



**RPF Registration Exam (2005)
Two Good Answers (sit-down)**

2005 RPF Registration Exam (2005): Sit-down Good Answers



This package contains examples of good answers that were submitted for questions in the sit-down portion of the 2005 RPF registration exam. Although the answers were chosen as one or two of the better answers submitted in 2005, take note of the score each answer received and be advised that answers may contain errors. Some questions on this package were not answered by enough examinees to provide examples of at least one or two good answers.

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RPF Registration Exam Questions (2005)



Question 1 (Essay)

You have been tasked with conducting a visual assessment on a series of blocks along a travel corridor frequented by the public. This is a known scenic area with an established Visual Quality Objective (VQO). You begin the design process and run into difficulties. There are few defined viewpoints along the corridor and your instinct tells you the blocks may exceed the alteration limits for the established VQO.

How would you proceed and what would you consider?

(10 marks)

Question 2 (Essay)

Based on results of pre-harvest field inspections of a proposed cutblock within a Forest Licence, you expect severe non-crop vegetation competition following harvesting. You know that local groups are opposed to the use of herbicides. Your preliminary costing indicates that using a non-herbicide approach will cost 50% more than a herbicide treatment. What factors will you consider in deciding how to proceed? What are the legal rights and responsibilities of the forest licensee? What are the legal rights of the local groups? What advice will you give your employer concerning how to proceed?

(10 marks)

Question 3 (Essay)

In a recent group of decisions (2004-FOR-020 (a) and 2004-FOR-025(a)) the Forest Appeal Commission (FAC) was asked to interpret the wording of the Silviculture Regulation (BC Reg. 147/88) relating to stocking standards. At issue was whether two blocks had met the target stocking obligations of the prescription even though there were significant areas in each of the blocks that were either under or over stocked. However, if the number of trees in the blocks were averaged at the standard unit level of stratification, they met the free growing target number of trees prescribed.

The licensee argued that the words “per hectare” of the Silviculture Regulation which describes stocking standards as a measure of the “...target number and the minimum number of healthy well spaced trees per hectare...” means an average number of trees over the standard unit and therefore that it had met its free growing obligations. The Ministry of Forests argued that the wording of the regulation means that the target number of trees must be found in each and every hectare of the opening and that the licensee had not met its free growing obligations.

The FAC determined that the words “per hectare” in the part of the regulation describes stocking standards as a specification of the [Section 2(2) (j)] means an average over the entire treatment or standard unit.

Preparing free growing declarations is the practice of professional forestry because it requires the person signing the declaration to exercise professional judgement and opinion when determining whether the stand of trees subject to the declaration has reached free growing status. As a professional forester, you will be called upon to sign free growing declarations for openings subject to this regulation.

Taking into account the FAC decision, your knowledge of the intent and wording of the regulation, and your obligations as a professional under the *Foresters Act* and bylaws, what do you do when asked to prepare free growing declarations for openings created under the Silviculture Regulation? What implications might your decisions have on timber supply assumptions and for the concept of greater reliance on professional judgement and accountability?

(10 marks)

Question 4 (Essay)

a) There are both social and economic reasons for self-regulated professions. Discuss.

(6 marks)

b) What will change in your day-to-day work as you make the transition from an enrolled to a registered member? Why?

(2 marks)

c) The Association has published Standards of Professional Practice and interpretive guidelines for those standards. Why are they important?

(2 marks)

Question 5 (Essay)

As an RPF and Statutory Decision Maker, you may be working in a jurisdiction in BC where you are faced with a similar situation to the one outlined below:

1. You have designated Wildlife Management Areas in the past to address habitat requirements for a federally identified species-at-risk.
2. Your Timber Supply Area (TSA) has been apportioned to several licensees and no area remains that is not already located within the chart area of any one licensee.
3. Research and new information has identified that areas previously identified as Wildlife Management Areas are in fact, not critical to the maintenance of the species-at-risk of concern. Instead, areas already under approved Cutting Permits have now been identified as being of critical importance to the survival of the species-at-risk.
4. Species-At-Risk Act (SARA) recovery teams are working on new guidelines for management for the species in your operating area, however, they are not as yet available to you.

You are considering negotiating with licensees to move operations from the areas with approved Cutting Permits back into Wildlife Management Areas which are now known to be no longer needed to maintain the species. The SARA recovery team working on the species recovery plan has identified the previously designated Wildlife Management Areas as needed for recovery of the species (other than maintenance).

- a) Identify the legal, ethical and forest management issues you would need to resolve, and what your role in each issue would be as a registered professional forester. (5 marks)
- b) As a Statutory Decision Maker, what would be your responsibility relating to any areas necessary to maintain a population of a species-at-risk? As the recovery plan has not been completed for the region, how would you consider the recovery teams' interest in reserving additional habitat for species recovery? (5 marks)

Question 6 (Short Answer)

You have been asked to make a presentation to a group of resource managers about timber pricing and stumpage policies in British Columbia. Briefly describe how you would answer the following questions that have been posed for your presentation:

- a) What are the current timber pricing challenges government is faced with in British Columbia in determining stumpage rates for the timber resource? (4 marks)
- b) What are the two important over-arching principles that should guide the process to arrive at stumpage rates? Why are these important? (4 marks)
- c) What responsibilities do ABCFP members have in the preparation of timber appraisals? (2 marks)

Question 7 (Short Answer)

You have been asked to oversee a planning process for the preparation of a Sustainable Resource Management Plan (SRMP) for a remote area of BC called Forbidden Valley. The SRMP must, in the end, be signed off by a government decision maker. The SRMP is meant to find a balance of economic, social and environmental uses for the area, including forestry uses.

Forestry has been the main employer in the surrounding areas. Forbidden Valley itself has seen very little development activity, and is renowned for the extensive back country recreational values, hunting and fish values. Since it is part of the larger Forbidden Timber Supply Area, it is envisioned to have more timber development activity over the next 20 years.

Forbidden Valley is within the overlapping traditional territories of two First Nations, and home to the Forbidden First Nation. Although there are no treaties in place for the area, there are a number of small Indian Reserves and archaeological sites. The area is reportedly relied upon by First Nations members for hunting, trapping and gathering of medicinal plants, some of which may be impacted by development activity.

- a) Briefly discuss the obligations that government and industry have for consulting First Nations in the preparation of this SRMP. (5 marks)
- b) In preparing the SRMP, briefly describe the key steps you would take for consultation with First Nations, assuming that development activity may infringe on an aboriginal interest in the absence of a Treaty. (5 marks)

Question 8 (Short Answer)

You are a professional forester working in the tenures section of a Ministry of Forests District office. Your district has just awarded four new woodlot licenses. The District Manager has asked you to provide an overview of woodlot licensee obligations in a 30 minute presentation to the new licensees. In an outline format include the details of your talk.

(10 marks)

Question 9 (Essay)

Identify and describe two “impediments” to good forest management in British Columbia today. An “impediment” may be considered to be any factor or group of factors that prevents or makes difficult implementation of good forest management. For each impediment that you identify, explain:

- (a) Why you believe it to be an impediment?
- (b) What considerations, if any, are given to this impediment in forest management today?
- (c) What considerations or procedures you would suggest to reduce the influence of this impediment in the future?

(10 marks)

Question 10 (Essay)

- a) Explain the difference between growth and yield. What does a forest planner need to know about growth and yield in order to prepare and defend a credible long-term strategic plan? Of what importance is this difference to forecasting future forest conditions, particularly as it relates to standard practice in British Columbia?
- b) You have been charged with developing a statistically sound method for monitoring changes in forest conditions relative to those projected in the forest plan, to account for actual changes in a variety of species habitat conditions, changes in the distributions of seral stages, and changes in the quantity and quality of timber. What are the key characteristics of the design of such a system? Justify your answer.

(4 marks)

(6 marks)

Question 11 (Essay)

As an RPF for a licensee you have responsibility for fire management planning.

As part of the Wildfire Act and Regulations a licensee conducting industrial or high risk activities has obligations for managing wildfire.

As a matter of professional due diligence, what do you need to do to meet your potential obligations and mitigate potential liabilities under the new Wildfire Act and Regulations? Be specific as to the types of information you need, and the range of preventative and suppression measures which you must plan.

(10 marks)

Question 12 (Essay)

You are a forester working in a Crown forest tenure with a portion of the operating area in a community watershed. A weather event over the weekend has resulted in significant volumes of windthrown timber within your operating area. During a field review of the damage, you identify an area of windthrow on the main S2 creek channel within the community watershed portion of the tenure. There is a length of the channel with a significant volume of windthrown timber in the channel. Though the timber is not obstructing flow at the time of the field review, you know from experience that the creek swells during spring freshet to a degree where the windthrown timber would create a significant obstruction to flow and the potential for channel re routing and siltation. It is early fall, and freeze up is imminent.

Describe your course of action and why, referencing relevant statutes and policy. What are your professional responsibilities?

(10 marks)

Question 13 (Essay)

There are no forest road regulations under the Forest Range and Practices Act (FRPA) that specify what you must do when planning and constructing forest roads. As the professional forester responsible for all aspects of forest development planning and operations in a forestry operation, what would you consider as you plan, design, and construct roads? Why?

(10 marks)

Question 14 (Essay)

You are providing professional advice to a woodlot licensee who has a challenge. During a previous cut control period (predating the Forest Practices Code of BC Act, and current Forest and Range Practices Act), the licensee harvested their entire allowable periodic harvest using an array of partial cut systems. The systems were prescribed using the best information of the day and have been largely successful at addressing non-timber values associated with the management unit, namely objectives associated with fish habitat in a number of S4 streams, terrestrial habitat structural diversity, and visual quality. However, the regeneration performance within the partial cut systems has been sub-optimal. A number of management units are likely not going to achieve late free growing date obligations despite various treatment interventions during the regeneration and free growing periods.

a) What is your advice to the woodlot holder? What are the implications of this dilemma to the licensee (especially for future timber yield)? What are the options available to you to adapt these prescriptions and return the management units to more successful stand development chronologies?

(6 marks)

b) Briefly explain how this scenario is relevant to forest management in British Columbia.

(4 marks)

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Question 1 (Essay)

You have been tasked with conducting a visual assessment on a series of blocks along a travel corridor frequented by the public. This is a known scenic area with an established Visual Quality Objective (VQO). You begin the design process and run into difficulties. There are few defined viewpoints along the corridor and your instinct tells you the blocks may exceed the alteration limits for the established VQO.

How would you proceed and what would you consider?

(10 marks)

Answer 1 (scored 10)

As a professional forester, I have obligations to the public, the profession, my employer and other members of the association. My main objective in this situation is to meet the desire of public first and foremost. In this example, the public has expressed or was perceived of placing a high priority on maintaining a high level of visual quality objective (VQO), established in high level plans, set in legislation and the public expects that these regulations are adhered to.

In addition to the public, I also have an obligation to my employer. Their desire is to continue to operate and maintain a positive profit margin. Though I have an obligation to my employer, my obligations to meet the public's desire are the priority. I must ensure that I practice in an independent manner, and do not allow my employer to cloud the objectives desired by the public. In order to start the Visual Assessment task, I must first consult the public in a meaningful manner (i.e. public meeting, ads, etc) to ensure that the viewpoints identified are accurate and represent all viewpoints that are of importance to the public in the area (i.e. waterways, highways, scenic points, etc).

In addition to public meetings and ads, I would also send out information packages to different user groups (i.e. rod & gun clubs, hiking clubs etc) to ensure that the obligation to consult the public is completed in a competent and accurate manner. I would thoroughly document any comments I have received, and document my processes effectively in order to prove due diligence.

After reviewing the comments I had received, I would conduct a preliminary GIS based Visual Impact Assessment (VIA) of the area in question. This would allow me to make accurate projections of the proposed development for use by myself or layout crew during engineering activities. If I was unsure or not competent in conducting VIAs, I would consult a reputable fellow professional to conduct the work.

Before the layout commences, I would have ensured that the engineering crew is competent, and that they possess the education, knowledge, and experience in laying out visual challenged blocks.

I would have accomplished this by reviewing their resumes or contacting references to ensure that they are reputable and would complete the task in an effective and quality driven fashion. I would have offered ensuring the crew was qualified; I would have done a thorough pre-work to ensure that they understand the challenges, limitations, and desires of the project.

Once the fieldwork has commenced, I would ensure that I have made frequent field visits to the area to ensure that the work was meeting my plan. In addition, I would have conducted a post layout "walk through" with the crew after the work has been done to inspect the quality and accuracy of the layout. If I were satisfied with the layout, I would proceed to conduct a post layout VIA. Any elements of the development that were identified as not meeting VQOs set by the government and the public, would be field revised until they fell into compliance/acceptance.

Finally, I would make these plans available for public consultation in the same fashion as the preliminary consultation. Any comments received would be thoroughly reviewed and assessed if action was required (i.e. changes to layout).

In conclusion, I would ensure that I have documented all these steps, and diligently provided rational for all my actions. This would ensure that my plans were well thought out, that I have balanced my obligations (public, employer etc), and that all these actions have led to a professional quality plan. By doing so, this would show I had practiced due diligence.

Answer 2 (scored 9)

If I were conducting a visual assessment or a series of proposed pre-developmental blocks in a known scenic area (with no previous or existing alterations) and I suspected the blocks may exceed alteration limits I would proceed as follows:

First of all, I would have to consider several issues prior to proceeding since the VQO is assumed to be gradually averted into FRPA, and also that the FSP my employer has prepared (and approved) has results and strategies for the VQO's, I am going to assume that I can't deviate from the alteration limits (at this time). I must consider any public concerns for the area and whether or not the scenic area and its respective VQO's are actually realistic as reflective of what is seen from the viewpoints. Ideally this should have been done prior to pre-scanning results and/or strategies for the FSP. I would seek to find any input from local people (if any) close to the viewpoints, naturalists clubs, I would meet with the local (MOF) specialist in visual resources management to discuss the constraints in the area, and I would look to see what significance the scenic area was given during any LAMP or other strategic land use planning process. I would personally visit the viewpoints to get a feel for the area before drawing any conclusions or forming any opinions. I would also consider what, if any, comments were received during the public and stakeholder review and comment stages of our FSP.

I would retain a qualified registered professional or QRP (luckily for me I know a very competent one who is doing this for our company right now!) to conduct and oversee a full visual impact assessment (VIA) of the area. This would be a GIS exercise backed up with actual photographs from the viewpoints to verify its accuracy. This VIA would ultimately be signed off by the QRP I have retained for the project. I would review the assessment with the QRP that pre-paved it while we were both in the field, looking at the view scope from the established view points. I would see if the designed blocks still seemed to the attention limits and by how much; if they did I would either

slightly redesign them to fit within the limits, or perhaps drag one or more of the blocks or relocate one or more of them, and re-scan the assessment if necessary. I would have to consider if there were any forest health concerns such as MPB infestation on the blocks, and if the locations couldn't change I may have to consider alternative silviculture systems such as a partial cut. In the end I would conduct a stakeholder and public review and comment period, advertise the plan in the local paper and other avenues such as a local radio infomercials (this would be dependent upon the level of public interest I had identified through our FSP review and comment period) and also during my review of HLP's and talks with various stakeholders and the MOF. I would consider any comments and ultimately make my own independent focal judgement based on the balance of forest health, visual resources, our company's requirements, and the public's interest. If I could not stay within the alteration limits as proposed in the plan I would contact the district manager to discuss the possibility of altering the VQO's as the scenic area – if the VIA warranted such actions re) that is if the scenic area or objectives don't reflect that level of notation was necessary, or as comments and concerns by the public warranted, otherwise I would have to defer the plan and make changes to the blocks so they met the objectives, until such time that the VQO's could be altered and incorporated into the FSP.

Fundamentally, I would not exceed the alteration limits for the VQO's of the scenic areas. Once they are established, grad averted into FRPA, and have approved results and strategies in the FSP, they are a legal obligation, and the law is an expression of public will. Only if I felt that the VQO's with the scenic area itself did not represent what I was hearing from stakeholders and the public, and I felt other factors, for example, forest health and/or resultant fire risks to local residences, outweighed the visual significance, I would advocate for change as it is my duty as per code of ethics section 11.3.1. to advocate and provide good stewardship... also, 11.3.10 to have proper regard in the safety of others.

Question 2 (Essay)

Based on results of pre-harvest field inspections of a proposed cutblock within a Forest Licence, you expect severe non-crop vegetation competition following harvesting. You know that local groups are opposed to the use of herbicides. Your preliminary costing indicates that using a non-herbicide approach will cost 50% more than a herbicide treatment. What factors will you consider in deciding how to proceed? What are the legal rights and responsibilities of the forest licensee? What are the legal rights of the local groups? What advice will you give your employer concerning how to proceed?

(10 marks)

Answer 1 (scored 9)

The question presented is as much on the use of silviculture treatments as it is on determining the public's interest. As this cutblock is only proposed, my options are greater than if it had already been harvested. Before diving into the issue of herbicide use, I need to ensure I am competent in assessing brush hazards. I may have to, or want to, get a second opinion on the potential brush hazard. I would also look at adjacent blocks or blocks in the same area to see how the brush established following harvesting. Given my predication of brush hazard had not changed, I would consult researchers, peers, experts or anyone else that has been dealing with similar situations to determine if there are harvesting options that can be employed to reduce brush hazard following harvesting. By altering the harvest system, I may be able to reduce brush hazard and not have to deal with the use of herbicides.

In continuing to assess the cutblock, I would look at the costs of all possible silviculture treatments to ensure they can be economically carried out within the silviculture allowance or under current company policy. If the costs did not seem economical, I would have to consider the cost of not harvesting the cutblock in terms impact on the Timber Harvesting Landbase (THL). I would then have to weigh the silvicultural costs with the cost of reducing the THL to determine an appropriate route to take. If the forest licensee does harvest the stand, they have the legal responsibility under both the FPC and FRPA to establish a free growing stand. There may also be other legal responsibilities set out in higher level plans to control or provide guidelines on the use of herbicides. As herbicide is being presented as an option for a treatment, I am assuming the forest licensee has an approved Pest Management Plan (PMP). Within the PMP, there may also be guidance or rules on where herbicide may be used and under what conditions.

I would have previously ensured that the use of herbicides on the proposed cutblock met all applicable legislative and approved plan requirements. If the Forest Licensee had an approved PMP and had met all conditions set out within it and other plans and legislations, they would be able to legally use herbicide as a treatment.

During the development of a FSP, FDP and/or a PMP, consultation is required. The local groups should have been consulted during the review and comment period and while preparing these plans to ensure concerns they had could be dealt with or at the least considered (if concerns were not incorporated into the plans, then a sound rationale should have been prepared).

Local groups also have other legal rights. Under the constitution, they are entitled to voice their opinion. As well, local groups can advocate for changes to legislation or policy. They can do this in a couple of ways. First, individuals can vote for a member of government during an election that

they feel will support their views and values. Secondly, they can also participate in planning processes (at the landscape or larger level), provide input into changes in legislation, and advocate for changes. Thirdly, each year, holders of a PMP are required to advertise their proposed herbicide activities. If local groups have concerns, they are able to provide feedback at this time. Although the local groups do not have many direct legal challenges to herbicide, they do have many opportunities to voice their concerns.

Before being able to provide advice to my employer in this circumstance, I need to make sure I have upheld my professional obligations. I need to follow my code of ethics ensuring that I balance the values of the public, the profession, and my employer and my peers. In this instance, I have to ensure my responsibility to the public is met. I need to ensure the practice of herbicide application in this area is good stewardship. I have to ensure I have met all applicable legislation, regulation, policy and common law. I have to ensure I balance public interests. This includes public interests on all levels including: global, national, provincial, regional, community, FN and all local groups. In this situation, I believe by following all applicable legislation, regulation, policy and common law, I am upholding the general public's interest.

As a professional, I must also ensure that I have followed the standards of professional practice. This would include acting independently and demonstrating good forest stewardship. In providing my advice, I will assume that everything I have mentioned this far in my answer is correct. With all professional and legal obligations being met, the decision comes down to one for management. I would provide the following for my employer:

1. My cost comparisons for the treatments (herbicide vs. non-herbicide) as well as my rationale to show how both would show good forest stewardship.
2. I would provide them with my evaluation and summary of the public's interest including detailed information from the local groups opposing herbicide.
3. My evaluation on the relationship we currently have with the local groups as well as the possible relationship we would have if we went ahead with the herbicide treatment.
4. Recommendations on how we could build a stronger relationship with the local groups through field trips and education by being pro-active with the groups, we should be able to build trust so future consultation and interactions may be more favourable.
5. All alternative harvest methods that may be available to reduce the brush hazard and the costs of each.

Answer 2 (scored 9)

There will be many factors I will need to consider when determining how to proceed and what the most suitable prescription for the site is. Firstly, I will want to determine what the non-crop vegetation is so that I can learn more about it and what particular treatments it might respond to. Secondly, I must want to consider the stance of the local groups to determine why they are opposed to the use of herbicides. Perhaps they are concerned about the effects to sensitive fish habitat. Perhaps there is a community watershed that could be directly affected if chemicals were to be used. Perhaps they are raging environmentalists. Regardless of the case, I will uphold professionalism and respect what they are saying and why they are concerned. Perhaps this

scenario will be an opportunity for me to exercise bylaw 11.3.6 and extend public knowledge of forestry matters and forest management. I will present the situation to the public groups and ask them if they have any alternate recommendations. The next factor I will consider is cost. If there are several treatments which have proven to be successful for the vegetation in question, then a cost analysis will help differentiate the feasibility (and affordability).

Other factors I will consider will pertain to my legal responsibilities as a licensee. Under FRPA, licensees must include in their FSPs the measures they will take to mitigate (and hopefully stop) the spread of invasive plants. If there were invasive plants that are threatening to be problematic, I'd consult my FSP and other documentation such as the "Invasive Plant Strategy for British Columbia" and the "Invasive Alien Species Framework for BC; Identifying and Addressing Threats to Biodiversity." If invasive plants were not a concern, then many of my legal responsibilities as a licensee are spelled out in the Integrated Pest Management Act and Regulation (IPMA). If, as a licensee, we had a valid Pest Management Plan in place, had submitted a pesticide use notice and then received a pesticide use notice confirmation from the Ministry of Environment, then, legally, we would have the right to use herbicides on the FL. There are public consultation requirements for tenure holders in the process of preparing a PMP. However, if these had been satisfied during the preparation of the PMP, then use of the herbicides on the block in question could still go ahead if the PMP were adhered to.

As previously mentioned, the local groups have the legal right to review and comment on PMPs during the preparation phase. Local groups also have the legal right to file complaints against licensees via the Forest Practices Board. Members of the public also have the ability to file complaints to the ABCFP if they believe a member has breaches the Foresters Act or its bylaws, has practice incompetently, or has engaged in conduct "unbecoming a member".

The advice I will give my employer will be heavily weighted to what I believe is good stewardship based on scientific and ecological principles. In making my decision/recommendations, I will not disregard valid, applicable comments/concerns from members of the public. Although I have responsibilities to my employer, I place my responsibilities to the profession and the public higher than any management prerogative. My employer may have to save money by herbiciding. In this case, I would try to come up with my own innovative approach to treating the brush, and incorporate any solutions other resource managers may have recommended to me during peer consultation. Amongst the options would be herbicide, manual brushing, spot brushing only where crop trees are being affected, vegetation management using sheep or goats. I would present these options, their costs, levels of public acceptance, and track records of success of these various treatments so that he/she and I can, together, make the most informed decision and prescription possible.

Question 3 (Essay)

In a recent group of decisions (2004-FOR-020 (a) and 2004-FOR-025(a)) the Forest Appeal Commission (FAC) was asked to interpret the wording of the Silviculture Regulation (BC Reg. 147/88) relating to stocking standards. At issue was whether two blocks had met the target stocking obligations of the prescription even though there were significant areas in each of the blocks that were either under or over stocked. However, if the number of trees in the blocks were averaged at the standard unit level of stratification, they met the free growing target number of trees prescribed.

The licensee argued that the words “per hectare” of the Silviculture Regulation which describes stocking standards as a measure of the “...target number and the minimum number of healthy well spaced trees per hectare...” means an average number of trees over the standard unit and therefore that it had met its free growing obligations. The Ministry of Forests argued that the wording of the regulation means that the target number of trees must be found in each and every hectare of the opening and that the licensee had not met its free growing obligations.

The FAC determined that the words “per hectare” in the part of the regulation describes stocking standards as a specification of the [Section 2(2) (j)] means an average over the entire treatment or standard unit.

Preparing free growing declarations is the practice of professional forestry because it requires the person signing the declaration to exercise professional judgement and opinion when determining whether the stand of trees subject to the declaration has reached free growing status. As a professional forester, you will be called upon to sign free growing declarations for openings subject to this regulation.

Taking into account the FAC decision, your knowledge of the intent and wording of the regulation, and your obligations as a professional under the *Foresters Act* and bylaws, what do you do when asked to prepare free growing declarations for openings created under the Silviculture Regulation? What implications might your decisions have on timber supply assumptions and for the concept of greater reliance on professional judgement and accountability?

(10 marks)

Answer 1 (scored 9.5)

Different statutes can be interpreted in many ways by different people. The Silviculture Reg. is no exception to this rule. However, the future of B.C.'s forests depends on RPF's interpreting and applying this statute in a way that best serves the public interest.

To me, as a future RPF, the interpretation of what is required under the Silviculture Reg. (SR) is fairly clear. When I sign my name to a free growing declaration I sign my name to a free growing declaration for a particular block, it is the same as me saying that this particular parcel of land will one day provide British Columbians with the resources they need and expect. I am legally obligated by the Forester's Act and ABCFP bylaw to promote and actively carry out good forest stewardship.

That being said, it appears that in this particular group of FAC decisions, the FAC made more of a “literal” interpretation of the wording of the SR. Yes, by averaging the number of well spaced stems per hectare, the licensee and the FAC both say that free growing obligations have been met and

this is a valid interpretation of the SR. However, this may not be indicative of a truly impartial professional decision and may not reflect the “intent” and “wording” of the regulation.

Clearly (to me) the wording of the SR is intended to mean the rather uniform distribution of healthy stems throughout the standard unit. This is not to say every square meter of the block needs to be identically stocked, but in my professional opinion it doesn't mean large brush filled voids and densely stocked patches.

This is where my obligations as a professional come into play. As previously mentioned, my primary responsibility is to the public, under bylaw 11.3.1 which says I must “advocate and practice good forest stewardship of forest land... to provide those values that have been assigned by society.” Bylaw 11.3.6. states “...to promote truthful and accurate statements on forestry matters “I am of the opinion that in these FAC cases, these bylaws may have been compromised to a certain degree by the licensee. Chances are, the licensees behaviour is in aid of lessening costs by declaring the areas free-to-go thereby getting these areas “off the books” and handing responsibility back to the ministry and the public. This would be contrary to the Bylaw 11.3.2 which states “to uphold professional principles above the demands of employment.”

Nevertheless, the FAC was established under section 194 of the FPC act (continue under FRPA) as an independent appeal tribunal with statutory authority to hear appeals from administrative decisions (FAC Procedure Manual). The commission clearly acted within its mandate by rescinding the initial determination and without further information I am in no position to pass judgement.

I myself would have difficulty declaring such a standard unit free growing for the several ethical reasons aforementioned. The people of B.C. are depending on us as RPF's to manage public assets and provide the resources they need in the future. Clearly, the implications for timber supply are huge. By allowing such a declaration of free-growing to stand, a precedent may have been set. Such behaviour may result in long-term timber supply issues as we will be depending on these potentially poorly stocked stands to provide us with timber that might not be there, or may be of poorer quality than expected. The public is depending on us to provide them with forest resources and revenues. Perhaps more “creative” methods of stratifying and surveying can be found, more after resulting in poorly stocked stands “making the grade.” I for one will stand by my professional principles when making free to grow declarations and will not allow these recent FAC decisions to colour my thinking about what truly is professional forest management.

Answer 2 (scored 9)

There has been a recent decision with respect to the interpretation of the meaning of stocking density. The FAC has determined that stocking “per hectare” means an average of the entire SU. This is a very interesting case as it attempts to answer a question which is very relevant to Foresters today. The question has to do with the best management and stewardship of BC's forests. It is important to realize the connection of this case with the obligations under the Foresters Act and bylaws. Primarily the potential conflict of a member's duty to advocate and practice good stewardship on the land for the public (Code of Ethics 11.3.1) and having proper regard for existing legislations and policy (Sec. 11.3.3). The result of this case is the clarification of the interpretation of the law, but this might not necessarily lead to the best stewardship of forests lands under certain circumstances. If cut blocks are managed poorly by using the “per hectare” interpretation this could amount to “misrepresenting the facts.” For instance, having some areas over stocked while other

areas are “under-stocked” and pushing free growing declarations forward might not be consistent with professional principles such as integrity and stewardship. The implications are very significant for the timber supply as the inventory numbers are put forward in declarations are used for calculating the AAC. If the numbers are inaccurate then the AAC may be inaccurate in turn. It is important to note the use of horizontal distance between trees is still an important component of free growing assessments and may help alleviate some of the potential problems with using the ‘averaging’ method. A forester could likewise advocate for a change in the definition of “per hectare” if it is seen or incompatible with sound stewardship and negative effects of AAC calculations.

If I had to declare an opening using the new interpretation of “per hectare” I would ensure that I had a scientifically based and ecologically sound way of gathering my data upfront before submission. Either I or members of my forestry team would also have this important information at hand. That is the definition of per hectare, the consequence of AAC determinations and “best management” based on sound stewardship. Armed with these information I would design my free growing assessments to have a good coverage of the ground so the final numbers were representative of the whole area. I would also make sure to stratify out areas which will not meet stocking requirements as set forth in policy (e.g. 1ha contiguous). It is important that the field data is sound and correct so that the inventory numbers passed on the AAC calculations are also robust. I must not misrepresent the facts.

My knowledge in this case is based on visiting sites where “the average” was used to a client’s “advantage” while being at the “detriment” of the public. Promoting poor practices is not the intent of the wording in the legislation. Foresters are now more than ever being relied on for the professional judgement and the public would expect proper stewardship and maintaining high standards in conduct and daily work. Therefore, foresters should understand the legislation but also realize responsibility to the public by fostering good stewardship of the land. Advocating for change in the wording could be undertaken by a member and perhaps the ABCFP. It may be a good idea to publish an article in the Forum about this issue. Let’s get a debate going.

Question 4 (Essay)

- a) There are both social and economic reasons for self-regulated professions. Discuss. (6 marks)
- b) What will change in your day-to-day work as you make the transition from an enrolled to a registered member? Why? (2 marks)
- c) The Association has published Standards of Professional Practice and interpretive guidelines for those standards. Why are they important? (2 marks)

Answer 1 (scored 9)

There are four self-regulated professions with the resource industry. These are professional foresters, professional biologists, professional agrologists and professional engineers and geoscientists. These professions are all defined by Acts which gives a right to title and in the case of Foresters, Engineers and Geoscientists an exclusive right to practice.

One of the most important reasons for the existence of self-regulating professions is the importance they place on the duty to protect the public interest by ensuring professionals are bound by the highest standards of conduct and competence. This is often described as a “social contract” whereby society gains highly trained accountable professionals with the obligation to provide stewardship while upholding the public interest first and foremost and the professional gains an exclusive right to title, and in some cases practice. (FRPA training companion guide pg. 36) This contract is one based on trust and confidence. By this contract the public is guaranteed social values are met through the Act, policies, guidelines and bylaws of the profession these include, but are not limited to that. They hold the public interest paramount; the professional practices within their area of expertise; they will provide a professional opinion only when it is based on knowledge and science; they will maintain competence in their area of practice, they will not misrepresent the facts and provide for alternatives when available; they will respond and report contraventions to the Foresters Act or other rules; they will work to extend the public knowledge where possible and the practice due diligence to minimize the chance of negative consequences to those values assigned by society. This social contract is more important now with the move to more results based forestry legislation. The society must now rely on the professional to make strategies and results as well as to act diligently in addressing issues that are important to society. The economic reasons for a self regulating body are many. First and foremost almost all decision a forest manager makes has a financial impact on society. These could be through calculating stumpage (timber appraisals), forest decisions (ex- financial implications of MPB) and up to determining an AAC which effects government revenue. When a person is making decisions which can have such a profound environmental, social and economical impact it is important that the person is competent to make these decisions and that he will be held accountable for the consequences of these decisions. Economic Impact: I can be held liable and therefore fined, creating \$.

As I make the change from an enrolled member to a registered member, I would like to think that very little will have changed in my day-to-day work. Personally I have always held myself accountable for the decisions I have made and the Code of Ethics have always guided me through my enrolment period. I have also tried to use the standards of professional practice to guide me through my work. I guess the biggest change is the association will be holding me accountable for

my actions. In the eyes of the public, peers, and the employer I will now be a professional and looked up to with a higher regard. As an enrolled member ultimate accountability was always left with my supervisor or another RPF who would sign any plans that I had prepared. I will now also be subject to a quality assurance program such as the continuing competency program (self-assessment annually, peer review, and practice reviews). I would have to act on a professional manner and be a role model for those enrolled members and other members of the public that I deal with.

The standards of professional practice are important to guide me through my everyday activities. They deal with professional practice expectations related to competence, independence, integrity, due diligence and stewardship.

These standards are mandated by the Foresters which gives the ABCFP council authority to make bylaws regulating the practice of a professional forestry by establishing stands of professional practices (Foresters Act 9 (1)(a)(i)). These standards are important to provide for performance benchmarks for daily practice and conduct; provide the public with additional means of what they can expect from a practitioner; provide indicators of quality; provide support for legislated rights to practice and title; show obligations that arise from the "social contract"; and ways to evaluate ones' practice through self-assessments, peer reviews and other continuing education plans (ABCFP Stands of Professional Practice Guidelines). Since professionals are accountable for the decisions they make they are bound by a "social contract" based on trust and confidence. They must continually earn the publics confidence by demonstrating the standards of professional practice. The standards can show the professionals what areas they may need more improvement in through training. Also they provide a means to assess where peers, supervisors, or members they are sponsoring may need to improve. They must use respectful regard when providing this assessment.

Answer 2 (scored 9)

Self-regulated professions (i.e. Registered Foresters, Agrologists, Biologists, and Engineers) have been granted exclusive rights by the public of British Columbia to manage their resources in their behalf. These groups have been entrusted by legislation to apply their education, experience and qualifications to ensure that each profession has an obligation to ensure members are competent and that they adhere to high standards. Each professional also has a regulatory body that has the power and responsibility to discipline its members. There are both social and economic reasons for the self-regulated professions.

Socially-speaking, resource professionals employ a code of ethics that hold paramount public interest and protection of the environment. Essentially, professionals need to balance social values with these economic and environmental values. These professional associations have an important duty of ensuring the competence of its members to protect public values. This is ensured by giving the regulatory bodies the power to establish education requirements, work experience, examination requirements, qualification guidelines, quality assurance requirements, and enforcement of standards of competence and conduct via disciplinary processes.

These strict requirements ensure that only properly qualified professionals are legally able to practice within their scope of their discipline. Self-regulated professionals are also bound by duty to

protect the public interest by ensuring professionals are bound by the highest standards of conduct and competence. The self-regulation profession is often described as a “social contract” between society and the professionals (FRPA training guide 2004). Each of the regulating bodies is bound by a Code of Ethics that holds paramount public interests/safety, environmental protection, and accountability through integrity, independence, stewardship, and competence. The era of professional reliance under FRPA is dependent upon the success of this social contract.

Economically, self-regulation makes sense. The government gives associations the ability to regulate themselves, which pulls financial burden away from government coffers. By charging fees from its member, the associations can have the financial resources to maintain high standards of admissions, professional practice and especially things like policy review seminars and continuing competency programs.

When making the transition from an enrolled to a registered member, my day-to-day work will change with regards to what I am legally allowed to practice under the Forester’s Act. I will no longer be required to work under the supervision of an enrolled member and I will now be afforded the opportunity to sign and seal professional forestry documents/plans/letters. I will still, however, be required to practice and sign only in areas that I am professionally competent to do so. Additionally I must take extra care in my day-to-day diligence (daily log, professional development plan, etc) because I can now practice independently, and I am legally responsible for all work I produce.

The association has published standards of professional practice and interpretive guidelines because the exclusive privileges of practice and title require the wise application of professional judgement and accountability (SOPP Guidelines 2002). The reason for these standards is to set a benchmark for earning the public trust through demonstrated competencies, independence, and integrity. The SOPP is important because it applies to all areas of practice and it can be used to measure a professionals’ work if their practice is called into question. In essence, the SOPP gives a guideline for public expectations, quality, expectations and support for legislated rights to title and practice.

In conclusion, the self-regulated profession provide a safety-net for the proper management of publics’ resources through due diligence, professional reliance and accountability.

Question 5 (Essay)

As an RPF and Statutory Decision Maker, you may be working in a jurisdiction in BC where you are faced with a similar situation to the one outlined below:

5. You have designated Wildlife Management Areas in the past to address habitat requirements for a federally identified species-at-risk.
6. Your Timber Supply Area (TSA) has been apportioned to several licensees and no area remains that are not already located within the chart area of any one licensee.
7. Research and new information has identified that areas previously identified as Wildlife Management Areas are in fact, not critical to the maintenance of the species-at-risk of concern. Instead, areas already under approved Cutting Permits have now been identified as being of critical importance to the survival of the species-at-risk.
8. Species-At-Risk Act (SARA) recovery teams are working on new guidelines for management for the species in your operating area, however, they are not as yet available to you.

You are considering negotiating with licensees to move operations from the areas with approved Cutting Permits back into Wildlife Management Areas which are now known to be no longer needed to maintain the species. The SARA recovery team working on the species recovery plan has identified the previously designated Wildlife Management Areas as needed for recovery of the species (other than maintenance).

- a) Identify the legal, ethical and forest management issues you would need to resolve, and what your role in each issue would be as a registered professional forester. (5 marks)
- b) As a Statutory Decision Maker, what would be your responsibility relating to any areas necessary to maintain a population of a species-at-risk? As the recovery plan has not been completed for the region, how would you consider the recovery teams' interest in reserving additional habitat for species recovery? (5 marks)

Answer 1 (scored 9)

- a.) As a statutory decision maker (SDM) and a professional forester I must balance numerous legal, ethical and forest management issues in order to conserve and protect species at risk (SAR). I am bound by the Association of British Columbia's Forest Professionals (ABCFP) code of ethics and standards of professional practice (the standards) as a practicing professional forester in British Columbia (BC). The code of ethics of the ABCFP dictates that I must practice and advocate good forest stewardship based on sound ecological principles. The code of ethics also states that I have to have regard for existing legislation, regulations, policy and common law in making my management decisions¹. The ABCFP's standards of professional practice mandate that I maintain sufficient knowledge, in my field of practice, exercise due diligence in work and achieve and demonstrate stewardship by balancing the needs of today with the needs of future generations². As a professional forester I am duty bound to balance and understand social, economic, and ecological issues and must consult with other qualified professionals to gather that knowledge if required.

In this case the legal issues I would need to resolve would be dictated by both federal and provincial legislation. The Federal Species at Risk Act (SARA) is mandated with preventing Canadian indigenous species, subspecies and distinct populations from becoming extirpated or extinct. SARA also provides for the recovery of endangered or threatened species and encourages the management of other species to prevent them from becoming at risk. SARA provides a framework for actions across Canada to ensure the survival of wildlife species and the protection of our natural heritage³. Provincial legislation is provided via the wildlife act and through the Forest and Range Practices Act (FRPA). FRPA uses the Identities Wildlife Management Strategy (IWMS) to protect SAR and Regionally Important Wildlife through the establishment of Wildlife Habitat Areas (WHA's) necessary to meet the habitat requirements of an identified wildlife element.

As a professional forester the forest management decisions I make must balance the social, environmental and economic values assigned by society. I must follow my ethical obligations to have regard for the existing legislation and regulations and hold my duty to the public paramount. Forestry decisions in the future regarding SAR will be made based on risk management assessments, choosing the lowest risk options, until our knowledge of SAR is improved. In order to adequately manage for SAR we must know a number of things to make the best informed decisions. I must know what the limiting factors of the species populations are, if it is available. I must be aware that legislations often lag behind knowledge of the species vulnerability. I must make myself aware of the species habitat requirements through readings of pertinent literature, consultation with known experts and any peers experienced in the area.

¹ABC FP Code of Ethics ²ABC FP Standards of Professional Practice- Guidelines for interpretation- Jan 2002 ³Federal Species at Risk Act- Bill C-5

- b.) As a SDM, I must ensure that there are adequate areas available to maintain populations of SAR. This requirement is legislated by the laws, acts and policies outlined above. I must ensure that enough habitat is protected to ensure that the species does not become extinct or extirpated. Due to the fact that the recovery plan has not yet been completed for the region I would have to make my decision regarding reserving additional habitat based on a risk management assessment. I would choose the option that has the lowest risk since there is no clear direction at this time. I would first ask to be included on the recovery team so that I could make the most informed decision. The recovery team members are experts in the field and could provide lots of guidance in making my decision. I would use this knowledge to arrive at a socially acceptable decision using the best available knowledge available to me. I believe that using professional judgment and relying upon the professional opinions of other qualified professional will enable me to come to a decision that balances competing interests and the development of a sound plan in the interest of good forest stewardship.

Due to the lack of data and knowledge surrounding SAR, protection of habitat for threatened species will likely have a negative impact upon timber supply in the future. I would strongly consider the recovery team's interest in reserving additional habitat for the species recovery. However, to include all of the area already reserved would not be a balanced decision. I would propose that portions of the existing area that best suit the needs for the species as well as the new proposed areas instead. At least 50% of the existing area would be reserved and the remaining portions would remain within the working forest land base. Once the recovery team's

assessment has been finalized the area would be amended to reflect their findings. Licensees would be compensated for loss of timber rights and reductions in AAC if required. This would allow for a balanced decision until the recovery team had made its final recommendations.

Question 6 (Short Answer)

You have been asked to make a presentation to a group of resource managers about timber pricing and stumpage policies in British Columbia. Briefly describe how you would answer the following questions that have been posed for your presentation:

- a) What are the current timber pricing challenges government is faced with in British Columbia in determining stumpage rates for the timber resource? (4 marks)
- b) What are the two important over-arching principles that should guide the process to arrive at stumpage rates? Why are these important? (4 marks)
- c) What responsibilities do ABCFP members have in the preparation of timber appraisals? (2 marks)

Answer 1 (scored 10)

a.) Currently in British Columbia we are operating using two separate stumpage systems. The interior of British Columbia uses the old comparative value pricing system, whereas the new market pricing system has been implemented on the coast. The major challenge that faces government in determining stumpage rates is the implementation of MPS in the interior and ensuring that a representative sample is obtained from BCTS on the coast to ensure fair, accurate prices. There are major hurdles to get over in order to implement MPS in the interior. The first of which is that there needs to be a 20% sample for BCTS to market in order to get a representative sample. Currently, the 20% reallocation is not fully complete in the interior and therefore, having a representative sample is not possible. Secondly, there is a high amount of resistance by industry to MPS due to the salvage efforts brought about by the mountain pine beetle problem. Currently, the licensees can pay as little as \$0.25/m³ for 'red and dead' timber which can still be made into lumber and sold. This presents an attractive economic opportunity and understandably, the licensees don't want that to change. On the other end, there is the softwood lumber dispute where the Americans are alleging a subsidy. Part of clearing these allegations is the implementation of MPS. Finally, MPS takes into account log value and not lumber and chips as does the CVP system. This may not accurately portray the value of the resource in the same cases. Then there is the problem on the coast with ensuring a representative sample. So far, less than 20% of the cut on the coast has been BCTS, not up to the sample goal. The problem with this is that if there is not an adequate sample size, the resulting stumpage rates will be flawed.

b.) The ABCFP has recognized that the two most important "over-arching" principles in determining stumpage rates is that they are determined in a:

- 1.) systematic manner
- 2.) equitable manner

-ABCFP policy manual 2005

It is important that stumpage rates are determined in a systematic manner for a few reasons, the first of which is that the process can be reproduced and will always develop the same output given the same inputs. Another reason to have stumpage determination be systematic is that it removes any biases that may be present, be that they are conscious, unconscious or circumstantial. The final reason why a systematic approach is required is so that the results and process the brought

that result can be checked (audited) for errors or omissions. If it were not systematic, it would be much harder to review and one would have to account for professional opinion. The other important principle of stumpage determination is that they are equitable. This is important in that the forests (for which stumpage is paid) are public and timber is a public resource. Tenure rights represent a contractual agreement between the province and the licensee to harvest and sometimes manage timber. In keeping with the controversial agreement, it is only fair that each party obtains what is rightfully theirs. The process being inequitable in either direction would create an unfair situation where one side is taking directly from the other side.

c.) As a result of inequitable stumpage management practices where licensees would “manage” the system to pay less stumpage, the ministry has decided that an RPF should be required to sign appraisal submissions. By requiring this, the MOFR is ensuring that the submission will be created and submitted in adherence to high professional standards and ethics. RPFs are accountable for their decisions, practice integrity, and are competent and are required to ensure such, and are independent. These quality, coupled with the Code of Ethics that outline member responsibilities (public interest is paramount), ensure that the appraisals are without bias and are equitable. The responsibilities of an RPF in appraisal submissions includes ensuring that the data is correct, free of errors or omissions, collected using accepted practices and that the data was interpreted/compiled and reported in accordance with accepted guidelines or rules (e.g. Coast Appraisal Manual). Although the RPF does not necessarily have to complete the data collection and appraisal themselves, they must sign and therefore take full responsibility for it and its outcomes. It should also be mentioned that this practice falls with the practice of professional forestry as per the Foresters Act and thus is exclusive to members of the association. It should also be added that the forester signing the appraisal must be “competent relevant to appraisals and knowledgeable about the operational conditions (i.e. Site, cruise, roads, harvesting methods etc.)” ABCFP 2001 The forester must ensure that the best available data is used and that the appraisal reflects the true operational conditions.

Answer 2 (scored 10)

a.) The provincial government faces a number of challenges with respect to timber pricing in B.C. The key points that my presentation would cover with respect to this are:

→ mountain pine beetle epidemic- probably one of the greatest challenges

- increased volume of timber being harvested in large-scale salvage operations has resulted in an increase in volume harvested in the interior of BC at minimum stumpage rate of \$0.25/m³ (grade 3 logs- dry saw logs)
- this has impacted Crown revenue, intensified “water bedding” → impacted in non-infested areas to offset it → increase in stumpage having negative impact on the health of the industry in other areas of the province
- interim adjustments to “green” pie saw log stumpage was implemented as a means to address waterbed while government works towards revising the log grades
- the volume of wood at \$0.25/m³ stumpage rate has raised concerns regarding whether the Crown is receiving fair value for the timber resource

→ implementing MPS in the interior of B.C.

- the AAC uplifts associated with the MPB epidemic has restricted the ability of government to proceed with MPS in the interior
- industry consolidation creates issues with having a truly fair and open market as the number of “competitive” bidders is limited. Collision is a concern.
- Take back- still on-going. Need BCTS to get the volume on the market
- concern whether 20% of AAC will be adequate to promote a truly competitive market and truly reflect fair return to the Crown. Also may not satisfy US demands in the softwood

lumber dispute

→ implementing fair and equitable changes to the log grading systems and applicable stumpage rates that will not reduce the industry incentive to harvest MPB- killed stands

→ enforcement of Sections 105.1 and 105.2 of the Forest Act regarding accurate appraisal data

- inherently difficult to do as timber appraisals are an estimate – due diligence as a defense will make this even more difficult to enforce
- increased professional reliance – signing and sealing of appraisal data submissions should be enough to ensure professional quality/accurate data submissions

b.) The two over-arching principles that guide timber appraisals to arrive at stumpage rates are that they must be determined in a systematic and equitable manner.

- systematic → this is accomplished through the procedures established in the interior and coast appraisals manuals, as well as through regionally established guidelines and procedures for Endangered Cost Estimates (ECE)
- equitable → this is accomplished through standing advisory committees for the interior (IAAC) and the coast (CAAC) which include representations from government and industry. These forums promote debate and resolution over appraisal issues to ensure that Crown receives fair value, and industry costs are recognized
 - this is also accomplished through section 136 of the Forestry Act which allows government to obtain logging and manufacturing costs as well as lumber selling prices from industry for use in the appraisal manuals and in stumpage rate calculations. This information is obtained from representative operators using the “average efficient operator” methodology to ensure costs are representative of the industry as a whole

These principles are important because they ensure a transparent process that will ensure the Crown receives fair value for the public resource. From an industry perspective, clear, well-defined procedures will ensure an equitable stumpage rate is produced, and that their operating costs are recognized. Systematic and equitable also make the timber pricing system stand up to a court of law if ever challenged.

c.) ABCFP members have significant responsibilities in the preparation of timely appraisals including:

- RPF or RFT must sign and seal timber appraisal data submissions as per ABCFP bylaws (10) and thus be accountable for the quality and content of the submission
- must ensure data is collected by qualified individuals under their supervision to the

approved standards

- must ensure the submission reflects current plans (i.e. season of planned harvest), the most appropriate data estimates are used – (i.e. consistent with government policy – appraisal manuals)
- must be competent about appraisals and operating conditions including harvesting systems, site conclusions restricting timing of harvest, road and bridge construction
- they are responsible to produce a professional quality plan that would stand up to a review of a peer
- responsible to ensure the data is accurate so that the Crown receives fair value- thus ensuring the public interest is upheld
- must act independent of employer (probably the most critical responsibility with respect to appraisals)

Question 7 (Short Answer)

You have been asked to oversee a planning process for the preparation of a Sustainable Resource Management Plan (SRMP) for a remote area of BC called Forbidden Valley. The SRMP must, in the end, be signed off by a government decision maker. The SRMP is meant to find a balance of economic, social and environmental uses for the area, including forestry uses.

Forestry has been the main employer in the surrounding areas. Forbidden Valley itself has seen very little development activity, and is renowned for the extensive back country recreational values, hunting and fish values. Since it is part of the larger Forbidden Timber Supply Area, it is envisioned to have more timber development activity over the next 20 years.

Forbidden Valley is within the overlapping traditional territories of two First Nations, and home to the Forbidden First Nation. Although there are no treaties in place for the area, there are a number of small Indian Reserves and archaeological sites. The area is reportedly relied upon by First Nations members for hunting, trapping and gathering of medicinal plants, some of which may be impacted by development activity.

- a) Briefly discuss the obligations that government and industry have for consulting First Nations in the preparation of this SRMP. (5 marks)
- b) In preparing the SRMP, briefly describe the key steps you would take for consultation with First Nations, assuming that development activity may infringe on an aboriginal interest in the absence of a Treaty. (5 marks)

Answer 1 (scored 10)

a.) The duty to consult means that the government has a fiduciary duty to consider aboriginal interest prior to making land or resource decisions concerning Crown land activities that are likely to affect those interests, and attempt to address and/or accommodate concerns that are raised. In this scenario since it is a Timber supply Area (TSA) it is Crown land. There are two First Nations (FNs) to consult with over Forbidden Valley's planned SRMP (Sustainable Resource Management Plan). Two recent legal cases relate to this.

- 1.) 2002- Haida → The BC Court of Appeal released two decisions regarding consultation and accommodation of aboriginal rights and title claims prior to proof of claims, holding that both the Crown and Crown Licensees must consult and accommodate such claims
- 2.) 2004 - Haida → The Supreme Court of Canada holds that Crown must consult with Aboriginal people whenever the government has knowledge, real or constructive, of the potential existence of an Aboriginal right or title and contemplates conduct that might adversely affect it, but that Crown Licensees have no such obligation. Depending on what is revealed by the consultation the Crown may also be under an obligation to accommodate the claimed rights in its decision-making. (Both from ABCFP's, FLPRG, '05)

→ From the question we know that the proposed development may impact the 2 FN's hunting, trapping, and gathering activities/traditions

→ Consultation is required whenever aboriginal rights and title may be infringed, whether or not

these rights and title have been proven in court. The scope of the duty to consult will vary with the circumstances and in most case the duty will be significantly deeper than mere consultation. The level will vary with the contemplated use of the land and the degree of the potential for aboriginal title to exist.

→ Code of Ethics 11.3.1- to advocate and practice good stewardship of forest... assigned by society (ABCFFP, FLPRG, '05). In order to know local societal values, FN consultation must be an inaugural part of the planning process for the developing of the SRMP for Forbidden Valley. This plan must find a balance between social, economic and environmental uses for the area (this also speaks to 11.3.1. in the stewardship sense). – multiple resources here

b.) When consulting with FN in good faith, foresters have a responsibility to work to extend FN's knowledge of forestry and to promote truthful and accurate statements on forestry matters (bylaw 11.3.6 and 11.4.4)

- It is especially important in consultation for the forester to state clearly on whose behalf the professional statements are made (Bylaw 11.4.7)

- Key steps to a RPF should take to ensure “proper consultation” has been undertaken so that FN's accept their plans are:

1.) First a “Sparrow Test” should be used to determined if an action interferes with an aboriginal right, and if so, whether the interference is justifiable

2.) Next, a pre-consultation assessment should be done to determine the amount of consultation required for the activity.

3.) finally, a four stage consultation process should take place (as follows):

i.) Initiate consultation (best done in person)

ii.) Determine the Impact of decision on Aboriginal interest

iii.) Determine whether any likely infringements of aboriginal interest could be justified in the event that these interests were proven aboriginal land rights and/or titles

iv.) Address and/or reach workable accommodations of aboriginal interests, or negotiates a resolution.

→ This process may take considerable length depending on the FN's willingness to cooperate and their own views or values.

Answer 2 (scored 10)

a.) Government and industry have separate obligations for FN consultation in terms of forest management activities. Most importantly and recently, a Supreme Court decision (Haida vs. Minister of Forests 2004) has found that the government must consult with FN whenever they have knowledge of a potential aboriginal right or title and contemplates actions that might adversely affect those rights/title. The MOF has their own consultation guidelines “Crown land Activities and Aboriginal Rights Policy Framework” (2005) and the “Aboriginal Right and Title Policy and Consultation Guidelines.” Thus the MOF must consult with FN on all operational activities, as well the AAC determinations, and other statutory decisions. Thus during the SRMP stage, which is a local land use planning approach implemented by FRPA, FN consultation could occur, even though it is more commonly occurring at the (SRMP's or other local level plans are not required to consult with FN; operational plans (FSP), AAC determinations, tenure replacement, and other tenure decisions are required, although it is encouraged) operational planning (FSP) stages. The

government is not responsible for proving title and assumes title does not legally exist until proven. However, they do have a duty and obligation to consult when they think activities threaten rights, especially since archeological sites (protected under the Heritage Conservation Act) and the FN groups are known to rely on the land for hunting and gathering.

Industry, on the other hand, is not included with the court ruling. In fact, they are excluded from the decision. However, that does not mean that industry doesn't have an obligation to consult with FN. The MOF can, plus the onus of consultation on the shoulders of the licensee when they are seeking Forest Stewardship Plan approval. As a planning forester, you would then be obligated to follow the "FSP Take List" to aid in your FSP preparation and guide your FN consultation efforts. This is the stage in which most consultation should occur (operational), but may be necessary at the local land use planning level. As a licensee you are also obligated by the Heritage Conservation Act that assesses and protects the cultural heritage resources (i.e. archeological sites), and use the FPC Act methods for the management of those resources. The licensee may have to follow/carry-out interim measures to avoid possible right infringements. It is important to note that administrative decisions made by statutory decision makers. However, as with government, industry is not required to consult at the landscape (strategic) level planning stage. However, it is encouraged to occur at this level.

b.) There are several key steps as a licensee that must be taken in consultation with the local FN groups.

1. A pre-consultation assessment which determines if consultation is required, which in this case is necessary, especially at the FSP level.
2. Initiate consultation- Consider FN interest, work with groups to determine the best way to gather relevant information.
3. Consider impacts of decision on aboriginal interest- do the activities infringe, and in this case they do.
4. Consider whether any infringement of interests could be justified in the event that a court proves them later. Due diligence is an important component in this step. Documentation of the efforts made for consultation is crucial.
5. Look for ways to accommodate the FN interest. Since hunting, trapping, and plant collection is important, find ways in your plan to enhance or minimize disturbance of these rights and interests.

As a professional, you can also carry-out traditional use studies, further archeological assessments, training initiatives, and more. This in turn attempts to provide positive outcomes from a potentially negative action. It is also encourage to share information between both parties, as well as to propose "on the ground" solutions to address aboriginal interest prior to decision making.

Question 8 (Short Answer)

You are a professional forester working in the tenures section of a Ministry of Forests District office. Your district has just awarded four new woodlot licenses. The District Manager has asked you to provide an overview of woodlot licensee obligations in a 30 minute presentation to the new licensees. In an outline format include the details of your talk.

(10 marks)

Answer 1 (scored 10)

Obligations of Woodlot Tenure Holders:

1.) Background:

- a.) What is a woodlot?
 - i.) it's an area-based forest tenure system
 - ii.) it has a 20 year term and is replaceable every 10 years
 - iii.) is granted as you know, based on the amount and quality of private forest land owned by the applicant, how easily and frequently the applicant can travel to the license area, the applicant's knowledge, training and/or experience in forest management, and the forest management commitments proposed by the applicant (ABCFP Policy Guide 2005)

2.) Professional Reliance:

- a.) definition: the practice of accepting and relying upon the decisions and advice of forest professionals (RPF or RFT) who accept responsibility and can be held accountable for the decisions they make and the advice they give (ABCFP 2005)
- b.) What does this mean to me?
 - i.) public has granted ABCFP exclusive rights to practice and title
 - ii.) you are required to rely upon them in all areas of professional forestry
 - iii.) it would be a contravention of the Foresters Act to practice professional forestry when not being supervised by an RPF

3.) Management Plans:

- a.) "successful applicant must prepare a management plan" – This is professional forestry.
- b.) primary focus is propose an AAC
 - i.) determined by the district manager
- c.) also serves to record commitments made in application
- d.) based on inventory of timber and non-timber resources
- e.) Will remain in effect until DM requests a new one or if there is an expiry date, the latter applies

4. Cut Control:

- a.) an AAC will be determined as mentioned above
- b.) No minimum cut requirement
- c.) Maximum cut allowed is + 20% of one year's AAC
 - i.) This "balance" continue into future, i.e. cannot cut more than AAC if +20% is already reached

5. Stumpage:

- a.) stumpage is the revenue paid to Crown in exchange for timber harvested
- b.) For woodlots, is comprised of \$200 deposit, annual rent of \$0.25, \$0.10, fire levy \$0.25/m³ to the woodlot product development council
- c.) interior= CVP system
 - i.) stumpage rate= base rate= (value index – mean volume index)
 - BR= calculated using target rate value set by revenue branch
→ target rate it based on log value as lumber and chips
 - VI= the difference between actual selling price and the anticipated operating costs of the operation
 - MVI= the average VI for all cutting authorities in which harvesting has taken place in past 12 months
 - ii.) Interior will move to MPS soon
- d.) Coast= MPS system
 - i.) Stumpage rate= (calculated preliminary estimated winning bid - operating cost of average operator) – tenure obligation costs
 - tenure obligation costs include planning, road building, silviculture road maintenance etc...
 - CPEWB and O.C. are derived from BCTS program data

6. Operational Planning Requirements:

- a.) under FPC= woodlot license forest management regulation
 - i.) Includes forest development plans
 - illustrates where development will occur over next 5 years
 - mandatory 60 day public review period
 - ii.) Site plans
 - stocking standards, free grow date etc.
 - * existing FDP continue until April 2005 or the end of the FDP specified term or when a WLP is approved
- b.) Under FRPA= woodlot license planning and practice regulation
 - i.) Must create WLP (similar to FDP)
 - identify FDUs, can be as large as wanted
 - derive results or strategies for 1.) land use objectives 2.) objectives in regulation and 3.) objectives enabled by regulation

- cannot stray from 'default practices' in WLPP
- ii.) Site plans
 - same as in FPC
 - not required for approval
 - identify values on site as well

7. Harvesting

- a.) Licensee must obtain a cutting or wood permit prior to harvest
- b.) Applies to private land in W.L. as well
- c.) Must have valid timber mark before transporting logs

8. Silviculture

- a.) As outlined in SP
- b.) Responsible to ensure a free growing stand

9. Road Building

- a.) Licensee is responsible for road construction and maintenance

10. Compliance + Enforcement

- a.) Licensee can be held liable for contraventions of FPC or FRPA
 - i.) Ensure due diligence by hiring the appropriate competent professional
 - ii.) Follow plans

11. Any questions?

Answer 2 (scored 10)

When answering this question it is assumed that no information is needed for Selection of Woodlot areas; Eligible applications, How to apply, and any other stuff applicable to before the woodlot is awarded as the presentation is to address successful applicants.

In preparing my presentation I would show a series of slides or overheads with broad categories and would speak about each point

- Slide 1: 1. Outline
Today we will cover:
- 2. Background of Woodlot Licenses (WL)
 - 3. Objectives of (WL)
 - 4. Applicable legislation
 - 5. Plans
 - 6. Professional services
 - 7. Costs
 - 8. Challenges

9. Other

Slide 2: Background

- established in 1979
- expanded in 2004-2006

Speakers notes:

The woodlot program was established in 1979 to increase opportunities for small scale forestry in BC as it was recognized the small scale tenure holders were important to BC's social and economical well being and these small parcels could possibly benefit from personal care of a community member.

The program is currently being expanded as a result of the Forestry Revitalization Act which has taken back 20% of long-term tenure holder's volume of this 2% will be directed to Community Forest Agreements and woodlots.

Slide 3: Objectives

- increase the amount of private land under sustainable yield management
- to improve the productivity of small parcels of Crown and private land
- to increase the opportunity for small scale forest management
- promote local employment opportunities
- promote excellent forest resource management
 - ABCFP Policy review seminar, unknown speaker, Prince George

Speakers notes:

In getting your WL, some of you may have contributed private land. This adds to the Province's sustainable yield management. This will hold your private land to be managed with the rest of the WL, allowing in most cases for better management. The operations on WL are generally on a smaller scale with no long term contractors so this provides for opportunities for smaller contractors, usually locals, to have employment. Of course, all of you are going to manage your woodlot to the best of your ability using competent professionals.

Slide 4: Applicable Legislation

- Forest Act
 - woodlot license regulation
- Forest and Range Practices Act
 - woodlot license Forest Management Regulation
- Woodlot License Planning and Practices Regulations (WLPR)

Speakers notes:

The woodlot license is an agreement under Sec. 44 of the Forest Act. It is area based tenure with the AAC determined by the District or Regional Manager.

You are bound by the Forest and Range Practices Act and the woodlot license Forest Management Regulation as well as the woodlot license planning and practice regulation. These will require you to abide by practice rules and set out objectives for you to manage for.

Slide 5: Plans

Management Plan

- AAC
- Woodlot Plan
- Site Plan

Speakers notes:

Your woodlot requires you to prepare and get approved plans before harvesting. The management plan must be approved prior to final issuance of the WL license. The primary focus of this plan is to propose an AAC (Annual Allowable Cut). This is sustainable level of cut that you could take of your WL yearly. You must not exceed harvesting your AAC by more than 20% in the five year cut control period. An exemption may be granted through Sec 8(6) and 75.9 of the Foresters Act. If you may need to over harvest to deal with a specific issue such as mountain pine beetles.

The Woodlot License Plan (WLP) will show what strategies you will use in meeting objectives set out by the WLPR

- it will include a map of your area identifying land base where harvesting will occur
- choose default to propose alternative results and strategies to meet objectives set out by government
- have a term of ten years

A site plan must be prepared before harvesting starts. This will show more site specific information and establish how you are going to get a free growing stand. This does not have to be approved but it is highly recommended that it is.

Slide 6: Processional Services (Forester's Act/Practice of Professional Forestry)

Speakers notes:

As mandated in the Foresters Act a registered professional, special permit holder or a person working directly under the supervision of these members can only practice professional forestry in BC.

I would read out the definition of practice of a professional forestry and further define practice requirements as well as outline the possible consequences for someone who violates the Foresters Act. I would point out that the preparation of the three plans discussed would constitute the practice of professional forestry.

Slide 7: Costs

Deposit (\$200)

Annual rent (\$0.25/m³)

- fire preparedness levy (\$0.10/m³)
- levy to woodlot product development council (\$0.25/m³) (WPDC)

Stumpage

Other costs

Speakers notes:

A \$200 deposit is required when the agreement is signed. For every metre (m³) of Crown land of AAC approved there will be an annual rent of \$0.25/m³, fire preparedness levy of \$0.10/m³ and a WPDC levy of \$0.25/m³ totalling \$0.60/m³.

I would explain briefly what stumpage is, how it is calculated, and when it is charged.

The indirect cost for managing your woodlot, such as for plans, road building, harvesting, professional services, and silviculture to achieve free growing will depend on your management practices and can be quite high.

Slide 8: Challenges (MPB/Stumpage)

Speakers notes:

The mountain pine beetle is a large concern in a few ways: First off, you must manage MPB as well as the other forest health concerns of the district manager will force you to. Also there is a large volume of wood on the market so getting top dollar for your timber may be tough. The stumpage system is a tool to value your timber. There is completely legal and ethical ways to manage stumpage to ensure you are paying a fair price. Use a competent professional to ensure this happens.

Slide 9: Other

- Timber (processing facility)
- Extension Services
- Federation of BC Woodlot Association
- Canadian Forest Service
- Questions?
- Ministry of Forest and Range
- ABCFP
- Forest Research Extension Partnership
- Silviculture Committees

Speaker's notes:

There has been a recent amendment to the *Foresters Act* which allows ownership of a timber processing facility as long as you are complying with your management plan and meeting your silvicultural obligations – requires authorization by the DM. Any questions?

Question 9 (Essay)

Identify and describe two “impediments” to good forest management in British Columbia today. An “impediment” may be considered to be any factor or group of factors that prevents or makes difficult implementation of good forest management. For each impediment that you identify, explain:

- (a) Why you believe it to be an impediment?
- (b) What considerations, if any, are given to this impediment in forest management today?
- (c) What considerations or procedures you would suggest to reduce the influence of this impediment in the future?

(10 marks)

Answer 1 (scored 10)

Two impediments to good forest management in BC today are: uncertainty on the land base and the terms of cutting permits. One is very broad, and the other is more specific.

Uncertainty

By “uncertainty”, I am referring to a group of factors that contribute to an overall environment which may deter investment into the industry. The main factors that are contributing to this uncertainty are the unresolved nature of First Nations’ (F.N.) land claims and the security, or duration of Crown land tenures.

Uncertainty is an impediment to potential investment, as mentioned above. Licensees unsure if their tenures are going to be affected by First Nations land claims may see less incentive to pour money into areas where they may not be the ones to realize the return on the capital employed. Licensees whose tenures are non-replaceable will certainly feel they won’t be the ones to benefit from monetary inputs to the land base. This lack of incentive to invest (in terms of investment in companies themselves or in terms of treatments to forests) has many potential negative spin-offs. For example, silviculture treatments that could result in a higher quality stand ready for harvest at a shorter rotation age, such as intensive fertilization, are not being carried out.

The considerations being given to this impediment are the offer of the Forest and Range Agreements by the provincial government. These agreements seek to gain stability on the land base by allocating tenure and volumes to First Nations. However, it seems that this is only a short term fix. The real resolution to the uncertainty due to unresolved F.N. claims won’t come until treaties are settled. Although the process of Treaty negotiation is underway for many bands throughout the province, it is a time consuming process and F.N. participation is voluntary. Another consideration being given to uncertainty is the Working Forest Initiative, in which the provincial government seeks to lock down land use designations by determining which Crown land is available for particular uses. This initiative seems to be on hold since it was not received warmly by some (many) interest groups. A final consideration to this uncertainty is the change in consolidation, subdivision and tenure transfer requirement that came through Bill 29, the Forest Revitalization Amendment Act (2003).

Further considerations I suggest to reduce uncertainty are to grant more area-based tenures throughout the province. If more replaceable, area-based tenures were awarded, and then tenure holders would feel more of a link to the land they are managing and would see the benefits to investing in the land base by realizing those benefits themselves. In order to achieve having more

area-based tenures, less volume from the Bill 28 20% take backs should be awarded to BCTS. A greater focus should be made on awarding long term tenures to F.N. as well, since the Forest and Range Agreements are of short duration and won't foster the link the land base that longer term tenures would.

Terms of Cutting Permits

Part of the Forest Revitalization Plan include changes to cutting permits (CPs). Now, CPs are only four year terms. I believe this is to be an impediment to good forest management because it severely restricts a licensee's ability to achieve two years of standing timber inventory (STI).

Under the FPC, two years STI was recommended. This was good stewardship because it allowed for built roads to be "seasoned" and helped managers plan harvest-outlays with more certainty. This certainty trickled down to other aspects of forest stewardship, including greater certainty in sowing requests and seedling allocation for planning planting programs.

Another negative impact of four year CPs is that licensees may be forced to log even when markets are unfavourable. Formerly, CPs could last indefinitely, meaning licensees had more jurisdictions when it came to following market trends. This is an impediment to good business management. In an era when BC forest policy is moving towards more market-based approaches, this CP policy seems inconsistent.

Since CP policy was recently changed, considerations regarding it being an impediment don't appear to be on the provincial government's radar screen. CPs can be extended, however, only in two year increments, which is still fairly restrictive. Additionally, fees to extend CPs apply.

I suggest the two year CP limit be extended. It would not necessarily have to be a blanket extension across all jurisdictions (for example, in order to address the salvage of MPB infested areas, CPs could still be short duration to encourage expedited harvest).

Another suggestion is the ability for varying lengths of CP extension. Two years is not much leeway and it could result in a heavy administrative burden to licensees to be applying for, and pay the fee to extend CPs all the time.

Answer 2 (scored 10)

Good forest management in the province of British Columbia is not necessarily an easy state to achieve by government or industry. What constitutes "good forest management?" Is it management that achieves the overused triplet of balancing social, economical and environmental needs? Is it good management if you are able to turn a reasonable profit while ensuring more forests for future generations? Good forest management would ideally not cause harm to species at risk, would protect cultural heritage values, ensure a clean drinking water/watershed protection, allow people who enjoy recreation to enjoy unimpeded views from their hiking trails. However, even though we strive to achieve these relatively simple goals, we often fall short. We are impeded. Caribou population in the mountain are still declining regardless of our management and recovery plans. What is impeding as from achieving good forest management? We have the tools, the guidelines, the legislation, and knowledgeable and dedicated professionals in place to achieve it. Perhaps we are on the road to reaching this goal, and learning on the way. However, two impediments that are

immediately identifiable are the current MPB epidemic, and stereotypical public perceptions of the practice of forestry.

The current MPB epidemic that the interior regions of BC are currently experiencing has thrown good forest management for a loop. The increase in the AAC will have long-term implications to both forests and the people who depend on them. An accelerated harvesting rate will provide a short term economic gain, but a long-term slump. How will the forests recover after we are through? The MPB is an impediment because it has altered and postponed sound resource management plans which took into account all the government set objectives. Preserving VQ is not possible during an epidemic, wildlife will both suffer and gain from the forest transition from live to dead standing, or live to logged. Our long-term plans for these regions in some cases no longer applies and have been shuffled around to met our needs now.

However, there have been considerations to this impediment over the last decade. We have first tried to stop the beetles spread through cut and burn sanitation logging and beetle probing surveys. Legislation and numerous MPB Action Plans have been created to help manage the beetles. Proposed solutions have not worked. Climate change to warmer winters has accelerated the problem, causing our good intention plans to be unsuccessful.

Future forest management for pest outbreaks should learn from our experience during the MPB epidemic. We cannot expect or force the forest resource to wait around for when we are ready to harvest. Forests are not static ecosystems. Fire suppression in both parks and Crown land has preserved lodge pole pine trees for our recreational and industrial enjoyment. That is not good forest management. Thus, future management plans must take into account NDT's (which they already do) for forest areas. Pests have their own built-in population checks, we must allow for those checks to occur if public safety is not at risk. We most likely will not have to worry about another MPB outbreak in the short term, as all susceptible host trees will be gone in a few years. However, we must try to plan for avoidance of future long term epidemics of other forest pests.

Public perceptions as to how forest professional manage this valuable public resource are limited to a few common phrases: "Clear cutting is bad and that's all forestry is," Forest management is guided solely by economics and money," and "Don't foresters just plant trees and cut them down again?" You may wonder how these statements and others could be and impediment to good forest management. I believe it is, since words and perceptions have power. It shows that regardless of our efforts to mimic nature, protect species, build recreational trails and interpretive forests, research into innovative and efficient wood usage, protect against erosion and sedimentation in streams, and generally be stewards of the land, we still have to battle these questions. From personal experience I have talked with countless young student, adults, and seniors about forestry in BC. The public, for the most part, still does not understand what the role of a RPF is. I believe this is an impediment for achieving good forest management in the sense that even if we were to reach our goal, the public wouldn't believe it, and simply wouldn't understand how it was possible. Since good forest management also involves that social component to the magic triplet, we must gain the trust and understanding of the public before we can claim victory. Consideration has been given to this issue by both the government and industry. This impediment was important enough to be listed with the Code of Ethics, "To work to extend public knowledge of forestry and to promote truthful/accurate statements on forestry matters" (11.3.6). Many forest companies give educational tours within their interpretive forest trails and spend money on ads on

TV (i.e. the watercolour painting Weyerhaeuser ad campaign). They volunteer their time to talk with students in elementary schools and offer public information nights on current forestry topics. UBC and UNBC offer educational outreach programs to high school students to educate them on what forestry is and what foresters do, as well as current topics on MPB, fire, and ecology (UNBC that is.). Therefore, there is much effort and consideration given to changing these forestry stereotypes; however, is public perception really changing? This problem is exemplified in larger urban centres far removed from actual working forests.

Future consideration to this impediment must be given to reduce its influence on good forest management. We are obligated as professionals to turn these perceptions around. We, as a profession, are striving to achieve environmentally sound, responsible forest management that encompasses social values. What more must be done? I believe that there should be community outreach foresters, who are on staff at both the government and industrial level. They need to sit down at a booth in the local and talk about forestry issues. It's simple. It's not high-tech. It does not involve strategic planning objectives or set legislation. They need to visit schools and talk with students of all ages. I believe that the effect will be noticeable.

In summary, good forest management is a goal that all foresters want to achieve. I believe we are on the road to achieving that goal, but are hindered by a few obstacles or impediments along the way. Though seemingly unrelated, the MPB epidemic and public perception are two such factors that impede this goal. However, the public perception about the MPB epidemic are closely linked. In time, we as forest managers will enter yet another phase of forest management... hopefully it will be a good one!

Question 10 (Essay)

- a) Explain the difference between growth and yield. What does a forest planner need to know about growth and yield in order to prepare and defend a credible long-term strategic plan? Of what importance is this difference to forecasting future forest conditions, particularly as it relates to standard practice in British Columbia? (4 marks)
- b) You have been charged with developing a statistically sound method for monitoring changes in forest conditions relative to those projected in the forest plan, to account for actual changes in a variety of species habitat conditions, changes in the distributions of seral stages, and changes in the quantity and quality of timber. What are the key characteristics of the design of such a system? Justify your answer. (6 marks)

Answer 1 (scored 9)

In terms of a tree, growth is the additional biomass (i.e. foliage, branches, stems, roots) that is put on by the tree. In merchantable terms, growth is the additional "wood" on the tree over time. Growth is usually expressed as $m^3/year$ for a tree and $m^3/ha/year$ for a stand. Yield is the total amount of biomass or wood in a tree; it's usually expressed as volume (m^3) or biomass (kg).

In preparing a strategic plan, I must clearly know what the objectives are regarding growth and yield (G & Y) from my employer. I must also be aware of the factors affecting G & Y such as species, site productivity, soils, terrain, slope, forest health conditions including potential pest damage in the future; the role of natural disturbance; stand competition and density, and abiotic considerations for wind throw, freezing conditions, and drought. The importance to the distinction between G & Y is that maximizing one factor does not equate to maximizing the other. For example, maximum growth (rate) may be achieved when the stand is mature or at maximum annual increment (e.g. at 80 years), but this does not mean maximum yield- the older the stand (prior to stand break-up), the more yield you'll get.

In terms of standard practice in BC, the annual allowable cut in some way represents the sustainable growth of an area (with considerations to social, economic, and ecological value). However, people may think of it as the amount of yield you can cut every year.

In designing a statistically sound method for monitoring changes in forest conditions, I must exercise independence, competence and accountability. I must not misrepresent facts and only practice within my scope of experience, education, and training. I would consult other qualified professionals such as RPBios and experts such as a statistician.

The design of the monitoring plan should be technically and scientifically sound, clean, variable, and measurable, is rationale, free from errors or omission and reviewed by my peers or experts. The design requires clear definitions and monitoring objectives regarding species habitat conditions, seral stages, and quantity and quality of timber. I may need to consider consulting the public and government regarding their interests and legal policies. For example, for species habitat conditions it may require that a minimal amount of coarse woody debris and stand type be left in a harvest block (or landscape unit). The design also requires a clear boundary of the area the design will be implemented. This will require a map. Furthermore, the design will require a sampling system (e.g. random or stratified) and further analyses (e.g. regression, multivariate, etc). I would

consult a statistician to determine the best method to employ. The plan would also require a schedule in terms of what, when, who and how often to sample.

When I implement the plan, I will hire trained, competent and reliable technicians (such as RFTs). I would also develop and provide a standard operating procedures, checklists as part of the company' Environmental Management System, the monitoring plan and a contingency plan. (e.g. in case of emergencies a contact number) to my crew. I would also ensure that a pre-work meeting took place before sampling.

As part of the monitoring plan, it is important to include results, outcomes, lessons learned, and tasks for future improvement. Risk assessments should also be provided as well as identified opportunities for a feedback loop for adaptive management and continuous improvement.

Question 11 (Essay)

As an RPF for a licensee you have responsibility for fire management planning.

As part of the Wildfire Act and Regulations a licensee conducting industrial or high risk activities has obligations for managing wildfire.

As a matter of professional due diligence, what do you need to do to meet your potential obligations and mitigate potential liabilities under the new Wildfire Act and Regulations? Be specific as to the types of information you need, and the range of preventative and suppression measures which you must plan.

(10 marks)

Answer – This particular question was not answered by enough examinees to provide examples of at least one or two good answers.

Question 12 (Essay)

You are a forester working in Crown forest tenure with a portion of the operating area in a community watershed. A weather event over the weekend has resulted in significant volumes of windthrown timber within your operating area. During a field review of the damage, you identify an area of windthrow on the main S2 creek channel within the community watershed portion of the tenure. There is a length of the channel with a significant volume of windthrown timber in the channel. Though the timber is not obstructing flow at the time of the field review, you know from experience that the creek swells during spring freshet to a degree where the windthrown timber would create a significant obstruction to flow and the potential for channel re routing and siltation. It is early fall, and freeze up is imminent.

Describe your course of action and why, referencing relevant statutes and policy. What are your professional responsibilities?

(10 marks)

Answer 1 (scored 9.5)

S2 stream- within community watershed blow down in stream- spring throw

Code of Ethics

11.3.1 advocate and practice good stewardship

11.3.3 regard for existing legislation

11.3.7 – 11.5.4

Professional Practice- Competent and Integrity

Water Quality Objective- increased siltation- decrease water quality

MOE- non salmon bearing- consult

MOF- seek variance under FPC to harvest timber- meet results and strategies under FRPA for stream and fish protection

As a forest professional, I have a responsibility to ensure prescribed forest activities protect public values, and promote forest stewardship. In this situation I have an S2 stream located in a community watershed, which has experienced a wind event. This wind event has caused a section of timber to blow down into the creek, it is expected that during the spring runoff this blow down could obstruct the stream and cause siltation. First I am assuming this timber is part of the Riparian Reserve Zone that is mandatory along a previously harvested block. Then I would determine if in fact I am competent in making these assumptions about the possible effects of the blow down in the creek (Sec. 11.5.4). I would consult with a fisheries and sediment specialist to get their professional opinion about the situation. If the qualified registered professional also believed that the blow down would have negative implications with water quality and fish passage, I would have an ethical, professional and legal obligation to correct this incident.

My next step would be to create a plan to remove the down timber that would meet my professional (Sec. 12) and legal obligations (Sec. 11.3.5). My legal obligations with regards to the water quality and community water sheds would stem from water quality objectives (WQO). WQOs set out the safe levels of substances for the protection of water use, with regards to turbidity, and organic

matter water temperature. I also have a legal obligation under the Fish Protection Act which ensures that fish and fish habitat are sustained for present and future generations. As a forest professional I must act with integrity and competence and be held accountable to meet public values and promote forest stewardship. I am also accountable to meet the results and strategies that were approved within the Forest Stewardship Plan. I have now created a plan with the help of QRP. I would then consult with community water users, MOE and MOF. I would discuss the reasons for harvesting the S2 stream including to maintain fish passable reach and water quality. I would also seek input from these resource users in the final plan before implementation.

Upon approving the plan I would go through a number of processes to ensure due diligence. This would include working with appropriate QRPs, hiring qualified logging crew, and logging clearing optimum seasonal condition (frozen ground). I would also set up a monitoring system to ensure water quality and fish habitat were not affected during harvesting. Finally I would document all actions and discussions surrounding this activity.

Answer 2 (scored 9.5)

On completion of the field day in which I discovered the wind thrown timber was in the S2 creek, I would immediately start to determine the best and most professionally sound course of action. As a professional I have a responsibility to the public and my employer or client whom I work for.

The first thing I would do is to inform my employer of the problem and the potential harm that could occur. Through meaningful dialogue, we would determine the correct course of action, to ensure good stewardship of the community watershed. Being the water quality is the number one objective; any action that is taken must ensure that no detrimental impacts to water quality occur.

Bylaw 11.3.1 is "to advocate and practice good stewardship of forest land base on sound ecological principals to sustain its ability to provide those values that have been assigned by society." In this case water quality is the value assigned by society. To ensure that I am performing due diligence and abiding by bylaw 11.3.6 "to work to extend public knowledge of forestry, and promote truthful and accurate statements on forestry matters," I would hold a public meeting with the community that would be affected by this wind throw event. This meeting will allow the public to express their concerns and allow us to explain the proposed management strategy. We will take any concerns that the public may have and alter the plan accordingly.

Of course, before we hold this public meeting, I and my colleagues need to obtain all the background information, such as field data and legislation, in order to express a professional opinion only when it's founded on adequate knowledge and experience (Bylaw 11.3.9).

Field data would be required to indicate the actual number of trees that have blown over and would be removed and, how close are they to the creek. Is it just the tops so a skidder will not go into the creek to remove the tree? What are the slopes, can a machine even get the trees, and is a yarder required? This data will help to prepare a plan on how to remove the trees and what equipment is required. Other information that will be useful is if other "standing" trees are required to be removed to remove the wind thrown trees. Will this cause sedimentation?

Other background information that I must be aware of is any legislation. Bylaw 11.3.3 says that I must have regard for existing legislation, regulation, policy and common law...." The Forest and Range Practices Act (FRPA) sect. 8.2 outlines the objectives set by government for water in

community watersheds. The results and strategies to be consistent with this objective set by government will be described in the tenure holders Forest Stewardship Plan (FSP). The relevant section of the FSP must be consulted to ensure any course of action is consistent with the strategies and results for water in a community watershed.

I would also consult with the Drinking Water Act and the Drinking Water Protection Act to ensure that the management plan does not impede these two acts. I would also hire any qualified registered professionals to assist and recommend the proper course of action. This will add to my due diligence defence.

\Once the required field data has been collected, the required legislation and FSP was examined for consistency, and the community was informed and any changes reflecting their views was taken into account the first draft of the plan could be prepared.

This draft will be reviewed for mistakes and once again presented to the community. A final draft will be signed and sealed by either myself or another RPF who will be held accountable.

Any removal of trees will commence on frozen or snow pack ground to ensure the least amount of seal damage and potential sedimentation. A monitoring program will also be setup to ensure no increase in sediment that would detrimental to water quality. Once the trees have been removed a community meeting will be held to discuss the results of the plan.

Question 13 (Essay)

There are no forest road regulations under the Forest Range and Practices Act (FRPA) that specify what you must do when planning and constructing forest roads. As the professional forester responsible for all aspects of forest development planning and operations in a forestry operation, what would you consider as you plan, design, and construct roads? Why?

(10 marks)

Answer 1 (scored 9)

The results based nature of FRPA doesn't specify what you must do when planning and constructing forest roads. This allows the professional to use his independent professional judgement in doing this. Being a professional I will be held accountable for the quality of the road, the assessments, recommendations and opinions that I provide. To ensure that I do prepare a professional quality plan that is constructed correctly there are many things I must do.

First off, I must determine if I am competent to do these aspects of road plan, design, and construction, as per Bylaw 11.3.7. If I am not competent I am obliged through Bylaw 11.5.4 to consult someone who is. Assuming I am competent, I would first look into the legislation concerning roads to ensure I am following the practice requirements that relate to roads in the FPPR, specifically: Sec 35.3 which deals with soil disturbance limits; Sec 37 which states that primary forest activity cannot cause a landslide. Sec 39.1 relates to maintaining natural drainage patterns; Sec 40 which states exposed soil must be re-vegetated. Sec 36 which establishes permanent access limits at 7%; Sec 50.1 which relates to roads in Riparian management areas; Sec. 55.1 relates to stream crossings; Sec. 56 [1 (2 + 3)] relates to maintain fish passage; Sec 57 in regards to timing in fish streaming; Sec 59 protecting water quality; Sec 62 relates to roads in a community watershed; as well as all of part 5 of the FPPR which relates specially to roads and road structures. Once I have a complete understanding of the legislation, I would go to the field and plan the road. I would consider the slopes it is on and if once again needed must consult a professional engineer to assess terrain stability. I would assess where proposed road is and determine if there are any potential negative impacts. If there are any crossings I would get a professional engineer to plan, design, and construct them unless they are simple crossings that I am competent to design, as outlined in the guidelines for professional services in the forest sector-crossings. Once all the planning is completed I would design the road to ensure the safety of all users as outlined in Sec 72 of the FPPR and 11.3.10 of the Code of Ethics. I would design the road considering all of the previously mentioned legislation as well as any commitments made in the Forest Stewardship Plan. When the road is being constructed I would ensure the contractor is well trained and has either demonstrated to me in the past that he is competent to build roads or, I would ask for a resume and confirm through other previous employers. I would maintain field inspections throughout. Before starting I would have a pre-work to ensure the contractor knows all of the relevant legislations, is clear about the plan and understands all of the objectives. I would include any other professionals that need to be there during the pre-work and construction. I would do several field checks to confirm compliance with the plan and ensure I am there while any of the riskier areas are being completed.

Before construction I would ensure my quality plan is professionally reviewed, is consistent with my FSP and that I have a site plan as well as an approved road permit.

Question 14 (Essay)

You are providing professional advice to a woodlot licensee who has a challenge. During a previous cut control period (predating the Forest Practices Code of BC Act, and current Forest and Range Practices Act), the licensee harvested their entire allowable periodic harvest using an array of partial cut systems. The systems were prescribed using the best information of the day and have been largely successful at addressing non-timber values associated with the management unit, namely objectives associated with fish habitat in a number of S4 streams, terrestrial habitat structural diversity, and visual quality. However, the regeneration performance within the partial cut systems has been sub-optimal. A number of management units are likely not going to achieve late free growing date obligations despite various treatment interventions during the regeneration and free growing periods.

a) What is your advice to the woodlot holder? What are the implications of this dilemma to the licensee (especially for future timber yield)? What are the options available to you to adapt these prescriptions and return the management units to more successful stand development chronologies?

(6 marks)

b) Briefly explain how this scenario is relevant to forest management in British Columbia.

(4 marks)

Answer 1 (scored 9.5)

A woodlot owner is obligated to meet his silvicultural contract obligation to bring this stand to free growing, as per the stocking standards of the silviculture prescription. Penalties may be imposed for not meeting these obligations.

It appears in this case that the licensee was diligent in attempting to promote good forest stewardship. The silviculture systems provided for good non timber values to be addressed, and various attempts were made to meet the FG obligations. I would advise the woodlot owner to document all of the management considerations and activities to determine if there is sound rationale to apply to amend the stocking standards to alleviate any penalties. This may include either extending the LFG date, or reducing the standards.

I would need to know what the objectives of this silviculture system were, what the current status and health of the stand is, its ability to contribute to a second rotation, and considering the current context; what are current values, resources zones for the area before proceeding with the amendment.

The implications of not meeting FG obligation can and do impact future AAC determinations. When figuring AAC determinations, the time and status of meeting FG and is one input to determining future yields. Establishing poorly stocked plantations can significantly impact long term yields, as it is these stands that will be contributing to the next harvest term.

There are two general management options. To accept the stand as it is and accept the long term consequences. This may be chosen if this action is deemed to best address other values in the area and/or if associated reclamation costs do not support future expected yields.

Returning the stand to a more successful development may entail further thinning or harvesting to create better light conditions. I am assuming that other attempts such as mounding, brushing, and

fill-planning with appropriate species were unsuccessful and likely will continue to be unsuccessful. This will involve a detailed plan that will address future stand conditions, and if repeated harvest entries are planned for. Harvesting levels in this case should contribute to the current AAC term. Detailed stand characteristics and forest health must be used in developing these plans.

This situation is becoming increasingly important in BC, as more and more operations are using some form of variable retention silviculture systems to address other forest values. This becomes increasingly complex when management systems were designed to meet social concerns opposed to clear-cutting based on visual and often un-founded scientific data.

While variable retention systems have increased significantly since 1998 (MacMillan Bloedel announcing no longer clear cutting) due to public concerns, especially on the coast, there is still very little growth and yield data- (long term data) to guide management considerations, including AAC determinations. Mario Di Lucca, RPF in Forum Sept/Oct 2004 states the less of growth and yield is proportioned to the amount of retention (15% loss from 15% retention). However, he recognizes that other factors such as wind throw pest and disease and conifer competition losses are largely unknown. Ultimately, the impacts of retention options to TSR are not yet well known, and further research analysis is required.

Retention systems are important, however, as they may provide valuable habitat and social and biodiversity requirements while still addressing timber-economic values. In order to properly implement, we must have specific goals or the stand, and further information of impacts.