



Multiple Resource Value Assessment (MRVA)

100 Mile House Natural Resource District

December 2013

FOREWORD

Forest management in British Columbia is governed by a hierarchy of legislation, plans and resource management objectives. For example, federal and provincial acts and regulations, Land Use and Forest Stewardship plans, and protected areas and reserves collectively contribute to achieving balanced environmental, social and economic objectives. Sustainable forest management is key to achieving this balance and a central component of forest management certification programs. The purpose of the Multiple Resource Value Assessment (MRVA) report is to provide resource professionals and decision makers with information about the environmental component of this 'balance' so that they can assess the consistency of actual outcomes with their expectations.

The Forest and Range Practices Act (FRPA) lists 11 resource values essential to sustainable forest management in the province; biodiversity, cultural heritage, fish/riparian and watershed, forage and associated plant communities, recreation, resource features, soils, timber, visual quality, water, and wildlife. The MRVA report is a summary of the available field-based assessments of the conditions of these values. Field assessments are generally conducted on or near recently harvested cut blocks and therefore are only evaluating the impact of industrial activity and not the condition of the value overall (e.g. they don't take into account protected areas and reserves). Most of the information is focused on the ecological state of the values and provides useful information to resource managers and professionals on the outcomes of their plans and practices. This information is also valuable for communicating resource management outcomes to stakeholders, First Nations and the public, and as a foundation for refining government's expectations for sustainable resource management in specific areas of the province.

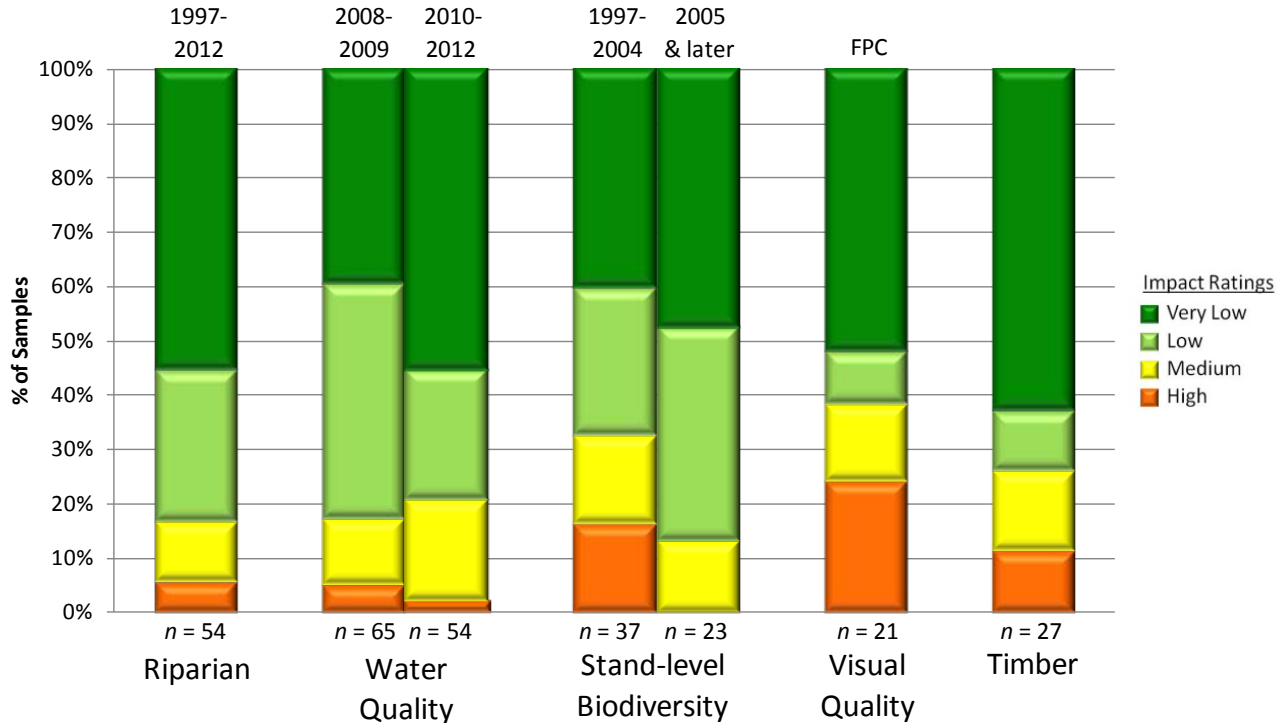
I encourage readers to review the full report and direct any questions or comments to the appropriate district office.

Tom Ethier
Assistant Deputy Minister
Resource Stewardship Division
Ministry of Forests, Lands and Natural Resource Operations

MULTIPLE RESOURCE VALUE ASSESSMENTS—IN BRIEF

Multiple resource value assessments show the results of stand and landscape-level monitoring carried out under the Forest and Range Evaluation Program (FREP). This report summarizes results for riparian, water quality (sediment), biodiversity, visual quality and timber (stand-development) monitoring conducted in the 100 Mile House Natural Resource District and includes a district manager commentary of key strengths and weaknesses. Through MRVA reports, decision makers communicate expectations for sustainable resource management of public resources and identify opportunities for continued improvement.

Figure 1: 100 Mile House Natural Resource District site-level resource development impact rating by resource value with trend (Riparian, stand-level biodiversity and visual quality by harvest year/era. Water quality trends by evaluation year. Timber samples are all post-free growing).



Important Context for Understanding this Assessment

The extraction and development of natural resources, along with natural factors (e.g., insects, wind, floods), influence and impact ecological condition. The goal of effectiveness evaluations is to assess these impacts on the state of public natural resource values (status, trends, and causal factors); such evaluations *do not assess compliance with legal requirements*. These evaluations help resource managers:

- assess whether the impacts of resource development result in sustainable resource management;
- provide transparency and accountability for the management of public resources;
- support the decision-making balance between environmental, social, and economic factors
- inform the ongoing improvement of resource management practices, policies, and legislation.

The resource development impact ratings contained in this report are based on assessments conducted within the areas where resource extraction takes place and do not reflect the ecological contributions of parks, protected areas, or other conservancy areas.

Although this report focuses on forestry-related activities, FREP monitoring protocols have also been applied to other resource sector activities, including mining (roads) and linear developments (hydro and pipelines). Procedures are being adapted to expand monitoring into these resource sectors over time.

INTRODUCTION

The development of the *Forest and Range Practices Act (FRPA)* had several key objectives, including:

- simplifying the forest management legal framework
- reducing operational costs to both industry and government
- allowing “freedom to manage”
- maintaining the high environmental standards of the *Forest Practices Code of British Columbia Act (FPC)*.

As part of the results-based *FRPA* framework, the provincial government committed to conducting effectiveness evaluations and publically reporting the monitoring results. The science-based information provided by these evaluations will be used to determine whether *FRPA* is achieving the government’s objectives of maintaining high environmental standards and ensuring sustainable management of public resources. If those objectives are not being met the monitoring results will be used to help inform the necessary adjustments to practices, policies, and legislation. Government is delivering its effectiveness evaluation commitment through the Forest and Range Evaluation Program (FREP; for details, see <http://www.for.gov.bc.ca/hfp/frep/>). The 11 *FRPA* resource values monitored under FREP include: biodiversity, cultural heritage, fish/ riparian & watershed, forage and associated plant communities, recreation, resource features, soils, timber, visual quality, water and wildlife.

Multiple Resource Value Assessments (MRVAs) reflect the results of stand- and landscape-level monitoring carried out under FREP. The program’s stand-level monitoring is generally conducted on forestry cutblocks, resource roads, or other areas of industrial activity. As such, these evaluations provide a stewardship assessment of resource development practices. Landscape-level monitoring of biodiversity, visual quality, and wildlife resource values is more broadly an assessment of the overall landscape. Reports on MRVAs are designed to inform decision making related to on-the-ground management practices, statutory decision-maker approvals, and data for the assessment of cumulative effects.

This report summarizes FREP monitoring results for the 100 Mile Natural Resource District. MRVA reports clarify resource stewardship expectations, and promote the open and transparent discussion needed to achieve short- and long-term sustainable resource management in British Columbia.

MRVA reports are intended for those interested in the status and trends of resource values at the timber supply area (TSA) or natural resource district scale, such as natural resource managers and professionals, government decision makers, and First Nations. These reports are also useful in communicating resource management outcomes to the public.

Government managers and decision makers are encouraged to consider this information when:

- discussing district or TSA-level resource stewardship with staff, licensed stakeholders, tenure holders and First Nations
- clarifying expectations for sustainable resource management of public land
- integrating social and economic considerations into balanced decision making
- reviewing and approving forest stewardship plans
- developing silviculture strategies for TSAs
- assessing Timber Supply Reviews and their supporting rationale
- informing decision making at multiple scales.

Natural resource professionals are encouraged to consider this information, along with other FREP information such as reports, extension notes, protocols, and monitoring data to:

- maintain current knowledge of the resources they manage
- inform professional recommendations and decisions, particularly when balancing of environmental, social, and economic values
- enhance resource management, consultation, and treaty rights discussions between First Nations, government, and licensees.

Published FREP reports and extension notes contain detailed findings for each resource value. These documents are available on the FREP website at: <http://www.for.gov.bc.ca/hfp/frep/publications/reports.htm>. Licensees can request data collected on their operating areas. FREP staff will assist licensees with the analysis of their data and the preparation of licensee-specific MRVA reports.

Although this MRVA report documents monitoring results at the district or TSA level, the MRVA concept is scalable. Reports for individual licensees, treaty settlement areas, or landscape units can be produced when sufficient monitoring data is available. Reports can also be prepared at the regional or provincial levels. This report provides site-level resource value assessments and trends through comparisons of cutblocks harvested before 2005 with those harvested in 2005 or later (where data is sufficient). FREP's site assessment monitoring results on each resource value are categorized by impact (very low, low, medium, or high). This classification reflects how well site-level practices achieve government's overall goal of sustainable resource management. Site-level practices that result in "very low" or "low" impact are consistent with sustainable management objectives. Practices resulting in "high" impact are seen as inconsistent with government's sustainability objectives. For a description of the MRVA methodology see Appendix 1.

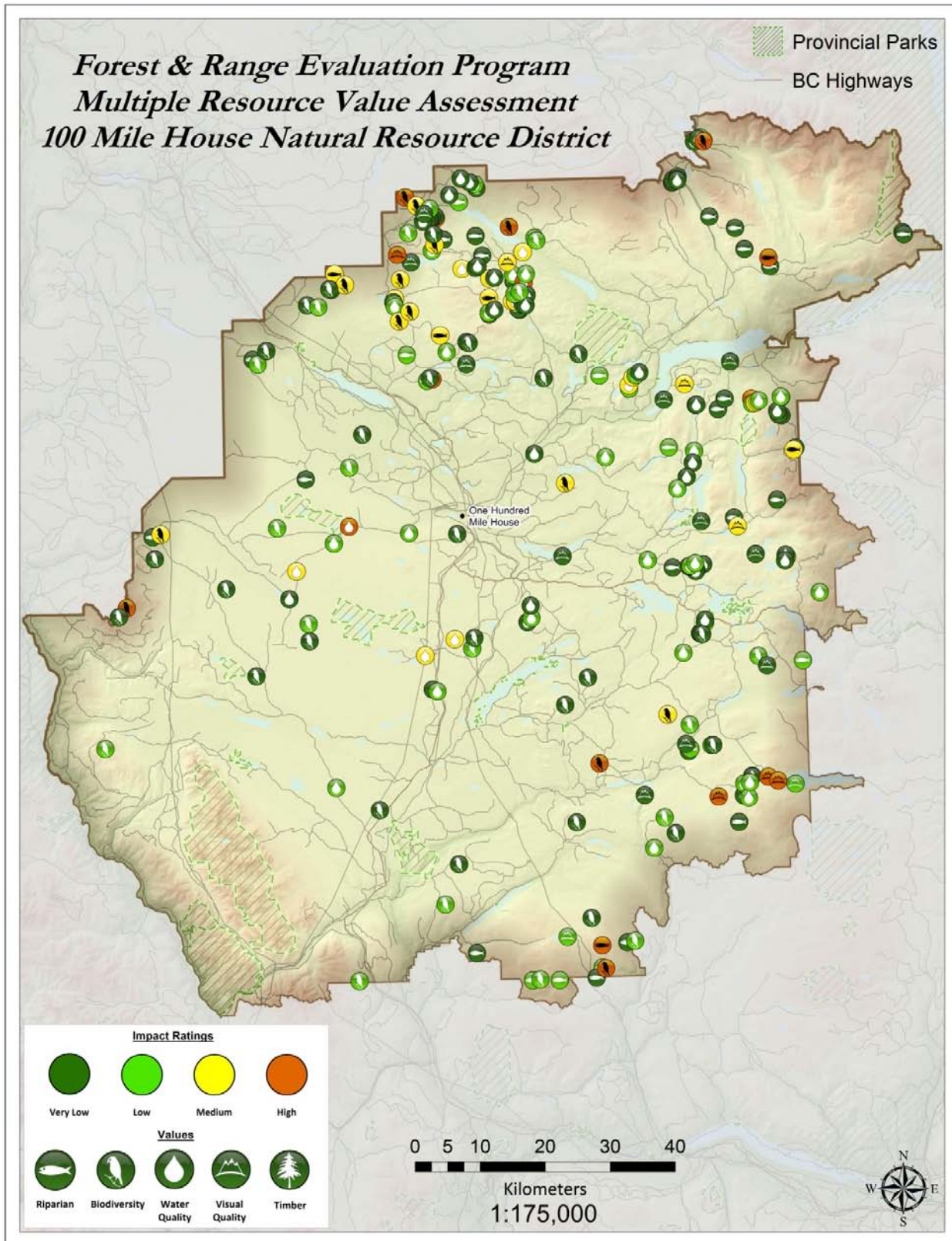
100 MILE HOUSE NATURAL RESOURCE DISTRICT – ENVIRONMENTAL AND STEWARDSHIP CONTEXT

This report covers the 100 Mile House Natural Resource District which encompasses the entire 100 Mile House TSA (figure 2). The 100 Mile House TSA is located in the South Cariboo Region of British Columbia and has a varied topography and climate. The flat, dry interior plateau separates the Marble range to the South West and the Quesnel highlands to the northeast. The western portion along the Fraser River is hot and dry, while the Cariboo Mountains to the east have a wetter climate and steep slopes.

The TSA is approximately 1.24 Million hectares in size where 100 Mile House and its surrounding area is home to around 21 000 residents. The forest sector accounts for 26 percent of the total basic employment in 100 Mile House.

Lodgepole pine forests of the TSA have been severely impacted by the mountain pine beetle (MPB) epidemic. The peak of the epidemic occurred in 2006 and has killed approximately 42 million cubic metres or about 72 percent of the mature pine volume. As a result, harvest activities have been focused on the salvage of the dead pine volume. Current forest management must meet the requirements of *FRPA* and also the objectives set out in the Cariboo-Chilcotin Land Use Plan (CCLUP) Land Use Order. Cumulative effects monitoring should be a key focus going forward considering the increased salvage harvesting over the past 7 years.

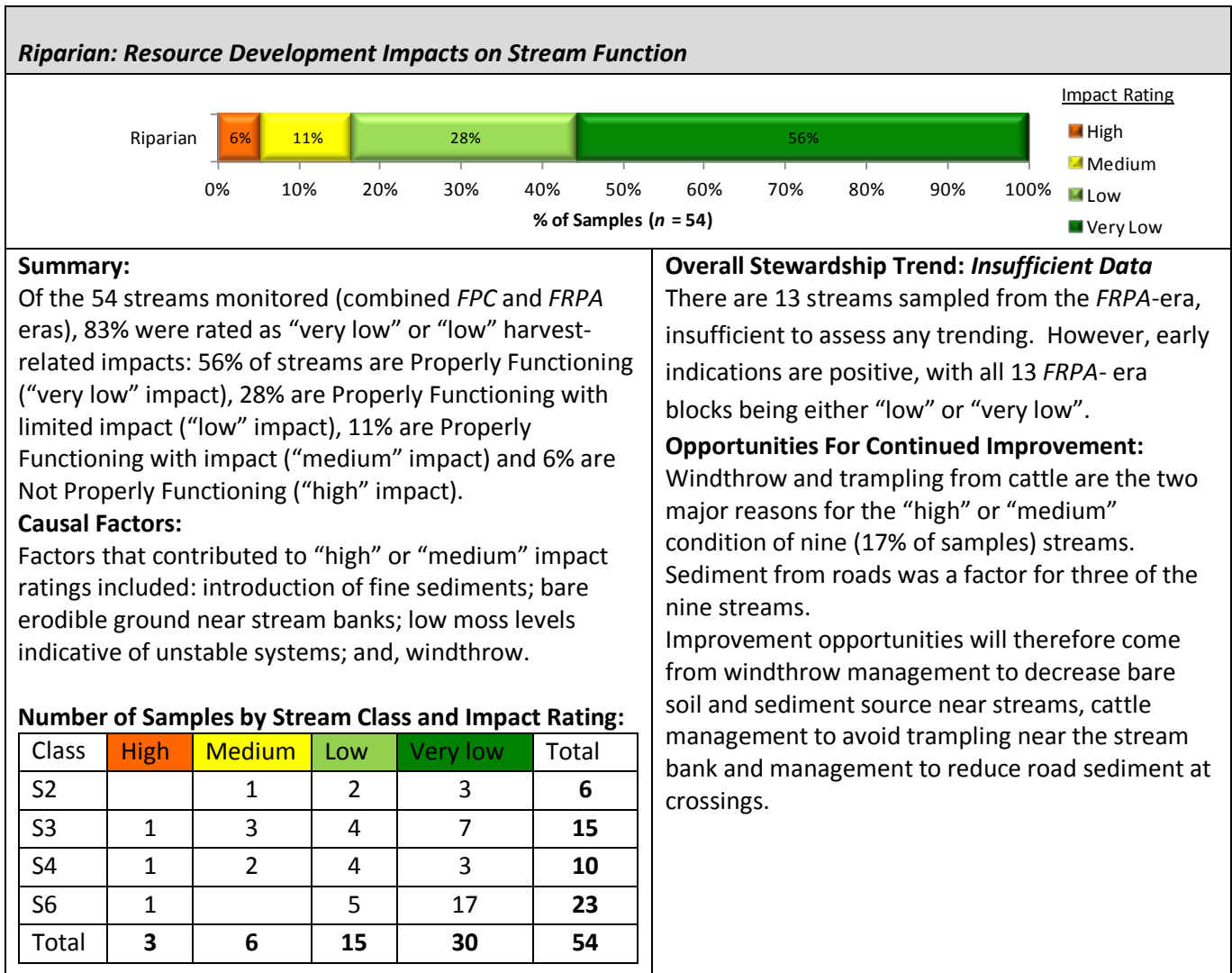
Figure 2: 100 Mile House Natural Resource District, showing FREP sample locations and results (see <http://www.for.gov.bc.ca/hfp/frep/publications/mrva.htm> for a high-resolution version of this map).



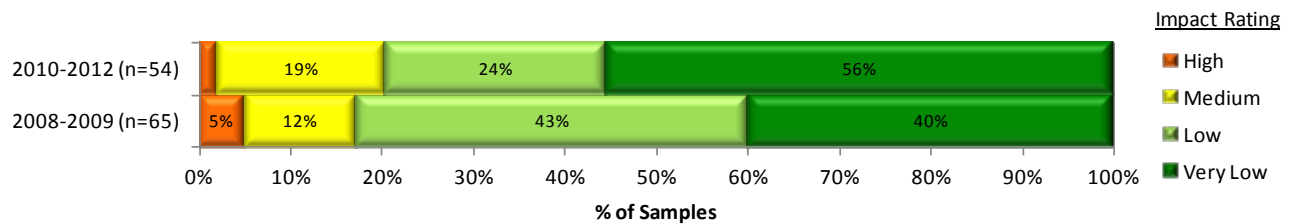
KEY RESULTS BY RESOURCE VALUE AND OPPORTUNITIES FOR CONTINUED IMPROVEMENT

Table 1 shows the resource values assessed for the 100 Mile House Natural Resource District, and includes a summary of key findings, causal factors, trends, and opportunities for continued improvement. Data are presented for *FPC*-era samples at sites harvested before 2005 and *FRPA*-era samples at sites harvested in 2005 or later. This approximates the *Forest and Range Practices Act* (*FRPA*) era, and allows for a comparison between earlier and later stewardship practices. The impact rating indicates the effect of resource development on the resource value, from “very low” to “high” impact.

Table 1: Resource development impact rating, key findings, and opportunities for improvement by resource value for the 100 Mile House Natural Resource District.



Water Quality (fine sediment): Resource Development Impacts on Water Quality



Summary:

Of the 119 road segments assessed from 2008 to 2012, 82% were rated as “very low” or “low” road-related impact.

Site assessments show the range for potential sediment generation as 47% “very low” (“very low” impact), 34% “low” (“low” impact), 15% “moderate” (“medium” impact), 3% “high” or “very high” (“high” impact).

Causal Factors:

See opportunities for improvement for “medium” or “high” impacted road segments. Some opportunities will apply to ongoing maintenance issues, while others would mainly apply to new road construction.

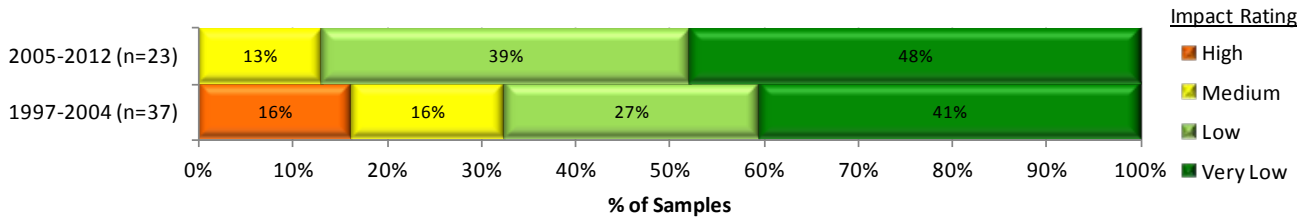
Overall Stewardship Trend: *Neutral*

Trending for water quality is based on survey years, to capture impact of road traffic and maintenance.

Opportunities For Improvement:

The most frequent suggested maintenance issues are to: use cross ditches, kickouts etc; armour, seed and protect bare soil; and, avoid long gradients approaching streams.

Stand-level Biodiversity: Resource Development Impacts on Stand-Level Biodiversity



Summary:

Of 60 cutblocks sampled (combined *FPC* and *FRPA*-eras), 75% of sites were rated “very low” or “low” harvest-related impact. Considering total retention, retention quality, and coarse woody debris quantity and quality, 40% sites are rated as “very low” impact on biodiversity, 35% as “low”, 18% as “medium”, and 7% as “high”. Two other blocks were sampled but cannot be ranked at this time due to insufficient baseline in one biogeoclimatic subzone, though individual indicators are assessed.

Causal Factors:

93% of all blocks had more than 3.5% tree retention. Considering only the *FRPA*-era blocks, that number increased to 100%. Retention averaged 29.5% in the *FPC*- and 25.9% in *FRPA*-era. Affecting this average is the 31% of the sampled blocks that have very high retention (>30%), though this dropped somewhat in the *FRPA*-era. Large tree density (generally ≥40 cm dbh) is similar or high compared to baseline as is the number of tree species retained. Coarse woody debris volume has increased, though the range is now skewed towards higher levels over many blocks, overshooting the desired natural range as defined by coarse woody debris on the ground in retention patches.

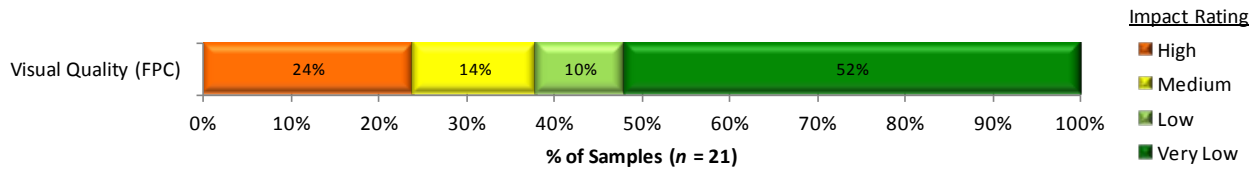
Overall Stewardship Trend: Improving ↑

This increasing trend comes largely due to increasing tree retention quality and coarse woody debris quality. The coarse woody debris quality is measured in terms of volume from large diameter pieces and density of big pieces (≥20 cm and ≥10 m).

Opportunities For Continued Improvement:

Continue trend of leaving treed retention on every cutblock, with a range of retention (e.g., 3% to 30%) over many blocks. Continue having big tree density and tree species diversity similar or better to pre-harvest conditions. Continue trend of good quality coarse woody debris. However, take care that coarse woody debris volumes do not become consistently high; a full range of coarse woody debris volumes (low to high) is preferred over many blocks. Increase retention quality by retaining large snags in densities similar to pre-harvest conditions.

Visual Quality: Resource Development Impacts on Achievement of Visual Quality Objectives (VQO)



Summary:

Of the 21 landforms assessed (all FRPA-era cutblocks), 62% were rated with “very low” or “low” harvest-related impacts on achieving the Visual Quality Objectives. VQOs were “well met” (“very low” impact on achieving VQO) on 52% of landforms, “met” (“low” impact) on 10%, “borderline” (“medium” impact) on 14%, “not met” on 5%, and “clearly not met” (“high” impact) on 19%.

Causal Factors:

14% of the openings contained visually effective levels of tree retention (> 22% by volume or stem count) and 19% of landforms sampled had good visual quality design (cutblock shaping).

Number of Samples by VQO and Impact Rating:

VQO ¹	High	Medium	Low	Very Low	Total
M		1		4	5
PR	4	1	2	6	13
R	1	1		1	3
Total	5	3	2	11	21

¹ M = modification, PR = partial retention, R = retention

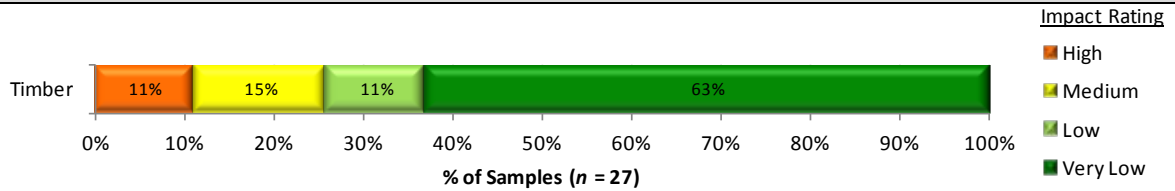
Overall Stewardship Trend: *Insufficient data*

No data for FRPA-era to allow for trending. Future trend analysis will use year of harvest.

Opportunities For Improvement:

Use existing visual design techniques to create more natural-looking openings and better achieve VQOs. Use partial cutting to retain higher levels of volume/stems. Reduce opening size in retention and partial retention VQO areas.

Timber Resource Value: Resource development impacts on the overall health and stocking of managed 20-40 year stands



Summary:

Of the 30 polygons sampled (from 2009 and 2010) only 27 were used in this summary. Three polygons were missing key biogeoclimatic ecosystem classification (BEC) info or other data. The weighted average well-spaced density over the six BEC's (SBS, IDF, ICH, SBPF, ESSF, MS) achieved 90% of target stocking standard.

Percent of target stocking standard by BEC

BEC	SBPS	SBS	ICH	IDF	MS	ESSF	Ave
TSS	96%	86%	100%	84%	100%	87%	90%

74% of the polygons were rated “very low” or “low” impact to health and stocking; 15% “medium” and 11% “high”. All four “high” impact rated polygons were a result of low total and well-spaced stems/ha. Two of these four also had 38% and 65% of the trees attacked by mountain pine beetle. Three of the four “medium” impacted polygons were rated as such due to low total and well-spaced stems/ha. Only one “medium” rated polygon was downgraded to “high” impact due to forest health factors which had 13.1% of the stems in that polygon attacked by mountain pine beetle. Overall, almost 19% of the polygons (5 of 27) shifted ratings when the forest health factors were incorporated onto the silviculture rating (which looks at the relationship between total and well-spaced stems/ha).

A DRAFT Stand Development Monitoring TSA Data summary report was not available at the time of this report to give more accurate data summaries. In light of this, a simple average of total stems/ha (based on 27 polygons) was 3716 stems/ha and well-spaced was 1084 stems/ha.

Causal Factors:

Seven of the eight “medium” and “high” impact rated polygons was a result of low total and well-spaced stems/ha. It is unclear whether there was low stand density at declaration or if these stands were spaced. If these low densities are attributed to spacing their productivity would be re-evaluated. If there was low stand density at declaration then investigating why may lead to recommendations on planting density and species mix.

Overall Stewardship Trend:

No trend can be established at this time

Opportunities For Continued Improvement:

A closer investigation is needed of the “medium” and “high” impact rated stands. A complete set of declaration and stand development monitoring data would provide a clearer picture of the polygons sampled. Also, when the 100 Mile House Stand Development Monitoring TSA Data summary is available it may shed more light on why 28% of the polygons were rated “medium” or “high” impact.

NOTE: Completing the polygon cover sheet will provide a clearer picture why some stands have such low stocking at declaration.

Soils: Resource Development Impacts on Soil Productivity and Hydrologic Function

There are currently only 6 Soils samples in the 100 Mile House Natural Resource District. Analysis will be completed in subsequent years when more samples are available.

Landscape-level Biodiversity: Is the forested matrix at the landscape-level providing the range of habitat understood as necessary for maintaining ecosystem function and old and mature forest dependant species?

In development. The three primary landscape-level biodiversity indicators are: (1) site index by leading species (ecosystem representativeness); (2) percent of TSA by age class (young, mid-, mature, and old forest); and (3) percent interior habitat of old forest. Each indicator is categorized by percent in non-commercial land base, timber harvesting land base, and protected areas. Data for these indicators is derived from Hectares BC and other spatial databases.

RESOURCE VALUE STEWARDSHIP RESULTS COMPARISON

Tables 2 provide ratings of stewardship effectiveness at varying scales. Effectiveness is determined by the percentage of samples with a “very low” or “low” resource development impact rating. Appendix 2 shows results by resource value for the North, South and Coast Areas and the province as a whole.

Table 2: Stewardship effectiveness within the Cariboo Region as determined by resource development impact rating (ID = Insufficient Data; sample sizes in brackets).

Resource Value	Effectiveness of Practices in Achieving Resource Stewardship Objectives: % Very low + low Resource Development Impact Rating (sample size in brackets)				
	Cariboo Region Comparison				Cariboo Region ^a
	100 Mile House District	Quesnel District	Williams Lake TSA		
			Central Cariboo District	Chilcotin District	
Riparian – all data	83% (54)	66% (67)	75% (69)	80% (59)	76% (249)
FRPA-era data	ID (13)	68% (22)	71% (35)	74%(23)	75% (93)
FPC-era data	78% (41)	64%(45)	79% (34)	83%(36)	76% (156)
Water quality – all data	82% (119)	82% (44)	80% (160)	81% (21)	81% (343)
2010–2012 samples	80% (54)	ID (18)	77% (91)	ID (9)	78% (171)
2008–2009 samples	83% (65)	ID(26)	84% (69)	ID (12)	84% (172)
Stand-level biodiversity-all data	75% (60)	52% (67)	81% (73)	68% (66)	69% (266)
FRPA-era data	87% (23)	76% (21)	94% (36)	61% (31)	80% (89)
FPC-era data	68% (37)	41% (46)	68% (37)	74% (35)	61% (95)
Visual Quality	ID (0)	68% (19)	59% (17)	ID (0)	64% (36)
FRPA	62% (21)	60% (10)	ID (0)	ID (0)	62% (31)
FPC					
Timber (stand development monitoring)	74% (27)	83% (35)	62% (42)	76% (34)	73% (138)

^a100 Mile House TSA, Quesnel TSA, and Williams Lake TSA (reported as former Central Cariboo and Chilcotin districts)

DISTRICT MANAGER COMMENTARY¹

The FREP program carries out stand and landscape-level monitoring for a multitude of resource values. The results of the monitoring work are captured in this MRVA report and are available for government managers, decision makers and natural resource professionals to consider in their duties as land stewards. Decision makers can use this information to help make informed decisions at multiple levels and resource professionals are encouraged to use the data to maintain current knowledge and enhance the management of the resources they are managing on behalf of the public.

Five resource values have been monitored in the 100 Mile House Natural Resource District (NRD) over the past number of years and in summary the results indicate “low” to “very low” impacts to natural resources. “Low” to “very low” impacts are considered to be consistent with society’s goal of sustainable resource management.

The resource values reported in this MRVA document for 100 Mile House include riparian, stand-level biodiversity, water quality (sedimentation), visual quality, and timber (stand development monitoring). All of the above noted resource values had strong (78% of the samples) “low” to “very low” impact ratings however the visual quality resource value, although still considered “low” to “very low” impact, rated a lower proportion of samples in that category (62%).

Potential opportunities for improvement exist to minimize the amount of “high” and “medium” impact rated samples in the future. I encourage resource professionals to use the suggested opportunities in this MRVA report for continued improvement of resource values in the 100 Mile NRD.

In light of the recent mountain pine beetle epidemic that has devastated the majority of the pine in this district and the subsequent accelerated harvest levels on the landbase, I see a greater need for monitoring of values associated with established land use objectives identified in the Cariboo-Chilcotin Land Use Plan. Also in response to the mountain pine beetle, there needs to be a monitoring lens placed on landscape level values to assess the level of cumulative effects on a broader scale.

SDM data indicates that post free-growing stands are being significantly impacted by biotic and abiotic forest health agents. Professionals need to put their minds to this emerging trend and adjust site plan stocking standards to mitigate future problems with the establishment of higher densities and a greater diversity of species.

Focus also needs to be placed on monitoring the current condition of soils in relation to how harvesting practices are impacting this value.

In the recent 100 Mile House TSA Timber Supply Review, the Deputy Chief Forester requested annual reporting on various values that in some shape or form impact timber supply. Future monitoring efforts will need to focus on those values (SDM) to aid in providing annual information to the Deputy Chief Forester.

¹ Commentary supplied by 100 Mile House Natural Resource District Manager, Pat Byrne.

APPENDIX 1: SUMMARY DESCRIPTION OF RESOURCE DEVELOPMENT IMPACT RATING CRITERIA

Table A1.1 shows the criteria used to determine the resource development impact ratings for each resource value. Detailed rating criteria, methodology, and definition of terms used are described in the companion document *FREP Technical Note #6: Methodologies for Converting FREP Monitoring Results to Multiple Resource Value Assessment (MRVA) Resource Development Impact Ratings* (http://www.for.gov.bc.ca/ftp/HFP/external/!publish/frep/technical/FREP_Technical_Note_06.pdf). The ratings of “very low”, “low”, “medium” and “high” are “technical ratings” based on best available science.

Table A1.1: Criteria for determining resource development impact rating outcomes for each resource value.

Resource Value	FREP Evaluation Question	Indicators	Resource Development Impact Rating Criteria	Very low	Low	Medium	High
Riparian	Are riparian forestry and range practices effective in maintaining the proper functioning of riparian areas?	Fifteen key questions (e.g., intact channel banks, fine sediments, riparian vegetation)	Number of “no” answers on assessment questions of channel and riparian conditions	0–2	3–4	5–6	> 6
Stand-level Biodiversity	Is stand-level retention providing the range of habitat and attributes understood as necessary for maintaining species dependant on wildlife trees and coarse woody debris?	Percent retention, retention quality from nine key attributes (e.g., big patches, density of large diameter trees), coarse woody debris volume, coarse woody debris quality from two key attributes (e.g., density of pieces \geq 10 m and 20 cm, and volume of large diameter pieces)	Cumulative score. A 60/40 weighting is used for tree retention versus coarse woody debris, recognizing the longer-term ecological value of standing retention.	> 70%	55–70%	40–55%	< 40%
Water Quality (sediment)	Are forest practices effective in protecting water quality?	Fine sediment potential	Fine sediment (m^3) due to expected surface erosion or past mass wasting	< 0.1	< 1	1–5	> 5
Soils	Are forest practices preventing site disturbance that is detrimental to soil productivity and hydrologic function?	Amount of access, restoration of natural drainage patterns, road side work area soil disturbance, amount of mature forest and coarse woody debris and restoration of natural drainage patterns	Overall assessment of practices on cutblock to maintain soil productivity and hydrologic function	Well	Moderately		Poor
Cultural Heritage	Are cultural heritage resources being conserved and where necessary protected for First Nations cultural and traditional activities?	Evidence and extent of damage to features, operational limitations, management strategies and type and extent of features	Combined overall cutblock assessment results with consideration of individual feature assessment results	See methodology report			
Timber: Stand Development Monitoring	What is the overall health and productivity of managed 20-40 year stands?	Impacts of forest health factors on stand stocking (ratio of total and well spaced)	Forest health damaging agent (% level of incidence) and level of stocking (well spaced stems per hectare)	\geq 1.7	0.8–1.69	0.3–0.79	0–0.29
Landscape-level Biodiversity	Is the forested matrix at the landscape-level providing the range of habitat understood as necessary for maintaining ecosystem function and old and mature forest dependant species?	Ecosystem representativeness, age class and interior old	Overall ranking: within protected and non-protected areas	Ranking under development			
Visual Quality	How are we managing views in scenic areas and achieving visual quality objectives?	Visual evaluation of block, design of block, percent of landform altered, impact of roads, tree retention and view point importance	Basic visual quality class (determined using the VQC definitions) is compared with the Adjusted VQC (derived using percent alteration measurements and adjustment factors) to determine if VQO is achieved.	VQO achieved, and % alteration low or mid-range	VQO achieved, but % alteration for one or both close to alteration limit	Only one method indicates VQO achieved	Both methods indicate VQO not achieved

APPENDIX 2: COMPARATIVE FREP RESULTS BY RESOURCE VALUE FOR OTHER AREAS

Table 2 describes overall ratings for the 100 Mile House Natural Resource District as compared to adjacent TSAs or districts. The table below describes the same results but by the North, South and Coast areas and the province as a whole. The three operational areas represent combined natural resource regions.

Table A2.1: FREP monitoring results by resource value for the North, South and Coast Areas and the province as a whole compared to the 100 Mile House Natural Resource District.

Resource Value	Effectiveness of Practices in Achieving Resource Stewardship Objectives: % Very low + low resource development impact rating (sample size in brackets)				
	100 Mile District	Forests, Lands and Natural Resource Operations Areas			Province
		North	South	Coast	
Riparian – all data	83% (54)	71% (654)	69% (678)	58% (451)	67% (1783)
FRPA-era data	ID (13)	71% (257)	68% (277)	62% (198)	67% (732)
FPC-era data	78% (41)	71% (394)	70% (401)	55% (253)	67% (1048)
Water quality – all data	82% (119)	66% (992)	70% (1515)	76% (1526)	71% (4033)
2010–2012 samples	80% (54)	67% (505)	70% (823)	79% (1021)	73%(2349)
2008–2009 samples	83% (65)	64% (487)	70% (692)	70% (505)	68% (1684)
Stand-level biodiversity - all data	75% (60)	42% (655)	54% (780)	77% (455)	56% (1890)
FRPA-era data	87% (23)	49% (270)	61% (347)	84% (201)	63% (818)
FPC-era data	68% (37)	38% (385)	49% (433)	72% (254)	50% (1072)
Visual Quality					
FRPA	ID (0)	73% (122)	54% (136)	78% (153)	69% (411)
FPC	62% (21)	56% (96)	65% (85)	62% (68)	61% (249)