

Forest and Range Evaluation Program Resource Stewardship Monitoring

2006 Quality Assurance Site Visit Report

for

Stand-level Biodiversity Monitoring

and

Fish/Riparian Monitoring



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FREP
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Introduction

Eleven resource values have been identified under the *Forest and Range Practices Act* (FRPA). The **Forest and Range Evaluation Program** (FREP) is mandated to conduct routine evaluations to assess the status of these resource values. A FREP quality control protocol guides data collection during these routine evaluations.

The FREP mandate is to assess the effectiveness of various forest management activities at maintaining and conserving biodiversity and fish/riparian values by evaluating key indicators. These indicators are outlined in the respective protocols for each of the resource values.

Following pilot testing of the protocols for Stand-level Biodiversity and for Fish/Riparian values in 2004 and voluntary monitoring in 2005, all provincial forest districts participated in the FREP routine evaluations in 2006.

Resource stewardship monitoring (RSM) effectiveness evaluations began with training. District staff who participated in the program attended training (formal or refresher) before conducting the evaluations. Formal training began in early May and the final of 12 sessions was completed by mid-June. Once formal training was completed, the district staff implemented the routine effectiveness evaluations on randomly selected harvest openings within their respective districts. Where requested, districts also received additional guidance with their field evaluation — called mentorship training.

Mentoring is an integral aspect to achieving positive quality assurance (QA) outcomes. The trainers mentored the staff by reviewing field methods and clarifying the procedures described in the applicable protocol. Mentoring also provided refresher training to staff who were unable to attend formal training. Mentoring began in late June and the final of 22 sessions ended in September 2006.

Project Purpose

A quality control protocol for “QA Site Visits¹” was drafted to guide data verification processes for FREP. During the 2006 field season, trainer Dean McGeough re-sampled cutblocks that district staff had sampled for Stand-level Biodiversity and Fish/Riparian resource values. This re-sampling, which assessed the measuring and estimating accuracy and precision, is the foundation of QA and control of data quality. Results from the QA

¹ See http://www.for.gov.bc.ca/hfp/frep/site_files/qmngmt/QM_QCP01_QA_Site_Visit_13-Oct-2005.pdf

site visits can also be used to identify patterns of error and recommend solutions that will support continuous improvement.

Scope

Trainer and consultant Dean McGeough delivered training at 6 of the 12 formal sessions and provided 10 of the 22 mentorship visits during the 2006 field season. Mentoring gave trainers an opportunity to review completed assessments with field staff, and to assist with the assessments to openings or streams from the district's random list of sites. All the 2006 mentoring visits are shown in Table 1. In some instances, staff from nearby districts attended these sessions.

Table 1. Mentor visits in 2006

Mentoring dates	Forest district (location)	Trainer
June 19–20	Kalum (Terrace)	Derek Tripp
June 19–20	North Island (Port McNeill)	Nancy Densmore
June 26	Prince George	Derek Tripp
June 27–28	Arrow Boundary (Castelgar)	Bryce Bancroft
June 29–30	Headwaters (Clearwater)	Ken Zielke
June 29	Rocky Mountain (Cranbrook)	Bryce Bancroft
July 11–12	Skeena Stikine (Smithers)	Derek Tripp
July 13–14	Fort St. James	Derek Tripp
July 11–13	Central Cariboo/Chilcotin/100 Mile House	Dean McGeough
July 25–26	Columbia (Revelstoke)	Dean McGeough
July 27–28	Kamloops	Dean McGeough
Aug. 1–2	Sunshine Coast (Powell River)	Dean McGeough
Aug. 12	North Island (Port McNeill)	Dean McGeough
Aug. 8–9	Peace (Dawson Creek)	Derek Tripp
Aug. 10–11	Mackenzie	Derek Tripp
Aug. 17–18	Nadina (Burns Lake)	Derek Tripp
Aug. 17	100 Mile House	Dean McGeough
Aug. 21–22	Fort St. James	Dean McGeough
Sept. 19–20	Fort Nelson	Dean McGeough
Sept. 27	Columbia (Revelstoke)	Dean McGeough
Sept. 25–26	Okanagan/Shushwap (Vernon)	Dean McGeough
Sept 26–27	Nadina (Burns Lake)	Nancy Densmore

Dean McGeough began with QA site visits in July 2006. With the exception of Prince George and Chilcotin, Dean visited forest districts while evaluations were underway, both to assist and mentor staff with their evaluations, and to audit assessments that had been completed. The goal for 2006 was to perform QA site visits for a minimum of 6 forest districts and to review as many as 20 assessments for both the Stand-level Biodiversity (SLB) and the Fish/Riparian (Riparian) values. However, the 2006 QA plan was modified in response to district requests to expand the number of mentorship sessions. As a result of the increased number of mentorship visits, the number of QA site visits completed in 2006 was 15 SLB sites and 17 Riparian samples (Table 2).

Table 2. Quality Assurance site visits in 2006

Forest district	Date of visit	Opening ID visited	Stand-level biodiversity	Riparian area
Prince George	Aug. 20, 2006	1056138	Yes	No
	Aug. 19, 2006	105476	No	Yes
	Aug. 22, 2006	86441	Yes	Yes
Central Cariboo	Sept. 30, 2006	114576	No	2 samples
	Aug. 23, 2006	101847	Yes	Mentor
Columbia	Sept. 28, 2006	76693	Yes	No
	Sept. 28, 2006	84254	Yes	2 samples
	Sept. 28, 2006	93681	Yes	Yes
Fort St. James	Aug. 22, 2006	113789	Yes	Yes
	Aug. 22, 2006	81864	Yes	Yes
Kamloops	July 28, 2006	86239	Yes	Mentoring
Fort Nelson	Sept. 19, 2006	102875	Yes	No
	Sept. 20, 2006	106352	Yes	Yes
	Sept. 20, 2006	106351	Yes	Yes
Quesnel	Oct. 16, 2006	80942	No	2 samples
	Oct. 12, 2006	93445	Yes	No
Chilcotin	Sept. 29, 2006	77220	Yes	Yes
100 Mile House	Aug. 24, 2006	64824	Yes	2 samples
	Aug. 17, 2006	105737	Mentoring	Yes
TOTALS:			15 sites	17 samples

To select sites, the QA focused on openings that the district staff identified as being representative of their sites completed and relatively easy to access, having specific challenges the district requested for review, or fitting into the staff's work plans (sites that were incomplete or near sites needing evaluation). Therefore, the QA site visit also provided additional mentoring when staff participated.

Quality Assurance Site Visit Process

Mentoring

Trainers met with the field staff at the district office and traveled with them to field sites. Trainers observed the staff's planning and block set-up, and then accompanied them in locating each biodiversity plot or riparian reach. Trainers assisted with field data collections by the staff, and audited ad hoc a sample of the field measurements to confirm the accuracy of the measurements. At all times, trainers were available for questions and provided clarification, interpretation, and application of the protocols. When opportunities arose and for increased productivity, trainers also helped the staff to establish plots and take measurements.

QA Audits

Methodology – SLB

Biodiversity plots were randomly selected for review. A plot from both harvest area and patch retention was selected in each cutblock. If issues were encountered, additional plots were reviewed.

Field measurements were verified for accuracy. Plots centres and CWD transects were located. Attempts were made to determine the order in which trees or CWD were sampled; then the dimensions, species, and decay classes were recorded on the Checklist form A. Diameters of standing trees were measured with a steel diameter tape, and CWD were measured with a carpenter steel tape. Tree heights were measured with a Haglof digital clinometer and rangefinder, while CWD lengths were measured with either a steel carpenter tape or a steel logger's tape.

The stratum summaries (form B) and opening summary (form C) were also completed on site following the field reviews. Strata were summarized based on the access and reconnaissance among plots.

Methodology – Riparian

Stream samples were field reviewed by traversing the reach as field marked by the district staff. An overview identified the general condition of the reach. The point sample sites were then located and field data recorded on the checklist. Where discrepancies were identified during the overview, measurements were taken to establish whether the discrepancies would alter the conclusion to the indicators and checklist questions. Where discrete measurements are needed (e.g., bare ground, length of disturbed bank), then measurements were made with a logger's tape or carpenter tape. Benthic invertebrates were also sampled in at least 2 locations to confirm species diversity using the same collection methodology found in the protocol (same dip net and white tray issued to all districts).

The data collected were used to answer the indicators and checklist questions before leaving the field site. Where impacts were identified, overview or walk upstream of the sample determined their source visually.

Quality Assurance Site Visit Outcomes

Without exception, the forest district staff welcomed the mentoring opportunities of the trainers' visits. Having a trainer on site provided opportunity for continuous improvement, refinement of data collection processes, and reassurance to the district staff that their assessments were correct and accurate. Mentoring also provided a forum for field-relevant review of their questions pertaining to the protocols. In general, the level of professionalism and enthusiasm for the RSM projects as demonstrated by the staff is commendable.

Stand-level Biodiversity Monitoring

The following issues were encountered during QA site visit reviews of the stand-level biodiversity sampling process:

- Mensuration accuracy was generally on target, meeting the 10% margin, largely because staff continue to choose to measure most trees for diameter and heights, or measure CWD for diameter and length; or rigorously calibrate their measurements with frequent “estimate then measure” performances. Where measurements did not meet the 10% margin, it was primarily because visual estimation lacked calibration. Missed trees or CWD pieces did occur, but generally plots were well done.
- Tree species recognition was most accurate and consistent for tree tallies than for CWD. Species recognition for CWD was weakest for decay class 4; persons often chose X (unknown) rather than extrapolate (e.g., if in a predominantly pine stand presume CWD to be pine), and often chose not to define CWD unknowns into conifer (Xc) or hardwood (Xh).
- Stratum definition was a challenge where dispersed retention and clearcut treatment units exist. Also, the sampling intensity information within the protocol was expanded but seemed to create some uncertainty about the number of plots to establish.
- Inadequate field marking sometimes complicated verification of CWD data. CWD transects could not be audited when transects were not field marked, or plot centres not flagged. Also, staff must not replicate plot numbers within a cutblock.
- Independent retention patches were not always sampled as unique patches, but rather “grouped” if of similar timber type or retention type. Only one form B was completed in error.
- Incomplete checklists were encountered. This issue can be remedied by having the districts review their checklist packages before submission. Having district staff enter the data for a sub-sample of their completed checklists will also encourage a review for completeness.

Evaluating the Condition of Streams and Riparian Management Areas

The following issues were encountered during QA site visits of the stream reach and riparian area assessments:

- Decisions about which stream reaches required sampling were generally appropriate. On a few occasions, reaches had to be dropped because they were either not within the cutblock being sampled, or the stream did not meet the adjacency requirements.
- The diversity of benthic invertebrates continues to be a challenge. Various staff teams misunderstood the concept of diversity and how to sort their benthic samples into the categories of types and groups.
- Question 1 (Is the channel bed undisturbed?) – Differentiation between lateral bars and sediment wedges or mid-channel bars was commonly weak, especially if streams were narrow or dry.
- Question 2 (Are the channel banks undisturbed?) – Recognition of recent erosion from cattle, and understanding of deeply rooted banks were problematic. Undercut banks are not always interpreted correctly.
- Question 3 (Channel woody debris processes) – Some confusion about how to differentiate between channel spanning debris and debris jams, old and recent debris accumulations. Some misunderstanding that a debris jam is always a debris accumulation, but that a debris accumulation may not always be a debris jam.
- Question 4 (Is the channel morphology undisturbed?) – Recognition of pools when channels are dry was problematic; the concept of heterogeneous substrate was confusing; measurement process for determining a deep pool was inconsistent; verification of plunge pools was sometimes weak.
- Question 5 (Connectivity aspects) – Adding the tips to the checklist has reduced confusion about connectivity.
- Question 6 (Diversity of fish cover) – A challenging concept for some when the streams were dry.
- Question 7 (Moss presence) – Clarification that we are to evaluate aquatic moss growing on channel substrate (rocks not logs), and that the assessments should be made where moss should be present (i.e., if the point lands at a deep pool, there is little chance of finding moss, except if you move to the nearest riffle margin).
- Question 8 (Minimized fine sediments) – Some clarification about embedding was required; distinguishing between organic fines and inorganic fines was a common weakness.
- Question 9 (Benthic diversity) – Diversity is sometimes confused with density; groups and types still confused (e.g., some recorded “mayflies” to be a major group; some would consider the “number of insect types” to be “mayflies” as one type when their sample had 3–4 different types of mayflies).
- Question 10 (Windthrow management) – Field measurement and calculations of historic levels to current levels of windthrow were not consistently understood; differentiation needed between windthrow and natural collapse or danger tree falling, or to observe where the trees originated relative to treatment side.

- Questions 11 (Bare erodible soil or disturbed ground) – Hydrologic connectivity is sometimes confused; disturbed ground was often misinterpreted to be simply trampled or windthrow-affected ground.
- Question 15 (Normal plant community within 10 m of the stream) – Still some confusion surrounding application of “A” and “B” to harvested riparian areas; identification of heavily browsed versus extensive browsing can be improved during training.
- Data records and conclusions to indicators did not always support one another – staff need to provide verification that an indicator was considered. A system of convention: **N/A** indicates the feature could not be assessed (e.g., dry stream and thus no invertebrates), and **blanks** indicate the feature was not evaluated; otherwise a numerical value is required.
- The “Other Indicators to Note” section is under-used. It is a format for recording the observations to be made during the walk-through of the stream reach. Circling the descriptors provides efficient validation.
- Conclusion on Functioning Condition and the source for impacts have improved.

Conclusion and Recommendations

During the QA process it was readily apparent that the development and training delivery of these two protocols are effective. Staff can generally undertake the field evaluations with a good measure of reliability. The QA process of mentoring and auditing ensures the integrity and validity of the data being collected, and identifies opportunities for continuous improvement.

The QA Site Visit protocol is appropriately rigorous. Mentorship reviews following training combined with data entry and submission will strengthen the reliability of the data collected. Regional and district staff could also work together to perform some mentoring or quality assurance reviews. Within a district, site lists and checklists could be reviewed for added quality assurance and mentor support.

Data quality should continue to be verified by field audits before the end of the field season. The 2007 QA auditing can be applied to those districts that were not covered in 2006 as well as a re-visit of districts identified to have had data quality weaknesses during the 2006 season. Ideally, mentoring and QA site visits could be integrated wherever possible, as long as not many training sessions are required to launch the 2007 field season.

The following recommendations are made following the visits in 2006, and in part reflect the data validation and review efforts. In turn, these will strengthen the QA protocol and support the overall process of continuous improvement.

Training

The 2007 training process should continue to offer both formal and refresher training. A train-the-trainers session should be conducted before delivery of the 2007 training to ensure consistency, and to ensure all support materials are complete. This will also provide an opportunity to strengthen the delivery of topics where consistent weakness was observed following the 2006 field season.

Formal Training

Formal training is a mandatory requirement for all new staff who will be participating in the Riparian and SLB assessments. Formal training can be optional to staff from districts that participated for the first time in 2006. The first day would be SLB training, followed by 3 days of Riparian training; there would be opportunity to review SLB at the end of the week (day 3 of Riparian training). This rigorous schedule is necessary for staff not experienced with these two protocols.

Refresher Training

For those staff who completed fieldwork during 2006, a 1-day refresher session is suggested. Ideally, this refresher training would cover both the SLB and Riparian checklists and focus on the key issues and changes made to the protocol and checklists. Those wishing to have a more general “practice review” of the checklists could opt to attend the 1 day of SLB formal training or the first day of Riparian formal training.

Mentoring

To improve the accuracy and efficiency of fieldwork, districts can have a mentor session. Mentoring would be best for those districts with limited experience (i.e., they participated in 2006 for the first time, or have new staff who received formal training). The trainers, as well as Resource Value Team leaders and regional staff, can be mentors.

Data Quality Assurance and Productivity Efficiencies

Data quality assurance and productivity efficiencies are mutual needs and can be greatly strengthened with a combination of training followed promptly with field implementation, early mentoring and data review, followed by formal auditing. The following suggestions are proposed:

- Refresher training should be delivered before the start of field sampling. This will increase the confidence of district staff, equip them with up-to-date understanding of the field procedures, and make known all changes and clarifications. In addition, the most current protocol and checklists would be used.
- Field implementation must begin within 2–3 weeks of receiving the formal training. The field evaluators should then enter the completed evaluations into the system. All openings entered should continue to be submitted to Branch for data review and evaluation without delay. Stockpiling the completed evaluations delays the opportunity for timely reviews and corrections.
- Staff need to be encouraged to conduct peer review during data collection. It is acceptable to review each other’s work, propose corrective practices, and give constructive critiques.
- Where possible, mentor visits should incorporate data entry and submission training. During this process, the field staff will each recognize the importance of

data validation. Where data gaps are discovered, the process for correcting the data will strengthen the district staff's attention to detail and ultimately increase data quality.

Protocol and Checklist Improvements for 2007

For both the Riparian and SLB protocols, a number of field checklist and protocol improvements were suggested. The field guide was produced and distributed once the season had started. This resource was generally well received, but should be updated with any relevant improvements listed below.

SLB Checklist Improvements

Consider the following for the Stand-level Biodiversity checklists:

Form D

- Modify the CWD section to promote the concept of decay state and to use numerical values rather than roman numerals. CWD footnote has an error (should read "... **For** other species, use texture, shape ..."). Consider revising the characteristics as follows:
 - Class 1 – fresh logging slash or fallen tree; bark firm, wood solid, branches have twigs, tree elevated on support points, sapwood decay is absent
 - Class 2 – bark is loosening, solid heartwood, sapwood decay is shallow, small twigs are absent, wood can support person's weight but sags if elevated between support points
 - Class 3 – bark absent, spongy heartwood, branches missing, extensive heartwood decay, may not support a person's weight if elevated between support points, but still retains its shape
 - Class 4 – bark absent, soft heartwood, stem shape collapses when stepped on, wood has a well-rotted but small blocky texture
- Class 5 CWD needs to be dropped or shaded to ensure staff do not tally them.
- Tree class table needs to be updated to line up with the WDTAC, as well as to shade out the conifer class 9 and deciduous class 6 (stumps).
- Possible that there is room to add reminders that a tree must be > 12.5 cm DBH and > 1.3 m height; and that CWD must be > 7.5 cm diameter.
- Tree species and Invasive plants lists to be updated. Missing Mountain alder. Consider if the invasive list should include Scotch broom, Gorse, Himalayan blackberry, others?

Form C

- Consider adding a simplified risk ranking process to help with evaluator's opinion

- In section 16, edit the “Vets (ha)” to read “Vets/ha”; title could read “Reserve Summary When No Plots Established”; still need to instruct people to not create a duplicate entry for when a Form B was used to describe a stratum.
- Clarify the Gross Area (includes NAR, Roads, All Reserves associated with the opening) and provide an opportunity for updating the gross where an edge or external WTP was not recorded as part of the SP’s gross area. The concept of WTP override was used during data entry in 2006, and should be added to the form C and discussed in the protocol.

Form B

- Fix the title (section 5) to read “Stratum summary – if Plotted (one card for EACH stratum)”
- Revise section 6: reword to state “% of total trees in stratum windthrown:”
- Revise section 7 to read “Retention Constraints” so that we capture the dispersed retention features.
- Section 7 – wetland change to wet site; add “Cultural/Heritage feature”

SLB Protocol Improvements

Consider the following for the stand-level biodiversity protocol:

- Definition of Stratum section – minor edits to improve and resolve confusion. Page 3 text can be simplified and reorganized to provide “key concepts” as a separate summary and to emphasize that WTPs cannot be lumped into one stratum when physically separated. Also, link this to the section on Block Stratification on pages 14–15.
- Figure 1 has errors for reserve (it should be 19.2 ha, not 17.5; NAR total is 56.2 ha, not 56.5 ha; also, the WTP Override can be included – since there is an extra 5.0-ha patch adjacent but not counted in Gross block area.
- Suggested Number of Plots (p. 6) creates confusion because of the statements “40–60 trees per cutblock” and the “90-m of transect per 20 ha of gross cutblock area.” This is background information about the ideal goal, but fails to clearly state that FREP has chosen to lessen this for routine evaluations because of a need for operational and cost efficiencies.
- The intensity of sampling chart (p. 7) needs to be updated for the “Big-block” criteria when Gross Area is > 100 ha. The Big Block sampling criteria need to be added to the protocol.
- Stratum Type (p. 16) can add for emphasis that a clearcut is “a stratum with no trees greater than 12.5 cm DBH, regardless of species and merchantability”
- Page 18 – section 3 stand table: Tree # can be improved to state “Tree # - number each tree in plot that is > 12.5 cm DBH and > 1.3 m Height.”
- Update the checklist card images as per possible changes to the checklists.
- Update the WT Classes (p. 27) and CWD Decay classes (p. 28).
- Add a section “General Procedure for Data Validation”.
- Clarify the term “Largest Tree for Site (Not Vets)” – basically, does the Retention Stratum have trees as large as what was harvested, or did they retain a smaller, scrubby timber type?

- Full count data collection – need to clarify that when the full count option is used that the tree tallies for the stand table are recorded as if for one “plot” and to use multiple cards if required.
- How does a person estimate constraint attributed to Visual Quality Objectives and Ungulate Winter Range? The protocol could expand this issue. For example, resolve whether a constraint needs to be a discrete feature within the cutblock (such as a rock knoll) or can it include a landscape-level planning requirement (such as VQO).

Riparian Checklist Improvements

Consider the following for the riparian checklists:

- Page 17/18 was produced as part of the sample checklist in error. A new page is needed for notes and diagrams
- A table is needed to record and organize the collection of benthic invertebrates.
- Page 15 – Specific impacts can be elaborated slightly. “Fill-slopes and Cut-slopes eroding into the stream”; were there any “others” identified during 2006 that can be added? Could add “unknown.”
- Page 14 – need to emphasize that > 6 No’s means “Not Properly Functioning.”
- Heavy browse: Remove “No. of Shrubs with heavy browse” and place into Other Indicators to Note.
- Lateral bars measurement should also add “or a thalweg meanders from bank edge to bank edge.”
- Edit “No. recent debris jams spanning the channel” to read “... recent channel spanning debris accumulations.” And then add “recent debris jams present or not” to Other Indicators to Note.
- Add a Q4 item for Step pool to the Other Indicators to Note: Are plunge pools frequent - >25% of steps have a plunge pool or not, few pools are filled in with sediment or not, <25% of the channel has relatively long cascade or not.
- Final comments page 16 can be modified to permit the recording of time spent doing the assessment.
- Q10 Page 3 the thresholds for S4, S5, S6 are 10% not 5% – add to the card.
- Q5 indicator “C” could have N/A available for when there is no culvert/crossing. Presently, it is expected that “Yes” is recorded if a crossing is not present.

Riparian Protocol Improvements

Staff discussed a number of items that could improve the field data collection process, as outlined below:

- Adjacency issues need to be resolved; suggest that if the stream is not part of a WTP and is adjacent to the harvest area, the stream must meet the distance requirements. Otherwise, a stream in a WTP on the edge of a block is eligible for sampling because that is a management decision (ties to Chilcotin examples).
- Expand the context for Disturbed Ground – it is not simply ground trampled by cattle, or traveled by a skidder, or disturbed by windthrow; concept of “compacted” may be a better term.
- Provide photo aids that will help staff to identify streams with Step-Pool morphology and streams that are Non-Alluvial.

- Provide a better help section in the protocol on how to recognize a non-alluvial stream (steep gradient, colluvial material, large boulders, bedrock control, etc.).
- Clarify the determination of fish cover attributes; especially “deep, quiet water” when the stream is dry during the field visit.
- Some inconsistency for what is considered to be a sensitive benthic invertebrate; page 4 of the checklist differs from page 43 of the protocol, page 7 of the field guide, and the subject is further confused by handing out the stream keepers pages, which include pollution-sensitive species.
- Lateral bars were often confused with sediment wedges or mid-channel bars, especially in low gradient, very small streams. Further guidance is needed to identify and understand the process; clarify that the thalweg option is for when a larger stream is flowing near bankfull and it is too difficult (and unsafe) to get into the stream to find the lateral bars.
- Elaborate on the feature differences between a mid-channel bar and a multiple channel, especially for heavily impacted streams (perhaps insert a photo of a landslide sediment deposition and the respective measurement segments for mid-channel/braided bars and multiple channels can be shown).
- Clarify that the point indicator sampling sites need not be rigid. For example, looking for moss or invertebrates but the sample lands at a deep pool – it is acceptable to move to the nearest riffle crest.
- Organic bottom streams are common and need to be better explored in the protocol.
- Section on hydrologic connectivity needs to be improved to reduce confusion. Insert a photo or a graphic to demonstrate the measurements counted for active road crossings; and to elaborate in the protocol that crossings need to have visual “proof” of sediment eroding directly into the stream in contrast to open slope sediment delivered into the 10-m riparian areas when NOT at a stream crossing.
- Windthrow section can be clarified further. Staff are still confused about how to rate windthrow management success when there was a clearcut RMA (successful), when there is a RRZ+RMZ and all the RMZ is affected but the RRZ is entirely intact (successful), or the outer edge of the RRZ is affected but the 10-m riparian area beside the channel is unaffected (success depends upon pre-treatment and post-treatment levels).
- Page 13 Question 10 (middle of page): Correct the text statement to read: “For S6 streams that fall into that category, Questions 10a) and 10c) are NA but 10b) would be Yes”.

Support Services

To provide additional support services, and to promptly spread the responses to queries, the Question-and-Answer forum and Conference Call processes should be continued. Training for data entry can also be offered in the same way as the training for the user acceptance testing format, whereby 2–3 sessions can be booked and districts participate in training while on-line with completed checklists ready for entry.