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**Differences That “Matter”? Identifying Analytical Challenges in
the Comparison of Forest Certification Standards**

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Abstract

Forest certification involves the labeling of certain forest practices as responsible or sustainable based on a set of environmental, economic and social standards for “good forestry”. As such, it treads within a normative arena previously reserved for government, i.e. the establishment and enforcement of acceptable rules of forest practice. Unlike governments, however, no single certification system can lay claim to ultimate authority. Instead, competing certification systems have developed. On one side is the Forest Stewardship Council, which is strongly backed by major international environmental groups. On the other, are industry-backed systems such as the Canadian Standards Association and the US-based Sustainable Forestry Initiative. Even within a single certification system, such as the FSC, differences have emerged between regional-level standards, highlighting complex and often controversial environmental, economic and/or social dynamics.

The act of comparing certification standards, therefore, can be seen as a politically reflexive act serving to highlight similarities or differences in such a way as to enhance the legitimacy of any given certification standard. In fact, comparisons to date range from those finding little significant difference between certification standards to those declaring that only FSC standards, or perhaps only a particular FSC regional standard, approaches a credible measure of good forestry.

This article presents a new and complementary methodology involving the systematic and analytical comparison of 1) the policy approach of different forest certification standards and 2) the difference between certification standards and underlying government regulations. The findings reveal clear differences between FSC regional standards in the US and Canada, as well as between the FSC, CSA and SFI certification systems, in regards to one key policy indicator: i.e. protection of riparian zones. The FSC British Columbian standards include the largest buffer zone requirements but are less prescriptive than those of the FSC Pacific Coast. The FSC Southeast standards are comparable to the SFI standards, while the CSA standards are the least restrictive. Comparison with government requirements shows a striking isomorphism between FSC regional standards and government requirements, whereby the certification standards in each region mimic the policy approach of government regulations in that region while providing incrementally more demanding substantive requirements. The SFI national standards reflect a mild increase in policy restrictiveness over government standards in the US Southeast and no significant change elsewhere.

Finally, the CSA standards provide no substantive requirements in addition to government standards. The authors in no way claim that the methodology presented here is the only “legitimate” method for comparing standards. Nevertheless, it does represent a relatively systematic, replicable and transparent methodology for identifying similarities and differences between certification standards that are of considerable importance to a wide variety of forest stakeholders.

Introduction

The proliferation of certification systems domestically and globally has led to considerable confusion about their differences, complementarity, behavioral impacts, and ability to reverse environmental deterioration. While originally designed as a means to promote and “verify” good forest governance, the sheer complexity of the new systems has created confusion and uncertainty, with supporters of different certification programs making claims and counterclaims about the ability of a particular program to improve forest management and arrest global forest deterioration. For these reasons an array of studies have been commissioned and developed in order to compare across systems with the goal of facilitating societal, market and governmental level evaluation of forest certification. However, the proliferation and complexity of various comparisons has arguably contributed to increasing confusion, as supporters of systems point to the comparison that seems to give their preferred program enhanced legitimacy.

The purpose of this paper is to analyze and shed light on differences across and within certification standards by focusing on precisely defined issues of policy and substance that are of known importance to key forest certification interest groups. The policy focus we have selected is that of the “prescriptiveness” of management requirements (i.e. the degree of discretion they afford forest managers and certifiers), including the presence and extent of quantitative thresholds defining minimum performance requirements. The substantive focus is the protection of riparian areas. By restricting our analysis to a few limited, but arguably prominent issues of global forestry debate, our paper is able to apply a relatively transparent and replicable three-stage approach to analyzing the content of certification standards. These three stages involve the classification of riparian protection standards according to the policy approach they employ, a comparison of their nominal requirements, and a comparison of their restrictiveness relative to pre-existing government policies. We argue such an approach helps to simplify complex policies, and offers a potential new way of facilitating policy learning that captures important differences within and across systems.

The methodologies introduced in this study, however, are not designed to assess the overall *effectiveness* of different certification programs in achieving their environmental, social and economic objectives. An assessment of program effectiveness would require the analysis of other factors beyond the written standards, including the local environmental, social and economic contexts in which certification takes place; the formal and informal procedures for implementing certification; and field-based performance measures. Nevertheless, the focused analysis of policy approach presented in this paper can set the stage for future studies that assess the linkage between policy approach and on-the-ground policy outcomes.

The remainder of this paper develops our three-stage comparison of certification standards through the following steps. Firstly, we review the origins of different certification programs competing for legitimacy within the United States and Canada.¹ A second section provides a brief review of past comparative studies and introduces our three-part analytical framework. The third section introduces our sub-national case study regions and the certification standards currently active in these regions. This is followed by the introduction of our policy variable, riparian protection, and a general discussion of the environmental, social and economic importance of riparian areas. A fifth section identifies the empirical results, revealing significant differences across different systems, as well as within the FSC. A sixth section goes further by recognizing that many certified companies must also follow public policy riparian zone regulations. We therefore apply the same comparative framework to these government policies, to assess the complete set of non-state and state regulatory constraints facing a firm undergoing certification. This enables a comparison of the sum total of performance requirements that that must be met by certified operators in each jurisdiction. It also sheds light on whether certification regulations largely mirror state approaches, or significantly increase forest management requirements, both within and across regions. A summary and conclusion provides an overview of key findings, and reflects on other factors critical for understanding the effects of this regulatory environment in shaping on-the-ground forestry impacts.

Origins of Forest Certification in the United States and Canada

The Forest Stewardship Council, the Canadian Standards Association, and the Sustainable Forestry Initiative are the three certification systems currently active in North America that have established standards of “responsible” or “sustainable” forestry. A brief overview of their evolution reveals a number of key differences that may potentially influence the nature of their certification standards.

The Forest Stewardship Council (FSC) was founded in 1993, with major impetus and support from international environmental organizations, such as the Worldwide Fund for Nature (WWF). The FSC is a membership-based organization designed around principles of balanced interest group participation. Members are organized according to a tri-partite structure consisting of environmental, social and economic chambers. Voting rights are divided equally between each interest-based chamber, and between members from the Northern and Southern world hemispheres. The stated purpose of such a structure is to “maintain the balance of voting power between different interests without having to limit the number of members” (FSC-AC 2002). In particular, the three-chamber system has been viewed as preventing traditionally dominant interests, i.e. industry and Northern interests, from controlling program decisions (Cashore, Auld, and Newsom 2004; McDermott 2003).

¹ This study focuses on the development of forest certification in the U.S. and Canada, two countries of critical importance to global forest dynamics. These two countries together account for over 12 percent of global forest cover and are among the world’s top producers and consumers of forest products
FAO. 2005. State of the World's Forests. Rome: Food and Agricultural Organization of the United Nations.. The methodologies introduced in this study, however, are equally relevant for comparing state and non-state policies in other countries and world regions.

The FSC has developed a set of international forestry standards, known as the Ten Principles and Criteria, that apply to all forests certified under the FSC label. The global scale of these Ten Principles and Criteria (P&C) arguably limits the degree of specificity (or “prescriptiveness”) of its forest management requirements. The FSC, however, has also established a system for creating national or regional-level “indicators” and “verifiers” to supplement the international standards. Under this system, national or regional “working groups” are formed according to the same general chambered structure of the FSC international membership (although in a Canada a fourth chamber, known as the “Indigenous Peoples Chamber”, has also been added). In large, federated countries such as the U.S. and Canada, regional processes have been developed at a sub-national level. There are currently eight regional standards completed or in progress in Canada, and nine in the United States.

The stated objectives of the FSC’s national and regional standard setting process are “...to decentralize the work of FSC and to encourage local participation (FSC-AC 2002).” This study’s analytical framework will illustrate whether, and to what degree, these regional processes may have also affected the prescriptiveness of certification requirements in select North American regions.

The Canadian Standards Association, first chartered in 1919, is Canada’s national standard setting body. In the early 1990s, the CSA began developing its system for “Sustainable Forest Management” (SFM) with the active participation of government and industry interests dissatisfied with the environmentalist-backed FSC (Cashore, Auld, and Newsom 2004; Elliot 1999).

The CSA structures its standards-writing process around a Sustainable Forest Management Technical Committee, with one-quarter of this committee categorized as “forest producers, including woodlot owners”, and the rest consisting of “Professional, Academia & Practitioners”; “Government/Regulatory”, and “Environmental & General Interest” (which includes such diverse interests as labor, environmentalists and indigenous groups) (CSFCC 2005). Key structural differences between the CSA SFM and FSC standards-writing processes, are the exclusively national level of the CSA standards, the organization of the CSA standards-writing committee according to professional categorization rather than value orientation, the direct participation of government in CSA standard setting, and the CSA’s lack of a required voting system.

Among the potentially significant results of such differences, is that interests defined as “environmental” under the CSA system lack the veto power that they hold under the FSC international, national and regional systems. Perhaps of even greater import, however, is the relatively little overlap between the environmental organizations involved in CSA standard setting and the major international environmental advocacy groups involved with the FSC. To date, well-known environmental groups such as WWF, Greenpeace, Sierra Club, the Rainforest Action Network and Friends of the Earth have demonstrated their preference for the FSC (Cashore, Auld, and Newsom 2004; Elliot 1999). The CSA has received widespread recognition from other industry-backed certification systems, however, including the SFI as well as the global-scale Programme for the Endorsement of Forest Certification Schemes (PEFC) (CSFCC 2005).

The first CSA SFM standards (CAN/CSA Z809) were released in 1996, and later updated in 2002. The standards include both forest management “performance” requirements, as well as “systems” requirements. The “performance” requirements

address broad substantive forest management goals, and the “systems” requirements focus on procedures for implementing those goals. The CSA’s performance requirements are built around six Criteria initially developed by the Canadian Council of Forest Ministers (CCFM) based on the international Montreal Process Criteria and Indicators. Under each Criterion, the standards also include one to four Elements that provide more detailed guidance for implementing the CCFM goals.

The systems component of the CSA standards requires the development of a system for setting values, objectives, indicators, targets, strategies, present conditions and forecasts for each Defined Forest Area (CSA 2002; Section 7.3.6.1 pg. 25). This local-level “standards-writing” must involve substantial public participation, with an aim towards achieving “consensus” among “interested parties”, and providing mechanisms for dispute resolution.

The Sustainable Forestry Initiative (SFI) was founded in 1994 by the American Forest and Paper Association (AF&PA), the largest forest industry association in the U.S. The SFI first developed a methodology for “first party” certification audits, whereby forest industry participants utilized industry association standards to conduct internal audits of their management systems and performance. The SFI has since undergone major changes in organizational structure and approach. Among the most notable developments has been the shift from first party audits to the increasing use of third party, independent assessments. Furthermore the SFI established its independence from AF&PA in the year 2000 by forming a separate organization, the Sustainable Forestry Board, to oversee the SFI program. Hence the SFI process is no longer officially controlled by an industry association.

The Sustainable Forestry Board now holds exclusive authority to approve SFI standards. The Board is composed of five members each in the categories of industry, environmentalists, and broad interests (board members in the latter category range from loggers to academics). Canadian representatives are included on the Board, since SFI certification has spread rapidly in Canada as well. The SFI standards are reviewed every three years, with the latest set of standards approved for the years 2005 to 2009.

The SFI standard setting process differs in a number of ways from the FSC, including its exclusive focus on the U.S. and Canada, its national-level standards, and the lack of required voting procedures. As with the CSA, there has been historically little overlap between the environmental organizations involved with the SFI and those active within the FSC (Cashore, Auld, and Newsom 2004; Elliot 1999).

The structure of the SFI standards consists of Objectives, Performance Measures, and Indicators, in increasing order of specificity. The new 2005 draft standards have removed a previous distinction between Core Indicators and “Other Indicators”, consolidating all Indicators into a single category.

In sum, the FSC, CSA, and SFI forest certification systems are diverse in terms of both their decision-making processes and the structure of their certification standards. Key among these differences is the composition of stakeholders involved in standard setting, as well as the level at which standards are developed (i.e. international, national, and/or regional).

The Table below provides a summary of the general structure of the standards and decision-making level for each of the certification systems discussed in this article. The numbers I, II, III and IV indicate order in a nested hierarchy of standards requirements,

with level I consisting of broad forest management goals; level II consisting of enabling conditions for meeting those goals; and levels III and IV providing progressively more specific guidance. As illustrated in the following table, each set of standards uses different terminology. For example, the broadest management goals are called “Principles” under the FSC, “Criteria” under the CSA, and “Objectives” under the SFI. These differences are primarily semantic, however. For the purposes of comparison, what is most important to consider is the level of a requirement within the overall standards hierarchy.

Table 1 Structure of the standards and decision-making levels

| | FSC | CSA SFM | SFI |
|----------------------------|----------------------------------|--|---|
| International | I. Principles II. Criteria | | |
| National | | I. Criteria* II. Elements | I. Objectives* II. Performance Measures III. Indicators |
| Regional | III. Indicators IV. Verifiers | | |
| Defined Forest Area | | III. Values, Objectives IV. Indicators, Targets | |

* The CSA SFM Criteria are based almost verbatim on the international Montreal Process Criteria. The SFI standards include some Objectives that are similar to the Montreal Process Criteria. Nevertheless, the CSA SFM and SFI standards themselves were developed at the national level, and hence we do not categorize these standards as including international level elements.

The above differences in process and structure between competing certification systems raise questions regarding their impact on the content of the certification standards. The following analytical framework can help to address such questions by providing insight into linkages between stakeholder composition, the level of standard setting and the policy approaches of the resulting certification standards.

Analytical Frameworks

The complexity of forest certification’s environmental, economic and social objectives, standards, and procedures makes the choice of what to compare very challenging indeed. This complexity is reflected in the range of methodologies and diverse collection of issues addressed in the comparative research conducted thus far.

Some past studies have focused primarily on detailed descriptions of the structure and procedures of competing systems (Meridian Institute 2001). Others have assessed the perceptions of landowners, certifiers and/or stakeholders regarding the clarity, adequacy, credibility and/or other key features of different certification standards and procedures (Mater, Price, and Sample 2002; UPM 2005). Another approach has been to assess the “rigor” or difficulty of achieving a given certification standard in comparison to other standards (Gale 2004; UPM 2005), and/or in comparison to underlying government

regulations (Cook and O'Laughlin 2003; Dicus and Delfino 2003; Fletcher, Adams, and Radosevich 2001). A “checklist approach” has been favored by some as a means to compare a large number of standards by recording the number and range of issues of relevance to “sustainable forest management” (Holvoet and Muys 2004). Some comparative studies go yet a step further in establishing their own set of normative requirements for “credible” certification programs, and then apply these to existing systems. Such normative guidelines may be based on stakeholder “consensus” (Nussbaum and Simula 2004), or on those of a given organization or association (FERN 2004; IFIR 2001; WB/WWF 2003), or on the procedural requirements of the International Organization for Standardization (CEPI 2005). These and other studies worldwide constitute important contributions to the global dialogue on “appropriate” certification programs.

What is thus far lacking, however, are comparisons that systematically address certain central points of contention in standards-development—i.e. the relative level of prescriptiveness and associated management thresholds among the competing certification standards (Cashore, Auld, and Newsom 2004). Prescriptive standards have been strongly favored by those environmentalists and others who distrust that the forest industry and/or forest certifiers will exercise appropriate management discretion. In contrast, many forest producers prefer more flexible standards, either without thresholds or with relatively low threshold requirements (McDermott 2003). Hence a politically informed standards comparison is needed that addresses the differences in prescriptiveness between primarily environmentalist-backed and primarily industry-backed certification systems. This article makes no claims regarding the appropriateness or effectiveness of prescriptive versus flexible standards. However a study of prescriptiveness can lead to more informed multi-stakeholder dialogue, by setting the stage for future research assessing the role of policy approach in achieving desired forestry impacts.

This paper, therefore, introduces a three-step methodology for systematically comparing environmental performance prescriptions in select North American certification standards. These three steps, elaborated in the following subsections, consist of 1) policy classification 2) the comparison of quantitative thresholds and 3) the comparison of certification standards with existing government regulations.

Policy Classification

A common methodology for comparing how policies are designed to achieve particular objectives is to employ a standardized policy typology. Given our objective of producing politically relevant data, our choice of typology has been tied to existing stakeholder debates over the prescriptiveness of forest certification standards. For the purposes of this article we define “prescriptiveness” as the degree to which standards prescribe specific on-the-ground forest practices as opposed to allowing for more flexible interpretations. The policy classification system we employ for comparing prescriptiveness levels is based on that first developed by Cashore (1997) to compare government policies in the U.S. and Canada.

The first policy distinction of relevance is the difference between “voluntary” and “mandatory” policies. Voluntary policies are inherently less prescriptive than mandatory policies.²

Both voluntary and mandatory policies may also be further classified as either “substantive” or “procedural”. “Substantive” policies involve specific, on-the-ground performance requirements, often consisting of numerical “thresholds” (such as minimum riparian buffer zone widths or maximum clearcut sizes). “Procedural” policies, in contrast, focus on plans and procedures for addressing forest management issues. Procedural policies are, by definition, less “prescriptive” regarding on-the-ground management choices than substantive policies.

Procedural policies may be further distinguished as “plan based” involving issue-specific planning requirements, or “systems based”. Systems-based policies, which have become commonplace among certification programs, involve broader requirements to develop a holistic management system, such as an “environmental management system”. Unlike “plan-based” policies, they do not prescribe planning requirements for specific forest management activities (such as the requirement to develop a “riparian management plan”). Instead, systems-based policies call for plans to be developed as necessary to meet the overarching management objectives. Systems-based policies allow the greatest flexibility and hence are the least “prescriptive” of the procedural policy types here listed.

The following table provides a summary of this policy classification system.

Table 2 Matrix of four major policy types and four sub-types

| | Voluntary | Mandatory | <u>Increasing prescriptiveness</u>  |
|--------------------|--|--|--|
| Procedural | <i>Systems-based flexible</i> | <i>Systems-based moderately flexible</i> | |
| | <i>Plan-based flexible</i> | <i>Plan-based moderately flexible</i> | |
| Substantive | <i>Policy specification (threshold) flexible</i> | <i>Policy specification (threshold) inflexible</i> | |

Adapted from Cashore (1997)

In introducing this typology, it is also important to mention a few caveats. Complex, “real world” policies often do not fit perfectly into the above abstract and dichotomously defined categories. In many governance systems “voluntary” policies may hold legal standing as proof of due diligence when management practices result in environmental harm (such as the siltation of waterways). Likewise, regulating agencies hold varying levels of authority to grant exceptions to “mandatory” policies on the basis of environmental, social or economic justification. Furthermore, procedural policies commonly include some level of substantive guidance and substantive prescriptions may include elements of a planning approach as well. The classification system remains a

² From a legal perspective, forest certification in North America is an entirely voluntary process. Hence, in the context of certification standards, we use the terms “mandatory” and “voluntary” to distinguish between policies that are required versus those that are not required for the purposes of achieving certification.

useful tool, however, to the degree it is able to capture differences in the primary approach or defining feature of the policies under comparison.

Threshold requirements

The policy approach that most easily lends itself to quantitative and replicable comparisons is the use of numerical “threshold” requirements, i.e. substantive policies that prescribe quantitative maximum or minimum performance measures (such as minimum reserve areas or maximum clearcut sizes). Threshold requirements, assuming they are effectively observed and/or enforced, afford a relatively high level of certainty regarding the actions of a given forest manager. As such, the use of thresholds is often favored by groups that distrust forest managers, certification auditors, and/or government officials to exercise appropriate discretion (McDermott 2003). The presence or absence of thresholds has in fact been a key concern of environmentalists in some standard setting processes, such as that of the FSC in British Columbia (Cashore, Auld, and Newsom 2004; McDermott 2003). Hence this study includes a methodology for comparing thresholds using the sample variable of riparian protection. The riparian thresholds addressed are the prescribed widths of protective riparian buffer zones.

Public policy context

Forest certification is not implemented in a policy vacuum. Instead, it operates as an additional non-state, voluntary mechanism that forest operators may apply on top of already existing state-based regulations. In recognition of this fact, all of the forest certification standards here reviewed require that forestry operations follow government policies. In order to understand the forest practices required of certified forest operators, therefore, it is important to view certification standards within the larger regulatory context in which they are both created and applied.

Our third comparative methodology therefore, draws on the work of Cashore and McDermott (2004) to ground our comparative analysis in their specific regulatory environments. We do this first by identifying and comparing the policy approach and threshold requirements of government regulations with the corresponding certification requirements applicable within each jurisdiction. We then create a matrix comparing the relative “restrictiveness” of certification standards and government policies. The measurement of relative restrictiveness is based on a comparison of both the policy approach and substantive thresholds of certification standards and government policies. Looking at both policy approach and threshold requirements together gives us a more complete picture of where certification standards exceed state or provincial requirements. For example, certification standards may serve to make voluntary government requirements mandatory, or they may establish additional substantive performance requirements, such as wider buffer zone widths. In either case, the certification standards would rate as more restrictive than government policies.

Again, this paper makes no claims regarding the adequacy, or lack thereof, of either the certification standards or the government policies under analysis. What it does do, however, is provide greater clarity and transparency regarding similarities and differences between the certification standards, and between the certification standards and government policies, in select regions and jurisdictions.

Case Selection

The geographic areas chosen for these sample analyses are the U.S. Southeast, the U.S. Pacific Coast, and British Columbia, Canada. The certification schemes currently active in this area are those described in the introductory section of this report, i.e. the environmentalist-backed Forest Stewardship Council (FSC), the industry-backed Sustainable Forestry Initiative (SFI), and the government- and industry-backed Canadian Standards Association (CSA) Sustainable Forest Management (SFM) certification program.

This selection of study area and certification systems, in turn, yields five different certification standards for comparison. These include the CSA SFM standard that encompasses all of Canada, and the SFI standard that covers both the U.S. and Canada. It also includes three FSC regional standards, consisting of: the FSC Southeast (FSC-SE), the FSC Pacific Coast (FSC-PC), and the FSC British Columbia (FSC-BC) standards. The FSC-SE standard encompasses all or part of each of ten U.S. states, including Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Virginia, and Texas. The FSC-PC standard covers California, Oregon and Washington. The FSC-BC standard covers the province of British Columbia, Canada.

Policy Variable – Riparian Protection

The policy variable we have selected for comparison is the protection of riparian areas along forested streams. One reason for selecting this variable is the prevalence of riparian policies and threshold requirements in both certification standards and government regulations. The frequent inclusion of riparian policies provides sufficient data to facilitate comparisons across all of the standards concerned.

The other reasons for our focus on riparian protection corresponds with a plausible explanation for *why* riparian policies are so prevalent—riparian areas play a key role in the regulation of water supply, they provide unique habitat for wildlife, and they serve as fertile areas for timber production. The protection of riparian zones for the purposes of maintaining water quality and quantity for domestic use is a concern shared across a broad and diverse segment of civil society. The ecological functions of riparian zones, although perhaps less broadly recognized, could also be viewed as critically important. As evidence of this importance, the World Wildlife Fund has estimated that half of the 1,200 species on the U.S. endangered species list depend on rivers and streams as critical habitat (WWF 2003). Meanwhile the economic value of riparian timber is of major concern to business interests, since river valleys and flood plains support large volumes of fast-growing, high value tree species. Hence the precise level of appropriate riparian protection is a matter of considerable debate among diverse forestry stakeholders.

How much, and what kind, of riparian protection is enough? A considerable body of research has developed to address this question. For example, there have been numerous studies assessing the importance of management restrictions in protecting riverine habitats. Research has supported the role of buffer zones in moderating stream temperatures, reducing siltation, stabilizing stream channels, influencing in-stream

nutrient cycling, contributing fine and coarse woody debris, and providing native plant, invertebrate, fish, bird and mammal habitat (Aubertin 1974; Belsky, Matzke, and Uselman 1999; Harper and MacDonald 2001; Johnson and Jones 2000; Kauffman and Krueger 1984; Kochenderfer, Edwards, and Wood 1997; Moring 1982; Nilsson and Svedmark 2002; Parkyn et al. 2003; Patric 1978; Quinn et al. 1992; Semlitsch and Bodie 2003; Spackman and Hughes 1995; Tschaplinski 2004; Whitaker, Carroll, and Montevecchi 2000; Williamson, Smith, and Quinn 1992; Young, Hinch, and Northcote 1999; etc.).

While there is substantial evidence to support the need for riparian protection, the precise nature of the protection needed, the appropriate balance of protection with exploitation, and the most effective and efficient policy approach for achieving protection, remain open to debate. The difficulties begin with the very definition and boundaries of a “riparian zone”. Riparian zones can be defined simply by their physical structure and/or species composition. However, a key environmental concern is the *function* of riparian zones in regulating water and providing habitat. Riparian function depends on the interactions of riparian structure with the local biotic community (Loftin et al. 2001). The importance of local contexts in determining riparian function, suggests that protection measures adequate in one area may well be inappropriate in another.

A common policy tool for protecting riparian areas is the creation of “buffer zones” which restrict or prohibit forest management activities within a prescribed area bordering streams and other water bodies. The variability of riparian function across the landscape serves as an argument for flexible policies allowing a corresponding variation in applied buffer zone widths. At the same time, the environmental importance of riparian protection can be seen as an argument for more prescriptive riparian rules and large buffer threshold requirements.

In spite of the numerous challenges of designing “appropriate” riparian protection policies, rules establishing and protecting riparian “buffer zones” are one of the more commonly shared forest practice regulations worldwide. Furthermore, such rules are particularly likely to involve prescriptive forest management thresholds (Cashore and McDermott 2004). This paper will compare both the policy approach and threshold requirements for streamside³ buffer zone protection in select forest certification standards and government regulations, thereby situating different certification systems within this international forest policy environment.

It is a relatively simple matter to identify the presence or absence, and quantitative width requirements, of riparian buffer zone rules. Upon closer inspection however, riparian policies vary greatly in content and complexity. For example, prescribed buffer zone widths are commonly based on stream type. However the number and definition of stream types varies between regions and regulatory systems, involving different combinations of diverse variables such as stream width, bank slope, soil type, stream velocity, presence or absence of fish, etc. Similarly, the nature and extent of buffer zone management restrictions may vary greatly, ranging from simply the exclusion of heavy machinery to a complete ban on timber harvest. For the purposes of our analysis, we simplify and codify this complexity in two ways. Firstly, we include graphs that

³ Many forest policies also include buffer zone requirements for lakes, wetlands and other water bodies. In this article we focus primarily on streamside buffers as an indicator of overall policy approach to riparian zone management.

paraphrase the definitions of stream types used in each jurisdiction in order to increase our analytical transparency. Secondly, we distinguish only between “no harvest” zones, in which there is a complete ban on timber harvest, and “special management zones” in which harvest is allowed but certain forest practices are restricted.

A certain degree of variation in stream classification systems, buffer zone widths and management restrictions may be explained by environmental differences between jurisdictions. This issue is discussed briefly in our empirical results sections. However, as reflected in other regulatory analyses, social and economic factors also play a key role in shaping riparian policies in the U.S. and Canada (Lee, Smith, and Boutin 2004), as elsewhere (Cashore and McDermott 2004).

Regardless, the end goal of our simplified analysis is not to produce definitive findings on the adequacy of environmental protection in the selected regions, but rather to provide a general sense of differences in policy approach between a range of state and non-state governance systems. The assessment of the *effectiveness* of riparian policies would depend not only on a more detailed analysis of buffer zone management prescriptions, but also consideration of such diverse issues as the local forest ecology, the range of forest practice activities across the broader landscape (for example, large-scale clearcutting or single tree selection, road-building or helicopter logging), the effect of different policy approaches on landowner incentives for certification, etc.

This comparative study is strictly bounded not only by its narrowly defined policy indicators, but also by its temporal scope. Specifically, it will compare those riparian policies that were in place during January 2005. At that time, the FSC-BC standard under consideration had received only “preliminary accreditation” by the FSC.⁴ Reflecting the dynamic nature of policy development, the conclusion of this report will provide a brief synopsis of proposed changes to the FSC-BC standard that have since been submitted by FSC-Canada in application for complete accreditation.

The following sections will now present the empirical results of the above-described comparative methodology. This will begin with a qualitative description of the riparian policies present in each of the standards under analysis, followed by a classification of their policy approach, a comparison of threshold requirements, and a comparison of certification standards and underlying government policies.

⁴ Preliminary accreditation constitutes “a formal mechanism through which national and regional FSC forest stewardship standards can be introduced in the field with FSC’s approval, whilst allowing the many interested stakeholders additional time to gain real field experience in the implementation of the standard, in order to resolve outstanding issues of concern”

FSC-BC. 2005a. Indicators for Compliance with FSC Principles and Criteria for Small Operations in British Columbia, Approved Final Draft: Forest Stewardship Council, British Columbia regional working group.

Empirical Results

A Description and Classification of Riparian Protection Policies in Select Certification Standards

CSA

The CSA standards for Sustainable Forest Management (SFM) include three Canadian Council of Forest Minister (CCFM) Criteria that could be considered directly relevant to riparian protection. These are Criterion 1 Conservation of Biological Diversity; Criterion 2 Maintenance and Enhancement of Forest Ecosystem Productivity; and Criterion 3 Conservation of Soil and Water Resources. None of the CSA Elements under these Criteria specifically refer to riparian buffer zones. However Element 3.2 “Water Quality and Quantity” requires that management “conserve water resources by maintaining water quality and quantity” (CSA 2002).

As already discussed, the CSA standards also include mandatory procedures for developing detailed substantive requirements for each Element at the level of the Defined Forest Area. These procedures include a process for partnering with public advisory groups to identify values, objectives, indicators, targets, strategies, present conditions and forecasts (CSA 2002: Section 7.3.6.1, pg. 25).

The CSA’s approach to riparian buffer zone protection can best be classified as a mandatory procedural approach, based on the detailed local-level procedural requirements and lack of substantive management thresholds. The procedural requirements furthermore, are of the least prescriptive sub-type, i.e. they are “systems-based”. Systems-based rules differ from “plan-based” rules, in that they do not specify the need for riparian protection *plans*, per se. Instead, they merely state the generalized objectives of riparian protection and require that the means for achieving those objectives be developed within the context of an environmental management *system*. Such a system may, or may not, produce specific riparian buffer zone plans.

SFI

The SFI standards, like the CSA SFM, include several broad Objectives relevant to the protection of riparian areas. Of these, Objective 3 “Protect the water quality in streams, lakes and other waterbodies”, most directly refers to the protection of water resources. Under this Objective, Performance Measure 3.1 requires that operators follow government-approved Best Management Practices for water quality protection. Performance Measure 3.2, furthermore, requires that operators develop appropriate riparian protection measures where government BMPs do not already exist. Performance Measure 3.2 includes an Indicator requiring the development of a “program” addressing “riparian zones” as a component of such protection measures (SFI 2005).

The SFI’s approach to our policy criterion of riparian buffer zone protection can best be described as mandatory and plan-based procedural, in that it requires managers, in the absence of government policies, to develop their own riparian protection “program”. This planning requirement, however, is contingent on the absence of pre-existing government Best Management Practices.

It is worth emphasizing here that our classification framework does not consider management “norms”⁵ when determining policy approach. For example, riparian buffer zones are a common component of “Best Management Practices” for water conservation in North America. Thus, regardless of whether or not the SFI standards include the specific phrase “riparian zones”, trained certification auditors would likely view streamside buffer zones as a necessary part of riparian protection measures. Nevertheless, semantic distinctions are important when classifying levels of policy prescriptiveness. As already noted, many supporters of prescriptive policies do not trust policy implementers to make consistently appropriate decisions if left to their own discretion (McDermott 2003).

FSC

Next, let us turn to an analysis of the FSC-BC, FSC-PC and FSC-SE regional standards and their treatment of riparian protection. Principle 6 of the FSC’s International Principles and Criteria (P&C) is the Principle that most directly addresses riparian protection. This Principle states that “Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.” International Criterion 6.5 of this Principle further states that “Written guidelines shall be prepared and implemented to...protect water resources.” Hence the FSC P&C establishes a mandatory procedural requirement which serves as a base or “minimum” requirement underlying all FSC regional standards (FSC-AC 2004).

FSC-BC

The FSC-BC regional indicators establish their own default quantitative thresholds for both “riparian reserve zones” (i.e. no harvest zones) and “riparian management zones” (illustrated below under the sub-section “threshold requirements”). The FSC-BC’s default buffer zone requirements, however, may be modified at the Forest Management Unit level based on an “integrated riparian assessment”. The FSC-BC provides detailed guidance, furthermore, on the necessary components of an integrated riparian assessment. These include the use of a “multi-disciplinary team” of experts to establish objectives for protecting a variety of stream attributes, set targets for meeting those objectives, and monitor the results (FSC-BC 2003: 97).

In terms of policy classification, the FSC-BC’s approach to riparian protection could best be described as “mixed”, in that it combines elements of a substantive (“threshold”) and a plan-based approach. This simple classification system, however, overlooks the many qualitative substantive requirements that the alternate integrated riparian assessments entail. In other words, the classification of policy approach alone says nothing about the qualitative *breadth* of the substantive requirements or the difficulty of meeting standards requirements.

⁵ The word “norms” here refers to those informal or “customary” rules of procedure that are shared by a given occupational or place-based community,

FSC-PC

The contents of the FSC-PC standards pertaining to stream protection have both similarities and differences with those of the FSC-BC standards. Like those of the FSC-BC region, the FSC-PC standards set minimum riparian buffer zones for a series of designated stream categories, which are to be followed only if they exceed requirements of state or other relevant regulation. Unlike the BC standards however, the PC standards do not set “no harvest zones.” Rather, the FSC-PC standards establish “inner” and “outer” buffer zones whereby management activities are increasingly limited in the “inner” widths. For instance, only single-tree selection silviculture is permitted within the inner buffer for Category A streams, whereas group selection silviculture may be practiced within the outer buffer for this stream type (FSC-PC 2003: 29). Also in contrast to FSC-BC, the FSC-PC standards do not provide managers with the option of establishing alternate, plan-based buffer zone widths. Due to this lack of flexibility, the FSC-PC standards rank as mandatory substantive policies, the most prescriptive policy type.

FSC-SE

The FSC-SE standards, in contrast to the FSC-PC and FSC-BC standards, do not establish specific riparian buffer widths. However, they do provide fairly specific goal-oriented requirements for planning appropriate buffer sizes. Beyond requiring that the “management {of SMZs} meets or exceeds state BMPs,” the FSC-SE standards state that the SMZ width is to reflect, for instance, changes in forest condition and erodibility of soil and to provide sufficient vegetation to limit nutrient inputs (FSC-SE 2004: 23). This approach, although including more detailed substantive guidance, constitutes the same general policy “type” as that of the SFI, i.e. it is best described as plan-based procedural.

Prescriptiveness ranking

The table below illustrates the policy classification of all five standards. An additional column has been added, ranking the relative prescriptiveness of each standard. The “mixed” category has been added to reflect those policies that mix substantive and procedural approaches. As discussed, the FSC-BC employs such a “mixed” approach in establishing threshold requirements that may be waived where managers have prepared alternative riparian management plans.

Table 3 Policy type and prescriptiveness of riparian protection policies in select certification standards

| | | Mandatory | Prescriptiveness Score ⁶ |
|-------------|---------------|-------------|-------------------------------------|
| No policy | | | 0 |
| Procedural | Systems-based | CSA SFM | 0.5 |
| | Plan-based | SFI, FSC-SE | 1 |
| Mixed | | FSC-BC | 1.5 |
| Substantive | Prescriptive | FSC-PC | 2 |

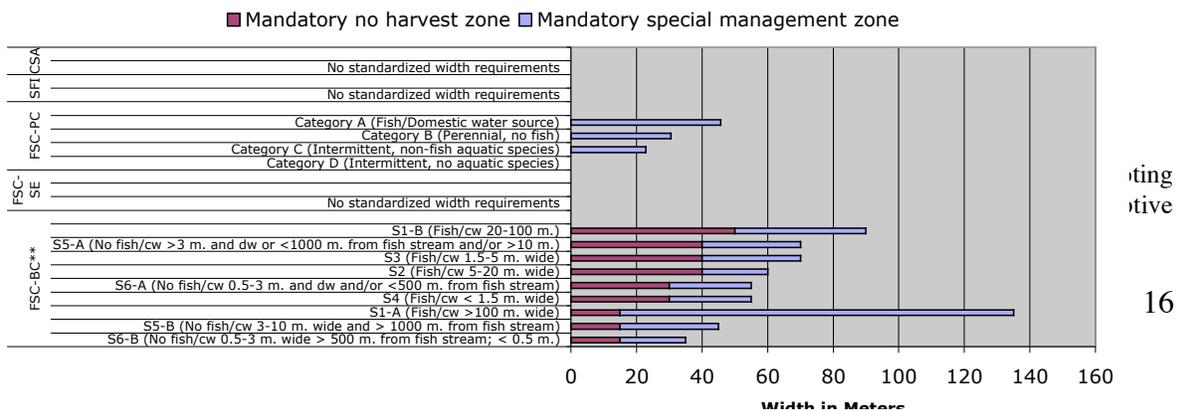
Clearly, the standards vary significantly in their policy approach and level of prescriptiveness. The CSA SFM standards qualify as the least prescriptive in policy approach, while the FSC-BC and FSC-PC standards include the most prescriptive requirements. However, these results suggest that differences in policy prescriptiveness between the different certification systems may not be entirely explained by the level of standard setting and the composition of stakeholder support alone. For example, the SFI is more prescriptive than the CSA, despite the fact that they are both national-level standards with industry support. Likewise, the SFI and FSC-SE standards both classify as only moderately prescriptive, despite stronger environmentalist support for the FSC. It must be remembered, however, that this classification system considers only levels of policy prescriptiveness—it does not address perceived or actual levels of environmental protection.

The classification of policies according to their prescriptiveness, meanwhile, tells us nothing about the *extent* of the management prescriptions they entail. Let us turn, therefore, to a different methodology that addresses policy extent.

A Comparison of Threshold Requirements for Riparian Protection in Select Certification Standards

As discussed above only the FSC-BC and FSC-PC regional standards, of the five certification standards under comparison, have established numerical minimum, or “threshold”, buffer zone width requirements. The following chart illustrates these findings, and outlines the numerical requirements included in these two most prescriptive standards.

Streamside Riparian Buffer Zone Widths in Select Certification Standards



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itive

Chart 1

Sources: (CSA 2002; FSC-BC 2003; FSC-PC 2003; FSC-SE 2004; SFI 2005)

** The above FSC-BC buffer zone widths constitute default requirements in the absence of an integrated riparian assessment.

From this chart, it is clear that the FSC-BC standards include by far the most restrictive thresholds of all the standards under comparison, including extensive “no harvest” as well as “special management zones” across a wide range of stream types. This finding contrasts with the measure of policy approach. While the FSC-PC held the highest “ranking” in *prescriptiveness*, the FSC-BC default standards contain the most extensive buffer zone thresholds. The FSC-BC’s addition of a procedural option for bypassing the threshold requirements, however, means that it is impossible to determine the relative width of buffers meeting the FSC-BC standard without conducting field assessments of certified forestry operations.

This analysis, however, serves to obscure some potentially critical information. Firstly, differences in classification systems and terminology make truly standardized comparison impossible. For example, the FSC-PC and FSC-BC standards use different stream classification systems: the FSC-BC standards classify streams by width and presence or absence of fish, and the FSC-PC standards distinguish between “perennial” and “intermittent” streams, types of aquatic species, and domestic water sources. There is also variation in the management restrictions imposed within special management zones. For example, the FSC-BC standards call for 75% {green tree} retention within special management zones, while the FSC-PC standard dictates appropriate harvest patterns but does not specify retention requirements. Hence this visually “clear” numerical comparison actually overlooks important differences in the “meaning” of these zones.

There are also potential environmental differences between regions that may justify different management thresholds. For example, environmental factors such as soil stability, the average slope of streambanks, native habitat requirements for certain species, etc. may increase the importance of larger riparian buffer zones. Such discrepancies could explain why standards covering broader geographic regions, such as the SFI and CSA SFM standards, might err towards a minimalist approach to thresholds (hence *de facto* resulting in lower standards in areas of higher environmental sensitivity). Nevertheless, ecologists have supported the use of buffer zones in all of the regions considered under this analysis (Aubertin 1974; Johnson and Jones 2000; Kochenderfer, Edwards, and Wood 1997; Moring 1982; Patric 1978; Semlitsch and Bodie 2003; Spackman and Hughes 1995; Tschaplinski 2000; Young, Hinch, and Northcote 1999). Thus the lack of thresholds in three of the standards under review cannot be explained by environmental factors alone.

The Public Policy Context

The following table lists the states and provinces whose policy approaches and threshold requirements will be compared with the relevant certification standards. The

right hand column of this table indicates which certification standards are applicable for each of the government jurisdictions listed in the left hand column.

Table 4 List of relevant certification standards by U.S. state and Canadian province

| State/Province | Relevant Standards |
|---|--------------------------|
| British Columbia | CSA, SFI, FSC-BC |
| Washington, Oregon, California | SFI, FSC-PC |
| Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas and Virginia | SFI, FSC-SE ⁷ |

Within each of the above-listed states and provinces, our analysis will cover the government regulations affecting those landownership types that account for the largest percentages of forest product production and forest cover. In British Columbia, therefore, we examine the rules governing provincial forestlands, since these lands account for roughly 90% of roundwood harvest volume and 95% of forest cover. The regulations shown for the Pacific Coast states are those for private lands, which currently account for about 95% of roundwood harvest volume in these three states, as well as regulations governing US Forest Service lands, which account for about 43% of forest cover (USDA Forest Service 2000). While third party forest certification is not currently being applied to US Forest Service lands, federal rules may nevertheless exert an influence on private land regulations (Cashore REF) and hence on forest certification standards as well. The authors therefore feel it is useful to include federal rules in comparisons of policies affecting the US Pacific Coast states.

A Comparison of Policy Approach to Riparian Protection in Public Policy and Select Certification Standards

The chart below summarizes the policy approach and prescriptiveness score of certification standards and corresponding government jurisdictions regarding riparian protection.⁸

⁷ In the case of the FSC systems, the SE standards being analyzed cover only some geographical portions of the states listed.

⁸ The public policies and certification requirements listed are those in effect January 2005.

Table 5 Policy approach and prescriptiveness score of riparian protection policies in select certification standards and government regulations

| | | |
|-------------|-----|---|
| 2 points = | 2 | Non-Discretionary/Substantive |
| 1.5 point = | 1.5 | Mixed Procedural and Substantive |
| 1 point = | 1 | Mandatory plan-based procedural |
| 1/2 point = | 0.5 | Mandatory systems-based or discretionary threshold requirements |
| 0 points = | 0 | No policy |

| Case Study | Policy Approach | Policy | Case Study | Policy Approach | Policy | Case Study | Policy Approach | Policy | Case Study | Policy Approach | Policy |
|---------------------------|-----------------|--|---|-----------------|---|--------------------|-----------------|--|--------------------------|-----------------|----------------|
| CSA | 0.5 | Systems-based policy | FSC-Pacific Coast | 2 | Mandatory buffer zone widths (also, state or federal BMPs - as appropriate - are activated if more stringent) | FSC-Southeastern | 1 | Written riparian guidelines and BMPs mandatory | Louisiana (Private) | 0.5 | BMPs voluntary |
| SFI | 1 | BMPs mandatory; Plan-based in absence of BMPs | California (CA private forests = 43% of forest area; 89% of harvest) | 2 | Mandatory buffer zone widths | Alabama (Private) | 0.5 | BMPs voluntary | Mississippi (Private) | 0.5 | BMPs voluntary |
| FSC-BC | 1.5 | Mandatory default buffer zone widths w/ options to conduct an integrated riparian assessment | USFS (Forest Cover = 75% ID; 27% MT; 9% AK; 48% OR; 37% WA; 43% CA. Harvest = 9% ID; 4% MT; 9% AK; 5% OR; 1% WA; 8% CA) | 2 | Mandatory buffer zone widths | Arkansas (Private) | 0.5 | BMPs voluntary | North Carolina (Private) | 0.5 | BMPs voluntary |
| British Columbia (Public) | 2 | Mandatory buffer zone widths | Washington (WA private forests = 45% of forest area; 80% of harvest) | 2 | Mandatory buffer zone widths | Georgia (Private) | 0.5 | BMPs voluntary | South Carolina (Private) | 0.5 | BMPs voluntary |
| | | | Oregon (OR Private forests = 36% of forest area; 85% of harvest) | 2 | Mandatory buffer zone widths | Florida (Private) | 1.5 | Permit required to waive BMPs | Texas (Private) | 0.5 | BMPs voluntary |
| | | | | | | | | | Virginia (Private) | 0.5 | BMPs voluntary |

Sources: (Alabama Forestry Commission 1993; Arkansas 2002; British Columbia 2004; California 2005; CSA 2002; Florida Division of Forestry 2004; FSC-BC 2003; FSC-PC 2003; FSC-SE 2004; Georgia 1999; Louisiana 2000; Mississippi 2000; North Carolina 1989; Oregon 1994; SFI 2005; South Carolina 1994; Texas 2000; Virginia 2002; Washington 2001)

The above chart reveals substantial variation in both certification standards and government policies addressing riparian protection. Overall however, the most prescriptive policies are the provincial rules in British Columbia, as well as the FSC-PC standards and state requirements in the U.S. Pacific Coast. The CSA standards, together with the majority of state rules in the Southeast, are the least prescriptive.

In terms of the relative levels of prescriptiveness between certification standards and government policies, the CSA standards clearly take a less prescriptive approach than government policies in the one Canadian province under review. The SFI standards, which apply to all regions under analysis, treat every region equally, leading to

requirements that are more prescriptive in approach in some areas (particularly the US Southeast) but less prescriptive in others (particularly the Pacific Coast).

In general, the FSC regional standards appear to more closely mirror the relative prescriptiveness of government standards in their corresponding regions. The FSC-BC standards however, rate as a “half point” less prescriptive than the BC government policies, due to the FSC-BC’s alternate planning requirements. The FSC-SE standards, in contrast, rate as a “half point” more prescriptive than most U.S. Southeastern state policies, in that the FSC-SE requires adherence to voluntary state BMPs and includes additional planning requirements and qualitative guidance.

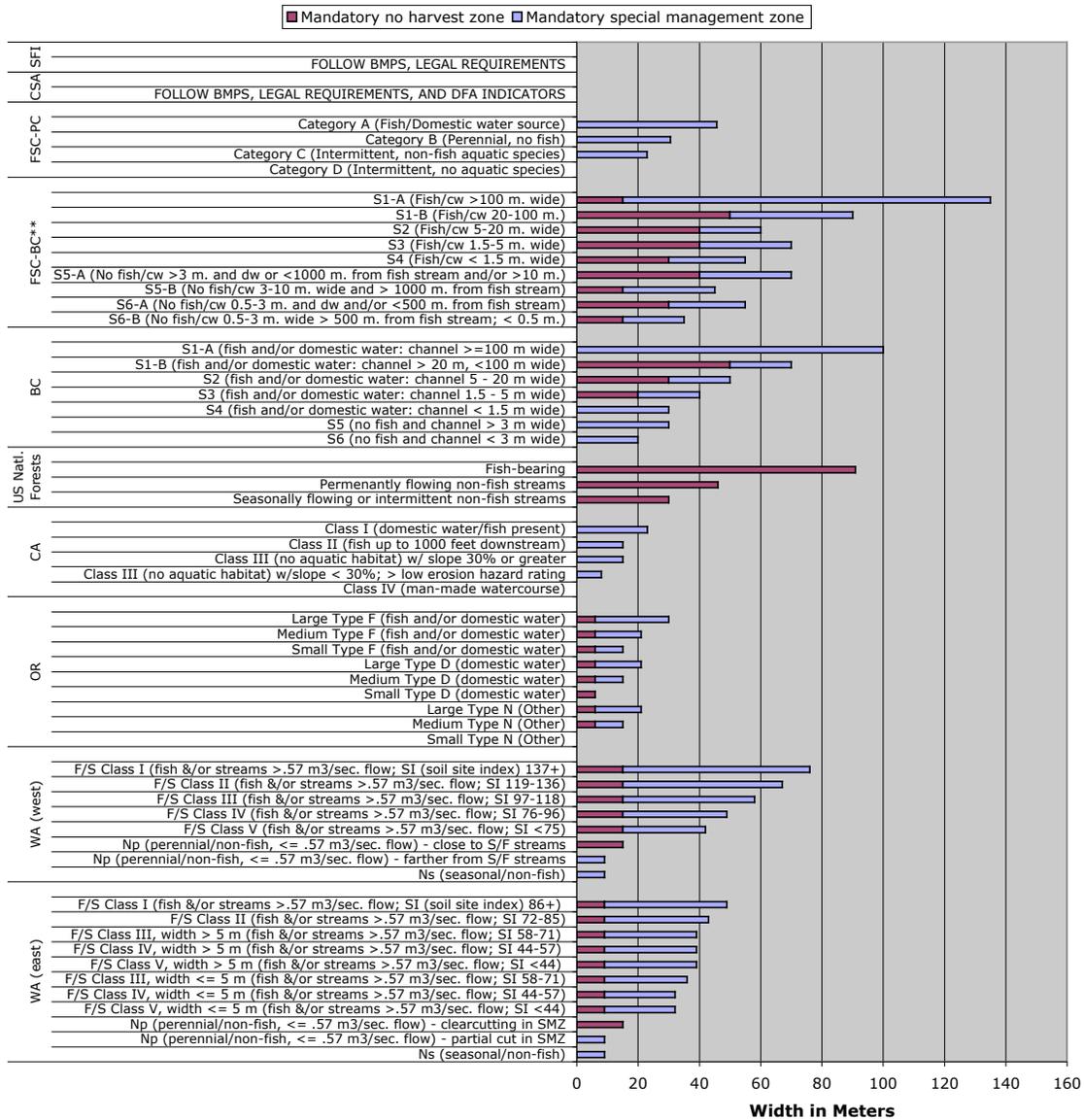
The above chart can also be used to determine the sum total of forest management requirements facing operations certified within any one jurisdiction. From this perspective, operators undergoing SFI or CSA certification in British Columbia or the U.S. Pacific Coast are subject to more prescriptive management policies than operators certified under the FSC in the U.S. Southeast.

A Comparison of Threshold Requirements for Riparian Protection in Public Policy and Select Certification Standards

The following chart provides a graphic illustration of both government and certification requirements for riparian protection along the Pacific Coast.

Chart 2

Streamside Riparian Buffer Zone Widths in Government Regulations and Certification Standards in the U.S. Pacific Northwest and British Columbia



Sources: (British Columbia 2004; California 2005; CSA 2002; FSC-BC 2003; FSC-PC 2003; Oregon 1994; SFI 2005; Washington 2001)

** The above FSC-BC buffer zone widths constitute default requirements in the absence of an integrated riparian assessment.

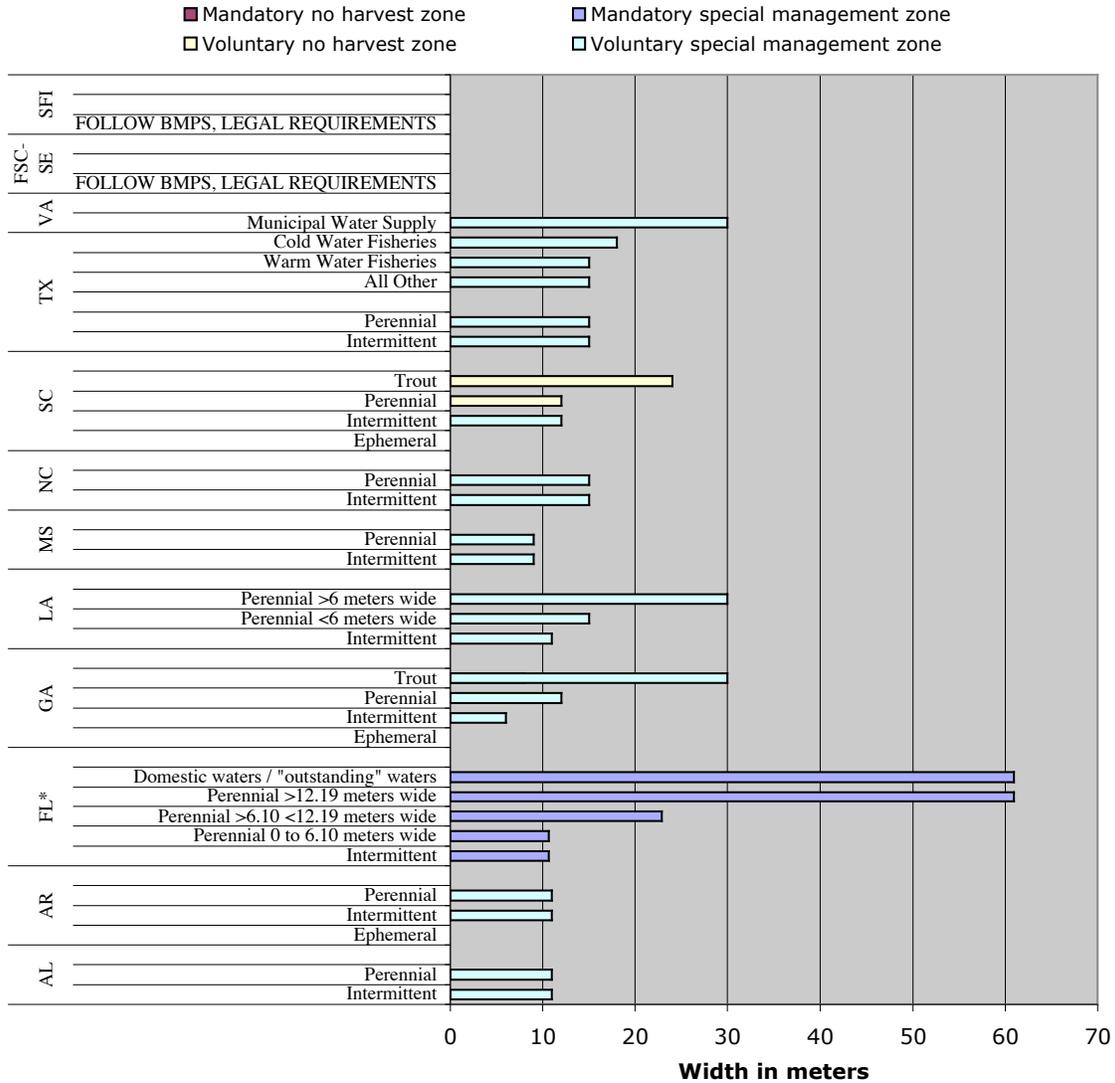
A number of observations can be made based on the above chart. Firstly, mandatory substantive buffer zone requirements are the regulatory norm along the Pacific Coast, with or without forest certification. Secondly, the CSA and SFI standards add no additional substantive rules, while the FSC-BC and FSC-PC standards both include supplementary width requirements. These additional FSC regional policies, furthermore, are consistent with the government stream classification and buffer zone systems characteristic of the regulatory context of their respective province and states. In addition to extending buffer widths in some cases, the FSC's additional requirements also provide some assurance of buffer zone protection in the event of changes in government policy.

The above chart reveals how the FSC-BC standards, while less prescriptive than underlying government policies in their inclusion of an alternate planning option, entail the largest no harvest zones and special management zones of any of the policies under comparison. This result highlights the importance of using multiple methodologies, such as the measure of policy prescriptiveness in conjunction with the comparison of thresholds, in order to determine the relative extent of riparian protection afforded by different governance systems.

In contrast to the prescriptive approach of government regulations and certification standards along the Pacific Coast, the following chart represents the more discretionary requirements found in the U.S. Southeast.

Chart 3

Streamside Riparian Buffer Zone Widths in Government Regulations and Certification Standards in the U.S. Southeast



Sources: (Alabama 1993; Arkansas 2002; Florida 2004; Georgia 1999; Louisiana 2000; Mississippi 2000; North Carolina 1989; South Carolina 1994; Texas 2000; Virginia 2002)

*The Florida BMPs include recommendations for expanded buffer zone widths based on a Site Sensitivity Classification system.

As illustrated in the above chart, the majority of Southeast states have instituted voluntary substantive riparian management policies.⁹ Florida is the one exception, requiring permits to circumvent state BMPs (Florida Division of Forestry 2004: 2).

The SFI and FSC-SE standards, in comparison, take a more prescriptive approach than most Southeastern state governments. Both of these certification standards turn voluntary state Best Management Practices into requirements mandatory for certification.

The Relative Restrictiveness of Public Policy and Select Certification Standards

Returning, then, to the challenge of identifying differences that “matter”, let us consider a question commonly raised in the context of certification, i.e., does certification actually serve to raise the bar on standards of forest management, or does it merely validate the status quo? In fact, if we combine our above methods of qualitative description, policy approach and threshold requirements, it is possible to produce the following matrix that systematically compares the relative “restrictiveness” of certification standards compared to existing government policies.¹⁰ Restrictiveness in this case, refers to whether or not certification standards include requirements for management actions that are not already covered by pre-existing legal requirements.

Table 6 Relative restrictiveness of riparian protection policies in select certification standards in comparison to government regulations

| Region | Certification Standard | More restrictive than gov regs? | Region | Certification Standard | More restrictive than gov regs? | Region | Certification Standard | More restrictive than gov regs? |
|-------------------------|------------------------|---------------------------------|----------------------|------------------------|---------------------------------|------------------|------------------------|---------------------------------|
| British Columbia | CSA | No | Pacific Coast | SFI | No | Southeast | SFI | Yes |
| | SFI | No | | FSC-PC | Variable | | FSC-SE | Yes |
| | FSC-BC | Variable | | | | | | |

This chart reveals that the FSC standards are the only standards that include requirements that sometimes exceed underlying government regulations in all regions under analysis. In the case of the FSC-BC, the quantitative thresholds for buffer zone sizes exceed those expected under provincial regulations. However, the FSC-BC’s inclusion of alternate plan-based options for riparian protection could in some cases result in the certification of operations that meet only the minimum government riparian

⁹ In many states, however, operations which do not observe Best Management Practices may be held liable for any resulting violations of water quality standards.

¹⁰ We define “restrictiveness” as policies that further limit the management options available to forest managers. For example, a 50 meter mandatory buffer zone on a 30 meter stream is more restrictive than a voluntary 45 meter buffer zone on that same sized stream.

protection standards. In the Pacific Coast, the FSC-PC standards exceed state requirements in California and include additional special management zone requirements for some stream types in Oregon and Washington.

The SFI policies, in contrast, are more restrictive only in the Southeastern U.S. Finally, the CSA standards add no mandatory restrictions in addition to pre-existing government policies.

In general, the largest increase in relative restrictiveness of the certification standards in comparison to government regulations occurs in the Southeast. This is due to the treatment of voluntary BMPs as required elements under both the FSC-SE and SFI certification standards.

In sum, the above analyses clearly illustrate how it is not possible to ascertain the entirety of the management expectations and requirements for certification if one does not also place them in the context of existing regulatory regimes. Such a contextual approach, furthermore, is critical to any analysis of the likely impacts of forest certification on existing management practices.

Summary and Conclusions

This article has outlined a systematic methodology for comparing key policy attributes (in this case prescriptiveness and threshold requirements) and forest practice requirements (in this case riparian protection) of importance to forest certification stakeholders. It has highlighted some significant differences between certification systems, and between the regional standards of a single certification system. Furthermore, it has placed the requirements of these systems within the state-based regulatory environments in which they operate.

In general, our results argue against across-the-board conclusions based on the nature of stakeholder support, or the level of standard setting, among the different certification systems. In terms of their approach to riparian zone management, the national, industry-backed CSA standards take the least prescriptive approach. However, the difference in prescriptiveness between the national, industry-backed SFI and regional, environmentalist-backed FSC standards varies depending on the region under consideration. The FSC standards are more prescriptive than those of the SFI only in the Pacific Coast and British Columbia. Both the FSC Southeast standards and the SFI standards include only qualitative, rather than quantitative, riparian buffer zone requirements.

Categorizing standards according to their policy approach, however, tells us little about the *extent* of protection afforded. Our comparison of threshold buffer zone requirements provides one methodology for comparing extent, albeit only for those standards that have established quantitative width requirements. The FSC-BC standards include the largest threshold widths and greatest management restrictions (including “no harvest” zones) of any of the standards under comparison. However, these requirements are less *prescriptive* than those found in the FSC-PC standards, because the BC standards allow managers to develop alternate buffer zone widths based on a detailed “integrated riparian assessment”. The fact that the FSC-BC standards are less prescriptive means that it is impossible to determine, based on the written standards alone, how the actual

minimum sizes of buffers certified under the FSC-BC compare with those of other standards elsewhere. This highlights the importance of combining methodologies, such as the comparison of policy approach and comparison of threshold requirements, in order to get a more complete understanding of policy differences.

Our third comparative method, contrasting certification standards with locally relevant government regulations, provides yet more critical comparative perspective. Only by considering existing government policies is it possible to compare the sum total of forest management requirements facing a certified operator in any given region. For example, the consideration of existing government regulation highlights how the least restrictive certification standards—i.e. the CSA standards—operate as additional systems-based requirements on top of already fairly prescriptive state-based regulations entailing detailed riparian buffer zone thresholds. Hence in effect, the certified BC operator undergoing CSA certification is subject to much more prescriptive riparian zone policies than, for example, the FSC certified Southeastern operator.

This study also points to some potential correlation between the prescriptiveness of public policies and those of regional-level certification standards. Government policies vary considerably in the different regions under analysis. Likewise the FSC standards, which are the only forest certification standards in North America that are written at the sub-national level, also vary in a manner consistent with the underlying government policies. The national-level CSA and SFI standards, in contrast, take the same relatively less prescriptive approach throughout their geographic range. The limited number of standards and policy issues covered in this paper preclude firm conclusions regarding the impact of government policy approach on the design of certification standards. Nevertheless, a more broad application of this study's methodology could shed further light on this issue.

This study has thus far restricted its analysis to policies in effect as of January 2005. The comparative methods it describes, however, can just as well be applied to track policy changes over time. For example, revised FSC-BC standards were submitted in February of 2005 by FSC Canada for approval by the FSC Accreditation Program. The following brief comparison of the current and proposed standards reveals significant changes in policy approach and threshold requirements.

One change of note is the introduction of separate standards for larger forest operations and “small operations”.¹¹ Another change is a more flexible approach to riparian buffers based on the concept of “riparian budgets”. Riparian budgets involve threshold requirements for buffer zones based on a total number of hectares per kilometer. The resulting buffer zones may be narrower or wider at any given point along the length of a stream as long as their total area meets the budget requirements. One policy feature that hasn't changed with the new proposed standards, however, is the option of altering buffer zone sizes as justified by an integrated riparian assessment.

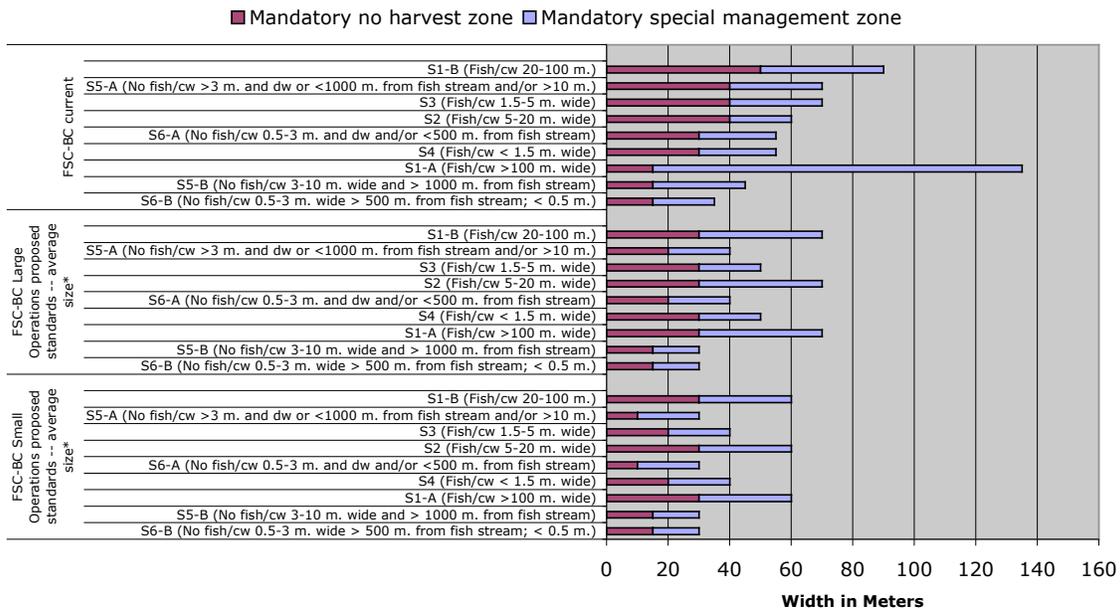
The chart below contrasts the current FSC-BC standards with the proposed new standards. In order to compare the new riparian budget approach to the more traditional

¹¹ “Small Operations in the BC context are defined as management units that: • meet the FSC-Canada definition of Small and Low Intensity Managed Forests (i.e. SLIMFs – management units less than 1,000 ha, OR MUs that have an allowable annual cut that is <5,000m³ and less than 20% of the total mean annual increment of the productive forest area); or, • are less than 2,000 ha.”

width requirements of the earlier FSC-BC standards, the buffer widths recorded for the new standards represent average widths only.

Chart 4

Riparian Buffer Zone Widths in Current and Proposed FSC-BC Standards



Sources: (FSC-BC 2003; FSC-BC 2005a; FSC-BC 2005b)

Note: All of the above FSC-BC buffer zone widths constitute default requirements in the absence of an integrated riparian assessment.

* The above buffer zone widths indicated for the new proposed standards are average widths. The forest manager may establish buffers of variable widths along the length of the stream as long as this average width is maintained.

The sum total of the proposed changes to the FSC-BC standards represents a significant increase in flexibility for forest managers and hence a less prescriptive policy approach. However, since both the current and the proposed standards involve a mix of substantive threshold requirements and alternate planning procedures these changes would not result in a reduced prescriptiveness score as defined in this article. This highlights the importance of including detailed qualitative as well as quantitative descriptions of the standards under comparison in order to ensure that important differences are captured.

Even with the inclusion of both qualitative and quantitative descriptions of certification policies, however, any comparison of certification standards involves choices regarding what to include and what to exclude from comparison. This is all the more true if one expands the scope of the comparison from certification standards to certification programs. There are many other factors worthy of comparative analysis, such as the broader local environmental, social and economic *contexts* in which certification takes place, formal (written) and informal (non-written, practiced) certification *procedures* for implementing certification, and a diverse range of environmental, social and economic forest management issues.

Instead of aiming for comprehensiveness, this article has focused on a precisely defined subset of policy attributes (prescriptiveness and threshold requirements), in the context of one forest practice policy variable (riparian zone management), as a demonstration of how focused and systematic research can provide clear and transparent information on differences of importance to key stakeholders. The purpose of this comparison is not to highlight prescriptiveness and thresholds as the most important attributes to consider in comparing certification programs. Rather what arguably “matters” much more is the degree to which various forest certification systems are improving the state of the world’s forests. It is hoped, however, that the methodologies here presented will ultimately help to address the question of certification impacts by facilitating future research linking policy approach with on-the-ground forest management results.

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