations to both improve existing collaborative arrangements and develop new ones, they are best understood as an integrated, incremental process involving any number of motivated partners (Figure 1). By establishing relationships based on mutual-benefit and respect, collaborators will be better positioned to engage Indigenous communities on meaningful terms, with increased sensitivity to the diversity of interests, values, and needs that exist within them. Through this broad community engagement, differences that exist between deeply-held knowledge and value systems can be better understood and reconciled within the planning processes. With such differences reconciled, flexible and holistic management systems, that respond to community needs, can be established and eventually supported by monitoring and assessment tools that reflect the needs and objectives of all parties.

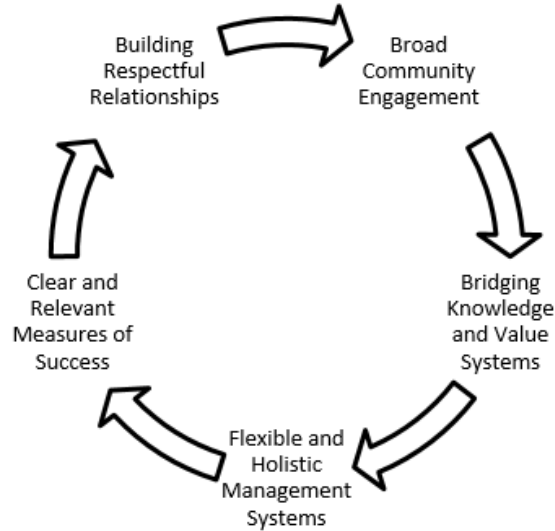


Figure 1: An integrated principle-based process for developing collaborative partnerships

While future work will help to refine this framework and produce new and innovative tools to support collaborative partnerships, it is hoped that the principles and mechanisms outlined in this review will serve as a basis for resource managers, policy makers, and Indigenous communities to better understand each other's needs and ultimately work more effectively towards achieving respectful co-existence and equity in Canada's forest sector.

3. METHODOLOGY

I have undertaken this study from an ontological position recognizing the existence of multiple subjective realities. Consequently, the research has been epistemically approached as a means of capturing the varied subjective experiences of individuals in order to enrich our collective understanding of First Nation youth perspectives on Ontario's forestry sector and its associated capacity development opportunities (Creswell 2013).

However, because knowledge is co-created through the interactions of individuals, it has been important to remain cognizant of the role that I—as a researcher—play in the development of that knowledge (Finlay 2002; Howard-Payne 2016). Consequently, I have adopted an inductive social constructivist interpretive framework, recognizing that individuals develop subjective meanings of their experiences, which are situated in a myriad of social, cultural and historical factors, and formed through interactions with others, including myself, as the researcher (Creswell 2013; Creswell 2014).

Because individuals hold varied meanings for experiences, it was, therefore, important to gather as many participants' views as possible (Creswell 2014) through creating an environment in which participants felt comfortable sharing their knowledge and perspectives (Manderson et al. 2006) while also providing insights into the contexts in which they live (Creswell 2013). In doing so, I continually worked to understand my own background and perspectives pertaining to the subject matter, to assess how they

influenced my interactions with participants and the resulting analysis of the data (Creswell 2013).

Recognizing that internal consistency between epistemology, methodology and methods is essential to sound qualitative research (Carter and Little 2007), a constructivist grounded theory methodology was adopted for this study. Grounded theory is commonly used in community-based forestry research (e.g. Adam and Kneeshaw 2011; Greskiw and Innes 2008; Klenk et al. 2013). Forest practitioners must produce complex management plans that integrate a myriad of social, ecological and economic factors, within strict time and budgetary constraints. Consequently, any information that can identify areas of potential conflict or disagreement early in the planning process can prove extremely valuable in enabling proactive resolution. Additionally, grounded approaches that test conceptual frameworks against evidence of lived experiences are suggested to be culturally appropriate for research involving Indigenous participants (Graveline 2000).

3.1 MY ROLE AS AN INDIGENOUS YOUTH RESEARCHER

Throughout this journey I have struggled to fully understand and conceptualize my role as a researcher within the complex context of the current study. What are my responsibilities? How do I navigate my dual identities as an Indigenous youth and researcher? How can I honour participants' voices and contributions through my work? These existential questions, and many others, have formed the basis of deep personal reflection and internal contemplation over the past two years.

It was only through ongoing reconnecting with my own Métis community, with Métis culture, with the land and with others who have undertaken this journey before me, that I was eventually able to achieve some semblance of clarity around these questions. It was through this parallel journey of reconnection that I was able to come to conceptualize my role as a young Métis researcher. This conceptualization is best represented in my own mind using the tradition of Métis floral beadwork.

The voices, words, ideas and contributions of each participant represent individual beads. Each is perfect and beautiful in its own right. Each is unique. Together, though, they are able to form something much more profound and beautiful than simply the sum of their individual parts. Together they can tell the story of a community, of a people and of nations.

As researcher, I thus become the thread that weaves the beads together. Securing each individual bead in its proper relation to the others. Integrating each individual bead into a coherent, collective whole. Supporting the fullest possible expression of each bead's individual beauty.

My own words must then become the underlying narrative that interweaves participants' individual voices and ideas. To promote the fullest possible expression of each participant's unique contributions. I must ensure that my application is deliberate and does not distract the reader from the beauty and power of participants' voices.

I have been taught that the sign of a skilled beadworker is in having the beauty of the threadwork reflect that of the beads. My hope is that through their deliberate and sparing application, my words and ideas can become that thread. That they can reflect the beauty and power of the young people who so generously shared with me.

3.2 ETHICAL CONSIDERATIONS

Recognizing that First Nation youth constitute a vulnerable and historically marginalized population, principles and protocols outlined by both Lakehead University's Research Ethics Board (REB) and the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans were adhered to at all times during the research study. Every effort was made to uphold the principles of respect for persons, concern for human welfare and justice (van den Hoonaard, 2015).

Research participants have an absolute right to know, as far as can be anticipated, what will become of the information they have volunteered, as well as its possible use and application. Consequently, potential participants were fully informed about the purpose, methods and evaluative protocols of the project prior to their participation. Additionally, participants' ongoing, free and informed consent was maintained throughout the research process. Prior to publication, opportunities for participants to review the data they contributed, as well as its interpretation, were provided. In all reporting and analysis, the identities of participants have been kept confidential.

While research questions and interview protocols were not designed to elicit emotional responses, it was recognized that through developing strong rapport and genuine relationships with participants, they may be more inclined to disclose personal, emotional experiences (Ryen 2011). Consequently, a First Nation Cultural Liaison, who was hired by Outland Camps, was available to help ensure that research activities remained culturally sensitive and appropriate. Youth participants were provided the opportunity to request that the Cultural Liaison be present during research activities. Additionally, I and many program staff had previously completed cultural sensitivity

and safeTALK suicide risk awareness training and have extensive previous experience working with First Nation youth and communities.

All participants were informed that they could terminate their participation in the research at any time as set out in the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans. Participants were free to not participate, to not answer any question asked as part of the research, had the right to withdraw at any time without prejudice, and were given meaningful opportunities to decide whether or not to continue to participate throughout the research process.

3.3 PARTICIPANT SELECTION AND RECRUITMENT

Grounded theory requires the purposive sampling of individuals who are well-positioned to provide insights into the research questions (Carter and Little, 2007). Consequently, research participants were recruited based on their voluntary participation in the First Nations Natural Resources Youth Employment Program (FNNRYEP), which built on a previously-established research partnership between Lakehead University and FNNRYEP.

Recruitment of FNNRYEP participants was led by Outland Camps, and undertaken using brochures, posters, flyers, videos and word-of-mouth promotion in First Nations communities. Each applicant was required to participate in a competitive selection process, conducted by Outland Camps, to assess their suitability for the FNNRYEP experience. As part of this process, each applicant was required to provide a letter of support from their community's Chief and Council.

For clarity, participation in the FNNRYEP did not necessarily constitute recruitment into the research study. During the summer of 2016, I was granted access to FNNRYEP's live-in camp environment. Beginning with an introductory period, I was gradually integrated into the camp environment, building rapport with FNNRYEP participants during daily activities, social events and in-class learning (van den Hoonaard 2015). These social interactions were of particular importance, as a number of sociocultural differences between myself and potential youth participants may have potentially affected our ability to build authentic trust and communication.

Consequently, a variety of rapport building techniques were employed which aimed to bridge social differences and maximize communication during interactions (Creswell 2013; Manderson et al. 2006). For example, the use of colloquial language (Manderson et al. 2006) and discussion of topics of interest to First Nation youth, like powwow drumming, humour (Finlay 2002) and athletics, was used to bridge interpersonal divides with potential participants (Broom et al. 2009).

Additionally, while my Indigenous identity may have aided in establishing relationships with First Nation participants, my Métis identity—and the political connotations that it carries within some First Nation communities—could potentially constrain relationships with some participants. This position was compounded by my relatively light skin tone and socioeconomic privilege, which could distance me from the experiences of potential research participants (Manderson et al. 2006). Consequently, I employed impression management techniques (Broom et al. 2009), such as wearing non-branded clothing and interacting flexibly to determine what personal information to disclose at any given time (Manderson et al. 2006).

It was following this initial incorporation period that I formally invited FNNRYEP participants into the research study. During the third week of the FNNRYEP's programming period, I was allotted time to address the entire group of FNNRYEP participants in order to explain: the research project's rationale, purpose and objectives; the potential risks and benefits associated with participation in the research; data collection and interpretation methods; and the process of free, informed and ongoing consent. This presentation followed the content outlined in the attached Cover Letter [Appendix I] and Participant Consent Form [Appendix II], and was intended to ensure that the potential participants gained a full understanding of the documents' contents prior to providing their consent to participate, as well as to have an opportunity to obtain any necessary clarification and ask any questions they may have about the research study. Following the presentation, potential participants were afforded the opportunity to contact their family, community representatives, and/or the Cultural Liaison to discuss their potential participation.

In total, 49 of 52 FNNRYEP participants (94%) voluntarily agreed to participate in the research study. Participants ranged in age from 15 to 22 and included 29 males and 20 females from 27 northern Ontario First Nation communities.

3.4 FIRST NATIONS NATURAL RESOURCES YOUTH EMPLOYMENT PROGRAM

The First Nations Natural Resources Youth Employment Program (FNNRYEP) is an industry-driven employment and training initiative aimed at building natural

resource-related capacity in northern Ontario First Nation communities (David Bradley, pers. comm., July 9, 2018). Originally established by Outland Camps² in 2000, the annual, immersive six-week program continues to operate under Outland's leadership, through a collaborative partnership between nearly 40 public and private sector organizations. Several partnering organizations—including Resolute Forest Products, Thunder Bay (formerly Bowater) and Domtar, Dryden (formerly Weyerhaeuser)—have remained with the program since its inception.

Occurring in July and August of each summer, FNNRYEP annually employs between 50 and 60 First Nation youth from urban, rural and remote communities throughout northern Ontario. Participants are provided with a diverse range of natural resource-related experiences, including: industry-standard training and certification in a wide range of skills and techniques such as firefighting and health and safety training; a science-focused education week at Confederation College and Lakehead University; tours of mining and forestry operations; land-based cultural activities; and introductory-level employment opportunities such as tree planting and brush thinning.

The majority of FNNRYEP's programming, including day-to-day in-camp supervision, is provided by a specially assigned team of Outland staff, leveraging the company's extensive experience in tree planting and remote camp management. Additional subject experts, including certified teachers, are retained, when required, to provide supplementary knowledge, program support and workshop delivery.

² Originally founded as an Ontario-based reforestation company in 1985, Outland Camps currently operates across Canada and specializes in all aspects of remote workforce camp management, including installation, supply and full service operation. The First Nations Natural Resources Youth Employment Program represents part of Outland's commitment to community-based corporate social responsibility.

Participants are paid for their work days and have all training costs covered by the program. They also receive two senior-level high school cooperative education credits. Since its inception, over 390 First Nation youth have successfully completed FNNRYEP's curriculum.

3.5 DATA COLLECTION

Research involving high school-aged young adults has suggested that there is variability in personal preferences for methods of qualitative data collection, such as individual or small group interviewing (Rossman and Rallis 2003). Consequently, it has been recommended to provide a variety of avenues for engaging with young people, to ensure that each is able to share his or her perspectives in a way that is most comfortable to them (Rossman and Rallis 2003). Indeed, combining qualitative data collection methods may allow for more effective exploration of research topics (Charmaz 2006). Given these considerations, primary data collection methods consisted of: a brief written survey [Appendix III] to better understand participants' existing experiences with forests and the forestry sector; in-depth, semi-structured focus group discussions; and semi-structured one-on-one interviews with participants.

Though some exceptions were required due to situational constraints, semi-structured focus groups were ideally conducted with between 7 and 10 participants per session (Rossman and Rallis 2003) and with a duration of approximately one to one-and-a-half hours. This approach was used to elicit a broad range of ideas and viewpoints related to the research questions. Focus group sessions were to be held at both the

beginning and end of the six-week program to gauge the effects of the FNNRYEP experience, as outlined in Research Objective 4. Due to an unforeseen administrative delay, however, introductory focus groups were not able to be conducted until the third week of the program. Sample focus group questions are attached as Appendix IV.

Open-ended, one-on-one interviews were conducted periodically with participants as they engaged in program-related activities, such as education, training, field work and cultural activities, to gain a deeper understanding of their perspectives on various aspects of the forest sector. These conversations consisted of asking participants what aspects of particular tasks they liked and disliked, and whether or not they would consider pursuing that activity in the future through education or employment pathways. While all data collection was conducted during the six week FNNRYEP delivery period and scheduled into regular program hours, research participants were contacted following the completion of the program for data verification purposes.

3.6 DATA HANDLING

All conversations and focus group activities were audio recorded. These recordings were subsequently transcribed verbatim into a digital text-based format by a third-party service. Likewise, written contributions (i.e. written surveys) were transcribed into digital format. Within the transcripts and subsequent analyses, all participants' names have been replaced by anonymous identifiers. All documents have been, and will remain, securely stored in locked rooms and/or password-protected files

at Lakehead University by Dr. Chander Shahi, the thesis supervisor, for a period of five years.

3.7 DATA ANALYSIS

Data analysis in grounded theory is a systematic and iterative process, occurring throughout the data collection, coding and more explicit analysis phases (Howard-Payne 2016). For the purposes of grounded theory, coding refers to the application of a word or short phrase used describe a theme or concept observed within text or audio data (Saldana 2013).

Although initial focus group and interview questions were developed through the review of existing literature (Howard-Payne 2016), preliminary open coding and reflective memo writing were used in the early phases of in-field data collection to further refine research questions and identify potential themes within the data (Pope et al. 2000). Given the manageable size of the data set early in the fieldwork phase, this early analysis was done in hard copy and using readily available computer applications, such as Microsoft Word (Rapley 2011; Saldana 2013).

Subsequent rounds of data analysis were completed with the assistance of the NVivo 11 qualitative software package. During first phase coding, transcripts were open coded (Saldana 2013), with node labels emerging organically from interview content. Salient quotes were highlighted within the transcripts for later retrieval and utilization. Memos were also created to document potential relationships between codes.

First phase, structural coding was simultaneously applied to the corpus, separating segments of transcripts into their corresponding research objectives and participant attributions (i.e. “Cases” in NVivo). This facilitated more efficient review and attribution in subsequent analysis phases.

Following review and reflection, similar first phase codes were axially coded (Saldana 2013) into logical node hierarchies according to their hypothesized relationships pertaining to each research objective [Appendix V]. Redundant labels were eliminated to reduce the number of codes developed during initial coding.

A final round of axial coding was then completed to organize the research objective-based node hierarchies into node hierarchies based on cross-cutting thematic categories [Appendix VI]. These categories represented underlying factors that influence participant perspectives on both forest management and capacity development opportunities.

Prior to publication, participants were provided with an opportunity to verify and comment on their transcripts and resulting analyses to ensure that their meaning and perspectives were accurately captured.

It is fully recognized that the processes of coding and grounded theory analysis are inherently subjective and interpretive and that the resulting theory represents the conceptualization of the author alone. Additionally, as non-probabilistic purposive sampling was utilized in an effort to access individuals who were well-positioned to provide insights into the research questions (Palys 2003), results are not generalizable outside of the FNNRYEP context (Carter and Little 2017). That said, it has also been recognized that including participants from a dispersed range of geographic locations may be useful in completing a robust and informative qualitative analysis (Creswell

2013). FNNRYEP achieves this effect by bringing together youth from a diverse range of social and cultural backgrounds, as well as geographic locations.

4. RESULTS

4.1 PERSPECTIVES ON FOREST RESOURCE DEVELOPMENT

Participants' perspectives on forest resource development were diverse and complex. This diversity of perspectives mirrored participants' recognition of the diverse range of effects that forest resource development can have on individuals, communities and the natural world. Most broadly, these perspectives pertain to the potential economic, social and environmental implications of forest resource development.

While each pillar will be explored individually for the purposes of organization and clarity, it is important to recognize that participants often acknowledged the strong interrelationships between them. This demonstrates a more holistic conceptualization of forest management on the part of participants, rather than viewing forestry's effects as belonging to distinct, unrelated economic, social and environmental realms.

But forestry helps so much with that stuff. Like we plant trees and even flag off bee's nests and wasp's nests. We don't try to hurt animals or do anything bad to the environment—well sometimes we do... But that's for everybody's benefit. Not just the money. Well, obviously money is a big factor in it, but it's money for a lot of people. Not just the company. –
Second Year Ranger, Female

4.1.1 Economic

Participants discussed the perceived economic importance of, and impetus behind forest, resource development, including its economic implications for both individuals and communities. This perception was rooted in a recognition of the diverse array of forestry-related economic outcomes, including the creation of forest products, employment opportunities and community revenue, as well as its potential effects on the traditional bush economy.

4.1.1.1 Forest Products

Participants demonstrated a clear recognition of forestry's role in generating a large number of important commercially available products. This included paper, lumber, furniture, money, canoes, poles and residential heating fuels. To underscore their importance, several participants referenced the production of industrial products as their preeminent mental association with forestry prior to their participation in the First Nations Natural Resources Youth Employment Program (FNNRYEP).

Coming into this program, before, all I thought about forestry was cutting down trees, making paper and that's it. – Second Year Ranger, Female

Indeed, for many participants, the generation of high-demand commercial products is seen as the primary driver behind industrial forest resource development.

They can't really cut less... Pretty much just supply and demand. – Second Year Ranger, Male

For several, the need for forestry-derived commercial products was also seen as the catalyst behind a larger cycle of forest renewal and job creation. In some instances, this perspective was described as being only recently acquired, often resulting from the experience at FNNRYEP.

I thought they just cut down trees and make paper or whatever it is they wanted to make. And they just leave it and worry about the money. But ever since we went in the program last year, they taught us what they actually do, instead of just hearing about the bad stuff. Like there's good. Like pros and cons. And we learned that they replant everything, so it can grow right. To just restart the cycle of everything. So I got well educated.
– Second Year Ranger, Female

Some participants also drew connections between forest resource development and the ability to address housing and infrastructure deficits that exist in many First Nation communities today.

[Forestry] can create housing. Every reserve has limited housing. Yeah, it costs way too much for lumber to ship. And supplies. I don't know the specs on it, though, but I heard it's a lot. – Crew Leader in Training, Male

4.1.1.2 Employment

Many participants described the forest industry as an important employer of First Nation people. Indeed, forestry was recognized as being the only opportunity for meaningful employment within some First Nation communities. Some participants acknowledged the efforts that forest sector employers are making to attract and retain First Nation people into forestry-related jobs.

I feel like the companies are making forestry a big option to Aboriginal people. Like it's totally getting out there for sure. – Second Year Ranger, Female

Several participants also highlighted additional benefits related to forest sector employment. These included utilizing forest sector jobs as stepping stones to future career opportunities and their ability to enable individuals to stay within their home communities, rather than travel abroad for work.

[Other companies] are not as inviting as forestry companies. Because forestry wants Aboriginal [sic] people. I think because...like we are all used to being in the bush. And I guess because we don't have like a lot of jobs out in the community. So, this will be an easier job. It will be closer to home, it will be more like home. Rather than if you lived in the city or something or those different kinds of things. – Second Year Ranger, Female

Some also suggested that forest sector employment could help First Nations to counteract various cycles of trauma and negativity that are perceived to plague their communities.

Paul: Do you think the forest industry or forestry could play a role in ending [cycles of addiction] as well?

Crew Leader in Training, Male: Yeah. I guess. Like offering training or jobs. So [youth] can get an understanding of what they can do. See that they have potential to do something in their lives.

Conversely, the abundance and convenience of forest sector employment opportunities were perceived by others to contribute, in part, to perpetuating the same problematic cycles within communities.

The reserve, you know, it just brings experiences. You start smoking at a young age and I feel like that environment brings that curiosity... As for the mill, I also don't think it's necessary... It's just keeping people within the reserve. And it's actually a good thing for a job, but they are never going to leave the reserve. Because now my brothers are working there. And now my brother has a kid and he has a house there. And, most likely,

when they are old, my nephew most likely is going to work there. So I just think it's a chain that will keep on going. – First Year Ranger, Male

Participants also described a number of perceived employment-related challenges young people face in attaining forest sector careers. These perceived challenges included the replacement of employees through technology, nepotism in the workplace and competition between older and younger workers.

That there's not as many jobs in the mill as there was back in the day. And there's more computer operators... When we went to the tour at the mill. They said they only got what, like 50 people working there? Working on the machines. And they used to have over a hundred people all the time. – Second Year Ranger, Male

4.1.1.3 Community Revenue

Community revenue generation opportunities were recognized as an important economic outcome of forest resource development. Though several specific examples of forestry-based revenue generation models were described, most highlighted existing or potential resource revenue sharing arrangements between First Nation communities and industry partners. These revenue sharing arrangements included joint economic ventures (e.g. processing facilities) and direct financial payments resulting from the extraction of forest resources from traditional First Nation territories. In many cases, however, these partnerships were acknowledged to exist but were not completely understood by participants.

Pretty sure before forestry goes into a community they have to give them a certain percentage of the money they will make... They can't just go in and take whatever they want. They have to share whatever they get from it. – First Year Ranger, Male

Well, I mean, there's like a sawmill. I don't know if it's on reserve. Maybe it is. Like it's on or beside the reserve, but I am not sure it is. Like maybe we do like a partnership with it. – Second Year Ranger, Female

Forestry-related revenue generation was, in turn, perceived by some as a potential means of supporting important social initiatives within First Nation communities, such as youth-focused programming, education, healthcare resources and food security.

Well if they use the money right, [the community-owned forest company] could like use it to have more programs and stuff. For people. Like they do like donate for stuff, like say there's events going on and they donate like prizes and stuff like that... even like the Little NHL tournament. They help out with that too. Like they pay for their travel expenses and stuff. – First Year Ranger, Male

My community lacks resources. They really do lack resources. They lack education resources, food resources, health resources and all that kind of stuff. And they don't have actual contractors who still build real houses, like safe houses. Like maybe partnering up with a company will maybe help us gain that money to help us gain those better resources. – Second Year Ranger, Female

4.1.1.4 Traditional Bush Economy

Several participants highlighted the ongoing importance of traditional forest use to First Nation communities. Specific emphasis was placed on the potential effects of forest resource development on maintaining aspects of the traditional bush economy, such as hunting, trapping and non-timber forest product harvesting (e.g. medicines, firewood). In many cases, participants' families continue to rely on the bush economy for supplementing their monetary or dietary needs and have been directly affected by forest operations.

Where they are also clear cutting in my reserve, like it's where my dad's trap line is. And that like totally disrupts like... because that's how my dad makes money during the winter, his trap line. And when they like cut it down, you can't just go and like trap in anyone else's trap line because they will get mad and they will be like... Yeah, it's not good. – Second Year Ranger, Female

A lot of people [in my community] will like shoot a deer. But I think that over the years they haven't really been finding much. I don't know if that's a result of all the clear cutting and all that stuff. I don't know. It's just a little strange. Not as much wildlife. – Crew Leader in Training, Male

Developing and maintaining clear communication channels between First Nation communities and forest sector companies was seen as a potential mechanism for reducing the negative effects of industrial forest operations on traditional land use areas.

Just like, talking...more communication between the businesses and the communities. Just to make sure the land that they bought or contract to isn't like traditional and isn't used for something else. Trap lines, hunting spots. – Second Year Ranger, Male

4.1.2 Environmental

The potential environmental implications of forest resource development factored heavily into discussions with participants. Environmentally-related perspectives were often rooted in deep concern about the potential acute and long-term negative effects of forest resource development on the natural world and were informed by either personal experiences or the historical perspectives of participants' First Nation communities. In recognizing these potential negative effects, participants were also able to articulate the importance of responsible forest management practices in maintaining a healthy environment.

Participants described the potential effects of forest resource development on a number of environmental components, including the land, air, water and wildlife. While many perspectives pertaining to potential environmental effects were, indeed, discussed in reference to specific environmental components, many participants also discussed the importance of understanding the various interrelationships between components. In some situations, participants described these interrelationships within the specific context of forest-based “ecosystems”:

We will perish, if we don't have trees. We will have no oxygen to survive... And all the rest will follow... Bumblebees... All the trees will die. The plants will die. Everything will die. The ecosystem...the whole ecosystem, will fall apart. And you have to take care of it, just like the computer. And you can't work it...you can't work the whole thing without the other pieces. And you just have to make sure to take care of all those pieces so we can have a functioning planet. – Crew Leader in Training, Male

This trend indicates that many participants take a holistic—rather than compartmentalized—view of the environment and of the potential implications of forest management within it.

4.1.2.1 Land

Participants conceptualize forestry—in its ideal form—as a cyclical process of harvest and renewal.

I think forestry is, like, an everlasting cycle. Like you take, you use, you reuse, then, whatever, you grow trees again. So, it's like a cycle. – Second Year Ranger, Female

Correspondingly, many described responsible forest management as being predicated on maintaining a balance between harvest and renewal—replacing what you take.

I think that it's a good thing to be planting trees and we need to be using them for things like paper and that kind of stuff. But we need to give back. Not to each other, but to the land. Because the land is providing us with the trees and if we are not going to take the time to give the land, to give the whole forest back, we are just taking from it. – Crew Leader in Training, Male

Maybe if the amount of trees you cut down was the amount of trees you had to replant. Like you take a tree, cut it down and haul it out. And you then have to plant another tree in that area. Something like that. – First Year Ranger, Male

Many participants also described specific aspects of forest management, including planting and pre-commercial thinning, as having positive effects on forest ecosystems—as manifestations of "giving back" to the land. This concept highlights the perceived connectivity between forest management and the relationships that participants maintain with nature (see "Social"), which are rooted in the values of respect and reciprocity.

Being a second year and planting for three weeks, it really changed my perspective of the forestry area. Because in forestry there's so many jobs that preserve lands and stuff like that. Also, with my culture, living in the traditional way, it's like giving back to Mother Earth. – Second Year Ranger, Female

While most participants expressed their comfort with the current cycle of forest management, some described it as an imperfect process. Specific concerns included the potential to harvest at a faster rate than forests can be regenerated, the unnecessary application of chemicals to increase growth rates and a perceived lack of sufficient oversight on harvesting and renewal operations.

This is the big reason why they want the land. They want the resources. The government. In a way, it's good because if you cut it... I don't know how to explain it to you. Like if you cut it down, they would go back to replant trees, but it takes a long time. – First Year Ranger, Female

Like my neighbour community... got all their trees cut down a long time ago and you barely see trees grow there today. – First Year Ranger, Female

Well, they are cutting them down and replanting more, but if you think about it, how long do these trees take to grow at a natural pace? With thinning and planting you're basically speeding up the growth, and putting chemicals into the ground that can help these trees grow faster and taller and bigger... But what about the natural cycle? You see these trees around, and some of them look natural and some of them are pretty old. And you see the ones that are being farmed for forestry and they are just massive. I guess that's fine, but what's the long-term goal for these trees? – Second Year Ranger, Male

4.1.2.2 Air

Participants highlighted life-sustaining oxygen production as a benefit of healthy forest ecosystems.

And we will perish, if we don't have trees. We will have no oxygen to survive. – Crew Leader in Training, Male

Correspondingly, some participants discussed the connections between oxygen production and forest management, including various activities participated in at FNNRYEP.

It showed me that it's really important to make sure that you are planting trees right. That grow nice and tall. And that way it will provide oxygen. Instead of being too close and cluttered. And a lot of them dying, not making enough growth. You know what I mean? – Crew Leader in Training, Male

One participant also identified the potential for industrial processing facilities, such as mills, to contribute to atmospheric pollution.

Like you chop down trees, and take them to a mill and make whatever they make out of it. And polluting...polluting the air and stuff. – Second Year Ranger, Male

4.1.2.3 Water

Participants highlighted the importance of water in maintaining both natural ecosystems as well as the sociocultural systems that rely on them.

For my culture, the livelihood of the community. If the water is bad, there will be no fish, no moose, no good water to drink from. The ecosystem would be gone. – Crew Leader in Training, Male

Several participants expressed concerns about the potential effects of forest resource development on waterbodies, including lakes and rivers. Many concerns were specifically focused on the potential polluting effects of processing facilities, such as mills.

I guess the only bad thing is all that shit they use to make the paper. Like the bleach and all of that shit. That's what they were saying at the pulp mill. Like what they do to make the pulp—they bleach it and all that. Chemicals. But like where do they put all of the chemicals after? Do they just dump it in a lake or? – Second Year Ranger, Male

These concerns were often described in relation to specific examples of First Nation communities that have experienced the downstream effects of industry-caused waterborne pollution.

I know some reserves, like my mom's reserve, they have a paper mill and it polluted all of their water. So, they have to go out of town to buy their

own water, to like bathe their babies, cook food and wash up. – Second Year Ranger, Female

I think some stuff like the big factories. All those toxins... All the waste too. Especially Grassy Narrows and all the dumping they did. There's a lady there. She has mercury poisoning from eating too much wild fish from the lake. – Crew Leader in Training, Male

Some participants also implied that there may be intentionality to the industrial pollution of waterbodies.

Look at the pulp mill. Like, look how they dump like tonnes of mercury in the river. – Second Year Ranger, Female

I mean, with the forestry stuff. But like when they poured oil and stuff into our rivers. It came to my reserve, too. – First Year Ranger, Female

4.1.2.4 Wildlife

Participants discussed the potential effects of forest management on various species of wildlife. Specific emphasis was placed on culturally-important small (e.g. birds) and large game animals (e.g. moose). Correspondingly, the importance of considering wildlife implications—including species at risk—during forest planning and operations was highlighted by several participants. Specific concerns, for example, were raised about the temporary displacement of wildlife caused by forest operations, such as harvesting and brush clearing, which result in a loss of habitat and increase in noise pollution.

It's just like...say there's like a bear family there, that has been there for maybe 20 years, 10 years. So, when they hear bulldozers coming down or stuff like that, coming in, they will have to find a new home. So, it takes a while for them to find a new hunting area. That's just my thoughts on that. – Crew Leader in Training, Male

And then, when we were camping, that is all you could hear at night. Just the machines... We didn't see any animals, like at all. – Second Year Ranger, Female

Others, however, cited more significant, long-term displacement of wildlife caused by forestry operations.

Oh! At that same meeting, they were talking about how we used to have, like, a lot of caribou... But yeah, [the forest company] just drove all the caribou north. It's just, like, crappy. – Second Year Ranger, Female

Some participants recognized that many wildlife species will likely return to an area following responsible reforestation.

It's like we are creating our own forest. Like we are just planting the trees and in a few years down it will actually be a forest kind of thing. I have actually wanted to go back to where I have planted and look at all the trees I planted and say, 'Wow! I did this!' Animals are living there, bugs are living there and a new ecosystem can be created or whatever. Like home for different things. – Second Year Ranger, Female

4.1.3 Social

Participants perceived forest resource development as contributing to a variety of social outcomes. These included: personal emotional and psychological wellbeing; community-based relationship networks and social processes; interactions between First Nations and external, non-Indigenous entities; and relationships between humans and nature.

4.1.3.1 Relationships with Self

Many participants described the intense personal feelings that they experience while in the outdoors as well as the resulting psychological effects caused by forest

resource development. These emotional responses were cited as being rooted in a strong affinity to the forest, often stemming from upbringings in rural First Nation communities.

I live in the rez, boy. I come from nature. – Second Year Ranger, Female

Many discussed fond memories of spending time in the forest, engaging in activities such as exploring, building forts and harvesting animals. These activities have become associated with positive feelings and mental wellbeing, described as a "bush life kind of feeling," or feeling "at home". For some, the forest has become a place of refuge and healing.

You can get frustrated. . . I just drive out of the town, just walk in the bush, collect my thoughts. I don't know. . . it just eases my mind. – Crew Leader in Training, Male

Correspondingly, some participants described the negative psychological effects that can be stimulated by forest resource development. In many cases, these effects were linked to the visual aspects of recently harvested areas. Indeed, participants described the mental distress that can occur when looking a large cutover area, especially when that area was associated with fond childhood memories.

I feel like it kind of upsets me. Because when I was younger we'd always go to this place. And we have this area where we can always go play in. And like seeing all that gone, when you come back when you are older. It just kind of upsets me. – First Year Ranger, Female

The ride from the highway to my reserve used to look so beautiful and stuff. And then this happened. Like I just hate how it looks like just. . . for me like I don't like it at all because. . . like I know we need trees to cut down. . . but why do it on my reserve where everyone can see it? Like why do it right off the highway? Because it looks ugly as hell. And it just ruins like nature, I guess. – Second Year Ranger, Female

4.1.3.2 Relationships within Community

Many participants discussed the relationships between forest resource development and the social interactions between individuals within their communities. These comments generally pertained to one of three areas: forestry-related decision-making processes; factors supporting or hindering participation in civic life; and health effects caused by forestry-related activities.

4.1.3.2.1 Forestry-Related Decision-Making Processes

The topic of community decision making related to forest resource development was discussed in a majority of one-on-one interviews and focus group conversations. In general, participants felt that forestry-related decision making should be conducted using a whole-of-community approach, involving individuals of all age groups.

With the exception of two respondents, however, participants described their communities as having either a near or complete lack of meaningful opportunities for young people to be involved in forestry-related decision making processes. Rather, most participants described community decision making as being dominated by a small group of community members, including Chief and Council, Elders and other adults.

It's usually most of the people on Council and stuff. Like the youth never get a say in anything. Like they always assume that the adults are... like the Elders are what they need and what they want. But, if you think about the youth, they have a better mind of things. Like they think of a lot of things to help our environment and stuff. But they never show it, because they never get a chance to. – First Year Ranger, Male

The necessity of having these segments of the community participate in decision making was not a question for study participants. Many acknowledged the valuable contributions that non-youth actors bring to decision making, such as wisdom, experience, cultural teachings and role modeling for younger generations. However, many participants felt as though the potential—and often unique—contributions that young people could bring to community decision making are often overlooked, unconsidered, or intentionally excluded.

In my community, they have these big meetings. But no youth are allowed in. – Second Year Ranger, Female

For, like, future projects within the community. Like in my community, I was told to go to a meeting which was for, like, the future... But then nobody listened to me. – Second Year Ranger, Female

Many participants highlighted the important contributions that young people could bring to forestry-related decision making processes if afforded the opportunity. These potential contributions included: innovative ideas and perspectives; energy; and bridging Western and First Nation knowledge systems. Several also highlighted the importance of early engagement and mentorship for sustainable forestry-related decision making in communities.

Definitely when I am older, I am going to be focusing on my children and the other children. Getting them exposed to the risk of what might happen in the future. We have to start teaching them, giving them knowledge of what might happen if we continue down our road of destruction... It would be good to get them aware of the risks they will be taking if they continue to do stuff that is not... if they are not properly trained on what to do. – First Year Ranger, Male

I was taught that, I don't know, like preserve our resources. And the teachings we're taught and it's like 'here'. You know? It's like hands-on, coming from people you love. And here, you're taught by like other teachers. It's like a more professional matter. It's like the side that your

parents are always complaining about, but you just learn from both perspectives. – First Year Ranger, Female

4.1.3.2.2 Civic Engagement

Participants also discussed a number of non-decision-making-related social conditions and interactions that occur within communities, which they perceive to be related to the forest sector in some way. The importance of youth-focused programming, for example, was highlighted by a number of participants. Several described reserve communities as having a significant deficit of healthy, constructive opportunities for young people to be involved in civic life, such as recreation, cultural and employment opportunities. These conditions were often attributed to lack of funding for youth-focused programming and poor communication between young people and community decision makers.

Like, some Native (sic) people, they don't live on the reserve. Like, nothing is changing. There's nothing there. – Second Year Ranger, Female

Instead of ignoring us. [Only] when something bad happens, that's when they notice. And they say they are going to like make changes or some shit like that. – Second Year Ranger, Female

Participants described a number of negative social effects they perceived as being related to the lack of meaningful opportunities for youth within communities. These included higher rates of depression and suicide, alcohol and drug abuse, and increases in solitary activities such as video games. Several participants expressed a belief that many of these negative social conditions could be alleviated, at least in part,

through targeting youth-focused programming including forestry-related recreation or employment.

I don't live on my reserve anymore. Whatever they do, I am sure it's not as fun. It's boring. But getting us out in the woods, giving us a job, a task. That could go a long way. – First Year Ranger, Male

Well if they use the [forestry] money right, they could like use it to have more programs and stuff. – First Year Ranger, Male

4.1.3.2.3 Community Health Implications

Several participants discussed effects to human health that they perceived to be caused by forestry-related activities. In most cases, participants described afflictions experienced by personal relations such as family, friends and members of their own community. Participants referenced a broad range of afflictions, linked to various stages within the forest management process, including: difficulty breathing caused by industry-related air pollution; poisoning caused by aerially-applied herbicides; and toxic effects of industry-related waterborne pollutants.

There was one time I went to this Elder's meeting and, like, this highly respected Elder told us how his two friends went blueberry picking. And one of the... I think it was aerial spraying. And I guess, like, they both ate the blueberries and they got sick. The first guy passed away. Then the second guy, I don't know, was like worried. I don't know. Just like stuff like that. They don't really tell the public. – Second Year Ranger, Female

Like, on our reserve, there's two mills... There's always smoky air. Stinky air. And, like, when I go to my grandma's, who is basically across the river, it's really hard to breathe and it always smells. Yeah, that's the effect it has on the community. – Second Year Ranger, Male

Grassy Narrows was highlighted by several participants as a specific example of the negative health-related effects caused by irresponsible forest resource development. Through this example, participants often demonstrated an awareness that water-borne pollutants can become non-localized, travelling to downstream communities, and remain persistent within the environment for generations.

Like, look at the pulp mill in Dryden. Like, look how they dump like tonnes of mercury in the river. To, like, Grassy Narrows and those communities downriver. They're all affected by that. Their children's children. – Second Year Ranger, Female

Participants identified a number of social changes that occur within communities due to forestry-related health effects. These included: increased worry among individuals; the need to care for community members with neurodegenerative disorders (e.g. mercury poisoning); and forced lifestyle changes due to inadequate access to clean water.

I know some reserves, like my mom's reserve, they have a paper mill and it polluted all of their water. So, they have to go out of town to buy their own water, to like bathe their babies, cook food and wash up. – Second Year Ranger, Female

Also, like the community members have like disabilities because of that. Including some in my family. – First Year Ranger, Female

4.1.3.3 Relationships with Non-Indigenous Actors

Participants also discussed relationships between their communities and external groups of actors, such as industry and government. Perspectives on these relationships

varied between participants. In many cases, participants' perspectives were rooted in the previous experiences their own communities have had with external forest sector actors.

Most participants described antagonistic relationships between their communities and external forest sector actors, as well as the negative effects that forest resource development has brought to their communities. A number of specific examples and types of interactions were highlighted as being problematic for First Nation communities. These included: industry-caused pollution, including water contamination and aerial herbicide spraying; destruction of sacred sites and traditional land use areas; poor communication between communities and external actors; perpetuating social issues such as alcohol and drug abuse; and lack of respect for treaties and land rights. Some participants perceived these negative effects to be rooted in greed and the desire for wealth creation.

When the first Europeans came, they never had knowledge of us. They didn't know where we lived. But that's what settlers do. They do what they do. They cut down trees and make a home, make places out of logs. And I can personally see my ancestors seeing that as, you are taking from us. – Crew Leader in Training, Male

A few participants offered a more neutral view of relationships with external actors. This included recognizing the regulatory role external actors play within the forest sector and the balance between harvesting and forest regeneration that ideally occurs during forest management.

In my mind, it's a 50/50 for the forest industry. In my opinion, the good and the bad is kind of evened out, I guess. And mostly, all the land they're doing now was managed a hundred years ago – Crew Leader in Training, Male

Well [governments] have their laws and stuff. So they are like the lead, I guess. – First Year Ranger, Female

One participant also described the potential benefits that external actors can bring to First Nation communities through the formation of formal forest sector partnerships.

Forestry is something that should probably be considered and like pairing with other companies to use the land, because we have a lot of people in our community that aren't really trustworthy with the community money.
– Second Year Ranger, Female

Participants offered a number of recommendations for improving relationships between First Nation communities and external forest sector actors. These included: hiring local people to participate in forestry-related data collection, such as forest inventories; developing clear communication protocols between communities and external actors; imposing transparent limits on harvesting, especially around First Nation communities, with strong enforcement measures; providing equitable benefits to First Nation communities; and offering opportunities for young people to learn about and participate in the forest sector.

3.1.3.4 Relationships between Humans and Nature

Several participants described having close personal relationships with the natural world. These relationships were characterized in a similar manner to those with human individuals, often using personified terms such as "Mother Nature" and framing interactions with the natural world in a relational, human-like manner.

And the fact that we're planting those trees is like paying back Mother Earth. – First Year Ranger, Male

Participants discussed a number of protocols and social conventions that they believe help to guide healthy interactions within these relationships. In many cases, participants cited traditional cultural teachings as being the basis behind their conceptions of proper interactions with the environment. Respect for and reciprocity with the land (i.e. "giving back") were repeatedly cited as fundamental underlying principles for guiding interactions with the natural world.

Paul: Where do you think that respect for the land comes from?

Second Year Ranger, Male: Our Grandfather Teachings.

Several participants described the forest as a classroom, where they had been taught about how to properly interact with the environment. This knowledge transmission generally involved learning-through-doing from parents, grandparents and respected Elders from the community.

The grandmothers or grandfathers would take about, maybe 7 to 6 kids a week out in the bush for the whole week. And we would learn how to trap, hunt, fish with everything that is already provided in the bush. –
Second Year Ranger, Male

Some participants also described intergenerational differences in the relationships that people have with the natural world. Many perceived Elders as being disproportionately affected by forest development, due to having stronger, life-long connections to teachings, traditions and interactions associated with forest ecosystems.

Paul: Does forestry have an impact on the community? Do you notice that?

Second Year Ranger, Female: Mainly with the Elders because they're concerned about the medicines and the animals.

Some participants also worry that forest development and modern lifestyle changes may decrease access to land-related cultural knowledge and traditions for future generations.

I think, especially in the forest industry, like I think it is important for them to see all the problems... And help like to sustain the forests. And like the populations of the fish and stuff for years to come. To keep these things alive. I think a lot of people just take things for granted. They think it's going to be there all the time. Like the way our lifestyles are... are just... I don't know... slowly dying. – Crew Leader in Training, Male

4.2 PERSPECTIVES ON EDUCATION AND CAREER OPPORTUNITIES

4.2.1 Education and Career Interests

Participants expressed interest in potentially pursuing a wide variety of education and career opportunities. While some had a clear sense of direction toward one specific opportunity, others explained that they were still exploring numerous options. As a result, many described multiple specific career opportunities that they may eventually decide to pursue. Consequently, the number of responses within this section (i.e. references to careers that were described as being of interest) exceeds the total number of participants.

4.2.1.1 Natural Resources Management

Careers within the natural resources management field (e.g. forestry, mining) were most frequently cited as being of potential interest to participants. In total, 28 participants (3 additional unknown respondents) expressed interest in pursuing careers within the natural resources management (NRM) field. Specifically mentioned opportunities were varied and included careers within the sciences (n=8, 1 unknown), trades (n=4) and technical fields (n=10, 2 unknown), as well as other labour-level positions (n=14, 2 unknown).

Science-related natural resources management careers included: professional forestry (n=3), geology (n=2, 1 unknown), aquatic biology (n=2) and metallurgy (n=1).

Technical natural resources management careers included: forest technician and cruising (n=7, 1 unknown), geographic information systems and mapping (n=2), environmental technician (n=1) and prospecting (n=1).

Trades within the natural resources management field included: millwright (n=4), industrial technician (n=1) and construction technician (n=1).

Labour-level natural resources management careers included: forest firefighting (n=7, 2 unknown), tree planting and thinning (n=5, 1 unknown), equipment operation (n=5, 1 unknown), tree felling (n=1) and working in a mill (n=1).

4.2.1.2 Military and Policing

Military (n=4, 2 unknown) and policing (n=5, 2 unknown) careers were also described as being of interest to participants.

4.2.1.3 Healthcare

A variety of specific careers within the healthcare field were referenced as being of interest to participants. These included: paramedic (n=2, 1 unknown), nursing (n=2) kinesiology (n=1), psychology (n=1) and surgery (n=1).

4.2.1.4 Business and Entrepreneurship

Several specific careers within the field of business and entrepreneurship were discussed. These included: small business ownership (n=3), business administration (n=1), business marketing (n=1) and accounting (n=1).

4.2.1.5 Arts, Social Sciences and Humanities

Specifically mentioned careers within the arts, social sciences and humanities included: archaeology (n=2, 1 unknown), song writing and production (n=2), graphic or video game design (n=1), law (n=1) and social work (n=1).

4.2.1.6 Hospitality and Tourism

Careers of interest within the hospitality and tourism field included: cooking (n=3), bartending (n=1) and casino dealing (n=1).

4.2.1.7 Education

Education-related careers of interest included: teaching (n=2), early childhood education (n=2) and youth program coordination (n=1).

4.2.1.8 Trades, Non-Natural Resources Management

Non-natural resources management related trades of interest included: aircraft maintenance (n=1), carpentry (n=1), mechanics (n=1) and underwater welding (n=1).

4.2.1.9 Science and Engineering, Non-Natural Resources Management

Careers of interest in science and engineering that are outside of the natural resources sector included electrical engineering (n=2) and chemical engineering (n=1).

4.2.1.10 Aviation

Two participants expressed an interest in pursuing a career as a pilot.

4.2.2 Level of Educational Requirement

The level of educational requirement for each career of interest was also assessed. In situations where a specific career opportunity could be pursued with varying levels of education (e.g. certificate or university degree) the minimum level of required education was selected unless otherwise specifically cited by the participant. For example, a career in cooking could be pursued with less than a high school level education, a college diploma or red seal trade. If a specific level of higher education was not cited as being of interest, the reference would have been categorized as requiring high school only.

The number of participants who specifically referenced career interests requiring corresponding minimum educational requirements were as follows: high school or certificate (n=19, 2 unknown); college diploma (n=22, 3 unknown); university degree (n=15, 3 unknown); and trades (n=9).

4.2.3 Part-Time and Temporary Opportunities

Some participants expressed interest in pursuing specific employment related opportunities that were not seen to have long-term career potential. Rather, these opportunities were viewed as being best pursued on a temporary basis to help support the attainment of more desirable, longer-term opportunities. Specifically cited part-time or temporary employment opportunities included: tree planting and thinning (n=6), forest firefighting (n=2), parks (n=2), slash burning (n=1), log truck driving (n=1) and felling (n=1).

4.2.4 Undesirable Careers

Some specific employment and career opportunities were described as being particularly undesirable to participants. These included: planting and thinning (n=3), camp management (n=1), working in a mill (n=1), prospecting (n=1) and parks (n=1).

4.2.5 Awareness, but Uninterested

Some participants described specific career opportunities in a neutral sense, rather than being specifically interested or opposed to them. Such opportunities included: forest technician and cruising (n=4, 1 unknown), geographic information systems (n=4), prospecting (n=3), planting and thinning (n=3), geology (n=2, 1

unknown), drilling (n=2), working in a mill (n=2), wildlife management (n=2), slash burning (n=1, 1 unknown), equipment operation (n=1, 1 unknown), water sampling (n=1), policy (n=1), guiding (n=1), archaeology (n=1) and biology (n=1).

4.2.6 Attributes of Desirable Education and Career Opportunities

Participants described a number of specific attributes that were important to them when considering education or career opportunities. Some attributes were seen as strong attracting factors to specific opportunities. Others were seen as aspects to avoid.

4.2.6.1 Hands-On Work

Participants had mixed perspectives pertaining to their affinities for hands-on, physical work. These perspectives ranged on a spectrum from a strong desire to pursue hands-on work to those who would strongly prefer less physically demanding careers.

The majority of participants who discussed their perspectives on hands-on work expressed an interest in pursuing those types of career opportunities.

Hands on work is something really big for me, especially for my career. –
Crew Leader in Training, Male

Specifically referenced hands-on work employment opportunities included both small and large engine mechanics, heavy machine operation forest firefighting and environmental sampling.

In many instances, participants explained that their interest had only developed recently, following a hands-on work experience that they found particularly enjoyable.

And once I got around to doing hands-on work, I found out how fun it can be. – First Year Ranger, Female

The minority who expressed disinterest in pursuing hands-on career opportunities often cited physical ailments associated with the work as determining factors in their decision making. Several participants described specific dissuading characteristics, including: heat and fatigue; joint and muscle pain; insect stings; and the ten-day-on job rotations associated with some forest sector opportunities.

In some cases, the combination of these factors led participants to view many hands-on, forest sector opportunities as being primarily short-term or seasonal in nature

[Thinning is] not a career because you can't do it when you are, like, old.
– Second Year Ranger, Female

4.2.6.2 Giving Back

Most participants expressed a strong desire to use their careers as a means of giving back through making positive contributions to both their communities and/or the natural world. For many, the opportunity to participate in the reforestation process (e.g. planting and pre-commercial thinning) enabled them to derive a sense of meaning and accomplishment from their FNNRYEP experience.

That's why I also like to be planting. Because it feels like I am doing something good. – Second Year Ranger, Female

Correspondingly, some participants highlighted the opportunity to incite positive environmental change as an influential factor in future education and career decisions.

That is why I want to take forestry. Because I want to make things better.
– Second Year Ranger, Female

Others described a strong desire to give back through helping others. In some instances, this ability was tied to a specific career (e.g. healthcare, social work) where they would be able to have a direct, positive influence on the lives of others.

Social work... I have always like, throughout my whole life, I have always liked helping people and I have a big heart. And like, even if I can just help in life like in a small way, I'd feel like... it will make me feel happy. – Second Year Ranger, Female

In other instances, the ability to help others was tied less to a specific career opportunity and more to a broader ability to support others—and especially other youth—through becoming a positive role model.

I want a job to inspire the younger generations. – Second Year Ranger, Female

4.2.6.3 Working Outdoors

Many participants highlighted their interest in pursuing career opportunities that would enable them to work outdoors. Reasons for enjoying outdoor work included fresh air, peacefulness, disinterest in sedentary office work and general enjoyment of nature. In some cases, participants cited their close-to-nature upbringings and comfortability within outdoor environments as having influenced their affinity for outdoor work.

I live in the rez, boy. I come from nature. – Second Year Ranger, Female

Despite having a general interest in working outdoors, environmental factors were also often cited as the primary causes of frustration and dissatisfaction with the various jobs performed at FNNRYEP, including tree planting and pre-commercial thinning. These frustrating factors included excessive heat, precipitation, insects and animals, natural hazards (e.g. rocks) and difficult-to-work land which slows the rate of production.

It was too long in the heat. They made us work in the heat. Like really, really bad heat. – Second Year Ranger, Female

[Tree planting] gets tiring fast. And sometimes frustrating. Especially with the bad piece you have. – First Year Ranger, Female

4.2.6.4 Financial Opportunity

Financial opportunity was often cited by participants as a motivating factor in their evaluation of education and career opportunities, including FNNRYEP. The precise reason for this financial motivation varied among participants, but included: the need to support a young family; saving for post-secondary education; and a general desire to generate personal income.

The pre-eminence of financial motivation was also highlighted by the way in which participants discussed their thought processes around how to maximize their personal revenue generation. This included: maximizing the amount of time spent actually planting trees; citing the second year raise as a motivating factor in returning to FNNRYEP; contemplating the monetary difference between hourly pay and piece work; and developing cost-saving measures to maximize profits.

Just like maybe when you run out of trees, you have to go back for your cache. You're going behind your pieces again, which is a lot of work. You have to think about money, I guess, when you are planting. – Second Year Ranger, Male

Get a step up in the payroll in the second year, when you come back to work. – Second Year Ranger, Male

Then again, I need motivation. So I want to go on planting camp. I don't know, I guess it will probably be different, if you get paid by the tree, not day rate. – Second Year Ranger, Male

Staying out of town. No expense again. This is a way to make a lot of money, as long as you don't spend it all while you are out there. Go to town and blow all your money, or at the truck stops or whatever. – Second Year Ranger, Male

Financial freedom and independence were also cited by some participants as desirable career attributes and motivating factors for participating in FNNRYEP. This included some participants expressing a preference for piece work systems in which individual workers could largely dictate their overall amount of income generated.

And you get to choose how much money you make. Like, it's not like 'this is how much you get paid.' It's like you work for how much you want to get paid. It's up to you, basically. Like, you are super independent when it comes to forestry. If you want to do your job, you do it. If not, that's fine. – Second Year Ranger, Female

4.2.6.5 Relationship Building Opportunities

Many participants highlighted the importance of friendships and relationship building in influencing their choices in education and career opportunities. When asked about their motivation for applying or returning to FNNRYEP, a large number of respondents cited friendships as the dominant factor. This included signing up for

FNNRYEP because existing friends would also be participating in the program and the prospect of making new friends over the summer.

There were a few other kids that came into the program from my community, so I was interested in it. – Second Year Ranger, Female

Well, my goal last year was to meet new friends. – Second Year Ranger, Female

Many returning participants also cited reunification with friends they had made in their first year as an influential factor in coming back to the program.

And I felt like last year we all... like, we became really close. And, after the program, no one really talked anymore. So, I thought coming back would be nice. – Second Year Ranger, Female

Some participants also extended the desire to build relationships into how they are evaluating future career opportunities.

It's just, even cruising is so cool. Going out there, spending four weeks with another person. It's just teamwork, I guess. Like, building the relationships. – Second Year Ranger, Female

4.2.6.6 Interest and Enjoyment

The importance of both having an interest in and deriving enjoyment from education and employment opportunities was highlighted in a large number of interviews and focus groups. When asked about their reasons for having interest in specific education or career opportunities, participants often explained that they simply enjoy doing it or thought it seemed like something they would enjoy, rather than describing particular aspects or tasks associated with that opportunity.

I think it just depends on what you like to do. Just enjoy your job and it's not like work. It's more like a hobby. You get paid for your hobbies... That's the best kind of job I see. – Second Year Ranger, Male

Many second FNNRYEP participants specifically cited their positive, fun experience within their first year as a major factor influencing their decision to return to the program.

I had so much fun last year, [so I thought] let's do it again. – Second Year Ranger, Male

4.2.6.7 Variety and Adventure

Numerous participants expressed an interest in using employment opportunities as a means of facilitating exciting and unique personal experiences. Many highlighted the desirability of employment opportunities, such as FNNRYEP, that would enable them to travel to new places away from their home communities.

I was just looking for summer employment off my reserve. Seemed like a great opportunity. – Second Year Ranger, Male

It's just the amount of fun you would have. I am an adventurous person. I really like going on trips to wherever. Like one time we went to Toronto, and I just kind of wanted to go, just for the ride. – First Year Ranger, Male

Others highlighted unique, fun and exciting aspects of specific jobs that increase their desirability. This included the opportunity to travel by boat or helicopter, utilizing explosives, accessing remote wilderness locations and participating in extracurricular activities such as paintballing.

The guy there was saying you can take a plane. You can take a floating plane, whatever that is. Like a boat. And you have to hike there. And it

just seems really cool! Adventurous! New things. – Second Year Ranger, Female

Incorporating variety into work was also seen as highly desirable. Several participants expressed specific disinterest in careers that had little variability in tasks or work environment.

It's pretty shitty. How it's like long hours, just repeating. Just doing the same thing all over again. – Second Year Ranger, Female

Yeah, but there's still one thing, personally, I like the most...having that change all the time. It's not the same every day. When it's the same, it just kind of gets boring, in my opinion. So I'd rather do something different. – Second Year Ranger, Female

4.2.6.8 Learning and Experience

Quality learning opportunities—including training and certifications—were cited by a number of participants as influential factors in evaluating education and career opportunities. This included both decisions relating to participation in FNNRYEP and differentiating between post-secondary education programs.

I didn't want to do [FNNRYEP] at first. Then she told me about all the certificates you can get, like first-aid, and I thought it was a good opportunity. – Second Year Ranger, Female

Depending on which one has the better program, really. I mean, I have all the proper schooling that's needed to be going into those programs but, a lot of the time, I really just want the best learning. The best knowledge I can get from an in-class experience. – First Year Ranger, Male

These learning experiences were seen by some as a conduit to future opportunities through building more robust resumes.

Yeah, it looks good on your resume, I guess. It's good. – First Year Ranger, Female

4.2.6.9 Pride and Accomplishment

Some participants highlighted a sense of pride and accomplishment as a driving factor behind participating in FNNRYEP. In some cases, this sense was derived from simply completing what is perceived to be a difficult endeavour, such as tree planting.

Doing this kind of seems like a hard job to do, if you think about it. And it kind of makes me feel good about myself, doing a hard job, like putting over a hundred trees in the ground. – Second Year Ranger, Female

In others, pride was derived from the newfound recognition of oneself as a leader and role model.

You know, the first years are pretty awesome. A few of them do look up to me. I really enjoy that. A couple of them came to speak to me about stuff... Having the ability to help them made me feel better. That's why I am here. Because it makes me... made me feel like I'm doing my job right! – Crew Leader in Training, Male

For some, a sense of pride and accomplishment was also attained through pursuing employment in which they felt they could excel through complementing their pre-existing personal gifts and proficiencies.

I'm good at mathematics and stuff like that. So, I figure that [accounting] is probably where I should go. – First Year Ranger, Male

4.2.6.10 Health and Safety

Various aspects of workplace health and safety were discussed in a number of interviews and focus groups. Generally, participants demonstrated a vigilance for occupational hazards and expressed a desire to both work alongside other safe workers and avoid workplaces that they perceived to be potentially unsafe.

[I would never consider] working in a sawmill, because if you really go into the sawmill, it's really loud and it was so scary. There are so many dangers. Like dangers you can't protect yourself against. You can kind of, but most of the guys there were not wearing any kind of safety things and they were not wearing any of that. – Second Year Ranger, Female

Additionally, a more general desire to use employment as a means of promoting personal health and well-being was expressed by some participants. This included using employment as an opportunity for physical exercise and a source of motivation for abstaining from substance use.

That is one of the reasons I came to Outland. To clean up... To clean my system out... Like the no smoking, quitting challenge. I feel a lot better. A lot healthier... I don't have the phlegm in the morning anymore. I don't spit black goo. I feel better. – Second Year Ranger, Male

4.3 BARRIERS AND SUCCESS FACTORS TO EDUCATION AND CAREER ATTAINMENT

Participants described a number of factors and conditions that may serve to either support or hinder their educational and career endeavours. The sources of these barriers and success factors were diverse, but generally pertained to either social circumstances

residing within their families and communities or to institutional entities, such as employers or educational institutions.

Rather than being viewed in isolation, perceived barriers and success factors were frequently discussed in the context of their interrelationships with one another. Indeed, identified success factors were often seen as solutions to perceived barriers to success. Correspondingly, this section endeavours to highlight these interrelationships.

4.3.1 Social Barriers and Success Factors

Socially-rooted barriers and supports factored prominently into education- and career-related discussions. Though specific factors and combinations thereof were unique to each participant, the overwhelming majority pertained to the importance of developing and maintaining close personal networks of support. These personal support networks were seen as a strong contributor towards long-term educational and career success.

Indeed, the importance of personal support networks was highlighted by numerous participants through describing their own personal experiences of trying to find success in the absence of such supports. For a variety of reasons—including cycles of low educational attainment within families, intergenerational trauma, substance abuse and social isolation—many participants felt as though individuals and communities around them were unable to provide the supports they required to achieve their educational and career aspirations. As a result, participants felt isolated and alone in their endeavours.

One thing that I found growing up was just like the lack of support. You could tell someone what you wanted to do with your life and they would just push you off. So you pretty well had to do it yourself. No one you can really go to that can help you get there. – First Year Ranger, Male

Most reserves have rough stuff going on: addictions, family mistreating them, mistreatment, nothing to do on the reserve. – First Year Ranger, Male

Well, for me, for what my barriers were... pretty much my family. Well most of my family weren't really doing good as far as education. So, I was the only one paddling the boat, I guess you could say. So, I had to work on my own at home. They couldn't have helped. They wouldn't know. So, I played that major role. – First Year Ranger, Male

This barrier was often exacerbated by the presence of “haters”—close, personal relations of participants who actively put them down or deter them from pursuing their aspirations. Many young people internalize haters' messages of doubt and deterrence, which then serve as a significant psychological barrier to success.

When people are told they can't do it. And it just stays in their mind, thinking they can't do it. So they just give up after so long. – Second Year Ranger, Male

Some kids grow up not in nice homes and they are told they won't make it. Then they start to doubt themselves and believe what they are told. – Crew Leader in Training, Male

Conversely, others described using haters' messages as a source of inspiration and motivation to pursue their aspirations.

Don't let anyone get you down, bring you down to their level. You know? You could be on the higher level and that's the reason why people put you down. Because they want to be on the level that you are. And they can't have what you want or what you've got. And they want what you got. – First Year Ranger, Male

To counteract the practical and psychological barriers that result from a lack of meaningful personal support within families and communities, many participants discussed the importance of consciously developing personal support networks through

other avenues available to them. For most, this typically involved the creation of meaningful peer-to-peer support networks. Peer-to-peer support was seen as a strong factor in promoting individual educational and career success as well as serving as a means of increasing the resilience of young people to adverse situations or transitional periods in their lives.

You could also mention all everyone here has different personalities. And how we all come together as a group on the [planting] block. How we all support each other. And how if someone feels sick when they are on the block we'll all support that person to feel better, and to feel great. – Second Year Ranger, Female

My first week I wanted to go home. My first time away from home for a while. I really missed home a lot. But I think the more and more you get to know people, the more you want to be there and stay with those people. For me, that's what kept me coming back to the program. It's the people you meet, it's the connections you make with people. – Crew Leader in Training, Male

Peers were also seen as an important source of mentorship and behavioural role modelling. Much like the need for psychological support, peer role modeling was seen as filling a mentorship deficit that exists in some participants' communities.

The adults around them are like setting shitty examples for everyone else... They all like drink and like do pills and talk bad about other people. – Second Year Ranger, Female

Peer role models, therefore, can become an important source of inspiration and guidance for young people who otherwise lack healthy adult role models in their lives.

More youth would just see their friends getting jobs and it would just grow more and more. – Second Year Ranger, Male

I will be the first in my family to be going to any post-secondary and I want to set an example for the rest of my family. To go to university. Get out there, get to the best of your ability. – Crew Leader in Training, Male

In some instances, these peer-to-peer support networks assume an elevated level of importance in participants' lives. Indeed, many described their consciously-created peer networks as having family-like status and providing a variety of success-supporting functions that would typically be provided by biological family members.

I might have already gone home by now, but I met friends here. I met family. This is closer to home than I would have ever been. – First Year Ranger, Male

Once you come out here, first couple of days you hate it. Like you want to go home. Feeling sick. After the first week, you start having fun. You start talking to everybody and having fun. And it becomes like family to you. – Second Year Ranger, Male

Supporting personal growth was also seen as a significant success factor for participants. For many, growing up in isolated and often unhealthy or unsupportive communities has resulted in a lack of life- and social skills, which they feel are necessary to achieving their long-term educational and career aspirations.

A lot of them are like depressed or shy or... all the kids I know on the rez are like... don't talk. Like they never speak up for themselves. – Second Year Ranger, Female

I didn't know who I was. I didn't know where I belonged... I just thought I was another First Nation, and we are nothing but just a number. – Crew Leader in Training, Male

Opportunities to develop and practice important life skills and perspectives, such as independence, socialization and self-confidence were, therefore, seen as factors to support sustainable educational and career success. Indeed, numerous participants spoke to the perceived life-changing benefits of capacity development programs, like FNNRYEP, that support meaningful personal growth.

It kind of makes me feel better about myself. Because you do cool things that no one really does where I'm from. I can say, 'Yeah, I've planted

trees, used a brush saw, had chainsaw training,' all that kind of stuff. – Crew Leader in Training, Female

And it just gets you more independent. Let's you know how you are around people. How the work place is. How you have to communicate with other people. So this program does help you out in your future. – Second Year Ranger, Female

Youth-focused community programs and access to healthy, constructive youth activities were also seen as factors in supporting youth educational and career success.

Many participants described the lack of opportunities within some First Nation communities and their resulting negative effects on youth development.

In my reserve there's a... we have gym nights, and that's about it. There's no actual like things. It's boring. Everybody is bored and they are just like 'Oh let's go and do drugs. Let's drink' or 'Let's have a party, guys.' We have a Canada Day games festival and stuff. But it's not like... it just gives people more reason to get drunk. – Second Year Ranger, Female

I guess you could say there's no...they have bingo...that's pretty much it. But that's for adults, so they are doing really nothing for the kids, and the kids just learn from their parents, and the parents...most of them just sell drugs, do drugs. I can't speak for all of them, but I know some of them do learn. – First Year Ranger, Male

Regular, low cost activities were, therefore, seen as a means of directing youth attention and energy towards healthy, constructive outlets. This, in turn, would support their sustainable, long-term educational and career success.

People don't really have anything to do. It's boring. Even in the cities, it's boring unless you have money, you go to the movies. It's as simple as having someone play games or something with the kids. Having activities that don't cost money. Simple stuff like that will change a lot. – Second Year Ranger, Male

The need for diversity in youth programming, both cultural and otherwise, was also highlighted. This was seen as an important factor in engaging a wide range of

young people, whose interests may not be reflected in the limited range of programming that is often offered within communities.

The Friendship Centres and all those Feathers of Hope, like all those Aboriginal... you know, sorts of things they do. I think that that's a good way to stop it, but not everybody is interested in it. You know what I mean? ... I feel like they should make different sorts of programs. Like if someone is interested in games or whatever, or if there's someone who is interested in art, or someone is interested in like skateboarding, and stuff like that. I feel like they should make... just like do... use these programs for all those. You know what I mean? Not just one specific thing. – Second Year Ranger, Female

4.3.2 Institutional Barriers and Success Factors

Participants strongly demonstrated a conceptualization of education and careers as a journey involving distinct phases and transitional periods. It is throughout these different phases and the transitional points between them that various institutional entities are seen to have the ability to either support or hinder participants' aspirational endeavours.

Entry points were an important aspect of education- and career-related discussions. Several participants described a general lack of meaningful employment opportunities for young people within their communities as a significant barrier to entering or advancing in the workforce.

Besides summer jobs, I guess it's kind of dull. Nothing after that. You have to find a job in the town next to our reserve. Yeah, so our only opportunity to work is during the summertime. – First Year Ranger, Male

On the rez, people are on welfare and can't get jobs. Because there is no jobs. – Second Year Ranger, Female

There's a lot of 18 year olds, 19 year olds, 20 year olds that have kids that they need to provide for. But a lot of jobs are not accepting, because they have a lack of experience. And they need this job to provide for them, for their little family. – First Year Ranger, Male

They, therefore, expressed great appreciation towards employers who were willing to take a chance on them by hiring them into an entry level position. Having an employer believe in them was, in turn, seen as a motivating and contributing factor to longer-term success.

I believe that's the jumping point in most First Nations' lives. Once you get that one foot in the door. Once you take that one step, it motivates them, you know? – Crew Leader in Training, Male

Participants also highlighted the importance of stepping stones within their education and career journeys. Indeed, many expressed a recognition that current opportunities have the ability to “open doors” to others. Many described the value of utilizing employment opportunities at all levels to develop a variety of employment-related skills. These included: teamwork; leadership; work ethic and discipline; understanding of workplace expectations; soft skills such as resume and cover letter writing; communication; and problem solving. Correspondingly, many felt it important to maximize the skills, experience and certifications attained through one opportunity to support further advancement toward their longer-term educational and career goals.

I feel like this is going to build up for me, over the years. This job is going to build up my experience. I will be able to maybe work wherever I want in the future. – Second Year Ranger, Male

Like today at that [tour], she was talking about like mills and stuff. They offer so many different things. It's not just being a mechanic. I want to do... I've actually thought about it... I want to do that security guard thing. Because I want to be an OPP. So going into that first will help me for other career opportunities. – Second Year Ranger, Female

Participants also described the importance of merit-based advancement in supporting transitions between various career stepping stones. Indeed, several participants expressed a guiding belief that hard work and dedication will be noticed by employers and, ultimately, rewarded with recognition and advancement.

Because if I come back as a second year... I can keep planting and plant more. And people will see me. And I'll get noticed. And people will want to maybe hire me. – First Year Ranger, Female

Maybe being a bigger role model or brave could earn me that spot. Just showing them that I can be a big leader and that I would be brave enough to have a lot of knowledge, to be a chief through firefighting. – Crew Leader in Training, Male

Guided education and career exploration were also seen as a mechanism for supporting in participants' long-term success. Participants placed significant value on learning about educational and career options from knowledgeable individuals as well as having the opportunity to experience them within a controlled and supportive setting. These opportunities were seen as chances to become exposed to potentially attractive and enjoyable careers, which would have otherwise gone unconsidered due to lack of exposure or preconceived biases about them.

Then I came to this program and it kind of opened my eyes a little more wide to all of the more interesting jobs out there other than something to do with art. Last year, they took us to the ACE Building with the college. And I didn't realize there were so many jobs with airplanes and stuff. I just thought there was the airplane mechanic and the pilot, and that was it. Then I realized I liked taking things apart and putting them back together. And then I did that a little and thought maybe I could consider aircraft maintenance because I also like being in planes and stuff like that. – Second Year Ranger, Female

It does help us figure out what we want to do in the future. For example, with the first aid, some people might want to be paramedics. Like [she] didn't know what she wanted to do. But after this thing—the paramedic—she found that she really likes that and is thinking 'I might really want to do that in the future.' – Second Year Ranger, Female

Supports and services offered by employers and educational institutions are also seen as vital factors to participants' long-term education and career success. Specifically cited examples of desired institutional supports and services included: mental health counselling; financial support; employment support services; easily accessible contact information for external agencies (e.g. Ministry of Labour); tutoring; education and career counselling; workplace safety training; and communications tools to maintain relationships with friends and family. Institutionally-provided moral support was also highlighted as being particularly essential to young people's success.

Someone to talk to if, just say, you needed someone to talk to and there wasn't a lot of people. Just, say, go talk to your teacher about it and they help you solve your problem... Because every teacher says they're always there. Open and everything. So, that's why you can go to them for moral support. And they've got to keep their... they keep confidentiality and all that. – First Year Ranger, Male

In some cases, these institutional supports were seen as a means of overcoming systemic educational deficits that presently exist within many First Nation communities.

In [my community] we have like... there is hardly any teachers. There's only two teachers. And not a lot of proper learning goes on. – First Year Ranger, Male

Like some schools on reserves... like the school system isn't really good. Like, my high school has like two teachers. It's really hard to get your credits and everything. – Second Year Ranger, Female

Institutional supports can also help young First Nation people to overcome the barriers imposed on them by racist attitudes that continue to persist within many predominately non-Indigenous northern Ontario communities.

It really holds a lot of us back. I know a lot of people are... like a lot of Aboriginals are scared to go in and be in the white world, because they are going to be pushed back. They are going to be pushed away from what they want to do. – Second Year Ranger, Female

There are still a lot of people who talk about their schools being so racist. And people don't like going to it because of the way they get treated in the schools. – Second Year Ranger, Male

4.4 FNNRYEP'S INFLUENCE ON PARTICIPANTS' PERSPECTIVES

Due to an unforeseen administrative delay, data collection was not permitted to start until the third week of FNNRYEP's program period. As a result, participants' pre-FNNRYEP baseline knowledge and perspectives were not able to be captured directly. Participant self-reporting was, therefore, used to evaluate FNNRYEP's effects on participants' knowledge and perspectives related to forestry and capacity development opportunities.

4.4.1 FNNRYEP's Influence on Forestry-Related Perspectives

Though a few participants stated that their perspectives related to forestry were unchanged by the FNNRYEP experience, the vast majority described at least some level of influence. Most generally, comments and perspectives related to either: perceptions of forest management practices; perceptions of forest sector employment; or conflation between forestry and other forms of resource management.

4.4.1.1 Perceptions of Forest Management Practices

Many participants described FNNRYEP as having a balancing effect on their perspectives related to forestry and forest management. Prior to the FNNRYEP experience, several described having more negative views of forest resource development. These perspectives were often described as being based on incomplete information received from a variety of sources, such as mass media, or personally witnessing the visual results of clear cut harvest operations.

Before coming to this program, I was... I didn't know anything. I thought that planting trees was just like planting a farmer's crop. That's literally what I thought. I didn't know what to expect at all. And I thought forestry was more about: if you cut down this tree you're going to ruin everything. You're going to ruin the parks, you're going to ruin everything. And that's what you see on TV, that's what you see in papers. People protesting about forests. – Second Year Ranger, Female

I used to kind of see it as bad because when you drive by something like that happening, you just see all the land that's gone. But the part you don't really see is replanting the trees. – First Year Ranger, Female

Through FNNRYEP, however, and its endeavours to show participants each component of the forest management process, participants described coming to a newfound understanding that forestry strives to maintain a sustainable cycle of harvest and renewal. This knowledge brought forestry into conformity with participants' pre-existing values and priorities and, thus, improved their perspectives of forestry as a whole.

I thought they just cut down trees and make paper or whatever it is they wanted to make. And they just leave it and worry about the money. But ever since we went in the program last year, they taught us what they actually do, instead of just hearing about the bad stuff. Like there's good. Like pros and cons. And we learned that they replant everything, so it can

grow right. To just restart the cycle of everything. So I got well educated.
– Second Year Ranger, Female

Several participants also described FNNRYEP as having improved their overall forestry-related literacy and contributed to viewing forest management in a more holistic manner. Through FNNRYEP, participants were exposed to the intersections between forest management and other subject areas that are of interest to them. These included: tree identification and dendrology; economics; wildlife management and species at risk; and First Nation culture.

The guy was explaining to us that if the smallest thing went wrong, their whole operation... like one thing would go after the other. Then they'd have to shut down. – Second Year Ranger, Male

I learned what a cedar tree looks like... I could never tell what a cedar tree actually looked like compared to like pine and all those other trees. – Second Year Ranger, Male

Last year, I learned a lot about traditions and teachings and stuff... I can't really recall any names but there were different teachings about different stuff like language, different words. – Second Year Ranger, Male

Some participants also credited FNNRYEP with increasing their overall awareness of and interest in the forest sector.

Before I started this program I didn't really care to be honest. I never would really think about it. – Second Year Ranger, Female

I didn't really think of [forestry] before coming here. At all. I was like 'the bush... cool.' – Second Year Ranger, Female

Others credited FNNRYEP with helping to improve their ability to recognize and critically evaluate the long terms implications of various forest management practices.

I think like programs like this. I think it has opened our eyes to the things that like go on in our forests... To kind of get an idea of what's going on out here. And just we can all make an impact somehow. – Crew Leader in Training, Male

But one thing I don't like about it, is all the land they are cutting down... that the forest doesn't fully grow within fifty years, or sixty years, at least. That bugs me, at least a little bit. It's just knowing the trees that are being planted everywhere now. At least when I'm an Elder that forest will be there. But at the same time there's more that's being cut down. – Crew Leader in Training, Male

4.4.1.2 Perceptions of Forest Sector Employment Opportunities

Aside from one participant who discussed declining employment opportunities within forestry-related processing facilities (i.e. mills), participants generally credited FNNRYEP with exposing them to an abundance of forestry-related employment opportunities of which they were not previously aware.

There are multiple different jobs that I didn't know in forestry... Basically it was just like cutting down trees or mining. After this, there's like a whole variety of forestry work that you could probably do. Tree planting, brush saw thinning, pine cone picking, slash burning. There's just multiple jobs that you can do if you're interested in them, I guess. – Second Year Ranger, Male

We talked about all of these job opportunities. There's actually so many that you wouldn't even think of. – Second Year Ranger, Female

4.4.1.3 Conflation between Forestry and Other Forms of Resource Management

When asked specifically about the effects of FNNRYEP on forestry-related perspectives and employment opportunities, several participants conflated their answers with other forms of natural resources management such as mineral development. Occasionally, answers would also conflate forestry with other non-resource sector areas, including archaeology.

Maybe if we got to see what other people do for other forestry work instead of just prospecting. – Crew Leader in Training, Male

I don't really know about any other forestry jobs besides the archaeology one. – Second Year Ranger, Female

4.4.2 FNNRYEP's Influence on Education and Employment Opportunities

Though a few participants described FNNRYEP's potential education- and employment-related effects as being contingent on pursuing careers within the resource sector, the vast majority provided unqualified descriptions of how FNNRYEP affected their outlooks on education and career opportunities. Most broadly, FNNRYEP's effects were described as relating to either increasing participants' confidence in their personal abilities and opportunities or as influencing their career trajectory in some way.

4.4.2.1 Increased Confidence in Personal Abilities and Opportunities

Participants credited FNNRYEP with improving their confidence in their own education- and career-related abilities and resulting opportunities. This was accomplished through: improving participants' education and career prospects; increasing participant's pride and self-esteem; supporting the development of life and job skills; and facilitating the expansion of participants' personal support networks.

4.4.2.1.1 Improved Education and Career Prospects

Participants strongly felt that FNNRYEP had contributed to their abilities to achieve their individual long-term education and career objectives. This effect was achieved through a number of different means.

Firstly, numerous participants highlighted the importance of receiving formal high school cooperative education credits as supporting their overall educational success.

The co-op, as well. I would have never have finished high school if not for the credits I gained in Rangers. – Crew Leader in Training, Male

Secondly, the formal certifications received through FNNRYEP were cited by participants as being a valuable and differentiating asset in securing future opportunities.

All the certification you get from it. Hoping to use it to gain more opportunities in the future in job organizations. – First Year Ranger, Male

Finally, participants described the experience, networking opportunities and employment supports provided through FNNRYEP as supporting future education- and career-related growth.

Outland can help you get different jobs... They can help you. Like I remember last year, we went to the mine and then [someone] got a job through Outland or something. So it helps give you better chances. Better opportunities than other people could. – Second Year Ranger, Female

I think it's helped me towards the right path. I think it's helped me choose. It's opened up another opportunity for another camp... It opened up that opportunity. Because I tried last time and I didn't get accepted. I feel like I have a better chance from coming here. With your guys referencing and all of that. – First Year Ranger, Male

4.4.2.1.2 Increased Pride and Self-Esteem

Many participants credited FNNRYEP with helping to increase their confidence, pride and self-esteem. In most instances, these feeling were associated with the act of completing the entirety of FNNRYEP, which they perceive to be a challenging personal endeavour.

I wanted to feel like I accomplished something and finish both years. –
Second Year Ranger, Female

To be able to say like I accomplished things throughout my two summers here... Because you learn a lot and do take more experience from it. –
Second Year Ranger, Female

Many people before me didn't finish in this program. It's only... like only two people have finished the program before me, so far. And there is a handful of people who have quit. They couldn't handle it, I guess, and being away from home. – Crew Leader in Training, Male

In some cases, feelings of pride were compounded by the satisfaction of being able to prove “haters” wrong.

And the only reason I am here and trying is because I know a lot of people said I couldn't do it and stuff. And they are, like, ‘Why are you going over there? You can't do that.’ – First Year Ranger, Female

Through accomplishing these feats, participants felt better prepared to take on future opportunities, such as post-secondary education and careers.

Like I was kind of worried, at first, about going to college or university. About say going in for forestry or geology. But this program kind of helped me gain more experience and get a better feel of what I am actually going into my first year of college. – First Year Ranger, Male

It makes me feel more confident that I can actually work for someone. Maybe get a contract with forestry, or any kind of other business. Going to build something for me. – Second Year Ranger, Male

4.4.2.1.3 Life and Job Skill Development

Participants credited FNNRYEP with supporting them in the development of various essential life- and job skills. These included: understanding employer expectations; work ethic; perseverance; communication; independence; socialization; teamwork; problem solving; positive attitude; and healthy lifestyles.

I think I learned a lot of life skills. To make me like better, and to just be around people... To have a routine and to develop better working habits. So I have those. I will when I get back home. – First Year Ranger, Male

For me, I think this program really teaches you how to be strong-minded. Also physically. But you have to be strong-minded to do something, and to overcome something. So this program really teaches you how to push. – Second Year Ranger, Female

The program has helped me a lot. It taught me how to have good communication skills, and be reliable, and independent. And to be on time. And I think the program teaches us for like how to prepare for our jobs in the future. – Second Year Ranger, Female

4.4.2.1.4 Expanded Personal Support Networks

Many described FNNRYEP as an invaluable opportunity to build and expand their personal support networks.

Most reserves have rough stuff going on: addictions, family mistreating them, mistreatment, nothing to do on the reserve. Sick of seeing the old faces, I guess. But once you come out here, first couple of days you hate it. Like you want to go home, feeling sick. After the first week, you start having fun. You start talking to everybody and having fun. And it becomes like family to you. – Second Year Ranger, Male

I like being here. It's like when I first came here, I didn't know anyone, I didn't talk to anyone. But now that we are all like comfortable with each

other so we have kind of build up our own family kind of. – First Year Ranger, Female

These networks of loving, like-minded individuals are seen by many as contributing factors to long-term educational and career success.

I have made friends for life here. I have some of the Rangers from my first year, we are still friends. Yeah, we don't get to talk to each other as much, but we are always going to be there for each other when the time comes... You know, it builds something like a network. A network throughout all the reserves. For example, say I'm in Thunder Bay, nowhere to go. I give one of my Ranger buddies a call and I'm like, 'Hey, man, do you think I can crash today? I'm hit on some pretty rough stuff.' And they are more than likely to be like, 'Yeah come on over, man, you know it would be nice to see you.' – Crew Leader in Training, Male

4.4.2.2 Influenced Career Trajectory

In addition to exposing some participants to completely new careers and career pathways, the ability to experientially learn about various previously-known education and career opportunities served to increase participants' consideration of those opportunities.

It does help us figure out what we want to do in the future. For example, with the first aid, some people might want to be paramedics. Like [one Ranger] didn't know what she wanted to do. But after this thing, the paramedic, she found that she really likes that and is thinking 'I might really want to do that in the future'... It's really interesting how in that six weeks you can really find yourself and what you want to do. – Second Year Ranger, Female

In some cases, experiential learning helped participants discover that specific opportunities were more enjoyable than previously thought. In others, it allowed them to

explore new personal interests they were previously unaware of. These effects occasionally served to alter participants' overall career objectives and trajectories.

A lot of people told me not to tree plant; it's like really boring and hard. It is hard, but it's not that boring to me... Just putting all the trees in the ground. Planting as much as I can. Just every day you set yourself a goal and then try to reach the goal. – First Year Ranger, Female

When I was in high school, I always wanted to do art... Then I came to this program and it kind of opened my eyes a little more wide to all of the more interesting jobs out there other than something to do with art. Last year, they took us to the ACE Building with the college. And I didn't realize there were so many jobs with airplanes and stuff. I just thought there was the airplane mechanic and the pilot, and that was it. Then I realized I liked taking things apart and putting them back together. And then I did that a little and thought maybe I could consider aircraft maintenance because I also like being in planes and stuff like that. – Second Year Ranger, Female

In other instances, experiential learning provided through FNNRYEP served as a catalyst for participants to consider careers that are held by members of their families, but which they had previously perceived to be unattractive for various reasons.

My family has always had jobs in forestry. Like, that's how they do their living. Before coming here, like, I didn't think of any careers in forestry. And once I got around to doing hands-on work, I found out how fun it can be. Like, I wouldn't mind continuing on with a career in this. – First Year Ranger, Female

For some participants, the FNNRYEP experience simply enabled them to more seriously consider various career options, rather than help them decide on one specific opportunity.

I haven't really found anything that I like doing, what I want to do for a career. But I think just progressing through this program I just found out a lot about what I like. You know? What I want to do as a career. – Crew Leader in Training, Male

4.5 UNDERLYING FACTORS INFLUENCING PARTICIPANT PERSPECTIVES

Four underlying factors influence First Nation youth perspectives on forest management and capacity development: relationship; intergenerational Equity; cycles and cyclicity; and the resource trap.

4.5.1 Relationship

It's basically the teachings that I live my life by... the Seven Grandfather Teachings. My Elders told me, 'If you can live by that, you can live in peace.' It's all about taking care of what you have. And it's not just us, as First Nations. It's not about a people, a race. We are all one. – Crew Leader in Training, Male

Participants demonstrated a foundational, guiding belief in a relationship-based conceptualization of existence, in which human and non-human entities interact with one another within complex relationship networks. It is through understanding the composition of these intra- and inter-community networks, individual and collective responsibilities within them, and the potential implications of various actions on other entities within those networks that participants were able to form and articulate personal perspectives related to forest management and capacity development opportunities.

4.5.1.1 Intra-Community Relationship Networks

Intra-community relationship networks were central to participants' perspectives and decision making frameworks pertaining to forest management, education and career opportunities. Participant understandings of intra-community relationship networks are most appropriately understood in a broad conceptualization of the term, referring both to relationships existing within the geographically-defined First Nation communities to which participants belong as well as the networks that are actively created by participants themselves within external contexts such as workplaces and educational institutions. It is within these intra-community relationship networks that participants were able to develop closer personal support networks. Though the composition of these networks was unique to each participant, they commonly consisted of family, friends, Elders, and other trusted relations. These personal support networks serve a variety of important functions within participants' lives.

Firstly, personal support networks serve as a trusted source of knowledge and information. This knowledge is often privileged within participants' own perspectives and decision making related to both forestry and capacity development opportunities.

There was one time I went to this Elders' meeting and, like, this highly respected Elder told us how his two friends went blueberry picking. And one of the... I think it was aerial spraying. And I guess, like, they both ate the blueberries and they got sick. The first guy passed away. Then the second guy, I don't know, was like worried. I don't know. Just like stuff like that. They don't really tell the public. – Second Year Ranger, Female

I am not against it, either. Like, my dad grew up in the bush. He was actually like a bush man. That's what they call him. So, like my dad would always take me out to get firewood and stuff. He would always take me there and like teach me, tell me. – First Year Ranger, Female

I came into this program because I went away from school, then all of a sudden I came back and everybody was talking about this Outland place. Then, both of these people had to fill me in on what the hell is going on. I was like ‘Okay’. So, I went to go to that presentation Outland gave with the second year Rangers. They were sitting in that classroom. And they were like ‘It’s so fun here’, ‘You guys are going to love it, if you guys go!’ So, I was like, ‘Okay, I will apply.’ – Second Year Ranger, Female

Personal support networks also serve as a counterbalance to the adverse lived realities experienced by many participants. Daily challenges and barriers to success described by participants were numerous and often included pervasive social inequities within First Nation communities as well as individual “haters” who actively discourage participants from pursuing their passions.

Most reserves have rough stuff going on: addictions, family mistreating them, mistreatment, nothing to do on the reserve. – Second Year Ranger, Male

Like someone you’ve known for a very long time telling you you’ll never make it... All saying that to your face. Well, that makes you feel bad about yourself. Makes you second guess your decisions. – First Year Ranger, Male

Personal support networks thus become a stabilizing factor for participants, promoting positive relationships with self and increasing participants’ resilience to challenging circumstances within their lives. For example, moral support provided through these networks was often highlighted as a significant contributing factor to long-term educational and career success.

That’s what everybody needs, I guess. They want a job so bad. They need that person to push them. – Second Year Ranger, Male

Tell me I can do this, so that I can have the motivation in myself, so that I can do it. – Second Year Ranger, Female

The presence of role model figures within participants’ support networks was also cited as a contributing factor towards their decision making, vocational success, and

sense of personal wellbeing. In turn, many participants also articulated a desire to become role models themselves and to use their personal experiences to provide positive supports to other young people within their networks.

We just need more role models and people to support us because most of the adults, all they tend to think about is themselves. They don't care about what the youth are doing because they think of alcoholics and druggies. – Second Year Ranger, Female

I know I can do a lot with my life. I am sure those people... they can, too. I think a lot of kids on the reserve have potential, too. They just don't realize it yet. And I just want to show them that they can do whatever the hell they want with their lives. – Crew Leader in Training, Male

Finally, the foundational importance of personal support networks was underscored by the specific choices of language that participants used to describe them. More specifically, many described the friends they made at FNNRYEP as "family". This newly-developed family-like support network helped participants overcome the challenges associated with being away from home and living in a foreign, often stressful environment. Many saw this network as also being vital to their long term education and career success, by supplementing or replacing the support received from their own biological families, who may not be in a position to fully provide the support that participants require.

But once you come out here, first couple of days you hate it. Like you want to go home, feeling sick. After the first week, you start having fun. You start talking to everybody and having fun. And it becomes like family to you, I guess. – Second Year Ranger, Male

We don't get to talk to each other as much, but we are always going to be there for each other when the time comes. When the time is needed, when the time is right, we will step up to the plate. – Crew Leader in Training, Male

Broader, less personal intra-community relationship networks were also discussed by participants. These broader intra-community networks were seen as important to community governance and for informing participants' perspectives related to community-based decision making, community and youth-focused programming, and the civic responsibilities of individuals within their broader communities.

Participants expressed a belief that whole-of-community relationship networks should be leveraged to inform community decision making related to both forestry- and non-forestry related matters. This model stands in contrast to many communities' current, more centralized decision making processes, which some participants felt do not adequately address their community's diverse range of interests and needs.

First Nation bands should be talking to the communities... Trying to get their opinions. Get people to come out, talk to them. We should be encouraging each other and not trying to put everybody in a hole. – Crew Leader in Training, Male

It's usually most of the people on Council and stuff. Like the youth never get a say in anything. Like they always assume that the adults are... like the Elders are what they need and what they want. But, if you think about the youth, they have a better mind of things. Like they think of a lot of things to help our environment and stuff. But they never show it, because they never get a chance to. – First Year Ranger, Male

The importance of youth-focused programming, such as recreational, cultural and employment opportunities, was also highlighted by a number of participants. Several described reserve communities as having a significant deficit of healthy, constructive opportunities for young people to interact and to be involved in civic life.

Like, some Native people, they don't live on the reserve. Like, nothing is changing. There's nothing there. – Second Year Ranger, Female

Participants described a number of factors that they believe contribute to the lack of opportunities for youth within communities. These included both a lack of funding for

youth-focused programming and poor communication between young people and community decision makers. This lack of opportunities was perceived to lead to a number of negative personal and community outcomes, including higher rates of depression and suicide, alcohol and drug abuse, and social isolation. Several participants expressed a belief that many of these negative social conditions could be alleviated, at least in part, through targeted youth-focused programming, including forestry-related recreation or employment.

On reserve, it's kind of isolated. There's no stores. You have to go to the town next to us. So if we have something to do, like out in our forests, giving us objectives, giving us meaning to do something, instead of being inside. Or, I'm not sure. I don't live on my reserve anymore. Whatever they do, I am sure it's not as fun. It's boring. But getting us out in the woods, giving us a job, a task. That could go a long way. – First Year Ranger, Male

For some participants, formative, early life experiences within both family- and community-based relationship networks have fostered within them a strong sense of civic responsibility. Several participants expressed a strong, guiding desire to “give back” or “help people” through their education and career endeavours.

I have always like, throughout my whole life, I have always liked helping people and I have a big heart. And like, even if I can just help in life like in a small way, I'd feel like... it will make me feel happy. I don't know, because... a lot of people that probably are out there... we haven't had the easiest life. Like we have never grew up... like I never got to grow up with both of my parents. They divorced when I was two. And just like I want to sort of help people in like situations that I have been in. Just to like give them my feedback and how I dealt with that sort of thing. – Second Year Ranger, Female

4.5.1.2 Inter-Community Relationship Networks

Relationships existing between communities were also seen as having a foundational influence on participants' perspectives and decision making frameworks related to both forest management and capacity development opportunities. Within the specific context of the forest sector, this included relationships between Indigenous and settler communities, including those with government agencies and commercial forest sector actors.

In a broader societal context, participants expressed an acute awareness of various inter-community social dynamics, as well as their resulting effects on both personal and collective agency. This included the widespread anti-Indigenous racism that is perceived to exist within some primarily non-Indigenous northern Ontario communities. Participants feel that these pervasive racial biases lead to significant, tangible barriers to their career development and success.

Just because you have a Native kind of background you are kind of restricted to do a lot of things. Like, in Thunder Bay, you're kind of terrified to walk on the streets. Like, you see a police cruiser go by and you get scared that they might randomly check you or something. – Second Year Ranger, Female

And I remember a group interview at Walmart. And there was me, and another white girl, I guess. And there was this [visibly] Aboriginal girl. And she did the best out of the three of us. I thought she was going to get the job, the way she talked and the way she answered the questions. And she didn't get the job and I did. But I felt she deserved it more than anyone. But I've never seen her since. So she didn't. – Second Year Ranger, Female

I don't really see it anymore, anyways. Because there's like... I guess I will stand up for myself. I am not saying anyone is more vulnerable, but there's a lot of others who get it worse. So that's a barrier to being what

we want to be. And it does put negativity in our brains. – First Year Ranger, Male

As a result of such widespread, systemic discrimination, one participant expressed a genuine feeling of gratitude and good fortune to attend a school in which there is “barely any racism going on”.

Participants also described engaging in inter-community relationships that extend beyond human-to-human interactions to include non-human entities within the natural world. These relationships were characterized in a similar manner to those with human entities, often using personified terms such as "Mother Nature" and framing interactions in a relational, human-like manner.

And the fact that we're planting those trees is like paying back Mother Earth. – First Year Ranger, Male

Traditional cultural teachings were often cited as guiding interactions within these human-to-nature relationships. Respect for, and reciprocity with, the land (i.e. "giving back"), for example, were repeatedly cited as fundamental underlying principles for guiding interactions between humans and the natural world.

Every First Nation knows, it's the land itself, we have to give back to her. She's the one that provides for us. We have water and trees out there... We just have to make sure we respect what she makes for us. – Crew Leader in Training, Male

Several participants also described the natural world as a classroom, where proper relational protocols could be taught and learned through the expression of other human-to-human relationships. This knowledge transmission generally involved learning-through-doing from parents, grandparents and respected Elders from the community.

The grandmothers or grandfathers would take about, maybe 7 to 6 kids a week out in the bush for the whole week. And we would learn how to trap, hunt, fish with everything that is already provided in the bush. – Second Year Ranger, Male

Relationships with place and the natural world were also seen to have a significant psychological influence on participants. Many described specific natural spaces with which they maintained important personal relationships. Disruption of these relationships—through either dislocation or physical disturbance—was consequently cited as a source of deep emotional and psychological distress.

I feel like it kind of upsets me. Because when I was younger we'd always go to this place. And we have this area where we can always go play in. And like seeing all that gone, when you come back when you are older. It just kind of upsets me. – First Year Ranger, Female

4.5.2 Intergenerational Equity

[The youth] are setting up for the future generations of their children and their children's. They make the land and the world a better place. – First Year Ranger, Male

The need to consider the implications of actions and interactions across time and generations also served as a foundational, guiding influence on participants' perspectives pertaining to forest management and capacity development opportunities. This principle manifested itself in a variety of contexts, including participant conceptualizations of responsible forest management, perspectives on community decision making processes and the guidance of knowledge and behavioural exchange.

4.5.2.1 Sustainable Forest Management

For many participants, conceptualizations of responsible forest management were predicated on sustaining forest ecosystems for the benefit and enjoyment of future generations. This did not mean that participants were opposed to fully utilizing forest resources as a means of deriving socioeconomic benefit for contemporary First Nation communities. Indeed, participants were well aware and supportive of the wide range of socioeconomic benefits forest resource development could bring to their communities, including employment opportunities, industrial forest products, community revenue and traditional non-timber forest products. Rather, participants expressed a guiding belief that today's development processes should not inhibit future generations from also deriving meaningful socioeconomic returns.

Well, I guess it's important to have lumber, too. We have to cut down trees for a bunch of essentials. But if it is not necessary, then I don't think so. No. But definitely the tree planting will benefit not just the environment and benefit us, but also future generations. – First Year Ranger, Male

The importance of maintaining inter-generational equity within forest management was also conveyed through the ways in which participants described their perspectives on the various employment-related tasks they engaged in during FNNRYEP, which included tree planting and pre-commercial thinning. Many described receiving a deep sense of personal satisfaction from the knowledge that their current efforts would help enable future generations to also enjoy the benefits of healthy forested ecosystems.

It's like we are creating our own forest. Like we are just planting the trees and in a few years down it will actually be a forest kind of thing. I have actually wanted to go back to where I have planted and look at all the trees I planted and say, 'Wow! I did this!' Animals are living there, bugs are living there and a new ecosystem can be created. – Second Year Ranger, Female

4.5.2.2 Decision Making

Participants emphasized the importance of meaningfully involving people of all ages in community affairs and decision making. Every individual is seen as having the potential to provide valuable, unique perspectives and contributions to the community. These contributions are often dictated by cultural norms, individuals' experiential backgrounds and contemporary power structures within communities. In short: Elders are an integral source of wisdom, experience and cultural knowledge; adults hold conventional power and decision making authority; youth provide energy and creativity; and children possess the capacity to observe and learn.

The biggest role that children play is learning. Learning what's going on around them, what's happening in the environment, what's happening in the reserve... We can't just have them uneducated when they step up to the plate. It's like baseball. If you don't show him how to hit the ball, he's going to get up there and it's going to be hard for him. – Crew Leader in Training, Male

[Youth have] fresher perspectives of things than most people do. [Adults are] so caught up in the past, they don't come up into the future. Like with us, we're getting into the future right now. – First Year Ranger, Male

[Decision making is] for people who are like 25 and up. Anyone who has any kind of experience. – Second Year Ranger, Male

We lost our tradition a long time ago. But my cousins and my grandmothers... well, not my grandmothers, but other grandmothers on

my reserve have been trying to get that back. They finally started getting it back a couple of years ago. – Second Year Ranger, Male

Though some participants felt their communities had taken meaningful steps towards incorporating the perspectives of all age groups, including through the creation of community youth councils, many felt as though significant power differentials existed within their communities. This imbalance was visually described by one participant utilizing a Medicine Wheel teaching that he had received.

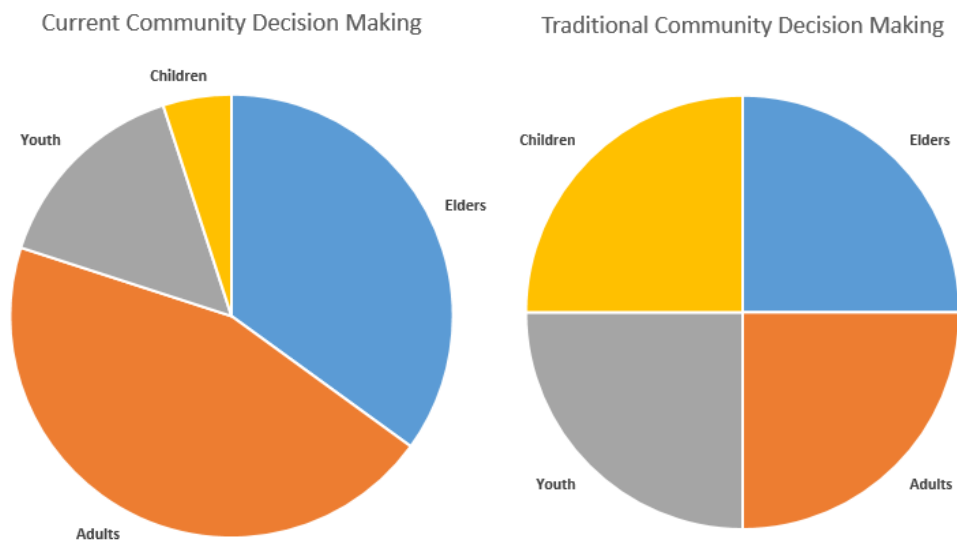


Figure 2: One participant's conceptualization of current versus traditional community decision making processes (Note: Figure is for conceptual illustration only. The participant did not attribute teachings to specific directions. Consequently, traditional Medicine Wheel colours were not used.)

These current imbalances were seen as being driven by a number of social circumstances and individually-held perspectives. These included: perceptions of young people as substance abusers and troublemakers; centralized community governance and

decision-making structures; belief that young people lack worthwhile experience; and poor communication between individuals of different generations.

I feel like adults won't listen. Because we are young. Like we don't have as much life experience as they do. So I feel like they will just like cut our ideas to the side. Which is really, really shitty. – Second Year Ranger, Female

They think we are just a bunch of kids who don't know what they are doing. I am like 'Holy! Just listen!' It's just like five minutes of your time to listen. – Second Year Ranger, Female

Usually they have an Elders' meeting. It is usually either Wednesday or Tuesday and they are always encouraging the youth to go, but we can't because of school. And then, the Elders are always getting mad at us because we never show up. – Second Year Ranger, Female

Participants viewed the (re)adoption of whole-of-community engagement as one means of promoting increased community resilience to long term challenges and change.

It's plain and simple. When all those people are dead and gone, they will have us. You know what I mean? I'd rather have them listen to us now instead of us trying to figure everything out and start where they ended things, just because we have to. You know what I mean? Not by choice, but because we sort of have no other choice or our communities will go to crap. – Second Year Ranger, Female

4.5.2.3 Knowledge and Behavioural Exchange

Meaningful opportunities for inter-generational knowledge exchange and role modeling were highlighted by participants as essential precursors to informed decision making at both an individual and community level. These personal interactions were seen as vital to transmitting important cultural knowledge—including land-based

knowledge—between generations, as well as for instilling attitudes and abilities that will ultimately enable young people to attain educational and career success.

Without the Elders we're going to lose our traditions, our teachings... I did like this co-op... And they were doing interviews with the Elders and I learned a lot of things from that, that I didn't know. Like where all the burials were, all the sacred rocks and paintings. Where all the good fishing spots were. Even with my family history. – Second Year Ranger, Female

A lot of the people I have met here have made a large impact on my life. The amount of effort they put into work here. They are all just big role models to me. – First Year Ranger, Male

By perpetuating positive attitudes and behaviours, individuals of all ages have the ability to support the wellbeing of subsequent generations. This foundational, guiding belief was readily evident in participants' widespread desire to both have positive role models and to be role models themselves.

I am here to inspire people to do good in their lives... to inspire others, to push others to do their best, to jump those barriers in one shot. To follow my work ethic, to follow my lead. I am not going to show them how exactly to do this. I am here to teach them to do it the way they want to do it. – Crew Leader in Training, Male

Conversely, participants also expressed an acute awareness of the potential inter-generational implications of modelling harmful or unhealthy behaviour.

Second Year Ranger, Female: A lot of [young people] are like depressed or shy or... all the kids I know on the rez are like... don't talk. Like they never speak up for themselves. Like a lot of bullying.

Paul: Why do you think that young people are like that?

Second Year Ranger, Female: Because, like seeing the adults around them. They're like setting shitty examples for everyone else... They all like drink and like do pills and talk bad about other people.

4.5.3 Natural and Socioeconomic Cycles

Participants expressed a clear recognition of the prevalence and influence of cyclical processes within their lives and within the environment. Through that recognition, participants were able to more fully understand the roles they play within those cycles as well as the potential implications of individual and collective actions within them.

4.5.3.1 Natural Cycles

Participants recognize the important role that natural cycles of succession play within forest ecosystems, including the necessary role of disturbances, such as wildfires.

They say that the forestland that was burned to the ground, everything there will be fresh green. Fresh. It will be greener than this. Everything that's there... It's one of Mother Earth's traditions. Like the burning of the forest. If it's happening out of nowhere... if lightning hits, I think let the forest burn. Don't stop it. It means it is trying to cleanse itself. –
Second Year Ranger, Male

Correspondingly, conceptualizations of responsible forest management are overwhelmingly predicated on the maintenance of a balanced cycle of harvest and renewal.

The amount of trees you cut down [should be] the amount of trees you had to replant. Like you take a tree, cut it down and haul it out. And you then have to plant another tree in that area. Something like that. – First Year Ranger, Male

Many expressed significant discomfort around forest management regimes that did not actively regenerate an amount of forest equal to that which was harvested through either planting or aerial seeding. Indeed, some participants went so far as to suggest that companies should be legally mandated to practice a balanced cycle of harvest and active renewal.

I honestly believe that I think we should legally have never been allowed to leave cutovers unattended. You know, left there. We should be the ones to go and fix it because Mother Earth can't simply plant, can't simply grow trees out of the ground, and that's where we come in. We can grow trees, we can make trees, we can choose where we place these trees. Wherever we place them, Mother Earth takes care of them. – Crew Leader in Training, Male

For most, the recognition of the guiding role of natural cycles within forest management was newly-found. Many attributed this recognition to the education and experience received through the First Nation Natural Resources Youth Employment Program (FNNRYEP). Prior to their experiences in FNNRYEP, participants described holding predominately negative views of forest resource development. These opinions were generally informed by either negative personal experiences related to seeing recently harvested areas (i.e. clear cuts) or through adopting the negative opinions of other trusted relations.

Yeah, I used to kind of see it as bad because when you drive by something like that happening, you just see all the land that's gone. – First Year Ranger, Female

Through FNNRYEP, participants came to learn about additional aspects of the forest management cycle that are often less visible to non-industry observers, including planning, renewal and regulatory efforts. As a result, participants were then able to recognize forest management's intended cyclicity and sustainability (i.e. inter-general

equity). This recognition improved participants' overall opinions and comfortability towards forest management, including clear cut harvesting practices.

I thought they just cut down trees and make paper or whatever it is they wanted to make. And they just leave it and worry about the money. But ever since we went in the program last year, they taught us what they actually do, instead of just hearing about the bad stuff. Like there's good. Like pros and cons. And we learned that they replant everything, so it can grow right. To just restart the cycle of everything. So I got well educated
– Second Year Ranger, Female

Even following the FNNRYEP experience, however, some participants continued to express a persistent concern that although forest management, in its idealized form, is a sustainable cycle, current management processes are often imperfect in their cyclicality and, therefore, need to be subject to continuous improvement.

All the cutovers back at my home, they are there, and they have been there for years and nobody has done a thing. We should fix them because we are the ones that cut that forest. – Crew Leader in Training, Male

4.5.3.2 Socioeconomic Cycles

Educate them. Show them. Teach them that it is possible for them to do this stuff on their own. That's the main key of breaking the cycle. And they should make young people believe that they can do it. They have to believe in themselves before they can believe in anything else. – Crew Leader in Training, Male

Participants conceptualize many prevalent social challenges that are seen to plague their communities today as self-reinforcing cycles of trauma. Examples of these cycles included addictions issues, physical violence, emotional abuse and low educational attainment.

Some kids have some bad upbringing as a child, or something. You know, my dad, he seen a lot as a kid, seeing his parents get into fights. They were drunk most of the time. They always made him feel like crap, so he turned to alcohol. Yeah, my older sister too. My older brothers were more into that. – Crew Leader in Training, Male

The manifestations of these cycles are seen as important contributing factors to youth decision making around education and career opportunities. In some instances, participants described feeling trapped in and constrained by these cycles. One commonly cited example was the cycle of active discouragement that deters community members from pursuing higher education or careers through the attempted use of social isolation.

People who are going to, not discriminate, but like discourage you. Say if you're doing better than one person in your rez, they start to spread rumours about you. Like making you sound like a bad person for taking this course or doing this. – First Year Ranger, Male

Conversely, some participants described leveraging negative cycles as an added source of motivation to pursue higher education and careers. Indeed, recognizing negative cycles within communities served as a call to action to try to break them.

The only reason I am here and trying is because I know a lot of people said I couldn't do it and stuff. And they are like, 'Why are you going over there? You can't do that.' – First Year Ranger, Female

Beyond motivation, persistent cycles of low education and career attainment within communities served as practical constraints on participants' decision making around educational opportunities. It was recognized that even when a family or community is emotionally supportive, they may not possess the practical skills required to support young people in their education or career endeavours. This makes educational success and skill development more difficult and, thus, serves to further perpetuate the cycle.

Well most of my family weren't really doing good as far as education. So, I was the only one paddling the boat, I guess you could say. So, I had to work on my own at home. They couldn't have helped. They wouldn't know. So, I played that major role. – First Year Ranger, Male

Participants, therefore, described the importance of developing alternative cycles of support as a means of overcoming cycles of low educational attainment and discouragement within families and communities. Participants expressed a strong desire to learn beneficial attitudes and skills from supportive, knowledgeable individuals within their communities, workplaces and educational institutions.

It's just the fact that a lot of the people I have met here have made a large impact on my life. The amount of effort they all put into work here. And they are all just big role models to me... The management and my coworkers. – First Year Ranger, Male

Every teacher says they're always there. Open and everything. So, that's why you can go to them for moral support. – First Year Ranger, Male

Tell me I can do this. So that I can have the motivation in myself. So that I can do it. – Second Year Ranger, Female

In attaining these skills and attitudes, young people are better positioned to subsequently instill them within others. In creating a culture of mentorship and support, socioeconomic cycles of trauma and discouragement within communities could eventually become replaced by self-reinforcing cycles of positivity and attainment.

I will be the first in my family to be going to any post-secondary and I want to set an example for the rest of my family. To go to university. Get out there. Get to the best of your ability. See the world for yourself. And that will be another way to get young people out of the reserve. Because of what happened in the past... all of our residential schools. You know, all that could be reversed. We just have to take the tougher and necessary stuff to do so. – Crew Leader in Training, Male

4.5.4 Resource Trap

Internal conflict over the acceptable balance between the benefits and negative repercussions of forest resource development permeated perspectives related to forest management and its associated capacity development opportunities. Indeed, rather than viewing forestry in categorical terms (e.g. all forestry is bad), many participants expressed nuanced perspectives of forest management and capacity development, informed by a recognition of the diverse range of positive and negative effects that forestry can have on both individuals and communities. It is in understanding and evaluating this array of potential effects in relation to one another that perspectives and decisions were able to be formed.

Some participants, for example, expressed an increased willingness to tolerate less-than-ideal forest management standards because of the economic benefits that it brings to their own families, who are often employed within the sector. Fear of personal financial instability, therefore, constrained their willingness to advocate for what they perceive to be responsible forest management.

I don't want to put my dad out of business or anything. I think they should just really cut back on the number of trees they cut down. –
Second Year Ranger, Male

This constraining effect also extended to the societal level. For many First Nation communities, forestry represents the only meaningful local source of revenue and employment. Consequently, at risk of losing vital economic opportunities, communities often accept resource development's negative socioenvironmental consequences, including environmental degradation and community health effects.

Well, since most of them work in the mill in the community, I guess they find it helpful. They don't really question the negativity of the mill, because it brings employment to my community. They don't like talking bad about it. It's helping them to live on the rez...so...yeah. – First Year Ranger, Male

Educational and career aspirations were similarly informed and constrained by internal conflict between the potential benefits and consequences of forestry-related development. For example, many participants expressed receiving a sense of personal fulfillment and joy from pursuing employment that is perceived to be of benefit to their communities and the environment. At the same time, maintaining close connections to personal support networks—which generally reside within their First Nation communities—is a significant contributing factor toward education- and career-related decision making and success.

In some situations, these competing desires can come into direct conflict with one another, necessitating difficult education- or employment-related decisions. For example, the availability and convenience of low-skilled forest sector jobs within communities may entice individuals into careers which either rely on the perpetuation of environmental degradation (e.g. aquatic pollution from mills) or contribute to the reinforcement of negative social circumstances within communities (e.g. substance abuse; low educational attainment). By accepting such careers, individuals will likely exhibit less willingness to advocate for desired changes within those systems at the risk of losing the employment that is vital to them and their families. This unwillingness to advocate for change, in turn, serves to further perpetuate those undesirable processes.

Forestry wants Aboriginal people, I think, because we are all used to being in the bush. And I guess because we don't have like a lot of jobs out in the community. So, this will be an easier job. It will be closer to

home, it will be more like home. Rather than if you lived in the city or something. – Second Year Ranger, Female

The reserve, you know, it just brings experiences. You start smoking at a young age and I feel like that environment brings that curiosity... As for the mill, I also don't think it's necessary... It's just keeping people within the reserve. And it's actually a good thing for a job, but they are never going to leave the reserve. Because now my brothers are working there. And now my brother has a kid and he has a house there. And, most likely, when they are old, my nephew most likely is going to work there. So I just think it's a chain that will keep on going. – First Year Ranger, Male

5. DISCUSSION

This study endeavoured to explore the knowledge and perspectives of northern Ontario First Nation youth pertaining to the forestry sector and its associated capacity development opportunities. By analyzing such perspectives, underlying factors that influence First Nation youth perceptions and decision making processes were also illuminated. To accomplish these objectives, focus group conversations and one-on-one interviews were conducted with 49 participants in the First Nations Natural Resources Youth Employment Program (FNNRYEP). During these sessions, participants were asked a series of open-ended questions regarding: forest resource development; education and employment opportunities; barriers to and factors promoting academic and vocational achievement; and FNNRYEP's perceived influences on their personal, educational and career journeys.

Through subsequent qualitative coding and inductive grounded theory analysis, four underlying cognitive influences were identified: relationship; natural and socioeconomic cycles; intergenerational equity; and the resource trap. These influences are hypothesized to contribute to participants' broader perceptions and decision making processes regarding forestry and capacity development opportunities. When situated within the larger body of literature, these explanatory factors indicate that participants' thought processes and worldviews are deeply grounded in and affected by the unique historical experiences, sociocultural traditions and contemporary lived realities of their First Nation communities.

The sociocultural significance of relationship among First Nations throughout Canada, for example, is well documented. In British Columbia, Castleden et al. (2009) have attributed the worldview of *Hishuk Tsawak* (“Everything is one, everything is connected”) as a foundational belief behind Huu-ay-aht approaches to forest management. Cajete (2000) similarly described the cultural importance of the Lakota teaching of *Mitakuye oyasin* (“We are all related”) to guiding community perceptions of and interactions with nature.

Wahkohtowin (i.e. *Wahkootowin*) is another such relational concept that has been discussed at length within the context of numerous academic disciplines. *Wahkohtowin* is a Cree (*Nehiyawak*) worldview which translates directly to “relation” or “relationship” (Macdougall 2010). *Wahkohtowin* emphasizes the importance of kinship (O’Reilly-Scanlon et al. 2004) and posits that individuals can only be fully understood within the context of their relationships, including those with family, friends, community members, non-community relations and the natural world (Macdougall 2010). In other words, *Wahkohtowin* is, “a worldview linking land, family, and identity in one interconnected web of being” (Macdougall 2010, p. 242).

Given that First Nations within close geographic proximity often influence and share each other’s ideas, values and worldviews (Chartrand 2013), it is unsurprising that Anishinaabe philosophy is similarly grounded in the primacy of interconnectivity (Rheault 1999). Anishinaabe creation stories situate human beings within a complex web of life (McGregor 2004) and emphasize that humans are not distinct from other forms of existence but are, rather, only one part of the whole (Rheault 1999). By embodying the same energy and spirit, humans are thus able to relate to all forms of existence (Littlebear 2009).

The interconnections between all aspects of life emphasized with *Wahkohtowin* thus become fundamental to First Nation understandings of events and for establishing standards of behaviour (Wenger-Nabigon 2010). Indeed, Borrows (2010) has conceptualized *Wahkohtowin* as an overarching Indigenous law that governs all relations between individuals, families, governments and non-human relations.

Like much Indigenous legal thought, *Wahkohtowin* thus facilitates respectful and harmonized kinship between all forms of life (Chartrand 2013) by informing the creation of shared sociocultural values. *Wahkohtowin*, for example, promotes the values of reciprocity, mutual support and dependency (Macdougall 2010). Combined with other foundational teachings, such as the Seven Grandfathers or Seven Gifts—wisdom, love, respect, bravery, honesty, humility and truth (Rheault 1999)—a conceptual basis is created upon which both individuals and communities can ground their actions, decision making processes and treatment of one another (Macdougall 2006).

Many of these socioculturally-rooted relationship-focused values were strongly evident in participants' perspectives and decision making processes related to both education and career opportunities, as well as in their perceptions of the First Nations Natural Resources Youth Employment Program (FNNRYEP). Examples of such relationship-rooted perspectives and values included: the importance of social and peer supports, including role models, in achieving educational and career success; valuing consciously-created relationship networks; viewing friends as family; the deep psychological effects of haters and other unsupportive individuals; the need for relationship-focused institutional supports, including moral support; the impetus to give back to society and the environment; and the value of guided, experiential learning.

Participants' perspectives related to responsible forest management, forestry-related decision making and the forest sector, as a whole, were similarly grounded within relationship-focused sociocultural values. This grounding was most evident in the ways in which participants conceptualized responsible forest management. For many, forest management should promote a sustainable balance of harvest and renewal and be conducted in a manner that minimizes adverse effects on wildlife, water and other ecosystem components. These perspectives demonstrate a commonly-held First Nation belief that all beings have a place in society (Miller and Davidson-Hunt 2013). Humans must, therefore, consider nature's perspectives (Chartrand 2013) and base interactions on reciprocity, well-being and non-interference (Miller and Davidson-Hunt 2013). This responsibility to both establish and maintain harmonious human-to-nature relationships ultimately enables human, plant and animal life to reciprocally sustain their interconnected existence (Cajete 2000).

Participants' emphasis on the need to sustain a balanced cycle of forest harvest and renewal also demonstrates a recognition of natural cyclicity and circularity that is widely held by First Nation peoples. Indeed, many First Nation teachings encourage people to think in terms of the cycles (McGregor 2004) and circularity that underlie experiences of existence (Rheault 1999). Cycles are an inherent part of all life. Birth is seen as the manifestation of recycling and transformation that occur after death, whereby the components of one form of existence become incorporated into all other components of the natural world (Cajete 2000). In this way, all life is interconnected by the cycle of death, transformation and rebirth.

Indigenous laws and worldviews correspondingly reflect this cultural grounding in a cyclical process of renewal (Chartrand 2013), transformation and re-creation

(McGregor 2004). Rooted in the most promising aspects of a First Nation's spiritual and cultural heritage (Cajete 2000), teachings that inform interactions with each other and the natural world are often broad enough to be perpetually recycled to meet the changing needs and circumstances of communities (Chartrand 2013). As a result, there is little need to develop completely new principles for guiding relationships (Chartrand 2013); there is only a need to reinterpret and reinvigorate traditional concepts (Fienup-Riordan and Rearden 2003). This precept was evidenced in participants' abilities to interpret and apply culturally-informed beliefs and values to contemporary forest policy and development processes.

Participants also highlighted several non-values-related aspects of the land-culture link that has been described as paramount for First Nation peoples (Beaudoin et al. 2015). This included the perceived importance of land-based learning as well as the interconnections between the land and First Nation community health, including mental health.

Forests are integral to many First Nation spiritual activities, such as hunting, fishing and gathering, where relationships with Mother Earth are formed and important sociocultural skills and perspectives are transmitted (Kant et al. 2014). Consequently, for many First Nations, knowledge, the people and the land are viewed as a single integrated whole (McGregor 2004), with land-based activities supporting the social solidarity necessary for maintaining a distinct society (Samson and Pretty 2006). Relationships between First Nations and the land thus serve to both support local subsistence economies (Kant et al. 2014) and allow communities to remain resilient to change (Castleden et al. 2009). Losing opportunities to transmit knowledge in its proper land-

based context would, therefore, indicate a loss of resilience and undermine communities' abilities to engage in adaptive learning (Davidson-Hunt and Berkes 2003).

Individual and community health implications resulting from environmental degradation, disconnection and dispossession were also emphasized by study participants. These perceptions echo the assertion that Anishinaabe health is rooted within cultural identity and the ability to practice respectful relationships with the land (Tobias and Richmond 2014). Indeed, numerous studies have emphasized the links between environmental relationships and well-being to that of Indigenous peoples, including Anishinaabe youth (e.g. Big-Canoe and Richmond 2014; Petrusek MacDonald et al. 2013; McIvor et al. 2009; Kant et al. 2013). As such, government land-use laws, including forestry policy, have a direct effect on First Nation community health and well-being (Kant et al. 2014).

The psychological implications of human-forest relationships described by study participants have been similarly well-explored within the literature. Access to land-based experiences (Petrusek MacDonald et al. 2013), including both cultural and spiritual sites (Kant et al. 2014) have been attributed to supporting Indigenous mental health and well-being. This culturally-grounded psychological well-being, in turn, supports individual engagement with larger societal issues, promotes self-esteem and resilience (Wexler 2009) and reduces risk of self-harm or suicide (Chandler and Lalonde 1998).

Environmental degradation, dispossession and disconnection from land can, consequently, result in deep psychological splits for Indigenous peoples (Cajete 2000) and perpetuate social ailments including alcoholism (Tobias and Richmond 2014) and other addictions issues (Big-Canoe and Richmond 2014). Supporting meaningful

connections and reconnections with the land can, therefore, support community healing and well-being (Cajete 2000).

Participants also emphasized the importance of building and maintaining meaningful human-to-human relationships in supporting both individual and community well-being. Primary among those relationships were those residing within participants' communities—both geographic and consciously created. Correspondingly, the importance of First Nation community-based relationship networks has been well-described within the literature. Community participation is the foundation upon which First Nation peoples come to learn and understand important cultural principles, including those that underlie proper relationship (Cajete 2000). The social relationships and supports developed through community participation also serve as a buffer against vulnerability for First Nation youth and help to foster healthy behaviours, emotional well-being (Big-Canoe and Richmond 2014) and overall long-term community health (Tobias and Richmond 2014). Similar to the perceived benefits of role modelling expressed by participants in the current study, both giving and receiving social support has been demonstrated to provide psychological benefits to those involved (Richmond and Smith 2012).

Much like in the current study, peers have been identified within the literature as the most significant source of social support for First Nation youth, as they are often able to be engaged in personal issues that may be difficult to discuss with older individuals (Richmond and Smith 2012). However, as was also the case in the current study, meaningful intergenerational interactions and relationships have also been identified within the literature as being vital to long-term First Nation community well-being and cultural continuity. Indeed, “the cultural identity of Aboriginal peoples hinged

on their ability to connect the present and the future to the past... relationship to place served as the common thread integral to all stories” (Macdougall 2010, p. 243).

Intergenerational knowledge and values transmission thus ensures that relationships with all of creation are maintained and that each successive generation can assume their collective responsibilities (McGregor 2004).

This relational, whole-of-community approach to responsibility reflects the traditional community perception that all things can be useful and that various qualities of usefulness intertwine to support reciprocity, benefit and purpose for all (Cajete 2000). Individuals of each generation were acknowledged to have a purpose and obligations in their relationships with others (Flaminio 2013). By acknowledging these clear roles and expectations for all members of the community, social cohesion was able to be maintained (Cajete 2000).

As a result of these interrelationships and interconnected responsibilities, there were traditionally no restrictions on who could participate in the resolution of social disorder within First Nation communities (Chartrand 2013). Indeed, in traditional Indigenous systems, the entire community served as decision-maker. This collaborative and intergenerational approach contrasts with the perceptions of many participants within the current study who perceive their communities’ decision making processes to be dominated by non-youth actors and, in some cases, explicitly exclusive of youth voices.

Much like First Nation decision making processes, which have been co-opted through the imposition of colonial policies (Chartrand 2013), Canada’s formal education system—which is rooted in racism, rivalry and capitalistic materialism (Littlebear 2009)—has also served to undermine and confuse traditional First Nation values systems

(Rheault 1999). The manifestations of this culturally-inappropriate educational system thus avail themselves as many of the barriers to success and achievement identified by participants within the current study, including: racism, culturally unaware teachers, poverty, substance abuse, family violence, cyclical underemployment and low self-esteem (Littlebear 2009).

As emphasized by participants, meaningful social supports can foster a sense of belonging in school environments and ultimately support Indigenous student achievement (Richmond and Smith 2012). This includes promoting greater understanding of the unique histories, cultures and socioeconomic conditions Indigenous students face (Littlebear 2009) and then equipping educators to provide supports that are responsive to these realities (Richmond and Smith 2012). Such actions serve to develop an environment of trust and belonging that is vital to Indigenous students' uptake of the structural supports available to them (Richmond and Smith 2012).

In addition to inclusive and culturally-relevant structural supports, training and curricular resources can be developed that more effectively encourage Indigenous education and career achievement. This could include the use of educational models that combine learning in both Indigenous and Western worldviews (Parsons and Prest 2003). Indeed, such measures could reduce cultural barriers that Indigenous youth often face when pursuing science-focused education (Sutherland and Dennick 2002) and enable them to more effectively cross between traditional knowledge and Western scientific approaches (Aikenhead 1997). As highlighted by study participants, education in these two distinct worldviews could empower them to act as communicators between the two worlds (Parsons and Prest 2003).

Education and training tools could also incorporate aspects of relationship and community that underlie Indigenous understandings of the world (Littlebear 2009). This could include numerous aspects that were highlighted by study participants, including: experiential and hands-on learning; family and community inclusion in the learning process (Littlebear 2009); leveraging the knowledge and guidance of Elders (Parsons and Prest 2003); culturally-grounded learning tools, such as the Medicine Wheel (Kemppainen et al. 2008); and land-based education (Booth and Muir 2013).

Through integrating whole-of-community and intergenerational teaching into formal education and training programs, cycles of low educational and career attainment identified by study participants could ultimately become replaced by novel cycles of culturally-grounded education and career achievement. Such measures could also serve to reinvigorate traditional Indigenous educational approaches which emphasize: the co-creation of knowledge through relationship with the natural world (Cajete 2000); holistic development of the person (Littlebear 2009); hands-on learning-by-doing (Ohmagari and Berkes 1997); and the involvement of key individuals including role models, Elders and extended family members (Lertzman 2002). Reinvigorating First Nation approaches to education could, in turn, support youth in locating themselves within a larger historical and societal context, which could further contribute to promoting a greater sense of connection to community, civic responsibility and overall direction in life (Wexler 2009).

When situated within the existing body of knowledge, the insights gained from this study can also be leveraged to inform the development of more inclusive, equitable and culturally-grounded approaches to forest management and capacity development in Ontario. Given the paramount importance of relationship—both within and between

communities, including non-human entities within forest ecosystems—to study participants and First Nation communities, more broadly (e.g. Chartrand 2013; Flaminio 2013; Miller and Davidson-Hunt 2013), such approaches must be rooted in a socially-based conceptualization of the forest industry (Wyatt et al. 2013) which recognizes that, at its most fundamental level, forestry’s goal is to better synchronize human-to-nature relationships, rather than being the ends in itself (Beaudoin et al. 2015).

By adopting approaches to forest management and development that emphasize healthy relationships, both to each other and to the natural world, the current culture of mistrust and exclusivity that is perceived by many First Nations (e.g. Kayahara and Armstrong 2015; Reed 2010; Wyatt et al. 2010)—including participants within this study—to exist within the forest sector could eventually become replaced by one of intergenerational collaboration, values alignment and mutual benefit. Indeed, such processes could be leveraged to overcome the resource trap mentality that was exhibited by numerous participants within the current study.

Despite the continued existence of Indigenous legal authority within the territory that now comprises Canada, processes of colonization and racist policy implementation have served to weaken or smother traditional First Nation approaches to relating to the land (Chartrand 2013). This colonial strategy, supported by Canada’s Constitution Act, 1982, has included the widespread propagation of a belief that provincial governments hold underlying jurisdiction over forested ecosystems (Mabee and Hoberg 2006), as well as the simultaneous suppression of First Nation systems of governance through legislative impositions such as the Indian Act (Nikolakis and Nelson 2015).

Such processes have ultimately culminated in the environmental dispossession of First Nations (Tobias and Richmond 2014) which renders First Nation land users largely

powerless against government-sanctioned resource development, including forestry (McIvor et al. 2009). In addition to community health effects brought on by environmental dispossession (Tobias and Richmond 2014), the resulting erosion of traditional land-based economies has also served to increase reliance on other components of northern First Nation economies including government transfer payments and wage employment (Ohmagari and Berkes 1997).

With limited wage employment opportunities in many northern First Nation communities, working age adults and adolescents may feel compelled to take whatever employment is available to them (Ohmagari and Berkes 1997). This often includes various high-pay, low-education jobs offered by the forest industry within their communities (Zurba and Trimble 2014). While such opportunities constitute an important means for First Nation peoples to remain connected to their home regions (Zurba and Trimble 2014), it must also be recognized that, when such opportunities are the only ones available to communities, they may be taken out of necessity rather than genuine interest or desire.

As demonstrated within the current study, the acceptance of these employment opportunities not only reduces the likelihood that concerns about forest management will be raised by those directly holding those jobs, but also by individuals who rely on those forest sector job-holders for their livelihood. At the community level, this pacification process of necessitated employment and industry reliance induced by forced environmental dispossession (i.e. the resource trap) may ultimately undermine First Nation efforts toward self-determination, sovereignty and self-government.

Exiting the resource trap will correspondingly require innovative, long-term strategic planning and implementation. Capacity development and employment creation

in technical and professional fields (Higgins 1999), that respond to the unique needs and lived realities of First Nations, including those illuminated through the current study, will necessarily be key to such a strategy. Such opportunities promote innovation and integration of diverse management strategies (Stevenson 2006), which may ultimately generate meaningful community benefits through the better alignment of forest management with community development priorities (Van Schie and Haider 2015).

Through supporting First Nation empowerment through socioculturally-responsive education and employment, students may also be able to overcome the “vicious cycle of social dysfunction” that has been created through the perpetuation of poverty, racism and violence (Littlebear 2009, p. 18). Given the importance of role models highlighted within this and previous studies (e.g. Zurba and Trimble 2014), breaking the cycle of low educational attainment is vital to inspiring future generations of potential resource managers and community leaders.

Building and maintaining collaborative institutions within the forest sector (Zurba and Trimble 2014) will, consequently, be vital to creating and supporting long-term, self-perpetuating cycles of positive role modelling and community empowerment. The insights uncovered by the current study may ultimately help to inform the development of such collaborative institutions as well as the relationships that underlie them.

For example, sustainable forest management must address both the material and non-material needs of First Nation communities (Lertzman 2002). Indeed, this imperative was demonstrated by study participants, whose conceptions of responsible forest management were not simply predicated on the outcome of forestry (e.g.

balancing harvest with renewal) but also on the processes used to develop those outcomes (e.g. whole-of-community decision-making). In other words: process matters.

As highlighted by participants, engagement and decision making should involve the entire community, including individuals of multiple generations. Such approaches have not only been shown to improve the quality of decision making by leveraging diverse knowledge- and skills-related backgrounds (Griffith et al. 2015), but could, ultimately, be seen as a means of reinvigorating traditional culturally-grounded relational imperatives, such as *wahkohtowin*, to help meet the contemporary challenges that communities face in relation to the forest sector.

Whole-of-community engagement approaches could, in turn, be leveraged to support more effective communication and relationship building between resource managers, government and First Nation communities. Such effective cross-cultural communication has been demonstrated to support a wide range of beneficial outcomes within the forest sector, including: multi-directional learning (Fraser et al. 2006); common understandings (Caine 2013); greater trust and confidence (Berkes 2010); and more effective resolution of relational crises (Greskiw and Innes 2008). By extending forest sector engagement beyond traditional community decision-makers, such as elected leadership and technical experts, less reliance is placed on those few, committed spokespersons within communities (Hvenegaard et al. 2015). Increasing the number of engaged and informed individuals on all sides thus supports the overall stability and sustainability of the system (Walker and Salt 2012).

These relationships could be further enhanced through the development of formal business partnerships between First Nation communities and commercial resource sector entities. Indeed, as mentioned within the current study, such partnerships

have the potential to help build meaningful community capacity (Beaudoin et al. 2015), including responsible financial management. Formal business partnerships have also been shown to reduce the need for external dispute resolution mechanisms (Beaudoin et al. 2015) and increase overall satisfaction in forest management within First Nation communities (Kant and Brubacher 2008).

Qualitative indicators were also highlighted by participants as an essential component of both satisfaction with forest management processes and of building meaningful forest sector relationships, more generally. This imperative was most evident in the negative psychological and emotional responses induced within participants by the jarring visual attributes of clearcut harvest operations in locations of personal significance to those participants. The value of qualitative indicators, including aesthetic attributes (Lewis and Sheppard 2005), has been well-explored elsewhere in the literature. Over countless generations of forest use and management, Indigenous peoples contributed to creating landscapes that reflected their values and beliefs (Cajete 2000). As such, contemporary notions of respectful forest use (Lewis and Sheppard 2005) and responsible management (Lewis 2008) may relate to the creation or maintenance of certain landscape conditions. Consequently, understanding the qualitative, aesthetic priorities of First Nations could support more acceptable and effective adaptive forest management (Karjala and Dewhurst 2003), while reducing overall costs by focusing larger amounts of forest operations within less culturally sensitive areas (Jacqmain et al. 2012).

Finally, participants emphasized the importance of acknowledging and understanding the largely harmful intergenerational effects of historic forest sector relationships and management practices. Indeed, it was evident that negative historical

relationships and socioenvironmental effects contributed heavily to participants' perceptions of contemporary forest sector practices. Consequently, forestry planning, management and research must incorporate historical approaches that support greater understanding of the links between forests, people and long-term social change (Christensen et al. 2010). Acknowledging important historical considerations may ultimately serve to counteract antagonistic relationships that exist between First Nation communities, government and commercial forest sector actors (Klenk et al. 2013), and thus contribute to the development of the collaborative institutions needed to support sustainable community development and First Nation youth empowerment.

6. CONCLUSION

The insights gained through this study can help to inform more holistic, equitable and, ultimately, sustainable approaches to forest management, capacity development and relationship building in Ontario. While any approach must necessarily be flexible enough to respond to the unique historical and contemporary realities of individual First Nation communities, common values such as the importance of relationship, cyclicity and intergenerational equity, as well as the acknowledgment of persistent induced effects, like the resource trap, could help to guide the development of such measures. That said, the results of this study also suggest a few specific, promising areas for policy and program development.

1. Comprehensive social impact analysis should be a mandated component of the forest management planning process.

Ontario's Forest Management Planning Manual (FMPM) currently mandates a variety of measures for including First Nation perspectives within forest planning, including: social and economic descriptions of affected First Nation communities; opportunities to develop customized consultation approaches; and protecting identified First Nation values (OMNRF 2017). However, the results of this study indicate that the scopes of these measures may prevent the Province of Ontario from adequately addressing the full range of interests held by First Nation communities. For example, as described in Part A, Section 1.1.8.11 of the FMPM, only communities that receive significant economic and social benefit from forestry-related activities are included

within social and economic descriptions. Consequently, communities that exclusively experience socioenvironmental injustices, such as those highlighted by numerous study participants, may not be adequately represented in current reporting and mitigation planning.

Additionally, though values mapping is mandated to include sites of archaeological, social, cultural and sacred significance, the scope of mapping is limited to geographically-definable areas within the forest unit, which can be included within First Nation values maps. As a result, sociocultural issues, such as health, addictions, youth programming, and education, which are also affected by forestry's activities, remain unconsidered in current planning processes. Given the high value placed on such community-based values by study participants, as well as their prevalence in participants' forestry-related decision-making processes, their inclusion in formal forestry planning may support more holistic management regimes and contribute to rectifying historically strained relationships between forest planners, industry entities and First Nation communities. Given the likely amplification of resource trap-related effects in forestry-dependent communities, thresholds in labour force dependency ratios—which are currently captured in community descriptions—could potentially be utilized to trigger such comprehensive social impact analyses.

2. Investments in forestry-related capacity development, such as those included in memoranda of understanding or impact benefit agreements, should be matched with complementary investments in education and employment supports for recipients.

Study participants emphasised the importance of holistic personal supports far more than the need for purely financial interventions, such as scholarships or bursaries. Investing in social supports such as mental health services, communication with friends

and family, recreation and extracurricular activities may, therefore, contribute substantially to long-term individual success and well-being and, by extension, to overall community empowerment and resilience. Without such comprehensive approaches to capacity development, which address the holistic needs of individual learners and employees, even the most well-intentioned efforts may ultimately prove ineffective.

3. Increased investments should be made in opportunities for culturally-rooted, land-based, experiential learning for First Nation youth, such as the First Nations Natural Resources Youth Employment Program (FNNRYEP).

Results of this study indicate that FNNRYEP has made a profoundly positive impact in the lives of participants. Beyond improved knowledge and perceptions of forest development in Ontario, the transferrable life- and job-skills, relationships and self-confidence gained through the FNNRYEP experience were overwhelmingly seen by participants as supporting their well-being and success long into the future. Investing in increased access to such programming can, therefore, be seen as an investment by both public and private funding agencies. Not only will such investments likely contribute to improved forest sector relationships, as former program participants enter community leadership positions, but they may also generate significant long-term financial returns by supporting First Nation community transitions from poverty-induced social dysfunction to socioeconomic empowerment and self-sufficiency.

While the preceding recommendations may serve as a basis for fostering more inclusive and equitable approaches to forest management and capacity development in Ontario, additional research is required to ensure that any such measures effectively and efficiently meet their intended objectives. Promising areas for future inquiry may include the following.

1. Quantifying the economic impacts of resource sector-based capacity development interventions, such as FNNRYEP, at the individual, community and broader societal levels.

Though the qualitative findings of this study suggest that culturally-rooted, land-based, experiential learning opportunities likely foster a wide range of indirect socioeconomic benefits to both First Nation and non-Indigenous Ontario communities, these suggestions remain speculative due to the limited scope of the current research. Conducting economic analyses on specific case studies would, consequently, provide increased clarity and direction to program developers and potential funders alike.

2. Engaging a diverse range of First Nation youth in similar discussions to the current study, outside of an explicit resource sector context.

Given the non-random self-selection process used to recruit participants into the current study, First Nation youth with pre-existing relationships with or affinities to the natural resources sector may be overrepresented in this study, as compared to the general population of their communities. Though their perspectives may represent trends in viewpoints held by their broader communities, future research would benefit from investigating these perspectives directly.

3. Directly exploring the potential cultural foundations of First Nation youth perspectives and decision-making processes related to forest development.

Though the evidence for culturally-grounded perspectives in this study is strong, they were not explored directly through interview or focus group questions. Rather, cultural underpinnings were inferred based on patterns of responses developed through analyzing the body of participant responses as a whole. Consequently, explicit inquiry into cultural connections and meanings pertaining to forestry-related issues could be of substantial value to informing future policy and relationship development.

4. Conducting comparative analysis between First Nation youth perspectives on forestry and other forms of resource development, such as mining, may be of significant theoretical and practical benefit.

Participants in this study clearly articulated well-formed and nuanced perspectives related to assessing the acceptability of resource development processes. In many instances, such acceptability was predicated on maintaining a balanced, renewable cycle of harvest and renewal. Given that such cycles may not apply to other forms of resource development, such as mineral extraction, and that some participants exhibited conflation between various forms of resource development, directly comparing and understanding perspectives related to various forms of resource development may prove valuable to resource sector proponents, government policy makers and First Nation communities alike.

Taken as a whole, this inquiry demonstrates the importance of adopting holistic approaches to research, resource management and capacity development efforts involving First Nation youth. Though the current study set out to explore First Nation youth perspectives related to the natural resources sector exclusively, it became apparent that such efforts also required an openness to considering interdisciplinary analysis and broader sociocultural meanings. Indeed, without incorporating aspects of community health, mental health, history, resilience and Indigenous studies, as well as their manifestations in the lived realities of youth participants, meaningfully understanding their interests and perspectives would not have been possible. Maintaining openness and flexibility to respond to the needs and interests of youth participants ultimately enabled the resulting breadth and richness of insights and understandings gained through this study.

Above all, this study emphasises the need to meaningfully considering diverse—and often marginalized—voices in both resource- and community-related planning and decision-making. Results indicate that First Nation youth possess the enthusiasm and capacity to critically engage in pressing societal issues, such as resource development and community building, when they are afforded the opportunity. Indeed, numerous participants expressed that, despite their best efforts, this research represented the first time that they had been invited to share their knowledge, interests and perspectives with the aim of potentially influencing meaningful change for their peers and communities. The honesty, courage, wisdom and love they exhibited suggest that providing additional future opportunities to have their voices heard could only serve to build more understanding, equitable and sustainable forest sector relationships and capacity development initiatives in Ontario. In doing so, First Nation youth can ultimately be the leaders of positive, transformative change within their own lives, within their communities and across the province, as a whole.

7. LITERATURE CITED

- Adam, M.C. and D. Kneeshaw. 2011. Expert opinion on the criteria and indicator process and Aboriginal communities: Are objectives being met? *For. Chron.* 87(3): 358–366.
- Aikenhead, G. S. 1997. Toward a First Nations cross-cultural science and technology curriculum. *Science Education* 81(2): 217-238.
- Beaudoin, J.M., L. Bouthillier and G. Chiasson. 2015. Growing deep roots: Increasing Aboriginal authority in contemporary forest governance arrangements. *Land Use Policy* 49: 287–295.
- Beaudoin, J.M., L. Bouthillier, J. Bulkan, H. Nelson, R. Trosper, and S. Wyatt. 2016. What does “First Nation deep roots in the forests” mean? Identification of principles and objectives for promoting forest-based development. *Can. J. For. Res.* 46: 508–519.
- Berkes, F. 2010. Devolution of environment and resources governance: trends and future. *Environ. Conserv.* 37(04): 489–500.
- Berrang-Ford, L., J.D. Ford, and J. Paterson. 2011. Are we adapting to climate change? *Global Environmental Change* 21: 25-33.
- Big-Canoe, K. and C. A. M. Richmond. Anishinaabe youth perceptions about community health: Toward environmental repossession. *Health & Place* 26: 127-135.
- Booth, A. L. 1998. Putting “forestry” and “community” into First Nations’ resource management. *For. Chron.* 74(3): 347–352.
- Booth, A. L. and B.R. Muir. 2013. “How far do you have to walk to find peace again?”: A case study of First Nations’ operational values for a community forest in Northeast British Columbia, Canada. *Nat. Resour. Forum* 37(3): 153–166.
- Booth, A. L. and N.W. Skelton. 2011. “There’s a conflict right there”: Integrating indigenous community values into commercial forestry in the Tl’azt’en First Nation. *Society & Natural Resources* 24(4): 368–383.
- Borrows, J. 2010. *Canada’s Indigenous constitution*. University of Toronto Press, Toronto, Ontario. 427 p.

- Bouman, O.T., G. Langen and C.E. Bouman. 1996. Sustainable use of the boreal Prince Albert Model Forest in Saskatchewan. *For. Chron.* 72(1): 63–72.
- Broom, A., K. Hand and P. Tovey. 2009. The role of gender, environment and individual biography in shaping qualitative interview data. *International Journal of Social Research Methodology* 12(1): 51-65.
- Bull, G., S. Pledger, M. Splittgerber, J. Stephen, A. Pribowo, K. Baker and N. Macleod. 2014. Culturally driven forest management, utilization and values: a Nuxalk First Nations case study. *For. Chron.* 90(5): 620–627.
- Caine, K. J. 2013. Bourdieu in the north: Practical understanding in natural resource governance. *Can. J. Sociol.* 38(3): 333–358 (online).
- Cajete, G. 2000. *Native science: Natural laws of interdependence*. Clear Light Publications, Santa Fe, New Mexico. 315 pp.
- Carter, S.M. and M. Little. 2007. Justifying method, taking action: Epistemologies, methodologies and methods in qualitative research. *Qualitative Health Research* 17(10): 1316-28.
- Castleden, H., T. Garvin and Huu-ay-aht First Nation. 2009. “Hishuk Tsawak” (Everything Is one/connected): A Huu-ay-aht worldview for seeing forestry in British Columbia, Canada. *Soc. Nat. Res.* 22(9): 789–804.
- Chandler, M. J. and C. Lalonde. 1998. Cultural continuity as a hedge against suicide in Canada’s First Nations. *Transcultural Psychiatry* 35(2): 191-219.
- Chartrand, L. 2013. Eagle soaring on the emergent winds of Indigenous legal authority. *Review of Constitutional Studies* 18(1): 49-87.
- Cheveau, M., L. Imbeau, P. Drapeau and L. Belanger. 2008. Current status and future directions of traditional ecological knowledge in forest management: a review. *For. Chron.* 84(2): 231–243.
- Charmaz, K. 2006. *Constructing grounded theory: A practical guide through qualitative analysis*. SAGE Publications Inc., Thousand Oaks, California. 208 p.
- Christensen, L., N. Krogman and B. Parlee. 2010. A culturally appropriate approach to civic engagement: Addressing forestry and cumulative social impacts in southwest Yukon. *For. Chron.* 86(6): 723–729.
- Creswell, J. 2013. *Qualitative inquiry and research design: Choosing among five approaches*. 3rd edition. SAGE Publications Inc., Thousand Oaks, California. 472 pp.
- Creswell, J. 2014. *Research design*. 4th edition. SAGE Publications Inc., Thousand Oaks, California. 273 pp.

- Davidson-Hunt, I. J. 2006. Adaptive learning networks: Developing resource management knowledge through social learning forums. *Hum. Ecol.* 34(4): 593–614.
- Davidson-Hunt, I. J. and F. Berkes. 200. Learning as you journey. Anishinaabe perception of social-ecological environments and adaptive learning. *Ecol. Soc.* 8(1): 5 (online).
- Davis, A. and J.R. Wagner. 2003. Who knows? On the importance of identifying “experts” when researching local ecological knowledge. *Hum. Ecol.* 31(3): 463–489 (online).
- Fienup-Riordan, A. and A. Rearden. 2003. “Kenekngamceci qanrutamceci (we talk to you because we love you)”: Yup’ik “culturalism” at the Umkumiut Culture Camp. *Arctic Anthropology* 40(2): 100-106.
- Finlay, L. 2002. Outing the researcher: The provenance, process and practice of reflexivity. *Qualitative Health Research* 12(4): 531-45.
- Flaminio, A. L. 2013. Gladue through wahkotowin: Social history through Cree kinship lens in corrections and parole. Degree of Masters of Laws thesis, College of Law, University of Saskatchewan. 189 pp.
- Fortier, J.F., S. Wyatt, D.C. Natcher, M.A. Smith and M. Hébert. 2013. An inventory of collaborative arrangements between Aboriginal peoples and the Canadian forest sector: Linking policies to diversification in forms of engagement. *J. Environ. Manage.* 119: 47–55.
- Fraser, E. D. G., A.J. Dougill, W.E. Mabee, M. Reed and P. McAlpine. 2006. Bottom up and top down: Analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management. *J. Environ. Manage.* 78(2): 114–127.
- Gough, A. D., J.L. Innes and S.D. Allen. 2008. Development of common indicators of sustainable forest management. *Ecol. Indic.* 8(5): 425–430.
- Grainger, S., E. Sherry and G. Fondahl. 2006. The John Prince Research Forest: Evolution of a co-management partnership in northern British Columbia. *For. Chron.* 82(4): 484–495.
- Graveline, F.J. 2000. Circle as methodology: Enacting an Aboriginal paradigm. *International Journal of Qualitative Studies in Education* 13(4): 361-370.
- Greskiw, G. and J.L. Innes. 2008. Comanaging communication crises and opportunities between Northern Secwepemc First Nations and the province of British Columbia. *Can. J. For. Res.* 38(7): 1935–1946.

- Griffith, J., A.P. Diduck and J. Tardif. 2015. Manitoba's forest policy regime: Incremental change, concepts, actors and relationships. *For. Chron.* 91(1): 71–83.
- Higgins, C. 1999. Innovative forest practice agreements - What could be done that would be innovative. *For. Chron.* 75(6): 939–942.
- Howard-Payne, L. 2016. Glaser or Strauss? Considerations for selecting a grounded theory study. *South African Journal of Psychology* 46(1): 50-62.
- Hvenegaard, G., S. Carr, K. Clark, P. Dunn and T. Olexson. 2015. Promoting sustainable forest management among stakeholders in the Prince Albert Model Forest, Canada. *Conservation and Society* 13(1): 51–61.
- Jacqmain, H., L. Bélanger, R. Courtois, C. Dussault, T.M. Beckley, M. Pelletier and S.W. Gull. 2012. Aboriginal forestry: development of a socioecologically relevant moose habitat management process using local Cree and scientific knowledge in Eeyou Istchee. *Can. J. For. Res.* 42(4): 631–641.
- Kant, S. and D. Brubacher. 2008. Aboriginal expectations and perceived effectiveness of forest management practices and forest certification in Ontario. *For. Chron.* 84(3): 378–391.
- Kant, S., I. Vertinsky, B. Zheng and P.M. Smith. 2013. Social, cultural, and land use determinants of the health and well-being of Aboriginal peoples of Canada: A path analysis. *J. Public Health Policy* 34(3): 462-476.
- Kant, S., I. Vertinsky, B. Zheng and P.M. Smith. 2014. Multi-domain subjective wellbeing of two Canadian First Nations communities. *World Development* 64: 140-157.
- Karjala, M. K. and S.M. Dewhurst. 2003. Including aboriginal issues in forest planning: a case study in central interior British Columbia, Canada. *Landscape and Urban Planning* 64(1): 1–17.
- Karjala, M. K., E.E. Sherry and S.M. Dewhurst. 2004. Criteria and indicators for sustainable forest planning: a framework for recording Aboriginal resource and social values. *Forest Policy and Economics* 6(2): 95–110.
- Kayahara, G. J. and C.L. Armstrong. 2015. Understanding First Nations rights and perspectives on the use of herbicides in forestry: A case study from northeastern Ontario. *For. Chron.* 91(2): 126–140. doi:10.5558/tfc2015-024.
- Kemppainen, D., K. Kopera-Frye and J. Woodard. 2008. The medicine wheel: A versatile tool for promoting positive change in diverse contexts, in *Collected Essays on Teaching and Learning*. <https://celt.uwindsor.ca/ojs/leddy/index.php/CELT/article/view/3183/2555>. May 3, 2018.

- Klenk, N. L., M.G. Reed, G. Lidestav and J. Carlsson. 2013. Models of representation and participation in model forests: Dilemmas and implications for networked forms of environmental governance involving indigenous people: Modes of representation. *Environmental Policy and Governance* 23(3): 161–176.
- Krcmar, E. and G.C. van Kooten. 2008. Economic development prospects of forest-dependent communities: Analyzing trade-offs using a compromise-fuzzy programming framework. *American Journal of Agricultural Economics* 90(4): 1103–1117.
- Krcmar, E., G.C. van Kooten, H., Nelson, I., Vertinsky and J. Webb. 2006. The Little Red River Cree Nation's forest management strategies under a changing forest policy. *For. Chron.* 82(4): 529–537.
- Kumar, S. and S. Kant. 2007. Exploded logit modeling of stakeholders' preferences for multiple forest values. *Forest Policy and Economics* 9(5): 516–526.
- Lee, S. and S. Kant. 2006. Personal and group forest values and perceptions of groups' forest values in northwestern Ontario. *For. Chron.* 82(4): 512–520.
- Lertzman, D. A. 2002. Rediscovering rites of passage: Education, transformation, and the transition to sustainability. *Conservation Ecology* 5(2): 30 (online).
- Lewis, J. L. 2008. Perceptions of landscape change in a rural British Columbia community. *Landscape and Urban Planning* 85(1): 49–59.
- Lewis, J. L. and S.R. Sheppard. 2005. Ancient values, new challenges: Indigenous spiritual perceptions of landscapes and forest management. *Society & Natural Resources* 18(10): 907–920.
- Lewis, J. L. and S.R. Sheppard. 2006. Culture and communication: Can landscape visualization improve forest management consultation with indigenous communities? *Landscape and Urban Planning* 77(3): 291–313.
- Littlebear, L. 2009. Naturalizing Indigenous knowledge: Synthesis paper. University of Saskatchewan, Aboriginal Education Research Centre, Saskatoon, Saskatchewan and First Nations and Adult Higher Educational Consortium, Calgary Alberta. 30 pp.
- Mabee, H. S. and G. Hoberg. 2004. Protecting culturally significant areas through watershed planning in Clayoquot Sound. *For. Chron.* 80(2): 229–240.
- Mabee, H. S. and G. Hoberg. 2006. Equal Partners? Assessing comanagement of forest resources in Clayoquot Sound. *Society & Natural Resources* 19(10): 875–888.
- Macdougall, B. 2006. Wahkootowin: Family and cultural identity in northwestern Saskatchewan Métis communities. *Canadian Historical Review* 87(3): 431–463.

- Macdougall, B. 2010. *One of the family: Métis culture in nineteenth-century northwestern Saskatchewan*. UBC Press, Vancouver, British Columbia. 335 pp.
- MacKinnon, L., C. Apentiik and M.P. Robinson. 2001. Revisiting traditional land use and occupancy studies: Relevance and implications for resource management in Alberta. *For. Chron.* 77(3): 479–489.
- Maclean, K., C.J. Robinson and D.C. Natcher. 2015. Consensus building or constructive conflict? Aboriginal discursive strategies to enhance participation in natural resource management in Australia and Canada. *Society & Natural Resources* 28(2): 197–211.
- Manderson, L., E. Bennett and S. Andajani-Sutjahjo. 2006. The social dynamics of the interview: Age, class and gender. *Qualitative Health Research* 16(10): 1317-34.
- Martin, D. 2012. Two-eyed seeing: A framework for understanding indigenous and non-indigenous approaches to indigenous health research. *Canadian Journal of Nursing Research* 44(2): 20-42.
- McGregor, D. 2002. Indigenous knowledge in sustainable forest management: Community-based approaches achieve greater success. *For. Chron.* 78(6): 833–836.
- McGregor, D. 2004. Coming full circle: Indigenous knowledge, environment, and our future. *American Indian Quarterly* 24(3&4): 385-410.
- McGregor, D. 2011. Aboriginal/non-Aboriginal relations and sustainable forest management in Canada: The influence of the Royal Commission on Aboriginal Peoples. *J. Environ. Manage.* 92(2): 300–310.
- McIvor, O., A. Napoleon and K. M. Dickie. 2009. Language and culture as protective factors for at-risk communities. *International Journal of Indigenous Health* 5(1): 6-25.
- Merkel, G. 2007. We are all connected: Globalization and community sustainability in the boreal forest, an Aboriginal perspective. *For. Chron.* 83(3): 362–366.
- Miller, A.M., and I.J. Davidson-Hunt. 2013. Agency and resilience: Teachings of Pikangikum First Nation Elders, Northwestern Ontario. *Ecol. Soc.* 18(3) (online).
- Miller, A.M., I.J. Davidson-Hunt and P. Peters. 2010. Talking about fire: Pikangikum First Nation elders guiding fire management. *Can. J. For. Res.* 40(12): 2290–2301.
- Morton, C., T.I. Gunton and J.C. Day. 2012. Engaging aboriginal populations in collaborative planning: an evaluation of a two-tiered collaborative planning model for land and resource management. *Journal of Environmental Planning and Management* 55(4): 507–523.

- Natcher, D. C., S. Davis and C.G. Hickey. 2005. Co-management: Managing relationships, not resources. *Hum. Organ.* 64(3): 240–250 (online).
- Natcher, D. C. and C.G. Hickey. 2002. Putting the community back into community-based resource management: A criteria and indicators approach to sustainability. *Hum. Organ.* 61(4): 350–363 (online).
- Natcher, D. C., C.G. Hickey and S. Davis. 2004. The political ecology of Yukon forestry: managing the forest as if people mattered. *Int. J. Sustain. Dev. World Ecol.* 11(4): 343–355.
- Natcher, D. C., C.G. Hickey, M. Nelson and S. Davis. 2009. Implications of tenure insecurity for Aboriginal land use in Canada. *Hum. Organ.* 68(3): 245–257 (online).
- Nikolakis, W. and H. Nelson. 2015. To log or not to log? How forestry fits with the goals of First Nations in British Columbia. *Can. J. For. Res.* 45(6): 639–646.
- O’Flaherty, R. M., I.J. Davidson-Hunt and M. Manseau. 2008. Indigenous knowledge and values in planning for sustainable forestry: Pikangikum First Nation and the Whitefeather Forest Initiative. *Ecol. Soc.* 13(1): 6 (online).
- Ohmagari, K. and F. Berkes. 1997. Transmission of Indigenous knowledge and bush skills among the western James Bay Cree women of subarctic Canada. *Human Ecology* 25(2): 197-222.
- Ontario Federation of Indian Friendship Centres. 2012. USAI research framework: Utility, self-voicing, access, inter-relationality. <http://ofifc.org/research/research/research>.
- Ontario Ministry of Natural Resources and Forestry (OMNRF). 2017. Forest Management Planning Manual. Queen’s Printer for Ontario, Toronto, Ontario. 462 pp.
- O’Reilly-Scanlon, K., C. Crowe and A. Weenie. 2004. Pathways to understanding: “Wahkohtowin” as a research methodology. *McGill journal of Education* 39(1): 29-44.
- Palys, T.S. 2003. *Research Decisions: Quantitative and Qualitative Perspectives*. Thomson Nelson, Toronto, Ontario. 473 pp.
- Parsons, R. and G. Prest. 2003. Aboriginal forestry in Canada. *For. Chron.* 79(4): 779–784.
- Petrasek-Macdonald, J., S. L. Harper, A. C. Willox and V. L. Edge. A necessary voice: Climate change and lived experiences of youth in Rigolet, Nunatsiavut, Canada. *Global Environmental Change* 23(1): 360-371.

- Pope, C., S. Ziebland, and N. Mays. 2000. Qualitative research in health care: Analyzing qualitative data. *British Medical Journal* 320: 114-116.
- Rapley, T. 2011. Some pragmatics of data analysis in Silverman, D. 2016. *Qualitative research*. 4th edition. SAGE Publications Inc., Thousand Oaks, California, 480 p.
- Rathwell, K. J., D. Armitage and F. Berkes. 2015. Bridging knowledge systems to enhance governance of the environmental commons: A typology of settings. *Int. J. Commons* 9(2): 851–880.
- Reed, M. G. 2010. Guess who's (not) coming for dinner: Expanding the terms of public involvement in sustainable forest management. *Scand. J. For. Res.* 25(9): 45–54.
- Rheault, D. 1999. *Anishinaabe mino-bimaadiziwin: The way of a good life*. Debwewin Press, Peterborough, Ontario. 181 pp.
- Richmond, C. A. M. and D. Smith. 2012. Sense of belonging in the urban school environments of Aboriginal youth. *International Indigenous Policy Journal* 3(1): 1-17.
- Robinson, M. P. and M.M. Ross. 1997. Traditional land use and occupancy studies and their impact on forest planning and management in Alberta. *For. Chron.* 73(5): 596–605.
- Rossmann, G.B. and S.F. Rallis. 2003. *Learning in the Field: An Introduction to Qualitative Research*. 2nd edition. SAGE Publications Inc., Thousand Oaks, California, 369 pp.
- Ryen, A. 2011. Ethics and Qualitative Research, Ch 23 in *Qualitative Research*, edited by D. Silverman, p. 416-438.
- Saldana, J. 2013. *The Coding Manual for Qualitative Researchers*. 2nd edition. SAGE Publications Inc., Thousand Oaks, California. 303 pp.
- Samson, C. and J. Pretty. 2006. Environmental and health benefits of hunting lifestyles and diets for the Innu of Labrador. *Food Policy* 31: 528-553.
- Sapic, T., U. Runesson and M.A. Smith. 2009. Views of Aboriginal People in Northern Ontario on Ontario's approach to Aboriginal values in forest management planning. *For. Chron.* 85(5): 789–801.
- Sherry, E. 2005. Local-level criteria and indicators: An Aboriginal perspective on sustainable forest management. *Forestry* 78(5): 513–539.
- Smith, M.A. 1998. Aboriginal and treaty rights and Aboriginal participation: Essential elements of sustainable forest management. *For. Chron.* 74(3): 327–333.

- Smith, M.A. 2015. A Reflection on First Nations in their Boreal Homelands in Ontario: Between a Rock and a Caribou. *Conservation and Society* 13(1): 23.
- Stevenson, M. G. 2006. The possibility of difference: Rethinking co-management. *Hum. Organ.* 65(2): 167–180 (online).
- Sutherland, D. L. and R. Dennick. 2002. Exploring culture, language and the perception of the nature of science. *International Journal of Science Education* 24(1): 1-24.
- Takeda, L. and I. Røpke. 2010. Power and contestation in collaborative ecosystem-based management: The case of Haida Gwaii. *Ecological Economics* 70(2): 178–188.
- Teitelbaum, S. and S. Wyatt. 2013. Is forest certification delivering on First Nation issues? The effectiveness of the FSC standard in advancing First Nations' rights in the boreal forests of Ontario and Quebec, Canada. *Forest Policy and Economics* 27: 23–33.
- Tobias, J. K. and C. A. M. Richmond. 2014. “That land means everything to us as Anishinaabe...”: Environmental dispossession and resilience on the north shore of Lake Superior. *Health & Place* 29: 36-33.
- Treseder, L. and N.T. Krogman. 1999. Features of First Nation forest management institutions and implications for sustainability. *For. Chron.* 75(5): 793–798.
- Trosper, R., H. Nelson, G. Hoberg, M.A. Smith and W. Nikolakis. 2008. Institutional determinants of profitable commercial forestry enterprises among First Nations in Canada. *Can. J. For. Res.* 38(2): 226–238.
- van den Hoonaard, D.K. 2015. *Qualitative research in action: A Canadian primer*. 2nd edition. Oxford University Press, Don Mills, ON. 225 pp.
- VanSchie, R. and W. Haider. 2015. Indigenous-based approaches to territorial conservation: A case study of the Algonquin Nation of Wolf Lake. *Conservation and Society* 13(1): 72–83.
- Walker, B., and D. Salt. 2012. *Resilience thinking: Sustaining ecosystems and people in a changing world*. Island Press, Washington, District of Columbia, USA.
- Weber, M., N. Krogman and T. Antoniuk. 2012. Cumulative effects assessment: Linking social, ecological, and governance dimensions. *Ecology and Society*. 17(2): 22 (online).
- Wenger-Nabigon, A. 2010. The Cree medicine wheel as an organizing paradigm of theories of human development. *Native Social Work Journal* 7: 139-161.
- Wexler, L. 2009. The importance of identity, history, and culture in the wellbeing of Indigenous youth. *Journal of the History of Childhood and Youth* 2(2): 267-276.

- Wyatt, S. 2008. First Nations, forest lands, and “aboriginal forestry” in Canada: from exclusion to comanagement and beyond. *Can. J. For. Res.* 38(2): 171–180.
- Wyatt, S., J.F. Fortier and C. Martineau-Delisle. 2010. First Nations’ involvement in forest governance in Quebec: The place for distinct consultation processes. *For. Chron.* 86(6): 730–741.
- Wyatt, S., J.F. Fortier, D. Natcher, M.A. Smith and M. Hébert. 2013. Collaboration between Aboriginal peoples and the Canadian forest sector: A typology of arrangements for establishing control and determining benefits of forestlands. *J. Environ. Manage.* 115: 21–31.
- Wyatt, S., M. Kessels and F. van Laerhoven. 2015. Indigenous peoples’ expectations for forestry in New Brunswick: Are rights enough? *Society & Natural Resources* 28(6): 625–640.
- Wyatt, S., S. Merrill and D. Natcher. 2011a. Ecosystem management and forestry planning in Labrador: How does Aboriginal involvement affect management plans? *Can. J. For. Res.* 41(11): 2247–2258.
- Wyatt, S., M.H. Rousseau, S. Nadeau, N. Thiffault and L. Guay. 2011b. Social concerns, risk and the acceptability of forest vegetation management alternatives: Insights for managers. *For. Chron.* 87(2): 274–289.
- Young, J. L. and P.N. Duinker. 1998. Canada’s national forest strategies: A comparative analysis. *For. Chron.* 74(5): 683–693.
- Zurba, M. and M. Trimble. 2014. Youth as the inheritors of collaboration: Crises and factors that influence participation of the next generation in natural resource management. *Environ. Sci. Policy* 42: 78–87.

APPENDICES

APPENDIX I

COVER LETTER TO POTENTIAL PARTICIPANTS



Natural Resources Management
t: (705) 427-7249
e: probitai@lakeheadu.ca

Cover Letter

August 3, 2016

Dear Potential Participant,

My name is Paul Robitaille. I am a graduate student at Lakehead University taking my Master's of Science in Forestry, under the supervision of Dr. Chander Shahi, Dean of Graduate Studies at Lakehead University.

Outland Reforestation, on behalf of the First Nations Natural Resource Youth Employment Program (FNNRYEP), has approved the research study titled "Roles and perspectives of First Nations youth within Ontario's forest resource sector", which is being funded by the Social Sciences and Humanities Research Council. This letter is the next step to move the project forward.

You are invited to participate through written surveys, focus group interviews, as well as subsequent follow-up conversations throughout the summer. If you choose to participate, I will ask you a set of questions to share any information, experiences, observations, stories or feelings you have about forests, Ontario's forest resource sector, and how First Nations youth can play a role within it.

Your participation in this research study is totally voluntary. Your participation in the FNNRYEP will in no way be affected by your decision to participate in the study or not participate in the study, and you can decide not to participate in the study and still enjoy all of the activities and opportunities that the FNNRYEP program provides.

The information you provide is vital to better understand forestry in the context of how it relates to the lives of First Nations youth in northern Ontario. This information will assist with 1) understanding how forest resource development impacts the lives of First Nations youth in northern Ontario, 2) creating meaningful opportunities for First Nations youth within the forest resource sector, and 3) developing mechanisms to better support First Nations youth who pursue education or careers within the forest sector.

Written surveys will take roughly 15 or 20 minutes to complete. Follow up conversations will take roughly 5 to 10 minutes, and the duration of the focus group interviews may be one to one-and-a-half

hours, possibly more, depending on the amount of information and experiences you wish to share. The focus group will be audio-taped to ensure an accurate recording of the information. The audio recording will then be typed, or "transcribed," and then provided to you for comment before conducting analysis to ensure I have understood and captured the meaning of your words.

Only you and members of the research team will have access to identifiable information related to your participation. All personal information (e.g. your name) will be replaced with a "code" so that your identity remains anonymous. This code will be kept confidential and separate from the research results. After the information (also called data) has been analyzed it will be securely stored at Lakehead University for five years. The research data may also be used by me in the future for other research studies. In this event, all personal information will continue to remain anonymous, kept confidential and separate from research results.

Information and data collected from interviews will be organized as collective discussions from different 'groups' of participants (e.g. 'individuals who hunt or trap' or 'Rangers who have returned for a second year in the FNNRYEP'). You will remain anonymous as an individual and will not be identified in published results unless you make an explicit request to be identified.

While every precaution will be taken to ensure privacy, there is a risk that identifiable information provided by a participant may be recognized. During focus group discussions participants will be asked to keep to content of conversations confidential. However, this confidentiality cannot be guaranteed. Consequently, there remains a risk that information related to your participation may become known to community members or other unintended individuals.

In addition to data collected by myself throughout the summer, I am also seeking your permission to access other "secondary data" relevant to my research project, that you have provided to Outland, including application questions, intake and exit surveys, etc. If you choose to provide consent to access this information, all of the same precautions described above will be taken to ensure your privacy.

The information being collected is intended for the use of this research project, thesis development, conference presentations, and possible publication in academic journals. Information collected will not be used for commercial development. All personal information related to your participation will be removed from all reporting, to protect your confidentiality.

As a participant you may receive a summary of the research results at your request. I will be glad to make those available to you.

By participating and providing your valuable perspectives and recommendations, you will be helping to ensure that government, industry, academic institutions and communities are better able to support youth, like yourself, who are interested in pursuing education or careers within the natural resource field.

In order to proceed to the survey and focus group, you are asked to sign a consent form. The consent form will not bind you in any way to participate. Your participation is voluntary; you may choose not to answer any question and can withdraw from the interview at any point.

Do you have any questions before we proceed?

This study has been approved by the Lakehead University Research Ethics Board. If you have any questions related to the ethics of the research and would like to speak to someone outside of the research team please contact Sue Wright at the Research Ethics Board at 807-343-8283 or research@lakeheadu.ca.

You are also invited to contact myself or my supervisor, at any time, at the contact information provided below.

Dr. Chander Shahi, Dean of Graduate Studies, Lakehead University, Thunder Bay, ON P7B 5E1 Tel.: (807) 343-8114, Email: cshahi@lakeheadu.ca

Paul Robitaille, MScF Student, Faculty of Graduate Studies, Lakehead University, Thunder Bay, ON P7B 5E1 Tel.: (705) 427-7249, Email: probitai@lakeheadu.ca

APPENDIX II

PARTICIPANT CONSENT LETTER



Natural Resources Management
t: (705) 427-7249
e: probitai@lakeheadu.ca

Participant Consent Form

Title: Roles and perspectives of First Nations youth within Ontario's forest resource sector

I _____ (please print), have read and understand the cover letter provided by Paul Robitaille for the research project entitled "Roles and perspectives of First Nations youth within Ontario's forest resource sector".

I understand that the data collected for this research project will be securely stored at Lakehead University for a period of five years.

I understand that Paul Robitaille may at some point in the future use the data from this research project for other studies, or authorize a third party to use the data. I also understand that Paul or any authorized third party are required to maintain my anonymity and confidentiality.

I am a volunteer in the study and can choose not to answer any question and can withdraw from this research project at any time.

I agree to the written surveys, focus groups, and follow-up conversations and am aware that the conversations with the researcher will be audio recorded.

I understand that I will remain anonymous in any publication and/or public presentation of research findings and that if I wish to be identified, I must explicitly agree to have my identity revealed, and sign a statement to that effect with a witness by a third party. I also understand that in the case of my participation in a focus group, my anonymity cannot be guaranteed within the context of this activity.

I understand the risks and benefits that may result from this study. I agree to participate in this research project.

YES NO

I agree to allow Paul Robitaille to access my secondary data from Outland, for the purposes described in the accompany Cover Letter for the research project entitled "Roles and perspectives of First Nations youth within Ontario's forest resource sector".

YES NO

I agree to allow Paul Robitaille to use the responses of our conversations as research data, provided he provides notice that he will be asking questions for the purpose of his research prior to the conversation.

YES NO

I agree to allow data I provide to be used in future projects.

YES NO

I wish to be provided with a summary of the research results.

YES NO

Dated: _____

Signature of the Participant

APPENDIX III

WRITTEN BACKGROUND SURVEY

1. **Is this your first year participating in the FNNRYEP?**
 YES NO
 - a. **If no, how many previous years have you participated for?**
Number of Previous Years: _____

2. **Do you live in your home community for the entire year?**
 YES NO
 - a. **If no, where else do you live and for how many months each year?**
Town/City: _____
Number of Months Each Year: _____

3. **Do you know of any commercial forestry operations taking place near your community?**
 YES NO

4. **Other than the FNNRYEP, have you ever been employed within the forest sector?**
 YES NO
 - a. **If yes, what position did you hold?**
Position: _____
Company/Organization: _____

5. **To your knowledge, have any members of your family been employed within the forest sector?**
 YES NO
 - a. **If yes, which family member(s)? (e.g. father, grandmother, aunt, brother)**
Family Member(s):

6. **Do you use the forest for hunting or trapping?**
 YES NO

7. To your knowledge, do any members of your family use the forest for hunting or trapping?

YES NO

a. If yes, which family member(s)? (e.g. father, grandmother, aunt, brother)

Family Member(s):

8. Do you collect forest plants for food, medicine, or other purposes (e.g. blueberries)?

YES NO

9. To your knowledge, do any members of your family gather forest plants for food, medicine, or other purposes (e.g. blueberries)?

YES NO

a. If yes, which family member(s)? (e.g. father, grandmother, aunt, brother)

Family Member(s):

10. Do you use the forest for recreational purposes (e.g. hiking, camping)?

YES NO

11. Do you use the forest for cultural purposes (e.g. ceremony)?

YES NO

APPENDIX IV

SAMPLE FOCUS GROUP QUESTIONS

Objective 1: Gathering youth perspectives on the forest sector:

1. What do you know about forestry and forest management in Ontario?
 - a. What does “forestry” mean to you?
 - b. Is it all just about cutting down trees?
 - c.
2. Overall, do you think forestry is a good or a bad thing?
- 3.
4. Do you think there are any benefits of practicing forestry?
 - a. What are some of the benefits that forestry has on your community (e.g. employment, culture), the environment, or you personally?
5. Do you think forestry creates any negative impacts?
 - a. What are some of the negative impacts that forestry has on you, the environment, or on you personally?
6. Where have you learned about forestry?
 - a. Have any of your friends or family ever shared their thoughts with you?
 - b. Have they taught you anything about it in school?
 - c. Have you received teaching from Elders or other members of your community?
 - d. Have forestry companies ever held information sessions in your community?

Objective 2: Roles of First Nations youth within the forest sector:

1. Why did you decide to participate in the FNNRYEP?
2. What types of career opportunities are you aware of within the forest sector?
3. What type of education or training would you need to go into each of them?
4. Of these careers, which (if any) would you be interested in pursuing?
 - a. Why or why not?

Objective 3: Supporting First Nations youth within the forest sector:

1. What are some barriers that might prevent you or other First Nations youth from pursuing education or careers in the forest sector?
2. What could be done to help overcome some of these barriers?
3. Who (e.g. employers, communities, government, youth) would be best suited to help overcome these barriers?
4. If you decided to pursue education or a career in forestry, what could universities and employers do to help you be happy and successful?

Objective 4: Effects of the FNNRYEP experience:

1. What do you hope to get out of the FNNRYEP over the summer?
 - a. Is there anything you hope to learn?
 - b. Is there anything you hope to do?
2. How do you think this experience has changed the way you think about forests and the forest sector?
3. Do you have any final thoughts you would like to share?
 - a. On forestry and forest resource development?
 - b. Other opportunities you would like to see?
 - c. The FNNRYEP program?
 - d. Opportunities you might want to pursue in the future?

APPENDIX V

NODE HIERARCHIES ORGANIZED BY RESEARCH OBJECTIVE

Research Objective 1

Nodes			
Name	Sources	References	
Forestry Perspectives		73	599
Social		55	238
Relationships within Community		38	93
Health Effects		9	19
Decision Making		18	46
Civic Life		17	24
Relationships with Self		22	36
Relationships with Nature		34	88
Respect and Reciprocity		10	12
Relationships with External Actors		13	21
Solutions		13	24
Positive		3	3
Neutral		7	8
Negative		16	31
Environmental		56	222
Wildlife		23	39
Displacement		14	24
Habitat Creation		6	6
Species at Risk		2	2
Water		13	34
Industrial Pollution		10	19
Downstream Effects		7	11
Land		50	116
Giving Back		22	32
Forestry as a Cycle		26	46
Ecosystem Thinking		11	12
Air		13	14
Oxygen		10	11
Air Pollution		3	3







<input checked="" type="checkbox"/> Economic		50	130
<input checked="" type="checkbox"/> Forest Products		29	35
<input checked="" type="checkbox"/> Products as Catalyst		9	11
<input checked="" type="checkbox"/> Community Infrastructure		6	6
<input checked="" type="checkbox"/> Employment		24	35
<input checked="" type="checkbox"/> Targetted Recruitment		5	5
<input checked="" type="checkbox"/> Meaning		5	5
<input checked="" type="checkbox"/> Employment Challenges		5	7
<input checked="" type="checkbox"/> Abundance of Opportunity		12	20
<input checked="" type="checkbox"/> Community Revenue		10	19
<input checked="" type="checkbox"/> Bush Economy		23	41
<input checked="" type="checkbox"/> Hunting and Trapping		16	24
<input checked="" type="checkbox"/> NTFP		10	11

Research Objective 2








Nodes			
Name	Sources	References	
<input checked="" type="checkbox"/> Education and Career Opportunities		58	637
<input checked="" type="checkbox"/> Attributes, E&C		4	4
<input checked="" type="checkbox"/> Working Outdoors		23	53
<input checked="" type="checkbox"/> Variety and Adventure		19	51
<input checked="" type="checkbox"/> Sense of Pride		6	7
<input checked="" type="checkbox"/> Complementing Strengths		5	7
<input checked="" type="checkbox"/> Opportunities to Build Relationships		22	41
<input checked="" type="checkbox"/> Learning and Experience		11	23
<input checked="" type="checkbox"/> Interest and Enjoyment		21	53
<input checked="" type="checkbox"/> Health and Safety		9	12
<input checked="" type="checkbox"/> Hands-On Work		26	55
<input checked="" type="checkbox"/> Giving Back		25	48
<input checked="" type="checkbox"/> Sustaining Nature		13	15
<input checked="" type="checkbox"/> Role Model		5	5
<input checked="" type="checkbox"/> Helping People		7	11
<input checked="" type="checkbox"/> Financial Opportunity		22	42
<input checked="" type="checkbox"/> Freedom and Independence		5	6

Name	Sources	References
E&C Subject Areas		31
Undesirable		3
Planting and Thinning		2
Part-Time and Temporary		3
Slash Burning		1
Planting and Thinning		6
Harvesting and Felling		1
Firefighting		2
Level of Education		0
University		15
Trades		14
High School or Certificate		22
College		21
Interest		30
Trades, non-NRM		4
Science and Engineering, non-NRM		3
Natural Resources Management		22
Military and Policing		10
Hospitality and Tourism		5
Healthcare		5
Education		1
Business and Entrepreneurship		3
Aviation		2
Arts, Social Science and Humanities		4
Awareness		1
Natural Resources		0
Arts, Social Science and Humanities		1

Research Objective 3

Name	Sources	References	
Barriers and Success Factors		41	518
Social Barriers and Success Factors		34	205
Youth-Focused Programming		13	25
Culturally-Relevant Programming		4	5
Young Families		3	3
Unsupportive Homes and Communities		16	31
Haters		11	18
Supporting Personal Growth		26	64
Social Skills		13	17
Self-Confidence		19	31
Independence		9	16
Substance Abuse		12	26
Peer Support		24	55
Role Models		13	18
Friends as Family		7	12
Criminal Records		1	1
Institutional Barriers and Success Factors		40	313
Supports and Services		26	66
Moral Support		14	18
Finances		13	25
Racism and Discrimination		8	24
Education		23	56
Career as a Journey		35	167
Stepping Stones		21	29
Professional Skills Development and Training		24	52
Certifications		14	21
Merit-Based Advancement		7	11
Guided Exploration		21	41
Entry Points		15	34






Research Objective 4

Nodes			
Name	Sources	References	
FNNRYEP		58	269
Forestry		17	30
Unchanged Perspectives		3	5
Conflation of Forest and Other NRM		8	8
Affected Perceptions of Forest Sector Employment		8	16
Declining Opportunities		1	1
Abundance of Opportunities		8	15
Affected Perceptions of Forest Management Practices		0	0
Unarticulated Change		2	4
Increased Awareness and Evaluative Skills		4	8
Improved Forestry Literacy		6	6
Balancing Effect		11	26
Education and Career		39	213
Unchanged or Contingent Influence		3	4
Influenced Career Trajectory		27	54
Value of Guided Experiential Learning		17	31
Learned about Potential Careers and Opportunities		6	8
Increased Knowledge of Career Pathways		1	2
Increased Confidence in Personal Abilities and Opportunities		33	150
Increased Pride and Self-Esteem		19	26
Improved Life and Job Skills		20	38
Improved Education and Career Prospects		20	62
Opportunity Through Knowledge, Experience and Certification		20	51
Expanded Personal Support Network		18	24

APPENDIX VI

NODE HIERARCHIES REPRESENTING UNDERLYING INFLUENTIAL FACTORS

Name	Sources	References	References
Resource Trap		58	247
Consequences of NRM		49	168
Wildlife		23	39
Water		13	34
Relationships with Self		22	36
Relationships with External Actors		13	21
Imperfect Cycle		11	19
Health Effects		9	19
Benefits of NRM		30	54
Employment		24	35
Community Revenue		10	19
Relationship		0	0
Healthy Supportive Relationships Within Community		48	255
Personal Support Networks		36	174
Unsupportive Homes and Communities		16	31
Relationships with Self		22	36
Peer Support		27	89
Moral Support		14	18
Institutions of Community Governance		34	81
Helping People		7	11
Decision Making		18	46
Civic Life		17	24
Healthy Supportive Relationships Between Communities		64	273
Relationships Between Indigenous and Settler Communities		26	64
Relationships with External Actors		13	21
Racism and Discrimination		8	24
Economic		10	19
Relationships Between Humans and Nature		55	209
Sustaining Nature		13	15
Relationships with Self		22	36
Relationships with Nature		34	88
Land		39	70
Giving Back		22	32

[-] Intergenerational Equity		60	267
[-] Sustaining Nature		27	39
[-] Role Models		14	23
[-] Land		50	116
[-] Giving Back		22	32
[+] Forestry as a Cycle		26	46
[-] Decision Making		18	46
[-] Cycles & Cyclicity		55	357
[-] Socioeconomic Cycles		42	218
[-] Cycles of Trauma		28	55
[-] Unsupportive Homes and Communities		16	31
[-] Haters		11	18
[-] Civic Life		17	24
[-] Youth Programming		16	22
[-] Cycles of Support		29	75
[-] Supports and Services		21	41
[-] Moral Support		14	18
[-] Role Models		14	23
[-] Helping People		7	11
[-] Cycles of Education and Employment		26	88
[-] Family Member as Career Influence		16	32
[-] Educational Attainment		23	56
[-] Natural Cycles		45	134
[-] Relationships with Nature		34	88
[-] Respect and Reciprocity		10	12
[+] Forestry as a Cycle		26	46