

Quality Control Protocol 1

– Quality Assurance Site Visits (assessment) and Mentoring Training for Stand-level Biodiversity and Riparian/Fish Resource Stewardship Monitoring

Rationale

This quality control protocol guides the assessment of data collected in the field. The quality assurance site visit, mentoring training, and its data will:

- verify the quality of the data collected;
- identify potential errors (systematic and ad hoc);
- reinforce learning in the field by narrowing the time gap between formal training and data collection;
- enhance stakeholder confidence in data; and
- continuously improve data collection, decision-making, resource indicators, checklist design, training, field protocols, and other related activities.

Quality Assurance Site Visit

Methodology (Plan)

Sample size

We re-sample the provincial sample population on a mentoring or quality assurance site visit. The routine monitoring target for stand level biodiversity (SLB) and Fish/Riparian routine sampling is 15 blocks and streams per district. Thus the sample size for QA site visit and the mentoring sessions should provide approximately 43 blocks and 43 streams, for a total of 86 set of data. In an ideal situation, only the blocks that district staff completed the SLB and/or Fish/Riparian assessment (checklist) will the QA site visit assessor perform the QA assessment. If previous assessment was not completed, mentoring will take place.

	Fish/Riparian	SLB	Total
Number of blocks/streams per district	15	15	30
Provincial total (29 districts)	435	435	870
Number of QA/mentoring blocks/streams (10%)	43	43	86

Assessment and verification time frame:

The QA site visit on the cutblocks and streams are conducted within the same field season so that external influences on the cutblocks and streams is minimized (e.g., wintering effects, storms). The QA site visit commenced in September and is expected to be completed by the end of November each year.

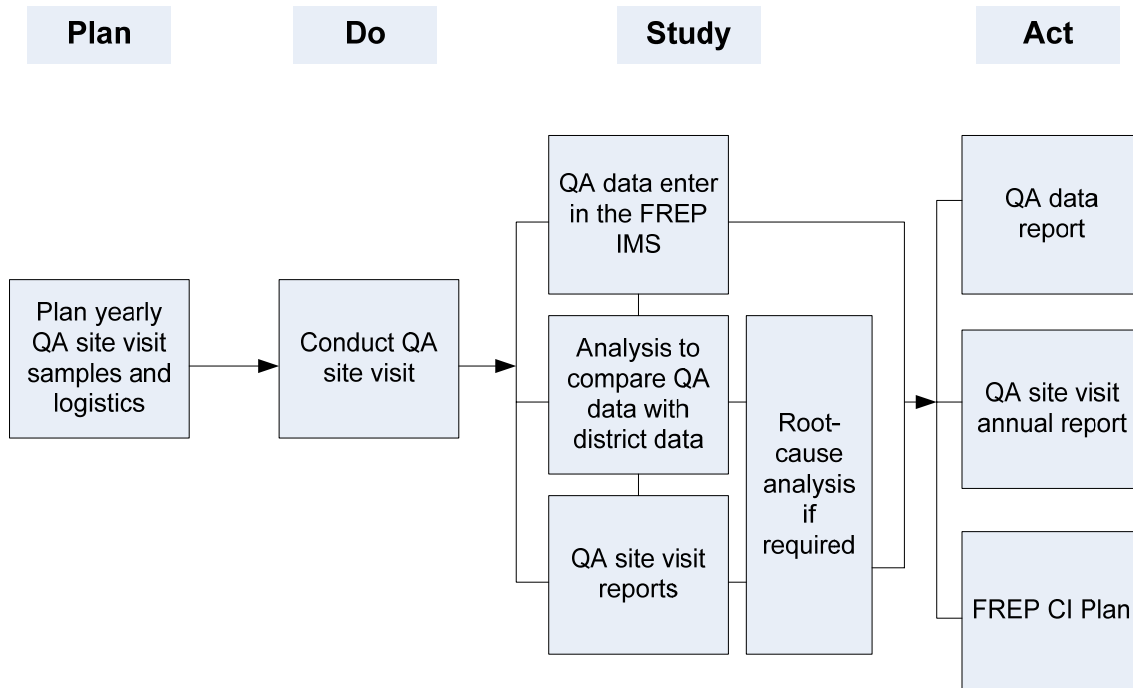
Assessor:

The QA site visit is conducted by the experienced specialists that delivered the training (i.e. trainers, team leads, and district leads) to ensure accuracy, consistency, and bias

control (i.e., reduce subjectivity). The assessor may be accompanied by district field staff to utilize the staff's familiarity of the locations (e.g., site access, plot centre locations); however, this is subject to district staff availability.

Process (Do)

This process map guides the general process of the QA site visit. Plan phase is the design and plan for QA sample, Do phase is the conducting of QA site visit, Study phase is the analysis of QA data and production of reports, and Act phase is the final presentation of all the QA site visit work and implementation of improvements.



Analysis (Study)

1. QA Assessment

The QA assessment examines both the original and the QA site visit data collected using the QA site visit report template and scoring card. For details please see Appendix A.

2. Methods to identify root cause(s) of discrepancies

The Quality and Data Management Specialist and RVTLs deploy methods and tools to find the root cause(s) of discrepancies, including fishbone diagrams (see Appendix B), affinity diagrams, and root & cause analysis.

3. Solutions and improvements

The Quality and Data Management Specialist and RVTLs rank all the causes of discrepancies, and provide solutions and improvements.

Improvement (Act)

The QA assessor will discuss all aspects of the program with district staff. As part of the continuous improvement effort, the QA assessor will record all discussions and feedback so that the Quality and Data Management Specialist can incorporate these valuable inputs back into FREP CI Plan. In this phase, 2 reports and results are incorporated in the FREP CI Plan. The reports are a quantitative assessment on data quality, and a summary report on all the QA site visits for the year.

Deliverables:

1. QA data
2. QA site visit report
3. QA site visit annual report
4. FREP Continuous Improvement Plan

1. QA data is the data collected from the QA site visit. These data are accompanied with the original data collected by the field staff. These data are entered in FREP IMS or in an Excel spreadsheet for analysis and reporting.

2. QA site visit assessment is a scoring template that accompanies each QA data set. There are QA site visit assessment templates for fish/Riparian and SLB resource values. Please see Appendix A for the templates.

3. At the end of the year and for the FREP Continuous Improvement session, an annual QA site visit report is produced to summarize all findings.

4. Prioritized improvements and suggestions are incorporated into the master FREP CI Plan. This is the plan that monitors the implementation of all improvement items.

Mentoring training

Methodology (Plan)

Sample selection

The selection of cutblocks, opening IDs, and/or sites for mentoring training is coordinated between the district staff, the training co-ordinator, and mentoring trainers. Typically the cutblocks are part of the random blocks selected from the Master Random List. In some situations, there are data already collected for the resource value on checklists/

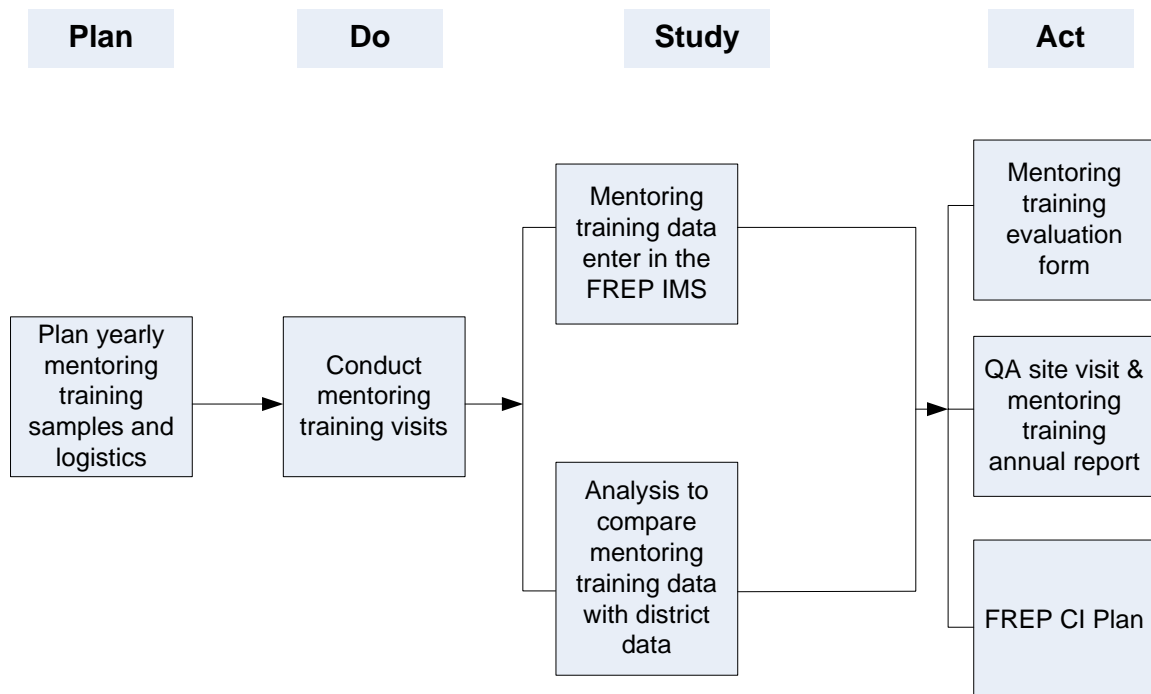
Mentoring Training

Assessor:

Mentoring training is conducted by the resource value specialists (trainers, regional and district leads, and resource value team leads) with the district staff.

Process (Do)

This process map guides the general process of the mentoring training. Plan phase is the design and plan for mentoring training, Do phase is the conducting of mentoring training, Study phase is the analysis of mentoring training effectiveness and data accuracy, and Act phase is the final presentation of all the mentoring training and implementation of improvements.



Analysis (Study)

Mentoring training data are good supplement information for data validation and cleaning. In rare cases, mentoring data can be used to replaced missing data or used as

first-hand data. The mentoring training directly benefits the district staff, with immediate feedback on the data collection.

Improvement (Act)

Each mentoring training session gathers evaluations and trainer's summary report. At the end of the field season, summaries of training, data validation, and mentoring training are collated for the districts. The deliverables are:

1. Field data collected in the mentoring training sessions
2. Completed mentoring training evaluation forms
3. Mentoring trainer's report as part of the annual training and QA site visit report
4. Part of the FREP Continuous Improvement Plan

Appendix A

QA assessment for Stand-level Biodiversity and Riparian/Fish Resource Stewardship Monitoring

QA Site Visit Report - Stand level Biodiversity

QA review by:		Date of QA Review:	
Forest District:		Opening Id:	

Form C: Block Information Date of District Field Assessment (D-Mo-Yr):

Section	Findings/Comments	Action Taken
11. <i>Opening Identification</i>		
12. <i>Innovative Practices</i>		
13. <i>Invasive Plants</i>		
14. <i>Evaluator Opinion</i>		
16. <i>Stratum Summary – if no plots</i>		

Form B: Stratum Summary

Section/question	Findings/Comments	Action Taken
5. <i>Stratum Summary Header</i>		
6. <i>Patch/Dispersed Summary – Patch location</i>		
7a. <i>Reserve Constraints</i>		
7b. <i>Ecological Anchors</i>		

Form A: Plot Information

Section/question	Findings/Comments	Action Taken
1. <i>Plot Identification</i>		
2. <i>Plot Information</i>		
3. <i>Stand Table</i>		
4. <i>Coarse Woody Debris</i>		

Overall Comments and Recommendations:

Tally Verification Field Verified Plot #'s:

Verification Items	# of Accepted Records	Total # of Records	Field Score (%)	Score* (1 – 4)
Tree Tally Accuracy				
CWD Tally Accuracy				
TOTALS:				

Field Measurement Verification Field Verified Plot #'s:

Verification Items	# of Accepted Records	Total # of Records	Field Score (%)	Score* (1 – 4)
Species Recognition				
Tree Classification				
Tree Diameter Accuracy				
Tree Height Accuracy				
CWD Class (1-4)				
CWD Diameter Accuracy				
CWD Length Accuracy				
TOTALS:				

Field Score: Number of accepted records ÷ total number of records * 100

Indicator	Criteria
Tree Tally Accuracy	0 tolerance
CWD Tally Accuracy	0 tolerance
Tree Species Recognition	0 tolerance for tree classes 1-6, tree classes 7-8 must be identified conifer or deciduous at a minimum
Tree Classification	Within 1 snag class type
Tree Diameter Accuracy	Within 10% of measured values or within diameter class range for estimates of true diameter (10cm classes)
Tree Height Accuracy	Within 10% for measured values or within height class range for estimates of true height (5m class interval)
CWD Class (1-4)	Within 1 class type
CWD Diameter Accuracy	Within 10% of measured values or within diameter class range for estimates of true diameter (10cm classes)
CWD Length Accuracy	Within 10% for measured values or within length class range for estimates of true length (5m length intervals)

Overall Quality Assurance Review Scoring*:

Score 1: Weak recognition of Key Indicators (score <70%)
Score 3: High Level of Confidence (score >80%)

Score 2: Moderate Level of Confidence (score >70%)
Score 4: Conforms to QA Standards (score >90%)

QA Site Visit Report – Riparian/Fish Habitat

Forest District:		Opening ID:	
Sample Number:		Stream Class:	
QA Review by:		Date of QA review:	

Stream/Opening Identification

Date of District Field Assessment (D-Mo-Yr):	
Reach location:	Length of Sample:
Field location easily verified?	Channel Depth?
Channel Morphology consistent with gradient and width?	
Retention information complete and in agreement?	

Rating: 0 = disagree with measurements, 1 = weak measurement, affects conclusion
 2 = weak measurement; does not affect conclusion 3 = agreement with measurement

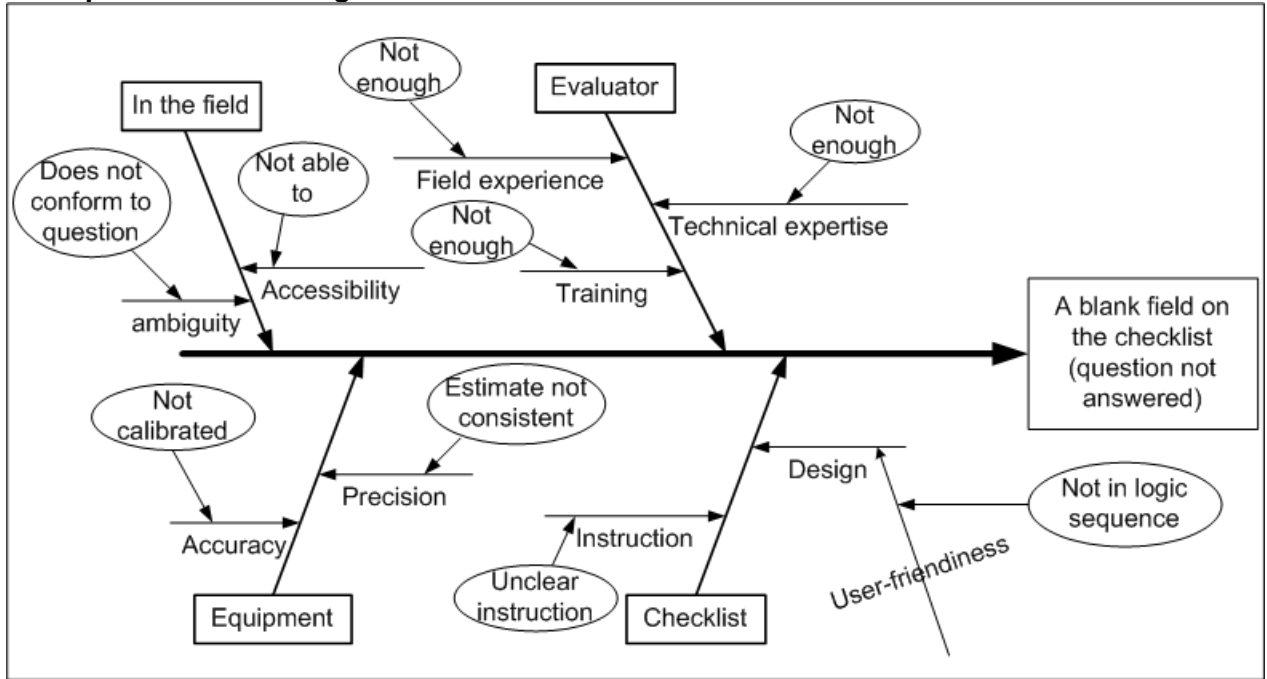
Field data

Section	Describe Findings	Rating
Moss		
Fines		
Benthic Invertebrates		
Shade		
Disturbance Increasers		
Noxious Weeds		
Mid-C. Bars/Sed. Wedges		
Lateral Bars		
Multiple Channels		
Recently Disturbed Banks		
Stable Undercut Banks		
Deep Rooted Banks		
Upturned Bank Root wads		
Recent Debris Accumulations		
Channel Spanning Debris		
Pool Length		
Deep Pools		
Recent Windthrow		
Bare Soil in 1 st 10m		
Bare Soil exposed in 1 st 10m		
Hydrologically connected soil		
Disturbed ground in 1 st 10m		
Hydrologic disturbed ground		
Channel Spanning Steps		
Sed & LWD Storage		
Moss along channel bed		
Non-erodible banks		
Channel Woody Debris		
Surface Sediment Texture		
Steps & Pools, Plunge pools		
Connectivity		
Fish Cover		
Fine Sediment Characteristics		

Bank Soils		
Vegetation Structure		
Vegetation Form, Vigor, Recruitment		
Browsing & Grazing		
		Average Rating:

Appendix B

Examples Fishbone diagram



Root-cause analysis using a process fish bone diagram

