

# The Forest and Range Practices Act Resource Evaluation Program

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## Abstract

The Forest and Range Practices (FRPA) Resource Evaluation Program (FREP) is a long-term commitment by the British Columbia government to assess whether forest and range practices are achieving management objectives for resource values identified under FRPA. The two primary components of FREP are provincial/regional-level evaluations and district/regional-level resource stewardship monitoring. Evaluations and resource stewardship monitoring both use indicators and standardized field protocols to assess the effects of forest management on specific resource values.

Indicators and monitoring protocols have been completed or are under development for a number of resource values, including riparian/fish, soils, biodiversity, recreation, visual quality, range/forage, resource features (karst), timber, water quality and wildlife. Evaluations of invasive plants, cutblock size, wildlife trees, forage quantity and quality, range hydraulic function, forest recreation sites, and tree species and genetic diversity are currently underway or in some cases completed. Resource stewardship monitoring protocols for riparian/fish and stand-level biodiversity are being operationally implemented, while monitoring protocols for soils and water quality are being pilot tested in various areas across the province. Continuous improvement occurs at the district/regional level and the regional/provincial level to improve local forest practices and Forest Stewardship Plan objectives and strategies, and to affect changes to legislation, policies and guidelines, where required. A comprehensive quality assurance plan is in development to guide and measure the success of FREP. Future program direction includes increasing capacity, funding and partnerships, developing digital data collection devices for improved data management, and completing an external third-party assessment of how well the program is meeting its objectives.

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## **Background**

The Forest and Range Practices (FRPA) introduces the transition to a results-based forest practices framework in British Columbia, where the focus is on the end results of forest practices rather than management through prescriptive regulations and standards. British Columbia is one of the few jurisdictions in the world to undertake such a forest management scheme.

Under this new approach, the forest industry is responsible for developing results and strategies for the sustainable management of 11 resource values identified under FRPA. The role of government is to ensure compliance with established results and strategies, and evaluate the effectiveness of forest and range practices in achieving management objectives set by government for the 11 resource values. The resource values addressed under FRPA include: soils, visual quality, timber, forage and associated plant communities, water, fish, wildlife, biodiversity, recreation resources, resource features, and cultural heritage resources.

To help ensure that FRPA achieves environmentally sound, innovative, and cost-effective forest and range practices in British Columbia, the provincial government initiated Resource Evaluation Program (FREP). FREP is a long-term commitment designed to:

- Assess the effectiveness of FRPA in achieving stewardship of the 11 resource values identified under the act
- Identify issues regarding the implementation of forest policies, practices and legislation as they affect those resource values, and
- Implement continuous improvement of forest management in British Columbia.

As identified in the FREP Charter, the primary objective of the program is to determine if forest and range polices and practices are achieving government's objectives for FRPA resource values, with a priority on environmental parameters, and consideration for social and economic parameters, where appropriate. In order to accomplish this objective, FREP will use on-the-ground monitoring and evaluations to:

- Evaluate the status or trends of resource values and determine causal factors
- Determine whether resource values are being managed in a sustainable manner through proven or alternative forest practices
- Communicate the results of evaluations to internal and external stakeholders, and
- Recommend changes to forest and range policies and legislation, where required.

## **Structure of FREP**

Ongoing direction and guidance for FREP is provided by the Program Sponsor (Chief Forester), who also receives input from the Minister's Practices Advisory Council and the FRPA Joint Steering Committee (figure 1). The Joint Management Committee makes program decisions in consultation with the Program Sponsor, and reviews and forwards recommendations from the FRPA Resource Evaluation Working Group to the Program

Sponsor. The FRPA Resource Evaluation Working Group (FREWG), consisting of a committee of internal stakeholders, leads the development and implementation of FREP. External stakeholders are invited to provide input on evaluation issues and participate on sub-working groups, as required. Resource Value Teams are responsible for developing evaluation questions for their assigned resource value(s), in consultation with internal and external stakeholders. Once an evaluation project has been approved for funding, Resource Value Teams work together with Evaluation Project Teams to develop or refine resource value indicators, data collection protocols, and reporting procedures.

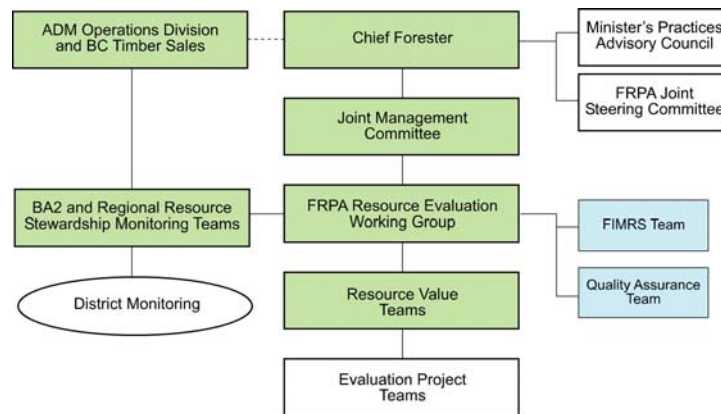


Figure 1. Structure of FREP (Province of British Columbia 2005).

## Program Participants

Internal stakeholders consist of the Chief Forester, the FRPA Joint Steering Committee, the Joint Management Committee, and staff from the Ministry of Forests and Range and the Ministry of Environment. The co-ordination, development and implementation of FREP is being led by the Ministry of Forests and Range, Forest Practices Branch, in collaboration with Research Branch, Resource Tenures and Engineering Branch, the three forest regions and various forest districts,<sup>2</sup> and the Ministry of Environment.

External stakeholders include provincial and federal resource agencies, the British Columbia Forest Practices Board, academics, consultants, non-government organizations, the forest industry, First Nations groups, municipalities and regional districts, other groups and organizations, and members of the public.

Input is sought from external stakeholders throughout all phases of the monitoring and evaluation process (e.g., identification of evaluation questions, indicator and protocol development, pilot testing) to ensure that stakeholder needs, priorities and concerns are identified and addressed. Stakeholders are kept apprised on ongoing projects, and mechanisms are in place to enable stakeholders to provide technical input into the design, implementation and analysis of FREP, as well as individual projects. Opportunities for stakeholder review and comment on program initiatives are also

<sup>2</sup> The administrative boundaries for forest management in British Columbia include three forest regions (Coast, Northern Interior and Southern Interior) and 29 forest districts.

provided through meetings and workshops, access to all program documentation and products on the Internet, and selected distribution of program reports.

## Program Approach

There are two primary components to FREP—evaluations and resource stewardship monitoring. Evaluations are carried out at the broader provincial or regional level to assess the status or trends of resource values. Resource stewardship monitoring is carried out on a more local basis at the district or regional level, and consists of overview monitoring of on-the-ground forest practices to assess whether resource value objectives or strategies are being achieved. Figure 2 illustrates the relationship of district and regional resource stewardship monitoring within the overall provincial FREP process. Resource stewardship monitoring provides valuable information on the status, trends and implementation issues related to specific local resource values. This information identifies “red flags” that may require further investigation, and helps to focus the efforts of more detailed evaluations.

FREP Evaluation and Resource Stewardship Monitoring Integration

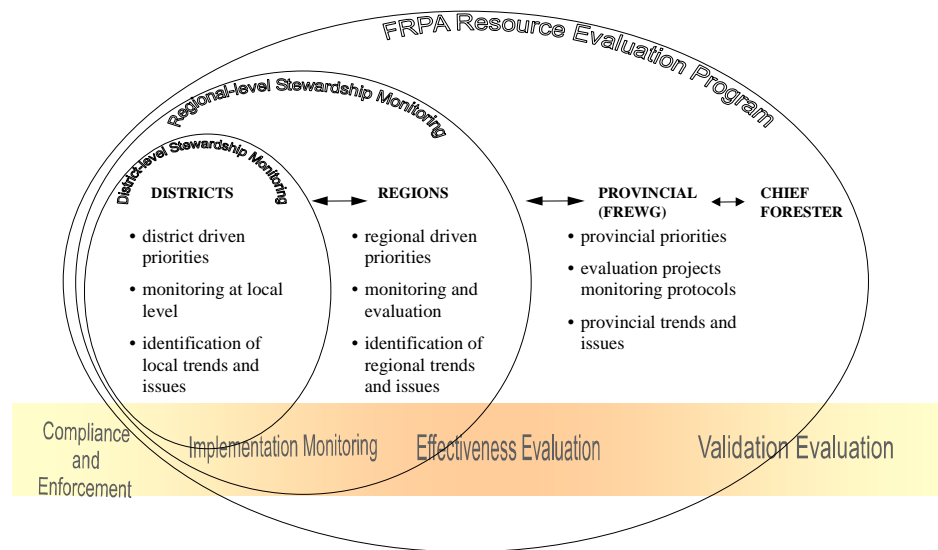


Figure 2. Integration of Resource Stewardship Monitoring and Evaluations (Province of British Columbia 2005).

## Indicators

Evaluations and resource stewardship monitoring both use indicators to assess the effects of forest and range management on a specific resource value. Indicators are measurable attributes or components (often environmental or social) of a resource value that provide reliable information on the status or state of that resource. The standardized methodology for collecting and analysing data for a particular indicator is referred to as a protocol.

- There are several types of commonly used environmental indicators:
- Function-based indicators—measures physical processes and their rates (e.g., water flow or nutrient cycling).
  - Structure-based indicators—measures ecosystem attributes that reflect broad-scale patterns (e.g., wildlife tree patch type, distribution and abundance).
  - Species-based indicators—measures some aspect of an individual species' life history, behaviour or demography (e.g., presence of Lewis's woodpecker).

## **Types of Evaluations**

There are four different types of evaluations that can be used to assess the outcomes of forest management practices. Each has a different purpose and answers different types of questions.

**Compliance** – Assesses compliance with legal requirements. Answers the question, “Have they done what they were legally required to do?” Compliance evaluations do not evaluate effectiveness and only provide limited guidance for improvement. As a result, compliance evaluations are not conducted under FREP; however, there are linkages between the two programs (See “Linkages with Other Monitoring/Evaluation Programs”).

**Implementation** – Assesses progress towards a specific goal (including the adoption of new practices, policies or guidelines) and whether practices were implemented as planned. Answers the questions, “Have they done what they said they would do?” “Have they achieved the intent of policy?” Implementation evaluations are frequently used for “internal” investigations.

**Effectiveness** – Assesses whether policies or practices are meeting management objectives. Answers the questions: “Did their actions achieve desired objectives?” “Are current practices, plans and standards effective?” Effectiveness evaluations assess the impacts of operational activities on specific resource values, often using comparisons with baseline data.

**Validation** – Assesses or verifies the basic assumptions under which a specific management direction was developed. Answers the question, “Are the assumptions upon which we base our policies and practices correct?” Validation evaluations are primarily research tools for examining the cause and effect relationships between an ecological system and management actions.

## **Evaluation Intensity**

There are three levels of intensity for evaluations conducted under FREP. All three levels can be used to assess the current status of resource features or to identify trends by conducting a series of evaluations over time (Figure 3).

**Routine** – A relatively low intensity evaluation calling for typically inexpensive and rapid data collection. Routine evaluations are low-cost overview evaluations that often involve

visual estimates and “yes/no” checklists. These types of evaluations are useful for identifying management trends or issues that may require more detailed evaluations.

**Extensive** – A more detailed evaluation involving the collection of categorical data using visual estimates or relatively simple measurements. Extensive evaluations are more rigorous and quantitative than routine evaluations, and are used to collect more detailed information on a given area.

**Intensive** – An in-depth evaluation involving detailed quantitative data collection and analysis. Intensive evaluations are more time consuming and expensive to conduct than routine or extensive evaluations. Comprehensive quantitative data is collected and compared with control or benchmark data.

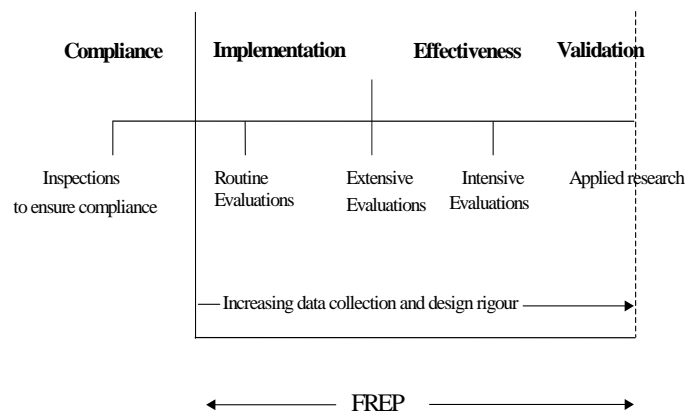


Figure 3. Types and Intensities of Evaluations under FREP (Province of British Columbia 2005).

### Linkages with Other Monitoring/Evaluation Programs

FREP is linked to the work of several other agencies, and shares data and information with a number of complementary monitoring and evaluation initiatives in British Columbia, including:

- Ministry of Environment biodiversity and environmental monitoring programs
- Ministry of Forests and Range and Ministry of Environment compliance and enforcement programs
- British Columbia Forest Practices Board audits and special investigations
- Sustainable Forest Management (Certification)
- National Criteria and Indicators Reporting, and
- Provincial State of the Forest Reporting.

A clear understanding of the linkages with these other agencies is important to ensure that FREP’s budget and staff resources are allocated efficiently and effectively. Representatives from the above agencies are engaged at various levels in the evaluation program.

One important linkage is compliance and enforcement (C&E). Activities carried out under FREP will not duplicate the efforts of C&E programs. The mandate of C&E is to ensure compliance with, and enforcement of, legislation. Therefore, FREP will not undertake compliance evaluations and C&E staff will not participate in FREP. Nevertheless, information from C&E databases (e.g., Compliance Information Management System) and other non-confidential data relevant to FREP priorities and projects may be requested and used during resource stewardship monitoring or evaluations.

## **Work Completed to Date**

Over the last two years, the FRPA Resource Evaluation Working Group (FREWG) has focused on developing the management framework and structure of FREP, building capacity and interest in the program, determining priority evaluation questions, developing indicators and monitoring protocols for specific resource values, and learning important lessons related to developing and implementing a new, comprehensive provincial evaluation program. FREWG has also developed an extensive website for FREP initiatives and updates, a communications plan and reporting framework, a quality assurance system, and a series of reports, extension notes and technical notes to communicate important program accomplishments to stakeholders.

Indicators and monitoring protocols have been completed for a number of resource values, including riparian/fish, stand-level biodiversity, recreation, visual quality, and range/forage. Indicators and protocols for several other resource values are at various stages of development (e.g., soils (cutblock and terrain level), landscape-level biodiversity, resource features (karst), water quality, timber and wildlife).

Implementation of FREP is being phased-in on an ongoing basis. Before monitoring and evaluation protocols are operationally implemented, they are rigorously pilot tested in field trials. In the fall of 2004, resource stewardship monitoring protocols for riparian/fish, stand-level biodiversity and soils were pilot tested. The pilot testing helped further define the role of district- and regional-level resource stewardship monitoring within the overall context of the provincial FREP. It also served to refine the three monitoring protocols to ensure they met district and regional stewardship monitoring needs, and were effective in identifying resource value status, trends and implementation issues. Another key component of the pilot testing was to provide training to district implementation staff.

In 2005, resource stewardship monitoring protocols for riparian/fish and stand-level biodiversity were operationally implemented in more than half of the province's forest districts, while the soils protocols underwent additional pilot testing along with initial pilot testing for water quality. It is anticipated that monitoring protocols for at least two resource values will be implemented in each subsequent year until all protocols are fully operational. By 2007, it is expected that all forest regions and districts in British Columbia will be monitoring and evaluating resource values under FREP.

Detailed evaluations have been completed or are ongoing for invasive plants, cutblock size, wildlife trees, forage quality, range hydraulic function, forest recreation sites, and tree species and genetic diversity.

## Continuous Improvement

One of the main objectives of FREP is to promote the continuous improvement of forest management practices in British Columbia. Continuous improvement occurs at two levels—the district/regional level and the regional/provincial level.

Continuous improvement at the district/regional level relates to improving local forest practices and Forest Stewardship Plan objectives and strategies. The results of resource stewardship monitoring are communicated directly to forest licensees and district managers. These results may indicate training or extension needs, or may be used to refine local practices to ensure that resource value objectives are being achieved. Resource stewardship monitoring may also identify “red flags” that require more detailed investigation at the regional/provincial level.

Continuous improvement at the regional/provincial level relates to affecting changes to legislation, policies and guidelines as a result of evaluations and resource stewardship monitoring. Monitoring and evaluation results, along with recommendations, are communicated to the Joint Management Committee and the Program Sponsor (Chief Forester). Social, economic and environmental factors are all considered prior to determining appropriate actions (e.g., training, extension, and/or policy and legislation changes).

The continuous improvement process within FREP is designed to ensure that we are asking the right questions, collecting the right information, ensuring that objectives for resource values are being met, and that the process is open and accountable to the public. Figure 4 illustrates the continuous improvement process.

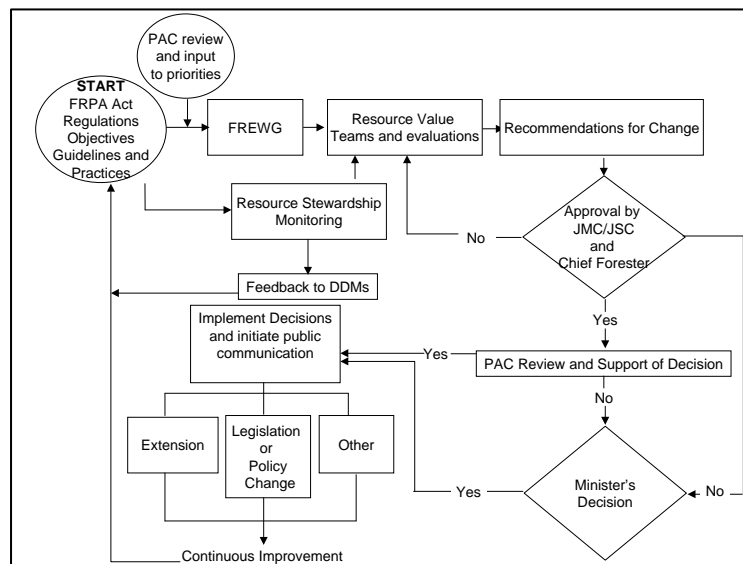


Figure 4. The Continuous Improvement Process (Province of British Columbia 2005).

## Measuring the Success of the Program

To measure the success of FREP, a quality assurance framework is being developed at both the program level and project level. Key questions at the program level include: “Are the program objectives being met?” “Is the Province receiving value for money?” “Are monitoring and evaluation results valuable and being used?” Quality assurance at the project level covers all aspects of monitoring and evaluations, including indicator and protocol development; data collection, management and analysis; and reporting, reviewing and approval processes. Performance indicators for evaluating the success of FREP are also under development.

## Focus for the Future

Future initiatives for FREP include:

- Continuous improvements/refinements to the program structure and framework
- Increase program capacity (including funding) and strengthen internal and external stakeholder participation
- Implement resource stewardship monitoring protocols for two resource values each year
- Pilot test resource stewardship monitoring protocols for two resource values each year
- Develop digital data collection devices for monitoring and evaluation projects
- Implement the FREP quality assurance and continuous improvement plans
- Complete an external, third-party assessment of FREP in meeting overall program objectives
- Publicly report results from completed monitoring and evaluation projects and provide public access to data
- Continue to develop FREP extension notes, technical notes, reports, publications and data files
- Produce a report on lessons learned during the development and implementation of a provincial evaluation program, and
- Within the next two years, begin reporting on changes and improvements to forest management legislation and policy resulting from FREP.

## References

Province of British Columbia. 2005. Monitoring and Evaluation Strategy. FRPA Resource Evaluation Program. BC Min For and Range, BC Min Env and BC Min Agric and Lands. Victoria, BC