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Community forestry in Canada: an overview of current affairs and potential for the future

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COMMUNITY FORESTRY IN CANADA: AN OVERVIEW OF CURRENT AFFAIRS AND POTENTIAL FOR THE FUTURE

by

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A CAUTION TO THE READER

This HBEM thesis has been through a semi-formal process of review and comment by at least two faculty members. It is made available for loan by the Faculty of Natural Resources Management for the purpose of advancing the practice of professional and scientific forestry.

The reader should be aware that opinions and conclusions expressed in this document are those of the student and do not necessarily reflect the opinions of the thesis supervisor, the faculty or Lakehead University.

ABSTRACT

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Keywords: community forestry, local governance, Canadian community forestry, community capacity

This paper examines the current body of literature available covering the topic of community forestry in Canada. Using a modified synthesis literature review method articles covering the theoretical and practical applications of community forestry in Canada are examined. The results are conclusive about the state of community forestry in Canada, namely that while it exists it faces serious problems in the attempt to become a recognized practice. The lack of governmental support, community ability and social and economic capital prove to be significant stumbling blocks in the face of mainstream success. This paper finishes with suggestions for a more effective community forestry process in Canada. It also includes a critique and summary of current literature and suggestions for further avenues of research.

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AUTHOR'S STATEMENT

The conversation that sparked my interest in community forestry happened in Dr. Smith's office in September of 2016. We were discussing thesis topics and forest tenure reform when she introduced the idea of community forestry in Canada. I was immediately intrigued by the topic and after some research into the current literature decided that this topic would warrant further investigation.

After this conversation and subsequent research, I quickly became interested in this idea as a viable alternative to traditional forestry tenure models in Canada. This process has ecological and social merit, allowing communities to decide what is important to them as well as a process to encourage community involvement and awareness of forestry. I wanted to understand why this topic was not getting more attention in mainstream forestry and why so many community forests were failing.

This project started with a wide scope, as there are thousands of different types of community forestry practiced across the world. I was very quickly forced to narrow it down; first to developed nations, and then to Canada in particular. This paper is aimed at synthesizing the current understanding of community forestry in Canada and how this understanding can be applied to make the entire community forestry more effective, successful and popular.

INTRODUCTION

Community forestry is a difficult topic to define. As is stated in the literature (Bradshaw 2003, Teitelbaum 2012), there are varying factors to consider and reasons to create a community forestry project, as well as many different communities that are each unique. Creating a one-size-fits-all definition is simply not possible. The Food and Agriculture Organization of the United Nations (1991) defines community forestry as:

> Any situation which intimately involves local people in a forestry activity. It embraces a spectrum of situations ranging from woodlots in areas which are short of wood and other forest products for local needs, through the growing of trees at the farm level to provide cash crops and the processing of forest products at the household, artisan or small industry level to generate income, to the activities of forest dwelling communities.

Community forestry has existed in some capacity for hundreds of years, be it in communal woodlots or the keeping of local forested lots for the benefit of the communities (FAO 1991). Community forestry as it is now recognized finds its roots in the early 1970s when concerns over rising fossil fuel costs, a movement to alleviate poverty and an increased focus on rural development pushed governments and international actors to try and develop lasting solutions to local issues. Most of the community forests that were initiated at this time were in developing nations and focused on providing opportunities for impoverished peoples and communities to improve their quality of life (FAO 1991). After this initial movement, the concept of community forestry gathered interest and momentum in developed nations as a method for communities to have

control over their local resources. The development of community forestry in Canada was part of this wave of interest in developed nations.

Canada has long been a forestry nation. To this day Canada relies heavily on forestry as one of its main exports and a large employment sector. The forestry industry (forestry and logging, pulp and paper manufacturing, support activities, wood product manufacturing) directly employed 230,567 people in 2016, with total wages and salaries measuring $9,789,541.00 in 2015 (NRCAN 2017a). In 2014 Canada exported over $31 billion in forest products (FPAC n.d.).

The roots of forest management in Canada go back to the colonial period (NRCAN 2017b) when timber was used to fuel the colonization of the country and create a resource-based economy. Since then, an industrial scale of forest management has developed within the country, with the regulation of the forestry industry and the creation of a sustained-yield policy that was controlled by provincial governments that have constitutional responsibility for natural resources within their provincial boundaries (NRCAN 2017b). The development of the forestry industry has not been consistent across the entire country, with the provinces of Manitoba, Saskatchewan and Alberta only instituting industrial scale forestry in the late 1980s (Parkins et al. 2016). The other provinces have undertaken industrial forestry since their colonization, and the forest industry is therefore much more embedded into their culture and economies (Parkins et al. 2016).

The main push for community forestry (also called community-based forest management) in Canada began in the early 1990s when public discontent and criticism about the large-scale industrial forestry practices and methods, as well as an international push towards sustainable forest management, led several changes to forestry laws in the provinces of Ontario, British Columbia and Quebec (Nadeau and Teitelbaum 2016, Palmer et al. 2016, Furness et al. 2015). These changes, along with increasing social pressures, resulted in the creation of community forestry pilot projects (Nadeau and Teitelbaum2016, Palmer et al. 2016, Furness et al. 2015). These pilot projects, which varied in their sophistication and size, met with varying degrees of success and longevity and have led to the community-based forest management projects that exist today. The collapse of the forest industry in Canada in the early 2000s also led to the push for community involvement and control over resources (Palmer et al. 2016).

The ideas that form the basis of community forestry are primarily based on local public involvement and control (Teitelbaum et al. 2006, Bullock et al. 2009). Local communities and the proponents of community forestry generally argue that local communities should have complete control over the use, allocation, and management of their local resources as a way to increase and sustain local benefits and involvement. This push towards local control and involvement followed a trend of increased

public participation within the world of resource management (Palmer et al. 2015, Masse 1995).

Governance and organization of these community forests have been the topic of scholarly research throughout the world. As Nelson (2003) stated:

> At present, two pressures create conditions that make community forest management and action research appear the most appropriate …One is an ecological pressure: the need to ensure the sustainability of forested landscapes. The other is a political pressure to extend democratic processes into environmental management in general and forestry in particular. If these developments continue, they will impact on all forest stakeholders and forestry practices … Therefore, it is critical to focus on community forest management and action … As community forestry and ecologically sustainable practices expand, action research will become a more appropriate and legitimate methodology. The emerging paradigm is interdisciplinary because it involves ecosystems and community participation is necessary to create sustainable practices. Especially because of its action-oriented and inclusive approach, action research is likely to attract increasing attention from local communities, international agencies, government policymakers and regulators and private stakeholders in forest management this century.

Direct involvement of local communities is a pre-requisite to the goals of creating jobs and value-added opportunities that flow from community forestry. Community forestry represents the public drive towards ecosystem-based management of a resource with the public placing it on the radar of both government and industry. There exists, however, a lack of cohesive policy analysis and reporting on the practice of community forestry in Canada which have left questions as to what constitutes community forestry and how to define its success (Teitelbaum et al. 2006).

Community forestry in Canada is a product of reform to the tenure processes controlling forestry in Canada. Tenure, the right to harvest and responsibility to manage an area of forest within a province, is granted by a provincial government to companies and other applicants whose applications have been accepted. Community forestry is like any other form of forestry in Canada and is therefore bound by the same rules and regulations that are placed on all other forestry practices (Palmer et al. 2016, Furness et al. 2015). This includes requirements for levels of operational quality and the completion of forest management and operations plans. This holds community forestry to the same standard as all other forestry in Canada which may not always be beneficial to the community forestry organization (Bullock et al. 2009). These comparisons and expectations can be damaging to community forestry organizations due to the size of the organization's forestry operations and technical ability.

This paper will explore the different facets of community forestry in Canada including the capability of the communities, the social and economic requirements for success and the trends and impacts of community forestry across Canada. The process in Canada is distinct from the developing world, upon which most of the literature focuses, but some global practices will be discussed to provide a baseline to show how the processes of establishing community forests are progressing. This thesis will explore the involvement of different community groups, including

First Nations, local municipalities, governments, industry and non-governmental organizations.

OBJECTIVES

The objective of this thesis is to examine community forestry in Canada. It will examine the current body of literature on community forestry in Canada and where the research and examination of the topic can go from there. The over-reaching object of this thesis is to explore the current literature on the topic to identify common themes, ideas, and concepts as well as to identify gaps and failings. This information will then be used to answer the research questions that have been formulated about this topic and will attempt to create a definition for community forestry in Canada.

These research questions are: what are the factors and criteria affecting the success or failure of community forestry in Canada? What factors for success are consistent and how do they affect community forestry? Is effective community forestry happening in Canada? A definition will be compiled from what the author considers to be the most appropriate sources and schools of thought and a conclusion on the state of community forestry in Canada as indicated by the research will be included. This thesis will then conclude with recommendations for continued research into community forestry and community involvement.

LITERATURE REVIEW

This section examines the main themes identified throughout the identified literature. This first topic is an overview of international community forestry, focusing on community forestry in developing nations. The review will then cover community forestry in Canada, with an overview of the national status of forestry, then focusing on the two provinces with the largest research base on community forestry, Ontario and British Columbia. The final topic will cover community involvement and capacity, the largest theme that was covered in the literature. The section will conduct a systematic summary of the topics covered in the body of literature examined in this paper.

Community forestry exists in many different forms and it can be very difficult to find a single definition that fits all of the different forms that community forestry takes. There are varying reasons for the creation, existence, goals and governance systems related to community forestry, so it is very difficult to find a single overarching definition for community forest models (Hajjar et al. 2016). There are many different definitions for community forests that exist around the world, varying from "a forest being shared among at least three households" as defined by the International Forestry Resources and Institutions (Hajjar et al. 2016) or Duinker et al.'s (1994) definition as "a tree dominated ecosystem managed for multiple community values and benefits to the community". Brendler

and Carey (1998) defined community forestry as "managing forests with the express intent of benefiting neighbouring communities" (Furness et al. 2015). This variety of definitions reflects the variety of types of community managed forests.

The variety of community forestry models demonstrate a commonality in the slow but steady progression away from the traditional centralized forest management model (Hajjar et al. 2016). The traditional centralized forest model involves large corporations having a monopoly on harvesting and forest use, leaving locals without the benefit of access to the forest (Hajjar et al. 2016, FAO 1991). There are community forests in many different countries, including England, Canada, Nepal, Bhutan, India, Cameroon, Mexico, and China. There are many more spread around South Asia, Latin America and Africa (Hajjar et al. 2016).

INTERNATIONAL APPLICATIONS OF COMMUNITY FORESTRY

Community forestry, whilst relatively new to Canada, is an established method of forest management in many other places around the world (Dbruba et al. 2016, Hajjar et al. 2016). It is estimated that 27% of forests in the developing world are community forests, established as a response to struggles of rural and Indigenous communities to support themselves (Teitelbaum 2012). These countries are mostly developing nations, such as Nepal and Bhutan, where community forestry was developed as a policy to assist in the alleviation of poverty and the

improvement of the quality of life. Bijaya et al. (2016) examined the effects of community forestry on the poor rural communities of Nepal and the impact that community forests have on communities' financial, social and natural well being, as well as the promotion of inclusion of minorities and women. The paper also examined the benefits to the community from community forest and found that, due to Nepal's complex social structure, the results were not as expected socially and financially. Bijaya et al. (2016) found that often the more powerful members of the community, particularly men, profited more from the community forest than others. It was also discovered that since the benefits of community forestry were not spread evenly, a positive impact on the community as a whole was not achieved. The expected results for the improvement of the human condition and environmental protection were not entirely achieved (Dbruba et al. 2016). This example illustrates how little is understood about the interaction of influences in community forests and the outcomes ecologically, economically and socially.

In Hajjar et al. (2016) an examination was made of the shortcomings of the data usually collected to examine the success of community forests in developing nations. Crucial information is lacking that would allow the analysis of the success of these endeavours to be analyzed globally. Hajjar et al. (2016) noted three major trends in the data that limited the assessment of the success of community forests, including data gaps linking environmental and livelihood outcomes. Most studies

focused on environmental outcomes and others assessing socioeconomic outcomes relied on data that made comparison difficult. There was bias toward studies on south Asian forests. This bias may make much of the data unrepresentative of community forest models globally.

Nepal and Canada differ in many ways, but the lessons from community forestry that have been learned in Nepal can be applied anywhere. The existence of community forestry in other countries presents a learning opportunity for Canada, as we can observe what the other countries have tried, modify their processes and apply it to our varying situations. Whilst not everything that is done in these other countries will work in Canada, many of the underlying reasons and techniques are transferable.

Examples of community forestry in Europe, Australia and the United States of America were also examined to see if parallels could be drawn among the developed nations (Rist et al. 2014, Ambrose-Oji et al. 2014). Due to differences in land allocation, private versus public land ownership, societal and cultural differences and forestry practices and history, it was not possible for true comparisons to be made between the various countries.

COMMUNITY FORESTRY IN CANADA

Canada is a forested nation with 347 million hectares of forest which amounts to nine percent of the world's forests (NRCAN 2018). Ninety-four percent of forested lands in Canada are owned by the public,

and less than twenty-seven percent of that make up community forests (Furness et al. 2015) Community forestry has existed in Canada for at least 20 years (Teitelbaum, 2013) with the earliest publication on the topic dating from 1930 (Bullock and Lawler 2014). There are examples of community forestry occurring in almost every province in Canada (Teitelbaum 2016). The monopoly of private forest management companies allowed for almost complete private industrial control over the forest sector and much of Canada's public forest (Teitelbaum, 2013). The movement towards the more inclusive model of community forestry in Canada resulted mainly from pressure by stakeholder citizens who wanted a say in the management of their natural resources (Teitelbaum 2013). The majority of community forestry research seems to be focused on British Columbia and Ontario, where the bulk of community forests are located (Bullock and Lawler 2014). This may be due to the higher percentage of community forests in these provinces.

Community forestry can be described as an approach to potentially foster more participatory approaches to decision making, creating local development strategies and better environmental outcomes (Duinker et al. 1994). There is very little current literature that examines community forestry as a whole in Canada, that does not focus on specific examples, and therefore it is very difficult to draw clear conclusions about the efficacy and success rate of community forestry in the country presently (Furness et al. 2015). There is much optimism about the scope and

success of community forestry and what can be achieved by the initiatives, but it is not always possible for the communities to achieve the success that is predicted (Teitelbaum et al. 2006). Canadian policymakers have become more aware of the public desire for community forestry, but due to resistance from the forest industry, progress has been slow to integrate the models into the mainstream (Furness et al. 2015). The values of community forestry organizations often contrast with the values and practices of the forest industry. This contrast can cause difficulties with negotiations and competition between the two parties (Bullock et al. 2009). Some resistance and lobbying from the forest industry against the establishment of official community forestry tenure also affected the relationship between industry and community forest organizations (Palmer et al. 2016).

Recent reforms to the tenure legislation in Ontario and British Columbia have allowed for the creation of new forms of tenure in both provinces to create community forests (Palmer et al. 2016, Furness et al. 2015). These new forms of tenure supported the expansion of community involvement in forest resource management and the ability of communities to have control over local employment and benefits (Teitelbaum 2014, Furness et al. 2015).

Teitelbaum et al. (2006) best defined what makes a community forestry as a practice that is

> distinct from public participation in that community members are not simply consulted on management planning but have a

> substantive influence over the decisions that result from the management process. The second element is local benefit; meaning that an effort is made to keep benefits that are generated from the forest, be they economic or social, in the community rather than accruing distant shareholders.
> Two other attributes must also be considered which may or may

not be associated with community forestry, multiple-use management, and sustainable forest management. Community forestry management is based primarily around the desires and needs of the community groups that are involved and around the community, with all decisions and actions reflecting this ideal (Teitelbaum et al. 2006, Sheppard 2006).

COMMUNITY FORESTRY IN ONTARIO

The movement towards community-based forestry in Ontario is relatively recent. However, some examples, including the Algonquin Forest Authority in the 1970s and the Nipigon Forest Village in 1944, existed previous to the initiation of the community forestry movement (Palmer et al. 2016). Arguably community forestry has existed in Ontario since long before the 1990s pilot project and the 2011 Ontario Forest Tenure Modernization Act. The conservation authorities and authority forests of southern Ontario have been classified by some as community forests (Teitelbaum et al. 2006, Palmer et al. 2016, Teitelbaum 2014). Conservation authorities and authority forests are structured semi-governmental agencies and have boards and decision makers who are appointed from local communities but are not made up of different representatives of the community. These examples include many of the

conservation areas that are run by the Conservation Authorities of Ontario (Teitelbaum and Bullock, 2012).

The majority of forestry in Ontario is carried out in the Area of the Undertaking (AOU) (Palmer et al. 2016). The AOU was created for the Class Environmental Assessment for Timber Management on Crown Lands that took place from the late 1980s-1994. The AOU covers most of northern Ontario from the Mattawa River to the French River at the southern boundary to the northern extent of harvesting at the northern boundary. Ninety percent of Ontario's forests are publicly owned, and the majority of this land is found in the AOU (Government of Ontario 2017). This area is sparsely populated and the communities in this area are heavily resource-dependent (Palmer et al. 2016).

The forest industry in Ontario experienced a major downturn in the early to mid-2000s. This was due mainly to external factors including changes in global markets, unfavourable export markets, an increase in the value of Canadian currency, high energy costs and competition from lower-priced international competitors (Palmer et al. 2016). This crisis worsened over the next few years, leading to dramatic declines in forestry employment and too many individuals leaving the economically depressed area. This almost complete collapse of forestry operations in northern Ontario led the provincial government to acknowledge that the tenure system was no longer working and in need of review. A committee was created in 2007 to investigate industry concerns and came up with several

recommendations. These included converting the existing tenure models, sustainable forest licences (SFL) into cooperative units to increase competitiveness and economics (Palmer et al. 2016).

When these cooperative SFLs did not have the impact that was expected, the province took steps to look at other options and appointed an economic facilitator (Palmer et al. 2016). This facilitator recommended the creation of ecosystem-based community authorities that were given partial authority to local community members for forest management. In light of these recommendations, a tenure review and reform process was initiated in 2009, resulting in the creation of the Local Forest Management Corporations (LFMCs) in 2010. This was made a legal form of tenure in 2011 with the passing of the Ontario Forest Tenure Modernization Act (Palmer et al. 2016, Ontario 2011). The current community forestry initiatives were started within the last 20 years but after the movements in Quebec and B.C. The movement in Ontario towards community forestry has been significantly slower.

LFMCs are community-based forest management corporations that can hold one or more SFLs. The corporations are governed by a board of directors appointed by the government. This board is made up mostly of representatives from the local community with a small group of industry representatives (Palmer et al. 2016). The Nawiinginokiima Forest Management Corporation is the only Local Forest Management Corporation in current operation (NFMC 2012). As community forestry in

Ontario is still in its infancy, the methods used in B.C. can be examined and applied to any problematic situations as they arise, although there will have to be an adjustment to compensate for the differences.

LFMCs are mainly focused in northern Ontario, or the AOU, due to the economic downturn that the forestry sector experienced in the mid-2000s (Palmer et al. 2016). This downturn caused many communities that depended on forestry as their main source of income to suffer, as many became unemployed. Due to this, there is great interest in community forestry in northern Ontario as it has the potential to return employment to these communities. As much of the forested land in northern Ontario is public land, it is much easier to form a community forest in that area. Examples of community forests in southern Ontario are often on public land, but this land is not used for income generation and is often not used by the public (Teitelbaum et al. 2016).

There are some examples of community forestry in the Far North of Ontario. The Far North of Ontario is considered to be the area of Ontario from the northern boundary of the AOU to the Hudson Bay. The development of forestry has been limited and the creation of community land use plans and community forestry has been seen as a method to bring employment into the region (Palmer et al. 2016). The Whitefeather Forest Management Corporation, started by the Pikangikum First Nation, is a community forest started on the principles presented by the First Nation in their land use plan. This corporation is closely aligned with the principles

of community forestry and combines forestry management practices and traditional Indigenous land use practices providing the community with employment. This is seen in the Far North as an example and many other communities are completing land use plans with the hopes of success comparable with the Whitefeather Forest Management Corporation (Palmer et al. 2016).

COMMUNITY FORESTRY IN BRITISH COLUMBIA

Community forestry in British Columbia (B.C.) was created through a similar process to the process in Ontario. After an economic downturn in the forestry sector in the 1990s and a newly installed provincial government eager for change, the Jobs and Timber Accord 1997 (British Columbia 1998) was created. This accord represented an attempt to create jobs and stability and led to the creation of a five-year pilot project examining the potential success of community forestry (McIlveen and Bradshaw 2009, Furness et al. 2015). This pilot project was formalized with the passing of the Forest Statutes Amendment Act, 1998. The pilot project began with seven trial community forests, many of which were renewed in 2004 and again in 2009 under the newer 25-year lease forms. As of 2013, 57 community organizations were involved in the process of creation of community forests (Furness et al. 2015). The active community forestry organizations in B.C. operate at varying levels of economic success and fulfill a crucial role of environmental caretakers and

provide for the multi-use of the public forests by the surrounding communities (McIlveen and Bradshaw 2009).

British Columbia's community forestry management units operate in a comparable way to the ones in Ontario. The forest organizations must apply to the government showing a community developed vision that reflects the community's attitudes and decisions on how the local forest would be managed (Furness et al. 2015). This must include a mission statement and guiding principles presenting the goals and objectives of the community (Furness et al. 2015). The organizations are governed by an elected or appointed board of governors who make decisions about what the crucial values of the forest are and who highlight the aspects of the forest that are important to the communities (McIlveen and Bradshaw 2009). These bodies are also responsible for the management of the timber and the creation of management plans (McIlveen and Bradshaw 2009).

Community forestry appears more developed in B.C. due to the fact that it has had government support through legislation since the mid-1990s (Bullock et al. 2009). This governmental support has allowed for the development of a more diverse and stable environment for the creation of community forestry in B.C. (Furness et al. 2015). This support has allowed for a diversification of community forest approaches and a large number of projects. While it is likely that not all of BC's community forestry projects will be successful in the long term, the current framework appears supportive enough that community forestry projects should

generally be successful. Similar to community forestry in other places, in BC much weight has been placed on the ability of community forest managers to solve and mitigate conflict, allow for public participation and enable social change (Furness et al. 2015). This may place additional stress on the communities and their managing boards that may impede the process of decision making and management.

COMMUNITY INVOLVEMENT AND CAPACITY

One characteristic that all community forest models share is the requirement that the needs and values of the communities living around the forest must be identified as important and operate as a driving force of the forest management plan (Furness et al. 2015, Palmer et al. 2016). In Canada, consultation in forest management planning is mandatory (NOSCP, 2007) and participation is encouraged from all the communities affected by the forest. The involvement of Indigenous communities is of particular importance as these lands are their traditional lands and therefore Indigenous communities must be given a say in what happens with the lands. Many Indigenous communities have expressed a desire to be consulted, even if they are not interested in being directly involved with the process of managing a community forest organization (Furness et al. 2015, Palmer et al. 2016). Furness et al. (2015) found that 33/38 of the people involved in community forests who were interviewed expressed

interest in incorporating Indigenous values into their goals and operational practices.

The inclusion of First Nation communities on the board of directors of community forests ensures that their concerns and values will be heard and understood (Letkeman 2015). The use of new legislation and changing governance styles can lead to significantly better relations between First Nation communities, the Crown and the other citizens of Canada (Zurba et al. 2016). This movement towards inclusiveness and self-governance can greatly assist the movement in Canada towards reconciliation between First Nation peoples and the Crown.

Community involvement is not only important but especially advantageous to projects as many of the community forest models hire local workers (Bullock et al. 2009, McIlveen and Bradshaw 2009). Including the public in decision making provides much more motivation for the community to support the enterprise. If the community forestry prospers, the community will prosper (Teitelbaum 2013, McIlveen and Bradshaw 2009). This creates an incentive for the community to ensure that the forest is successful and continues to exist. This can be done by the addition of value-added products (McIlveen and Bradshaw 2009) and multi-value use such as hiking, dog-sledding and other activities that people enjoy (Teitelbaum 2013). This goal can be difficult to achieve as the capital required to expand can be hard to come by and the market for these activities is not always enough to make them profitable.

Community involvement is a very important aspect for the success of a community forest (Bullock et al. 2009, Bradshaw 2003, McIlveen and Bradshaw 2009). This is due mainly to the fact that the community use and participation in the forest is one of the main reasons that these community forest models are created and are used. This means that public outreach and input is valuable for the board of governors (McIlveen and Bradshaw 2009). The dangers of community support and involvement include volunteer burnout, community apathy and disinterest, and changing attitudes and economic conditions, among other problems. All of these can cause communities to lose interest and, therefore, the community forestry to lose support, which is crucial to the continued success of the enterprise (Furness et al. 2015).

The need for local involvement stems from the need for local input in decisions and goals for forest management (Sheppard 2005, Bullock et al. 2009). Community involvement is crucial for ensuring the desired outcome of a community forest. Local governance boards must ensure that all viewpoints are equally represented and acknowledged to show transparency accountability, equity and capacity building in communities that may be lacking many of these factors at the outset (Furness et al. 2015).

MATERIALS AND METHODS

This section addresses the process used to locate, analyze and review the literature that was used to create this paper. It begins with an explanation of the process used to locate and refine the literature used for the literature review including the keyword searches, exclusion criteria and the final number of sources that were collected. The synthesis process is then explained covering the research questions that were used to identify the overall theme groupings of the publications and the criteria that would be identified by the author as important to the success of a community forestry project. Finally, the criteria and themes identified are explained.

LITERATURE REVIEW

This thesis is primarily a literature review guided by the research questions that are presented in the objective statement. This literature review was undertaken in a three-phase review process (Berrang-Ford et al. 2011) based on the method presented in Robitaille (2017). The three-phase process involves: phase one using identified keywords to search for publications related to the chosen topic; phase two the application of exclusion criteria to narrow down the original search results to papers that better fit the parameters of the study; and phase three reading, reviewing and analyzing the narrower pool of literature (Robitaille 2017). The collection of peer-reviewed literature began in October 2016, with

searches on the Lakehead University Library Database (hosted by EbSCO host) and Web of Science. Given the broad scope of the topic and varying terms used to define and describe the phenomenon of community forestry, the search terms used were narrowed down to: "community forest*", "community forest* Canada", "multi-use forest*", "multi-use forest* Canada", "community forest manage*", "forest govern*". "Community forest* Canada" and "multi-use forest* Canada" were added to the list of search terms after "community forest*" and "multi-use forest*" returned over 1,000,000 results each. The expanders ("*") were added to narrow down the list of search terms and to prevent search results from being restricted. These search terms were used to find all relevant literature on the topic that would exist.

Following the initial search, which returned a combined total of articles from both sources of approximately 7,500, exclusion criteria were used to narrow down the available literature. These criteria were that; the publications had to be in the English language, from peer-reviewed sources and about Canadian situations, which resulted in a total of 85 articles that were acceptable during this first phase. After these criteria were applied, further exclusions took place by reading titles, keywords, and abstracts to determine the suitability. This resulted in 76 articles and books that fit within the new narrower criteria. Some publications were included that were not about Canadian community forestry to add background information and a basis for comparison. There were four

articles in total that fall into this category and they were selected using the same criteria as the other publications, excluding the criteria that the publication was about Canada. Some articles were also provided by the advisor of this thesis but were subjected to the same criteria as the other publications.

SYNTHESIS OF MATERIAL

After this process was applied, the resulting 76 publications were read, analyzed and summarized. The publications were then analyzed by publication date and location of study and sorted into possible thematic categories. These categories were then solidified after the completion of reading the publications. A total of 38 publications was decided upon after elimination of those that did not fall under the scope of the paper. A grouping of the papers into loose theme groups and an identification of the main criteria was then undertaken. This process was conducted with consideration of the three research questions presented earlier in this publication. It was fully recognized during the process that this process of sorting and deciding on thematic categories is entirely subjective and interpretive and that the results and opinions presented in this paper are therefore the opinions of the author. The themes and criteria were chosen after reading the literature and observing the overarching ideas and topics in the papers. These topics were then listed to see how many were repeated and overlapped. The topics were then grouped into criteria and

themes that were used to assist in the analysis of the literature on community forestry and relate it back to the original research questions.

RESULTS

The findings of the literature review that was conducted were conclusive regarding community forestry in Canada. This literature focused mostly on initiatives on public land. The criteria of success can be summarized in Table 1.

CRITERIA FOR SUCCESS	EXAMPLE
Community involvement	Board membership; volunteers
Government support	Supporting legislation; direct government support; knowledge transfer
Community capacity	Population; interest; educational background; educational capacity
Community involvement	Long-term volunteers; project interest
Economic success	Resource management capacity; decision making; board knowledge and capability

Table 1: The criteria necessary for the success of a community forestry enterprise.

PRACTICE OF COMMUNITY FORESTRY IN CANADA

Community forestry in Canada is practised in almost every province (Teitelbaum 2016). The majority of this practice is focused in Ontario and British Columbia, with the next highest concentration existing in Quebec (Teitelbaum et al. 2006). The movements towards community forestry began in Canada in the early 1990s, both in B.C. (Furness et al. 2015) and in Ontario (Teitelbaum 2016) but emerged much earlier in Quebec (Teitelbaum 2016). Community forestry in Quebec has existed

since the 1940s in the form of forest co-operatives, with 45 community forests existing in 2006 (Teitelbaum et al. 2006). With legal changes to forestry policy in many provinces through the late 1990s and early 2000s, support and regulatory systems were put into place around community forestry initiatives (Palmer et al. 2016, Furness et al. 2015). There are many different tenure types that can be classified as community forestry, which include Local Forest Management Corporations in Ontario, tree farms and woodlots in Quebec and tree farm licences, forest licences, timber sale licences, woodlots and community forest agreements in B.C. (Bullock and Hanna 2006, Nadeau and Teitelbaum 2016, Letkeman 2015)

Community forestry in Canada was born out of a discontent with the large-scale industrial forest management practices and a desire from communities to be able to exercise more control over their public forest resources (Teitelbaum et al. 2006). Another contributing factor for the development of community forestry was the economic downturn in forestry that hit Ontario and other provinces in the mid-2000s (Palmer et al. 2016). These influences combined resulting in many communities expressing interest in taking control over their forest resources as a method of securing employment and income for their communities (Robson 2013).

Community forest management groups are generally managed by either representatives of community groups and others, such as First Nations, that are in the surrounding areas (Furness et al. 2015). These

groups are designed to reflect the structure of the community and the opinions that are present. Other projects are managed by a board of representatives that are selected from outside sources and paid to make up the board (Furness et al. 2015). These outside boards are generally less aware of desires of the community but made up of professionals who have more capacity to pursue successful community forestry. Community forestry is viewed by many experts as a method to settle conflicts (Rist et al. 2015), ensure that various needs are represented and that the management of the forest and surrounding areas (Bullock and Hanna 2006). This may not be as achievable as is commonly believed (Dunkier et al. 1994, Bullock et al. 2009).

There were three major types of community forestry theory that were identified by Furness et al. 2015: social forestry, ecological forestry, and small-scale industrial forestry. Social forestry is the method that is most commonly practised in developing nations; it can be used to assist in community development and the alleviation of poverty. Social forestry is used to improve living conditions for the poor in the area around the community forest by providing the resources and ability to improve their quality of life. This method is not particularly common or useful in Canada, as it mostly relies on public use and does not provide many opportunities for industrial harvesting or the other opportunities to provide employment and income. Social forestry is best suited to providing poor

rural people with access to fuelwood and other forest products that they can use to provide themselves with sources of income (FAO 1991).

Ecological forestry is a method that advocates ecosystem-based forest management (Bullock et al. 2009). It was developed in response to the environmental impacts of conventional forest harvesting and management practices. Although conventional forestry practices are required by law to be ecologically sustainable and responsible, many public members are discontented with the industrial process (Teitelbaum et al. 2006). Ecological forestry proposes a more ecologically based method of forest management that focuses more on preserving ecological systems. This process focuses much more on the ecological management and preservation than on harvesting. Ecological forestry can be very difficult to maintain as it generally involves many different approaches and an extensive knowledge base of ecological system and management practices, while simultaneously not providing a large income base due to the restricted ability to harvest because of a reduced allowable cut. This combination of effects makes it a very uncommon method of community forestry in Canada although some concepts of ecological forestry appear in many of the goals of community forests (Furness et al. 2015).

The final method, small-scale industrial forestry, is a method of community forestry that is practised primarily for economic gain. This method is the most common method of community forestry in Canada. Harvesting methods may not differ from those used in large-scale forestry.

In a community forest, the harvesting methods are generally at a smaller scale and may go to processing centres that are local to the area of harvest. This is the form of community forestry that is most commonly practised in Canada due to the fact that this form shows the most potential for profit and employment, while also providing opportunities for more local control and benefits than large-scale forestry operations (Bullock and Hanna 2006).

The results of successful community forestry endeavours are positive social and economic impacts (Teitelbaum et al. 2006, Teitelbaum 2014). In a successfully managed community forest, there are positive primary and secondary economic benefits stimulating the local economy and providing local employment. This leads to positive social benefits, where more money is present in the community, so there can be more positive impacts on the community.

GENERAL PRINCIPLES

Community forestry varies between communities as different communities have unique requirements and goals for their forests. These variations mean that it is very difficult to create a definition and a method that fit all community forest enterprises. There are several principles that are commonly associated with community forestry in Canada. The three most common principles are that; local residents have access to the forested lands; opportunities for participation of local residents in

management decisions relating to forested lands exist; and an effort is made by communities to protect and maintain the forests for which they have a management responsibility (Teitelbaum 2012). The criteria that are encompassed within these ideas are consistent with community values of an area that composes a community forest.

The core foundations of community forestry in Canada are that regard will be given to sustainable forest management, that there will be a collaborative potential with an emphasis on conflict resolution, and that there is attention paid to the ecological potential of the forest including multiple use plans and areas of conservation (Teitelbaum 2012). These are connected to the fundamental elements of community forestry, which are present in every successful community forest management project. These elements are community control and involvement with an emphasis on community values, local economic benefit, and sustainable forest management to create multi-use forests (Teitelbaum et al. 2006). Out of this, community control and local benefits are the driving forces for the creation of most community forests. Community control and involvement mean that the people that live in the area surrounding the forest should have substantial influence over the decisions made about the forest. With community, control should also come community benefit, both economic and social from the employment and financial impacts of the community (Teitelbaum et al. 2006).

The general principles of community forestry in Canada encompass social, economic and ecological sustainability, and the communities attempt to balance them while still having a regard the interests and needs of the associated groups (Teitelbaum 2012).

ISSUES WITH COMMUNITY FORESTRY

While there are many positive impacts of community forestry, there are also some areas of concern. Many of the issues around community forestry are a result of the pressure for the venture to succeed. Often community forestry is seen as a method of conflict resolution and a method to create positive social and economic impact (Teitelbaum et al. 2012, Bullock and Hanna 2006). In reality, often these endeavours achieve the opposite effect as communities do not have the capability or capacity to deal with the many problems that appear during the process. Many of these problems stem from the community itself, as the idea that community forestry can be used as a form of conflict resolution is often a gross overestimation of the capacity of the community in question (Robson and Kant 2007). These communities are often not capable of the level of conflict resolution that is necessary, and community forestry cannot reverse deeply held resentments (Bullock and Hanna 2006).

Other issues which impact community forestry include the technical ability to successfully run a forestry operation (Rist et al. 2015, Egunyu et al. 2015). The knowledge base of communities varies greatly,

with some people or communities possessing knowledge of forest management practices and others with none at all (Egunyu et al. 2015). This variation in community knowledge can mean that certain communities attempting to start a community forest organization possess no knowledge of forestry practices or forest management (Teitelbaum 2014, Egunyu et al. 2015). This lack of knowledge can prevent communities from reaching their full potential. The lack of technical knowledge can be overcome by education of key board members and hiring professionals to fill some of the most technical roles (Egunyu et al. 2015). Community forests are often non-profit organizations and the primary burden of technical planning and running of the operation falls to individuals not entirely suited or qualified to make the appropriate decisions (Bullock et al. 2009). This means that the organization and individuals must either educate themselves, and therefore create a divide between the citizens who manage the organization and others who are involved, or they must bring in professionals to run the day-to-day business, therefore alienating many local stakeholders from the running of the business (Bullock et al. 2009).

Along with the requirement for appropriate education and questions about the capacity of the community, there is also the danger of burnout and disinterest (Bullock et al. 2009). Volunteer burnout is a phenomenon that occurs when volunteers who are working with a project become overworked, feel underappreciated or that their opinions are not

respected and, as a result, leave the program abruptly. This leaves boards and programmes in a vacuum with vacancies that are difficult to fill and can result in difficulties in continuing the program (Bullock et al. 2009).

Knowledge transfer from government ministries and conservation authorities to the managing boards of community forests can be critical to their long-term viability (Teitelbaum et al. 2006). The infrastructure exists in many provinces like Ontario to have experts from conservation authorities and the Ministry of Natural Resources and Forestry provide guidance, knowledge transfer, and best management practices to community forests to increase the likelihood of their success.

Another fundamental problem that can occur within community forests is community apathy and disinterest (Bullock et al. 2009). Community support is one of the principal factors for success, as community involvement in the process is crucial for success. Communities can lose interest due to many reasons including feelings of exclusion, changing social attitudes, economic and political changes or crises that affect the community (Bradshaw 2003). This loss of support can have an extremely negative impact on the success of community forestry and should be avoided at all costs.

DISCUSSION

This section will take a deeper look into the implications of the research that was analyzed. The current state of community forestry in Canada will be examined looking at the current information about issues community forestry organizations face and research. The factors that affect success are explored, looking deeper into the different elements of these factors that are important to overcome.

Current and future research is then explored. A critique of the literature and an examination of the gaps in the research is explained. The potential for future research is discussed with comments on what avenues would be the best to pursue to ensure successful community forestry models.

THE CURRENT STATE OF COMMUNITY FORESTRY

Community forestry in Canada is clearly a complex topic. The current body of literature about community forestry in Canada lacks an overarching set of criteria to allow for consistent analysis (Teitelbaum 2014). This is due to a variety of factors including; the lack of a standard definition of what a community forest is, the lack of a consistent regulatory framework across Canada; and the fact that not all community forest projects embrace the same goals (ecological, economic and social).

The comparison of community forests across Canada was impeded by the lack of samples discussed in the literature (Teitelbaum et al 2006),

the differences in the analysis of the community forests in the literature, the broader lack of definitions of what function these forests should provide to the communities surrounding them, and a diversity of sophistication of the community forest themselves.

While there were some examples cited extensively that made it easy to compare and contrast community forest models within select provinces such as British Columbia (Furness et al. 2015), the lack of easily comparable data across Canada meant that it was nearly impossible to create a framework of analysis to determine benchmarks for success or failure of the projects nationally (Teitelbaum 2014). The result of this has broader implications for the future of community forests in Canada as there are few replicable and tested models to follow for new projects. This can result in fewer attempts to create new community forest projects. This holds particularly true for those provinces where there are few examples of successful projects represented in the literature. Forestry legislation has many similarities between provinces, but the differing requirements and internal policies can make comparison very difficult.

Without the proper analysis of past and current community forest organizations, it becomes very difficult to measure their success (Teitelbaum et al. 2006, Bullock et al 2009). This has deeper implications for community forestry in Canada, its impacts on the communities around them and warrants a deeper look into the causes of success and difficulties.

FACTORS INFLUENCING SUCCESS

As seen in the results, community forestry success rests on the ideas of community involvement and capacity, local access and sustainable management (Sheppard 2005, Bradshaw 2003). These are the minimum requirements of what is required to make community forestry successful. From the research that was conducted, it is clear that many other factors must be considered in assessing the success of community forests (Furness et al. 2015, Assuah et al. 2016). Success is dependent upon extensive community support and involvement, participation, and interest in the project, and support for the identified goals of employment, ecological, economic and social (Teitelbaum et al. 2006, Teitelbaum 2014, Furness et al. 2015). Technical knowledge and ability need to be provided by the government and other agencies to support and guide the decision-making process of the community forest boards and volunteers (Teitelbaum 2014). This assistance may be necessary to help the community become educated and experienced in forest management and planning (Bullock and Hanna 2006).

The social capital required for any community forest project is immense (Bullock et al. 2009, Egunyu et al. 2015). Volunteers need to be available for both long- and short-term commitments to the project. The knowledge base required is significant for those who wish to serve on the boards of the organizations and this base is not always readily available in the surrounding communities. This shortfall means that some regulatory frameworks would benefit all projects, but particularly those that are

located in more remote areas that lack both numbers and sophistication of potential volunteers.

Economic capital is a significant challenge to the establishment and continuity of all community forest projects (Bradshaw 2003, Furness et al. 2015). Without the appropriate level of funding, the project cannot begin with a solid forestry plan that includes the needs of the stakeholders and community (First Nations, community members, adjacent landowners, local businesses, local government). The lack of a business plan for harvesting timber and for co-uses such as recreation or hunting (as the community plan defines these uses) can mean ultimate economic failure as revenues will not support the long-term viability of the project.

Diversification within the project can be a challenge for community forests (Teitelbaum 2014). Furness et al. 2015 stated in their review of community forestry in B.C. that 37/38 community forestry groups that they interviewed expressed interest in diversifying their operations to more than timber harvesting. The authors also noted that the communities had great difficulty finding ways to diversify into different revenue streams. Once timber harvesting cycles are established, the desires of the community often shift to include more social and economic components such as recreational use or secondary harvesting of non-timber forest products (berries, mushrooms, mammals). In some mature community forest projects, the shift to secondary product manufacturing becomes an economically and socially viable option. This can include new

ventures closely tied to the community forest itself, such as the establishment of more sophisticated milling practices or furniture manufacturing. The economic benefits of secondary product manufacturing cannot be underestimated, but such initiatives have not been adequately addressed in the literature. This may be due to the fact that secondary manufacturing is not in the focus or scope of the literature that was turned up using the criteria of this paper. There are many examples of the potential that value-added and secondary manufacturing has in other, non-peer reviewed, sources (Williams 2018, DeLong et al. 2007, NRCAN 2016). The parameters of the literature review may have excluded many government policy-based publications.

Forming appropriate partnerships between community forest organizations and other organizations is a key to success (Bullock and Hanna 2006, Bullock et al. 2009). These partnerships should include input on economic, technical, and social factors. Drawing expertise from the surrounding area is key to building the long-term volunteer and knowledge base required for the project to succeed. Specifically, the projects should consider the inclusion of First Nations groups, provincial government agencies such as Ontario's Ministry of Natural Resources and Forestry, conservation authorities, environmental NGOs, and universities. These organizations can all provide knowledge and enthusiasm to support the established goals of community forest projects.

Other factors that affect community forest organizations include the lack of control over much of the process entered in to (Bullock et al. 2009). There are many criteria that must be met in order to establish a recognized community forest and to secure harvesting rights (Furness et al. 2015). The lack of technical ability to properly manage forest harvesting and write the management plan, along with the lack of forestry-based and related knowledge within the community, can make this even more difficult (Teitelbaum 2014, Egunyu 2015). This lack of control is one major limiting factor of the success of community forests. The lack of control over much of the process can seem very intimidating and can discourage many communities from beginning or continuing the process of becoming a community forest organization (Bullock et al. 2009, Furness et al. 2015).

Other difficulties which should be considered prior to entering into the process of establishing a community forest include the competition and opposition from the commercial forest sector (Bullock et al. 2009). This is problematic as some of the commercial forestry actors have exerted pressure on governments to slow the establishment of regulations supporting community forests (Palmer et al. 2016). Community forests are also held to the same environmental and technical standards of large commercial forest operators, especially in B.C. (Furness et al. 2015). This is not always favourable to, or achievable for, community forests. Smaller undertakings such as community forests can struggle to meet the criteria

that was originally developed for large-scale industrial harvesting and management (Furness et al.) The impact of these challenges from industry can mean that the community forest fails to thrive economically and thus fails in the end.

CURRENT AND FUTURE RESEARCH

The current body of literature on community forestry is, at first glance, extensive. The beginning searches following the outlined criteria turned up almost 100 papers that fit the criteria. Even after narrowing the papers down there were 76 papers left. The papers cover a variety of topics and span a thirty-year time period. Upon closer inspection, however, reoccurring trends appear. The same projects are repeatedly cited and examined (Teitelbaum et al. 2006).

While covering similar topics is the norm for many bodies of literature and repeated use of examples is common, the repetition of a few examples when many others exist is not. The narrow focus on a few projects serves to distort the state of affairs of community forestry in Canada (Teitelbaum et al. 2006). This repetition resulted in some problems when conducting this research and analysing the projects because there was an impression that there were far fewer examples of community forestry in Canada than actually exist. This was a significant failing identified in the literature making the dataset seem smaller and community forestry seem less successful than it actually is in Canada.

Other identified gaps in the research include a seeming ignorance of the state of community forestry in provinces other than Ontario, Quebec, and B.C. (Teitelbaum et al. 2006). The only literature mentioning community forestry in the Maritime provinces were Teitelbaum's 2016 book, Community Forestry in Canada: Lessons from Policy and Practice and a small number of other papers including Roy (1989). There is also a lack of any comparison between provinces of the actual projects or trends (Teitelbaum et al. 2006). This lack of information may have been in part due to the fact that the applied search criteria somehow excluded certain publications; however, there also seemed to be very little mention of the presence and operational structures of community forests in general. Without this information, it was impossible to accurately estimate the overall state of the community forest movement in Canada. While it is possible to draw parallels and, while it is true that the different provinces have different laws governing their forestry practices, a comparison between the provinces would be a useful tool for showing the impact of community forestry in Canada.

Some of the identified gaps in this body of literature may have been due to the criteria that was applied to find the publications for this literature review. The requirements of English language, peer-reviewed, and Canadian publications may have excluded some important literature to fill the gaps that are presented in this section. The English language requirement most likely excluded literature published on community

forestry in Quebec and possibly the Maritime provinces, and the requirement for peer-reviewed sources excluded any policy, governmental and NGO publications.

There are many opportunities for further research that are identifiable from this literature review. One of the principal areas of further research includes a closer examination of community forestry in the Maritimes and in the prairie provinces, as well as further comparisons between provinces and an inclusion of examples of community forests that are not already regularly cited. Other further avenues for research include the examination of failed community forest operations in order to determine commonalities from those examples (Bullock and Lawler 2014). A more current synthesis of the state of community forestry in Canada may also be instructive. While Teitelbaum et al. 2006 was an extensive look at the current state of forestry at the time, 12 years have passed since the publication of that paper and much has changed. The attempt to create another synthesis of the same caliber would provide valuable information on the current state of community forestry in Canada. The creation of a standard set of criteria and indicators to evaluate success would help to create a method of analysis that could be consistently applied across the spectrum of community forestry (Teitelbaum 2014). One final avenue of research would be to compare community forestry in Canada to practices in other countries that have

similar management systems and community structures such as those in the United States.

CONCLUSION

This thesis and its research has delved deeply into the current body of literature on community forestry in Canada and has determined that there is enormous potential for community forestry in Canada. The research has shown that there is currently extensive interest in community forestry in many areas of Canada, but a lack of capacity and economic and social capital to see the projects through mean that programs often fail before they begin. It is clear that finding the economic, and social capital required for such extensive and long-term commitments is difficult for the communities to achieve (Egunyu et al. 2015).

These problems can be mitigated by intervention from government in the form of guiding legislation and policy frameworks, a thorough analysis of the current state of community forests in Canada, and by other players helping community forests gain the experience and knowledge necessary for the projects to succeed.

While community forestry initiatives in Canada have much potential, they have not lived up to their potential for success. The existence of many problems and issues that these communities experience results from a lack of ability and economic and social capital and results in the failure of the groups to solve the problems on their own. This simply shows that community forestry in Canada is in its infancy and that, with the correct structural guidance and support, community forestry in Canada will flourish.

To answer the research questions that were asked at the beginning of this paper, the factors that affect the success or failure of community forestry can be boiled down to economic viability, government support, and community involvement. These factors which affect the success of community forests are consistent throughout Canada, although they will affect communities differently depending on the individual circumstances. The literature review that was conducted points to Canada having effective community forestry, although it is not as effective as it could otherwise be. With the correct support and attention, community forestry could become a viable form of forestry tenure in Canada.

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