

2012 RPF Registration Exam

This package contains the exam questions and key points (in italics) listed after each question that may be used or referenced for developing good answers. This list of key points is meant to provide direction to members on areas for further study in regards to the exam questions. It is not meant to be a definitive answer to each question and a candidate may well come up with other valid points.

Question 1 (Essay)

You are an RPF who has been hired by a mining company to develop one of their mining sites. You are engaging in the lay out of the roads, as well as developing the camp location, and mine site. You also work with the government to acquire permits and licenses to develop the land for the mine, and its associated infrastructure.

- a) What aspects of this work fall within the practice of professional forestry? (4 marks)
- *Anytime you are working with forests, forest lands, forest resources, and forest ecosystems as per the Foresters Act. Even though you are not managing for the objective of (perhaps) traditional forest products, you are still working with forest resources, and because of your specialized skills as identified in the Foresters Act, you are practicing*
 - *General discussion of the Foresters Act and reference to specialized education and training*
 - *Reference to professional services and documents that don't just have to be about "timber", can also be about other forest resources and still fall under the practice (laying out a road to the mine, reforesting a reclaimed mine site, advising on operations to mitigate impacts to non-timber values, applying for tenures and permits, etc)*
 - *Examples are helpful but not necessary*
- b) As a forest professional working for a non-traditional employer, what are your professional and ethical obligations? (3 Marks)
- *no different than obligations working for a traditional employer*
 - *discussion required here about professional and ethical obligations as per Code of Ethics and Standards of Professional Practice*
- c) How are they determined? (3 Marks)
- *determined as you would if you were working for a traditional employer*
 - *Code of Ethics, Standards of Professional Practice, having a sound rationale and meeting "best practice standards" of what peers might be doing, legislation and policy guidance, scientific research*

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Question 2 (Essay)

- a) Discuss what is meant by the term Not-Sufficiently Restocked (NSR) and the issues and resulting implications around NSR.

(5 marks)

a) i) A version of at least one of the following definitions should be provided, ideally with some reference to the specific content of stocking standards, the source should be indicated, and there should be some commentary on the different categories of NSR by disturbance type, date and responsibility.

Not satisfactorily restocked (NSR) area "An area not covered by a sufficient number of well-spaced trees of desirable species. Stocking standards are set by the B.C. Forest Service. Areas harvested prior to October 1987 and not yet sufficiently stocked according to standards are classified as backlog NSR. Areas harvested or otherwise disturbed since October 1987 are classified as current NSR."

<http://www.for.gov.bc.ca/hfd/library/documents/glossary/Glossary.pdf>

Not satisfactorily restocked (NSR): Productive forest land that has been denuded and has not been regenerated to the specified stocking standards for the opening.
(Silviculture Surveyors Manual)

Not satisfactorily restocked (NSR): The term NSR has been used by some to describe all of the forests where there might not be a 'satisfactory' number and type of trees. However, at present the government uses a much more constrained, administrative meaning of NSR. First, the government only uses the term NSR to apply to the Timber Harvesting Land Base. Beetles and fire have affected a substantial amount of forest in areas where there is no current intent to harvest, but the government does not consider these areas when assessing the amount of NSR.

Additionally, the government only uses the term NSR to describe areas:

- that do not meet expectations because there are not enough live trees (based on a survey and comparison against a standard); and
- where there is some obligation or intent to correct the situation; that is, to restock the area.

<http://www.fpb.gov.bc.ca/WorkArea/DownloadAsset.aspx?id=2147483870>

a) ii) Issues and resulting implications, some examples: Licensees are obligated to regenerate areas they harvest (post 1987). The government is not obligated to regenerate land denuded by wildfire/insects/disease and prioritizes reforestation based on economic return. MPB has damaged 17.5 million ha. Current inventories do not reflect MPB damage, leading to uncertainty about the level of NSR. This uncertainty has implications for AAC determinations and for licensees with 3rd party certification, and whether non-timber objectives can be met, carbon management being an example.

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Sources for the issues identified should be indicated in the commentary. There are plenty of recent sources on NSR-related issues, including:

Forest Practices Board backgrounder: <http://www.wsca.ca/Media/Multimedia/Feb%203%20-%20NSR%20-%20FPB%20Backgrounder%20-%20Marvin%20Eng.pdf>

ABCFP http://www.abcfp.ca/publications_forms/BCFORmagazine/documents/BCFORPRO-2011-3_AllArticles/BCFORPRO-2011-3_Britneff.pdf

Stocking surveys:

http://www.for.gov.bc.ca/hfp/silviculture/Surveys/SilvicultureSurveyProceduresManual_April_1_2010.pdf

Some interesting quotes from Hansard: <http://www.leg.bc.ca/cmt/39thparl/session-4/pac/hansard/P20611a.htm>

b) How is the stocking status assessed and how do professional judgment and accountability factor into the assessment of NSR?

(5 marks)

b) i) There are two ways of assessing stocking status – forest inventories (naturally disturbed areas and areas previously declared free-growing), and silviculture surveys (regeneration and free-growing surveys). The procedures for both methods should be outlined along with the role of stocking standards and sampling in these surveys.

ii) Professional judgment and accountability: Inventories and silviculture surveys should be conducted by qualified surveyors. Results of these surveys should be accurate, properly analyzed and reported (to RESULTS for regeneration and free-growing data). RPF's are accountable for the content of reports and decisions based on inventories/silviculture surveys. RPFs' should prescribe remedial action where reforestation obligations are not likely to be met, or are not being met, and under specific circumstances this may include amending the stocking standards. In all of the preceding, expectations of professional competency, due diligence, good stewardship and advocacy for improved practices and policy pertain.

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Question 3 (Short answer)

- a) Considering wood volume only, how would you define sustainability of a forested area? (2 marks)
- Harvesting rate (volume) is in balance with the growing capacity of the harvestable land base.*
- b) Given basic average growth and yield information, how would you calculate a sustainable rate of harvest for the above question? (1 marks)
- With average figures, the rate of harvest is the mean annual increment (mai) for the operating rotation times the operating area*
- Alternatively, if working off of a cumulative volume to age curve, the calculation is volume per hectare at rotation age times average area harvested annually.*
- If average information is not available, the exercise is the same for the components (groupings of growth characteristics) and then summing them.*
- c) Given the objective of managing for several resources, including the forest, for sustainability, expand on your definition in (a). (2 marks)
- When adding objectives for non-timber resources, the sustainability objectives can include:*
- a. Area removed from the harvestable land base: Any reduction in area will reduce the rate of harvest.*
 - b. The extension or reduction of rotation: If mai at culmination was originally used, either an increase or decrease of rotation years will decrease mai.*
 - c. A change to recoverable volume at harvest due to retention: Cumulative volumes will need to be adjusted.*
- For the identified objectives, sustainability becomes an exercise in optimization.*
- d) How is forest sustainability handled in provincial legislation? In your opinion, how successful are we in achieving sustainability goals? (5 marks)
- Check any references given. The question asks for an opinion which MUST be presented and supported.*

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Question 4 (Essay)

What are your professional and legal responsibilities with regards to management of Identified Wildlife Species and Species at Risk?

(10 marks)

A good answer could begin by describing/defining what is meant by "Identified Wildlife Species" and "Species at Risk".

- *Species at Risk include endangered, threatened or vulnerable species.*
- *Identified Wildlife Species include Species at Risk and Regionally Important Wildlife.*
- *Recognize that in addition to endangered species we also must manage and identify threatened and endangered ecosystems.*

A good answer could then look go on to identify the relevant authority.

- *Described under the Identified Wildlife Management Strategy (IWMS) provided for under the Forest and Range Practices Act (FRPA).*
- *IWMS "provides direction, policy, procedures and guidelines for managing Identified Wildlife".*
- *"Identified Wildlife are managed through establishment of wildlife habitat areas (WHAs), and the implementation of general wildlife measures (GWMs) and wildlife habitat area objectives, or through other management practices specified in strategic or landscape level plans."*
- *"The IWMS applies to all Crown land regulated by the FRPA, as well as to private land that is subject to a tree farm or woodlot license. The IWMS addresses only forest and range practices regulated by the FRPA."*
- *Discuss the application of the federal Species at Risk Act in BC.*

Identify and discuss legal and professional responsibilities of a practicing forest professional with respect to Identified Wildlife Species.

- *Follow the provisions for managing Identified Wildlife Species identified in a higher level plan.*
- *Appropriately consider Identified Wildlife Species in the development of higher level and site level plans.*
- *Appropriately consider the Species at Risk Act.*
- *Keep up to date on and appropriately consider the work of COSEWIC in the listing and designation process for endangered species*
- *Reference the conservation data centre and the use of this data and the difference between red blue and yellow listed species.*
- *Reference the ABCPF guidance document titled "Managing Species at Risk in British Columbia" and discuss how a forest professional follows this professional guidance.*
- *Reference the need to review any relevant species recovery plans.*
- *Reference the need for effective monitoring and adaptive management.*

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Question 5 (Essay)

Climate change is impacting forest health and productivity. Several mitigation strategies have been proposed including facilitated (assisted) migration.

a) What should be considered when making decisions about seed and species transfers?

(5 marks)

Forest health is a major issue that should be mentioned in a response. There are several ideas here:

- Moving plants from one place to another may help with adapting to a changing climate, but it may also expose a trees to biotic agents that they haven't had to deal with historically and therefore have a limited if no evolved defense response.

- moving plants may also enable pathogens or insect pests that are seed-borne or systemic to be moved into areas where they previously haven't existed.

Related to forest health is the adaptation of tree provenances to different climates. We often tend to work with mean climate variables in planning, but it is the extremes that challenge trees the most. Southern range species may be adapted to warmer climates that develop in the north, but they may not have a tough enough cuticle or sufficient lignin-based defenses to withstand extreme cold temperatures that may still occur even as the climate warms.

Similarly, biodiversity could be affected – in terms of genetic diversity, species diversity and ecosystem diversity. It is most likely that different species brought into an area where they haven't been before will bring in different symbionts, and will have different competitive abilities and characteristics than the native species. This could lead to a change in ecosystems and their function. Habitat types may also be altered to the benefit or detriment of vertebrate and invertebrate animals and other plants.

Productivity of the migrated species – will it meet expectations for timber supply? For carbon uptake and fixing? Does it have appropriate wood properties for local mills to be able to use?

Any other thought(s) that make sense and are justified could contribute to a good answer.

b) What tools can be used to assist in these decisions and what is your role as a forest professional with respect to facilitated (assisted) migration?

(5 marks)

Tools - Research findings would be an obvious one – quite a lot of work has been done on species suitability and species response to climate.

- climate models that predict change over time would be another – should discuss some of the weaknesses of these models and their underlying assumptions.

- literature on forest health agents and expected responses to climate change – there are several synthesis type documents that have been prepared in Canada and the US, and in Europe, about expected impacts of climate change on forest health agents.

Role of forester – to not just jump on the bandwagon, but to be informed about risks

- Suggest smaller pilot projects at first

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- *Monitor or advocate for monitoring programs*
- *Learn about costs and benefits*
- *Almost anything would be ok here if it was justified.*

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Question 6 (Short answer)

You are a forest professional employed by a forest tenure holder. As part of your duties you inspect a road construction project being conducted by your employer's contract road crew. You discover that they have diverted a small fish stream so that it flows 20 m down the ditch line to a large culvert that had been installed to accommodate an adjacent larger fish stream. In its natural state the small fish stream had originally joined the large fish stream 50 m below the road location. What are your professional and legal obligations?

(10 marks)

Suggested Responses

- *Determine whether the diversion has been authorized. Is there authority under the cutting permit or from Fisheries and Oceans to divert the stream? If authorized, determine what legislation applies and ensure compliance with any other relevant legal obligations and document the results of the inspection. If the diversion isn't authorized, stop work in the stream and notify road foreman/contract supervisor/tenure holder immediately.*
- *Determine whether any mandatory reporting obligations – that is, reporting to a government agency - apply as a legislated requirement or as a permit/contract obligation. If so, speak to the tenure holder about fulfilling this obligation. If there is no legal obligation to report to government, discuss with tenure holder the pros and cons of self-reporting. Factors such as what is best stewardship practice, maintaining future relationships of trust with government agency, potential penalties, costs etc. should be considered. The situation presents an ethical dilemma. Should the forest professional advise government authorities if the tenure holder decides not to? The concept of balancing competing duties in the Code of Ethics (11.2 – responsibilities to public, employer, profession, other members; 11.3.4 stewardship obligations; 11.5.2 not to disclose confidential information except as required by law) should be discussed briefly.*
- *Photograph the site and document the results of the inspection. Gather and preserve any information that may be helpful in establishing a due diligence defense for the tenure holder.*
- *If a decision has been made not to advise authorities, the forest professional should discuss with the tenure holder the pros and cons of taking action to mitigate the damage to the site. Factors to consider include legal (such work in the stream would likely be unauthorized), and stewardship-related (loss of 50 m of fish habitat, is there an appropriate "fish window", hydrology vs. biology, impacts to fish vs. non-fish resources).*
- *If government compliance and enforcement (C&E) staff get involved, the forest professional should take his or her cue from the tenure holder with respect to the degree of cooperation to provide. The forest professional may not, however, knowingly obstruct or mislead government staff and should so advise the tenure holder. A reference to s. 97 of FRPA, which makes it an offence to intentionally obstruct or mislead, would be helpful here. The*

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forest professional may wish to recommend that the tenure holder should get legal advice as to what constitutes obstruction or misleading.

- *Take steps to avoid a similar occurrence in the future. Assess what went wrong. Recommend to tenure holder that an environmental management system be developed including provisions for standard operating procedures, crew training, pre-work conferences, adequate supervision etc., or if one is already in place, it should be amended to specifically address the problem that arose here.*
- *Any other appropriate responses.*

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Question 7 (Essay)

Bylaw 11.3.7 states that it is a duty of a member "to practice only in those fields where training and ability make the member professionally competent."

a) How can you determine if you are competent to practice in a particular field of forestry?

(5 marks)

A good answer should include aspects of both self-assessment and external assessment.

Key Points

- *Dictionaries variously define competence as: properly qualified; answering all requirements; having sufficient capacity, ability or authority; possessing the requisite physical, mental, natural, or legal qualifications; sufficient for the necessities of the work.*
- *Competence includes sufficient knowledge and experience, appropriate judgment, discretion, and due care, combined to produce work which is correct, complete and clear.*
- *Professional competence requires members to remain current in any field in which they practise, and may require members to demonstrate or define how they have maintained or established their professional competence. Refer to the ABCFP continuing competency program on the website.*
- *Competence goes beyond formal qualifications. It has to do with sufficiency of qualifications to deal with the matter in question. It includes knowledge, skill and the ability to use them effectively in the public interest. **Three essential components of competence are knowledge, completeness and correctness, and professional care.** Standards for each of these components are described in ABCFP guidance documents.*
- *If a member is unsure of their competence they can ask the ABCFP practice advisory service for advice on competency.*
- *Members can undergo a voluntary peer review of their practice that will provide them with advice on competency concerns.*
- *Reference and illustrate how to follow the ABCFP practice guidelines on the code of ethics section 11.3.7.*
- *Reference and illustrate how to follow the ABCFP practice guidelines on the standards of professional practice including competence.*
- *Consider your formal academic credentials. Are they at least equivalent to others practicing in this field?*
- *Consider your relevant experiential background. Is it at least equivalent to others practicing in this field?*
- *Consider the work done by others in this field. Do you feel confident that you can produce work at that level?*
- *Ask knowledgeable colleagues to assess your work in this field (peer review). Are they supportive of your work products and your abilities?*
- *Consider your work in this field being challenged. Would you feel confident in your ability to defend your work product to your employer/client? In a court of law?*

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b) What mechanisms are available to you to increase or maintain your competence?

A good answer should have a "continuous improvement" flavor to it.

Key Points

- The art and science of forestry is constantly growing and evolving. Practitioners must continually reassess and upgrade their knowledge to ensure continuing competence. This translates into the duty of, and commitment to, lifelong learning that characterizes most professions. Competent professionals continuously evaluate whether they are practising within the limits of their training and experience.
- *Members are required to complete a self-assessment of their practice annually and this should lead to development of an annual plan for continuing education to maintain and increase their skills and competencies.*
- *Arrange to work with others more knowledgeable/experienced than you periodically.*
- *Ask questions of colleagues that practice in the field in which you hope to improve your abilities.*
- *Ask questions of individuals who assess the work you produce in this field. What are they looking for in good work products?*
- *Keep current by attending formal training courses or seminars and by studying relevant materials.*
- *Maintain a practice diary making notes of questions/problems as they occur. Seek answers to those questions and solutions to those problems.*
- Attend the ABCPF annual general meeting.
- Participate in ABCFP voluntary continuing professional development (CPD) program, utilize the ABCFP continuing professional development documentation tool and achieve the ABCFP professional development certificate.
- Keep current on readings in academic, professional and trade publications;
- Participate in discussion groups, technical committees and professional committees;
- Develop a circle of mentors, colleagues and peers with whom to engage in learning and professional development.
- Participate in ABCFP online discussion forum.
- Undergo the ABCFP voluntary peer review process to get professional advice on competency issues and how to improve your competencies.