Forest certification is used around the world to assure markets of the sustainability of forestry operations. However, until recently, social science—the study of people—has played a relatively minor role in professional forestry (Tindall 2001). Certification systems have tended to concentrate on more economic and ecological criteria (Jepsen 2000; Ridley-Thomas and Bebb 2000), and the forestry sector has been slow to develop meaningful criteria and indicators for measuring social dimensions of sustainability (Burley 2001; Raison et al. 2001; Sheppard 2003). This article considers one of these social dimensions, aesthetics.

Aesthetics represents an important value in sustainable forest management. The visual landscape can be a source of great pleasure, emotion, and public information (Lucas 1991; BC Ministry of Forests 1996). Quality of life and health benefits have been tied directly to naturalistic, wooded surroundings and roadside scenery (Ulrich 1986; Kaplan et al. 1998). The

Are We Neglecting a Critical Issue in Certification for Sustainable Forest Management?

Stephen R.J. Sheppard, Cecilia Achiam, and Robert G. D’Eon

Current forest certification programs may be neglecting aesthetics and related public perception and acceptance issues, concentrating on more easily quantified socioeconomic and ecological criteria. Because aesthetics is an important value for forest users, and to avoid potential conflicts between certification status and public perception, we suggest that forests should be certified for aesthetic performance. Current forest certification programs weakly address aesthetics, if at all. Those systems that do consider aesthetics tend to be procedural rather than outcomes-based and generally do not encourage solid or consistent approaches to the problem. Visual resource management approaches provide some precedents that are not as yet widely used in certification, but they also have their limitations. We recommend that more effort be put into developing more robust indicators for aesthetics as part of certification programs.

Keywords: public perceptions; third-party certification

AESTHETICS

ABSTRACT

Aesthetics

Paul Picard

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public has on many occasions demonstrated its concern for aesthetics, at both local and national policy levels (Shindler et al. 2002). The US National Environmental Protection Act, National Forest Management Act, and various state environmental laws recognize the public demand for aesthetic enjoyment. Forest managers are beginning to manage for aesthetics as a fundamental forest resource objective: This has both a practical rationale, in reducing the level of public protest over unattractive forest practices (e.g., Shindler et al. 2002), and a normative rationale, particularly on public forestland, whereby society benefits from aesthetically pleasing and restorative forest landscapes that enhance recreation and quality of life, which in turn can enhance community viability and tourism values.

“Visual resource management” in North American forestry has become increasingly important since it was first developed by the USDA Forest Service (1974). It can be a major priority for land managers and is believed to have significant impacts on timber availability in visually sensitive areas (e.g., Picard and Sheppard 2002a).

If aesthetics is an important non-timber value in its own right, then it is logical to expect that it would be addressed in a comprehensive certification system. Even if many foresters still view aesthetic quality merely as a constraint on conventional timber management (Picard and Sheppard 2002b), we argue that any issue that significantly affects management decision-making should receive consideration in the certification process.

Although aesthetics encompasses many aspects of the experience of a landscape, including sound and smell, the bulk of the research and practice devoted to aesthetics addresses the visual senses, and this article similarly focuses on visual qualities of the forest landscape.

Do Certifiers Address Aesthetics?

In an extension of Burley’s (2001) review of sustainable forest management standards, we evaluated literature from 14 international, national, and regional certification programs or structured sets of criteria and indicators published between 1994 and 2003, most of them relevant to northern temperate forests (table 1, p. 8), to find references to aesthetics or visual landscape qualities.

Indicators that address aesthetics can be classified as general expressions of intent, procedural issues (management inputs), or performance outcomes (management outputs), as described by Sheppard (2003). McCool and Stankey (2001) have stressed the need for sustainability indicators to focus on the results of management, rather than simply management inputs. In addition, indicators and supporting definitions of measures or verifiers can be evaluated for specificity, measurability, reliability, validity, suitability to the scale of application, comparability across units or nations, and social responsibility or public input (McCool and Stankey 2001). In short, if aesthetics issues are identified, are the criteria and indicators adequate and meaningful?

We found that only one of our five international certification or standards systems even mentioned visual or aesthetics criteria and indicators. None specifically exclude the role of aesthetics, but social indicators are simply not explicit at this level. The general pattern can be illustrated by the Montreal Process, in which socioeconomic benefits are listed as a criterion of sustainability but treated rather vaguely. Other international systems, such as ISO 14000 and Forest Stewardship Council (FSC), exhibit a similar pattern. Only the Pan-European Forest Certification (PEFC) system mentions visual values, under the cultural values component of Criterion 6: “Maintenance of other socioeconomic functions and conditions.”

At the national and regional levels, five of the nine schemes we reviewed mention aesthetics specifically. The PEFC operational-level guidelines for forest management practices under Criterion 6 state that management operations should take into account the aesthetic values of forests.

The two UK systems examined also require consideration of aesthetics. Criterion 8 of the UK Forestry Standard addresses historic, cultural, and aesthetic use of forests. Indicators at the national level comprise procedural reporting and surveys of ancient monuments and national parks, determination of woodland aspects of countryside character and landscape assessments, protection of important heritage features, and enhancement of landscape quality. Indicators at the forest management unit level are procedural, including “landscape principles of forest design are used” and “cultural and historical character is considered.”

The UK version of the Forest Stewardship Council certification guidelines requires consideration of several aesthetics-related policies and standards, including: forest and environment guidelines for recreation, nature conservation, landscape, and archaeology; countryside and landscape strategies; guidelines for areas of outstanding natural beauty; and locally significant values associated with prominent viewing points, landscape features, veteran and other notable trees, forests featured in literature or of artistic significance, and historic landscapes and woods still managed under traditional systems.

Only one North American system, the Sustainable Forestry Initiative (SFI), addresses aesthetics. The 2002–04 SFI Standard and Procedures contains Objective 5, to “manage the visual impact of harvesting and other forest operations,” with core indicators addressing policy, procedures, training and design systems, clearcutting practices, and green-up requirements.

How Is Aesthetics Handled?

Systems that specifically address aesthetics tend to be somewhat vague and generalized, or they emphasize procedural indicators rather than outcomes in the landscape (table 1). Only three systems contain any clear outcomes-based indicators.

It is perhaps not surprising that an international or national level of
indicators relating to aesthetics would be somewhat general, but we suggest they should be at least in part quantitative, meaningful, and outcomes-based. The aesthetics indicators listed under the PEFC international-level system, the UK FSC system, and the UK Forestry Standard, however, are all procedural in nature.

PEFC, for example, lists no quantitative indicators under cultural values, and all those listed are procedural. The only potentially descriptive indicator addressing aesthetics refers to “the capacity to conduct studies on “sites with special visual value”; the effectiveness of such an indicator in quantifying or encouraging visual management is questionable.

The UK FSC guidelines and UK Forestry Standard forest management unit indicators are similarly procedural, requiring aesthetics and landscape-related issues or policies to be “taken into account” or “considered.” Such wording is weak, fails the test of measurability and comparability, and is at best ambiguous and at worst inadequate for this important social value.

Of the three systems that address aesthetic outcomes, two remain very general. The operational level of the PEFC system states that aesthetic values should be taken into account by “maintaining for example varied forest structures, and by encouraging attractive trees, groves, and other features such as colours, flowers, and fruits,” although in a way that does not lead to serious negative effects on forest resources. This vague guidance is largely procedural (the emphasis is again on “taking into account”), selective in the outcomes described (it ignores the larger visual landscape issues often associated with forest harvesting), easily circumvented, and not readily quantified.

The UK Forestry Standard national-level indicators include two indicators that are general but clearly outcomes-based and appear to be comprehensive and somewhat quantifiable, calling for “protection of important heritage features” and “enhancement of landscape quality.”

The SFI system proved to have the most specific and numerous aesthetics indicators, with 16 “core” indicators considered integral to conformance, and nine other indicators. Most are procedural, but some are meaningful and measurable, such as requiring written policy to address visual quality management, requiring foresters trained in landscape architecture or visual quality management, and encouraging the use of computer visualization tools in operations planning.

Five SFI indicators that suggest

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Table 1. Visual or aesthetic criteria and indicators in 14 forest certification or standards programs.

<table>
<thead>
<tr>
<th>Level</th>
<th>Source of criteria and indicators</th>
<th>Visual or aesthetic criteria and indicators are mentioned</th>
<th>Visual or aesthetic outcomes are explicitly addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>International</td>
<td>Helsinki Process (<a href="http://www.helsinkiprocess.fi">www.helsinkiprocess.fi</a>)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Montreal Process (<a href="http://www.mpci.org">www.mpci.org</a>)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>International Standards Organization 14000 (<a href="http://www.iso14000.com">www.iso14000.com</a>)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Forest Stewardship Council International (<a href="http://www.fscoax.org">www.fscoax.org</a>)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Pan-European Forest Certification (<a href="http://www.pefc.org/internet/html">www.pefc.org/internet/html</a>)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>National</td>
<td>Round Table of the USA Report (<a href="http://www.gefweb.org/Outreach/outreach-Publications/Roundtable_on_Forests.pdf">www.gefweb.org/Outreach/outreach-Publications/Roundtable_on_Forests.pdf</a>)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Sustainable Forestry Initiative (USA) (<a href="http://www.aboutsfi.org/core.asp">www.aboutsfi.org/core.asp</a>)</td>
<td>Yes</td>
<td>Largely procedural, fairly specific</td>
</tr>
<tr>
<td></td>
<td>Canadian Standards Association (<a href="http://www.csa.ca">www.csa.ca</a>)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>UK Forestry Standard (<a href="http://www.forestry.gov.uk">www.forestry.gov.uk</a>)</td>
<td>Yes</td>
<td>Partly outcomes-based, but general</td>
</tr>
<tr>
<td></td>
<td>Forest Stewardship Council UK (<a href="http://www.fsc-uk.demon.co.uk">www.fsc-uk.demon.co.uk</a>)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Regional</td>
<td>PEFC Operational Level Guidelines (<a href="http://www.pefc.org/internet/html">www.pefc.org/internet/html</a>)</td>
<td>Yes</td>
<td>Largely procedural, very general</td>
</tr>
<tr>
<td></td>
<td>Forest Stewardship Council Pacific Northwest (<a href="http://www.fscus.org">www.fscus.org</a>)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Smartwood British Columbia (<a href="http://www.smartwood.org">www.smartwood.org</a>)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>UK Forestry Standard—management unit level (<a href="http://www.forestry.gov.uk">www.forestry.gov.uk</a>)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Total: 14 programs</td>
<td>No: 8</td>
<td>Yes: 6</td>
<td>Partially: 3</td>
</tr>
<tr>
<td></td>
<td>No: 11</td>
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</tr>
</tbody>
</table>
outcomes are ambiguously worded: For example, “harvest area tracking system to demonstrate compliance with the green-up requirement” could refer to the availability of a tracking system, not necessarily achievement of compliance. Two indicators are explicitly outcomes-based and quantitative, referring to a maximum average clearcut size of 120 acres and a requirement for trees to reach three years of age or five feet in height before adjacent areas are clearcut. Although relevant to visual quality, these outcomes represent minimal standards focusing on the dimensions of the apparent scale and color contrast of clearcutting; they ignore many other factors typically addressed in visual management, such as location, shape of opening, edge effects, and within-block retention (USDA Forest Service 1974; Lucas 1991; BC Ministry of Forests 2001).

In jurisdictions where legislation or policies on visual resource management exist (e.g., federal land in the United States and Crown land in British Columbia), certification panels might consider, as its own indicator, compliance with all mandatory requirements, which could include visual quality objectives set by the government (Picard and Sheppard 2002b). Most countries and management agencies, however, do not establish quantifiable visual objectives, and as discussed below, even when they do, there are sometimes serious limitations.

Indicators assessing how forest managers handle public involvement might also address aesthetics concerns where these are articulated by an involved public. However, whether (and how) all important public issues will be addressed depends on the nature of the process followed.

As new certification standards evolve, we may expect to see more depth in criteria and indicators for aesthetics. At present, however, aesthetics criteria are missing or not explicitly addressed in most certification systems, and very few deal with meaningful, measurable outcomes—even though visual resource management methods and expertise are available in some countries and regions.

Why Consider Aesthetics?

Beyond the normative and logical arguments for assessing the aesthetic performance of sustainable forestry, various practical consequences can follow from making socially acceptability part of the definition of sustainable forest management.

Various authors have established close links between the visual quality of forested landscapes and their acceptability to the public (Sheppard and Harshaw 2001). In an explicit test of this relationship with forested landscapes in the US Pacific Northwest, Ribe (2002) found that scenic beauty and acceptability ratings were strongly correlated and concluded that scenic beauty could be a proxy for acceptability with mainstream interest groups. As Shindler et al. (2002) described, North American foresters have long associated the look of the forest with public acceptance or protest, as demonstrated in the clearcut crisis of the 1960s in the United States or the Clayoquot Sound protests of the 1990s in British Columbia. Acceptability of Tongass National Forest management practices among Alaskans was linked to how they would look once implemented (Shindler et al. 2002).

Several studies have shown that acceptability depends on more than just appearance and varies with viewers’ attitudes, the environmental context (Brunson and Shelby 1992), the public involvement process (Kruger 2001), and information provided (Ribe 2002). Nevertheless, there remains a substantial likelihood that members of the lay public may view neglect of aesthetics as a sign of poor forestry.

Although not all forestry operations are necessarily unaesthetic in the absence of visual design, without evaluation against reasonable aesthetics standards, certification systems may not catch the operations that do cause visual problems; managers then run the risk of losing public support for otherwise sustainable practices, potentially losing credibility in sustainable forest management and even the certification process itself. Activities based on good ecological science and stewardship may be forced into hiding because of a public distaste for the activity. Traditional visual resource management is often accused of hiding forest management activities from public view behind buffer strips or ridgelines (Hull et al. 2000; Sheppard 2001; Tindall 2001). Even this strategy is of limited effectiveness, as lack of attention to aesthetics criteria in backcountry areas can nevertheless be captured from the air, and the resulting photos show landscapes that the public may associate with poor forestry practices (Sheppard 2003).

Ignoring or inadequately addressing aesthetics in the certification process could have other consequences. First, without an official policy on forest aesthetics and no widely understood norms for how a socially acceptable forest should appear (Hull et al. 2000), the personal aesthetic biases of reviewers could affect the certification process in unrecognized, unpredictable, or systemic ways. But if aesthetics assessment were separate, in its own indicator, the tendency to factor it into other indicator assessments would be reduced.

Second, lack of an aesthetics framework within the certification process could result in the undocumented forgoing of nontimber economic benefits, such as tourism and property values. For example, the British Columbia Ministry of Forests (2003) has documented sizable economic values from ecotourism relative to timber harvesting in visually sensitive viewsheds on Vancouver Island. The US Federal Highway Administration in 1991 reported that designated scenic byways generated an average of $32,500 per mile from nonresidents annually. Property values have been shown to decline drastically following changes to the local landscape (Iversen 1997).

Where aesthetics indicators do exist but are poorly defined, there is the risk that they will be inconsistently applied. None of the systems we studied made explicit use of the available methodologies that offer standardized ways to measure visual impacts. The SFI system and UK Forestry Standard at least refer to visual quality systems and design principles as procedural require-
ments, although without referencing guidance documents.

We observed in some certification efforts, conducted at the local level in British Columbia under the Canadian Standards Association system, that compliance with the province’s documented visual quality objectives has been used as an indicator of aesthetic outcomes. Visual quality objectives refer to maximum acceptable levels of visual alteration allowed in areas visible from sensitive public viewing points (BC Ministry of Forests 1995). Where such specified levels of acceptable visual impact are set by government, this provides a convenient and measurable indicator. However, compliance may not address important issues such as backcountry or aerial views, winter conditions, potential visual change due to natural or fire suppression–induced disturbance, locally valued landscapes not addressed in expert systems, and political or logistical reasons not to fully implement the standards in visually sensitive areas (Sheppard 2001; Picard and Sheppard 2002b). Visual quality objectives have also been criticized for overly prescriptive interpretations based on simplistic assumptions about, for example, the effects of clearcut size (Sheppard 2001) and for inconsistency between expert evaluators.

One of the disadvantages of omitting aesthetics in certification programs is that aesthetically responsible forestry does not get credit for good practice, at the same time that aesthetic problems caused by other operators are not caught.

**Why Is Aesthetics Undervalued?**

We suggest at least four reasons for the common omission or lack of specificity in aesthetics indicators for sustainable forestry:

- A cultural bias among professionals and scientists, who favor the hard physical and natural or mathematically based sciences and view areas such as aesthetics as soft, subjective, and risky.
- A lack of training in aesthetics and allied social science disciplines at all levels, from senior scientific panels and government task forces writing criteria and indicators to forest managers and certification teams.
- A general omission from the certification process of people with qualifications in aesthetics, such as landscape architects, landscape foresters, and other social science professionals (Sheppard et al. 2001).
- The absence of substantive public input to local indicator setting, whereby public concerns for aesthetics and sense of place, for example, could be actively expressed (Beckley et al. 2002).

McCool and Stankey (2001) consider public input into the definition of the critical evaluation criteria for sustainability indicators. There is no indication of public consultation in setting the aesthetics indicators or in verifying the results of certification audits in terms of public satisfaction—a major issue in assessing social sustainability (Sheppard 2003).

This lack of awareness of the issue of forest aesthetics and, more importantly, of the methods available to address it can perhaps be related to many forestry schools’ lack of substantive education in the area of aesthetics, despite its importance to the public and the policymakers who affect how forestry is conducted.

**Discussion and Conclusions**

Most certification programs today do not adequately deal with aesthetics and public perception of forest management activities. There is a need for more specific and meaningful aesthetics indicators within certification programs, with greater participation by those with aesthetics and social science training, and improved training of foresters in these and allied fields.

In the near future we can expect accumulating research results and practical experience in the area of social sustainability to shed more light on the issue of aesthetics in certification programs. As an example, Sheppard et al. (2004) reported a case on the British Columbia coast where careful consideration of aesthetics resulted in a viable logging operation in visually sensitive landscapes; the forest was among the first in British Columbia to be certified by FSC. Highly visible, steep forested slopes that were essentially off-limits to conventional harvesting because of visual constraints were harvested using a partial-cutting technique. According to the operators, despite the highly sensitive location and proximity to an eco-tourism lodge, the operation was acceptable to the public and even generated positive comments from the eco-tourism operator (Sheppard et al. 2004). Interestingly, the FSC guidelines did not explicitly address aesthetics; in this case, aesthetics was a crucial part of the process despite their absence from the certification guidelines. Clearer guidelines would ensure that this is not left to chance, that subjective judgments do not hold sway in marginal cases, and that forest managers receive credit for their efforts.

Many questions remain about how certification programs should evaluate aesthetics. In addition to questions of utility and validity, there are pragmatic issues of feasibility and cost, as well as broader implications of changing perceptions over time, especially with public awareness of sustainability. Further research is needed to provide a stronger basis for addressing this issue in sustainable forest management and certification. New approaches to defining and monitoring aesthetics indicators need to be tested, including concepts of visible stewardship (Sheppard 2001) where forestry is seen to be more sustainable.

Finally, some of our observations about aesthetics might also be applied to other sociocultural aspects of sustainability that have eluded systematic consideration, such as broader cultural, spiritual, sense-of-place, amenity, and recreational values. These too may need to be strengthened and the degree of overlap with aesthetics clarified.

**Literature Cited**


