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A Case for Indigenous Community Forestry

Julia H. Lawler and Ryan C. L. Bullock

Local control, benefits, and values are core principles of indigenous community forestry, which is a relevant management model for North America where communities and forests increasingly face competing and complex demands. In this article, we discuss the core principles and supporting conditions of indigenous community forestry in the context of Manitoba, Canada, where indigenous and forestry issues are closely connected. We characterize indigenous involvement in forest management in Canada to highlight the significance of forest-community connections and link recent developments to the Manitoba context to consider the potential for indigenous community forestry based on existing conditions, forest development opportunities, and needs.

Inclusion of indigenous communities in forest development and conservation is now a central part of sustainability efforts worldwide (Food and Agriculture Organization [FAO] 2010). Approximately 200 million of the world's 500 million forest-dependent people are indigenous (Chao 2012). Indigenous communities have cultural and spiritual connections to the forests in which they live and traditional rights to land, and community-level involvement in forest management is fundamental to their values and way of life (Baker and Kusel 2003, Wyatt 2008). In recent decades, addressing indigenous rights alongside environmental and economic goals has gained importance among forest decision-makers across North America (Belsky 2008). This is underscored by the fact that in the United States there are 302 forested Indian reservations encompassing 17.9 million acres of forestlands (National Congress of American Indians 2016), and in Canada more than 70% of indigenous communities are located in forested areas (Natural Resources Canada [NRCan] 2014a). Many indigenous communities seek ways to establish more control over and benefits from forest resources based on traditional values (Wyatt 2008, Booth and Muir 2013). As Booth and Muir (2013, p. 154) describe, traditional values incorporate "procedural and substantive rights … in relation to culture, ecological, social, and economic components." The above considerations—local control, benefits, and values–are core principles of indigenous community forestry (Wyatt 2008, Bullock and Hanna 2012), which is a relevant management model for North America where communities and forests face competing and complex demands (Curran and M'Gonigle 1999).

Community forestry, an approach that empowers communities to manage forests for the benefit of local constituents, is growing in North America and other parts of the world (Charnley and Poe 2007, Bowler et al. 2012, Moktan et al. 2016). There remains demand for new approaches and therefore changes to the dominant policy regimes. The commonly available forestry models often do not provide indigenous communities with the long-term timelines and flexibility needed to incorporate diverse values and uses (Curran and M'Gonigle 1999). Understanding the conditions known to precipitate community forestry is important for identifying settings where local management might be suitable and effective. In this article, we explore indigenous community forestry as one approach for managing complex forest issues at a time when acknowledgment of indigenous rights and values is at the forefront. In particular, we consider the potential for indigenous community forestry in Manitoba, Canada, a region where indigenous people and issues are prominent and decision-makers and communities are considering forestry options suited to their jurisdiction. There is a strong need for employment and for economic and social development in many indigenous communities where forest resources abound. Some local experiments have been tried in Manitoba. The local buy-out of the Pine Falls Paper Company in 1994 (Krogman and Beckley 2002), indigenous engagement in the "East Side" of Lake Winnipeg forest area (Wellstead and Rayner 2009), the use of

Affiliations: *Julia H, Lawler (juliahlawler@gmail.com), The University of Winnipeg, Winnipeg, MB, Canada. Ryan C. L. Bullock (r.bullock@uwinnipeg.ca), The University of Winnipeg.*

community allocation Timber Sale Agreements with indigenous communities (Manitoba Conservation 2011), and locally sourced housing project proposals (Kemp 2012) are recent examples. Yet there has been little attention given to indigenous community forestry in Manitoba compared with that in other Canadian provinces (Bullock and Lawler 2015). In particular, British Columbia, where in 2003 a *Forest Revitalization Plan* reallocated 20% of the Annual Allowable Cut away from industrial forestry with half directed toward indigenous communities (Pinkerton et al. 2008). This is despite the fact that more than half of Manitoba is forested, and the majority of indigenous communities reside in forests. There is also strong interest among indigenous communities on issues of importance to forest communities in Manitoba and indeed elsewhere. Serious declines in moose populations (Kotak 2014), movements to create protected areas and international designations for northern boreal areas (Wilson and Graham 2005, Fortier et al. 2012), and the pursuit of indigenous partners by private natural resource development firms (Manitoba Métis Federation 2016) further illustrate the pervasiveness of complex forest issues in Manitoba that now require indigenous involvement.

As in other parts of the world, indigenous communities in Manitoba and their partners are experimenting with different arrangements to enable more local *control* and *benefits* in forest development and conservation (see Wyatt 2008, McIvor 2014). Canada's National Forest Strategy (Canadian Council of Forest Ministers 2008) and the province of Manitoba (Manitoba Conservation 2002) both identified increasing indigenous involvement through community-based forest management as a priority for sustainable forest management and community development. Whereas sustainable forest management focuses on maintaining resources for future generations, addressing current issues of equity and fairness through indigenous rights are an essential component (Burton et al. 2006). However, the Manitoba government has yet to formally embrace community forests as a practice that could support indigenous development.

Below we interpret recent literature in the context of boreal forest management in Manitoba, Canada, to consider whether indigenous community forestry holds potential and to highlight insights for practice and research. In particular, we do the following:

1. Review core principles of indigenous community forestry and supporting conditions as discussed in recent literature.
2. Characterize indigenous involvement in forest management in Canada to highlight the significance of forest-community connections.
3. Link recent developments to the Manitoba context to reflect on the potential for indigenous community forestry based on existing conditions, opportunities and needs.

Our conclusion offers new policy and management insights and identifies future research needs.

Indigenous Community Forestry: Principles and Supporting Conditions

Indigenous community forestry has emerged as one promising model among many institutional arrangements that vary in the range of local control and benefits that are supported (see Wyatt et al. 2013). Community forests involving indigenous and nonindigenous groups can provide a local forum for participation and decision-making in natural resource development. As such, they can be a vehicle for broader, yet related, community planning initiatives (Bullock et al. 2009). Practice demonstrates that community-managed forests can play a key role in promoting economic development and community well-being and in supporting environmental management (e.g., Brendler and Carey 1998, Baker and Kusel 2003, Furness and Nelson 2012). This is because community forestry usually involves local control over decisions, use of forest resources to produce community benefits, and attention to multiple place-based values (Table 1). The principles of community forestry are in line with prominent indigenous issues and goals, such as environmental stewardship, community well-being, and self-reliance.

Local Control

Community forests are different from conventional industrial forestry in that communities have direct access to and control of local forests (Beckley 1998). Community representatives are empowered through enhanced decision-making responsibilities, although the degree of community control can range from consultation to comanagement to direct tenure access with full strategic, tactical, and operational responsibilities (see Krogman and Beckley 2002, Teitelbaum and Bullock 2012, Wyatt and Nelson 2013). This variability in the degree of local control provides flexibility, which is needed to address the diversity that exists across communities and forest regions (Schlager and Ostrom 1992). At the same time, devolution of control to the local level does not automatically produce equitable distribution of benefits (Charnley and Poe 2007). Although local decision-making is an important principle of community forestry, the effectiveness of local decision-making has been shown to vary across contexts and processes (Reed and McIlveen 2006).

Local control of traditional territories is also an essential part of indigenous self-governance (FAO 2010). Local management

Management and Policy Implications

The recognition of indigenous rights is a fundamental aspect of sustainable forest development. Contemporary forest management across North America faces increasingly complex and competing demands, particularly in adapting to changing environmental and economic needs. Indigenous community forestry focuses on local control, benefits, and values and offers one approach to address forest management challenges. Regions with adequate natural capital, supportive policy, and tenure options to provide community timber access are well suited to explore community capacity and interest in this type of forest management practice. By providing a local forum for direct community participation and decision-making in natural resource development and planning, this approach can play a key role in promoting economic development and community well-being and supporting environmental management. Broader benefits are also associated with indigenous community forestry including collaboration, relationship building, and trust, as well as balancing local values, economic development, and conservation. Involving indigenous communities in forest management bridges traditional indigenous rights, knowledge systems, and values with scientific forestry, offering new opportunities and insights in contemporary forest management.

Table 1. Core principles of community forestry.

Aspect	Description	Examples
Local control	Authority and ability for decision-making in forest planning, management and development resides at the local level; forest community representatives are empowered to decide on various normative, strategic and operational matters	Design governance structures/processes and identify stakeholders Set harvest levels Identify where/when harvesting occurs Determine who will undertake harvesting Direct wood flow to end use
Local benefits	Human interactions with forests foster physical, emotional and spiritual gains, felt at individual and community levels	Local/regional employment Training and capacity building Community service and program provision Maintain cultural identities and ways of life Self-reliance, capacity and autonomy Maintenance of healthy ecosystem
Local values	Social interactions, forest conditions, and forestry products deemed important by and for the community, whether for sociocultural, economic, ecological, or aesthetic reasons are upheld	Timber Nontimber forest products Sacred sites Education Habitat Scenic views

Source: Bullock et al. 2017.

can also increase the likelihood of long-term planning for sustainability, as community members often possess a closer connection to the land as forest-dependent people and, therefore, must live with the consequences of non-local poor planning and practice. Indigenous community forestry is thus one way to implement the sustainability principle of subsidiarity (Berkes 2010).

Local Benefits

Community forests promise many economic, sociocultural, and environmental benefits. At the core, however, local benefits derive from forest-based economic opportunities, namely, employment in forestry operations, harvesting of forest products, tourism, or recreation activities. Community forestry directs benefits from the forest back to the local community rather than contributing to the external "leakage of benefits" (Teitelbaum and Bullock 2012, p. 701). The above endeavors often require an initial focus on local capacity building, which contrasts with the "needs based approach of past regional development policy" (Markey et al. 2005, p. 132). Capacity building initiatives take stock of existing strengths, skills, and areas for improvement and base development plans and activities on such inventories of assets, needs, and opportunities. Through the capacity building process, community forests encourage participation of locals in planning and decision-making, and work toward achieving social sustainability through empowerment (Beckley 1998, Markey et al. 2005, McIlveen and Bradshaw 2009). Another benefit of local management is that it typically uses smaller forestry operations

that can have a smaller ecological footprint and tend to be more adaptive to the changing needs of ecosystem-based management practices and markets (Markey et al. 2005, Plummer and Armitage 2007, Pinkerton and Benner 2013).

Local Values

Community forestry seeks to expand forest use beyond timber production by incorporating the full range of local values and aspirations. For example, Teitelbaum and Bullock (2012) described the array of activities that can take place when local values are considered, such as educational programming, recreation activities, and protection of traditional cultural assets. Culturally driven forest management can also help establish new locally endorsed economic development opportunities (Bull et al. 2014). It is also argued that community forestry pays more attention to environmental values, which normally includes respect for traditional ecological knowledge and, by extension, the needs of forest users (Wilson and Graham 2005). Markey et al. (2005, p. 164) further described ecological health and diversity as "critical indicators of community capacity and stability," pointing out the importance of connections between the different forms of capital (natural and social in this case) that support communities. Incorporating local values, however, also presents its own challenges when communities must grapple with balancing traditional values with business demands and development strategies (Booth and Skelton 2011).

Supporting Conditions

The success of community forestry initiatives can be determined by the human, social, and economic capacity of the community itself, such as education levels, technical skills, business experience, and communication and leadership qualities (Gunter 2000, Markey et al. 2005, Charnley and Poe 2007). Projects are more likely to be successful if designed to "fit" the needs, abilities, and goals of communities (Markey et al. 2005, McIlveen and Bradshaw 2009). Appropriately designed initiatives can also assist in addressing some of the common challenges associated with community forestry, such as a lack of local support, a lack of human, financial, or physical resources, decision-making complexity, and conflicting motivations (Bullock et al. 2009, Wyatt and Nelson 2013).

Several other factors also have significant influence over the success of community forestry (Duinker et al. 1994, Gunter 2000, Pagdee et al. 2006, Bullock and Hanna 2012), such as (1) the presence of adequate "natural capital," i.e., availability and suitability of a land base and resource allocations; (2) the presence of supportive and legally binding policies; (3) the degree of local authority and property rights/tenure that provides access, and (4) the level of government support through human and financial resources.

These conditions are the main factors for enabling sustainable community forest management, as they are significant for economic viability, community buy-in, and ecological stewardship (Burton et al. 2006).

Despite the fact that many of these conditions currently exist in various settings, incorporating indigenous interests and values in forest management has not been a mainstream objective until quite recently. We consider these conditions below in the context of Manitoba, Canada, to reflect on the potential for indigenous community forestry.

Indigenous Involvement in Forestry in Canada

Historically, Canada's natural resource policies excluded indigenous groups from resource development, limiting their control, benefits, and values. However, recent decades have seen increased indigenous involvement in the forest resource sector driven by, for example, indigenous development priorities (Tindall et al. 2013), new government and industry programs (see FP Innovations 2016), and moves to increase certification (Teitelbaum and Wyatt 2013). Today, just over 10% of the national wood supply in Canada is held by indigenous interests (National Aboriginal Forestry Association [NAFA] 2015), which represents an increase of 140% in volume since the NAFA began tracking indigenous-held tenures in 2003 (NAFA 2003). This high increase in indigenous-held timber volumes can be attributed to land management agreements (as with Newfoundland and Labrador and the Innu Nation of Labrador), policy changes (such as the *Ontario Forest Modernization Act* ["*The Forest Act*"]), and indigenous business partnerships (including Mistik Forest Management, Ltd., and Sakâw Askiy Management, Inc., in Saskatchewan) (NAFA 2015).

In 2013, more than 13% of total public land harvest volume was allocated to indigenous organizations (NRCan 2015). More than 9,000 indigenous people currently work in the forestry sector, accounting for 4.8% of the forest sector workforce, and approximately 1,300 forestry businesses are owned by indigenous groups (NRCan 2016). Such increases in participation bring indigenous values and beliefs to commercial management systems and contribute to the development of a community-driven sustainable forest management paradigm (Parsons and Prest 2003, Booth and Skelton 2011, Nikolakis and Nelson 2015). Bridging traditional and scientific forestry knowledge is also an increasingly common goal for today's resource managers (Mason et al. 2012).

However, conflict between indigenous groups and provincial governments regarding historic treaty lands and rights has occurred across Canada (Fortier et al. 2012, Tindall et al. 2013). Numerous court cases (see *R v. Sparrow 1990*, *Delgamuukw v. British Columbia 1997*, and *R v. Marshall 1999*) have supported indigenous rights to resource benefits and access under Section 35 of Canada's constitution and have implications for treaties in Manitoba (Wellstead and Rayner 2009, Indigenous and Northern Affairs Canada 2010). Many indigenous group-led actions, most notable perhaps, the Clayquot Sound protests on Vancouver Island in the 1990s (Barnes 2005), have also turned public attention to and raised support for indigenous rights and priorities regarding forest-based development (Burton et al. 2006). Despite apparent federal and provincial political support and successful examples of indigenous forestry, greater indigenous involvement remains a challenge under most current management systems. Elements of exclusive policies are still in place and continue to influence Canada's dominant forest management systems, which were established long ago to support large-scale industrial development (Ross and Smith 2002, McGregor 2012, Booth and Muir 2013). In Canada, the vast majority (91.4%) of forestlands are publically owned (NRCan 2016), provinces have jurisdiction over natural resources, and indigenous affairs and reserve lands fall under federal jurisdiction (Howlett and Rayner 2001, McGregor 2012). These historical and constitutional realities complicate indigenous forestry goals, objectives, and, most importantly, access to land as large areas of traditional indigenous territories have been allocated as public land for industry use (McGregor 2012, Fortier et al. 2013, Tindall et al. 2013). Although some policy documents now contain more references to indigenous and local involvement, the practice is advancing slowly at best.

In addition to these institutional challenges, there are several operational challenges within the forest sector. The highly mechanized nature of modern forestry, which results in the need for high capital investments and technical, financial, and managerial skill and capacity, presents barriers to increased local involvement and economic viability (Brubacher 1998, Wilson and Graham 2005). In addition, indigenous reserves are, in general, too small for large-scale forest development typically based on

industrial tenure models, and, therefore, opportunities for economic development are restricted via this path (Ross and Smith 2002, Booth and Skelton 2011). The dominant large-scale industrial system typically does not support smaller, local management. These challenges, along with restrictions of conventional forest tenure design, are discussed at length within the literature on indigenous forestry in Canada (see Hickey and Nelson 2005, McGregor 2012, Ross and Smith 2013).

Despite these limitations, indigenous peoples have maintained traditional social, economic, and spiritual forest activities and they participate in the forestry workforce (Tindall et al. 2013). Improving indigenous involvement in the forest sector is essential to both the recognition and protection of treaty rights and the incorporation of indigenous values into forest management (Ross and Smith 2002). Collaborative arrangements provide an avenue for forest management that is more compatible with traditional indigenous values and objectives (Fortier et al. 2012). Indigenous involvement is also essential to forest conservation (FAO 2010).

Thus, there is a strong rationale and potential for increased indigenous development through forestry (Hickey and Nelson 2005, Booth and Skelton 2011, NRCan 2014b). Exactly how remains an open question. As discussed below, Manitoba has made efforts to increase indigenous involvement, but opportunities and needs remain, at least some of which could be realized through community forestry.

Connecting Indigenous Communities and Forests in Manitoba

Manitoba Has Abundant Natural Capital

Although most often thought of as a Prairie Province, more than half of Manitoba is forested (approximately 64,000,700 acres) (Manitoba Conservation 2011, Manitoba Conservation n.d.a) (Figure 1). Manitoba's boreal forest is critical habitat, representing a "crown jewel" for environmental conservation groups interested in the remote, intact, unroaded forests of the Northeast for protection (e.g., Wells et al. 2014). At 220,078 mi^2, Manitoba's boreal forest is larger than most European countries (Ducks Unlimited Canada 2015, Boreal Songbird
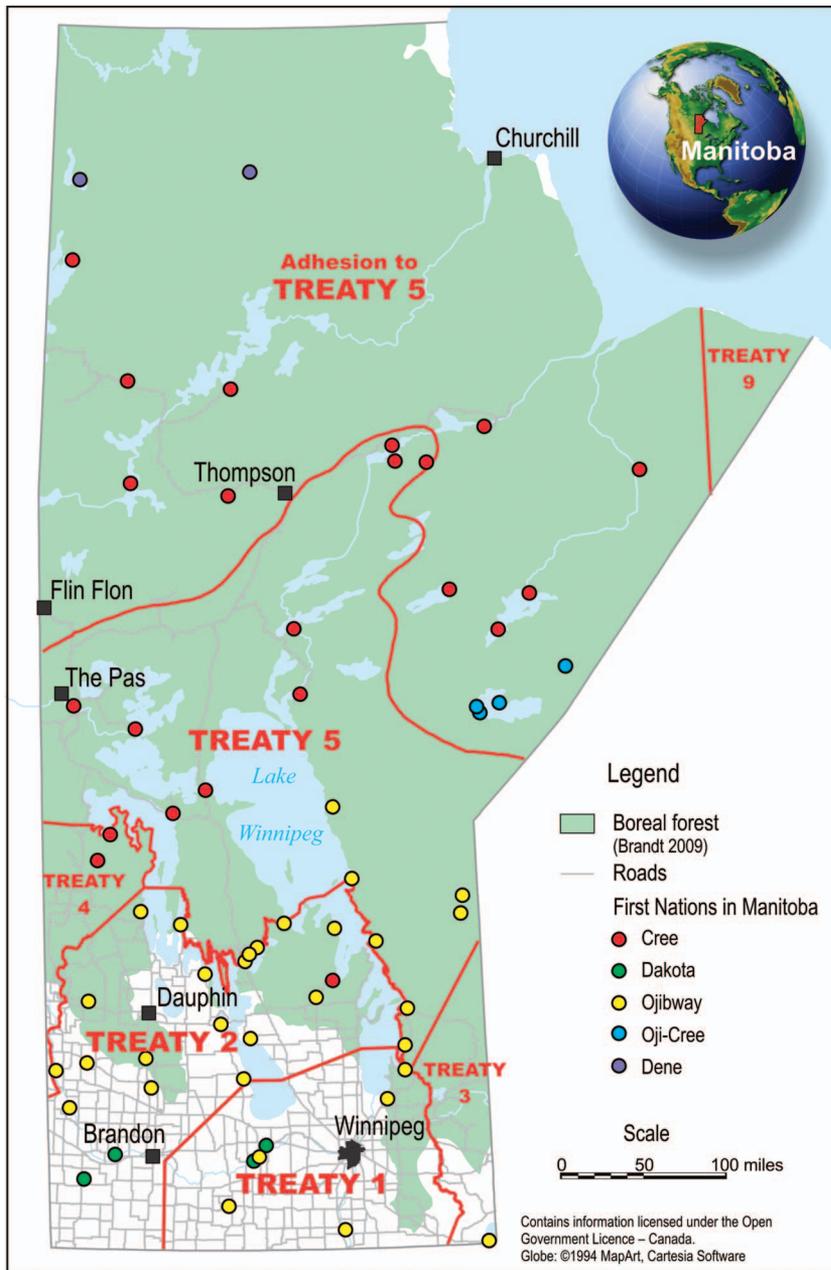
Figure 1. Distribution of indigenous communities and boreal forest in Manitoba, Canada.

craft products to garden products (Davidson-Hunt et al. 2001, Duchesne and Wetzel, 2002, Boxall et al. 2003).

Indigenous-Oriented Policy and Legislation Is Emerging

The forest is home to most of Manitoba's 63 indigenous communities (Figure 1). Indigenous people account for 16.7% of the total provincial population, making Manitoba Canada's most indigenous province by proportion (Statistics Canada 2011). With such a prominent indigenous population comes a responsibility and pressure to prioritize indigenous issues (Wilson and Graham 2005, Griffith et al. 2015). This is particularly relevant considering that indigenous people are Manitoba's youngest and fastest growing demographic (Wellstead and Rayner 2009). Median income for indigenous people in Manitoba is much lower than that of nonindigenous people (Manitoba Aboriginal and Northern Affairs 2012, Griffith et al. 2015), and Manitoba's indigenous communities rank last on Canada's community well-being index (Aboriginal Affairs and Northern Development Canada 2015), making economic development and employment all the more important. Indigenous issues and workforce contributions to the forestry sector are sure to grow into the future (Bombay 2010).

Evidence from recent decades indicates a desire for changes to the dominant policy regime, particularly regarding indigenous forestry arrangements. Notably, the East Side of Lake Winnipeg has been the site of ambitious initiatives that demonstrate the demand for increased indigenous involvement. This region has been described as one of the most economically significant areas in Canada that has not yet seen large-scale forestry development (Wilson and Graham 2005). The Wabanong Nakaygum Okimawin (WNO) planning initiative, also known as the East Side Planning Initiative involves more than 16 indigenous communities, representatives from interest groups, and the broader public (East Side Road Authority n.d.). The WNO is committed to broad area planning to ensure sustainable development in addressing the economic, social, and environmental needs of the region. Indigenous communities there are also pursuing United Nations Educational Scientific and Cultural Organization (UNESCO) World Heritage Site designation through the collaborative Pimachiowin Aki Corporation (Fortier et al. 2012, Pimachiowin Aki

Initiative n.d.). In 2014, approximately 5,900 forest sector jobs (NRCan 2014a) and more than $406 million in manufactured goods were generated through forestry (NRCan 2014b). Manitoba's annual allowable cut is approximately 303,200,000 ft³, and it provides the backbone for the provincial forest sector (Manitoba Conservation 2011). However, the wood supply is underutilized. There are only two active industrial licenses on the west side of the province, which account for roughly 43,900,800 ft³/year (14.5%) combined (LP Building Products 2009, Tolko Industries 2013). Another 19,900,200 ft³ (6.5%) is allocated through smaller timber sales. Conversely,

there is another roughly 14,700,200 ft³/year (4.8%) unallocated in an inactive Forest Management License formerly held by Tembec on the East side of the province (Matt Conrod Manitoba Conservation, pers. comm., Apr. 29, 2016). Thus, much of Manitoba's fiber (224,600,000 ft³/year or 74%) is currently unallocated largely due to physical remoteness. These figures have led others (Wilson and Graham 2005; Manitoba Conservation 2011) to the conclusion that Manitoba's forest sector holds considerable potential for growth. In addition, Manitoba has abundant opportunities for the harvesting and production of nontimber forest products (NTFPs), from food items to

Corporation n.d.). These initiatives highlight the fact that increased indigenous involvement in forestland use and management is not simply focused on timber harvesting, but also on broader collaboration, relationship building, and balancing local values, economic development, and conservation, all of which are incorporated under indigenous community forestry approaches (see Wyatt 2008, Teitelbaum 2014).

Moves to Increase Access and Recognize Rights

Whereas relationships between the province and indigenous communities in Manitoba have been unstable in the past, recent policy changes have been positive (Wilson and Graham 2005). In 2002, the Manitoba government released a *Next Steps* strategic document outlining key priorities for sustainably managing Manitoba's forests, which included increasing comanagement, employment, and economic development opportunities with indigenous communities and promoting a sustainable forest economy (Manitoba Conservation 2002). These priorities were reiterated in Manitoba Conservation's *Five-Year Report on the Status of Forestry April 2006–March 2011*. It is important to note that throughout these policy development processes indigenous communities are not stakeholders, as typically considered for outreach to user groups of forested lands and for forest products management (McGurk et al. 2006). An Aboriginal Relations Branch was also established to ensure and increase the involvement of indigenous communities in policy and programming (Manitoba Conservation n.d.b). Despite these initiatives for change, in their review of indigenous collaboration in the forestry sector, Fortier et al. (2013) noted that indigenous community involvement in economic partnerships was much lower in Manitoba (i.e., 12% of communities) than in other provinces (e.g., 59% in Alberta and 66% in Saskatchewan). These findings were reiterated by Griffith et al. (2015) who found that although new ideas, objectives, and actors have emerged in Manitoba's forestry regime over time, they were unable to influence the dominant industry-government relationship within the forestry sector, or introduce legally enforceable changes to *The Forest Act* in response to the changing culture of forestry in past decades. Taken together, the above points signal that there is demand for involvement, and although conceptual progress has been made, there is perhaps more work that could be done to advance practice relative to that in other provinces, particularly British Columbia (where, for example, communities have the option to pursue Community Forest Tenures) (McGurk et al. 2006, Booth and Muir 2013). As proposed in other studies (e.g., Booth and Muir 2013), a form of indigenous community forestry tenure could create opportunities to address longstanding issues in Manitoba. At this time, however, such tenure is not currently available in the region, although access to timber volumes is available through other means.

Current Land Use and Development Initiatives Are Furnishing Capacity

Capacity building is ongoing through existing timber allocations such as volume-based tenures. There are also natural opportunities to build on existing initiatives that are complementary enterprises, such as the Manitoba Métis Federation Wood Lot Management Project, square timber housing, and NTFP initiatives, activities that are a good fit with the small- and medium-scale forestry activities associated with indigenous community forestry initiatives. Examples of these very kinds of businesses are already supported by community forestry in other jurisdictions such as British Columbia, Canada (Boxall et al. 2003, British Columbia Community Forestry Association 2016). Established networks also exist, e.g., the Manitoba Model Forest, the NTFP Network, and the Manitoba Woodlot Association, which could connect and mobilize existing capacities and institutions to mount new projects and programs. Using existing institutions is easier than starting over (see Harvey and Hillier 1995).

Moreover, Manitoba has a long history of community economic development (CED), mainly regarding social and economic development with indigenous and urban communities (Fernandez 2005). For example, the organization Community Futures Manitoba has demonstrated successful outcomes with the development of a NTFP program in the northern boreal region (Community Futures Manitoba 2014). For northern forest-dependent communities vulnerable to the effects of economic instability, this form of CED through multiple forest use can contribute to increased stability and adaptive capacity (Burton et al. 2003, Community Futures Manitoba 2014).

Below we set out opportunities and considerations for indigenous community forestry in Manitoba and like settings.

Considering a Case for Indigenous Community Forestry

As shown above, the principles of and supporting conditions for community forestry are already at work in Manitoba, manifest in different efforts to sustainably manage forest resources. There are also economic drivers, environmental concerns, and social disparities related to the use and control of forests, which are well-documented preconditions of many community forest initiatives (see Bullock and Hanna 2012). There is demand for indigenous and local involvement in forestry in Manitoba's boreal forest. At the same time, there is external demand for partnerships with Manitoba indigenous communities, fiber, and protection of Manitoba's boreal forest. Competing uses have increased pressures on forest landscapes and peoples. The government and communities have already begun to respond, demonstrated by the volume-based tenure programs, planning processes, new businesses and networks, and provincial strategic policy directions meant to elevate involvement.

The discussion now links back to the overarching question behind this article, which asked whether there is potential for local forest management by indigenous communities in Manitoba? Put another way, do conditions resemble those identified in recent literature and as found in other regions where community forests are flourishing? The short answer is "yes."

Manitoba has an immense land area available for communities to manage, which is considered a primary "enabling factor" (Gunter 2000, Markey et al. 2005). For many communities these lands are traditional territories over which they already hold rights. There are also currently unused timber allocations due to closures of industrial license holders (Tembec at Pine Falls, Manitoba, since 2009), leaving large tracts of unmanaged forest available to surrounding indigenous interests positioned to take the lead. Indeed, the lands and forests on the East Side of Lake Winnipeg have been the topic of frequent debate (Fortier et al. 2012). Environmental concerns that make it difficult for conventional large-scale forestry to practice (e.g., unroaded areas where protection is an issue and concern for moose and other wildlife populations is high) also leave ecologically significant areas that could be

more amenable to ecosystem-based management by communities (Bullock and Hanna 2012).

Various capacities also exist to support local involvement. Of critical significance is the fact that there is already an established rapport between some northern communities, quota holders, and forest companies. This provides a precedent for good business relations on which new indigenous businesses could be developed to enhance the northern forest sector and community development. At the same time, there is also a prominent and growing indigenous population with close ties to forests. Needs and opportunities for two-way sharing of knowledge are apparent, both in training forestry professionals and in forest resource users informing managers and specialists.

Specific policy and legislation are developing slowly. In their description of conditions necessary for the development of community forestry, Markey et al. (2005, p. 235) list "political will on the part of the … government to enable sustainable community forestry," followed by "meaningful tenure with sufficient duration, security, and devolution of management rights …". Manitoba currently uses a volume-based system of small-scale quotas to enable community involvement, which includes playing the role of contractor on short-term or special purpose licenses (Wyatt et al. 2013). Although a good starting point, contract timber allocations alone are not enough to adequately address forest values beyond timber or support full community participation (Ross and Smith 2002, Beaudoin 2012, Booth and Muir 2013). Thus, there is a need to develop institutional infrastructure (Griffith et al. 2015), perhaps building on the accomplishments of communities that already have a record of success in forest-related enterprises in Manitoba. Manitoba is currently missing substantive and legally binding policies needed to embed and enable indigenous community forestry. Revising *The Forest Act* will be essential for addressing these and other concerns.

Indigenous community forestry offers a useful model for Manitoba and other jurisdictions to consider. The focus on local control for local benefits provides opportunities for sustainable economic development and the incorporation of community values into management. Community forestry may stimulate economic activity by indigenous communities that reside in Manitoba's for-

ested areas but are not located where industry currently operates. It also provides an applicable model to support forest-based economic development initiatives in which communities have a demonstrated interest.

Manitoba is an important forestry and community development case, considering the vast intact forests it contains and numerous indigenous forest communities for which the forest is a homeland. This case enables us to recognize that there is a demonstrated interest in forestry activities among many Manitoba indigenous communities similar to that around the world. It also supports reflection on the future/potential of indigenous community forestry in Manitoba (and indeed other alternative forms of forest management and development, such as restoration forestry managing for a wider range of ecosystem services and forest product goods). Manitoba exhibits both the challenges and the potential of many forest regions across North America. Specifically, this case demonstrates the need to recognize and take stock of commonplace but cumulatively significant programs and projects. Such initiatives mobilize and build capacity, as well as contribute to supporting conditions that may be overlooked otherwise.

Assessments of existing capacity building projects could help support community forestry by gleaning lessons from made-in-Manitoba projects. Analyses of community goals and objectives with respect to forestry and community planning could help provide a better understanding of the variations in management and conservation objectives that could exist among indigenous communities (such as the Cree, Ojibway, Dene, and Métis communities). Indigenous communities are characterized by diversity and local needs and knowledge vary according to local context and experience. Needs assessments of within-Manitoba knowledge and resource sharing between communities are needed to promote efficient and effective exchanges and support capacity development initiatives (see Davidson-Hunt and O'Flaherty 2007, Adams et al. 2014). There are also good opportunities for comparative work. For example, analyses of cross-jurisdictional/international collaboration, networking and model sharing, involving other North American models of indigenous forest governance, community-based forestry, and cross-government collaboration (similar to Pagdee et al. 2006, Plummer and Armitage 2007, Pinkerton et al. 2008), are needed to help gauge the suitability of importing and

exporting models and practices. Finally, there is a need for market and product development and economic feasibility work to determine viability. All of these research opportunities could provide additional empirical evidence for or against the case of indigenous community forestry.

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