



**Forest
Practices
Board**

Forest Stewardship Plans: Are They Meeting Expectations?

Special Investigation

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Table of Contents

Board Commentary	i
Executive Summary.....	1
Introduction.....	3
Background	4
What are FSPs?.....	4
FSPs – Why should we care?	4
Approach.....	5
Purpose	5
Methods	5
Findings and Observations.....	6
Are FSPs useful for public review and comment?	6
Are FSP results and strategies enforceable?	9
Are results or strategies consistent with government’s objectives?	14
Are FSP’s improving?	18
Do FSP’s enable innovation?	19
Conclusions.....	21
Recommendations.....	22
Appendix 1: Information and Definitions Regarding FSPs.....	23
Appendix 2: Detailed Methods.....	26
Appendix 3: Results for Individual Measures and Objectives.....	37

Board Commentary

It has been nine years since the Board reported on the initial set of Forest Stewardship Plans (FSPs) prepared under the *Forest and Range Practices Act* (FRPA). Several problems were identified in that original report, and it is truly disappointing to have to report now that the situation has not improved.

The FSP is the only operational plan that must be made available for public review and comment, and is the only operational plan that requires government approval. In the FSP, license holders propose how they will meet government's objectives. The FSP is meant to provide government with a set of measurable or verifiable results or strategies against which government enforces compliance and to assure the public that all resource values are being conserved and protected.

The Board finds, based on our sample, that most FSPs contain results or strategies that do not demonstrate consistency with objectives, and, that **all** have significant problems with measurability or verifiability. In addition, many FSPs cover vast and overlapping areas of the province making it very difficult for public understanding and review.

The existing culture associated with FSP preparation and approval is unacceptable. Licensees write FSPs in a manner that renders them of little value to the public. Yet, in many cases these plans are approved, and extended, by government decision makers, despite the fact that they do not meet the required approval tests.

The Board also observes that:

1. Many forest tenures in the province are certified to international forestry standards, which require the forest company to prepare a sustainable forest management plan. The detail and level of commitment provided in those plans is often superior to the contents of the FSP for the same tenure.
2. FSPs were intended to foster innovation by licensees in the achievement of government's objectives. Such innovation is rare, as licensees do not commit to innovative approaches, preferring instead to follow government's default practices.
3. Professional reliance, a cornerstone of FRPA, fails to solve the systemic FSP problems of consistency and measurability because license holders are under no obligation to accept the advice of these resource professionals.

The Board is very concerned that many of these current, problematic FSPs have the potential to be extended without a public review or correction of the problems. In the Board's view, such extensions should not be permitted for any FSPs that do not meet the approval tests. Government needs to act immediately if these problems are going to be corrected in the next round of FSP approvals. This report contains recommendations to help achieve these goals.

Finally, it has been 10 years since FRPA was introduced and the first FSPs were prepared. These documents have not improved over time. They do not meet the public's interest, are not adequate for their intended purpose and the Board questions whether they are the right tool for the job.

Executive Summary

The *Forest and Range Practices Act* (FRPA) requires most licensees harvesting Crown timber in BC to prepare forest stewardship plans (FSPs). FSPs are the only operational plans prepared by licensees for approval by government. They provide the central means for government to hold industry accountable for their actions. In 2004, government stated its expectations for FSPs, saying they would, among other things, contribute to:

- innovation in results, strategies and measures;
- effectiveness in compliance and enforcement actions; and
- effectiveness in public consultation.

Various government guidance documents since then have reiterated these expectations.

The purpose of this special investigation is to determine if FSPs are meeting the expectations government set for them. Specifically:

- Are FSPs useful for public review and comment?
- Are results, strategies and measures within FSPs measurable and enforceable?
- Are results and strategies in approved FSPs consistent with government's objectives?
- Is innovation apparent in FSPs?
- Are FSPs getting better?

The Board approached these questions through an examination of 43 of the 290 FSPs active in BC and included interviews with people who have been involved with preparing, reviewing and implementing FSPs. The examination included determining if: the FSP was advertised and public comments considered; results, strategies and measures were measurable or verifiable; and results and strategies were consistent with government's objectives. Also, in 11 of the 43 FSPs, all amendments were examined and the overall changes documented to assess improvement over time.

Observations from the examination include: areas applicable to FSPs are often very large; areas from different FSPs often overlap; multiple licensees can be involved in a single FSP; planned cutblocks and roads are usually not shown; FSP documents can lack clarity due to complex language and poor correlation to operations on the ground; there are very infrequent opportunities for the public to review FSPs; and results, strategies and measures are highly variable in their measurability or verifiability and are often not consistent with government's objectives.

The Board concludes:

1. A high proportion of the results, strategies and measures in FSPs are not measurable or verifiable and therefore not enforceable. All 43 sampled FSPs were signed and sealed by professional foresters and approved by government decision makers, yet had more than one result, strategy or measure that was not measurable or verifiable.
2. In the Board's opinion, many results or strategies in FSPs do not demonstrate consistency with government's objectives. Results or strategies for those objectives that are simple and clear, or those with practice requirements, more often demonstrate consistency.

3. FSPs alone continue to be inadequate as tools for public review and comment. They are difficult to understand, do not provide the type of information the public wishes to see, and often overlap with other FSPs that may have different results, strategies and measures.
4. The time between opportunities for full public review and comment on FSPs can be excessive. Most licensees chose to extend their FSPs, meaning that these opportunities may not occur for intervals of ten or more years.
5. Few of the measures in FSPs designed to prevent the introduction or spread of prescribed species of invasive plants, or to mitigate the removal or ineffectiveness of natural range barriers, demonstrate that they are both practicable and likely to be effective for these purposes.
6. FSPs are not improving over time. Amendments to existing FSPs are primarily administrative in nature and do not improve results, strategies or measures. Newer FSPs do not have better results, strategies and measures than older FSPs.
7. Innovation in FSPs is rare.

The Board recommends that Government should not approve FSPs or extensions that do not meet the requirements set out in FRPA, and that government improve processes for public review and comment. In addition, the Board recommends that the Association of BC Forest Professionals should ensure that its forest professionals and their employers are cognizant of the forest professionals' responsibilities around FSPs.

Introduction

It has been more than ten years since approval of the first forest stewardship plan (FSP) under the *Forest and Range Practices Act* (FRPA), and more than seven years since the majority of licensees shifted to FSPs to set the direction for their practices. Indeed, most licensees have worked through the first generation of their FSP and have completed a second FSP or extended their first one. Some licensees have extended their FSPs twice.

FRPA requires most licensees harvesting Crown timber in BC to prepare an FSP. These plans fulfill an important function—they are the only operational plans prepared by licensees for approval by government. They provide the central means for government to hold industry accountable for their actions. In 2004, government stated its expectations that FSPs would, among other things, contribute to:

- innovation in results, strategies and measures;
- effectiveness in compliance and enforcement actions; and
- effectiveness in public consultation.ⁱ

Various government guidance documents since then have reiterated these expectations.ⁱⁱ

Given these expectations, as well as the legal and functional importance of FSPs, periodic evaluation of effectiveness is necessary. Although the Board regularly audits forest planning and practices under FRPA, the audit process tests planning and practices against legislation, regulation and approved FSPs—it does not evaluate the content of FSPs. In 2006, the Board examined the content of initial FSPs prepared under FRPA and concluded that they were not particularly suitable for public review, content was sparse, and enforceability of results and strategies was limited due to the way they were written.ⁱⁱⁱ

Since then, a number of government reports have examined specific parts of FSPs. For example, recently the Board identified issues in FSP content relating to government's objective for water in community watersheds^{iv} and the measures for natural range barriers.^v Also, the Board in *A Decade in Review: Observation on Regulation of Forest and Range Practices in British Columbia*, concluded that FRPA plans, including FSPs, do not provide for meaningful public input and advised government to, when approving FSPs, "ensure that results and strategies are: (a) consistent with governments objectives and (b) measurable and verifiable."^{vi} The Ministry of Forests, Lands, and Natural Resource Operations, through the Forest Resource Evaluation Program (FREP), has looked at certain aspects of FSPs. One FREP report identified opportunities for improvement in relation to cultural heritage resources.^{vii} Another FREP report observed that old stocking standards were often included in new FSPs, despite changes in knowledge, pest occurrence, technology, and assumptions about the future.^{viii} A third FREP report examined the efficacy of visual quality results or strategies in FSPs.^{ix}

The Board assumed that scrutiny of FSPs early on would help improve subsequent FSPs. This report tests that assumption, asking many of the same questions as in the 2006 Board report, to determine if FSPs have improved.

Background

What are FSPs?

FSPs are one of the primary plans governing forest activities on public land in BC. They are the only “operational” plans that must be made available for public review and comment and that are subject to approval by government. FSPs consist of text and maps with the content specified by FRPA and the *Forest Planning and Practices Regulation* (FPPR). Some of the main items required are:

- Results or strategies designed to meet government’s objectives.
- Measures for invasive plants and natural range barriers, if applicable.
- Stocking standards (a listing of suitable tree species for restocking, and criteria for acceptability of these at free growing age).
- Maps showing boundaries of forest development units (FDUs), designations in effect, such as ungulate winter ranges, scenic areas, and reserves, as well as existing cutting permits and roads.

FSPs generally do not include *planned* roads or cutblocks. We say generally because they may be included in some cases, such as when the licensee wishes to declare¹ them, or when they are in cutting permits or road permits that were issued prior to the FSP submission.

Appendix 1 explains terms and processes common to FSPs.

FSPs – Why should we care?

Forest operations enabled by an FSP can affect the public, interest groups, and other resource users. Because FSPs are the only operational plans that must be made available for public review and comment, they may be the only venue where those potentially affected can influence operations.²

FSPs are important for government because they are the only operational plans that requires government approval. They provide a means for government to see how forest licensees propose to meet government’s objectives, and are meant to provide government with a set of measurable or verifiable results or strategies against which to enforce compliance.

FSPs are important for licensees too. First, licensees must have an approved FSP before harvesting timber. Second, licensees, through the FSP, make commitments to government and the public on how they will achieve government’s objectives.

¹ “Declaring” under the FPPR section 14(4) that a cutblock has had all necessary assessments done provides planning protection for that block so that future orders do not apply. Cutblocks can also be protected under section 196 of FRPA if the blocks were part of a previously approved forest development plan. These are ways of protecting the often-significant investments necessary to plan and prepare a cutblock for harvest. Cutblocks or roads are declared in FSPs either at the time of original approval or by amending the FSP later.

² Many licensees are involved in voluntary forest certification programs that incorporate further public processes or planning including utilization of public advisory groups and sustainable forest management planning.

Approach

Purpose

The purpose of this special investigation is to determine if forest stewardship plans (FSPs) are meeting the expectations set for them. Specifically:

- Are FSPs useful for public review and comment?
- Are results, strategies and measures within FSPs measurable and enforceable?
- Are results and strategies in approved FSPs consistent with government's objectives?
- Is innovation apparent in FSPs?
- Are FSPs getting better?

Methods

The Board approached these questions through an examination of FSPs and interviews with people who have been involved with preparing, reviewing and implementing FSPs.

There are about 290 FSPs currently active in BC. The Board randomly selected 15 percent (43 FSPs) of these as a sample for examination. Since the selection of FSPs was random, there was no influence nor bias over the sample FSP population, such as location in the province, or size of operation covered by the FSP. The sampled FSPs do represent all of BC's resource regions and include a range of licences of various sizes (Appendix 2).

This FSP examination included a thorough review of each sampled FSP to determine whether: the FSP was advertised and public comments considered; results, strategies and measures were measurable or verifiable; and results and strategies were consistent with government's objectives.

The Board examined stocking standards in all sampled FSPs for basic requirements including presence of ecologically suitable species, tree density specifications, and ages for achievement of regeneration and free growing status. An examination of the biological suitability of the stocking standards for the FSP areas was not within the scope of this investigation.

The Board randomly selected a 25 percent subsample of these FSPs (11 of 43) for further examination. For this subsample, the Board examined all FSP amendments and documented the overall changes to each FSP over time in an effort to assess improvement over time.

The Board interviewed forest industry and government personnel to discuss innovation, compliance and enforcement, improvement in FSPs, and public review and comment. Also, records of previous discussions with environmental non-government organizations (ENGOS), industry and government personnel were reviewed and information incorporated in this investigation. Further details on methods are in Appendix 2.

Findings and Observations

Are FSPs useful for public review and comment?

The Board reviewed the sampled forest stewardship plans (FSPs) for consistency with the *Forest and Range Practices Act* (FRPA) requirements for review and comment, and looked at the effectiveness of the FSPs for facilitating consultation.

Section 18 of FRPA requires that a licensee make its plan available for public review and comment before submitting it for approval. Licensees must also make major amendments³ available for review and comment unless granted an exemption. These review and comment opportunities are important for the public in general and for other tenure holders in the FSP area or businesses, such as lodges or tour companies, which may be affected by forest activities enabled by the FSP. There are no requirements specific to consulting with such tenures or businesses, although one FRPA guidance document does provide advice and suggestions regarding review and comment for tenured recreation businesses.^x

In addition to FRPA itself, the *Forest Planning and Practices Regulation* (FPPR) provides more details on public review and comment—the licensee must publish a notice, must provide a person who is interested in the plan an opportunity for review, and must consider all written comments. All 43 sampled FSPs met the FRPA and FPPR requirements.

Under section 21 of the FPPR, licensees must make reasonable efforts to meet with First Nations. All 43 sampled FSPs met this requirement. In addition, licensees must include a result or strategy for government's cultural heritage resources objective, which often includes further consultation requirements relating to First Nations. Government and licensees holding FSPs have other responsibilities for First Nations consultation, related to Aboriginal rights and title—these are beyond the scope of this investigation.

Although sampled FSPs met FRPA's review and comment requirements, some characteristics of FSPs are not consistent with the notion that the public requires suitable information and appropriate review opportunities to provide meaningful comment.

Size of Area to Review

FSPs specify forest development units (FDUs), in which the results, strategies and measures apply. There is no minimum or maximum size for an FDU. The *Administrative Guide to Forest Stewardship Plans* (AGFSP) lists factors that may influence the size of FDUs. The AGFSP notes that a factor contributing to smaller FDUs is "more effective public review." However, most FDUs tend to be large. In January 2015, the average size of an FDU among all approved FSPs was 1260 square kilometres (an area the size of the lower mainland from Vancouver to Langley) while the largest FDU was over 71,000 square kilometres (about twice the size of Vancouver Island). It can be difficult for a member of the public to provide meaningful input when confronted with such large areas.

³ A licensee can make "minor" amendments to an FSP without approval by government. There is no requirement to make these available for public review.

Overlapping FDU

It is very common for FDUs from separate FSPs to overlap. This is particularly common in timber supply areas (TSAs) where there are several licensees.⁴ For example, Paul Lake, about 20 kilometres northeast of Kamloops, has six overlapping FDUs. Harrison Mills, near Chilliwack, has four. A member of the public, interested in reviewing forest management planning in an area with overlapping FDUs, may not know that other FSPs exist. Overlapping FSPs may not be available for public review and comment at the same time, so the public would need to get involved several times. Results, strategies or measures may not be the same, or may conflict, in these overlapping FSPs. Several interviewed foresters said that overlapping FSPs make it hard for the public to judge effects and make relevant comments.

Multi-Licensee FSPs

Licensees often cooperate in producing a single FSP among them or sometimes a new licensee in an area will join an existing FSP. The Board found that about 37 percent of FSPs have more than one licensee listed. About 24 percent have three or more licensees involved.^{xi} This can be an advantage for those interested in reviewing and commenting on FSPs in an area—there are fewer plans to review. However, it can sometimes be difficult to determine which licensee(s) to contact if someone has a concern about forest management in a particular area.

Cutblocks, Roads and FDUs

Generally, FSPs do not show the location of *planned* cutblocks and roads—instead they show the results, strategies and measures that apply within the FDU.⁵ Members of the public reviewing FSPs will not know where development will occur within the FDU, they will only know that certain results, strategies and measures will apply across that unit.

The interested public can view site plans for proposed roads and cutblocks at licensee offices.⁶ Site plans must show the location of the proposed road or block and identify how results and strategies from the FSP will apply. Although certain site plans may be made available, licensees are not required to consider comments on them and relevant site plans may not be ready at the time the FSP is available for review. The interested public may also find that site plans are difficult to access because:

1. There is no requirement to advertise the availability of site plans.
2. There is usually no obligation to inform interested parties of the availability of site plans.
3. In cases of overlapping tenures, interested parties may need to visit several licensees' offices to see all applicable site plans.
4. Only site plans for historic and currently permitted activities are required to be available—site plans for activities planned in the near future need not be available.
5. Licensee offices may be very distant.

⁴ Licensees often harvest only in selected areas (often-termed “chart” areas) within a TSA. However, most volume-based forest tenures in BC allow the licensee to harvest anywhere within a large TSA.

⁵ Licensees generally must only show planned roads and cutblocks in FSPs when active cutting permits are in place for them at the time of FSP submission or if the licensee wishes to ‘declare’ a road or block to ensure planning protection. See also footnote 1 on page 4.

⁶ Site plans for roads and cutblocks must be kept at the office of the licensee and be made available to members of the public upon request.

Many of those interviewed told the Board that the public wanted to see proposed cutblocks and roads on maps in order to provide comment on licensee plans. One forester said, “people want to see cutblocks” when reviewing licensee plans. Another said, “the public never grasped FDU-level comment in FSPs—they like block and road level information.” A forest licensee representative told the Board that their relationships with guide outfitters and trappers had deteriorated since the shift to FSPs from forest development plans because of the lack of site-level information in the FSP. Some licensees have dealt with these problems by voluntarily providing planned cutblock and road information to the public or for specific interest groups.

Public Understanding

During the interviews, the Board heard from several sources that the public’s understanding of FSPs was poor and that this affected their ability to provide meaningful input. The Board identified some reasons for this. **First, there is the lack of clarity in FSP documents.** FSP authors often use unclear language, legal language or unnecessary information that masks the intent of a result or strategy. The following excerpt of a small part of a result or strategy for old forest retention from a sampled FSP demonstrates some of these problems:

Subject to the old forest report information obtained in 1, and the targets calculated in 2(a), for High and Intermediate biodiversity emphasis LU and BV combinations determined to have an immediate recruitment situation due to insufficient old forest in a BV that overlap the Licensee's FDUs, the following actions shall be carried out by the Licensee prior to further cutting and road permit applications within the affected BV...

Public Review and Comment for Operational Plans —Other Approaches

One part of the province operates under a different set of regulations for forest planning and practices. In the Fort St. John timber supply area, the *Fort St John Pilot Project Regulation* governs forest planning and practices. This regulation requires an ‘operations plan.’ This plan provides the public with an opportunity to review and comment on planned roads and cutblocks.

In other areas of the province, some licensees voluntarily provide additional information and opportunities for public review and comment. For example, Western Forest Products publishes *Operational Overview Maps* that show planned roads and blocks. Tolko’s Okanagan Woodlands operations also provide additional information by posting maps of proposed blocks and roads on their website and providing 60 days for feedback during their annual information sharing referral process.

Some licensees have also designed public advisory groups to review their planning and practices related specifically to sustainable forest management certification. These same groups may review planned roads and cutblocks. A potential drawback for this approach is that the licensee chooses the members of the public advisory group, presumably to represent a cross-section of community interests. However, such an approach does not necessarily provide all interested members of the public with a forum to voice their concerns.

Second, it can be difficult to envision the application of the results and strategies set out in FSPs to the operations on the ground. One interviewed forester said that there is not enough information and what is available is in a form that is difficult for the public to translate to a vision of effects on the ground.

Frequency of Review

A primary requirement for effective public consultation is timely and ongoing availability of the documents for review and comment. FSPs are available for full public review and comment prior to submission to government. For FSP amendments, only the amended portion is available for public review and comment. The opportunity for a full public review is limited to the original submission of the FSP.

The normal term of an FSP is five years. If, after five years, the licensee chooses to write a new FSP, then there is another opportunity for public review and comment. However, most licensees are choosing to extend the term of their original plans, rather than prepare a new plan. There is no requirement for public review and comment on extensions.

In practice, FSPs are only available for full review and comment once prior to commencement of the term, and the term can be up to five years. The original terms can and often are extended for a further five years—stretching the term to ten years. Almost all of the sampled FSPs have had terms extended to ten years. Government staff told the Board that they are preparing for the second round of extensions commencing in 2015. Those FSPs, if extended, will have terms of up to 15 years without any further opportunity for full public review and comment.

Review and Comment Requirements Embodied in FSPs

Some FSPs contain results, strategies or measures that mitigate some of the problems identified above. For example, many results or strategies created for the cultural heritage resources objective have a review and comment component. This is also true for the natural range barriers measures. Some results or strategies for visual quality objectives will involve special consultations with stakeholder groups. These review and comment or consultation requirements are usually specific to an objective and do not apply to the rest of the FSP.

Finding

The Board finds that FSPs are inadequate as the sole avenue for public review and comment regarding operational forest planning. They do not provide the type of information that the public wishes to see and they are difficult to understand. Cases of overlapping FSPs that may have different results, strategies and measures, can be confusing to the public. The length of time between opportunities for full review and comment is also contrary to principles of effective public consultation.^{xii} Some licensees have voluntarily created additional procedures, such as allowing for viewing and commenting on cutblock and road plans, to improve public consultation.

Are FSP results and strategies enforceable?

The *Forest and Range Practices Act* brought about big changes to forest planning and practices in BC that are still being felt today. Rules-based forestry, as seen under the previous forest legislation (the *Forest Practices Code of British Columbia Act*), was replaced by a results-based approach. The FRPA training material and available literature says that FRPA is a results-based model supported by three pillars: government objectives, plans and practice requirements, and compliance and enforcement (Figure 1).

The pillars are interrelated and all must exist and be applied effectively in forest planning to support FRPA. The FSP (plan and practice requirements pillar) provides the results and strategies that the licensee intends to employ to meet many of government's objectives (objectives pillar). To support FRPA, these must be measureable or verifiable and hence enforceable so that the compliance and enforcement pillar is effective.

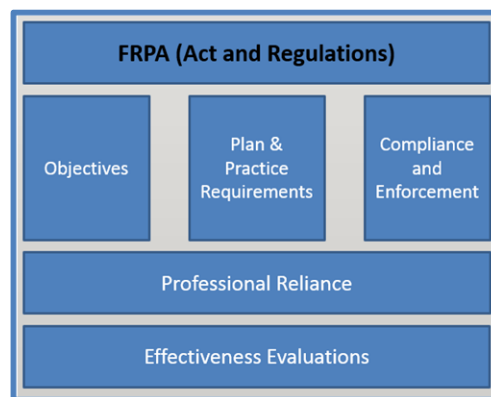


Figure 1. The FRPA Model

The intent of results and strategies is to serve in lieu of government regulatory requirements, which reinforces the importance that they be measurable or verifiable. “After all, a commitment that is not measurable or verifiable cannot be enforced. And a commitment that cannot be enforced is but an empty promise.”^{xiii}

The Board reviewed results, strategies and measures in the sampled FSPs to determine if they were measurable or verifiable, using a process based upon the *C&E Program Staff Bulletin #12*.^{xiv} The AGFSP suggests the use of this bulletin in determining if a result or strategy is measurable or verifiable and the Board heard that many districts use this document as guidance in determining measurability and verifiability. The bulletin lays out a two-step process. In the first step, a result or strategy is broken into its key elements: who is doing it, where it will occur, when it will occur, and what will occur. If any key element is missing, the result or strategy may not be measurable or verifiable.

The second step involves asking a series of questions:

1. Can data be used to determine if the result or strategy has been achieved?
2. Are there clear steps or practices in a well-described process that can be shown to have occurred?
3. Can the situations or circumstances where the result or strategy is to be applied be determined?

If the answer to question one (alone) or the answers to both questions two and three are “no” then the result or strategy may not be measurable or verifiable. Either outcome of step one or step two must be positive for the result or strategy to be measurable or verifiable.

The Board applied this test to all results, strategies and measures in the sampled FSPs. The results indicate that all FSPs have results, strategies or measures that are not measurable or verifiable. If they are not measurable or verifiable, they are likely not enforceable (Table 1).

Table 1. Assessment of Proportion of Sampled Results/Strategies or Measures that are Fully Measurable or Verifiable

Source of objective or measure	Objective or measure	Proportion that are measurable or verifiable
FPPR	Sec. 5 Soils	High
	Sec. 6 Timber	All licensees are exempt from the requirement to create a result or strategy for the timber objective.
	Sec. 7 Wildlife	High
	Sec. 8 Riparian	Moderate
	Sec. 8.1 Fisheries sensitive watersheds	None of the sampled FSPs had a result or strategy for this objective.
	Sec. 8.2 Community watersheds	Low
	Sec. 9 Landscape level biodiversity	Moderate
	Sec. 9.1 Stand level biodiversity	High
	Sec. 9.2 Visual quality*	Moderate
	Sec. 10 Cultural resources	Low
LUO, GAR and grandparented	Government Actions Regulation (GAR)	Moderate
	Land use orders (LUO) and higher level plans	Moderate
FPPR Measures	FPPR Sec. 17 Invasive plants	Low
	FPPR Sec. 18 Range barriers	Low

* Visual quality objectives come from a number of sources (FRPA 181, FPPR 9.2, GAR 17, GAR 7.2) and are grouped in this table under FPPR 9.2 for convenience.

	High: 80% or more of the results, strategies or measures are measurable or verifiable
	Moderate: 50% to 79% of the results, strategies or measures are measurable or verifiable
	Low: less than 50% of the results, strategies or measures are measurable or verifiable

Variability of Results, Strategies and Measures

Results, strategies and measures in the sampled FSPs vary widely. Results and strategies for objectives like stand level biodiversity are usually measurable or verifiable. Others, like community watersheds, or measures for invasive plants, are often not measurable or verifiable. The characteristics of the objectives themselves, or the practice requirements associated with the objectives, help explain the variation. Measurable or verifiable results and strategies were most often associated with:

- simple and clear government objectives;
- presence of practice requirements; or
- availability of good examples.

Simple and clear government objectives

Some government objectives are clear, concise and easy to understand. For example, the objective for stand level biodiversity is:

...without unduly reducing the supply of timber from British Columbia's forests, to retain wildlife trees.

Other objectives, such as the community watershed objective are not:

(2) The objective set by government for water being diverted for human consumption through a licensed waterworks in a community watershed is to prevent to the extent described in subsection (3) the cumulative hydrological effects of primary forest activities within the community watershed from resulting in:

- (a) a material adverse impact on the quantity of water or the timing of the flow of the water to the waterworks, or
- (b) the water from the waterworks having a material adverse impact on human health that cannot be addressed by water treatment required under (i) an enactment, or (ii) the licence pertaining to the waterworks.

(3) The objective set by government under subsection (2) applies only to the extent that it does not unduly reduce the supply of timber from British Columbia's forests.

(4) If satisfied that the objective set out in subsection (2) is not required to provide special management the minister responsible for the *Wildlife Act* must exempt a person from the requirement to specify a result or strategy in relation to the objective.

(5) If satisfied that the objective set out in subsection (2) is addressed, in whole or in part, by an enactment, the minister responsible for the *Wildlife Act* must exempt a person from the requirement to specify a result or strategy in relation to the objective set out in subsection (2) to the extent that the objective is already addressed.

Most of the sampled results or strategies created for the stand level biodiversity objective were measurable or verifiable. In contrast, less than half of those created for the community watershed objective were measurable or verifiable.

Influence of practice requirements

Where there are practice requirements, and the FPPR allows results and strategies in lieu of those practice requirements, results and strategies were more likely to be measurable or verifiable.

Objectives for soils, riparian areas, community watersheds, landscape level biodiversity, and stand level biodiversity all have practice requirements and the FPPR provides an ability to replace some or all of these practice requirements with results or strategies. Excluding community watersheds, which is a very complex objective, most (over three-quarters) of the sampled results and strategies for these objectives are measurable or verifiable. Objectives without practice requirements—cultural heritage and visual quality—did not fare so well with less than two-thirds of the results and strategies being measurable or verifiable. For measures, both of which do not have practice requirements, less than one-third are measurable or verifiable.

Government wrote practice requirements to be measurable or verifiable—these tend to become models for those writing results or strategies for those objectives with practice requirements.

Availability of good examples

Practice requirements are not the only source of models for results and strategies. FSPs for licensees within the same geographic area or licensees with multiple FSPs tend to have similarities. The earlier FSPs tend to be models for the later ones. Often, if the early FSPs are good ‘role models,’ that is reflected in later FSPs. Unfortunately, the opposite is also true.

Several foresters told the Board that they would welcome examples of what government considered acceptable results, strategies and measures. Government has generally not provided examples (although a few exist in FRPA General Bulletin #25).^{xv}

Role of Registered Professional Foresters and the Association of BC Forest Professionals

Both the Association of BC Forest Professionals (ABC FP) and its members have roles in the FSP process. “Under the *Foresters Act*, it is the ABC FP’s responsibility to uphold the public interest respecting the practice of professional forestry by ensuring the competence, independence, professional conduct and integrity” of its members.^{xvi} In turn, members have responsibilities including providing professional work that is measurable or verifiable.

FRPA section 5(3) states that FSPs “must be signed by the person required to prepare the plan.” This *person* is the forest licensee, not necessarily a professional forester. However, FSPs are documents that include professional work and although FRPA and the FPPR do not specifically require the signature of a professional forester, other British Columbia forestry legislation (and professional organization bylaws and policies) related to the practice of professional forestry require that professional content be signed and sealed by a registered professional forester.^{xvii}

The ABC FP has provided guidance to its members clarifying what is expected of professional work. The ABC FP professional practice guidelines state, “competent members provide professional work that is measurable or verifiable and can provide a rationale as to the methods used in measuring or verifying.”^{xviii} Another document discusses the statement “results or strategies must be measurable or verifiable,” describes the meanings of these terms and provides examples.^{xix}

All sampled FSPs include a professional forester’s signature and seal, yet all of these FSPs contained results, strategies or measures that were not measurable or verifiable.

The ABCFP advised the Board that ultimately, it is the licensee, not the professional forester, who can control submission of the FSP to government for approval. In addition, the ABCFP pointed out that the professional forester acts in an advisory capacity to the licensee and it may be that the submitted FSP does not include the options preferred by the professional forester, but that the forester will ensure that the forest practice undertaken by the licensee will meet the principles of stewardship.

Characteristics of Unmeasurable or Unverifiable Results, Strategies or Measures

Here are some common characteristics or reasons that the Board found for results, strategies or measures that are not measurable or verifiable:

Imprecise phrases and words

Results, strategies and measures must use direct and precise language to be measurable or verifiable. Some examples of words and phrases that do not meet this test include: “if necessary,” “trend toward,” “reasonable” (without further explanation), “will consider” and “may.”

Defining important terms

Many results, strategies and measures commit to carrying out assessments or using risk categories as triggers for actions. A clear definition for these categories or triggers is necessary for the results or strategies to be measurable or verifiable.

Ensuring the result or strategy applies to the appropriate phase

A common problem in results and strategies for visual quality objectives was to base a result on the cutblock design rather than the cutblock after harvest.

Specifying who

Results, strategies and measures must clearly specify who will carry out actions. A lack of specification or a commitment to “work with government to...” or “work with other licensees to...” carry out an action is not enforceable.

When

Many results, strategies and measures do not specify when an action must be completed. Without a deadline, an action in a result, strategy or measure can perpetuate indefinitely as a work in process and is simply unenforceable.

Finding

Measurability and verifiability are key components of all three pillars of FRPA: objectives, plan and practice requirements, and compliance and enforcement. **All sampled FSPs included a professional forester’s signature and seal, yet had significant problems with measurability or verifiability, making some results, strategies or measures difficult or impossible to enforce.** Where government provided simple objectives with clear practice requirements, rates of measurability or verifiability were highest. Measures, complex objectives and those without practice requirements rated the lowest.

Are results or strategies consistent with government's objectives?

Government sets objectives for forest values, and it is up to licensee professionals to ensure their FSPs are compliant with the requirement for measurable or verifiable results and strategies that are consistent with these objectives. Licensees can then submit the FSPs to government. After submission, it is up to the government's delegated decision makers (DDMs) to assess the effectiveness of results and strategies for consistency with meeting government objectives. They do this by applying tests.

The tests reside in FRPA and the FPPR. FRPA section 5(1)(b) states that an FSP must "specify intended results and strategies" pertaining to government's objectives and the FPPR section 25.1(1) says that these "must be consistent with the established objectives to the extent practicable." The definitions in the FPPR section 1(1) for both *result* and *strategy* include the terms "measurable and verifiable." DDM approval of FSPs is contingent on the outcome of these tests.^{xx}

Government has provided guidance—initially in the AGFSP and then supplemented with FRPA bulletins and related documents as needs became apparent—to aid FSP authors in creating results, strategies and measures, and DDMs and their staff in understanding and applying the tests. The AGFSP distills the consistency portion of these tests to a simple statement—*results and strategies must be consistent with established objectives to the extent practicable*. Even with this clear guidance, and simple test, the Board found that it was a challenging task to determine consistency with government's objectives.

Methods

For each government objective, the Board developed specific processes to aid in seeing if the results and strategies clearly demonstrated consistency with that objective. The processes were based on the guidance documents, FPPR factors (FPPR schedule 1), the FPPR practice requirements and the Board's opinion that a result or strategy is consistent with an objective if it is "in agreement with, in harmony with, or compatible with" it.

Results or strategies were classified as "not demonstrating consistency with the objective" in three specific situations:

- Where they did not clearly demonstrate consistency to the extent practicable with the objective;
- when results and strategies were so vague or unclear that one could not tell whether they were consistent; or
- when they contained broad or vague exceptions that threatened to compromise the objective.

There are three primary types of government objectives under FRPA:

1) Land-use objectives established or carried forward under the *Land Act* and *Land Use Objectives Regulation*.

2) Objectives set in regulation. These are found in sections 5 to 10 of the FPPR.

3) Objectives enabled by regulation. Government regulations enable these and they come into effect through *Government Action Regulation Orders*.

Additionally, FRPA section 181 continues certain objectives that were in effect under the *Forest Practices Code of British Columbia Act*.

What does the term ‘consistent to the extent practicable’ mean in the context of FSPs?

Consistent

Concerning government objectives, the *Forest Practices Code* (Code) defined the term *consistent* as “not in material conflict.” Our current forest legislation, FRPA, carries no definition at all for this term. In the absence of definitions within the current legislation, the *Administrative Guide to Forest Stewardship Plans* (AGFSP) turned to *Black’s Law Dictionary* for a definition of consistent: “to be in agreement with,” “in harmony with,” or “compatible with.” The Board’s opinion, consistent with the AGFSP and *Black’s Law Dictionary*, is that a result or strategy is consistent with an objective if it is in agreement with, in harmony with, or compatible with it.

Practicable

The term practicable is also not defined in the current forest legislation (nor was it in the Code), but the AGFSP again cites *Black’s Law Dictionary* which defines the term as “that which may be done, practised, or accomplished,” or “that which is feasible or performable in the circumstances,” or “that which is actually possible.”

Consistent to the extent practicable

The AGFSP states “*Consistent to the extent practicable* can usefully be understood to mean compatible with to the extent feasible in the circumstances.”

In some cases, the wording of the result or strategy was so vague or unclear that it was not possible to tell whether it was consistent with the objective. For example, one FSP says the “cutblock or road will be designed in a manner that is consistent with the best information that is available and or the *Spotted Bat Accounts and Measures for Managing Identified Wildlife (Identified Wildlife Management Strategy Version 2004)*.” The information in the *Spotted Bat Accounts and Measures for Managing Identified Wildlife* is very broad, providing a wide range of possible management options, some of which might be consistent with government’s objective and some which might not. The document is simply not written in a manner that lends itself to being used as a result or strategy. Also, we do not know what “best information available” means. This result or strategy does not demonstrate consistency with the objective.

In other cases, the result or strategy at first appeared to be consistent with the objective but there were exceptions that were so broad or vague that the exceptions risked compromising consistency with the objective. For example, one result or strategy concerning retention of wildlife

trees, sets out exceptions for wildlife tree retention, including this exception: “permanent or temporary access structures required to provide access to a cutblock.” The licensee holding this FSP can build roads through wildlife tree retention areas even if practicable routes exist that bypass the retention area. As well, the holder does not need to provide a replacement retention area. This exception is too broad. Many FSPs contain similar exceptions, but they are bounded by a requirement to provide replacements for wildlife tree retention areas that are destroyed, or they provide limitations on the situations where roads will be built through the retention areas.

Measures

Government also requires that FSPs include measures for invasive plants and natural range barriers where they are relevant to the plan. Measures are different from results or strategies in that there is no government objective, so the approval cannot rely on a consistency test. Instead, the DDM “will review the measures against two tests—that they are reasonable and appropriate—determined on the basis of both efficacy and what is practicable.”^{xxi} The Board examined measures to see if they demonstrated reasonableness and appropriateness through the reasonable likelihood of the measure being both effective and practicable. As in results and strategies, in some cases the measures were so vague or unclear that it was not possible to tell if they were practicable or likely to be effective. There were also some cases where exceptions were so broad or vague that the exceptions compromised the

likelihood of efficacy. Processes, similar to those for results or strategies, were used to examine measures (Appendix 2).

Results

Table 2 contains a summary of the results—the proportion of results or strategies that are consistent to the extent practicable or proportion of measures that are reasonable and appropriate. Because licensees may choose to comply with or adopt some practice requirements rather than write a result or strategy, the Board did not count these instances when assessing overall consistency of a group of FSPs or results and strategies.⁷ In other words, if 10 of the 43 FSPs sampled chose to comply with or adopt a practice requirement and 33 wrote a result or strategy, then the denominator for any results and strategies calculations for that objective was 33, not 43.

Results of the assessment were variable. For example, most of the results and strategies for riparian areas were clearly consistent with government's objective. On the other hand, most of the results and strategies for cultural heritage resources did not demonstrate consistency with the objective.

Government wrote practice requirements to be consistent with its objectives and to be measurable or verifiable. Authors of FSPs often used practice requirements, where available, as models for results or strategies. Overall, almost 70 percent of results or strategies for objectives with practice requirements did demonstrate consistency with the objectives.

The 2014 Decade in Review Board report said that “the objectives contained in the FPPR lack the clarity needed to form the basis for results and strategies...”^{xxii} Practice requirements in the FPPR help improve the clarity by providing examples of what government expects. Two objectives in the FPPR do not have practice requirements – visual quality and cultural heritage resources. Less than half of the results or strategies for these objectives demonstrated consistency with the objective.

Most results and strategies for older “grandparented” objectives and those stated in higher-level plan orders and *Government Actions Regulation* orders demonstrated consistency with the objectives. However, there was a high degree of variability in their consistency with the various objectives.

Government sometimes writes objectives like practice requirements and licensees often use the wording verbatim in their FSP or they slightly modify the wording to create results or strategies. The *South Central Coast Order* (SCCO) reflects this—many objectives are written like practice requirements. For example, the *objective* for red-listed plant communities is to “protect each occurrence of a red-listed plant community during a primary forest activity.” Most licensees simply used this wording as a *result or strategy* in their FSPs. The Board deemed these consistent with the government objective.

However, it can be difficult to write results or strategies for some government objectives. One higher-level plan order has 24 objectives including these examples:

- Maintain a mosaic of angling opportunities within the recreational spectrum.
- Maintain viewsapes in recreational and tourism areas to a standard that does not detract from recreational enjoyment of users.

⁷ The FPPR, sections 12.1 to 12.5 describe the conditions, and list the practice requirements, where it is permissible to “undertake to comply.”

It is difficult to write effective results or strategies for vague objectives like these, and a forest licensee may not have control over some aspects of the objective. Consequently, many results or strategies for these objectives did not demonstrate consistency with the objective.

Table 2. Consistency of Results and Strategies with Government's Objectives and the Reasonableness and Appropriateness of Measures.

Source of objective or measure	Objective or measure	Proportion of R/S that are consistent to the extent practicable or proportion of measures that are reasonable and appropriate
FPPR	Sec. 5 Soils	Moderate
	Sec. 6 Timber	All licensees are exempt from the requirement to create a result or strategy for the timber objective.
	Sec. 7 Wildlife	Moderate
	Sec. 8 Riparian	High
	Sec. 8.1 Fisheries sensitive watersheds	None of the sampled FSPs had a result or strategy for this objective.
	Sec. 8.2 Community watersheds	Moderate
	Sec. 9 Landscape level biodiversity	Moderate
	Sec. 9.1 Stand level biodiversity	Moderate
	Sec. 9.2 Visual quality*	Moderate
	Sec. 10 Cultural heritage resources	Low
LUO, GAR and grandparented	Government Actions Regulation (GAR) objectives	Moderate
	Land use orders (LUO) and higher level plans	Moderate
FPPR Measures	Sec. 17 Measures for invasive plants	Low
	Sec. 18 Measures for natural range barriers	Low

* Visual quality objectives come from a number of sources (FRPA 181, FPPR 9.2, GAR 17, GAR 7.2) and are grouped in this table under FPPR 9.2 for convenience.

	High: 80% or more of the results or strategies are consistent, or measures reasonable and appropriate
	Moderate: 50% to 79% of the results or strategies are consistent, or measures reasonable and
	Low: Less than 50% of the results or strategies are consistent, or measures reasonable and appropriate

Finding

The findings for whether results and strategies are consistent with objectives are similar to those for measurability and verifiability—in the Board's opinion, **most FSPs contain results or strategies that do not demonstrate consistency with objectives.** Where government provided simple objectives with clear practice requirements, rates of consistency were highest. Complex objectives and those without practice requirements had the lowest consistency rates. As well, in the Board's opinion, **most measures did not demonstrate that they were both practicable and likely to be effective, hence may not be 'reasonable and appropriate.'**

Are FSP's improving?

There are two aspects to this question. Since FSPs have a long potential lifespan, are they improving through the succession of amendments and extensions? In addition, what about newer FSPs – are recently approved FSPs better than older ones?

Are FSPs improving through successive amendments?

The Board randomly selected a subsample of 11 (25 percent) of the 43 FSPs for further analysis. These FSPs ranged in age from 2 to 8 years (average 6.7 years). Nine of the 11 had been extended beyond their original five-year terms. There were 105 amendments among these 11 FSPs, and all were examined and classified.

Table 3. Characteristics of FSP Amendments in 11 Randomly Selected FSPs

Purpose of amendment	Number of amendments	% by purpose	Does the amendment lead to improvement?	%
Adding declared areas	40	38%	No – Administrative changes only	88%
FDU changes	15	14%		
Adding or removing licensees	18	17%		
Minor administrative changes	7	7%		
Adding or amending Orders	13	12%		
Minor wording changes	2	2%	Maybe – Possible improvement	11%
Changing stocking standards	9	9%		
Amendments to improve readability, enforceability or generally improve result or strategy	1	1%	Yes – Clear improvement	1%
TOTAL	105	100%		

Licensees completed most amendments (88 percent) for administrative purposes. Administrative purposes includes licensees protecting their engineering investments by declaring areas, making changes to FDU boundaries, adding or removing participants in the FSP, and making other minor administrative changes. The Board also considered amendments to include new or changed Orders to be administrative amendments, since these are most often legally required.

There were minor wording changes in a further two percent of the amendments, and changes in stocking standards in nine percent. These changes may have contributed to minor improvements in FSPs.

A clear improvement was noted in only 1 of the 11 FSPs. The licensee rewrote the FSP measures for natural range barriers and the visual quality objective strategy. The rewording clarified and improved the measurability and verifiability of those sections.

Are newer FSPs better than older ones?

The Board reviewed the full sample of 43 FSPs to determine the year of approval and the average number of results and strategies in FSPs in each year of approval that were not measurable or verifiable, or did not demonstrate consistency with government's objectives. These are, for the sake of a better descriptor, termed 'weak' results and strategies. The average ranges from 3.5 to 8 weak results and strategies in each year of approval and are displayed in Figure 2. Clearly, there is no improvement over time.

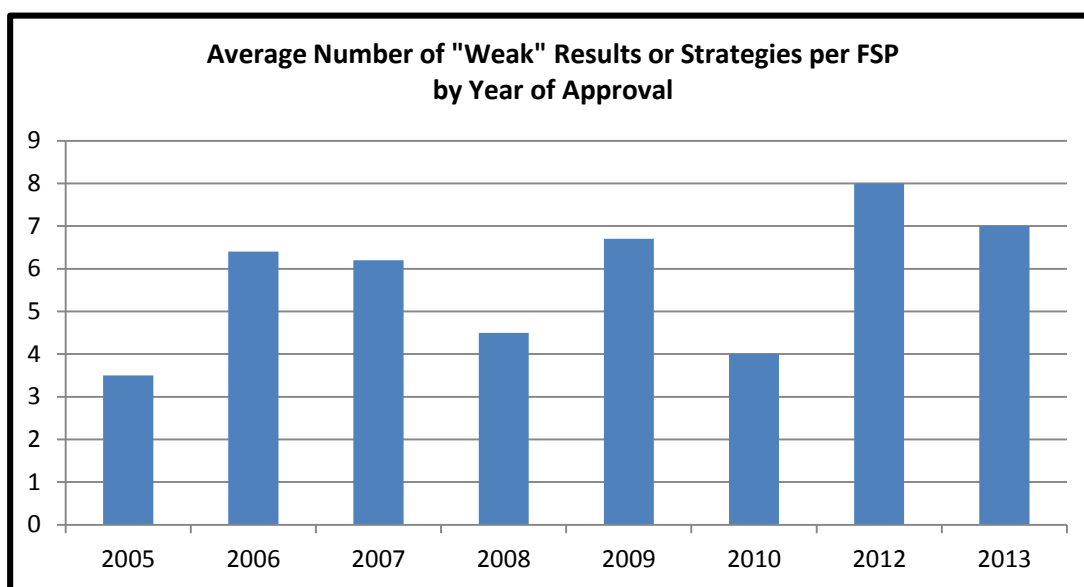


Figure 2. This chart shows the average number of 'weak' results or strategies (vertical axis) in each FSP based on year of the FSP approval (horizontal axis). For example, the FSPs shown in the 2010 column were all approved in 2010 and had an average of 4 "weak" results or strategies in each FSP. The data in this chart is from the 43 sampled FSPs.

Finding

The Board finds that very **few FSPs are improving over time through the process of successive amendments**. There is also **no improvement in FSPs prepared more recently over those prepared in the past**.

Do FSP's enable innovation?

The Board investigated this question by reviewing all FSPs in the sample for examples of innovation. The Board also asked interviewees about their experiences with innovation in FSPs.

To be considered innovative, a measure, result or strategy had to have one or more of the following characteristics:

- significantly different than practice requirements;
- based on research or sound professional opinion;
- easier implementation than typical results, strategies or practice requirements; and
- likely to yield improved results.

The Board found examples of results or strategies in four of the FSPs that met some of these innovation characteristics. One example was for riparian management zone treatments and involved a decision tree for prescribing tree retention depending on criteria that included windthrow hazard in addition to riparian classification. Many FSPs base retention only on riparian classification.

Another FSP had stocking standards that included characteristics of innovation. These stocking standards will help create stands that are appropriate for wildfire hazard reduction in urban interface areas. Another two FSPs had results and strategies for soils and riparian management based on the biological needs of alder as a crop tree.

There were no other examples of results strategies or measures that clearly embodied innovation. More commonly, licensees made minor changes to existing practice requirements. For example, several FSPs vary how wildlife tree retention is counted to ease administration.

Some interviewees said that *innovation* in results, strategies and measures was often confused with flexibility. These are not mutually exclusive, but inappropriate flexibility can lead to results or strategies that cannot be assessed for consistency with government's objective or results, and strategies or measures that are not verifiable or measurable.

For example, this portion of a strategy for the visual quality objective might be deemed by some to be innovative, but the flexibility provided can yield a wide range of acceptable and unacceptable outcomes—making it impossible to determine if it will be consistent to the extent practicable. In this example, the licensee has also essentially changed a government objective, which is not permitted.

The holder of this FSP may construct a road or harvest a cutblock in a manner that produces a landscape alteration in excess of that specified in the visual quality objectives, where road construction or cutblock harvesting is:

1. related to the harvesting of timber that is damaged or destroyed by fire, insects, disease, wind, or flooding...

Government encouraged licensees to use innovative planning and flexibility in FSPs by building results or strategies that would allow a different outcome to address unique local situations or circumstances. In such cases, those situations and circumstances need to be specified and the rationale for the innovation made clear. The result or strategy must still be measurable or verifiable and consistent to the extent practicable with the government objective.^{xxiii}

One industry forester said that he “tried innovation, but there was too much demand for proof.” He felt that efforts to innovate stocking standards in response to climate change were hampered because “the ministry’s tolerance to risk was low” and that an innovative result or strategy submitted with a reasonable rationale “should meet the test and be approved.” Another industry forester experienced problems with varying stocking standards initially, but said that he has since made minor changes he considers innovative.

It can be difficult to find information on rationales for innovative FSPs. Rationales are usually not part of FSPs, but are attached to submissions to the approving forest district by placing in the FSP support document, or other attached documents. Licensees do not consistently enter support documentation in the FSP Tracking System, although the system is built to support this function. If licensees do enter support documents, they are only visible and accessible to the submitter and to government staff. Other tracking system users cannot access them.

Findings

Examples of innovation in FSPs are rare. Many licensees feel that it is too difficult to get an innovative result, strategy or measure approved, and will not risk delaying approval of an FSP. Instead, licensees appear to prefer using conservative or existing results, strategies or measures in new or amended FSPs.

Conclusions

Forest stewardship plans (FSPs) are a cornerstone of the *Forest and Range Practices Act* (FRPA) regime and have been since they began to replace forest development plans in 2004. A 2006 Board report noted problems with FSPs, including lack of enforceability and poor utility for public review. In light of the importance of FSPs and the poor results in the 2006 Board report, the Board undertook a thorough review of current FSPs. The Board concludes:

1. A high proportion of the results, strategies and measures in FSPs are not measurable or verifiable and therefore not enforceable. All 43 sampled FSPs were signed and sealed by professional foresters and approved by government decision makers, yet had more than one result, strategy or measure that was not measurable or verifiable.
2. In the Board's opinion, many results or strategies in FSPs do not demonstrate consistency with government's objectives. Results or strategies for those objectives that are simple and clear, or those with practice requirements, more often demonstrate consistency.
3. FSPs alone continue to be inadequate as tools for public review and comment. They are difficult to understand, do not provide the type of information the public wishes to see, and often overlap with other FSPs that may have different results, strategies and measures.
4. The time between opportunities for full public review and comment on FSPs can be excessive. Most licensees chose to extend their FSPs, meaning that these opportunities may not occur for intervals of ten or more years.
5. Few of the measures in FSPs designed to prevent the introduction or spread of prescribed species of invasive plants, or to mitigate the removal or ineffectiveness of natural range barriers, demonstrate that they are both practicable and likely to be effective for these purposes.
6. FSPs are not improving over time. Amendments to existing FSPs are primarily administrative in nature and do not improve results, strategies or measures. Newer FSPs do not have better results, strategies and measures than older FSPs.
7. Innovation in FSPs is rare.

Recommendations

The third generation of forest stewardship plans (FSPs) is upon us. The first generation began in 2004 as the forest industry transitioned to the *Forest and range Practices Act*. By 2011, most first generation FSPs had been extended, carrying many of the same issues into the second generation. Many licensees are now preparing to extend or replace these second-generation plans. Now is the time to make improvements to the third and subsequent generations of FSPs.

Under section 131(2) of the *Forest and Range Practices Act*, the Board makes the following recommendations to address key findings of the investigation:

- 1) Government, and its decision makers, should not extend or approve FSPs that include:
 - results, strategies and measures that are unenforceable,
 - results or strategies that are not consistent to the extent practicable with government's objectives, or
 - measures that are not reasonable and appropriate.
- 2) Government should ensure that the public has at least one opportunity every five years for full review and comment on forest stewardship plans.
- 3) Government should establish a process for public review and comment on planned roads and cutblocks.
- 4) The ABCFP should ensure that forest professionals, and their employers, are cognizant of the forest professionals' independent responsibilities regarding:
 - results, strategies and measures that are measurable or verifiable,
 - results or strategies that are consistent to the extent practicable with government's objectives, and
 - measures that are reasonable and appropriate.

The Board requests that government advise it of progress made and timelines for implementing recommendations #1, #2, and #3 by November 30, 2015. The Board requests that the Association of BC Forest Professionals advise it of progress made and timelines for implementing recommendation #4 by November 30, 2015.

Appendix 1: Information and Definitions Regarding FSPs

The following paragraphs provide explanation and discussion around some common terms used regarding forest stewardship plans (FSPs) in British Columbia.

Results and Strategies

The results and strategies are the heart of the FSP—they must be consistent with government's objectives. Government's objectives come from several sources, primarily as set in land use orders and the *Forest Planning and Practices Regulation* (FPPR) (sections 5 to 10), or are enabled by regulation (the *Government Actions Regulation* enables a Minister to set objectives in certain circumstances). Results and strategies must be measureable and verifiable because, once approved, they become legal requirements that can be enforced by government. Most FSPs have between 7 and 15 objectives, for which they will have results or strategies.

Measures

In addition to government objectives, which require results and strategies, FSPs may include measures for invasive plants and natural range barriers. These measures are plans or courses of action designed to prevent the introduction or spread of invasive plants and to mitigate the effect of removing or rendering ineffective a natural range barrier. They differ from results and strategies in that there are no related government objectives. Most, if not all, FSPs have measures to deal with invasive plants. Only FSPs in areas with range use agreements or permits have measures dealing with natural range barriers.

Stocking Standards

All FSPs have stocking standards. Stocking standards specify post-harvest conditions (density and height of ecologically suitable tree species) and a timeline for achievement. These standards are usually in the form of a table with suitable tree species, regeneration date, and free-growing⁸ date for achievement of minimum heights and tree densities. The term free growing refers to a set of tree or stand characteristics, at age 20 or earlier, which are likely to result in a suitable and harvestable future stand of timber.

Forest Development Units (FDUs)

FDUs are areas where results, strategies, measures and standards described in FSPs apply. There can be multiple FDUs within an FSP, allowing creation of specific results, strategies, measures, and standards for particular conditions. There is no minimum or maximum size. FDUs from different FSPs can also overlap—single locations in BC are often covered by several FDUs from different FSPs.

⁸ FRPA defines a "free-growing stand" as a stand of healthy trees of a commercially valuable species, the growth of which is not impeded by competition from plants, shrubs or other trees.

Practice Requirements

Practice requirements are set in sections 35 to 70 of FPPR and, as the name implies, provide a set of requirements to follow for the practice of forestry on public lands. Many of the practice requirements are associated with government's objectives, as shown in sections 5 to 10 of FPPR.

An example of a practice requirement, this one for protecting water quality, is:

An authorized person who carries out a primary forest activity must ensure that the primary forest activity does not cause material that is harmful to human health to be deposited in, or transported to, water that is diverted for human consumption by a licensed waterworks.

For some of the objectives, FPPR provides an automatic exemption from *all* the practice requirements relating to that objective if the licensee has an FSP with an approved result or strategy for the objective. For some other objectives, FPPR exempts licensees from *some* of the practice requirements that apply to those objectives. A third group of objectives have no practice requirements associated with them.

An example of an exemption from all associated practice requirements is stand level biodiversity. When a licensee has an approved result or strategy for stand level biodiversity, they are exempt from the practice requirements for wildlife tree retention (sec. 66) and restriction on harvesting (sec. 67). An example of an exemption from some of the associated practice requirements is community watersheds. A licensee with an approved result or strategy is exempt from sections 59, 60(2) and 61, but must still comply with sections 59, the remaining portions of 60 as well as sections 62 and 63. There are no practice requirements at all for the visual quality objective and cultural heritage resources objective. There are no practice requirements specific to the measures for natural range barriers (FPPR section 18) and invasive plants (FPPR section 17).

Complying With or Adopting Practice Requirements in Lieu of Writing a Result or Strategy

The FPPR provides the ability for licensees to undertake, to comply with, or adopt certain practice requirements instead of writing a result or strategy for some objectives. In these cases, the FSP may state that the licensee will comply with or adopt the practice requirement. A statement often accompanies this, qualifying that the licensee adopts the practice requirement *as it was on a certain date*. This ensures that the requirements stay the same for the term of the FSP.

The FPPR does not provide this ability for all objectives or practice requirements. Some objectives must have a result or strategy. For example, the community watershed objective has several practice requirements. The FSP must have a result or strategy in relation to some of these practice requirements but may undertake to comply with others.

Approval

Forest licensees submit FSPs to the Ministry of Forest, Lands and Natural Resource Operations where staff will review, and if they meet approval tests, approve them. The approval tests are based on the *Forest and Range Practices Act* (FRPA) and the FPPR. Very generally, the FSP must meet review and comment requirements, must include specified content, and the content must meet certain

requirements. Results and strategies must be “measurable or verifiable and consistent with government objectives to the extent practicable.”^{xxiv} Measures must be “reasonable and appropriate – determined on the basis of both efficacy and what is practicable.”^{xxv}

Term and other content

FSPs have terms of up to five years. FRPA appears to allow multiple term extensions in increments of up to five years. The licensee may amend the FSP at any time.

Most FSPs include a second text document, usually called the “support document.” The purpose of this document is to provide information to the decision maker in support of the FSP. There is no requirement that this document be available to the public.

Appendix 2: Detailed Methods

The purpose of this appendix is to document the methods used in this special investigation. The investigation involved two steps. First, the Board selected and reviewed a sample of randomly selected forest stewardship plans (FSPs). Second, Board staff interviewed government and industry personnel involved in FSP review, enforcement, administration and planning.

Sample Selection

The Board obtained a list of all active FSPs and sorted them using the provincially assigned FSP number. The Board then numbered each of these FSPs sequentially and used a random number generator to select 15 percent of these FSPs. Similarly, a random number generator was used to select the 25 percent subsample from the main sample.

The distribution of the FSP samples is shown in Tables 1 and 2 below.

Table 1. Geographic Location of Sampled FSPs

Resource Region	Number of FSPs	% of Sampled FSPs
South Coast	11	26%
West Coast	5	12%
Northeast	2	5%
Omineca	5	12%
Skeena	3	7%
Cariboo	6	14%
Kootenay/Boundary	3	7%
Thompson/Okanagan	8	19%
TOTAL	43	100%

Table 2. The Number of Sampled FSPs among BC Timber Sales (BCTS)⁹ and Non-BCTS Licensees of Various Sizes

Tenure Type or Allowable Annual Cut (AAC) of the Primary Licensee Holding an FSP	Number of FSPs	% of Sampled FSPs
Non-BCTS, big licence (>1.1 million m ³ AAC)	12	28%
Non-BCTS, medium licence (75,000 to 1,100,000 m ³ AAC)	14	33%
Non-BCTS, small (<75,000 m ³ AAC)	9	21%
BCTS, any size	8	19%
TOTAL	43	100%

⁹ BCTS is a government run entity that manages areas of forest in BC for timber production.

FSP Review

Overview

The following activities were carried out on the samples and subsamples:

- Main sample:
 - Collection of FSP content information
 - Collection of public review and comment information
 - Assessment of results and strategies
 - Assessment of measures
 - Assessment of stocking standards
- Subsample
 - Collection of information relevant to changes over time
 - Assessment of improvement in FSPs over time

Data

Obtaining data

The Board downloaded sampled FSPs (when available) from the FSP tracking system (FSPTS). Other information viewed or downloaded from the FSPTS including maps, stocking standards, amendments, delegated decision maker's (DDM) decision rationales, and supporting information. The downloads took place in early 2014 with some additional information downloaded in late 2014 and January 2015.

In some cases, the licensee had not uploaded their current FSP into the FSPTS. This was apparent when the FSPTS indicated that the FSP had expired, yet records showed that the licensee was still operating. In these cases, the Board contacted the licensee and requested a copy of the FSP and related information.

FSPs are often amended. Sometimes the amendments are separate documents, and other times they are consolidated into a complete FSP document. The Board used the latest consolidated FSP and any subsequent amendments in the analysis.

Recording data

The Board kept printed copies and electronic files of key documents (including FSPs, stocking standards, some amendments, and some support documents) for analysis. Data elements from the key documents were recorded in a spreadsheet to aid analysis. For further details, see the data collection and analysis section below.

Analyzing Content

The Board reviewed each FSP for the basic requirements from the *Forest and Range Practices Act* (FRPA) and the FPPR (Table 3).

Table 3. FSP Content Requirements

Act or Regulation	Content Requirement	Content Details
FRPA Sec. 5(1)(a)	Map	<ul style="list-style-type: none"> Scale and format deemed satisfactory by government. Must show the boundaries of the forest development units (FDUs).
FRPA Sec. 5(1)(b)	Intended results and strategies	<ul style="list-style-type: none"> These are in relation to objectives set by government and other objectives established under FRPA. They must be consistent to the “prescribed extent” with the objectives.
FRPA Sec. 5(3)	Signature	<ul style="list-style-type: none"> Must be signed by the person required to prepare the FSP, or if a corporation, by the authorized individual(s).
FPPR Sec. 14(1)	FDUs	<ul style="list-style-type: none"> Must specify the FDUs
FPPR Sec. 14(2)	Cutblocks and roads approved in previous forest development plans	<ul style="list-style-type: none"> Cutblocks and roads brought forward from a previous forest development plan.
FPPR Sec. 14(3)	Designations in effect within the FDUs	<ul style="list-style-type: none"> Ungulate winter ranges Wildlife habitat areas Fisheries sensitive watersheds Scenic areas Large lakes Community watersheds Old growth management areas Reserves Existing cutting permits and road permits held by the agreement holder
FPPR Sec. 16	Stocking Standards	<ul style="list-style-type: none"> Must show the circumstances and situations that the standards apply to, and include regeneration date and free growing height.
FPPR Sec. 17 & 18	Measures	<ul style="list-style-type: none"> To prevent the introduction or spread of invasive plants (specified in Invasive Plants Regulation). To mitigate the effects of removing or rendering ineffective a natural range barrier.

Public Review and Comment

Some licensees download evidence of compliance with the review and comment requirements into the FSPTS. This evidence is in the form of copies of advertisements, records of public comments, and statements by the licensee of what they did to deal with the comments. Other licensees did not download any such evidence. However, DDM rationales often reference the public review and comment efforts of the licensee—the Board considered this sufficient evidence of compliance.

The Board recorded the following information:

- Advertised (Yes, No, Uncertain)
- Comments received (Yes, No, Uncertain)
- Comments actioned or considered (Yes, No, Uncertain)

There was sufficient evidence available on the FSPTS to answer yes or no to question one in only 25 of the 43 samples. Interviews were used to supplement information on public review and comment.

Review of Results, Strategies and Measures

The Board tested all results and strategies to see if they were measurable or verifiable, and consistent to the extent practicable with government's objectives. The measurable/verifiable test was the same in all cases, but the consistency test was customized for each objective. The measurable/verifiable tests are described below.

Is the result, strategy or measure measurable or verifiable

The Board reviewed all results, strategies and measures. If they were obviously not measurable or verifiable, then they were deemed so and the reason recorded on the FSP spreadsheet. No further testing was done. Obvious signs included:

1. A commitment to an action, but **no commitment to when** it would be completed. For example one measure contains this commitment: *All areas disturbed through road construction, maintenance, or deactivation that overlap range tenures will be re-vegetated.* There is no indication of when it will be done.
2. **Imprecise or non-committal** words and phrases for significant parts of the result, strategy or measure. Words and phrases like *may, if necessary, reasonable, and trend towards*, depending on how they are used, may render that part of the result, strategy or measure unenforceable.
3. No indication of **who will carry out the action**. For example, some range barrier measures say that a structure will be put in place but it is unclear if the range tenure holder, the forest licensee or government will do the work.
4. **Undefined key terms**. Many results and strategies and measures commit to an assessment, but fail to say what the assessment is. Other FSPs link actions to certain levels of risk—but there is no definition of risk.

If there were no indications that the result, strategy or measure was unmeasurable and unverifiable, then no further testing was done. The investigator used a more formal approach when it was not obvious.

The formal approach uses *C&E Program Staff Bulletin #12* as a guide.^{xxvi} This bulletin lays out a 2-step process. In the first step, a result or strategy is broken into its key elements: who is doing it, where it will occur, when it will occur, and what will occur. If any key element is missing, the result or strategy may not be measurable or verifiable. The second step involves asking a series of questions. If the answers to question one or questions two and three are “no”, then the result or strategy may not be measurable or verifiable. Either the outcomes of step one or step two must be positive for the result or strategy to be measurable or verifiable. The Board developed a worksheet (Table 4) to aid in the process.

Table 4. Worksheet to Aid in Determining if a Result, Strategy or Measure is Measurable or Verifiable

Worksheet: Measurable or Verifiable?

This worksheet will be used to determine if a result, strategy or measure is measurable or verifiable. It is based on the two-step process discussed in C&E bulletin #12. In step one, the result or strategy is broken down into its essential elements: who is doing it, where it will occur, when it will occur and what will occur. If any of these elements are missing, it may not be measurable or verifiable. In step two, the presence of data (to assess if a result has been achieved) or clear steps (to assess if a strategy is being followed) is determined and the ability to see what situations or circumstances that the result, strategy or measure will be applied.

Identification			
Sample #		x	
FSP #		xx	
Result, strategy or measure description		Riparian	
Step 1			
Who is doing it?	2	Yes	
Where will it be done?	3	Yes	
When will it occur?	4	Yes	
What will occur?	5	No	windthrow hazard assessment definition is incomplete
Substantial compliance in step 1?	6	No	If there are any No's, or more than 2 Partials', then answer is No
Step 2			
Can a set of data be used to determine if the proposed result has been achieved?	7	Partial	windthrow assessment weakness
and/ or			
Are there clear steps or practices in a well-described process that can be shown to have occurred?	8	Partial	as above
and			
Can it be determined under what circumstances the result, strategy or measure will be applied?	9	Partial	no, because it depends on windthrow assessment
Substantial compliance in step 2?	10	7 or 8 and 9 must be Yes	
Result of Evaluation			
Measurable or verifiable?	11	No	Either step 1 or 2 must be Yes
Comments	12	The retention strategies depend on a windthrow hazard assessment result, and it is unclear how the windthrow hazard ratings are determined.	

Is the result or strategy consistent to the extent practicable?

The Board created unique evaluation methods for results and strategies for each of government's objectives. For objectives that were commonly included in FSP's, a worksheet was developed to use on each of the results and strategies for that objective. Less common results or strategies were evaluated on the same principles, but without a worksheet.

Here is an example involving the objective for wildlife and biodiversity at the landscape level (FPPR section 9). The Board reviewed the objective itself, the practice requirements and the FPPR schedule 1 to help design the methodology.

The objective for wildlife and biodiversity at the landscape level (FPPR section 9) is quite clear in its intent:

Objective: ... to design areas on which timber harvesting is to be carried out that resemble, both spatially and temporally, the patterns of natural disturbance that occur within the landscape.

The practice requirements provide further information:

FPPR section 64: ...licensee must ensure that the size of the net area to be reforested for the cutblock does not exceed... 60 hectares.

FPPR section 65: ...licensee must not harvest timber on a new cutblock...unless green-up requirements met...

In addition, the schedule 1 factors provide more information:

FPPR Schedule 1 Factors:

- (a) the size, distribution and salient characteristics of the area being designed for harvesting;
- (b) the size, distribution and salient characteristics of other areas within the landscape that have been shaped by, or affected by, natural disturbance;
- (c) the extent to which wildlife habitat areas, ungulate winter ranges, riparian management areas, scenic areas and other areas established to manage forest resources complement efforts to resemble natural disturbance patterns in a landscape, including old growth.

The Board used this to create a worksheet for evaluating all results and strategies for this objective (Table 5).

Table 5. Worksheet to Aid in Determining if a Result or Strategy for the Landscape Level Biodiversity Objective is Consistent to the Extent Practicable.

Main Question		Criteria	Q #
From government's objective			
Will the result or strategy lead to timber harvesting that resembles, <u>spatially</u>, the pattern of natural disturbance on the landscape?		Either 1a and 1b must be Yes or 1c must be Yes	1
	Are cutblocks designed to resemble the pattern of natural disturbance in the landscape?	This will be "Yes" if the result or strategy resembles the practice requirement (s 64). Better yet, a system that plans cutblock size/configuration based on true natural disturbance patterns will also be "Yes"	1a
	If there are exceptions to the cutblock size criteria above, are they acceptable?	Acceptable = minor proportion of area, sound reasons, and government's objective will still be met.	1b
	If there is no cutblock size rule, are there other steps or results in place that will meet the spatial part of government's objective?	Rationale presented that includes the schedule 1 factors	1c
Will the result or strategy lead to timber harvesting that resembles, <u>temporally</u>, the pattern of natural disturbance on the landscape?		Either 2a and 2b must be Yes or 2c must be Yes	2
	Must blocks be "greened-up" prior to new harvest on adjacent blocks?	Is there wording in result or strategy defining green-up and prohibiting logging until this is attained? Still a yes if it allows exceptions. Desirable to have exceptions to allow configuration to resemble Natural Disturbance	2a
	If there are exceptions to the green-up criteria above, are they acceptable?	Acceptable = minor proportion of area, sound reasons, and government's objective will still be met.	2b
	If there are no green-up requirements, are there other steps or results in place that will meet the temporal part of government's objective?	Rationale presented that includes the schedule 1 factors	2c
Input completed above?			
Other Questions (for information, not evaluation)			3
Does the result or strategy demonstrate innovation?			
Is it a major deviation from the practice requirements?			
Is this result or strategy an example of truly setting up harvesting to resemble natural disturbance patterns?			
Is the result or strategy consistent with government's objective?			4
Yes if Q's 1, or 2 are Yes			
Is it measurable or verifiable?			5
Assess through measurable verifiable process if necessary			
Does it meet approval requirements?			6
Yes if Q's 4 and 5 are Yes			

In some cases, information from government guidance documents, including FRPA bulletins and the *Administrative Guide to Forest Stewardship Plans* was helpful.

Is the measure reasonable and appropriate?

Unlike FSP results or strategies, measures do not have government objectives. The tests for measures therefore do not include a “consistent to the extent practicable” component. Instead, the tests are that they must be “reasonable and appropriate—determined on the basis of both efficacy and what is practicable.”¹⁰ Additionally, measures must be measurable or verifiable.

The Board created procedures for each of the measures (natural range barriers and invasive plants) similar to those created for results and strategies. As well as lacking government objectives, measures also lack practice requirements.

For invasive plant measures, the Board used several documents including:

- *Invasive Plants Prevention Guidelines for FRPA Operational Plans*, BC Ministry of Forests, Invasive Plants Committee, April 2005.
- FRPA Administration Bulletin #3, Questions 15 and 16.
- *Invasive Alien Plant Program Reference Guide Part 1*, Range Branch, Ministry of Forests and Range, June 2010.
- *Invasive Plant Pest Management Plan for the Southern Interior of BC*, Range Branch, Ministry of Forests and Range, Spring 2010.

¹⁰ Administrative Guide to Forest Stewardship Plans (Volume 1) – Preparation and Approval of the FSP. Resource Tenures and Engineering Branch, Version 2.1, August 2009. P.81.

Table 6. Assessment Worksheet for Invasive Plant Measures

Aspect			Yardstick	Does the measure include this aspect?*
Sample #				
FSP #				
Are there any indications in FSP or elsewhere regarding seriousness of invasives within FSP area?			<i>Insert comment here</i>	
Prevent introduction	Machinery brought in is clean	1	Wash machinery known to come from weedy areas	
	Seed for re-vegetation is free of weeds	2	Use seed free of weeds (Minimum <i>Common No. 1 Forage Mixture</i> NOT <i>ground cover mixture</i>)... OR provide rationale*	
	Potential seedbed is kept to a minimum	3	Minimize ground disturbance in areas prone to invasives	
	Seedbed is promptly re-vegetated	4	Timeline specified	
	Other -- explain in comments	5		
			At least row 4 must be Yes and row 2 must be Partial or Yes . Must be =< 2 No 's in rows 1 to 5.	
Prevent spread	Assess risk	6		
	Detect weeds	7	Provide a process for detecting weeds	
	Report weeds	8	Process for reporting weeds	
	Eliminate infections	9		
	Monitor	10	Must have process for reviewing infection sites and checking re-vegetated sites	
	Other -- explain in comments	11		
			Row 7 and 8 must be Yes, Must be at least 3 Yes'	
Other	Provision for reseeding if initial seeding does not take.	12		
		13		
		14		
			A Yes here can be applied in above to negate a No	
Overall	Are they likely to be effective?		Prevention of spread and introduction must be Yes	
	Are they practicable?			
	Are they measurable or verifiable?		Use the measurable verifiable worksheet if it is not obvious.	
	Meet approval tests? (reasonable and appropriate)		Above 3 questions must be "Yes"	

* "Yes", "No" or "Partial" in this column (except for sample # and FSP #)

Interviews

The Board conducted formal interviews with government and forest industry staff. The interviewees included government staff involved with FSP approvals and administration as well as compliance and enforcement staff. The industry interviewees included staff who had written FSPs and those working under FSPs.

Along with formal interviews, the Board discussed FSP issues with numerous others including industry staff, government staff, and interested members of the public.

Each formal interview took one to two hours and began with a series of set questions. Discussion of related FSP topics during the interviews was encouraged. Board staff took notes during the interviews, but did not make audio recordings.

Data Collection and Analysis

The Board recorded data collected for each FSP and then further analyzed the information. The analysis was to derive simple statistical data including sums and means.

Basic legal content data collected is shown in the table below. The number of Yes (Y), No (N) and Uncertains (U) were summed and means calculated over the 43 sampled FSPs.

Table 7. Content

Data Element	Criteria
Include a suitable map	Is there a suitable map as per FRPA 5(1)(a)? (Y or N).
Specify intended result or strategy (FPPR)	Are results or strategies specified as per FRPA 5(1)(b)(i)? (Y or N).
Specify intended result or strategy (i.e. Government Actions Regulation) if required	Are results or strategies specified as per FRPA 5(1)(b)(ii)? (Y or N).
Be signed	Was the FSP signed? (Y or N or U) Sometimes the posted versions did not have signature – hence the ‘uncertain’ answer in some cases.
All things identified in 14(3) are shown in FSP	Y if all things identified, otherwise N.
Propose stocking standards (and meets minimum req.)	Are stocking standards included that meet minimum requirements? (Y or N).
Include measures for invasives	Are measures for invasives included (Y or N or N/A).
Include measures for range barriers (Y or N or N/A)	Are measures for NRBs included (Y or N or N/A).
Meet BASIC required legal content	Does the FSP meet the basic legal content requirements? (Y or N).

A summary of data collection and analysis work for each result or strategy in each of 43 FSP is shown in the table below. The data element details and the methods to determine the answers are described in the preceding sections.

Table 8. Results and Strategies

Data Element	Criteria	Analysis
Result or strategy present?	Is there a result or strategy? (Y, N). Did they simply undertake to comply? If so insert UTC instead of Y or N. If they UTC'ed and wrote a result or strategy, insert UTC, Y.	This information was summed for the 43 FSPs.
Is it a result or a strategy?	If UTC or N above, then n/a. Otherwise determine if it is a result or strategy or has characteristics of both.	This information was summed for the 43 FSPs.
Is it consistent with objective?	Y, N, n/a, or U. Use n/a for those that UTC'ed and those with no N for result or strategy.	This information was summed for the 43 FSPs.
Is it measurable or verifiable?	This can be Y, N, blank or n/a. It is Y if there is a result or strategy specified and it is measurable or verifiable. It is N if the result or strategy is specified but is not measurable/verifiable. It is blank if there is no result or strategy for this objective. It is "n/a" if it is entirely "UTC'ed".	This information was summed for the 43 FSPs.
Has an exemption been granted	Are they exempted from the need to do a result or strategy for the objective? Y or N.	This information was summed for the 43 FSPs.
UTC	The FRPA sections that the licensee <i>undertook to comply with</i> or committed to follow are noted.	No analysis.
Does it meet requirements?	Y, N or n/a.	This information was summed for the 43 FSPs.
Comments	Comments on details of the assessment, observations, and reasons for decision.	No analysis.

The data elements, criteria and analysis for measures are slightly different from that shown above for results or strategies. The Table below illustrates them.

Table 9. Measures

Data Element	Criteria	Analysis
Measure present?	Is there a measure? Y, N. Insert n/a if there is no requirement for a measure.	This information was summed for the 43 FSPs.
Is it likely to be effective	Y, N. Insert n/a if there is no requirement for a measure.	This information was summed for the 43 FSPs.
Is it practicable?	Y, N. Insert n/a if there is no requirement for a measure.	This information was summed for the 43 FSPs.
Is it measurable or verifiable?	Y, N. Insert n/a if there is no requirement for a measure.	This information was summed for the 43 FSPs.
Does it meet requirements?	Y, N or n/a.	This information was summed for the 43 FSPs.
Comments	Comments on details of the assessment, observations, and reasons for decision.	No analysis.

Since the sample size is large (fifteen percent of FSPs), and the samples were obtained in a random fashion, then these numbers can be used to describe all FSPs.

Appendix 3: Results for Individual Measures and Objectives

The following paragraphs describe results for measures and some of government's objectives, from the *Forest Planning and Practices Regulation* (FPPR).

Soils Objective—FPPR Section 5

Most licensees (33 of 43) adopted or committed to comply with the practice requirements. Of the remaining 10 forest stewardship plans (FSPs), most 'tweaked' the practice requirements slightly to create a result or strategy. One FSP had an entirely original result or strategy. Almost two thirds of the results and strategies demonstrated consistency with the objective.

Wildlife Objective—FPPR Section 7

This objective only applies after publication of an official notice, and when there is not an exemption within the notice—this was the case for 29 of the 43 sampled FSPs. Of these 29, about three quarters demonstrated consistency with the objective. Ideally, an FSP will list the applicable wildlife objective notices, note which notices exempt the licensees from the need to create a result or strategy, and include a clear result or strategy for those notices that do not contain an exemption.

Riparian Objective—FPPR Section 8

Most licensees (40 of 43) adopted or committed to comply with the practice requirements where the FPPR allows this. Where licensees were required to write a result or strategy, most closely followed the practice requirement in the regulation. Most of the results or strategies demonstrated consistency with the objective. However, the Board noted that in spite of concerns about windthrow in many riparian management and reserve zones, few licensees used the opportunity to create results or strategies that clearly dealt with this issue.

Community Watershed Objective—FPPR Section 8.2

Twenty-four of the sampled FSPs had community watersheds within their forest development units. All of these had results or strategies for the community watershed objective. The community watershed objective involves several practice requirements—the licensee may undertake to comply with some, but not all, of these. Almost two-thirds of the FSPs with results or strategies for the community watershed objective did not demonstrate consistency with the objective.

Landscape Level Biodiversity Objective—FPPR Section 9

Some of the sampled FSPs (12 of 43) adopted or complied with the practice requirements. Of the remaining FSPs, over half chose to write results or strategies that used 'tweaked' FPPR practice requirements as a basis while about one-third had somewhat original results or strategies. Most of the tweaked practice requirements were consistent while overall almost two-thirds demonstrated consistency with the objective.

Stand Level Biodiversity Objective—FPPR Section 9.1

Few of the sampled FSPs (5 of 43) adopted or undertook to comply with the practice requirements. The other FSPs created results or strategies to meet government's objective. Over two-thirds demonstrated consistency with the objective.

Visual Quality Objective—FPPR Section 9.2, *Government Actions Regulation*, or FRPA Section 181

Most FSPs (40 of 43) required results or strategies for visual quality objectives. Thirty-nine of these wrote results or strategies. About half of these FSPs had results or strategies for visual quality objectives that demonstrated consistency with the objectives. Common problems with results or strategies that were not consistent included:

- Presence of open-ended exemptions built into the result or strategy.
- Committing to the “design” of the block or road being consistent rather than having results on the ground consistent with visual quality objectives.

Although licensee may create results or strategies for situations where it is not practicable to meet the visual quality objective, (a major windthrow event for example) most attempts were too open-ended and could allow avoidance of visual quality objectives for a very wide range of circumstances. A *Forest and Range Practices Act* (FRPA) guidance document discusses this issue.^{xxvii}

Cultural Heritage Resources Objective—FPPR Section 10

Forty-two FSPs had results or strategies for this objective. However, few demonstrated consistency with the objective. The most common oversight was a failure to provide a strategy to conserve or protect cultural heritage resources in situations that might not be directly associated with development of a cutblock or road. For example, herbicides might damage plant-related cultural heritage resources or general access might affect a ceremonial site. Another common problem was a lack of clarity on how licensees would identify affected First Nations.

Measures for Invasive Plants—FPPR Section 17

All 43 FSPs had contained measures for invasive plants. However, few (about one-fifth) of these were both practicable and likely to be effective. A good set of measures should have components to reduce the likelihood of introduction and spread of invasive plants including risk assessment, detection, treatment, and reporting. Common problems with measures were a lack of commitment to using weed-free seed and a lack of an effective system to monitor and report occurrences of invasive plants.

Measures for Natural Range Barriers—FPPR Section 18

Measures for range barriers were included in all FSPs where range use existed (25 of 43 FSP's). Very few (about one-tenth) demonstrated that they were practicable and likely to be effective. Common problems included inadequate consultation and lack of clear responsibility for carrying out measures.

Summary of Results for Measurability/Verifiability and Consistency

The following table summarizes the results of the investigation regarding measurability or verifiability and consistency. The table also notes which objectives have practice requirements.

FRPA *measures* do not have practice requirements and had poor results in terms of measurability or verifiability and consistency in this investigation. The objective for cultural heritage resources also is unaccompanied by practice requirements and had poor results. The visual quality objective does not have any practice requirements but fared better in the investigation. This is likely because the objectives are quite clear and simple. The wildlife objective does not have practice requirements, but fared relatively well in the investigation too. This may be because the results and strategies generally were simple and revolved around leaving a certain amount of habitat available for the species as stated in the official notice. As well, the official notices are often accompanied by supporting information that aids in creation of a result or strategy.

Table 1. Presence of Practice Requirements and the Results of this Investigation

Source of Objective or Measure	Objective or Measure**	Proportion that are Measurable or Verifiable	Proportion of Result or Strategy that are Consistent to the Extent Practicable or Proportion of Measures that are Reasonable and Appropriate	Are Practice Requirements Associated with the Objective or Measure?
FPPR	Sec. 5 Soils	High	Moderate	Yes
	Sec. 7 Wildlife	High	Moderate	No
	Sec. 8 Riparian	Moderate	High	Yes
	Sec. 8.2 Community watersheds	Low	Moderate	Yes
	Sec. 9 Landscape level biodiversity	Moderate	Moderate	Yes
	Sec. 9.1 Stand level biodiversity	High	Moderate	Yes
	Sec. 9.2 Visual quality*	Moderate	Moderate	No
	Sec. 10 Cultural resources	Low	Low	No
LUO, GAR and Grandparented	Government Actions Regulation (GAR)	Moderate	Moderate	n/a
	Land use orders (LUO) and higher level plans	Moderate	Moderate	n/a
FPPR Measures	FPPR Sec 17. Invasive plants	Low	Low	No
	FPPR Sec 18. Range barriers	Low	Low	No

*Visual quality objectives come from a number of sources (FRPA 181, FPPR 9.2, GAR 17, GAR 7.2) and are grouped in this table under FPPR 9.2 for convenience.

**Results or strategies are not required for the timber objective (FPPR sec. 7) and there were no results or strategies in any sampled FSPs for the fisheries sensitive watershed objective (FPPR sec. 8.1), therefore these objectives are not included in this table.

 High: 80% or more

 Moderate: 51% to 79%

 Low: less than 50%

ENDNOTES

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- ⁱ Ministry of Forests, “[Backgrounder: Forest Stewardship Plans Produce Enforceable Results](#)”, 2004.
- ⁱⁱ Ministry of Forests and Range, “[Administrative Guide to Forest Stewardship Plans, Volume 1](#)”, 2009.
- ⁱⁱⁱ Forest Practices Board, [A Review of the Early Forest Stewardship Plans Under FRPA](#), May 2006.
- ^{iv} Forest Practices Board, [Community Watersheds: From Objectives to Results on the Ground](#), April 2014.
- ^v Forest Practices Board, [Mitigation of Forestry Impacts to Natural Range Barriers](#), April 2015.
- ^{vi} Forest Practices Board, [A Decade in Review: Observations on Regulation of Forest and Range Practices in British Columbia](#), May 2014, Pages 11 and 12.
- ^{vii} Ministry of Forests and Range, FREP report #22, “[Evaluating Forest Management Planning and Implementation under the Forest and Range Practices Act: FREP Cultural Heritage Resource Process Evaluation Pilot Project](#)”, 2010.
- ^{viii} Ministry of Forests and Range, FREP report #19, “[Forest Stewardship Plan Stocking Standard Evaluation](#)”, 2009.
- ^{ix} Ministry of Forests, Lands and Natural Resource Operations, FREP Report Extension Note 32. http://www.for.gov.bc.ca/ftp/hfp/external!/publish/FREP/extension/FREP_Extension_Note_32.pdf, 2013.
- ^x Ministry of Forests and Range, FRPA Administration Bulletin #14, FSP Review and Comment Requirements Relative to Tenured Commercial Recreation Operations on Crown Land, March 4, 2010.
- ^{xi} Data from FSP Tracking System downloaded November 2013.
- ^{xii} Forest Practice Board, [Board Bulletin, Volume 3 – Opportunity for Public Consultation under the Forest and Range Practices Act](#), 2003.
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- ^{xiv} Ministry of Forests and Range, Guidance to C&E Program Staff on the Assessment of Measurable or Verifiable Results or Strategies with a Forest Stewardship Plan (FSP), [C&E Program Staff Bulletin #12](#), revised June 26, 2006.
- ^{xv} Ministry of Forests and Range, FRPA General Bulletin #12, Use of the Term “Practicable” in Results or Strategies, March 30, 2007.
- ^{xvi} Association of BC Forest Professionals, http://www.abcfp.ca/regulating_the_profession/practicing_in_bc.asp, accessed January 27, 2015.
- ^{xvii} Association of BC Forest Professionals, [Professional Reliance Principles for FRPA Operational Plans and Declarations](#), Feb. 2007.
- ^{xviii} Association of BC Forest Professionals, [Standards of Professional Practice, Guidelines for Interpretation](#), June 2014, Page 9.
- ^{xix} Association of BC Forest Professionals, [Guidance for Professional Quality Rationales and Commitments](#), September 2008.
- ^{xx} Ministry of Forests and Range, Administrative Guide to Forest Stewardship Plans (Volume 1) – Preparation and Approval of the FSP. Resource Tenures and Engineering Branch, Version 2.1, August 2009. Page 68.
- ^{xxi} Ministry of Forests and Range, Administrative Guide to Forest Stewardship Plans (Volume 1) – Preparation and Approval of the FSP. Resource Tenures and Engineering Branch, Version 2.1, August 2009. Page 81.
- ^{xxii} Forest Practices Board, [A Decade in Review: Observations on Regulation of Forest and Range Practices in British Columbia](#), May 2014, Page 7.
- ^{xxiii} Ministry of Forests, Lands and Natural Resource Operations, FRPA General Bulletin 25, [A Comparison of FSP Results or Strategies Flexibility Options](#), June 2011.
- ^{xxiv} Ministry of Forests and Range, Administrative Guide to Forest Stewardship Plans (Volume 1) – Preparation and Approval of the FSP. Resource Tenures and Engineering Branch, Version 2.1, August 2009. Page 76.
- ^{xxv} Ministry of Forests and Range, Administrative Guide to Forest Stewardship Plans (Volume 1) – Preparation and Approval of the FSP. Resource Tenures and Engineering Branch, Version 2.1, August 2009. Page 81.
- ^{xxvi} Ministry of Forests and Range, Guidance to C&E Program Staff on the Assessment of Measurable or Verifiable Results or strategies with a Forest Stewardship Plan (FSP), [C&E Program Staff Bulletin #12](#), revised June 26, 2006.
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