
# Forest Stewardship Council Regional Certification Standards for British Columbia

## *Small Operations Standards*

**Forest Stewardship Council Canada**
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**This standard was developed by the FSC BC Regional Initiative for Forest Stewardship Council Canada, and accredited by FSC International in October 2005.**

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BECAUSE
FORESTS
MATTER

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# Introduction

To assist the reader, each occurrence of a defined term is **bolded** throughout these standards. A glossary of these terms is provided in Appendix A of the Main FSC Regional Certification Standards for B.C. Other publications referred to in the standards are listed in Appendix E of the Main FSC Regional Certification Standards for B.C.

## Where the Small Operations Standards Apply

The FSC Regional Certification Standards for B.C., and the Small Operations version of those standards, are intended for application throughout the province of British Columbia, except for the portion of northern B.C. where the National Boreal Standard applies. The Boreal area is defined by the presence of the Boreal White and Black Spruce (BWBS) and the Spruce Willow Birch (SWB) **biogeoclimatic zones** (roughly the area within the Boreal, Sub-arctic and Sub-arctic Highlands ecodivisions (see glossary for **biogeoclimatic** and **ecoregional** classifications). **Forest management units** that include land covered by the B.C. Standard, and the National Boreal Standard will normally be certified with the B.C. standard, unless the area outside of the boreal region is small, in which case the National Boreal Standard is used.

The Small Operations Standards are only intended for use in the certification of Small Operations. 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 management units 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. in area.

In comparison to the full set of indicators for larger operations, some indicators have been removed where they did not apply to Small Operations, and others have been modified to better reflect the scale and intensity found on Small Operations. Inventory and assessment procedures, documentation requirements, and other process requirements have also been simplified to make them more appropriate for the scale of Small Operations. Although these changes have been made, the basic requirements for environmental, social and economic accountability in the standards have been retained. Operations that do not meet the above definitions should refer to the "Main Standards" for BC.

## Applying the FSC Principles and Criterion in the BC Context

In addition to the information contained in this document, there is additional information that should be consulted in the following documents:

*FSC Regional Certification Standards for BC - Main Standards*

- Introductory material on the application of FSC Standards in BC
- Glossary (to assist the reader, each occurrence of a defined term is **bolded** throughout these standards)

- Appendices with additional information on riparian management, pesticides, and high conservation value forests

*FSC BC Guidance – A companion document to FSC Regional Certification Standards for BC*

- Management plan template for small operations
- Further information on applicable legislative requirements, international agreements, planning, inventory information, environmental risk assessment and the application of the "range of natural variability" (RONV) to forest management

British Columbia is a diverse province, more variable physically and biologically than any comparable region in Canada. Broadly speaking BC is a cool, moist, mountainous, forested region with areas of semi-arid, subarctic, and alpine climates. The province has been ecologically classified into 14 **biogeoclimatic zones**, based on mean annual precipitation, temperature, soils and vegetation. Forests dominate the vegetation but there are also areas of grasslands, wetlands, scrub and tundra.

Because of the wide variation described above, these standards are designed for use in any type of forest or **ecosystem** found in the province. For this reason they require site-specific interpretation by the forest **manager** and by the certification body suited to the specific ecological context of each **management unit**.

# Indicators for Compliance with FSC Principles and Criteria for Small Operations in British Columbia

## Principle 1: Compliance with Laws and FSC Principles

**Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.**

### *1.1 Forest management shall respect all national and local laws and administrative requirements.*

**Intent for Criterion 1.1:**

In British Columbia, laws and regulations provided by provincial, federal and municipal governments govern forest management planning and practices. Legal requirements are in flux as governments implement new policies and legislation; during auditing certifiers need to familiarize themselves with current legal and regulatory requirements that apply to the forest management unit.

The best measure of "respect for all national and local laws" is the manager's record of compliance with laws and regulations. Legal and regulatory measures governing forest management planning and practices anticipate non-compliance, but certification against these Standards demands a *good record of compliance*. These Standards require that certifiers determine what constitutes a good record of compliance by considering the following:

- Number of instances of non-compliance (there is not an established threshold for non-compliance, but in British Columbia a good record of compliance has routinely been measured as a compliance rate of greater than 95% with little or no significant non-compliance).
- No evidence of a pattern of recurring non-compliance.
- Evidence of corrective action including new policies implemented by the manager to avoid future non-compliance, mitigation of impacts associated with an act of non-compliance and the manager's overall efforts to comply with laws and regulations (e.g., standard operating procedures, record keeping, forest worker training).

Recognizing that there is a degree of subjectivity involved in determining a good record of compliance, the Standards require certifiers to review written documentation relating to compliance and to interview government agency personnel responsible for compliance in making their determination.

1.1.1 Personnel who plan and implement management activities demonstrate knowledge of legal, regulatory and administrative requirements relevant to their responsibilities.

1.1.2 A good record of compliance with **applicable law** relating to forest management activities is demonstrated through a review of records held by **agencies responsible for enforcement or auditing of laws affecting forest management**.

### *1.2 All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.*

1.2.1. The manager pays stumpage fees, royalties, taxes and other charges in a timely way in the manner prescribed by law or contract.

**Means of Verification:**

1.2.1 (i) Log volume data from cruise, scale, billing and payment information maintained by manager and/or the provincial harvest and billing database.

### *1.3 In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.*

1.3.1 The applicant respects the provisions of all binding international agreements such as CITES, ILO Conventions, and the Convention on Biological Diversity (see also *FSC BC Guidance – A companion document to the FSC Regional Standards for BC* – Guidance on International Agreements).

### *1.4 Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and the involved or affected parties.*

1.4.1 Situations where the **manager**'s compliance with the law would preclude compliance with the FSC-BC Regional Standards, or vice versa, are documented.

1.4.2 Where a **conflict** is found to exist, steps are taken and documented to ensure that the FSC-BC Regional Standards are met in the present and can be met in the **long term** in the management unit, including written evidence of necessary government approvals, designations, authorizations, or exceptions/exemptions from legal requirements. Any conflict that cannot be resolved by the manager/owner and/or the certification body should be referred to FSC Canada.

### *1.5 Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities.*

1.5.1 The **manager** has measures in place to protect the **management unit** from illegal/unauthorized activities

**Means of Verification:**

1.5.1 (i) Presence of specific measures to prevent unauthorized activities (e.g., boundary notices, access controls).

1.5.1 (ii) Reporting system for illegal harvesting, settlement or other unauthorized activities.

1.5.1 (iii) Reports of such activities detected during management activities.

1.5.1 (iv) Interviews with relevant personnel, to assess their familiarity with procedures for reporting unauthorized activities.

## *1.6 Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.*

1.6.1 The **manager** has made a publicly available, written commitment to adhere to the FSC-BC Regional Standards over the **long term**, and the commitment is included in the **management plan**.

1.6.2 If the **manager** has management responsibility over forest areas other than the management unit for which certification is being sought, full disclosure is made of those forest areas.

**Means of Verification:**

1.6.2 (i) If list of other forest areas, and a strategy by the applicant to move towards managing its forest areas in the region using a management regime that is consistent with the FSC's Principles and Criteria (e.g., grounded in similar management philosophies, ecological frameworks, and balancing of values and objectives).

**Intent for 1.6.2 and 1.6.3:**

FSC does not require a forest management enterprise to apply to have all of its forest operations certified, nor to agree to a timetable for such evaluation (FSC requirements on partial certification of large ownerships). It is the goal of FSC Canada to encourage certificate holders to move towards having all of their holdings FSC certified.

A manager can further demonstrate a long-term commitment to the FSC Principles and Criteria by meeting the FSC standard for controlled wood, i.e. not being involved in harvesting or handling wood that originates from areas where traditional or civil rights are violated; from forests where high conservation values are threatened; from genetically modified (GM) trees; from illegal harvesting or wood from areas which have been converted from natural forest to plantations or non-forest uses (see FSC-STD-30-010).

1.6.3 If the manager processes wood from non-FSC certified sources, the manager's non-FSC wood products are not from sources included in the categories outlined in FSC-STD-30-010 "FSC standards for forest managers supplying controlled wood".

# Principle 2: Tenure and Use Rights and Responsibilities

## Long-term tenure and forest use rights to the land and forest resources shall be clearly defined, documented and legally established.

### *2.1 Clear long-term tenure and forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be clearly demonstrated.*

2.1.1 The **manager** has the legal right to manage the lands and to utilize the forest resources for which certification is sought, in one of the following circumstances:

a) the **manager** is named on the certificate of title for the area of land for which certification is sought and there are no reservations or charges that would constrain the **manager**'s right to manage the lands and utilize the forest resources for which certification is sought;

b) the **manager** has **customary rights** (e.g., **Aboriginal title**) to manage the land and utilize the forest resources in the management unit;

c) the **manager** has an area-based **tenure** or lease that is legally eligible to be renewed or replaced over a time period sufficient to achieve the long-term management objectives set out in the **management plan** (e.g., the **manager** has a Tree Farm Licence, Woodlot Licence, Community Forest Agreement);

2.1.2 A legally documented description of the lands over which the manager has rights, and for which certification is sought, including a map, is included in the management plan.

2.1.3 Where the **manager** does not have title, the manager demonstrates that the owner/Province does not impose constraints that prevent the implementation of the FSC-BC Regional Standards or the **management plan** in the management unit.

2.1.4 Where **tenure** and forest **use rights** in the **management unit** are not held by a single **manager**, the management activities of other legal **tenure** holders do not undermine the achievement of **management plan** objectives or the manager has taken steps that mitigate for damages resulting from those activities.

**Means of Verification:**

2.1.4 (i) No evidence of activities of other **tenure** holders in the **management unit** that undermine the achievement of **management plan** objectives.

2.1.4 (ii) The Manager has taken steps to mitigate damages resulting from such activities that may undermine the management plan objectives..

2.1.4 (iii) Mitigation measures result in no net loss to value affected.

### *2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.*

2.2.1 In consultation with **local** people, the **manager** identifies any **legal or customary tenure or use rights** in the **management unit** held by one or more people who reside within or adjacent to it. If requested, the manager documents and/or maps the tenure or use rights.

2.2.2 The **manager**:

a) obtains **free and informed consent from local rights holders** to any portion of the **management plan** that affects their rights and resources; and,

b) if **local rights holder**s **dispute** that current or proposed management protects their rights and resources, the **manager** implements recommendations developed through a Criterion 2.3 **dispute** resolution process that protect their rights and resources, to the extent that these rights are consistent with the FSC-BC Regional Standards.

### *2.3 Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.*

2.3.1 The **manager** and the disputant(s) develop and implement a mutually agreed-to process to address **disputes** related to **tenure** claims and **use rights**.

2.3.2 To assist the mandatory consideration of **disputes** in the certification assessment of Criterion 2.3, the **manager** maintains a record of **disputes** and the status of their resolution, including evidence related to the **dispute** (whether generated internally, from outside experts or provided by disputants), and documentation of steps taken to resolve the **dispute**.

2.3.3 The **manager** is not involved in **outstanding disputes** of substantial magnitude involving a significant number of interests in relation to the management unit. The magnitude level of disputes and the significance of the number of interests will depend on various factors, including the following:

a) whether the **dispute** involves **local rights holder**s, **local forest workers**, or **local** residents;

b) whether the **dispute** involves the legal or **customary rights** of **First Nation**s;

c) the range of issues and/or interests involved;

d) whether the potential impacts on the disputant(s) are irreversible or cannot be mitigated;

e) whether the dispute involves vexatious grievors or disputants, and /or

f) whether the dispute involves issues related to meeting the FSC-BC Regional Standards.

## Principle 3: Indigenous Peoples' Rights

**The legal and customary rights of indigenous peoples to own, use and manage their lands, territories and resources shall be recognised and respected.**

### *3.1 Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies.*

**Intent for Criterion 3.1:**

The Standards direct the certifier to assess the relationship between the manager and the relevant First Nation(s). This relationship forms the basis for addressing the requirement of Criterion 3.1 relating to "free and informed consent." The relationship should clearly demonstrate whether the manager recognizes and respects the customary and legal rights of First Nations over their lands, territories and resources. See the glossary for a definition of lands, territories and resources.

While the Constitution and case law affirm Aboriginal Rights and Title, the lands, territories and resources to which rights and title are associated overlap with Crown ownership and the rights of Crown tenure holders. The process of determining where Aboriginal Rights and Title apply is a matter of negotiation between the Crown and First Nations (e.g., Treaty Process) and the outcome of litigation. A Crown tenure holder—for the purpose of these Standards the manager—has a different role from that of the Crown in relation to a demonstration of respect and recognition for Aboriginal Rights and Title.

These Standards do not address the relationship between First Nations and the Crown, but that between the manager and relevant First Nations. The Standards define the relationship between the manager and First Nations in terms of respect and recognition, and the interplay between consent and control as related to the management plan and operations on the management unit. The Standards set out a number of ways the existence of these elements can be determined. The tests in this case, are not a measure of the *degree* of respect and recognition, but whether all of these elements are apparent in the relationship, along with the effort made by the manager to consult with and accommodate the interests of relevant First Nations.

During an assessment certifiers need to take into account the following:

- Agreements between the relevant First Nation(s) and the manager that address the requirements of the Standards may be in writing or otherwise apparent. It can be anticipated that the exact form of an agreement, formal or informal, will vary depending on circumstances and the decision-making practices of individual First Nations.
- If during an assessment it is determined that, notwithstanding the efforts of the manager, relevant First Nation(s) have decided not to participate in measures that address the requirements of the Standards, this circumstance should be evaluated and taken into consideration by the certifier. The certifier should clearly distinguish between cases where the First Nation(s) are not participating because of dissatisfaction with management activities on the management unit or the manager, and a lack of interest or capacity to participate.

/cont'd ….

**Intent for Criterion 3.1 cont'd:**

- Under no circumstances should certification proceed in the face of dissatisfaction of the affected First Nation(s) re management activities within the FMU.
- The ability of relevant First Nation(s) to participate in measures that address the requirements of the Standards may be limited by the availability of human and financial resources (capacity). Where this circumstance arises the certifier will evaluate the situation on a case-by-case basis including steps taken by the manager and/or First Nation(s) to mitigate the situation.
- Claims to traditional territory made by more than one First Nation occasionally overlap geographically. In some cases overlapping claims are subject to protocol agreements or similar mechanisms between the relevant First Nations, while in others the overlap remains an open question. Where an overlapping claim occurs, it is beyond the ability of the manager to adjudicate or otherwise resolve this issue. Certifiers will have to consider this circumstance when it arises on a case-by-case basis, looking for agreements between relevant First Nations and efforts made by the manager in response to the circumstance.
- Where the land and/or traditional territories of more than one First Nation (i.e., discrete from overlapping claims) fall within the management unit being certified, the certifier will, as directed by the Standards, assess the relationship between the manager and each First Nation.

Application of the Standards are without prejudice to treaty, land claims settlements, or agreements First Nations may reach with government. The Standards shall not be construed as an acceptance of Provincial Crown title or extinguishment of Aboriginal title. The Standards do not derogate from the Aboriginal rights of First Nations.

***Indicators of Recognition and Respect***

3.1.1 The **manager recognizes and respects** the **legal and customary rights** of the **First Nation(s)** over their **lands, territories and resources**.

**Means of Verification:**

3.1.1 (i) **First Nation(s)** formally indicate, clearly and unambiguously, either verbally or in writing, that their **legal and customary rights** over their **lands, territories and resources** have been recognized and respected by the manager.

3.1.1 (ii) **First Nation(s)** interests or concerns are clearly incorporated in the **management plan**.

3.1.2 If requested by the relevant First Nation(s), the **Manager** has negotiated, or is in the process of negotiating a protocol agreement(s) with the **First Nation(s)** that provides for the nature of the relationship between the parties, including:

a) how the parties will establish and conduct their relationship;

b) the roles and responsibilities of the parties;

c) the interests of the parties;

d) a description of appropriate decision-making authorities for all parties; and,

e) provides the framework for subsequent agreements necessary to give effect to the protocol.

**Means of Verification:**

3.1.2 (i) A protocol agreement is signed, or **First Nation(s)** indicate that they are satisfied with the relationship and no protocol agreement is necessary, or **First Nation(s)** indicate that they are satisfied with progress toward negotiating a protocol agreement, such that there are no objections to the certification proceeding at this time.

3.1.3 Where a **dispute** arises the manager makes available an effective and fair resolution process to address the **dispute** as outlined under Criterion 4.5.

***Indicators of Consent and Control***

3.1.4 The **manager** has obtained **free and informed consent (**communicated verbally or in writing) for the **management plan** from the appropriate **First Nation(s)** after either:

a) jointly developing the plan according to the process set out in a **joint management agreement**, or,

b) **consulting with the First Nation**(s) on the plan.

**Means of Verification:**

3.1.4 (i) Evidence, either through written or oral "sign-off", that the relevant First Nation(s) indicate their interests have been addressed within the plan.

3.1.5 If there are any conditions attached to the consent for the management plan, those conditions are recorded in the **management plan**.

3.1.6 Where more than one **First Nation** is affected by the area being proposed for forestry activities, consent from each is ordinarily required.

**Means of Verification:**

3.1.6 (i) The manager has contacted all appropriate **First Nation**(s).

3.1.6 (ii) The manager has an ongoing relationship, based on mutual respect, with those First Nations(s) that have close ties to the area of the management unit (e.g., First Nations' communities within close proximity, have present activities within the management unit, have historical occupancy, traditional uses or traditional place-names within the management unit, etc.).

## *3.2 Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.*

3.2.1 **Forest management** activities within the **management unit** are planned and implemented in such a way as to maintain the **resources and tenure rights** of the **First Nation(s)**, except in the following circumstances:

a) the **First Nation(s)** are satisfied with measures to offset the loss or diminishment (e.g., restoration, replacement, monetary compensation, or other consideration); or,

b) the **First Nation(s)** agree to accept the loss or diminishment.

### *3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognised and protected by forest managers.*

3.3.1 **Forest management** activities within the **management unit** are planned and implemented in such a way as to protect **sites of special cultural, ecological, economic, or religious significance** to the **First Nation(s)** except in the following circumstances:

a) the **First Nation(s)** are satisfied with measures to offset the loss or diminishment (e.g., restoration, replacement, monetary compensation, or other consideration); or,

b) the **First Nation(s)** agree to accept the loss or diminishment.

### *3.4 Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.*

3.4.1 Where mutually agreed, the manager incorporates **First Nation(s) traditional knowledge** into the **management plan** and supporting operational plans and practices.

3.4.2 Parties have reached agreement on fair compensation where the manager has made use of the **First Nation(s) traditional knowledge.**

## Principle 4: Community Relations and Worker's Rights

### Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.

### *4.1 The communities within, or adjacent to, the forest management area should be given the opportunity for employment, training and other services.*

4.1.1 The applicant provides the communities within, or adjacent to, the forest management area opportunities for employment, training and other services.

### *4.2 Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.*

4.2.1 The manager meets or exceeds occupational health and safety regulations, which includes assessing new forest practices for hazards and developing/communicating appropriate safety measures in relation to them, and ensuring that **forest workers** are informed about potential health and safety risks, including provision of full information about the contents of chemicals used.

4.2.2 The **manager**'s operations have a consistently low accident frequency rate.

**Means of Verification:**

4.2.2 (i) Workers Compensation Board records and confidential **forest worker** interviews.

4.2.3 **Forest workers** indicate satisfaction with the **manager**'s safety program and the **manager**'s respect for workers own rights and responsibilities with regard to maintaining a safe work place, including the right to refuse unsafe work.

4.2.4 The **manager** requires contractors/subcontractors to meet or exceed legal health and safety regulations and requirements under Criterion 4.2.

### *4.3 The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in conventions '87 and '98 of the International Labour Organization.*

4.3.1 The applicant does not obstruct the rights of **forest workers** to organize and voluntarily negotiate with their employers as outlined in conventions '87 and '98 of the International Labour Organization.

### *4.4 Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups (men and women) directly affected by management operations.*

4.4.1 The **manager** contacts and solicits input from potential **directly affected persons**:

4.4.2 Upon specific request, **directly affected persons** are provided with information used in making management decisions in a manner that allows those persons to understand potential impacts on their rights or interests (i.e. including technical interpretation of the information when requested).

4.4.3 Steps sufficient to protect the rights or interests of directly affected persons are developed and agreed to through public consultation, and implemented by the manager.

4.4.4 Where the **manager** and **directly affected persons** fail to reach agreement through the public consultation process, a mutually agreed-to **dispute** resolution process is used as outlined under Criterion 4.5.

### *4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.*

**Intent for Criterion 4.5:**

The Standards direct the certifier to evaluate the performance of the manager in relation to the rights, property, resources and livelihoods of local people who may be affected by the manager's activities on the management unit. In the British Columbia context, this may encompass activities of local people such as trapping, tourism, recreation, access, use of non-timber forest products, livestock grazing, etc. It may also include the integrity of adjacent or nearby property, water use rights and amenities such as viewscapes, etc.

4.5.1 Grievances involving potential loss or damage related to the **manager's** forestry activities are resolved through a process mutually agreed to by the **manager** and the **grievor**(s).

**Means of Verification:**

4.5.1 (i) Manager's records of grievances

4.5.1 (ii) Interviews with local people.

4.5.2 Where a **local** person or people have provided the **manager** with a **grievance notice**, the **manager** takes actions to resolve the grievance, for example:

a) in the case of a **grievance involving potential loss or damage** related to the **manager**'s forestry activities, the **manager** refrains from carrying out the activity(ies) until: a) the **manager** satisfies the **grievor**(s) that the activity(ies) will not cause loss or damage; or, b) effective measures are in place to protect the **grievor**(s) from the potential loss or damage set out in the **grievance notice**;

b) in the case of a grievance based on evidence that the **manager** is responsible for actual loss or damage affecting the **grievor**(s)' rights, property, resources or livelihoods, the **manager** provides the compensation (e.g., financial payment, restoration), if any, required to place the **grievor**(s) in the position that they would have been but for the activities of the **manager**, as agreed to by the parties or determined through arbitration, and takes measures to avoid future damage, and,

c) in the case of a vexatious grievance with no evidence of past or potential loss or damage from the manager's forestry activities, the **manager** documents: the grievance, the rationale for classifying the grievance as vexatious, and the manager's previous attempts to resolve past grievances from this **grievor**.

4.5.3 The **manager** documents steps taken to resolve grievances, including evidence related to proof of loss or damage and amount of compensation, whether generated internally, or provided by outside experts or the **grievors**.

## Principle 5: Benefits from the Forest

**Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.**

### *5.1 Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.*

5.1.1 The **manager**'s ability to implement the **management plan**, including investments necessary to maintain the ecological productivity of the forest and provisions to manage for other forest values, is confirmed by activities in the management unit and available documents.

**Means of Verification:**

5.1.1 (i) The management plan and supporting operational plans describe activities in sufficient detail to enable costs of implementation to be credibly estimated.

5.1.2 If monitoring, public consultation or research indicates that matters that are specifically addressed by the Standards are nevertheless generating social and environmental costs, then the **manager** assesses such costs and implements measures to minimize them.

### *5.2 Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.*

***Local processing***

5.2.1 The **manager** makes available for purchase a diversity of forest products from the management unit, in a manner appropriate to respond to the needs of **local** processors, at prevailing market rates, or at prices that cover the **manager**'s opportunity costs.

***Optimal use***

5.2.2 Without **high grading**, the **manager** captures the optimal value of forest products throughout the production cycle (e.g., planning, harvesting, stand management, sorting, processing and marketing).

### *5.3 Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.*

5.3.1 Consistent with the requirements for **coarse woody debris** and snags as set out under Indicator 6.3.6, waste that is generated through harvesting and on-site processing operations and that does not contribute to site productivity or **ecosystem functioning** is minimized.

5.3.2 The **manager** ensures felling, skidding/yarding, bucking, sorting and handling are carried out in a way that minimizes breakage and damage while optimizing log utilization, grade and value.

5.3.3 The **manager** ensures harvesting is carried out in a way that minimizes damage to the residual stand, other **ecosystem** components, and special features.

5.3.4 The **manager** ensures that relevant personnel receive instruction, training and/or incentives to minimize damage to the residual stand, other **ecosystem** components, and special features.

### *5.4 Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.*

5.4.1 If there are **local** economic objectives and expressed interest from the **local** community for diversifying timber and **non-timber forest products** (including visual landscapes, recreational opportunities, etc.), and the management unit has significant potential for the production of a greater diversity of timber and **non-timber forest products**, the manager is able to demonstrate how management strategies are compatible with those objectives, or provide a rationale for why they are not compatible.

### *5.5 Forest management operations shall recognize, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.*

5.5.1 The applicant's **forest management** operations recognize, maintain, and, where appropriate, enhance the value of **ecosystem services** and forest resources such as watersheds and fisheries.

### *5.6 The rate of harvest of forest products shall not exceed levels which can be permanently sustained.*

5.6.1 The rate of timber harvest for the **management unit** is based on a documented and comprehensive analysis, incorporating the following:

a) the management objectives and strategies for the full range of forest resources as set out in the **management plan**, including those for restoration;

b) practices employed to implement the strategies and operational approaches in the **management plan**, including those for restoration;

c) up-to-date inventories and the best available growth-and-yield data and projections;

d) land base reductions to account for areas that are reserved or unavailable for harvest due to economic or operational limitations;

e) volume reductions to account for stand level retention and recruitment for **ecosystem** components such as snags, wildlife trees and **coarse woody debris** ;

f) non-recoverable losses such as those resulting from fires, insects and disease; and,

g) reductions required to protect non-timber values and forest-dependent economic activities.

5.6.2 The rate of timber harvest is determined in a manner that adequately reflects reliability and uncertainty associated with inventory data, management assumptions, growth-and-yield projections, and analysis methodologies; and is determined when the management plan is produced or revised, unless the manager demonstrates with reference to a-g in 5.6.1. above, that changes to the rate of timber harvest resulting from recalculation is unlikely to exceed 10 %.

5.6.3 Where the **manager** harvests or has the ability to control the harvest of **non-timber forest products**, the **manager** assures that the rate of harvest reflects the best available inventory and productivity data, provides for sustainable production, and is adjusted when monitoring indicates over-harvesting.

5.6.4 If the allowable annual cut from the management exceeds 100m3/year, the **manager** demonstrates that the average of the present and projected annual timber harvests over the next twenty years, and subsequent 20 year periods, do not exceed the projected long-term harvest rate while meeting the FSC-BC Regional Standards over the **long term**.

## Principle 6: Environmental Impacts

**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.**

### *6.1 Assessment of environmental impacts shall be completed - appropriate to the scale, intensity of forest management and the uniqueness of the affected resources - and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.*

6.1.1 Based on the best available information, the manager assembles inventory data and other information to describe the characteristics of the management unit and its context, including at a minimum addressing the information needs and potential issues in Tables 1 and 2 of Appendix 1, "FSC-BC Toolkit for Small Operations".

6.1.2 Based on the best available information, the **manager** prepares a description of the natural disturbance processes (e.g., fire regimes, windthrow, insect and disease) that affect the management unit, and the stand and landscape characteristics that result from those processes (i.e. the "range of natural variability" or RONV – see also Appendix 1, "FSC-BC Toolkit for Small Operations").

6.1.3 If the management unit contains areas of critical wildlife habitat, areas with high terrain stability or erosion hazards, or areas of domestic, irrigation, fisheries sensitive or high value fisheries watersheds, the manager has consulted with relevant **qualified specialists** and/or completed assessments to confirm that the management strategies proposed for those areas will protect the identified values or minimize risk of environmental damage from the recognized hazards (see Appendix 1, Table 2, "FSC-BC Toolkit for Small Operations").

6.1.4 Consistent with the descriptions of the management unit characteristics and natural disturbance regime, the management unit context, and any special values present on the management unit (see also 6.1.1-6.1.3 and 9.1), the manager has a rationale explaining how the management objectives and strategies presented in the management plan will result in minimal environmental impacts (i.e. are **compatible with RONV**).

6.1.5 During operational planning for road construction and forest harvesting, operational assessments are conducted that are appropriate to the type and intensity of planned operations, and the sensitivity of values present (e.g., cruising, identification of wildlife trees and habitat features, coarse woody debris requirements, site diagnosis and silvicultural assessments, terrain stability and site degradation hazards, streams and riparian areas, critical wildlife habitats, cultural, recreation and visual assessments, etc.). The results of the assessments are incorporated in operational plans to ensure environmental impacts are minimized (i.e. – level of environmental risk is **compatible with RONV**).

## *6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g. nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.*

6.2.1 Habitats of red- and blue-listed species and plant communities (as defined by the BC Conservation Data Centre) and **threatened species** and **endangered species**, and species of special concern (as defined by the Committee on the Status of Endangered Wildlife in Canada) within a **management unit** are identified by field surveys or other means, and delineated on maps.

6.2.2 Where there are existing or potential habitats of red-listed, blue-listed, endangered or **threatened species**, or species of special concern, or red- or blue- listed plant communities present on the management unit, the manager demonstrates effective measures are in place on the **management unit** to minimize risk to the long-term persistence of those species and/or plant communities, by:

a) protecting those habitats and/or plant communities by including them in the protected reserve network;

b) avoiding habitat alteration that may result in increased risk to those species' and/or plant communities' long-term persistence; and/or,

c) where necessary, restoring those habitats and/or plant communities to a suitable condition.

**Means of Verification:**

6.2.2 (i) Interviews with local wildlife managers; indications they are satisfied that past, present and proposed management activities on the management unit are not contributing to increased risk to the species, or limiting recovery options for the species.

6.2.3 Where a government recovery plan or species **management plan** has been prepared for a red- or blue-listed, **threatened** or **endangered species**, species of special concern or red- or blue-listed plant community whose habitat occurs within a management unit, the **manager** is implementing the recovery or species **management plan** in a manner appropriate for the management unit. While recovery or species management plans are under development, the **manager** takes steps that are within his or her control to facilitate survival and recovery of the species or plant community.

6.2.4 The **manager** cooperates with the government authorities to prevent the harming, harassing, capturing or taking of red- or blue-listed species, threatened or **endangered species**, or species of special concern within the management unit.

## *6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:*

### *a) Forest regeneration and succession.*

### *b) Genetic, species, and ecosystem diversity.*

### *c) Natural cycles that affect the productivity of the forest ecosystem.*

6.3.1 If there are portions of the **management unit** where previous management activities have resulted in conditions that are inconsistent with the FSC-BC standards (i.e. areas of poorly managed **natural forest**s or former **plantation**s), these have been designated **restoration areas**, and it is evident that activities are planned and being implemented to restore those areas to conditions that are consistent with FSC-BC requirements.

## *a) Forest regeneration and succession*

6.3.2 The present and projected regeneration methods result in a diversity of tree species, stand types, landscape patterns and stand structures that are **compatible with the range if natural variability**.

**Means of Verification:**

6.3.2(i) Regeneration surveys.

6.3.3 When site preparation is utilized, the manager selects a site preparation method that takes into consideration and balances the following factors: effectiveness of achieving management objectives and minimization of negative environmental impacts (including soil degradation).

## *b) Genetic, species, and ecosystem diversity*

***Stand and Gene Level Issues***

6.3.4 Regeneration methods implemented by the manager maintain or enhance the structural and genetic diversity of forest stands by:

a) showing a preference for natural regeneration; and/or

b) where necessary, using artificial regeneration methods (e.g., planting), with seed or stock produced from **local provenances**.

6.3.5 Seed trees, advanced regeneration or other sources of natural or artificial regeneration are selected to maintain species and genetic diversity.

6.3.6 **Silviculture** and stand management prescriptions include measures for the maintenance and/or restoration of stand structure to conditions compatible with the **range of natural variability** at the stand and **landscape level**s (e.g., canopy complexity, **live wildlife tree**s, snags, **coarse woody debris).**

**Means of Verification:**

6.3.6 (i) Where species habitat modeling or assessments are available, they indicate that stand level habitat supply is consistent with the long-term persistence of naturally occurring species dependent on those habitats (appropriate to the size and location of the management unit).

6.3.7 Within each **cutblock area,** the retention of dominant and co-dominant green trees and snags is consistent with meeting objectives in Indicator 6.3.6, as patches and/or single trees, and exceeds the following minimum levels (stems/ha, of which a minimum of 25% are snags where present):

| **NDT** 1 | | **NDT** 2 | | **NDT** 3 | | **NDT** 4 | |
|---|---|---|---|---|---|---|---|
| ESSF | Other | ESSF | Other | ESSF | Other | PP | Other |
| 12 | 8 | 15 | 10 | 12 | 8 | 4 | 8 |

6.3.8 Forest harvesting and other silvicultural treatments maintain or restore coarse woody debris in quantities and distribution that is compatible with the range of natural variability.

***Landscape and Ecosystem Level Issues***

6.3.9 If the management unit is located in Natural Disturbance Type (NDT) 1 or 2, and maintenance of interior habitat or mature/old forest connectivity has been identified as a management issue, forest management maintains or restores a distribution of seral stages, patch sizes and/or interior habitat that are compatible with the range of natural variability (see Appendix 1, Table 2, questions 9-11 for applicability to management units >2400 ha).

6.3.10 If access-sensitive values are present on the management unit, the manager has objectives and strategies to manage access where required to meet non-timber objectives (e.g., to minimize displacement of access-sensitive species such as grizzly bears, to prevent human contamination of domestic watersheds, to protect cultural sites).

6.3.11 Where they occur on a management unit, unique ecosystems (e.g., antique forests, rare site series), unique ecosystem features (e.g., caves, mistletoe platforms, mineral licks) and non-forest ecosystems (e.g., wetlands, grasslands, rock outcrops) are maintained or restored to a level that ensures their ecological functions are maintained.

## *c) Natural cycles that affect the productivity of the forest ecosystem.*

6.3.12 Forest management maintains soil fertility and natural soil processes by limiting **detrimental soil disturbance** to less than 7% of the **timber harvesting landbase**; or less than 10% where there are off-setting environmental or cultural benefits, and the benefits are explained in a written rationale.

**Means of Verification:**

6.3.12 (i) A consistent effort to minimize **detrimental soil disturbance** is evident in planning, construction and implementation of road construction, timber harvesting and **silviculture** treatments.

6.3.12 (ii) If soil disturbance surveys have been completed, their results are consistent with meeting Indicator 6.3.12.

6.3.12 (iii) Assumptions regarding roads, landings and other **detrimental soil disturbance** in timber supply analyses are consistent with meeting Criterion 6.3.13 (See also Criterion 5.6).

6.3.13 Temporary access structures and unplanned **detrimental soil disturbance** are promptly rehabilitated.

6.3.14 Where **detrimental soil disturbance** exceeds levels in Indicator 6.3.12, a plan is being implemented to rehabilitate sufficient area to meet the standard in a timely manner (<5 years).

6.3.15 If fertilizers or other soil amendments (e.g., pulp sludge, manure) are used, preference is given to non-chemical alternatives that are of equivalent effectiveness, and measures are employed to avoid contamination of surface and ground waters, protect non-timber forest values and maintain long-term soil health (e.g., maintenance of soil organic matter, pH balance).

## *6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.*

6.4.1 If the descriptions of the management unit characteristics, including the presence of HCVF(s), the management unit context, or any other special values present on the management unit indicate the need for reserves to protect recognized values, the manager establishes such reserves (see also Criteria and Indicators 6.1.1-6.1.3, 6.5, 9.1 and 9.3, and Appendix 1, "FSC-BC Toolkit for Small Operations").

6.4.2 If any NDT 1 or NDT 2 BEC variant that occurs on more than 200 ha of the management unit has less than 10% in protected areas within BC, **and** less than 10% within the ecosection where the management unit is located, the manager establishes at least 8% of reserve(s) in that BEC variant (8% may include riparian reserves, unstable terrain, permanent wildlife tree patches >2ha, habitat reserves, etc.).

6.4.3 If any NDT 3 or NDT 4 BEC variant that occurs on more than 200 ha of the management unit has less than 10% in protected areas within BC **and** less than 10% within the ecosection where the management unit is located, the manager establishes at least 4% of reserve(s) in that BEC variant (4% may include riparian reserves, unstable terrain, permanent wildlife tree patches >2ha, habitat reserves, etc.). Reserves in NDT 3 and 4 may be **dynamic reserves**.

6.4.4 If **protected reserves** are established within the **management unit,** the reserves:

a) are mapped,

b) have written objectives that outline the purpose of the reserve (e.g., representation, critical wildlife habitat; some areas may have compatible overlapping objectives, e.g., riparian protection, unstable terrain and visual management),

c) do not include roads, and

d) are reserved from forest harvesting, except where it is necessary to restore or create habitat to meet the objectives of the protected reserve (e.g., dynamic reserves in NDT 3 or 4).

### *6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.*

6.5.1 Environmental damage resulting from landslides, snow avalanching, erosion and sedimentation resulting from road construction or forest harvesting is **compatible with the range of natural variability**.

6.5.2 Road construction and forest harvesting do not occur on areas with a high **likelihood of landslide initiation**.

6.5.3 Road construction and forest harvesting do not occur on the following high risk areas, unless measures are implemented such that risk of landslide initiation is not increased:

a) areas of moderate **likelihood of landslide initiation** and high or very high landslide-induced stream sedimentation hazard; or,

b) areas of moderate **likelihood of landslide initiation** and a high to very high likelihood of the landslide reaching areas of human habitation.

6.5.4 Harvesting within or adjacent to areas with a high or moderate **likelihood of landslide initiation** does not significantly increase windthrow hazards in those areas.

6.5.5 Road construction and harvesting do not occur in areas of high or very high road/ditch/surface erosion hazard and high or very high sediment delivery unless mitigative measures are taken that prevent erosion and sedimentation (e.g., minimizing soil disturbance, prompt revegetation).

6.5.6 In areas with a very high potential for snow avalanche initiation, forest harvesting does not occur. In areas with high potential for snow avalanche initiation, harvesting is limited to partial cutting consistent with the prevention of snow avalanche initiation.

6.5.7 Consistent effort to maintain the **ecological integrity** of aquatic **ecosystems** is evident, including at a minimum:

a) planning of road locations to minimize stream crossings and construction of roads within **riparian management area**s,

b) stream crossing construction measures to minimize disturbance to riparian areas, stream banks and stream channels,

c) timing of stream crossing construction to avoid fisheries sensitive seasons (e.g. spawning),

d) locating and constructing landings in ways that avoid **riparian management area**s and detrimental impacts on **hydrologic features**,

e) locating and constructing roads, landings, backspar trails and skidroads in ways that minimize disruption of natural drainage patterns (e.g., drainage systems are planned and constructed to avoid diversion of surface waters; road widths are minimized to limit the interception of subsurface water),

f) employing yarding techniques that do not disturb stream channels, and

g) where **channel assessment**s indicate decreasing stability, halting road construction and harvesting in relevant portions of watersheds, unless it can be shown that further development will not slow channel recovery or contribute to further channel instability.

6.5.8 **Machine-free zones** are established on all streams, lakes, wetlands and marine shorelines. The **machine-free zones** are:

a) at least 7 m in width;

b) not entered by machinery, except where required for construction of crossings or restoration of riparian or stream channel functions, and only if it can be demonstrated that no significant environmental damage will result; and

c) areas within which, if harvesting occurs, non-commercial trees and understory vegetation are retained for protection of riparian functions.

6.5.9 Active roads and other potential sediment sources are identified and monitored for sediment production on a regular basis. Deactivation, rehabilitation and/or restoration plans are prepared and implemented to control all significant human-induced sediment sources.

6.5.10 If a management units includes more than 50% of a domestic, irrigation, fisheries sensitive or high value fisheries watershed, consistent effort is evident to minimize increases in peak flow resulting from management activities, including in snowmelt-dominated watersheds, maintaining weighted **equivalent clearcut area (ECA)** to less than 25%, unless recommended otherwise by an **hydrologic assessment**.

6.5.11 If a management unit includes more than 30% of a watershed with temperature–sensitive fish habitat, consistent effort is made to prevent detrimental increases in stream water temperature by maintaining adequate levels of shading on all such water bodies and their tributaries, including limiting the extent of early seral vegetation in riparian zones to not more than 10% of the total area of riparian zones within the portion of the management unit that is in a watershed with temperature–sensitive fish habitat.

## *6.5 bis Riparian ecosystems and all their functions shall be maintained or restored.*

6.5.*bis1* If the management unit includes rivers, streams, wetlands, lakeshores or marine shoreline, the **manager** maintains and/or restores riparian areas along those water features by:

a) implementing riparian reserve zones and/or riparian management zones along those features that, on average, meet or exceed the measures specified in Table 1 in Appendix 2, “Requirements for Riparian Management on Small Operations”, and providing an ecologically-based rationale for the spatial deployment of riparian reserves and management zones, OR,

b) implementing alternative management measures that will provide an equivalent level of riparian area conservation, and providing a written rationale prepared by a **qualified specialist**(s) in hydrology, terrain **and/or** riparian biology that confirms those measures are adequate to maintain or restore the riparian functions, riparian values and the ecological integrity of the associated hydrologic feature(s) within the management unit.

## *6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.*

6.6.1 Where **chemical pesticides** are used on the management unit, plans are in place to continually reduce and finally eliminate their use through **integrated pest management**. The phase out period shall be no more than 5 years from the date of initial certification of the management unit, and applies only to use on the management unit itself. The only exception would be the use of a pesticide for a limited time to control an exotic invasive species that poses a high risk to the ecological integrity of forest ecosystems, where there were no known feasible non-chemical alternatives.

**Means of Verification:**

6.6.1 (i) Forest health plans with regard to controls of insect, diseases and weeds.

6.6.1 (ii) Silviculture plans and prescriptions related to brushing and weeding.

6.6.1 (iii) Assumptions in AAC calculations related to brushing and weeding and control of insects and disease.

6.6.2 Where **chemical pesticides** are used on the **management unit** during the phase out period, there is evidence of consistent effort to meet plans for their phase out, including the use of integrated pest management, with emphasis on prevention strategies.

**Means of Verification:**

6.6.2 (i) Forest health plans with regard to controls of insect, diseases and weeds – integrated pest management components.

6.6.3 Where tree seedlings or other materials for use on the **management unit** are purchased from outside suppliers, managers take ongoing actions to source materials that are consistent with eliminating the use of **chemical pesticides**.

**Means of Verification:**

6.6.3 (i) Correspondence between the manager and suppliers who may be using pesticides.

6.6.3 (ii) Selection criteria for requests for proposals, purchase orders, or bid selection related to any services or materials that may involve use of pesticides.

6.6.4 **Chemicals** prohibited by Criterion 6.6 are not used on the management unit (See FSC International Policies and Appendix 6b of the main standards for BC).

**Means of Verification:**

6.6.4 (i) Records of chemical use on the management unit.

6.6.5 Where chemical pesticides are used, the manager takes measures to avoid risks to human health and the environment (e.g., prior notification of tree planters, First Nations, and other forest users of pesticide use, stream buffers), and complies with regulatory requirements under the Pesticide Control Act and the Workers Compensation Act.

**Means of Verification:**

6.6.5 (i) Operational plans, field assessments and monitoring of pesticide applications.

6.6.5 (ii) Standard operating procedures regarding pesticide use on the management unit and regarding use of out-sourced materials that may be contaminated (e.g., tree seedlings).

6.6.5 (iii) Interviews with forest workers, First Nations, local wildlife biologists and other forest users who may be impacted or familiar with impacts from pesticide use.

6.6.5 (iv) Permits issued for pesticide use in the management unit, and compliance monitoring for those permits.

## *6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.*

6.7.1 If chemicals are used on the management unit, the manager implements measures, to prevent the unintended release of chemicals, petroleum products, containers and non-organic wastes, and avoid health and environmental risks due to their disposal.

## *6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.*

6.8.1 Where **biological control agents** are employed on the **management unit**, the applicant documents, minimizes, monitors and controls their use in accordance with national laws and internationally accepted scientific protocols.

6.8.2 **Genetically modified organisms** are not used.

## *6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.*

6.9.1 Exotic plant or animal species are only introduced after scientific evaluation that determines that they are not invasive and will bring environmental benefits without entailing significant adverse ecological impacts.

## 6.10 Forest conversion to plantations or non-forest land shall not occur, except in circumstances where conversion:

***a) entails a very limited portion of the Forest Management Unit; and***

***b) does not occur on High Conservation Value Forest areas; and***

***c) will enable clear, substantial, additional, secure, long term conservation benefits across the Forest Management Unit.***

### *a) Entails a very limited portion of the Forest Management Unit*

6.10.1 Areas of new conversions to **plantation**s or other non-forest uses (NOT including road, landings and other infrastructure directly related to forest management, see also 6.3.12):

a) do not exceed 10% of the management unit;

b) are located in previously harvested poorly-managed forest, or if that forest type is not available, in previously harvested well-managed **natural forest**, or if that forest type is not available, in un-harvested, non old growth forest, and only if none of the previous areas are available, in old growth forest;

c) do not directly result in the area of old growth forest falling below the estimated mean area of old growth forest determined by the description of the **range of natural variability** completed under Indicator 6.1.7; and

b) are otherwise consistent with Principle 10.

### *b) Does not occur on High Conservation Value Forest areas*

### *c) Will enable clear, substantial, additional, secure, long term conservation benefits across the Forest Management Unit*

6.10.2 The manager demonstrates the conservation benefits enabled by conversion, and the impacts of the conversion, as evaluated and reported by **qualified specialists**. The evaluation process includes:

a) evaluation of the conservation benefits enabled by the conversion;

b) evaluation of the environmental impacts of the conversion itself, taking into account impacts both at the **management unit** level and at the **landscape level**;

c) the **social impacts** and benefits entailed by the conversion;

d) review of and input on the conversion area and the offsetting conservation benefits from **qualified specialists**, affected parties and relevant interests (e.g., **First Nation**s, agencies, **local** communities, conservation organizations);

e) conclusions regarding whether the offsetting benefits meet Criterion 6.10; and

f) if the conversion evaluation report concludes the proposed conversion meets Criterion 6.10, specific recommendations on how the offsetting benefits for conversions should be secured in a manner that ensures the benefits will be maintained over the **long term** (e.g., legal designations, restrictive covenants).

6.10.3 Management objectives and measures identified in the final evaluation report as outlined in 6.10.2 are incorporated into the **management plan** and other relevant documents, and are implemented.

## Principle 7: Management Plan

**A management plan - appropriate to the scale and intensity of the operations - shall be written, implemented, and kept up to date. The long-term objectives of management, and the means of achieving them, shall be clearly stated.**

### *7.1 The management plan and supporting documents shall provide:*

***a) Management objectives.***

***b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and profile of adjacent lands.***

***c) Description of silvicultural and/or other management system, based upon the ecology of the forest in question and information gathered through resource inventories.***

***d) Rationale for rate of annual harvest and species selection.***

***e) Provisions for monitoring of forest growth and dynamics.***

***f) Environmental safeguards based on environmental assessments.***

***g) Plans for the identification and protection of rare, threatened and endangered species.***

***h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.***

***i) Description and justification of harvesting techniques and equipment to be used.***

7.1.1 The management plan includes the information described above. (*FSC BC Guidance* includes a recommended "FSC-BC Management Plan Template for Small Operations").

7.1.2 The **management plan** describes how the FSC-BC Regional Standards will be met.

7.1.3 The **management plan** is reviewed at least every five years and updated as required.

### *a) Management objectives.*

7.1.4 The management plan includes:

a) long-term measurable objectives and management strategies that are consistent with the FSC-BC Regional Standards, and management indicator(s) by which their achievement can be assessed;

b) management objectives that address issues identified in other Principles of the FSC-BC standards (e.g., objectives from public participation and local communities – P4, P5 and P9, objectives identified through **First Nations** consultation – P3, objectives to conserve environmental values – P6 and P9); and,

c) maps showing the specific geographic area to which management objectives apply (e.g., management unit, specific reserve, management zone, local community).

### *b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and profile of adjacent lands.*

7.1.5 The **management plan** describes natural processes and how they affect forest and stand development (i.e. the **range of natural variability,** see also Indicator 6.1.).

7.1.6 If present on the management unit, the **management plan** describes environmental hazards (e.g., terrain stability, waterborne erosion, see Criterion 6.1 and Appendix 1, "FSC-BC Toolkit for Small Operations").

7.1.7 If High Conservation Value Forests are present on the management unit, the **management plan** describes the values present and associated **conservation attributes** (See also Criterion 9.1 and Appendix 1, "FSC-BC Toolkit for Small Operations").

7.1.8 To provide a management unit context, the **management plan** describes land uses, management regimes and conditions on lands adjacent to the management unit.

7.1.9 The descriptions, inventories and maps utilized for developing management objectives, strategies and practices are included or referenced in the **management plan**.

### *c) Description of silvicultural and/or other management system, based upon the ecology of the forest in question and information gathered through resource inventories.*

7.1.10 Management approaches to be used in operational planning and implementation that will fulfill management objectives are described in the **management plan (**including, if present any approaches to managing riparian areas and/or maintaining HCVF conservation attributes, see Criterion 6.5 and Principle 9).

7.1.11 Operational plans are prepared to guide management activities at the site level to implement the management objectives, strategies and approaches identified in the management plan.

### *d) Rationale for rate of annual harvest and species selection.*

### *e) Provisions for monitoring of forest growth and dynamics.*

7.1.12 Forest inventory information utilized in developing the management plan is updated as required (e.g., regen surveys, free-to-grow surveys, age classes).

### *f) Environmental safeguards based on environmental assessments.*

7.1.13 The **management plan** includes management strategies to minimize environmental impacts, consistent with any hazards present (See also Criterion 6.1).

### *g) Plans for the identification and protection of rare, threatened and endangered species.*

7.1.14 If red- or blue-listed species are present on the management unit, the **management plan** contains provisions for rare, threatened and **endangered species** (See also Indicators 6.2.1 to 6.2.5).

### *h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.*

7.1.15 A map and legal description showing the location and **tenure** status of the **management unit** is included in the **management plan** (See also Indicator 2.1.2).

7.1.16 If present on the management unit, **legal or customary tenure or use rights** of others within the **management unit** are identified, described and, where appropriate, mapped and are included in the **management plan**.

7.1.17 If any management zones are required to address management objectives flowing from Principles 3, 6, 9 and 10, maps of those zones are included in the **management plan**, and larger scale maps appropriate to operational planning are referenced to provide detail where necessary (see also Appendix 1 and *FSC BC Guidance*).

### *i) Description and justification of harvesting techniques and equipment to be used.*

## *7.2 The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.*

7.2.1 The **management plan** is periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.

## *7.3 Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.*

7.3.1 **Forest workers** receive adequate training and supervision to ensure proper implementation of the **management pla**n.

### *7.4 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.*

7.4.1 Upon specific request, with the exception of sensitive or confidential commercial, cultural or ecological information, the **management plan**, supporting operational plans and assessments are made available to the public.

7.4.2 Input from interested parties, is solicited during public review of the draft **management plan**.

## Principle 8: Monitoring and Assessment

**Monitoring shall be conducted – appropriate to the scale and intensity of forest management – to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.**

### *8.1 The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and repeatable over time to allow comparison of results and assessment of change.*

8.1.1 A documented monitoring plan is in place. Where operations are limited in extent and/or intensity, and the values of concern are of minimal significance and/or insensitive to management activities, informal, qualitative monitoring may be sufficient.

8.1.2 The monitoring plan describes:

a) elements and indicators to be monitored (including **HCVF**s if present, see Criterion 9.4);

b) consistent and replicable monitoring procedures;

c) the frequency and intensity of monitoring, and,

d) relevant baseline information.

8.1.3 The monitoring plan is periodically updated and available to those doing the monitoring or working with monitoring data, and a clear link between the monitoring plan and **management plan** is established.

8.1.4 Monitoring records are compiled in a secure accessible location.

### *8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following Indicators:*

***a) yield of all forest products harvested;***

***b) growth rates, regeneration and condition of the forest;***

***c) composition and observed changes in the flora and fauna;***

***d) environmental and social impacts of harvesting and other operations;***

***e) costs, productivity, and efficiency of forest management.***

### *a) Yield of all forest products harvested*

8.2.1 Data regarding the yield of timber harvested from the **management unit** (e.g., volume, species and grade) sufficient to assess performance with respect to management objectives, are collected and maintained.

8.2.2 Where the **manager** is responsible for the harvest of **non-timber forest products** within the management unit, data regarding their yield, sufficient to assess performance with respect to management objectives, are collected and maintained.

### *b) Growth rates, regeneration and condition of the forest*

8.2.3 Data are collected and maintained concerning growth rates, regeneration, forest health, productivity, condition of the forest, and disturbances resulting from forest operations or other causes.

### *c) Composition and observed changes in the flora and fauna*

8.2.4 Where critical wildlife habitat has been identified on the management unit (including HCVFs, riparian areas, etc.) , changes in the flora and fauna related to that habitat are monitored (see Indicators 6.1.3 and 6.5.12, and Principle 9).

8.2.5 If red- or blue-listed species habitat is identified on the management unit, it is monitored to ensure the habitat is maintained and/or restored (see Criterion 6.2).

### *d) Environmental and social impacts of harvesting and other operations*

8.2.6 Where road building or harvesting are carried out in domestic, irrigation, fisheries sensitive or high value fisheries watersheds on moderate to high hazard areas, watershed conditions applicable to the identified hazards are monitored (e.g., sediment sources, **Equivalent clearcut area (ECA)**, channel stability, riparian condition, shade).

8.2.7 Where social impact issues are identified through consultation with **First Nation**s and **directly affected persons** relevant management activities are monitored as agreed to in the consultation process.

8.2.8 When employed on the management unit, the use and disposal of chemical pesticides and other potential contaminants are monitored, with a focus on phase out strategies and avoiding environmental impacts and risks to human health (see also Criteria 6.6 and 6.7).

### *e) Costs, productivity, and efficiency of forest management*

8.2.9 Costs and production associated with harvesting, including stumpage payments, are documented to enable evaluation of **forest management** efficiency.

### *8.3 Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as "chain of custody".*

8.3.1 The forest manager provides documentation to enable monitoring and certifying organizations to trace each forest product from its origin.

### *8.4 The results of monitoring shall be incorporated into the implementation and revision of the management plan.*

8.4.1 Findings from monitoring are regularly summarized, analyzed and documented to identify discrepancies between outcomes (e.g., yields, growth, ecological changes) and expectations (e.g., plans, forecasts, anticipated impacts).

8.4.2 The results of monitoring are incorporated into periodic revisions of the **management plan** (see also Criterion 7.2) , policies and procedures.

8.4.3 Unanticipated impacts identified through monitoring are acted upon.

### *8.5 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring Indicators, including those listed in Criterion 8.2.*

8.5.1 A regular summary is compiled of the results of monitoring. Upon specific request, the summary is made available to interested parties.

## Principle 9: Maintenance of High Conservation Value Forests

**Management activities in High Conservation Value Forests shall maintain or enhance the attributes which define such forests. Decisions regarding High Conservation Value Forests shall always be considered in the context of a precautionary approach.**

### *9.1 Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.*

9.1.1 As an assessment to determine the potential presence of **High Conservation Values** within the management unit, the **manager** has completed the **High Conservation Value Forest** (**HCVF**) checklist found in Table 3, Appendix 1, "FSC-BC Toolkit for Small Operations".

9.1.2 If the checklist results indicate the potential presence of HCVFs on the management unit, the manager has identified **conservation attributes** associated with each **HCVF** present, and developed management strategies to maintain and/or enhance those attributes.

9.1.3 Where the manager requires further expertise to complete the HCVF checklist or develop management strategies for the maintenance of identified conservation attributes, the manager has consulted with **qualified specialists** or other relevant interests (e.g., biologists, **First Nation**s, regulatory agencies, **local** communities, conservation organizations).

9.1.4 If **HCVF(s)** are identified during the assessment, and they can be represented spatially, they are delineated on map(s) in a manner that demonstrates the location of the **HCVF**(s) in relation to the management unit. The maps are included in the **HCVF** assessment report, **management plan**s and relevant operational plans. Where there is a need to maintain confidentiality regarding the location of a sensitive site, the exact location of the **HCVF** or conservation attribute is not mapped or the information is otherwise held in confidence.

9.1.5 The HCVF checklist reviewed every 10 years or whenever new information related to high conservation values or attributes is garnered through consultation, inventory or monitoring.

### *9.2 The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.*

9.2.1 The forest manager consults with **directly affected persons**, **qualified specialists** and **First Nations** on the identification of the High Conservation Values and the management options thereof.

### *9.3 The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.*

9.3.1 The management strategies and measures selected to maintain or restore conservation attribute(s) are consistent with a **precautionary approach**, and with respect to each **HCVF** or **conservation attribute**, the measures:

a) create conditions with a very high probability of securing the long-term maintenance or the restoration the High Conservation Value or **conservation attribute** (see Appendix 1, Table 3 for further information on measures);

b) are being implemented; and,

c) where monitoring results are available, they confirm the measures are proving effective, or the measures are modified based on the results of monitoring (see also Criterion 9.4).

9.3.2 Upon specific request, the completed **HCVF** checklist and any other assessment reports, including the manager's proposed strategies and measures for the maintenance of **HCVFs** and **conservation attributes** are made available to interested parties.

### *9.4 Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.*

9.4.1 If **HCVF**s are present on the management unit, the **manager** monitors the status of identified **HCV**s and their **conservation attributes** in a manner that is capable of alerting the **manager** to changes in the status of an **HCVF** or **conservation attribute**, and determining if the conservation measures are effective in maintaining or restoring the **HCVF** or attribute. The monitoring practices are designed and implemented consistent with the requirements of Principle 8.

9.4.2 When monitoring results indicate increasing risk to a specific conservation attribute, the manager re-evaluates the measures taken to maintain or enhance that attribute, and adjusts the management measures to reverse the trend.

## Principle 10: Plantations

**Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.**

### *10.1 The management objectives of the plantation, including natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.*

10.1.1 Where **plantations** are present on the **management unit**, the management objectives of the **plantation**, including natural forest conservation and restoration objectives, are explicitly stated in the **management plan**, and clearly demonstrated in the implementation of the plan.

### *10.2 The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods, shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands found within the natural landscape.*

10.2.1 The location, management and extent of **plantation** areas are consistent with biodiversity objectives for the management unit and its landscape unit context (e.g., seral stage distribution, old-growth retention, **landscape connectivity**, tree species diversity).

### *10.3 Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.*

10.3.1 Selection of species and genotypes for areas under **plantation** management regimes is compatible with local environmental conditions, forest health considerations and biodiversity objectives.

### *10.4 The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.*

10.4.1 Preference is given to planting **native species** from local provenances.

10.4.2 Exotic tree species are only utilized where it has been demonstrated that they are not, or will not become invasive species, and will not result in the introduction of other pests or diseases, on or off the management unit (See also Indicator 10.8.1).

### *10.5 A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover.*

**Explanatory Note for Criterion 10.5:**

The presence of absence of plantations within a management unit is determined according to the definition in the Glossary. Plantation management is generally rare in BC; the vast majority of forest management and forest production in BC is focused on natural forest stands rather than plantations. Most of the forest areas that could potentially be classified as "plantation management regimes" are located in low elevation coastal forests, or rarely in low elevation interior wetbelt forests. However, these areas tend to generally be under-represented in BC's protected areas network, have significant pressures for non-forest landuses, and are often associated with increased threats to biodiversity values, as indicated by a higher frequency of red and blue-listed species. One example would be the short-rotation cottonwood plantations on private lands in the Fraser Valley, where there are also extensive areas of forest conversion to agriculture and urban development, or on floodplains where there are extremely high biodiversity values. Due to the relatively few plantations present in BC, and the significant threats to biodiversity already present in areas where most plantations already occur, it was felt that the Regional Standards for BC should require a high degree of restoration for existing plantations, and severely limit establishment of new plantations.

Therefore Indicator 10.5.1 limits total plantation area to 10% of the timber harvesting landbase of a management unit (i.e. an existing total plantation would have to restore 90% of its area).

10.5.1 The extent of area under **plantation** management regimes does not exceed 10% of the management unit.

10.5.2 Where the extent of area within the **management unit** that has stand characteristics and past or present management practices that are consistent with **plantation** management regimes (i.e. former or present **plantation**s) exceeds the maximum requirement under Indicator 10.5.1:

a) sufficient areas have been identified for restoration to **natural forest**s to meet the requirement within a timeframe less than the average rotation age of the **plantation**s,

b) the **restoration areas** are identified on maps, and

c) they are actively being restored (See also Indicator 6.3.1).

***10.6 Measures shall be taken to maintain or improve soil structure, fertility, and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.***

10.6.1 Management practices in **plantation** areas are consistent with soil and water conservation measures specified under Criteria 6.3 and 6.5.

***10.7 Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.***

10.7.1 Measures are taken to prevent and minimize outbreak of pests, diseases, fire and invasive plant introductions.

10.7.2 The **management plan** demonstrates a commitment to integrated pest management, with primary reliance on prevention and biological control methods rather than on chemical pesticides and fertilizers.

***10.8 Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts (e.g. natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in Principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.***

10.8.1 Use of exotic tree species, on an operational basis, only occurs following intensive, long-term research trials. Exploratory exotic tree species research trials are:

a) limited to a maximum of 10 ha in aggregate;

b) of sufficient duration to determine potential long-term impacts (e.g., a full harvest rotation); and,

c) designed and assessed by **qualified specialists**, including a forester, conservation biologist and agrologist.

### *10.9 Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly for such conversion.*

10.9.1 Areas under **plantation** management regimes established before November 1994, or that were established since November 1994 and the **manager** or owner is not responsible directly or indirectly for the conversion, and do not meet Criteria 10.2 or 10.5 (e.g., exceed the requirements of 10.5.1), are designated **restoration areas** (See also Indicator 6.3.1).

10.9.2 Where areas under **plantation** management regimes have been established after November 1994, and the **manager** or owner are directly or indirectly responsible for the conversion, they are established in accordance with Criterion 6.10.

# Appendix 1: FSC-BC Toolkit for Small Operations

## Introduction

The Criteria and Indicators under Principles 1-10 provide the specific certification requirements for a management unit. This appendix provides a framework for collecting necessary information, and identifying and addressing potential issues that may be associated with meeting Principles 6, 9 and 10. Alternative approaches may also be used, but following this framework will ensure the minimum requirements are met, and will help to minimize certification costs by providing the certifier with a well-organized and clear summary of information regarding how forest management plans are consistent with relevant portions of the standards.

The intent is that all of the basic inventory and assessment procedures can be completed by the average small operation manager. Only where significant environmental risks or exceptional values are identified at this stage, is the manager likely to require consultation with qualified specialists. Most of the information required should already have been collected to meet regulatory requirements for Crown woodlot tenures. Specific sources (including government agency contacts, web locations and/or qualified specialists) are provided for each category of information required. The necessities for more detailed inventories or assessments are limited in scope, and should normally be met through informal discussions with government or other local specialists. Some situations may require the hiring of qualified professionals (generally 0.5-2 days maximum). The flow chart in Figure 1 summarizes how the various parts of the framework fit together.

## Inventory and Assessments for Principles 6, 9 and 10

The inventory and assessment needs for Principle 6, 9 and 10 have been summarized in a series of questions organized into three tables. Table 1questions examine the characteristics of the management unit itself, and establish a landscape and regional context within which the management unit is located. The second series of questions in Table 2 determine if specific values are present on the management unit, and whether there are significant risks to those values. Answers to these questions provide the basic information necessary for determining what portions of Principles 6 and 10 apply to the management unit, and what may be required to meet those portions of the Principles that do apply.

Table 3 questions provide a simplified assessment of the presence or absence of High Conservation Value Forests as required under Principle 9 (i.e. a simplified HCVF assessment for Criterion 9.1). If the answers to all of the questions in Table 3 are clearly “NO”, there are no HCVFs present on the MU. Where the answer to any of the questions is clearly “YES”, then there may be HCVFs present on the MU, . Where the manager is unsure of the answer, the manager may wish to gather further information or consult with a qualified specialist to assist with making a decision.

Where the manager has recognized the presence of HCVFs, other parts of Principle 9 will apply to the MU. In this case, the manager should provide a description of the values present, the

management strategies that will be used to protect the HCVs, and how the values will be monitored to ensure they are protected. The management strategies should be precautionary, resulting in minimal risk to the HCVs. Figure 1 summarizes how the three tables fit within the overall framework.

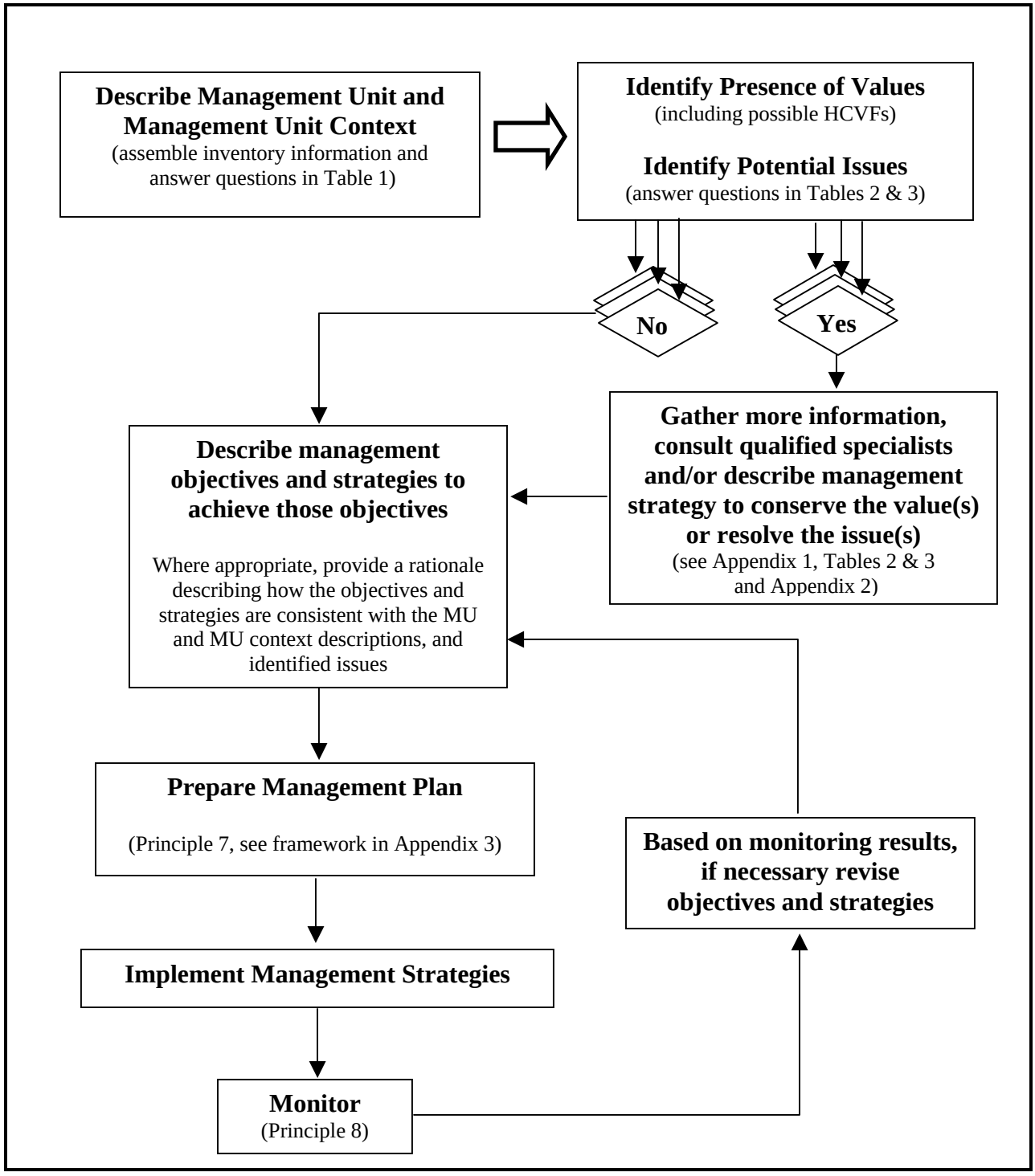


**Figure 1.** Flow chart describing simplified procedures for meeting inventory and assessment requirements for Principles 6, 9 and 10, and their relationship to requirements in Principles 7 and 8. Note that some questions/issues in Tables 2 and 3 may require gathering further information, while others may not.

**Table 1.** Questions related to the management unit (MU) and management unit context descriptions (information required to meet various aspects of Principles 6 and 9).

| # | Topic | Specific Question(s) | Information Sources |
|---|---|---|---|
| 1 | Ecosystem Classification | What BEC variant(s) are present in the MU?<br>In which ecosection(s) is the MU located? | Ministry of Sustainable Resource Management (MSRM) or Ministry of Forests (MoF) maps |
| 2 | Terrain Stability | Are there unstable or potentially unstable areas within the MU? (areas mapped P or U, or Class IV or V, or in the absence of Terrain Stability Mapping, areas with slopes >60%) | Terrain stability maps and assessments and/or TRIM topographic maps and slope data; MoF Regional terrain, hydrology and/or soil specialists |
| 3 | Biodiversity – wildlife habitat | Does the MU supply critical habitat for any Red- or Blue Listed Species, or Identified Wildlife Species? | COSEWIC and CDC; Identified Wildlife Guidebooks; http://srmwww.gov.bc.ca/atrisk/toolintro.html |
| 4 | Biodiversity – aquatic habitat | Does the MU contain or border any streams, lakes, wetlands or marine shorelines? If so, what classes of those features are present (see Appendix 2 Riparian Management)? | TRIM and Forest Cover maps; FPC Riparian Management Guidebook |
| 5 | Biodiversity – riparian areas | If the MU contains hydrologic features as described in Question #4, does the MU contain riparian areas that are critical for: maintaining stream channel or shoreline stability; protecting the hydrologic feature from sediment; for supplying large woody debris, shade or litterfall to streams; or providing riparian habitat for aquatic or terrestrial species (see Appendix 2 Riparian Management)? | Ministry of Water Land and Air Protection (MWLAP) fisheries specialists; Department of Fisheries and Oceans (DFO); MWLAP wildlife managers; fishwizard http://www.bcfisheries.gov.bc.ca/fishinfobc.html |
| 6 | Natural Disturbance Regimes – landscape level | What is the Natural Disturbance Type (NDT) of the management unit? What are the general characteristics of that NDT? (e.g., types of disturbances – fire, insects, wind; how do they affect stands, and how often are there stand-replacing disturbances, etc.) | FPC Biodiversity Guidebook; LMH 53 (2003) from http://www.for.gov.bc.ca/hfd/pubs/Lmh.htm ; MoF Regional Ecologist; local studies on disturbance regimes |
| 7 | Natural Disturbance Regimes – stand level | What are the specific stand types and structures that are typical of the natural disturbance regime that occurs on the MU (e.g., even-aged or mixed-aged stands, open or dense stands, many or few snags, pure stands or mixed spp. stands, etc.)? | FPC Biodiversity Guidebook; LMH 53 (see above); MoF Regional Ecologist; local studies on disturbance regimes |
| 8 | Land use context of the MU | What land use practices are present in the area surrounding the MU? (private land, protected areas, intensive forest management, other habitat reserves, communities) | MoF forest cover and/or 1:100,000 topographic maps showing ownership/ tenure information; management plans of nearby forest managers; airphotos; MWLAP wildlife managers; local conservation organizations |
| 9 | Planning context of the MU | Are there local and regional plans that have potential implications for the management unit? (e.g., Regional or Local Land Use Plans, Higher Level Plans (HLPs), Landscape Unit Plans (LUPs), Regional District or Municipal Official Community Plans(OCPs), interface fire/fuel management plans, species, ecosystem or habitat recovery plans, etc.). What are the implications of those plans? | MSRM Regional Planner; MoF District Planner; nearby Regional District or Municipal Planners |

**Table 2.** Questions related to identifying important values and potential risks to values that may be present on the management unit.

| # | Issue | Specific Question(s) | If the response is YES, then: | If the response is NO, then: |
|---|---|---|---|---|
| 1 | Representation in Protected Areas Provincially and Locally | Do any of the BEC units with more than 200 ha present in the MU have less than 10% in protected areas throughout BC? AND, less than 10% in the ecosection in which the MU is found? | If both responses are yes for any BEC unit, and the BEC unit is NDT 1 or 2, then >8% of the MU area within that BEC variant is reserved (Criteria 6.4).<br>If both responses are yes for any BEC unit, and the BEC unit is NDT 3 or 4, then >4% of the MU area within that BEC variant is reserved. Reserves in NDT 3 and 4 may be dynamic reserves.<br>Reserves established for other objectives (e.g., riparian protection, unstable terrain, permanent wildlife tree patches >2ha, habitat reserves) can be counted toward this requirement | If EITHER response is NO for a specific BEC unit, then there is not a minimum requirement for protected reserves in that BEC unit on the MU; however, other reserves may still be required to protect specific values. |
| 2 | Domestic, irrigation, community and high value fisheries watersheds | Does the MU contain, or include more that 50% of a domestic, irrigation, community or high value fisheries watershed? | Equivalent clearcut areas (ECAs) are maintained below 25%, or the manager provides confirmation by a qualified specialist that an increased ECA provides no threat to watershed integrity (Indicator 6.5.10). | No special requirements. |
| 3 | Terrain Stability Hazards | Are there unstable or potentially unstable terrain areas on the MU? (areas mapped P or U, or Class IV or V, or where no mapping is available, areas over 60% slope) | Prior to road constructions or harvesting in those areas, terrain stability field assessments are completed by qualified specialists, and the assessment recommendations are implemented (Indicator 6.1.3 and Criteria 6.5). | No special requirements. |
| 4 | Riparian protection | Does the MU contain streams, lakes, wetlands or marine shorelines, and/or associated riparian areas? | Implement riparian management that meets or exceed requirements of Indicator 6.5.12and Appendix 2. | No special requirements. |
| 5 | Red- and blue-listed species | Does the MU contain habitat of red- or blue-listed species? | Meet the requirements of Criteria 6.2, and consider designation of HCVF. | No special requirements. |
| 6 | Wildlife habitat | Does the MU contain other critical wildlife habitat? (e.g., ungulate winter range, old growth, etc.) | Establish management objectives and implement stand management strategies to maintain habitat values (Criteria 6.3). | No special requirements. |
| 7 | "Plantation" areas | Does the MU contain any plantations? (i.e. intensively managed areas, as defined by FSC-BC) | Determine if the plantations meet the requirements of Principle 10 and/or Criteria 6.10, and it they do not, adjust management strategies to be consistent with P | No special requirements. |

| # | Issue | Specific Question(s) | If the response is YES, then: | If the response is NO, then: |
|---|---|---|---|---|
| | | | 10 and Criteria 6.10. | |
| 8 | Restoration areas | Does the MU contain any restoration areas? (i.e., areas where previous management has resulted in conditions that are inconsistent with the FSC-BC standards) | Designate the areas as restoration zones and develop management strategies to restore those areas so they meet the FSC-BC standards (Indicator 6.3.1). | No special requirements. |
| Operations > 2400 ha | | If the management unit itself is a "low intensity MU", or in the case of "group certifications" a contiguous group of MUs (i.e. where MUs share a common boundary, count the aggregate area of those MUs), that exceed(s) 2400 ha in area, the following questions apply: | | |
| 9 | Seral Stage Distribution | Are the present or predicted seral stage distributions for each BEC variant(s) in the MU(s) and the applicable Landscape Unit (LU) significantly different (i.e. not compatible) with the estimated range of natural variation (RONV)? | Develop management strategies to maintain or restore seral stage distributions within the MU(s) to levels compatible with RONV; or to levels that assist the applicable LU to be compatible with RONV (Indicator 6.3.9). | Maintain of seral stage distributions that are compatible with RONV. |
| 10 | Connectivity | Are there regional or landscape connectivity issues associated with the MU(s)? (e.g., identified regional or landscape connectivity corridors) | Develop strategies to maintain connectivity (e.g., maintain contiguous mature and old forest corridors through space and time, ensure well planned stand level retention in openings, Indicator 6.3.9). | No special requirements. |
| 11 | Patch Size Distribution | If located within NDT 1 or NDT 2, are present and predicted patch sizes inconsistent with guidelines in the FPC Biodiversity Guidebook? | Develop strategies to meet patch size objectives, especially for meeting interior habitat requirements for species associated old or mature forest types (e.g., caribou, Indicator 6.3.9). | Maintain recommended patch size distributions. |

**Table 3.** Questions to determine whether any of the six categories of High Conservation Value Forests are present on the management unit (table derived from FSC Canada High Conservation Value checklist (for the full checklist see the FSC Canada standards for the Boreal 2003).

| Question | Rationale | Possible Information Sources | Guidance on assessing HCV | Potential Management Strategies |
|---|---|---|---|---|
| ***Category 1) Forest areas containing globally, nationally or regionally significant concentrations of biodiversity values.*** | | | | |
| 1. Does the MU contain critical habitat for regionally or provincially significant species, or areas with concentrations of species? | Addresses wildlife habitat requirements critical to maintaining population viability (regional "hot spots"). | MWLAP, MoF, MSRM, local experts and traditional knowledge<br>Local groups involved in wildlife conservation, Ducks Unlimited http://www.ducks.ca/ Canadian Bird Studies http://www.bsc-eoc.org/iba/IBAsites.html | This may include habitat for Identified Wildlife species, high value ungulate winter range, migration corridors, wetlands or riparian areas with exceptional species diversity, etc. | Habitat reserves, designated habitat management areas with specific habitat management measures (e.g., cover constraints, snag retention, access management, etc.) |
| 2. Is the MU located adjacent to a protected area or other designated Wildlife Management Area, such that wildlife species occurring in that unit depend on habitat in the MU? | Ensures that management of the MU does not undermine conservation measures in adjacent areas. | MSRM and MWLAP<br>Local protected area and Wildlife Management Area managers<br>Local wildlife experts | Where the MU is adjacent to or associated with a PA or WMA, review the management objectives of that area and/or discuss those objectives with the PA/WMA managers to understand how those may relate to management in the manager's MU. | Habitat reserves, designated habitat management areas with specific habitat management measures (e.g., cover constraints, snag retention, access management, etc.) that enhance the conservation objectives of the nearby PA/WMA |
| *Only applies if the management unit is larger than 2400 ha; or in the case of group certification, a group of contiguous MUs are larger than 2400 ha.*<br>***Category 2) Forest areas containing globally, regionally or nationally significant large landscape level forests contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.*** | | | | |

| Question | Rationale | Possible Information Sources | Guidance on assessing HCV | Potential Management Strategies |
|---|---|---|---|---|
| 3. Does the MU, or group of MUs, form a portion of a large unfragmented forest patch that is rare within the surrounding landscape or region? | Identifies large remnant forest patches where large scale unfragmented forests are rare (fragmented by roads and/or other permanent infrastructure) | Global Forest Watch intactness mapping:<br>Forest inventory data provided by the forest industry or government.<br>Regional and local experts | Is the MU, or group of MUs, part of one of the last few remaining largest patches of unfragmented forest in the region?<br>In highly fragmented forest regions these could include intact forest patches as small as 10,000 ha, while in low or moderately fragmented areas this is more likely to include 25,000 to 50,000 ha forest patches. | Silvicultural systems that minimize fragmentation and maintain continuous forest (e.g., partial cutting), access management strategies to minimize fragmentation (e.g., road rehabilitation, access controls); harvesting strategies to minimize fragmentation (e.g., large openings, and long periods between entries) |
| ***Category 3) Forest areas that are in or contain rare, threatened or endangered ecosystems.*** | | | | |
| 4. Does the MU contain naturally rare or unique ecosystem types, species at risk, or potential habitat of species at risk? | Ensures the maintenance of vulnerable and/or irreplaceable elements of biodiversity. | BC Conservation Data Centre – CDC: http://srmwww.gov.bc.ca/cdc/<br>Committee on the Status of Endangered Wildlife in Canada - COSEWIC: http://www.cosewic.gc.ca/index.htm<br>MWLAP | Ecosystems that are naturally rare or unique, and ecosystems or species and their habitats that have been designated as rare, threatened or endangered by provincial or national legislation. | Habitat reserves, designated habitat management areas with specific habitat management measures (e.g., cover constraints, snag retention, access management, etc.) that protect rare types and are consistent with recovery planning for red- or blue-listed spp. |
| 5. Are there ecosystems or forest types within the MU that have significantly declined, or are projected to significantly decline in the surrounding area? | Ensures the protection of ecosystems and forest types that are being lost due to development in the surrounding area, if they are found in the MU | MWLAP, MSRM<br>Suitable forest or vegetation inventories (PEM/TEM)<br>Regional and local experts<br>BC Conservation Data Centre – CDC: http://srmwww.gov.bc.ca/cdc/ | This category includes ecosystems and forest types that are becoming rare due to forest management and/or conversions of forest land to agriculture or other uses (e.g., old forests, riparian forests, cottonwood forests, swamp forests, deciduous mixed forests). | Reserves or the use of silvicultural systems that conserve the conservation attributes of those ecosystems (e.g., seral stage constraints, partial cutting to maintain mature and/or old stands, snag retention) |

| Question | Rationale | Possible Information Sources | Guidance on assessing HCV | Potential Management Strategies |
|---|---|---|---|---|
| ***Category 4) Forest areas that provide basic services of nature in critical situations (e.g., watershed protection, erosion control).*** | | | | |
| 6. Is the MU located in a "fire interface" zone for a community, such that the MU potentially provides a critical barrier to destructive fires? | Ensures that fuel management in MUs in fire interface areas considers threats of wildfires spreading into populated areas | MoF, Local emergency fire planning | Consult with MoF or local community emergency planning groups regarding the mapping of fire interface zones. | Silvicultural systems and harvesting methods that are compatible with fuel reduction; access management to reduce ignition risk |
| ***Category 5) Forest areas fundamental to meeting basic needs of local communities (e.g., subsistence, health).*** | | | | |
| 7. Is the MU located within a watershed that provides the primary source of drinking water for a community? | Ensures maintenance of quality, quantity and timing of flow for community drinking water sources | Land and Water BC, MWLAP, MoF<br>Local communities | The potential impact to a community water supply is such that changes to water quality may affect people's health, or changes to flow may affect ability of people to meet their basic needs for water. | Increased riparian reserves, minimize road density, elimination of sediment sources, access management to reduce the spread of disease, minimizing ECA |
| 8. Are there local communities who depend on forests within the MU for meeting fundamental needs other than water? | Ensures protection of forest-based resources that are fundamental to meeting communities' needs | Consultation with the communities themselves is the most important way of collecting information.<br>If available, literature sources such as reports and papers on local traditional land uses and economic profiles can be useful sources of information. | Consider food, medicine, fodder, fuel, building and craft materials and income – but, to be an HCVF, the forest must be **fundamental** to meeting the local communities' needs.<br>There is a distinction being made between the use by individuals (i.e., traplines) and where use of the forest is fundamental for local communities (could include visual values in situations where tourism is the main industry). | Reserves on key sites, silvicultural systems and harvesting methods that are compatible with maintaining the values (e.g., mushroom or berry production, large cedar trees, partial cutting for visuals ), harvest scheduling to respect other uses |
| ***Category 6) Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).*** | | | | |
| 9. Is the traditional cultural identity of the | Ensures the identification of | Consultation with the communities themselves | Generally will apply to First Nations communities in the BC context, but | Reserves on key sites, silvicultural systems and harvesting methods that |

| Question | Rationale | Possible Information Sources | Guidance on assessing HCV | Potential Management Strategies |
|---|---|---|---|---|
| local community particularly tied to a specific forest area in the MU? | culturally important sites | is the most important way of collecting information.<br><br>If available, literature sources such as reports and papers on local traditional land uses and economic profiles can be useful sources of information. | could relate to other communities in some situations.<br><br>The difference between having some significance to cultural identity and being critical will often be a difficult line to draw; however, some key points to consider are:<br><br>1. Will changes to the forest potentially cause an irreversible change to the culture?<br><br>2. Is the particular forest in question more valuable than other forests?<br><br>To be an HCV, the forest must be **critical** to the culture.<br><br>For FSC certification **all** identified values must be addressed even if they are not critical, but will be dealt with under other principles. | are compatible with maintaining the values, harvest scheduling to respect other uses |

## References and Information Sources

*See Appendix D in Main Standards for sources; additional local information sources will be further developed*

# Appendix 2: Requirements for Riparian Management on Small Operations

The following sections describe the FSC-BC approach and requirements for riparian management for Small Operations under Indicator 6.5*bis*.1.

## Introduction

Riparian areas are ecosystems that occur adjacent or in the immediate vicinity of **hydrologic features** (e.g., streams, lakes, wetlands, estuaries). Riparian areas are influenced by the hydrologic feature (e.g., flood plains), and/or have the potential to directly impact the hydrologic feature (e.g., steep gully walls that supply sediment). Riparian forests protect hydrologic features by stabilizing stream banks and shorelines, and by filtering sediment that may otherwise reach the water body. Riparian forests are also essential to maintaining aquatic habitat for fish and other aquatic life. Riparian forests supply large logs to the stream channel to create pools and other habitat, they provide shade to regulate water temperatures, and they supply food for aquatic life through litterfall. Riparian forests and associated flood channels and wetlands are also important habitat to many species, including amphibians (e.g., salamanders, frogs), mammals (e.g., bears, moose, beaver) and many bird species (e.g., great blue herons, wood ducks, songbirds). The intent of the riparian requirements is to ensure these riparian functions are maintained along all waterbodies.

## Describing and Classifying Hydrologic Features

The first step in riparian management is to identify, map and classify the **hydrologic features** present on the management unit. This is also a basic requirement under the Forest Practices Code (FPC). The FSC-BC classification system for hydrologic features is based on the BC FPC classification; however, it groups some FPC classes and splits some others.

Although ideally the manager would map and classify all hydrologic features and riparian areas at the strategic planning stage, this is NOT a requirement. At the strategic planning stage the manager is only required to use existing information (e.g., TRIM maps, existing fish inventories, airphotos) to estimate amount and location of various hydrologic features. Actual field mapping and classification of waterbodies and riparian areas can be finalized at the operational level during road and cutblock layout. As more detailed operational information becomes available, it can be used to update the strategic information.

The classification for streams, wetlands, lakeshores and marine shorelines is provided in Table 1. These are adapted from the BC Forest Practices Code Guidebooks for Riparian and Lakeshore Management (BC MoF 1995a and 1995b) and the Clayoquot Sound Scientific Panel 1995. The definitions of S1a, S1b, S2, S3 and S4 classes are the same as the FPC; however, the specifications for riparian forest retention have been modified. FPC S5 and S6 stream classes have been subdivided to better account for streams potentially affecting fish-bearing reaches and those present in domestic watersheds, as follows:

- S5a streams include large non-fish-bearing streams, moderate-to-large streams likely to influence fish-bearing streams, and moderate-to-large streams in non-community domestic watersheds;

- S5b streams include moderate sized non-fish-bearing, non-community watershed streams that are: unlikely to influence fish-bearing streams, and not located in domestic watersheds;
- S6a streams include small non-fish-bearing, non-community watershed streams that are: likely to influence fish-bearing streams, or located in domestic watersheds.
- S6b streams include very small non-fish-bearing, non-community watershed streams, and small non-fish-bearing streams that are: not likely to influence fish-bearing streams, or not located in domestic watersheds.

## Riparian Area Management Measures

As utilized in the BC FPC, riparian management includes consideration of both riparian reserve zones and riparian management zones. Because the width, distribution and potential importance of riparian areas vary from waterbody to waterbody, using a single width or retention level for all situations is inappropriate. Where streams are deeply incised in gullies or canyons, the riparian area may be relatively narrow, while streams that are in broad u-shaped valleys may have wide floodplains and the riparian areas may coalesce with valley bottom wetlands. In drier areas, coarse textured glaciofluvial terraces may extend right up to lakeshores or wetlands, leaving essentially no riparian areas on one side, while there may be a wide zone of wet soils and riparian vegetation on the other side. However, on average, a minimum level of retention will likely be required to maintain riparian values across a landscape.

Hence the minimum requirements provided in Table 1 are intended to be applied by the manager in a manner that reflects the distribution of riparian values and risks to those values within the management unit. There is flexibility to utilize whatever combination of reserve zones and management zones that are appropriate to protecting the values present, as long as the average overall retention levels meet or exceed the minimum retention levels specified in Table 1. When applying riparian management measures, the manager should consider factors such as:

- channel and bank stability,
- terrain stability and other sediment sources,
- supply of large logs to stream channels,
- fish habitat,
- stream temperature requirements,
- the supply of nutrients from litterfall, windthrow,
- riparian habitat for other species, and
- other natural disturbance factors in the riparian area.

For example, deployment may include wide riparian reserve zones along salmon spawning stream reaches or wide floodplains, and partial cutting management zones in wetter riparian areas without flooding, while canyons or dry terraces may have little or no reserve or management zones (see example in Figure 1). The riparian retention budgets in Table 1 are minimums – where risks to aquatic ecosystem values are high (e.g., unstable terrain in a community watershed), or riparian values are critical (e.g., high value salmon spawning habitat or red-listed species habitat), riparian protection may have to exceed the minimum budgets to adequately protect the values present.

The manager should use his/her local knowledge and experience to develop riparian management measures. If they are available, the manager should also consult other studies such as riparian or

watershed or channel assessments, fisheries or wildlife habitat surveys, TEM/PEM mapping, windthrow assessments or terrain stability mapping. For further information on the kinds of issues to consider when implementing riparian management see the Principle 6 Riparian Annex in the main FSC-BC standards, or the EBM Hydroriparian Planning Guide[1] (especially for coastal areas). If the manager is uncertain regarding the identification of specific riparian values, risks to aquatic values or measures necessary to protect hydrologic features, the manager may wish to consult with qualified specialists for further guidance.

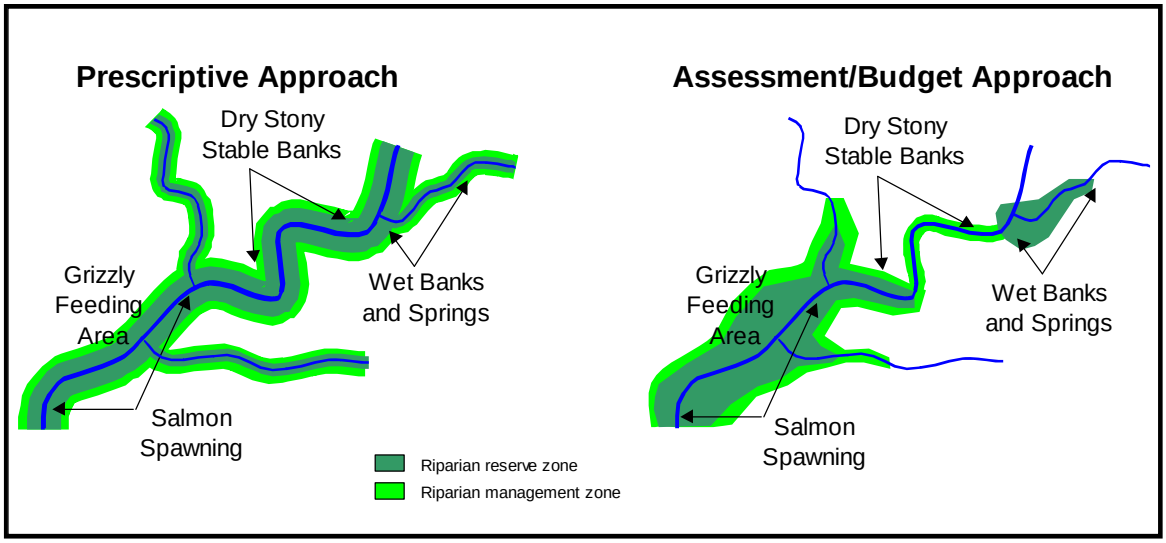


**Figure 1. Schematic diagram of riparian reserve zone and management zone deployment under the FSC-BC Small Operations approach – note that reserve and management zones vary in width depending on need, and may be zero in some stream reaches, as long as they meet the minimum budgets overall, and maintain or restore riparian functions and values.**

Where the manager believes that the management unit includes hydrologic features with little or no riparian values, and where those limited values can be protected without meeting the minimum budget requirements, this must be confirmed by qualified a specialist(s) in hydrology and riparian biology through a review of the manager's proposed riparian management measures, or an assessment by the qualified specialist(s). Specifically this would require a written confirmation and/or report by an hydrologist/biologist, specifying what reduced measures would be required for protection of riparian values within the management unit, and a rationale for not meeting the minimum requirements (maximum 0.5 to 2 day of qualified specialist's time). The most likely reason for not requiring the minimums would be the presence of a minimal amount of actual riparian habitats along the stream-length or lakeshore within the management unit, usually accompanied by extensive riparian protection of critical riparian areas on lands adjacent to the management unit.

The management plan must include a description of the measures to be employed and a rationale for how and where they will be implemented (see also Principle 7 and *FSC BC Guidance* - Guidance Material on a management plan for Small Operations).

[1] Suggest sources of information and how to obtain them are listed in the references at the end of the Annex.

**Table 1. Minimum riparian requirements for Small Operators except where an hydrologist/ biologist recommend(s) alternative measures.**

| Stream Class.[1] | Definition (fish presence, watershed status, stream width, stream class[1]) | Riparian budget minimums[2,4] (RRZ/RMZ[3] widths and retention levels will vary depending on deployment) |
|---|---|---|
| **S1a** | Fish present or community watershed, >100 m wide | Minimum budgets for streams in these classes:<br>RRZ – 6 ha/km<br>RMZ – 6 ha/km with 50% BA retention<br>(30 m reserve and 30 m 50% retention mgmt. zone or other combinations that result in equivalent retention) |
| **S1b** | Fish present or community watershed, 20-100 m wide | |
| **S2** | Fish present or community watershed, 5-20 m wide | |
| **S3** | Fish present or community watershed, 1.5-5 m wide | Minimum budgets for streams in these classes:<br>RRZ – 4 ha/km<br>RMZ – 4 ha/km with 50% BA retention<br>(20 m reserve and 20 m 50% retention mgmt. zone, or other combinations that result in equivalent retention) |
| **S4** | Fish present or community watershed, <1.5 m wide | |
| **S5a** | Fish absent, not in community watershed, >3 m wide, and:<br>a) in a domestic watershed, and/or<br>b) ≤500 m upstream of fish-bearing stream, and/or<br>c) >10 m wide | Minimum budgets for streams in this class:<br>RRZ – 2 ha/km<br>RMZ – 4 ha/km with 50% BA retention<br>(10 m reserve and 20 m 50% retention mgmt. zone or other combinations that result in equivalent retention) |
| **S6a** | Fish absent, not in community watershed, 0.5-3 m wide in the interior (1-3 m on the coast), and:<br>a) in a domestic watershed, and/or<br>b) ≤250 m upstream of fish-bearing stream | |
| **S5b** | Fish absent, not in community watershed, 3-10 m wide, non domestic watershed, and >500 m upstream of fish-bearing stream | Minimum budgets for streams in this class:<br>NDTs 1,2 and 4:<br>RMZ – 3 ha/km with 30% BA retention<br>NDT 3<br>RMZ – 3 ha/km with 10% BA retention<br>(15m mgmt. zones with 30% and 10% retention respectively or other combinations that result in equivalent retention) |
| **S6b** | Fish absent, not in community watershed, and:<br>a) 0.5-3 m wide and not in a domestic watershed and >250 m up-stream of fish-bearing stream, or<br>b) < 0.5 m wide in the interior (< 1 m in the coast)o | |

[1] S1 – S4, W1 – W5, L1 – L4: classification according to BC Forest Practices Code Riparian Management Area Guidebook 1995; S5a, S5b, S6a and S6b as defined above.

[2] Riparian budgets are applied at the level of the Small Operator Management Unit, budgets and stream lengths are calculated and applied to forested portions of the management unit (i.e. not in AT or ESSF parkland); where stream densities are high and there is overlap between RRZs or RMZs, the budgets should be reduced by an amount equivalent to the overlap (e.g., on wet portions of the coast); if an *Integrated Riparian Assessment* has been completed, the budgets are applied at the level of a **riparian assessment unit** (generally watersheds or other **landscape level** ecological units of 5,000 – 50,000 ha).

[3] RRZ – **riparian reserve zone**; RMZ – **riparian management zone**.

[4] Budget equivalencies for streams can be calculated by multiplying the ha/km by 5 to get the equivalent width of zone in metres (e.g., 6 ha/km ~ 30 m on each side of a stream). The intent of the flexibility is also to allow limited trade-off between the reserve and management zones and between classes, as long as the "equivalent total retention" is comparable (e.g., 10m of reserve zone is equivalent to 20m of management zone at 50% retention); however, total reserve zone area should never be below 80% of the budget for any specific class (i.e. conversion of all reserves zones to management zones is not acceptable).

**(table continued on next page)**

**Table 1 (cont'd). Minimum riparian requirements for Small Operators except where an hydrologist/ biologist recommend(s) alternative measures.**

| Wetland Class[1] | Definition (wetland type, wetland class[1]) | Wetland Riparian Budget Minimums[2,4] (RRZ/RMZ[3] widths and retention levels will vary depending on deployment) |
|---|---|---|
| **W1-5** | Wetlands >1 ha, wetlands 0.25-1 ha in selected BEC **variant**s, wetland complexes and other wetlands with fish | Minimum budgets for wetlands in this class:<br>RRZ – 2 ha/km of wetland perimeter<br>RMZ – 1.5 ha/km with 30% BA retention |
| **Other Wetlands** | Unclassified wetlands without fish | Minimum budgets for wetlands in this class:<br>RMZ – 1.5 ha/km with 30% BA retention |

| Lakeshore Class[1] | Definition (lake size and type, lakeshore class[1]) | Lakeshore Riparian Budget Minimums[2,4] (RRZ/RMZ[3] widths and retention levels will vary depending on deployment) |
|---|---|---|
| **L1-4** | Lakes >1 ha, lakes 0.25-1 ha in selected BEC **variant**s and other lakes with fish | Minimum budgets for lakes in this class:<br>LRZ – 1.5 ha/km of lakeshore<br>LMZ – 1.5 ha/km with 30% BA retention |
| **Other Lakeshores** | Unclassified lakes without fish | Minimum budgets for lakes in this class:<br>LMZ – 1.5 ha/km with 30% BA retention |

| Marine Shoreline Class[1] | Definition (marine shoreline class[1]) | Marine Shoreline Riparian Budget Minimums[2,4] (RRZ/RMZ[3] widths and retention levels will vary depending on deployment) |
|---|---|---|
| **Open water beaches and low shorelines** | Shores with beaches (e.g., shores of unconsolidated cobbles or sand) or low shores without beaches (bluffs < 5m) adjacent to open waters | Minimum budgets for marine shorelines in this class:<br>MRZ – 5 ha/km of marine shore<br>MMZ – 3 ha/km with 50% BA retention |
| **Open water bluffs and cliffs** | Shores without beaches and with bluffs >5m or steep bedrock cliffs adjacent to open waters | Minimum budgets for marine shorelines in this class:<br>MRZ – 2 ha/km of marine shore<br>MMZ – 1.5 ha/km with 50% BA retention |
| **Protected waters** | Protected water lagoons or estuaries | Minimum budgets for marine shorelines in this class:<br>MRZ – 4 ha/km of marine shore<br>MMZ – 1.5 ha/km with 50% BA retention |

[1] Riparian wetland classes (W1-5) and riparian lakeshore classes (L1-4) are based on FPC classes as defined in the BC Forest Practices Code Riparian Management Area Guidebook 1995; marine shoreline classes adapted from Clayoquot Sound Scientific Panel 1995.

[2] Riparian budgets are applied at the level of the Small Operator Management Unit, budgets and stream lengths are calculated and applied to forested portions of the management unit (i.e. not in AT or ESSF parkland); where stream densities are high and there is overlap between RRZs or RMZs, the budgets should be reduced by an amount equivalent to the overlap (e.g., on wet portions of the coast); if an *Integrated Riparian Assessment* has been completed, the budgets are applied at the level of a **riparian assessment unit** (generally watersheds or other **landscape level** ecological units of 5,000 – 50,000 ha).

[3] RRZ: **riparian reserve zone**; RMZ: **riparian management zone**; LRZ: **Lakeshore Reserve Zone**, LMZ: **lakeshore management zone**; MRZ: **marine shore reserve zone**, MMZ: **marine shore management zone.** Marine shores are defined as the seaward edge of forest vegetation, and MRZs and MMZs are measured inland from that point.

[4] Budget equivalencies for wetlands, lakeshores and marine shores can be calculated by multiplying the ha/km by 10 to get the equivalent width of zone in metres (e.g., 2 ha/km ~ 20 m along the edge of the feature). The intent of the flexibility is also to allow limited trade-off between the reserve and management zones and between classes, as long as the "equivalent total retention" is comparable (e.g., 10m of reserve zone is equivalent to 20m of management zone at 50% retention); however, total reserve zone area should never be below 80% of the budget for any specific class (i.e. conversion of all reserves zones to management zones is not acceptable).

## Sources of Further Information:

**FPC Guidebooks** – available at:
http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Guidetoc.htm

BC Ministry of Forests and BC Ministry of Environment, Lands and Parks. 1995. The Riparian Management Area Guidebook. MoF and MELP. Victoria, BC.

BC Ministry of Forests and BC Ministry of Environment, Lands and Parks. 1996. Channel Assessment Procedure Guidebook and Field Guidebook. MoF and MELP. Victoria, BC

BC Ministry of Forests and BC Ministry of Environment, Lands and Parks. 1999. Coastal Watershed Assessment Procedure Guidebook (CWAP): Interior watershed assessment procedure guidebook (IWAP) – second edition. MoF and MELP. Victoria, BC.

BC Ministry of Forests and BC Ministry of Environment, Lands and Parks. 1996. Lake Classification and Lakeshore Management Guidebook: Nelson Forest Region. MoF and MELP. Victoria, BC.

Hydroriparian Planning Guide. 2004. Prepared by the Hydroriparian Planning Guide Work Team for the Coast Information Team. This report is available from: http://www.citbc.org under CIT reports and data.

## Other References

BC Ministry of Forests and BC Ministry of Environment, Lands and Parks. 1998. Riparian assessment and prescription procedures. Watershed Restoration Program Tech. Circular No. 6. MoF and MELP. Victoria, BC

Carver, M. and D. Putt 1999. Channel assessment and sediment source review with rehabilitation prescriptions - Ross, North Aylmer, and South Aylmer Creeks, Queen's Bay Area. Unpubl. report for Meadow Creek Cedar Ltd. Nelson, BC. 23pp. Appds.

Carver, M. 2001. Riparian Forest Management for Protection of Aquatic Values: Literature Review and Synthesis. Unpubl. report for FSC-BC. Nelson, BC. 48 pp.

Clayoquot Sound Scientific Panel. 1995. Sustainable Ecosystem Management in Clayoquot Sound: Planning and Practices. Report 5, Province of BC. Victoria, BC. 296pp. Appds.