

This package contains examples of good answers that were submitted for take portion of the 2009 RPF registration exam. Although the answers were chosen as the two better answers submitted in 2009, take note of the score each answer received and be advised that answers may contain errors. Please note that the examples do not conform to the criteria and formatting outlined in the exams procedures.

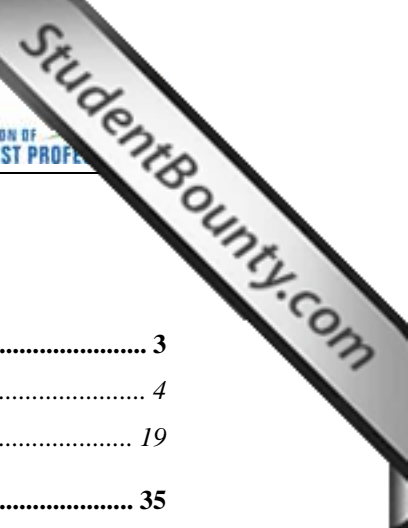


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Question 1 (30 marks)

One of the recommendations that came from the Working Roundtable on Forestry was a recommendation to "...establish commercial forest land reserves for key portions of the current forest land base where wood production will be a primary focus". One of the main reasons behind this recommendation is to ensure timber supply in order to attract investment into the province. In the past, ideas such as a "working forest" with a similar goal have been met with considerable public outcry and protest.

Many of the details for the current recommendation have not yet been worked out. As a professional forester, you have a responsibility to the public to (among others) "advocate and practice good stewardship of forest land based on sound ecological principles to sustain its ability to provide those values that have been assigned by society." (ABC FP Code of Ethics).

Is it possible to have a commercial forest reserve in BC and provide all of the values from the forest that have been assigned by society? If your answer is no, provide your reasons in support of the status quo or your arguments for an alternative approach. If your answer is yes, provide with reasons, how the commercial forest reserve should be structured, and how such a structure will enable maintenance or enhancement of other forest values such as biodiversity, water quality, and wildlife habitat.



Answer 1 (scored 100)

In Search of Certainty:
Why a Commercial Forest Reserve in BC is not the Solution



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1.0 Introduction

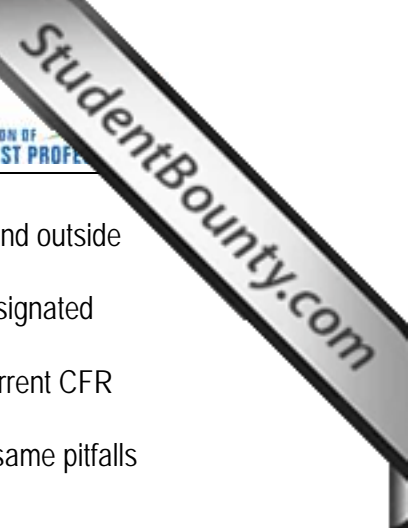
On February 16, 2009 the Provincial Government of BC announced that a new Commercial Forest Reserve will be explored “to establish selected areas of the land base where forestry has the priority both for harvesting and for growing new trees to secure forest jobs and investment. This will ensure harvested lands remain protected as a forest asset and will not be set aside for other uses.” (Government of BC, 2009).

This announcement, which included a number of forest sector related initiatives, was a direct response to Recommendation #7 of The Working Roundtable on Forestry, 2009. This recommendation, to “establish commercial forest land reserves for key portions of the current forest land base where wood production will be a primary focus”, has generated interest not only from the forest industry, but also from environmental and non-government organizations (NGOs), likely due to similarities with the BC Liberal Government’s ‘Working Forest Initiative’ of 2003.

The objective of this report is to discuss the similarities between these two initiatives, explain why the current initiative will not achieve its objectives, and recommend potential solutions that will help to achieve those objectives, in lieu of an exercise in land base re-designation to create an ineffective Commercial Forest Reserve.

2.0 Background

The details of the current Commercial Forest Reserve (CFR) initiative have not been communicated to the public, and as such it is difficult to gauge how similar it will be to the Working Forest Initiative (WFI). However, Minister of Forests Pat Bell has indicated that this idea is different from the past initiative in that the CFR will more closely model the Agricultural Land Reserve, designating smaller parcels of particularly productive forest land, with future expansion possible (Prince George Citizen, 2009).



This is a significant departure from the original WFI where all Crown forest land outside existing protected areas and parks, approximately 45 million hectares, were to be designated (MSRM, 2003). However, the argument can be made that regardless of scale, the current CFR initiative will likely be structured similarly to the WFI, and as such suffer some of the same pitfalls as its predecessor.

For example, two of the five 'main elements' in the proposed policy framework for the WFI have been completed by separate processes since 2003. One of these is the substantial completion of Sustainable Resource Management Plans (SRMPs) and Land and Resource Management Plans (LRMPs), which were identified as providing certainty to the land base within the Working Forest. The other completed element is the development of the Land and Resource Data Warehouse (LRDW) and the creation of a program that can monitor the effectiveness of forest practices and regulation, currently known as the Forest and Range Evaluation Program (FREP).

One final indication that the CFR may follow the structure of the WFI is found in Appendix 1: Alternatives for Defining the Working Forest of the WFI Discussion Paper, 2003. It states that, "the Working Forest could be defined as only those forest lands that are the focus of intensive timber harvesting or forest management activity", which although originally discarded, echoes Minister Bell's recent comments regarding a focus on particularly productive forest land.

If these indications are correct and the CFR is intended to be similar to the WFI other than in scale, it will not be possible to achieve the primary objective of certainty for investment, and will not serve to provide all of the values from the forest that have been assigned by society.

3.0 Economic Certainty

The key driver of both the WFI and the current CFR initiative is achieving economic certainty, either through secure timber supply and/or a stable forestry land base, however in BC these are not the only issues impacting long-term investment appeal.

Pearse, 1998, states that, "the long planning periods involved in forest production aggravate the difficulty of predicting the future value of products and services which will determine the economic outcome of current actions. Risks from losses such as fire and other causes also contribute to the uncertainty in forestry decision making", and hence investment.

These risks also include epidemic insect outbreaks, increased incidence of rusts and root rots, and compounding all of these, climate change, which may negatively affect the long-term net productivity of the forest land base, depending on the severity and rate of change (Spittlehouse, 2008). Certainly these risks are present with all natural systems but their economic effect, individual or cumulative, could be far more severe if they occur in a landscape that has been heavily invested in (ie. intensive silviculture).

Another very important part of improving certainty for the forest sector is the relationship with First Nations. It is widely recognized that unsettled treaties are the primary source of uncertainty surrounding land and resource management (Paulsen, 2004). Further to this point, the responses of First Nations groups to the WFI of 2003 were strongly opposed to its implementation due to a lack of meaningful consultation prior to release of the discussion paper, potential infringement on aboriginal rights and title, impact on treaty negotiations, and harm to First Nations' culturally significant values, ecological values, and economic diversification opportunities (Brown, 2003). With little progress on treaty negotiations and settlements since the WFI, and court decisions moving in favour of increased First Nations rights on traditional lands (ie. Tsilhqot'in

Nation v. British Columbia, SCBC, 2007) it appears unlikely that the CFR initiative will garner more favour than the last initiative.

It is clear that in order to increase certainty around the support of First Nations, the government must first come to terms with the commitments agreed to in 'The New Relationship', (Government of BC, 2005). More specifically, the Principles to Guide the New Relationship, which include mutual development of, "integrated intergovernmental structures and policies to promote co-operation, including practical and workable arrangements for land and resource decision-making and sustainable development," must be demonstrated prior to embarking on new government and industry led forest policy initiatives.

Due to the impossibility of increasing the certainty of forest land productivity over the long-term (ie. one or more harvest rotations) due to climate change, and the unlikelihood of securing First Nations support in the near future, it is doubtful that a CFR can meet the key objective of providing certainty for investment, thereby improving the state of the forest industry.

4.0 The Values Assigned by Society

Professional foresters are bound by a Code of Ethics set forth by the Association of BC Forest Professionals, and as per Bylaw 11.3.1, must "...advocate and practice good stewardship of forest land based on sound ecological principles to sustain its ability to provide those values that have been assigned by society" (ABC FP, 2003). The Guidelines for Interpretation (ABC FP, 2006a) of that Code state that, "Society means public of British Columbia as represented by Government." Therefore, by the Provincial Government enacting the Forest and Range Practices Act, 2004, and its eleven resource values, it can be inferred that by balancing these eleven values, good forest stewardship can be achieved. The inverse however, may also be true; emphasizing one value over another, may negatively impact overall stewardship.

These resource values, namely, biodiversity, cultural heritage, soil, water, fish, forage and associated plant communities, timber, recreation, resource features, visual quality, and wildlife, were chosen as the key building blocks within sustainable forest management. It is the maintenance and balancing of all these values that society and government have entrusted with the professional foresters of BC.

The classic example of elevating the value of timber production over other ecological values is that of the managed forests in some parts of Europe. In Sweden for example, timber production has increased by 50% over the last 20 years, with the result being serious endangerment of 40 vertebrate and 50 plant species (Registry of Nature Habitats, 2009).

In the WFI discussion paper, 2003, a common theme was that the Working Forest would not, "achieve economic development at the expense of a sustainable environment", and perhaps this was thought to be possible due to the extremely large scale of the designation (~45 million hectares). In contrast the CFR proposal is to designate smaller parcels, which could conceivably make balancing sustainability more difficult, as the operational footprint of intensive management would represent a greater proportion of that smaller reserve.

If this is the case, it would appear that the other ten values of FRPA would receive less emphasis and management focus as a trade-off to timber production, thereby reducing the ability of the forest to produce all of the values assigned by society, with some impacts on FRPA values being potentially irreversible (ie. cultural heritage resources, fish/riparian habitat, recreation opportunities, water quality).

As a final note, it would seem that the concept of reserves emphasizing timber production also runs countercurrent to the Pearse Commission Report of 1976, which states, "The future of forestry hinges on our ability to meet this challenge (reconciling industrial forestry with other forest

uses and social objectives to realize the full range of potential values), because we can no longer parcel out the forest land for separate uses as the demand for all of them grows.”

5.0 Stay the Course

In today's rapidly changing society the 'status quo' is often given a negative connotation, regardless of its warrant. In lieu of a commercial forest reserve designation in BC, perhaps 'staying the course' with key initiatives already begun, while encouraging innovation within the current policy framework could provide greater certainty for investment while maintaining all of FRPA's eleven resource values.

5.1 FREP

The aforementioned Forest and Range Evaluation Program (FREP) began in 2005 with the goal of being, “a world leader in resource stewardship monitoring and effectiveness evaluations; providing the science-based information needed for decision-making and continuous improvement of BC's forest and range practices, policies and legislation” (MOFR, 2005). Since becoming operational, this program has developed protocols for monitoring and has been monitoring on a yearly basis, eight of the eleven resource values, with the final three near ready for implementation.

When all of the eleven FRPA resource values are monitored and tracked year over year, a clearer picture of the current status and future sustainability of the forest industry will emerge. This picture, when combined with the rigorous Allowable Annual Cut determinations conducted by the province's Chief Forester, will provide certainty to the public of BC and potential investors that the timber supply is accurate and sustainable, while at the same time, the values assigned by society are being maintained.

5.2 The New Relationship

It has been established that the relationship between the First Nations of BC and the forest industry has been a major barrier to stability and sustainability across the province (BCFNFC, 2008). As such, the priority of reaching the goals outlined in "The New Relationship" (Government of BC, 2005) should be placed above potentially controversial administrative land designations such as the CFR, which provide little investment certainty and may serve to erode the tentative trust currently established.

The recommendations of the Roundtable on Forestry, 2009, identify a number of options for encouraging First Nations involvement that maintain the spirit and intent of the New Relationship, and it is these that should be championed by the Government of BC. One such option, originally put forth by the BC First Nations Forestry Council and echoed in Recommendation #25, is the development of an area-based First Nations forest tenure. Such a tenure agreement could be constructed following the model of a Community Forest Agreement, with the First Nations community managing the forests to meet its collective goals, while at the same time realizing the benefits flowing back to the community. This arrangement would also be an excellent opportunity for First Nations youth to become involved in the forest sector and engaged in the success of the community.

The over-arching result of a successful area-based First Nations forest tenure, beyond engagement at all levels of the forest sector and increased forestry capacity, will eventually be greater certainty on the land base. What may begin as involvement under the guidance of a competent professional forester will likely lead to a better understanding of industry dynamics, which could then lead to clearer communication with government and industry, with the result being a united front for the BC forest industry and a common goal of success through sustainability and accommodation. The seed has been planted, now we need to re-engage and 'stay the course'.

5.3 Innovation within the Current Framework

In 2008 the ABCFP submitted a response to the Working Roundtable on Forestry, and one of the key recommendations was diversification of the current tenure system. This diversification referred to increasing the number of small area-based forest tenures (woodlots and community forest agreements (CFAs)), but also new tenures for other values such as exclusive recreation rights. Building on this innovative idea, the Government of BC should allow the holders of these area-based tenures to enter into third party tenure agreements for the harvest of non-timber forest products (NTFP) on these lands. These products include mushrooms, berries, floral greenery, and many others.

In 1997, the MOFR estimated that the NTFP sector generates \$600 million/yr in BC, and includes over 200 species that are harvested for sale. As such, a community that holds a CFA should be allowed and encouraged to sell harvest rights of these products, within the tenure area, with the associated revenue flowing back to the community. Not only would this improve the economic viability of the community and CFA, it would encourage compatible management of timber and other products on the same land base, and further involve the community. This type of tenure could be very successful if the concept of First Nations area-based tenure agreements is explored, as a higher level of community engagement could result.

One key portion of the announcement regarding the CFR (Government of BC, 2009) that has been absent from this discussion is the concept that, "harvested lands remain protected as a forest asset", and remain as such throughout the rotation. A possibility for addressing this portion of the 'certainty discussion' that builds on the ABCFP's tenure diversification theme and potentially the First Nations engagement theme could be an area-based silviculture tenure.

This tenure agreement would be based on an existing area-based license such as a Tree Farm License, CFA, or woodlot, but only on openings that have been declared Free-to-Grow, and

had the obligations returned to the Crown. The MOFR would identify candidate stands that meet a certain expectation of site productivity and return on investment, and the licensee would design an incremental silviculture program that would maximize the benefits from those stands between the Free Growing milestone and the next harvest rotation.

As with the current situation in incremental silviculture, the Government of BC would need to make the initial investment, but from that point on, the license holder would be responsible for maintaining the stand. That licensee could be compensated based on performance (increase in Mean Annual Increment across the license), or by receiving rights to intermediate harvests, and/or a portion of the revenue from the final harvest. In turn, the Government of BC will increase the productivity of second growth stands throughout the province, increase the security and sustainability of the AAC over the long-term, while also ensuring that any opening held under a silviculture tenure is secure from a shift in land use.

Clearly a silviculture tenure agreement is not the only option for securing harvested land while increasing the investment in silviculture, but it is an example of an idea that could be implemented using the current policy framework while achieving one of the objectives of the CFR. The concept also concurs with Recommendation #3 of the ABCFP's commissioned paper on the effect of current stocking standards on forest stewardship, in that the status of regenerated stands would be monitored beyond the Free Growing declaration (McWilliams, 2009).

6.0 Conclusion

In terms of overall certainty for investment in the forest industry in BC, a secure or 'reserved' land base is only one small part of the equation. It is clear that ongoing litigation and negotiation with First Nations, the unknown impacts of climate change, and the variability of natural systems over long planning horizons, are the key drivers of investment risk. The Government of BC



needs to recognize this fact and actively work towards mitigating the priority risk factors that can be managed, while maintaining the best interests of the public.

The WFI of 2003 met a response of 97% opposed from nearly 2700 individuals and groups (Brown, 2003) and due to the outward similarities, it is likely that the current initiative will have a similar response. As such, the recommendations of this report focus on gaining investment certainty through improving First Nations relationships, maintaining environmental values with science-based monitoring, and innovation within accepted policy, in order to achieve the objectives of the CFR without public outcry and costly policy development.

In order to survive the current global economic downturn, the forest industry in BC must evolve and move forward on a number of fronts, including following through on valuable initiatives already begun, and new ways of promoting business. In doing so, it is paramount that the principle of sustainability for all resource values is upheld, and that we as professionals, "uphold the law, apply sound science, and act with the utmost regard for public interest" (ABC FP, 2006b). Therefore, the urge to look past the degradation of an environmental value in search of economic certainty must be resisted. Rather, we must 'stay the course', work with First Nations to find common ground and mutual success, and be innovative with the tools and resources that are available.

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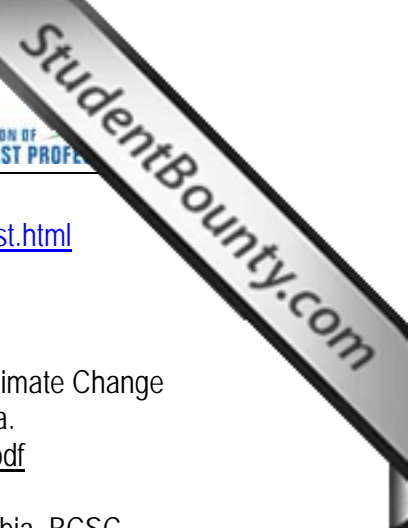
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Answer 2 (scored 99)

Opportunities for a Commercial Forest Land Reserve in British Columbia



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1.0 Introduction

The Working Roundtable on Forestry (Roundtable) was tasked by the British Columbia (BC) government to consider global changes and make recommendations to achieve a successful forest industry for future generations. The Roundtable report, released in May 2009 created a vision for the future of forestry in BC. Six priorities and twenty-nine recommendations were offered for action. Key to achieving the six priorities is Recommendation 7 ... "we should establish commercial forest land reserves for key portions of the current forest land base where wood production will be the primary focus" (Roundtable).

This paper supports Recommendation 7 and the concept of establishing a Commercial Forest Land Reserve (CFLR). It will outline how the CFLR should be structured to provide stability and promote investment in the forest industry and how the structure will enable maintenance or enhancement of other forest values. It will also examine how this structure should be created to accommodate all forest stakeholders and protect the public's interest. The future of its contribution to the provincial economy, and many rural communities could well depend on the effectiveness of a CFLR strategy.

2.0 Background

The "roots" of a CFLR in BC started as far back as 1865 when the Government of Canada created policy to retain ownership of Crown land while allocating "rights" to harvest timber (ABCFFP, 2009c). In 1906, the *Dominion Forest Reserves Act* allowed the Dominion Forestry Branch to "create and manage a system of national forests within federal lands" (BC Forest, 1999). In 1912, the BC legislature created the *Forest Act* that formed much of the framework for administering the sale and protection of timber. Since that time three royal commissions - the first Sloan Commission in 1945, the second Sloan Commission in 1957, and the Pearse Commission in 1976

- have all emphasized the need to protect the land base on which the forest industry in BC operates (BCCFA).

Following the Pearce Commission the *Forest Act* was revised in 1978, charging the Chief Forester with responsibility to classify as "forest land" all land that would be considered to "provide the greatest contribution to the social and economic welfare of BC if predominantly maintained in successive crops of trees or forage" (ABCFFP, 2009c). Under section 5 of the revised *Forest Act*, the provincial cabinet may designate forest land as provincial forest (BC Laws, 2009). This revision gave the Chief Forester the power to control the alienation of crown land inside provincial forests unless the uses were compatible with provincial forest policy.

The *Forest Act* specified "land inside a provincial forest must be managed and used in a way that is consistent with one or more of; timber production, forage production and grazing by livestock and wildlife, recreation, scenery and wilderness purposes, water, fisheries, wildlife, biological diversity and cultural heritage purposes, and any purpose permitted by or under the regulations" (WCEL).

"Eighty three percent of the land in BC" has been designated by cabinet as provincial forest (WCEL). The historic purpose of the designation was to "prevent or limit alienation of public land for non-forestry purposes" (WCEL). However, just as cabinet may designate forest land as provincial forest, it may also cancel a provincial forest if it considers it to be "to the social and economic interest of British Columbia" (WCEL). The Minister of Forests also retains the discretionary power to delete land from a provincial forest (WCEL).

Following many years of environmental and forest land use conflict resulting in numerous withdrawals from the forest land base the BC government introduced "A Working Forest for British Columbia: Discussion Paper" (WF) in January 2003 (Working, 2003b). The WF policy had four

central goals. First, to “maintain and increase the economic and social benefits that flow from the Working Forest” (Working, 2003b). Secondly, to “identify and provide additional certainty and access about those lands within the Working Forest which have specific priorities for timber and a variety of other values and uses” (Working, 2003b). Third, “assuring land-use decisions affecting the Working Forest are supported by a consistent and transparent process that recognizes forestry and also addresses all other identified values” (Working, 2003b). Finally, “assuring society’s environmental goals are achieved in the Working Forest” (Working, 2003b).

Ninety seven percent of the public rejected the WF initiative while one percent supported it from a public consultation process of twenty seven hundred respondents (Tides). The public feared it would eliminate government’s ability to manage the forests for the public interest on a sustainable basis (Working, 2003a). Resource sectors such as tourism, agriculture, mining, oil and gas opposed the WF initiative, expressing the position that other stakeholders’ interests would rank behind the forest industry in BC (Working, 2003a). FNs also rejected the WF concept as they feared it would constrain their ability to have their outstanding aboriginal rights or title resolved (Working, 2003a). Their rejection was in spite of much discussion in the WF Discussion Paper that implementation would not hinder “negotiations with First Nations in the treaty process, or affect the legal obligations of the Province to consult on First Nations interests” (Working, 2003b).

The forest industry, provincial government, and people of BC have long grappled with the issue of creating a land base for the forest industry to operate (TLA, 2008). The concept of creating a CFLR on key portions of the forest land base most suited to timber production will improve security of investment and encourage the best value and range of products from the land base (Roundtable). With the current state of the forest industry it is “imperative the industry and Province as a whole change the way business and the practice of professional forestry are

conducted on the public land base" (Lewis, 2009). Maintaining the 'status quo' will risk the loss of the forest industry as a major driver of the BC economy and the resultant social and economic benefits it provides (TLA, 2008). It would also be devastating to forest dependent communities.

3.0 Discussion and Argument

The Roundtable "believes that specific areas of forestry land base should be designated as CFLRs that attract intensive silviculture investments, and where plantations for fibre production can be established, and where initiatives to improve tree resilience can be piloted" (Roundtable). The Table also hopes to achieve "the best value and range of products from our investments on the land base, attracting private investment in forests, and having a secure commercial forest land base" (Roundtable).

Security of the land base is required to provide the forest industry with a fibre supply and to facilitate intensive forestry practices that will improve both the "volume and value of the fibre harvested as well as reduce the cost of fibre to the market" (Lewis, 2009). Local history in BC has already shown more secure, longer term tenures result in higher standards of forest management and investment in the land base (TLA, 2008). Currently however, we lack tenure or land regulation that secures investments or capital improvements on the forest land base (TLA, 2008).

3.1 Is a Commercial Forest Land Reserve Possible?

This paper takes the position that it is possible to have a CFLR on crown land in BC, with a different structure than the similar previously proposed WF initiative. The provincial government and the forest industry have long advocated the need to provide a land base to practice commercial forestry (Coast, 2008). The forestry profession has advocated a secure land base that will enable forestry practices to reflect long-term needs and secure investments in the land (TLA, 2008).

Critical to the above concept will be support by FNs. It will be necessary to engage FNs support and to communicate the benefits of CFLRs to “First Nations as they become full partners in forestry” (Roundtable). Subsequent sections of this report provide detail on how FNs will benefit from CFLRs. It is also imperative the provincial government make clear any CFLR initiatives will not impact or affect the settlement of aboriginal rights or title (TLA, 2008).

As owners of crown forest land the public of BC has a huge investment at stake in any forest policy changes. To gain public support it will be necessary to “engage the forest industry, industry associations, and forest professionals in providing the public with information on the benefits” of enacting CFLRs (Lewis, 2009). Community level awareness campaigns will be critical in communicating the CFLR program.

Forest professionals have always protected the public interest and have “advocated and practiced good stewardship of forest land based on sound ecological principles to sustain its ability to provide those values that have been assigned by society” (ABC FP, 2003). Professional management bound by ethical obligations will play a critical role.

3.2 Commercial Forest Land Reserve Structure

CFLRs should be designed at the “regional or strategic planning level with legal boundaries designated at the landscape planning level” (Lewis, 2009). Firstly, CFLRs should be located on land best suited for forest growth and yield (Lewis, 2009). Secondly, on land suitable for commercial forestry – “avoiding areas already under conflict or until land use conflicts are resolved” (Coast, 2008). Third, consideration of proximity to markets and/or conversion facilities (Lewis, 2009). Forth - the economics of future development and harvesting (Lewis, 2009). Finally, the last criteria for planning of CFLRs are community interests with other resource uses and values (TLA, 2009).

The CFLR should provide for a variety of tenures, (area based tenures encouraged over volume based) and ownership (major forest companies, small and medium sized business, community forests, and cooperative ventures) (TLA, 2008). Area based tenures inside CFLRs should be "less regulated" (Lewis, 2009) and allow industry to realize the "benefits of their investments through shorter term rotations, other uses of forest fiber, and increased yield" (Stirling, 2008).

To provide security of investment a commercial forest land registry (similar to BC's land registry) should be created that will allow tenure holders to register a security charge over the land base where capital improvements or silvicultural investments are made (Lewis, 2009). Improvements or investments would be defined by legal description and be recorded as a charge on the tenure in the registry. A map based record would also be maintained as part of the CFLR registry process (Lewis, 2009). A legal framework would be created that would compensate the tenure holder for any loss of investments or improvements made on lands inside the CFLR (Coast, 2008). "Tenure rights need to be revised" to permit the tenure to be pledged as an asset of ownership to facilitate financing projects on CFLRs or for the business benefit of the tenure holder (Lewis, 2009).

To encourage innovative forest management and flexibility of harvesting the Forest and Range Practices Act (FRPA) should be "relaxed" through results based objective management (Lewis, 2009). This will also be accomplished by increased reliance on forest professionals who protect the public interest on the land base. To ensure the public's interest is protected measure tenure compliance and performance attributes on the CFLR by annual audit (Lewis, 2009). A legal framework of penalty or monetary assessment would be applied if legal and management criteria are not met (Lewis, 2009).

Inside CFLRs area based tenures will become more prevalent and encourage improved yield and/or quality of fibre from the land base (Stirling, 2008). The concept of charging an “area based rent” in lieu of stumpage would provide economic incentive to industry to maximize the yield from the commercial forest land base (Coast, 2008). The establishment of CFLRs should embrace the principal of “higher and better use” of the land (Working, 2003b). Therefore as economic and social circumstances change it will allow for adjustments in the use of the land without loss of capital investment to the tenure holder or investor (TLA, 2008).

3.3 First Nations and Rural Community Considerations

The last (and possibly most important) priority the Roundtable recommends “First Nations becoming full partners in forestry” (Roundtable). The establishment of CFLRs will require full participation and support of FNs and not impact any aboriginal rights or title claims (Lewis, 2009). To achieve full support for this concept the BC government will engage and educate FNs on the commercial value and necessity of CFLRs (Lewis, 2009). The CFLR concept will enhance the economic value of tenure opportunities to FNs (TLA, 2009). This is an important distinction as FNs ability to obtain financing for business startups is often impaired by lack of assets. As FN tenures are often located in areas of the province where limited business opportunity exists, “commercially viable forest businesses secured by a commercial forest land base become important” (Lewis, 2009).

Rural FNs communities currently exercise little or no control over forest activity adjacent or tributary to their community. By creating a CFLR and increasing the flexibility and professional focus in managing the forest this could allow for FNs “communities or to make decisions and apply their strengths and values over their immediate resources” (ABC FP, 2008). The ability to set goals, implement business strategies, and solve problems in order to take charge of their future will

ultimately rebuild the forest sector in that place (ABC FP, 2009). Such structure would allow partnerships or cooperatives to develop that build on forest assets and use a community's strengths as the basis for strategic government investments (ABC FP, 2009). Creating a CFLR with improved management flexibility and security of investment will encourage industry to intensify their management focus and make both short and long term investments where industry and the province will benefit.

3.4 Maintenance or Enhancement of Other Forest Values Accommodated by a Commercial Forest Land Reserve

This paper previously mentioned location of CFLRs will avoid areas where land use pressures or resource conflicts where the growing and extraction of timber will not be the primary use of the land. Such "zoning" will not prohibit timber harvesting outside the CFLR but will not include areas of obvious conflict or designated alternate use inside the reserve (Lewis, 2009).

Inside CFLRs other forest values such as biodiversity, water quality, and wildlife habitat will be protected under "relaxed regulation of FRPA" managed by forest professionals (Lewis, 2009). Enhancement of other forest values will not occur at the "expense of intensive forest management" (Coast, 2008); however, the public's interest will still be upheld to maintain those other forest values under FRPA by the forest professional (ABC FP, 2003). Other forest values will be super enhanced outside of CFLRs to compensate for lack of providing enhancement within the reserves. Using best site specific forest management practices forest professionals will enhance tree growth and yield within the CFLR.

The establishment of CFLRs will be done by a "coordinated planning platform" (ABC FP, 2008). This platform will reduce or eliminate all resource sectors working in "silos" to reduce

pressure on the forest land base of other sectors working against each other (ABCFP, 2008).

Good planning will be key to protecting non forest values in the establishment of CFLRs.

4.0 Conclusions and Recommendations

The creation of CFLRs BC is both desirable and possible. This paper has outlined how CFLRs could be established on “key portions of the current forest land base where wood production will be the primary focus” (ABCFP, 2009). The establishment of CFLRs will enable more intensive commercial forestry and increase investment in silviculture on the land base. This will result in “improving BC’s competitive position in world forest product markets” (Lewis, 2009). Investments in CFLRs will be secure and provide long term stability to the industry. Given such conditions the creation of CFLRs will assist in attracting capital investment and promote long term strategies. To create a globally competitive, market based operating climate CFLRs will “create ‘host’ conditions” to attract investment and bolster a successful forest industry (Roundtable).

The establishment of CFLRs is key to improving tenure opportunity for FNs. FNs involvement in the creation of CFLRs is critical as the rural isolation of many FN communities will undoubtedly result in FNs ownership of forest tenures inside CFLRs (ABCFP, 2009). FNs support will be critical to the establishment of CFLRs. The establishment of CFLRs must not impede or affect the settlement of aboriginal rights or title.

With stewardship of our forests a common desire in our culture and one of the few actions that requires the collective energy of a multiple of generations (ABCFP, 2009) it is important that all stakeholders with non timber values in the forest be accommodated (ABCFP, 2008). The creation of CFLRs should reduce conflicts of other stakeholders if a proper “coordinated planning platform” is implemented to eliminate planning in “silos” that has plagued planning on forest land in BC for decades (ABCFP, 2008).

While CFLRs will be commercial in focus it is important they be professionally managed to protect the public interest and maintain other forest values.

To accommodate the creation of CFLRs the following is recommended:

1. The Province of BC adopts Recommendation 7 of the Roundtable report in establishing CFLRs.
2. The Province design and develop the concept of CFLRs and provide information as to structure and operation of such reserves throughout the Province.
3. The Province undertakes a large scale information campaign to inform the public of BC of the benefits of establishing CFLRs. Public input and that of all stakeholders should be evaluated and considered in the final design and implementation of CFLRs. FNs involvement and support is critical.
4. Establishing CFLRs will not impact aboriginal rights or title settlement for FNs.
5. Upon completion of recommendations one to three above the province, evaluate public support of the CFLR program and implement if adequate support exists.

This paper has provided a vision of how CFLRs may be created and operated to improve the security of investment, return on capital, and improve the stability of the forest industry for BC.

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Question 2 (30 marks)

When large timber supply units (currently called Timber Supply Areas or TSAs, Tree Farm Licenses or TFLs) were created, an expected benefit was a reasonably predictable and sustainable rate-of-harvest. On the basis of this expectation, many communities developed adjacent to forest operations or the converting plants associated with the tenure. Managers, professionals, and workers moved their families to these communities expecting a stable and sustainable economic base.

Through the 1970s, a number of significant changes occurred which affected land allocated to the forest industry and also how forest lands were managed. Since the 1980s, harvest rates have changed significantly for both entire timber supply units and within segments of larger units. A consequence of these changes ranged from reduced local employment to near-elimination of some resource communities.

For your report:

1. Describe and discuss the changes to the rate of harvest over the history of the forest profession in BC (excluding the mountain pine beetle and other salvage operations).
2. Discuss the role of forest professionals in this sequence.
3. As a forest professional, what do you recommend to improve the sustainability of resource dependent communities in relation to the resource base in the future?



Answer 1 (scored 93)

A History of Policy Change Affecting the Rate of Harvest
and the
Evolution of Today's Forest Professional in British Columbia

Introduction

It is reality that the people hardest hit by a troubled forest industry are the workers and communities who are left with nothing but a deserted mill. In the past, the rate of harvest has played a key role in influencing the size, type and location of manufacturing activity and thus economic development and employment in the province of British Columbia (BC). The rate of harvest has had a definite hand in influencing where we are today but now is only symptom of an industry in peril. Today's foresters are highly recognized as experts in the field of forestry and playing a key role in developing management plans, research and contributing to policy changes, but this wasn't always the case. This report will take a brief look through history at both the rate of harvest and how the professional forester has developed into what they are today with recommendations for a prosperous future.

Stage 1 Pioneer Forestry - Prior to 1945

In the early days of forestry there really was no policy regulating the rate of timber harvested (Royal Commission 1975). Timber owners and holders of rights to crown timber were for the most part free to harvest at whatever rate they chose and new crown timber tenures were made available in response to applications (Pearse 1976). When a mill had exhausted the timber supply within an economic hauling distance, it would simply close down or, if portable would be moved on (Royal Commission 1975). During the 1920's and 1930's tentative allowable cuts were set for the forest reserves but no attempt was made to enforce them. By the end of this period roughly 15 millions cubic metres were being logged annually with the bulk of this timber coming from the coast (Pedersen 2003).

An Industrial Foresters' Role: The Fulton Royal Commission of 1912 promoted a strong Forest Act and staff for regional forestry offices, and the Whitford and Craig Royal Commission of 1918 promoted a College of Forestry at the University of British Columbia. Many graduates of forestry

worked for the BC Forest Service doing forest inventories or protection work from fire, insects and diseases, while others were doing forest engineering or logging work for forest companies. There was no professional status for the foresters who practiced during this time. Many belonged to the Canadian Society of Forest Engineers (the predecessors of the Canadian Institute of Forestry). During the late 1930s and early 1940s two government foresters, B.C. Orchard and F.D. Mulholland, lobbied their political bosses for a major forest policy overhaul, in particular a policy of sustained yield for BC, which would eventually happen (ABC FP 2006).

Stage 2: Sustained Yield Regulation – 1945 - 1976

The 1945 Royal Commission of Forest Resources (1945 Sloan Commission) was the start of a very significant change in policy relating to the rate of harvest. The 1945 Sloan Commission was asked to address concerns about the lack of regulation of the expanding timber harvest, particularly on the coast. Following the resulting recommendations amendments were made to the Forest Act in 1947. A huge chunk of the timber harvesting land base was divided up into two sustained yield units: Tree Farm Licences formally Forest Management Licences and Public Sustained Yield Units (PSYU's) formally Public Working Circles. A sustained yield policy was developed for these units that used the Hanzlik formula as a way to transition the virgin (mature) forests to normal forests as a way to set the annual allowable cut (AAC). A normal forest was defined as equal volume of timber available over time (National Forestry Database Program 2005 and Pedersen 2003). With the guarantee of a timber supply over a longer period of time investment grew in the industry and it was during this time that many of the current sawmills and pulpmills were built throughout the province, replacing the hundreds of traditional "bush mills" with sophisticated industrial complexes (Pedersen 2003).



In the decade following the 1945 Sloan Commission, the volume of timber harvested in B.C. doubled to about 29 million cubic meters, with the majority of increase coming from the interior of the province. This rapid increase prompted a second Royal Commission on Forest Resources in 1955 (1955 Sloan Commission) which confirmed the sustained yield policy, and maintained the use of the Hanzlik formula for estimation of sustainable yield (National Forestry Database Program 2005). The next two decades saw the rate of harvest double again to roughly 60 millions cubic metres / year with increases in both the coastal and interior harvest (Pedersen 2003). Much of these increases were due to the commercialization of lodgepole pine and coastal western hemlock (National Forestry Database Program 2005). The other increase came from the introduction of close utilization policy in the mid sixties (Devitt and Pratt 1998).

Land alienations, logging roads, regeneration delay and unsalvaged losses were taken into account in the AAC calculations (Pederson 2003) although future notions of protected areas, biodiversity, riparian areas and wildlife habitats were not. In 1971 an ecological reserves act allowed for setting aside of crown land for research, education and preservation of representative ecosystem samples (Devitt and Pratt 1998). Provincial AAC reached a high of 85 million cubic metres in 1975, although this AAC was never fully committed in harvesting agreements (Pedersen 2003).

A Professional and Industrial Foresters' Role: Sloan recognized the need for better forestry practices and statutory recognition of the profession of forestry in his 1945 report (Sloan 1945). The Association of British Columbia Professional Foresters (ABCPF) was created in 1947 and the Foresters Act was enacted giving professional status to foresters (ABCFP 2006). This was a pivotal period that marked the evolution of a professional foresters' role from a logging engineer, inventory or protection specialist to that as defined in the Foresters Act as someone to be held

accountable for the overall state of BC's forest resources (Devitt and Pratt 1998). In 1947 the technical forestry options was opened up in the University of British Columbia, designed to train professionals in silviculture and forest management for careers in government service and forest industry. The Industrial Forester during this time had jobs related to fact gathering, supervising planting activities, protection plans and public relations (Rajala 1999).

Stage 3: The Ecological Approach – 1976 - 1991

The 1976 Royal Commission on Forest Resources (Pearse Commission) was the start of a new way of thinking regarding management of the forest land base. "Present circumstances call for a more flexible approach to yield regulation, with greater emphasis on protecting and enhancing the productivity of forest land and on the economic, social and environmental implications of harvesting" (Pearse 1976). As a result of the Commission, recommendations were made to the Forest Act in 1979. AAC's were to be determined by the provinces' Chief Forester according to legislative requirements instead of the Hanzlik formula hence changing the way harvest rates were chosen. The Act consolidated PSYU's into 33 timer supply areas (TSA's) covering 90% of the provinces managed forests. The small business forest enterprise program was developed and a timber supply review was required every 5 years (instead of 10) (Devitt and Pratt 1998 and National Forestry Database Program 2005).

The phenomenon known as the Falldown effect was first mentioned on record in the Pearse Commission. During this time it was commonly thought that the increased yields from managed forests would offset the loss of the mature "old growth" forests (Pearse 1976). Later using new more sophisticated timber supply analysis and modeling techniques fall-downs were identified in both the chief foresters AAC determinations and in the 1980 and 1984 Forest and Range Resource Analysis reports. By 1980 the chief forester Bill Young had adjusted AAC's to the

level of commitments in existing licences, resulting in a reduction in the total provincial AAC from a high of 82 million to 68 million cubic meters (Pedersen 2003). In 1988 an amendment to the Forest Act introduced a 5% tenure take-back when tenures were transferred or there was a change in tenure control, which was used mostly to expand the Small Business Forest Enterprise Program (SBFEP) (Clogg 2003).

A Professional and Industrial Foresters' Role: In the 1970's and the early 1980's there were rapid changes in the public attitudes towards forestry and environmental issues that set the stage for the development of new resource management practices and the initiation of land use and management planning processes (ABC FP 2006). Foresters played a key role in developing and implementing these practices and processes.

Stage 4: Stewardship 1991 to 2000

The Forest Resource Commission of 1991 (Peel Commission) was a result of public concern and led to an explosion of forest policy (Devitt and Pratt 1998). The Peel Commission made 108 recommendations but the main ones affecting the rate of harvest due to land elimination, constraints and policy were: 1) establishment of the Commission on Resources and Environment (CORE); 2) the implementation of the Timber Supply Review (TSR) process; 3) the implementation of the Forest Practices Code (FPC) 4) and the implementation of the Protected Areas Strategy (Agnoletti and Anderson 2000).

CORE was responsible for all the land use plans developed in 1994 (Agnoletti and Anderson 2000) and would make way for the Land and Resource Management Plans (LRMP's) we know today (Grzybowski 2001). The 1992 timber supply review was established to gather the information needed to make timely defensible AAC determinations through Section 8 of the Forest Act (Peel 1991). The 1995 Forest Practices Code put constraints on where and how trees were

harvested. The 1992 Protected Areas Strategy established policies and procedures needed to double the amount of protected area by the year 2000 (12 % target) (Agnoletti and Anderson 2000). In addition to these changes harvest levels began to drop as a result of the fall down effect (Harding and Alder 2002). More land was also removed from the timber harvesting land base as a result of Old Growth Management Areas and Ungulate Winter Range criteria legislated into the code as higher level plans (LRMP's) (Harding and Alder 2002).

In 1996 the first round of timber inventory reviews were completed and new AAC's were determined (Harding and Alder 2002). At the end of the first timber supply review, the total provincial AAC had been reduced by less than 1% to 71million cubic meters. This number was low overall but some areas had bigger hits than others. Only 20 units stayed the same and 19 units increased therefore the remaining 32 units saw much larger decreases than 1%. The declines occurred primarily in the Vancouver and Nelson Forest Regions with the Kamloops and Prince George Regions seeing increases. It was good news in the second Timber Supply review, research was completed that confirmed that in addition to our new forests growing faster the productivity of our forest lands were much higher than had been anticipated. Based on this new information on average the projected volumes from new managed forests were to 20 to 30% higher than unmanaged forests (Pedersen 2003).

A Professional and Industrial Foresters' Role: Once the Forest Practices Code (FPC) came into place there was more concern on the ecological impacts of logging. Forestry became very process driven and foresters played a key role advising on and implementing these new practices on the ground. Additional responsibilities of a forester during this time included but not limited to; ecological classification, reforestation, integrated resource management and land use zoning (Pederson 2003). Foresters during this time had to focus on some difficult land use issues and

were tasked with managing the triple bottom line approach of integrating social, environmental and financial perspectives.

Stage 5: Revitalization: 2000-2009

The BC Forest Policy Review, *Shaping our Future*, (Wouters 2000) in 2000 began the next stage of policy reform. It was an informal inquiry compared to the Royal Commissions but, none the less, contained the substantial recommendations that would end up completely revamping our forest tenure and pricing system in BC. These changes were first addressed in the 2003 Forest Revitalization Plan and were actioned by the Forest Revitalization Act and Forest Act amendments. Bill 28, introduced at this time, had the potential of affecting the rate of harvest. This bill provided for a 20% one time 'take back', over 3 years, in timber volume from the tenures held under major licenses, with compensation. Roughly half of the take back went to BC Timber Sales (formally the SBFEP), and the other half for community tenures and First Nations. Interestingly enough the potential blow of a 20% take back was softened and barely noticed by some due to the changes in legislation that removed the appurtenance, timber processing requirement and the constraints on timber transfers and closers (eg elimination of the 5% take-back on tenure transfer, licensee change in control and mill closures) (Clogg 2003). In addition there has been a huge uplift in AAC in the mountain pine beetle hit areas of the province.

Although, an agreement that was made in 2006 termed Ecosystem Based Management (EBM) had major implications for the rate of harvest on the coast. The agreement reached for Haida Gwaii in 2007 included 254,000 hectares (25.3%) of protected area that when added to the existing protected area brought the total protected land base to nearly 50%. The operating area covering the remaining 501,436 ha is subject to the ecosystem-based management regime (BCLiberals 2009). For the North and Central Coast this agreement included 2.1 millions hectares

protected from logging and new lighter touch logging regulations (50% of the natural old growth), applied outside of the protected areas. This plan was not implemented until March 31st 2009 (Sierra Club BC 2009). Current reductions in AACs were considered as designated area netdowns under Part 13 of the Forest Act (ABC PF 2009).

A Forest Professionals' Role: The registered Forest Technologists were regulated into the profession at this time and the name of the association was changed to the Association of British Columbia Forest Professionals (ABC FP). The new Forest and Range Practices Act initiated in the 2003 Forest Act amendments, put more emphasis on professional reliance and independence than ever before to the forest professional. Specifically as a result of the EBM frameworks on the coast, forest professionals have to apply EBM objectives and methods through adaptive management and have the duty to plan, advise and recommend economically viable forest activities (ABC FP 2009).

Stage 6: The Future

Recently a Working Roundtable on Forestry made a number of recommendations that if enacted could affect the rate of harvest: 1) Establishment of commercial forest land reserves where wood production would be a primary focus. 2) Increase the percentage of fiber that is available through competitively-bid timber sales. 3) Reflect the unique forest attributes and socio-economic circumstances in different parts of the province through forest policy. 4) Create more long term area-based forest tenures that are of an economically viable size for First Nations (MoFR 2009).

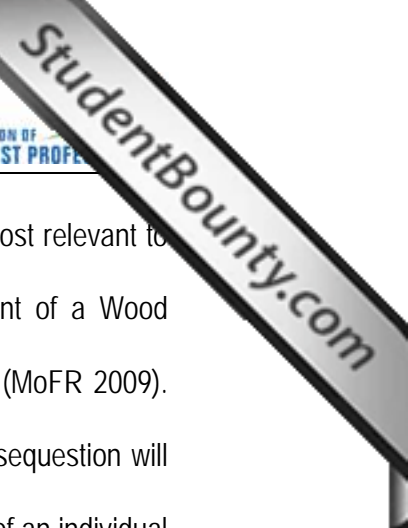
The future is going to see more emphasis put on non timber forest products (NTFP), First Nations land title claims, species at risk, corridor management, protected areas and conservation projects all of which have the potential of removing land from the harvesting land base and

reducing the rate of harvest. The harvesting land base is going to be further impacted by disease, fire and insects brought on by new climate conditions. We can offset these losses to some extent, with incremental silviculture and carbon trading but one thing is for sure, there will be less land to harvest in the future than there is today. So how do we keep communities stable in this un-stable environment?

Recommendations of a Forest Professional

The biggest driver for a sustainable rural community is creative leadership and diversity. With good leadership innovative solutions can be foreseen and implemented before mill shut downs and / or layoffs occur. This leadership can come from as high as government (province or municipal level) or from foresters. As a forest professional I will show this leadership by continuing to value the public interests, maintaining professional principals and demonstrating stewardship by balancing present and future values against the capacity of the land to provide for those values. As part of "keeping informed in our field of practice" (ABCFFP, 2009), it is my responsibility to keep current on forest policy and advocate for change if current forest policy isn't the most suitable to current conditions.

The change that I want to advocate for today is a complete overhaul to the forest tenures system. The current system developed in the 1950's is no longer working and is no longer the best system in the interest of the public and for community sustainability. The system to work towards is a completely publicly managed tenure system with free market activity, access and pricing (Beckett 1991). This system would give small businesses (the backbone of our economy) access to timber they need for value added products. With a true market pricing system the sale of the logs will reflect true market value and therefore would increase the money coming back into the province and to communities for social programs and infrastructure. As a forester professional I



also encourage the ideas presented in The Working Roundtable on Forestry, the most relevant to this report being their ideas of an internet-based wood market, the establishment of a Wood Innovation and Design Centre and the advance of bioenergy and biofuel projects (MoFR 2009). Continuing to promote BC forestry and forest products and capitalizing on carbon sequestration will open up more markets across the globe for our wood products increasing the value of an individual log. Being able to harvest less for more is what BC needs to strive for. All of the above will increase job diversity, entrepreneurship and create communities that are less susceptible to market fluctuations.

In Conclusion

“Clearly we should manage and use our forests to the best of our ability, but one of our concerns should be to leave as many options as we can to our successors who with more knowledge than we, and in light of their priorities will be better placed to determine how the forests of this province should be further developed” (Pearse 1976). This was great advice but given 20 years too late. The result of the 1945 Sloan Commission saw the majority of the forested land base divided up into tenure to be managed on a sustained yield basis. Since then the values, objectives and uses of the forest have increased significantly and policy changes have had to be made accordingly. At times this has meant land deletions and constraints put on the existing timber production land base. Forest professionals have developed over time to become stewards of the land that the public trusts will look out for their best interest. We must value this trust and work towards a balance that will both sustain economic prosperity and make sure the land we know and love today is there for the next generation of forest professionals to know and love.

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Answer 2 (scored 91)

BC'S ROLLER COASTER INDUSTRY: searching for community stability through reliable timber harvests.



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1.0 Introduction

In order to maintain a stable and vibrant community whose economic base is largely dependant on forest resources, sustainable and stable rates of timber harvest are critical. In an effort to provide a reliable supply of timber to communities whose primary economic driver is fibre, the Crown has guaranteed license holders access to specific areas or volumes of timber through the creation of forest tenures. The two largest and most important of these are Tree Farm Licenses (TFLs) and forest licenses within Timber Supply Areas (TSAs). When they were originally created, these agreements were expected to provide stable supplies of timber over time that would allow forest-dependent communities' economies to develop and diversify. As these tenures developed, the mechanism that would eventually ensure a sustainable and continued stream of fiber was the Allowable Annual Cut (AAC), determined every five years by the Chief Forester (for TFLs and TSAs). The AAC determination balances net harvests and growth over time, creating a dynamic equilibrium of standing fiber that – in theory – would sustain the socio-economic model *ad infinitum*.

But things change. At the time the TSA and TFL tenure system was created, no one predicted that the products society desired from forested landscapes would significantly change to encompass anything but sawlogs. In reality, societal expectations for streams of services and products from BC's forests have varied greatly over the last thirty years causing numerous modifications to forest policy, the tenure system and the way forestry is practiced in BC (See Marchak *et al.* 1999, Cashore *et al.* 2001). According to Haley and Nelson (2006), these modifications have been required to "accommodate changing public attitudes towards forest resources and to meet increasing demands placed upon them." As a result of these policy and management changes, stable timber harvests from TFLs and TSAs have not materialized because

of continuous changes in the way forest lands were managed and how land was allocated to the forest industry.

This essay will explore the history of forest tenure in BC and how different types of tenure and its modifications have affected the rate of timber harvest over time. It will also investigate the role of Registered Forest Professionals in this chronology with an emphasis on the effect that their professional obligations have had on influencing timber management and silviculture to align with public goals. Finally, the report will build on the lessons learned through the history of BC's forest management and resource allocation systems to make several professional recommendations that will improve the future economic, social, and environmental stability of forest-dependent communities and the landscape they depend on.

2.0 A Brief History of Forest Tenure in BC and Associated Harvest Rates¹

Before 1865, the only means of allocating Crown timber for development was a fee simple Crown Grant. In 1865 the *Land Ordinance* was established which provided the legal means to sell the rights to harvest crown timber without segregating the land ownership from the Crown (Ministry of Forests and Range, 2006a). In 1884 the *Timber Act* was introduced which stipulated that revenues be paid to the public for timber harvested from crown land creating the first stumpage fees. By the early 1900s timber cutting was beginning to generate significant employment and revenue in some areas of the province and it was realized that a centralized management agency was needed to administer licenses, monitor cut levels, extinguish fires, and collect revenues on behalf of the Crown. This led to the first *Forest Act* in 1912 which created the BC Forest Service.

¹This essay assumes that BC's harvest rates are primarily determined by provincial policy and forest management. It does not consider the effect of international demand on harvest rates, but rather focuses on the autogenic factors that influence provincial timber supply.

In response to increasing private demand for timber access, the government initiated the Sloan Royal Commission in 1943 to analyze the BC tenure system and suggest ways to improve it (Ministry of Forests 2006a). The Sloan Commission suggested that areas be created that would be managed for sustained yield through the issuance of a sustainable Allowable Annual Cut (AAC). Known as Public Sustained Yield Units, they would become today's TSAs and their sister tenure the forest management licenses would become today's TFLs (Coretex, 2001; Ministry of Forests and Range, 2006a). The expectation that these management units would produce a sustainable supply of timber attracted capital to invest in milling infrastructure and created jobs that drew-in human resources to develop forest-dependant communities.

Timber harvests grew steadily in BC until about 1970 (Figure 1.) Then In 1976 a report

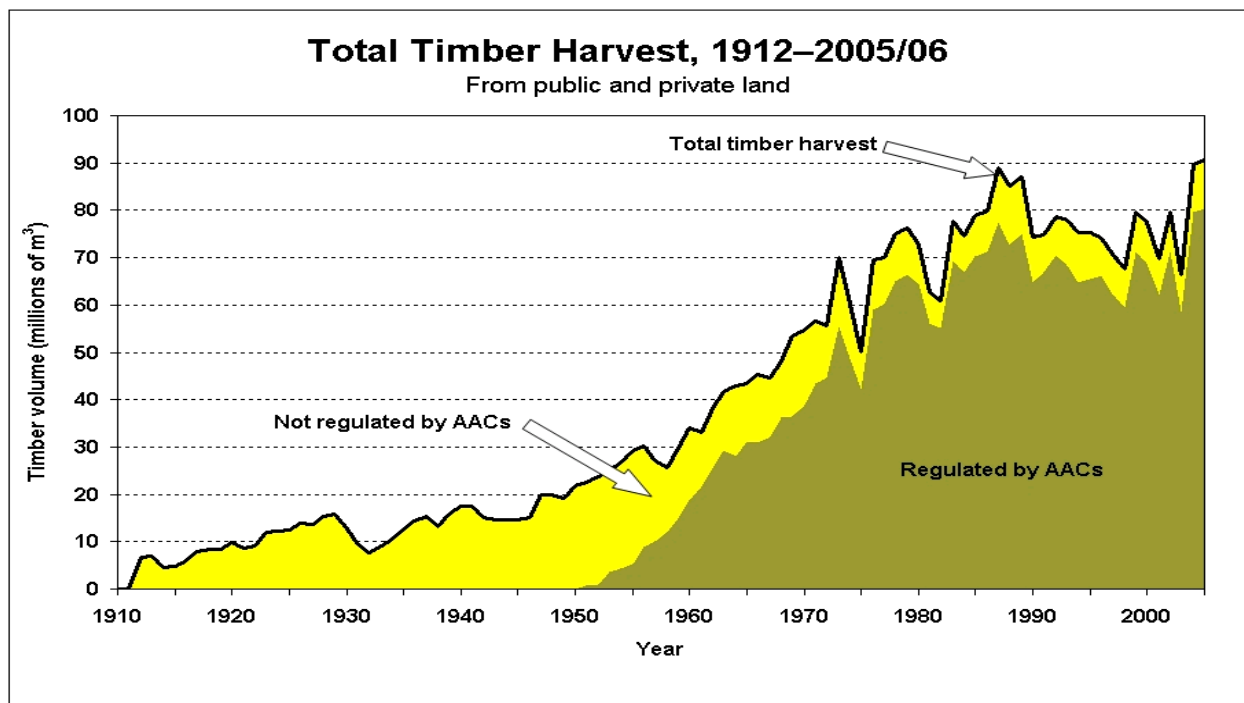


Figure 1: The rate of timber harvest in BC over the past 95 years from both public (regulated by AACs) and private land (not regulated by AAC's). Source: Ministry of Forests and Range, 2006b.

by British Columbia's Forth Royal Commission of Inquiry was delivered suggesting alterations to the *Forest Act* that would significantly change the way forestry was practiced in BC (Ministry of



Forests, 2006a). The most significant of these was consolidation of the Public Sustained Yield units into TSAs and the creation of new non-replaceable forest tenures. Changes to the *Forest Act* also required certain license holders to reforest areas that were harvested. During the 80s there was also an emphasis on public input into AAC determinations and tenure management (Ministry of Forests 2006a). As can be seen in Figure 1, these increased costs, modified tenure, and a poor timber market resulted in a harvest decline of about 15 million m³ during the late 80s.

Forest policy and land management continued to evolve in BC. In 1992 the timber supply review was established as a way of determining AAC. Then in 1995 the government responded to environmental concerns by setting new industry standards with the introduction of the *Forest Practices Code of British Columbia Act*. An unanticipated side-effect of the Code was it significantly increased licensee compliance costs and handcuffed the forest industry's ability to respond to new market opportunities or to develop innovative forest practices. Haley (1996) estimated that the costs of complying with the regulations of the Code raised the delivered cost of industrial wood by as much as \$10 to \$12 per cubic meter. Between 1990 and 2000 rising costs contributed to a steady decline in the rate of timber harvest in BC (Figure 1).

In 2002 a newly-elected government replaced the Code with the *Forest Practices Act* which was followed rapidly in 2003 by the *Forestry Revitalization Act*. The *Forest Practices Act* shifted the focus of government from prescribing how forestry was conducted to monitoring the effects in an effort to streamline licensee operations and reduce compliance costs. The *Forestry Revitalization Act* made many significant changes to forest operations including abolishing minimum cut controls, creating a market-based stumpage system, removing mill appurtenance requirements and reallocating about 20% of the AAC to BC Timber Sales, First Nations and small tenure holders (Ministry of Forests 2003).

3.0 The role of forest professionals and professional responsibilities on timber harvests in TFLs and TSAs.

The *Foresters Act* – which took effect in 1947 – established the practice of Professional Forestry in BC (ABC FP 2006). It gave members of the Association of BC Forest Professionals (ABC FP) the exclusive right to certain professional titles and the practice of professional forestry in exchange for their commitment to manage public forest assets in the best interest of British Columbians. The Bylaws of the Association clearly describe the obligations that registered members must adhere to in order to retain their rights and title to practice.

For example, Bylaw 11.2.1 (ABC FP 2008) states that “a member has responsibilities to the public” and further, under Bylaw 11.3.1, that they agree “to advocate and practice good stewardship of forest land based on sound ecological principles to sustain its ability to provide those values that have been assigned by society.” In addition to these responsibilities, registered members of the ABC FP must also “have regard for existing legislation, regulation, policy and common law (Bylaw 11.3.3) while at the same time balancing the demands of existing legislation with a commitment “to improve practices and policies affecting the stewardship of forest land.” (Bylaw 11.3.5 – ABC FP 2008). The ethical responsibilities resulting from such bylaws create a need for registered members to constantly balance the needs of the economy, society and the environment. As the public values associated with forests and forested landscapes change, forest professionals must continually adapt the way they practice professional forestry in order to comply with the bylaws of the ABC FP.

In the early 70s and continuing through the 80's there was a profound social shift in the expected benefits that the public placed on forested landscapes. People began to view the forest as more than stands of timber, an ecological conscience began to germinate, and non-timber benefits such as recreation, water quality and wildlife were given increasing public importance. This

profoundly influenced the way that Registered Professionals managed the forested landscape because there was an emphasis on integrated land management which resulted from their ethical obligations.

Beginning in the early 1990's and continuing into the present the focus of forest activities has been on sustainable management. With the publication of the Bruntland Report, Canada's signature on the 1992 *Convention on Biological Diversity* and the resulting Montreal Process, British Columbia embraced a new direction in forest management. BC committed to protecting 12% of its area in parks and ecological reserves, there was an increased focus on environmental protection, old growth management, biodiversity, forest certification, ecosystem services and more recently, carbon sequestration and storage. This shift requires many changes to the way Registered Professionals manage forests and is another reason why stable timber harvests have not materialized from TFLs and TSAs.

4.0 Recommendations to renew forest-dependent communities and maintain their economic stability while maintaining a productive resource base.

To ensure a sustainable and profitable timber harvesting landbase, I suggest the following four recommendations as strategic priorities to improve resource sustainability and community prosperity well into the future:

1. There is a need to reduce the long-term uncertainty associated with timber supply by resolving land-use conflicts, particularly First Nations' land claims.
2. BC needs to increase both the diversity and number of small tenures. The majority of the AAC should be harvested through such ventures.
3. Tenure allocation should be structured to create an entrepreneurial arena that rewards innovation and provides room for corporate agility in response to global market demands.

4. The lion's share of tenure should be area-based and confer long term timber rights. Volume-based tenure should be phased out to the extent possible.

Some of these changes have already begun to appear through BC's *Forestry Revitalization Act* and the government's commitment for aboriginal reconciliation. However in some cases, such as increasing the numbers of small tenures there is still a long way to go.

4.1 Resolve Land-Ownership Conflicts

Property ownership and its transferability are fundamental to prosperous economic systems, particularly when land and resources are involved (Feder and Feeny, 1991). In BC however, Aboriginal Rights and Title have never been extinguished and the ownership of land and resources is often brought into question. There is a growing body of case law that confirms there are significant uncertainties around access to resources where Aboriginal Rights or Title may be proven, and this is particularly true in the timber industry. In order to attract international capital that will construct and maintain milling and processing infrastructure, BC needs to demonstrate to investors that it has a stable and well defined commercial landbase. This will help encourage capital investment and maintenance of depreciating assets such as mills (Haley and Nelson, 2006). Moreover, it must also exhibit that it can guarantee a reliable supply of timber through a secure tenure system

4.2 Increase the Number and Diversity of Small Tenures

Like a wise investment portfolio, BC needs to increase the diversity of its timber tenure system and significantly increase the proportion of AAC that is allocated to small tenures. More numerous smaller tenures would lead to more competition which in turn increases production efficiencies and encourages specialization. Furthermore, increasing the number of small tenures would provide manufacturing facilities with opportunities to purchase wood from a competitive

market. Such a system would reduce the tendency for undesirable vertical integration of large forest products companies to protect their wood supply (Haley and Nelson, 2006). Small tenures are also more flexible in their operations; they have the potential to produce many different forest products, generate local employment and sustainable livelihoods, create sustainable environmental values, and contribute to a stable and diversified economy (Wang *et al.* 2004).

Environmental goals and economies of scale suggest there are also many benefits to having a system where silviculture and wood production is fully diversified while wood processing and export are conglomerated. Experience in the Southern US where virtually all the commercial forest land is owned and operated by multiple small parties suggests that a micro-management approach to silviculture creates increases in the value and production of wood to the benefit of the greater socio-economic system (Mike Ferrucci, Pers. Com. March 21, 2008). In fact, Haley and Nelson (2006) note that "throughout North America the trend [in commercial forestry] is for forest products companies... to divest themselves of their forestland holdings in order to concentrate their resources and expertise on the processing of wood." Having a larger number of small tenures would diversify the forest economy helping it to capitalize on niche markets, buffer it in depressed cycles and create more competition to realize production efficiencies.

4.3 Structure tenures to encourage entrepreneurialism and corporate agility.

The current tenure system is not designed to encourage innovation or allow licensees to seize opportunity markets when they are briefly available. Aside from the economic benefits of being more efficient, companies have little reason to invest in research or development, and administrative regulations often prevent innovative practices from developing. Currently the pejorative approach of imposing restrictions, fines or penalties is the predominant model. This is often unsatisfactory, because improvements to forest practices will only occur with significant

enforcement. The government should examine an alternative such as rewarding licensees that are efficient, entrepreneurial or innovative with additional timber volume. By not allocating, say, 5% of the AAC in each forest district, the government would have a powerful tool to reward companies that are generating the most value from the public resource and this would help rekindle the entrepreneurial spirit in the BC forest industry. By using such an approach, forest dependant communities would benefit by becoming centers of innovation while at the same time realizing economic benefits from the efficiencies that come out of such an initiative.

4.4 Switch to area-based tenures and increase their duration.

Experience over the past thirty years in BC has demonstrated that area-based tenures typically result in improved environmental quality and are characterized by more investments in forest management than volume based tenures (Zhang, 1996). Area-based tenure holders have a strong incentive to invest capital and resources into the tenure, because they hold the exclusive rights to the final product or the increases in value that result from the initial capital investment. Evidence in BC demonstrates that more intensive resource management and reforestation are associated with area-based TFLs than volume based TSAs (Zhang and Pearse, 1997). This increased management effort suggests that area-based tenures may be managed more holistically than volume based tenures for multiple goods and services. Finally, ensuring that area-based tenures are available for long timeframes will encourage investments – for example in incremental silviculture and processing facilities – that will increase value (and therefore government revenues through stumpage) down the road. Such socially-desirable long-term investments will only occur if the licensee is guaranteed an opportunity to reap what they sow through long-term area-based tenures.

5.0 Conclusion

The stability of forest-based communities in BC is dependant on predictable supplies of fiber and thus on the tenure system as a legal means for timber access. Tenures such as TFLs and TSAs were created to allow private access to the timber resource and to provide the private sector with an incentive to invest in milling infrastructure. But as BC's economy diversified, public values began to change and with them the products that the public demanded from BC forests. This caused changes to the way forestry was practiced, lands were managed, and areas that were set aside. Forest companies witnessed new constraints on their harvesting methods, increased public scrutiny of their operations and an erosion of their timber harvesting land base. These factors significantly increased their operating costs and introduced more stochasticity in the timber harvest which has had lasting and often detrimental effects on forest-dependant communities.

To get the forest industry and the communities it supports back on a solid social and economic footing we can make several changes to forest policy and management. The following four recommendations will lay a foundation for the industry's recovery and improve the sustainability of resource dependent communities in the future: (1) resolve land-ownership conflicts around aboriginal land-claims, (2) increase the number and diversity of small tenures, (3) structure tenures to encourage entrepreneurialism and corporate agility, and (4) switch to area-based tenures and increase their duration.

British Columbia's forest resources are a renewable and sustainable asset. As public values shift around forests and forestry, we need an innovative and flexible forest tenure system to ensure that forest resources play a significant economic role in our children's future, and the future of all generations of British Columbians.

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