

The Silviculture Survey Accreditation Process

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Resource Practices Branch

Ministry of Forests, Lands & Natural Resource Operations

Background

In the 1980s a silviculture surveyor certification and training process was developed for British Columbia with the goal of ensuring quality silviculture surveys. However, surveyors and survey contractors were dissatisfied with the process of certification and with the structure of training (an intense five-day course with exam). In 1995, the certification process changed to an accreditation process.

Through a consultative process with Forest Service staff, industrial foresters and survey contractors throughout the province, the MFLNRO has developed the silviculture survey accreditation process.

The silviculture surveyor accreditation process:

- defines the role of a silviculture surveyor
- eliminates prerequisites for the accreditation exam in favor of a self-screening process
- clearly defines performance expectations of silviculture surveyors
- separates the accreditation exam from training so that individuals can design their training to suit their specific needs.

The role of a silviculture surveyor

Silviculture surveyors are experienced field practitioners. They make use of silviculture plans and prescriptions and other information to carry out the following tasks:

- conduct or confirm the stratification of a survey unit
- ensure the accuracy and thoroughness of data collection and mapping
- confirm and identify additional critical site factors that may influence the attainment of management objectives set out in plans
- make preliminary recommendations for future treatment.

Although some silviculture surveyors will be capable of making detailed final prescriptions, this is not their intended role. It is the responsibility of the Qualified Forest Professional in charge to ensure that detailed prescriptions are done by someone with the appropriate level of expertise, and are signed and sealed by a Qualified Forest Professional (RFT or RPF).

The silviculture surveyor accreditation process will ensure that successful candidates have achieved a high standard of competency. It will also provide a pathway for entry into the workforce as a survey technician.

Prerequisites for the accreditation exam

The Silviculture Surveyor Accreditation Process illustrates what is expected in order to pass the exam (see the attached list of performance expectations for the current year). Using this information, surveyors must decide if they have progressed sufficiently in their training to register for the exam. **It is highly recommended that surveyors interested in taking the exam should have a minimum of one field season performing stocking and free growing surveys.**

To pass the examination for silviculture surveyor accreditation, a person will need to meet a range of performance expectations under specific conditions. The criteria for success in each performance expectation have been defined.

Examples of performance expectations include:

- The ability to describe the conceptual basis for stratification. This could be accomplished during a written indoor examination that the examiner would use to judge the participant's understanding of the concept.
- The ability to recognize signs and symptoms of damage to young stands and identify the source as a major pest species group (e.g., rusts, root disease) or as another causal factor such as frost and snow. This could be accomplished in a field or written classroom exercise using slides, lab specimens or field examples. The participant would be expected to answer 80 percent of the examiner's checklist.

It will be up to the individual candidate to assess their own knowledge and skill level prior to registering for the accreditation exam. It is expected that most experienced surveyors will be able to meet these performance expectations.

What does it take to be a silviculture surveyor and how does one acquire the necessary training?

To ensure that individuals have sufficient opportunities to acquire the needed skills and knowledge required for accreditation, the MFLNRO

is supporting training modules that individuals will be able to access from educational resources such as colleges, universities, and private consultants on a course basis. These modules are designed to help participants meet the

performance expectations for a silviculture surveyor.

The knowledge and skills required to meet the performance expectations do not have to be acquired solely through these training courses.

These requirements may come from a combination of the following sources:

- formal education (college, university)
- informal on-the-job training
- on-the-job experience (some will be necessary)
- short courses (offered through various educational facilities).

The MFLNRO supports training for silviculture surveyors that includes the following content:

- soils
- biogeoclimatic ecosystem classification
- basic silviculture surveys
- forest health for silviculture surveyors
- vegetation management
- multi-storey silviculture surveys
- how to determine site index
- stand treatment recommendations

Accreditation exams

Accreditation exams will be offered at the beginning and the end of the field season, in the spring and fall of each year, depending on interest. We suggest you register early to reduce the chance of them being cancelled due to low participation.

The accreditation exam will include a one-day written examination, focusing on general, procedural, technical and practical case studies questions. The second day of the exam will include a complete silviculture survey conducted in the field and submission of a complete survey compilation and prescription that day. **Note that several exam forest health questions and all field sites are regional in nature and it is suggested that individuals select an exam location best suited to their current field familiarity.**

The exams will be marked based on the performance expectations.

The examination process will test the performance of surveyors. If major weaknesses in a surveyor's skill are identified, the examiner will suggest training to address these weaknesses. A major weakness, for example, is where a site has

been poorly stratified with failure to identify a small area with moist compaction-prone soils within a larger mesic area with loamy soils. This error could affect future management and site productivity. When a major weakness is found, the candidate surveyor will be required to rewrite the exam, following further training.

Each time a candidate takes the exam, an exam fee will be charged to cover all examination costs. Dates and locations of the exams will be advertised through the MFLNRO web site http://www.for.gov.bc.ca/hfp/silviculture/Silviculture_Surveys.html as well as other forestry-related associations. Courses available range from 1 day What's New upgrading for present surveyors, to 1 to 10 day survey training sessions.

Examination Re-Write Policy – As of 2009

A candidate will be eligible to re-write a portion of the exam, if the candidate fails 2 or less high priority Performance Objectives, but clearly demonstrated their ability to achieve the balance of the Performance Objectives.

Determination of a candidate's eligibility for re-writing a portion of the exam will be at the examiner's discretion. Eligibility of a candidate to re-write will be recommended by the examiner by identifying which portion of the exam requires a re-write, on the candidates marking summary, which will be returned to the candidate after the first exam.

All re-write opportunities will only be available during a scheduled and running full regular 2-day accreditation exam. Therefore re-written exams will only commence if a scheduled full exam runs.

Re-write candidates must notify the registrar (UNBC) a minimum of 2 weeks prior to the examination day, if they are opting to re-write on that scheduled examination day.

Re-write candidates will only be permitted to attempt a re-write exam once.

Eligible candidates will have up to 1 ½ years from the original exam date to re-write the identified portion of the exam. Failure to re-write the exam in this time frame will preclude the candidate from completing a re-write and will therefore have to complete the entire accreditation

exam again at full cost, in order to become accredited.

The cost for re-writing will be ½ the cost of the regular full two day exam.

Accreditation is not a guarantee

The accreditation process will not guarantee the quality of a silviculture surveyor's work. It is the employer's responsibility to ensure that a silviculture surveyor has sufficient local knowledge and successful past experiences to undertake a project.

Timing of training and exams in the silviculture surveyor accreditation process

Training and Accreditation Exams are offered only as demand dictates. Generally there are exams offered in the spring, and occasionally in the fall. Training is offered throughout the year, but more frequently in the spring.

Questions and answers

Will there be any prerequisites for a candidate to register for the accreditation exam?

No...It is your choice. You will have to review all of the performance standards and determine if you can meet the requirements.

If I am currently a "certified surveyor" do I need to go through this accreditation process?

No...Those whose certificates have not expired on or before December 31, 1994 will not be required to take this exam.

If I have been accredited, will I have to go through a re-accreditation process in a few years?

No...Emphasis will be placed on individuals remaining active in surveys.

Will junior data collectors require any sort of accreditation or prerequisites?

It is likely that survey contracts will state that all data collectors must demonstrate a working knowledge of the biogeoclimatic classification and basic surveys training modules.

When will a survey contract specify the involvement of an accredited silviculture surveyor?

Silviculture contracts will specify the involvement of an accredited surveyor to the requirements specified by the client.

Will the accredited surveyor have to sign each survey and take on responsibility for the survey and the recommendations?

No...Accreditation ensures performance expectations are met and does not imply professional standards and ethics. A Qualified Forest Professional will sign and seal the prescription and will become ultimately responsible for the survey and the prescription. However, the surveyor is still accountable for the accuracy and precision of the survey data collected and critical site factors identified.

Will an accredited surveyor who moves to a new forest region have to be accredited in that forest region?

No...Once accredited, the accreditation will apply throughout the province even though the exam content will address regional and local issues. However, most survey contracts will require a working knowledge of local management issues.

Why was the name of the process changed from certification to accreditation?

Accreditation implies attainment of a training standard. Certification implies a guarantee. It was felt that accreditation was a more accurate term since the process ensures competency of surveyors but does not guarantee their work.

The Silviculture Surveyor Accreditation Program Performance Objectives (Updated Spring 2015)

| PO# | Performance Objective | Conditions | Criteria for success |
|-----|---|-----------------------------------|--|
| 1 | Understand current legal requirements as they relate to silviculture surveys and how to stay current. | Written and field examination. | <u>Written:</u> 75% accuracy. <u>Field:</u> acceptable in the judgment of the examiner. |
| 2 | List the criteria for stratification, and describe why good stratification is important for a silviculture survey. | Written and field examination. | <u>Written:</u> To match 75% of the answer key. <u>Field:</u> acceptable in the judgment of the examiner. |
| 3 | Choose the survey type timing, data to collect, and the sampling method. | Written and field examination. | <u>Written:</u> To match 75% of the answer key. <u>Field:</u> To effectively facilitate the achievement of the stand management objectives and standards in the judgment of the examiner. |
| 4 | Apply alternative survey concepts. | Written examination. | To match 80% of the answer key. |
| 5 | Pre-stratify a sample unit identifying potential strata to be ground checked. | Field examination. | The strata boundaries must reasonably agree with the examiner's. |
| 6 | Ground-check photo-stratification based on both environmental and interpretative features. | Field examination. | To match examiner's previously completed survey, or must not have the potential to negatively impact future forest management and site productivity. Strata greater than or equal to 1.0 ha in size must be identified. |
| 7 | Understand the purpose of and complete a walkthrough. | Written and field examination. | <u>Written:</u> To match 75% of the answer key. <u>Field:</u> acceptable in the judgment of the examiner. |
| 8 | Establish the parameters of the silviculture survey and record them on Silviculture Survey FS 657 field form. | Written and field examination. | Appropriately complete 85% of the key elements of the form in the judgment of the examiner. |
| 9 | Design line and grid plot layout with an appropriate plot distribution on a field map. | Written examination. | Layout and distribution must be to provincial standard. Completed on pre-stratified map only. |
| 10 | Choose an appropriate method to be used to determine site index for the stand and correctly identify site index. | Written and field examination. | <u>Written:</u> Match 75% of the answer key. <u>Field:</u> Using the appropriate method, correctly identify site index. |
| 11 | Identify the texture of a mineral soil sample and explain its implications for management. | Case Study and field examination. | <u>Case Study:</u> Describe the significant management implications of certain soil textures in the judgment of the examiner. <u>Field:</u> For a single soil sample provided, determine the soil texture and the percentage of the three components. Participants will be given a latitude of 20% either side of the determined % sand, silt and clay content. |
| 12 | Identify the % coarse fragments in a sample soil horizon and explain its implications for management. | Case study and field examination. | <u>Case Study:</u> Describe the significant management implications of certain soil coarse fragments in the judgment of the examiner. <u>Field:</u> For a single soil sample provided, determine the % coarse fragments to within plus or minus 15% of that determined by the examiner. |
| 13 | Identify critical factors and explain how they affect the establishment, growth and development of the future stand and the achievement of stand objectives. This will include site limiting factors and management limiting factors such as: frost, soil conservation hazards, soil nutrient/moisture/temperature, forest health agents, non-timber objectives | Case Study and field examination. | Within a reasonable range to be determined by the examiner on a site-by-site basis. |

| PO# | Performance Objective | Conditions | Criteria for success |
|-----|---|--|---|
| 14 | Confirm and verify the appropriate subzone and variant. Provide rationale for decision. | Field examination. | To an accuracy of 100%. |
| 15 | Identify the appropriate site series or site series complex for each stratum within the forest unit. | Field examination. | The stratification must agree with the examiner's previously completed survey, or to the satisfaction of the examiner, must not have the potential to negatively impact future forest management and site productivity. For the surveyed stratum the assessment must be within one of the primary site series. For adjacent stratum identified during the walkthrough the assessment must be within 2 of the correct site series. |
| 16 | Construct a basic field map that identifies: strata boundaries, silviculture and inventory labels, opening number (or cutting permit and block), surveyor name, survey date, north arrow, gross and net areas, map title and scale. | Field examination. | Must contain all key elements. Accuracy per the examiner's judgment of an acceptable basic field map. |
| 17 | Survey to the applicable legal stocking standards and provide recommendations for amendments where appropriate. | Written, case study and field examination. | Within a reasonable range to be determined by the examiner on a site-by-site basis. |
| 18 | Collect and record data on MOF field forms FS 657 and 658. | Field examination. | Appropriately complete 85% of the key elements of the forms. |
| 19 | Identify commercial seedlings and/or mature trees of the commercial species found in the region. | Field examination. | To an accuracy of 100%. |
| 20 | Correctly provide an age for mature and immature trees. | Field examination. | To an accuracy of; 2 years for trees up to 20 years old, 10 years for trees > 20 years old. |
| 21 | Summarize data on Silviculture Survey Summary Plot Summary Card forms FS 659 and 1138A. | Written and field examination. | Appropriately complete 80% of the key elements of the forms. Calculations of averages to within 10% of examiners results. |
| 22 | Interpret stocking standards compared to survey results to determine stocking status and make appropriate administrative recommendations (i.e., establish more plots, label as NSR, SR, FG) | Written and field examination. | Achieve an accuracy of 100% |
| 23 | Construct silviculture and inventory labels. Describe the uses and importance of silviculture and inventory labels to forest management decisions. | Written and field examination. | Achieve 80 % accuracy. |
| 24 | Identify forest health damage, along with the major regional pest species (biotic and abiotic). | Written and field examination. | Achieve 80% accuracy on identification. In addition, successfully demonstrate an understanding of the potential impacts of forest health factors and the damage they cause to the satisfaction of the examiner. |
| 25 | Identify and understand growth characteristics of non-crop vegetation that could pose a potential threat to crop-tree survival and/or performance. | Written and field examination. | To an accuracy of 80%. Successfully demonstrate an understanding of the potential threats posed by non-crop species, in the examiner's judgment. |
| 26 | Recommend treatment options to address identified reforestation limitations. | Written, case study and field. | Select an option, or set of alternative options with justification, which, in the judgment of the examiner, is/are reasonable and effective in achieving objectives. |