

Resource Stewardship Monitoring 2006 Continuous Improvement Workshop

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INTRODUCTION

On February 28/March 1, 2006, a two-day resource stewardship monitoring (RSM) continuous improvement workshop was held in Victoria. Participants included the Chief Forester; the ADM Operations; branch, regional and district staff from the Ministry of Forests and Range; representatives from the Ministry of Environment and the Ministry of Tourism, Sport and the Arts; and consultants participating in RSM.

The purpose of the workshop was to:

- communicate the support of ministry executive for RSM;
- present the preliminary results of the 2005 RSM field data analysis;
- review the 2005 implementation of RSM to identify opportunities for continuous improvement; and

- promote communication, participation and support between all organizational levels and agencies involved in the implementation of RSM and FREP as a whole.

The RSM continuous improvement workshop was well attended (over 60 participants) and extremely well received. Support and enthusiasm for RSM was evident in the many presentations and the follow-up group discussions and question periods. Based on workshop evaluations, participants rated the event an average of 4.5 on a scale of 1.0–5.0.

The following is a summary of the workshop proceedings.

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BRITISH
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Ministry of Environment
Ministry of Agriculture and Lands

The FREP Mission:

To ensure British Columbia is a world leader in sustainable forest management by providing the high quality, science-based information we need for decision-making and continuous improvement of our forest practices, policies and legislation.

<http://www.for.gov.bc.ca/hfp/frep/index.htm>

EXECUTIVE SUPPORT FOR RSM

Chief Forester — Jim Snetsinger

The Chief Forester identified FREP and RSM as the “heart and soul” of the ministry’s stewardship role in ensuring sustainable forest management in British Columbia, and emphasized the importance of getting the implementation of RSM up and running to collect the baseline data necessary to effectively evaluate FRPA. He thanked district field staff, resource value team members, and branch staff for their significant contributions and commitment in developing and implementing RSM indicators and monitoring protocols. To recognize and acknowledge RSM successes, the Chief Forester announced the “Award of Excellence for Stewardship Monitoring” to be presented to one forest district each year for excellence in RSM. The first award will be presented after the 2006 field season.

ADM, Operations — Tim Sheldan

The ADM, Operations re-affirmed executive support for RSM and expressed his thanks to all staff for their continuing commitment and hard work. RSM and FREP have become important corporate performance measures for the ministry in fulfilling its stewardship mandate. The ADM announced the schedule for ramping up RSM across the province. For 2006, monitoring for riparian-fish and stand-level biodiversity will be carried out in all forest districts; soils and water quality monitoring protocols will continue to be pilot tested. During 2007, a total of four resource values will be monitored – riparian-fish, stand-level biodiversity, soils and water quality. Thereafter, two additional resource values will be added each year.

The Executive is committed to providing FREP with sufficient funding to carry out program activities. Funding will be approximately \$4.0 million annually over the next three years. For 2006, FREP will receive an additional 15 FTEs, with a further five FTEs to be added by 2008. District costs associated with implementing RSM (e.g., training, travel, remote access, seasonal employees) will be covered through the FREP budget.

To acknowledge the personal contributions made by staff to RSM, the Chief Forester and ADM presented each workshop participant with a small gift (FREP pen knife). In return, the Chief Forester and ADM were presented with FREP fleece vests in appreciation of executive support.

Indicators and monitoring protocols for riparian-fish and stand-level biodiversity can be viewed at http://www.for.gov.bc.ca/hfp/frep/3_indicators.html.

RSM 2005

Operational Implementation

Riparian-Fish

A total of 19 forest districts, representing all three forest regions, participated in implementing riparian-fish RSM in 2005 (see sidebar). Overall, 250 streams were evaluated to determine whether FRPA standards and practices are protecting fish values. The routine-level checklist assesses physical and biological conditions in streams and their riparian areas using 15 indicators.

The indicators are scored with YES or NO answers (YES = OK; NO = problems). A roll-up scoring system based on the number of NO answers is used to determine the overall condition of the stream (i.e., 0–2 NOs = functioning; 3–4 NOs = functioning at risk; 5–6 NOs = functioning at high risk; >6 NOs = non-functioning).

Preliminary data analysis results were presented; however, some of the data were subjected to complicating factors, such as pre-Code influences and non-forestry impacts (e.g., beaver dams). Therefore, additional data cleaning and analysis is required prior to finalizing the results. It is anticipated that final analysis results will be available by the fall of 2006.

Overall, the riparian-fish field assessments were completed thoroughly and accurately, with a good representation from all stream class types, with the exception of the largest fish-bearing streams – S1. The riparian-fish checklist was found to be relatively straight forward and generally produced consistent answers. One of the major challenges associated with the checklist is differentiating effects caused by forest practices at the site from those occurring upstream.

Another important challenge is to identify specific causes of observed impacts and relate them to specific forest practices or riparian management standards. This is essential for the evaluation of management effectiveness, and will be an important component of future training.

Continuous improvement suggestions from field staff included:

- providing more guidance for the checklist through additional diagrams and tips;
- a possible reordering of the checklist questions;
- clarification of what is meant by “impact sources;” and
- associated protocol refinements.

Stand-level Biodiversity

The same forest districts that implemented riparian-fish RSM in 2005 also implemented stand-level biodiversity, with the exception of the Kamloops district (see below). A total of 201 cutblocks located in 10 different biogeoclimatic zones were assessed. Preliminary data analysis results were presented, but again, further analysis and data cleaning are required prior to finalizing results.

The stand-level biodiversity indicators are being ranked to come up with a risk rating for each indicator based on thresholds established through comparisons with baseline data. The indicator risk ratings will then be combined to come up with an overall risk rating for each cutblock.

Some of the continuous improvement insights gained from implementing the checklist include:

- Need to determine the value of utilizing baseline cruise data from pre-beetle infestations to help rank post-beetle stands for biodiversity.
- To obtain accurate information on stand characteristics, it may be better to sample 50-60 trees per cutblock rather than the 30 trees currently identified in the monitoring protocol.
- Tree height estimates appear to be quite accurate based on limited quality assurance work on the data – measuring at least one tree per plot and estimating the rest seems to be an effective procedure.

A primary component of stand-level biodiversity RSM for 2006 will involve collecting baseline data for the indicators. A major goal for the future is to sample enough cutblocks within a landscape unit and link this information with a landscape-level biodiversity assessment to more fully assess overall biodiversity.

Pilot Testing

Water Quality

The RSM checklist for water quality was pilot tested in the Southern Interior Forest Region in 2005. Water quality indicators assess practices associated with road construction and management, timber harvesting, silviculture, and livestock management. For 2006, the pilot testing will be expanded to all three forest regions, with a target of 10 sites per district in at least three districts per region.

Soils

In 2005, RSM indicators and protocols for soils at both the cutblock and landscape levels were pilot tested.

Cutblock level – Pilot testing occurred at eight sites in the Prince George Forest District in 2005. The pilots are focusing on using aerial photography and OziExplorerCE software to assess site disturbance. Pilot testing will continue into the 2006 field season until data collection is completed at all sites. Data analysis, interpretation and reporting are expected to be completed during 2006, as well as revisions to the monitoring protocols and field cards as needed. Full implementation of cutblock-level soils RSM is scheduled for 2007.

Landscape level – The focus for landscape-level soils RSM will be on access structures (e.g., roads, landings) and landslides (both immediate and likelihood of future slides) in watersheds 5000–10 000 ha in size. Other indicators include gully processes and snow avalanches. The primary assessment tool will be satellite imagery, although orthophotos and standard aerial photography may suffice in some cases. One pilot is currently underway at Hellroaring Creek near Cranbrook. Additional pilots (2–3) are planned for 2006 in the Coast, Northern Interior, and/or Southern Interior forest regions.

Forest Districts Participating in 2005 Riparian-Fish RSM

Coast Forest Region	Northern Interior Forest Region	Southern Interior Forest Region
Campbell River	Fort Nelson	Arrow Boundary
Chilliwack	Fort St. James	Cascades
North Island – Central Coast	Kalum	Central Cariboo
Queen Charlotte Islands	Mackenzie	Chilcotin
South Island	Nadina	Kamloops
Squamish	Prince George Vanderhoof	Quesnel

Overview of the 2004 Recreation Effectiveness Evaluation

Recreation is one of the 11 resource values identified under FRPA. The Ministry of Tourism, Sport and the Arts provided a brief overview of the effectiveness evaluation conducted on 120 recreation sites in 2004. The ministry's goal is to assess all 1200 recreation sites across the province over the next five years under FREP.

DISTRICT PERSPECTIVES ON 2005 RSM IMPLEMENTATION

Districts that participated in implementing riparian-fish and stand-level biodiversity RSM in 2005 reported on what worked well, and identified some of the challenges experienced during the 2005 field season. The districts also provided suggestions for improving implementation for 2006. Highlights of the districts' comments are summarized as follows.

What Worked

Virtually all districts expressed the positive impact RSM has had on staff morale and enthusiasm. Staff are excited to be getting out into the field and working together in a team environment with branch, regional, other district staff, and staff from other ministries (e.g., MOE) in an important stewardship role. Many district staff felt strongly that RSM activities should be conducted in-house, with only limited use of contracted services.

The training for riparian-fish and stand-level biodiversity was felt to be very good, and the checklists and monitoring protocols worked well in the field (particularly if they were laminated to protect them from the elements). Many districts acknowledged the good support from branch staff and appreciated rapid responses to their implementation questions. A number of districts pointed out that planning ahead before going out to the field led to a more efficient use of time and resources.

Challenges

Districts identified access as the number one challenge, particularly a lack of helicopter funding to access more remote blocks. Starting too late in the field season was another challenge experienced by many districts, in some cases exacerbated by having to wait for the random sample lists. Many districts had difficulty working through

the random sample lists in order, and as a result were not able to complete their lists by the end of the field season.

A number of districts felt having more teams on the ground would have helped in assessing more blocks. Some blocks were difficult to complete in a single day, and beetle-killed blocks proved to be difficult to evaluate in a number of ways (e.g., large block size, fragmented blocks, etc.). Several districts found that streams to be assessed had often been misclassified by the licensees. Finally, some districts reported that branch staff were unavailable to answer questions during the peak of the field season due to being on annual leave.

Suggestions

Many districts indicated that additional training and refresher training would be beneficial, as well as timing the delivery of training as close to the beginning of the field season as possible. Training more people per district would also help the districts in completing all the cutblocks on their lists. The ability to hire more auxiliary field staff would further assist districts in meeting their RSM commitments.

Several districts emphasized the benefits of involving as many district staff as possible in RSM as it draws in a broad range of expertise and experience, and serves to build cooperation and commitment for the program. Planning ahead prior to going out in the field maximizes effort and resources. Locating cutblocks on maps, planning access strategies, and assembling equipment kits in the office prior to heading out to the field can significantly reduce down time and increase the number of cutblocks sampled.

Many districts plan to get an early start on the field season in 2006 and are interested in investigating handheld data collection devices to further streamline RSM processes.

Loon Tale Challenge Winner

The winner of the 2005 Loon Tale Challenge Award for the best field story went to the Nadina Forest District.

2006 RSM PHOTO CONTEST

District RSM staff are encouraged to visit <http://www.for.gov.bc.ca/hfp/frep/recognition/photo.htm> for details on the first annual RSM Photo Contest. Entries will be judged and prizes awarded at the next CI Workshop.

CONTINUOUS IMPROVEMENT

Recommendations for the continuous improvement of the site selection, stand-level biodiversity and riparian-fish protocols were collected through a variety of means, including field staff feedback, question and answer dialogue, RSM district meetings, Resource Value Team member input, data cleaning processes, etc.

Site Selection

A number of important issues related to the continuous improvement of the site selection protocol were discussed at the workshop. Two major issues that need to be addressed are:

1. developing clear and consistent rules for rejecting blocks from the random sample lists; and
2. determining how to deal with very large and/or very small mountain pine beetle blocks (e.g., expanding blocks consuming smaller blocks on the periphery) in comparison to the rest of the cutblock data.

Standardized rules for rejecting blocks from the random sample lists, along with other clarifications and improvements, will be provided in a revised site selection protocol that will be available by the beginning of the 2006 field season. Resolving the issues of how to manage large and/or consumed small mountain pine beetle blocks within the database will be addressed by a new working group that will review and assess options over the next several months.

Stand-level Biodiversity

Continuous improvement for the stand-level biodiversity checklist and protocol focused on a number of questions and issues raised by field staff. Highlights of the discussion include:

- The professional opinion/comments section of the checklist is intended to serve as a check against how well the checklist scores a block. To address concerns expressed over commenting on a professional's work, the ABCPF will be consulted
- When answering the checklist question regarding innovative forest practices, determine whether the licensee employed a beneficial practice not normally seen in the district.

- A discussion was held on the value of gross volume calculations versus focusing on the quality of retained structures.
- The checklist question dealing with ecological anchors will be modified somewhat, where some anchors will require a count and others only a YES or NO response. Absolute numbers are difficult to determine for many ecological anchors – it is more important to determine if they are present or not. An absence of ecological anchors raises a red flag. More MOE participation may be required for this indicator.
- The idea of using cruise data to act as baseline data for stand-level biodiversity was discussed.
- Several changes to the stand-level biodiversity checklist were proposed and discussed. These changes will be incorporated into the checklist for the upcoming field season.

Riparian-Fish

Three major themes for continual improvement were discussed for the riparian-fish checklist:

1. Reorganization and revisions to the checklist – A number of organizational changes and revisions are underway to streamline and simplify the checklist, including moving the field data sheet to the front to improve the logical flow, adding more diagrams and tips, clarifying wording, etc.
2. Selecting sample reaches within blocks – Additional guidance for selecting appropriate stream reaches for sampling will be provided (e.g., how to identify representative reaches, identifying and dealing with non-classified drainages, minimum reach lengths, assessing streams with organic substrates, etc.)
3. Protocol revisions – Definitions, descriptions and guidance will be expanded to assist field staff in implementing the protocol (e.g., measuring variables, identifying sources of impact, best time of year for surveys, seasonal effects on riparian vegetation, etc.)

Further clarification and explanation on using the riparian-fish checklist and protocol will be addressed in subsequent training.

TRAINING

An overview of riparian-fish data issues was presented based on information gained from field site visits and data cleaning. This information will be included in the training program for 2006.

The RSM training program for 2006/07 will offer:

- **Full Session Riparian-Fish Training** – A three-day course for first-time RSM field staff or those that received the training last year, but did not complete many field assessments (i.e., less than six cutblocks).
- **Full Session Stand-level Biodiversity Training** – A one-day course for first-time RSM field staff or those that received the training last year, but did not complete many field assessments (i.e., less than six cutblocks).
- **Refresher Training** – A one-day course that provides updates to protocols, field cards and monitoring procedures for those who have a previous year's experience with both riparian-fish and stand-level biodiversity checklists.
- **Mentorship/Site Visits** – A one-two day session where field staff work one-on-one with a trainer to address local issues and concerns. These sessions also allow the instructor to solicit feedback from field staff which can contribute to continuous improvement.
- **QA Site Visits** – Random visits to 3–4 districts per region per year to ensure data quality, consistency and repeatability, and to identify continuous improvement requirements and opportunities.
- **Conference Calls** – One hour, once a month between districts, regions and headquarters to ensure early identification and resolution of issues, and to communicate successes, challenges and updates.
- **LearnLinc Sessions** – Two-hour sessions to complement formal training and mentorship. Provide district staff with an opportunity to ask questions of the trainers and Resource Value Team Leaders. In some cases, these sessions may take the place of the one-day refresher course.
- **Q&A Site** – Real-time answers to ongoing questions provided by the Resource Value Team Leaders on the FREP website.
- **FREP Website** – Support for training provided through:
 - posting latest field cards and protocols
 - posting Q&As
 - identifying contacts
 - posting conference call minutes.
- **Summer/Auxiliary Staff Training** – A five-day “bootcamp” session for temporary staff that provides comprehensive training and awareness of FREP (e.g., protocols, field cards, data collection techniques, safety, first aid, etc.).

FREP IMS UPDATE

A GIS needs assessment project is currently underway to determine if a GIS mapping component is required for RSM/FREP. There are three key areas where GIS capabilities could be incorporated:

1. operational field maps;
2. data presentation and reporting – map layers of RSM/FREP information; and
3. GIS analysis – incorporating GIS into spatial analysis questions (e.g., wildlife habitat usage).

Some Resource Value Team Leaders are already using GIS. The question of whether FREP requires in-house support in this area will be investigated.

The FREP IMS Working Group presented an IMS prototype and requested workshop participants to provide feedback on the proposed format as part of an inclusive process to develop a user friendly, quality-assured product based on input from district, regional and headquarters staff. For 2006, districts will again send in checklist results to the branch, where the data will be entered into the new IMS as it continues to evolve. The IMS Working Group encourages all staff to provide feedback on the new system (written and verbal) to help further refine the prototype and identify additional system requirements.

QUALITY ASSURANCE UPDATE

Quality control indicators and protocols are being developed for all aspects of RSM, including checklist design, training, data collection, data entry, data validation and cleaning, data verification site visits, data analysis and summary, and interpretation and reporting. The focus for quality assurance in 2006 will be on training.

PERFORMANCE MEASURES AND BUDGET UPDATE

A major performance measure for the regions for 2006 is the percentage of districts within the region implementing riparian-fish and stand-level biodiversity RSM. The target for 2006 is 100%. A key headquarters performance measure for 2006 is completing 4–5 intensive evaluations.

The RSM operational budget for 2006 is \$1,375,000. These funds will be allocated to the regions to cover costs for access, equipment and travel. A portion of these funds will be allocated to headquarters for indicator development, training delivery, intensive evaluations, extension, etc.

DISTRICT COMMUNICATION UPDATE

A number of issues and suggestions related to communication with the districts were discussed. The existing channels of communication have been working quite effectively (e.g., conference calls, e-mails, FREP website, yearly meetings, etc.). It was decided a monthly conference call will be set up between Resource Value Team Leaders, trainers and field staff to work through any ongoing implementation issues and answer questions. In addition, team leaders will attempt to get out into the field as much as possible this year to assist field staff. It was clarified that RSM does not have a C&E component, but staff are responsible for reporting any problems to C&E when they are encountered.

FIELD SEASON 2006

The riparian-fish and stand-level biodiversity checklists and protocols will be updated prior to the 2006 field season, and implementation will occur in all forest districts across the province. Soils and water quality monitoring protocols will continue to be pilot tested. Indicators and monitoring protocols for karst resource features may be pilot tested as well.

MORE INFORMATION

For additional information on RSM or FREP in general, please refer to our website at:

<http://www.for.gov.bc.ca/hfp/frep>.

Thank you to all the staff who work so hard and continue to contribute so much to FREP. You are the reason for the success of the program!

*The FREP Newsletter is a regular publication of the **Forest and Range Evaluation Program** designed to inform stakeholders on program development and implementation, and report on the results of evaluation projects.*