Forest Stewardship Council®

Intact Forest Landscapes Guidance for Forest Managers

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Guideline

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The Forest Stewardship Council® (FSC) is an independent, not for profit, non-government organization established to support environmentally appropriate, socially beneficial, and economically viable management of the world's forests.

FSC's vision is that the world's forests meet the social, ecological, and economic rights and needs of the present generation without compromising those of future generations.

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1 Preamble

1.1 Context and Objectives

Principle 9 requires extra safeguards and extra levels of protection, additional to those already provided under other Principles and Criteria, by requiring:

- Greater efforts to identify and assess High Conservation Values (HCVs) including environmental and social values not covered elsewhere in the Principles and Criteria;
- Respect the right to Free, Prior and Informed Consent (FPIC) of affected rights holders;
- Engagement with Indigenous Peoples, local communities, stakeholders and experts;
- Management strategies that include, at times, full protection; and
- Rigorous monitoring to ensure the effectiveness of the management strategies and the maintenance, enhancement and / or restoration of HCVs.

This Guidance applies to countries with IFLs:

Angola, Argentina, Australia, Belize, Bhutan, Bolivia, Brazil, Brunei, Cambodia, Cameroon, Canada, Central African Republic, Chile, China, Colombia, Congo DRC, Costa Rica, Cote d'Ivoire, Dominican Rep, Ecuador, Equatorial Guinea, Ethiopia, Finland, French Guiana, Gabon, Georgia, Guatemala, Guyana, Honduras, India, Indonesia, Japan, Kazakhstan, Laos, Liberia, Madagascar, Malaysia, Mexico, Mongolia, Myanmar, New Zealand, Nicaragua, Nigeria, Norway, Panama, Papua N Guinea, Paraguay, Peru, Philippines, Repl. Congo, Russia, Solomon Islands, Suriname, Sweden, Tanzania, Thailand, Uganda, United States, Venezuela and Vietnam.

Aligned with the enhanced protection for HCVs, this guide is written for forest managers and clarifies the specific requirements for the identification, management planning and activities, and monitoring of Intact Forest Landscapes (IFL) in FSC certified forests. It can also be useful to SDGs in their development of Indicators for IFL in National Forest Stewardship Standards.

The management of IFLs shall conform with national indicators based on FSC-STD-60-004 *International Generic Indicators* and be consistent with other developments in the FSC system such as those related to Free Prior and Informed Consent (FPIC) with Indigenous Peoples and local communities with legal or customary rights and payments for ecosystem services as described in FSC-PRO-30-006 *Ecosystem Services Procedure*.

1.2 Scope

This guide is written for forest managers and aims to clarify the specific requirements for the identification, management planning, operations, monitoring and restoration of Intact Forest Landscape (IFLs) in FSC certified forests. This guide describes how forest managers of FSC certified forests should:

- Identify and assess IFLs;
- Engage with Indigenous Peoples, local communities and other stakeholders;
- Develop and implement strategies for protecting core areas;

- Ensure consistency with the requirements the International Generic Indicators: and
- Monitor the impacts of forest operations in IFLs and core areas;

1.3 The HCV Normative Frameworks

This Guidance is part of a broader HCV Normative Framework that includes FSC-GUI-60-009 *Guidance for Standard Development Groups: Developing National High Conservation Value Frameworks*, the FSC-GUI-60-009a *Template for National High Conservation Value Frameworks* and the FSC-GUI-30-009 *High Conservation Value Guidance for Forest Managers*. Once completed, National HCV Frameworks are normative documents where they exist.

This Guidance is part of the broader normative framework as follows:

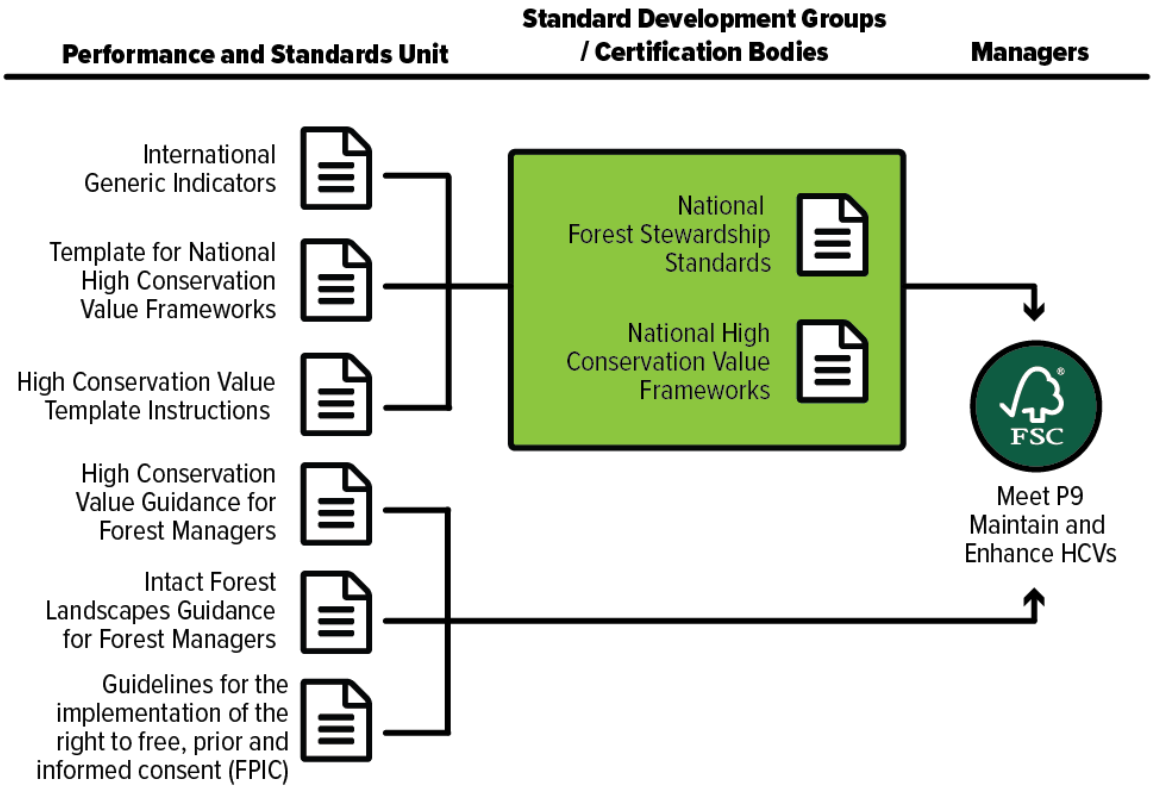


Figure 1: FSC Normative Framework aligned with the HCV Framework

1.4 FSC Network Roles and Responsibilities

A number of different documents are used to provide Guidance across the FSC Network on the effective implementation of Principle 9, including the development of National HCV Frameworks, as follows:

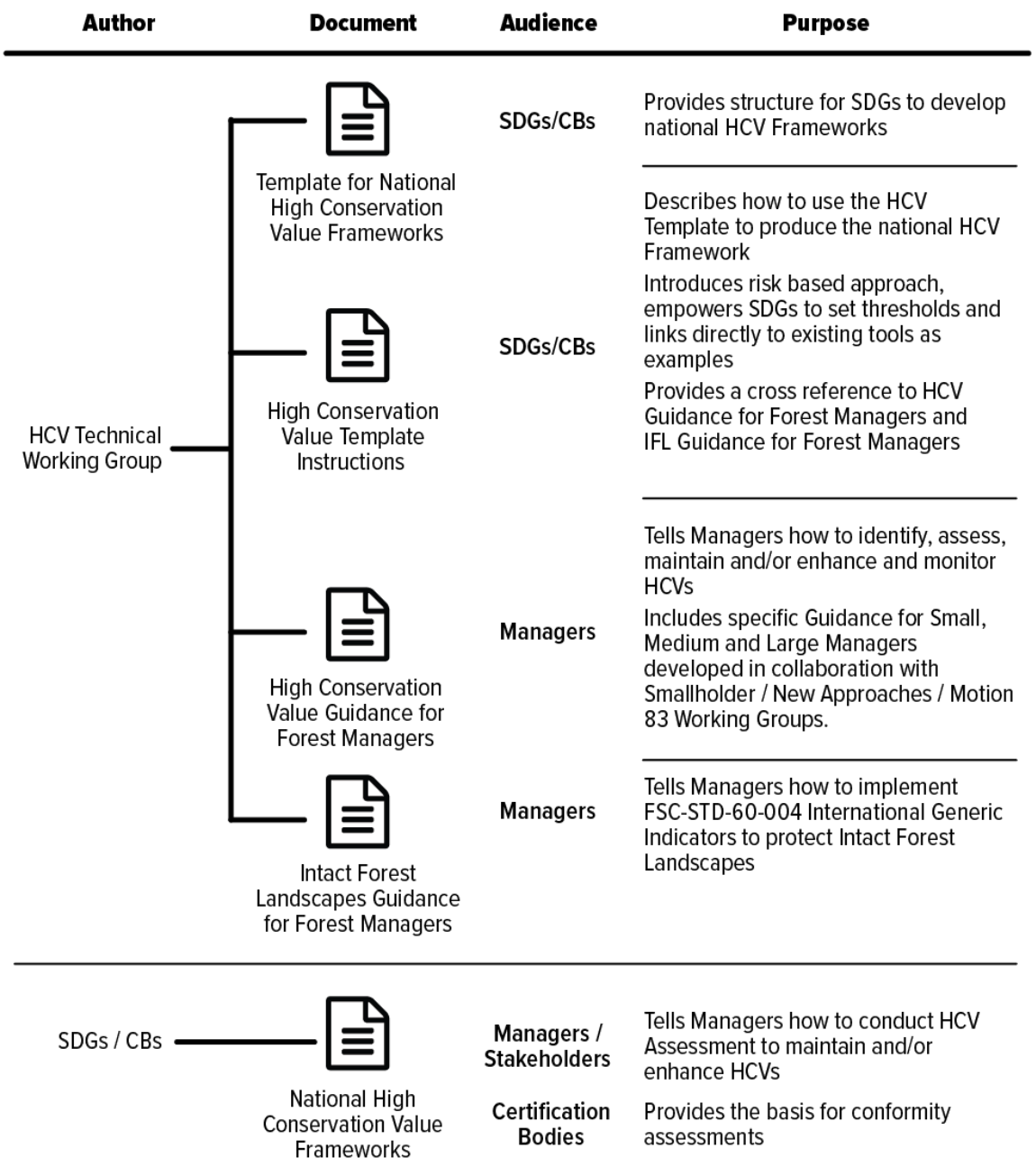


Figure 2: HCV Guidance and Support Documents

The identification, protection and enhancement of HCVs are shared responsibilities across the FSC Network. Table 3 summarizes the complementary roles and responsibilities in developing and using the HCV Frameworks.

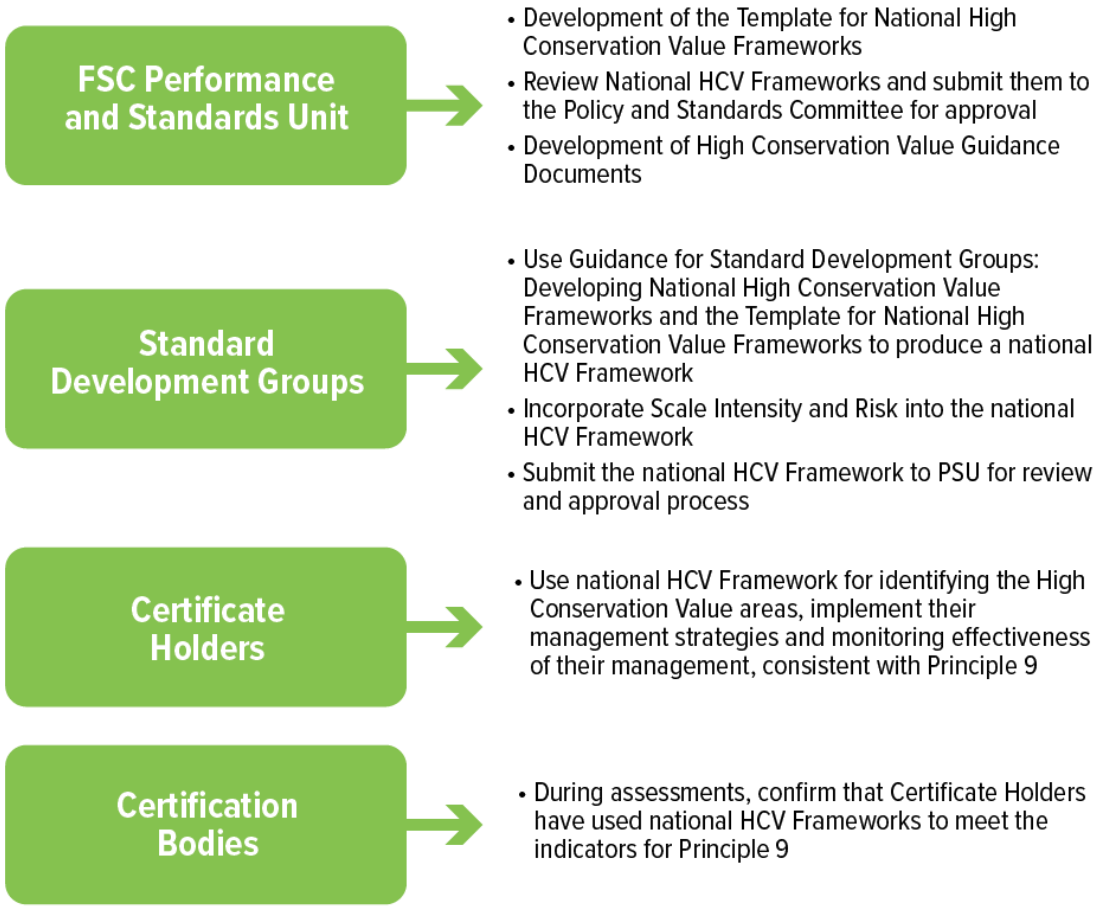


Figure 3: Complementary roles in developing and using HCV Frameworks

1.5 Normative Aspects of IFL Guidance

FSC frequently produces guidance material in support of its Standards, Policies and Procedures, often referencing or even quoting those sources. For the sake of clarity, any FSC Policy, Standard or Procedural requirement referenced or quoted in a guidance document retains its normative status.

Orange boxes contain normative language from the FSC's Principles and Criteria and International Generic Indicators.

This guidance is, by definition, informative and not normative. However, in order to maintain consistency across the global network, and to ensure that Standards Developers and Managers understand their respective responsibilities, in the context of HCVs the following elements are normative:

- Standards Developers shall complete National HCV Frameworks;
- Standards Developers shall consider FSC's HCV Guidance when developing their National HCV Framework; and
- Forest Managers shall meet the requirements of the approved National HCV Framework, as included in the approved national standard.

1.6 Effective Date and Validity Dates

Approval date	6th August 2019
Publication date	10th January 2020
Effective date	10th January 2020
Period of validity	Until replaced or withdrawn

2 Background to Intact Forest Landscapes

2.1 Support for HCV Protection Throughout the FSC's Principles and Criteria

PRINCIPLE 9: HIGH CONSERVATION VALUES

The Organization* shall* maintain and/or enhance the High Conservation Values* in the Management Unit* through applying the precautionary approach*.

The HCV methodology is set out in Criteria 9.1 to 9.4. Support for the identification, assessment, management and monitoring of ecological and cultural HCVs are established throughout the FSC's Principles and Criteria, as summarized in Figure 4.

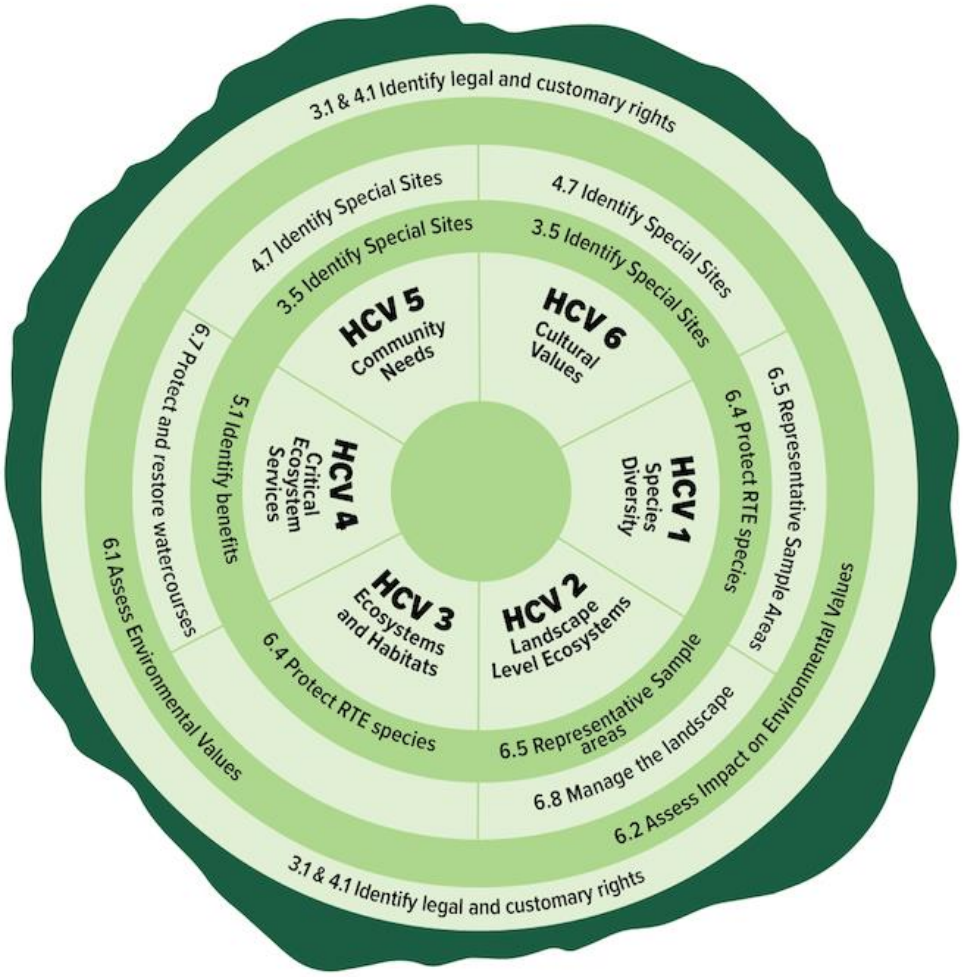


Figure 4: Support for HCV Protection throughout the FSC's Principles and Criteria

2.2 Intact Forest Landscapes

Intact Forest Landscapes (IFLs) are the remaining large unfragmented areas of forest, undisturbed by roads or other significant human infrastructure. IFLs are unbroken expanses of natural forest ecosystems greater than 500 km^2 that may contain non-forested areas.

Intact Forest Landscape

A territory within today's global extent of forest cover which contains forest and non-forest ecosystems minimally influenced by human economic activity, with an area of at least 500 km2 (50,000 ha) and a minimal width of 10 km (measured as the diameter of a circle that is entirely inscribed within the boundaries of the territory).

Being the last remaining large forested areas unfragmented in the world, IFLs are valued for their environmental, social, and intrinsic worth. Ninety percent of the world's remaining IFLs are concentrated in only 11 countries. Just three of these - Canada, Russia and Brazil - contain approximately 65% of the world's entire IFL area. In response to the declining abundance of IFLs, the FSC membership widely supported Policy Motion 65 at the 2014 General Assembly. As a result, protecting IFLs became a goal within the FSC system.

This Guidance provides direction to forest managers for the identification, assessment and maintenance of IFL core areas to ensure consistency with the International Generic Indicators.

2.3 Indigenous Cultural Landscapes

Recognizing that many IFLs occur within forests that are of tremendous interest to, or occupied by, Indigenous Peoples', this guidance also describes Indigenous Cultural Landscapes.

Indigenous Cultural Landscapes

Indigenous Cultural Landscapes are living landscapes to which Indigenous Peoples attribute social, cultural, environmental and economic value because of their enduring relationship with the land, water, fauna, flora, and spirits and their present and future importance to cultural identity.

An ICL is characterized by features that have been maintained through long term interactions based on land-care knowledge and adaptive livelihood practices. They are landscapes over which Indigenous Peoples exercise responsibility for stewardship.

Meeting the requirements of Principle 3 means identifying Indigenous Cultural Landscapes (ICLs) and the values that the Indigenous Peoples have for different parts of IFLs consistent with Criteria 3.1. This includes approaches to account for sites that are of special cultural, ecological, economic, religious or spiritual significance and for which these Indigenous Peoples hold legal or customary rights consistent with Criterion 3.5.

2.4 Experts

The use of experts to assist with developing management strategies and monitoring of effectiveness is unique to Principle 9. The characteristics of experts are as follows:

- Independent;
- Professional and adequately trained; and
- Guided by performance monitoring with quality control.

Specific to Principle 9, the following characteristics of expert exists:

An expert:

- Has knowledge or skill that is specialized and profound as the result of substantial practical or academic experience; and / or
- Is a recognized authority on a topic by virtue of published material on this topic, their stature within the professional community, and the broadly recognized related experience; and / or
- Possesses a wealth of experience on a topic, possibly through practical means including the accumulation of traditional knowledge.

These characteristics of 'Expert' for Principle 9 expand on the FSC Glossary definition. Standards Development Groups may adopt as part of their national standards and National HCV Frameworks a definition in keeping with the normative elements of Principle 9 that incorporate these characteristics.

The level of trust and acceptability to other stakeholders can be a measure of the expert's independence from the organization.

2.5 Precautionary Approach

The precautionary approach is unique to Principle 9, specifically Criterion 9.3 for the implementation of management strategies. Avoiding risks when scientific information is incomplete or inconclusive is appropriate for Principle 9, especially given the vulnerability and sensitivity of the values in question.

When implementing the precautionary approach, HCVs are understood to be critical, fundamental or significant and therefore any threat to a HCV is considered to be a threat of severe or irreversible damage.

Precautionary Approach

An approach requiring that when the available information indicates that management activities pose a threat of severe or irreversible damage to the environment or a threat to human welfare, The Organization will take explicit and effective measures to prevent the damage and avoid the risks to welfare, even when the scientific information is incomplete or inconclusive, and when the vulnerability and sensitivity of environmental values are uncertain.

HCVs are understood to be critical, fundamental or significant and therefore any threat to a HCV is considered to be a threat of severe or irreversible damage.

3 Protection of Intact Forest Landscapes

3.1 Steps to Identify Intact Forest Landscapes

The following steps can be used to identify IFLs:

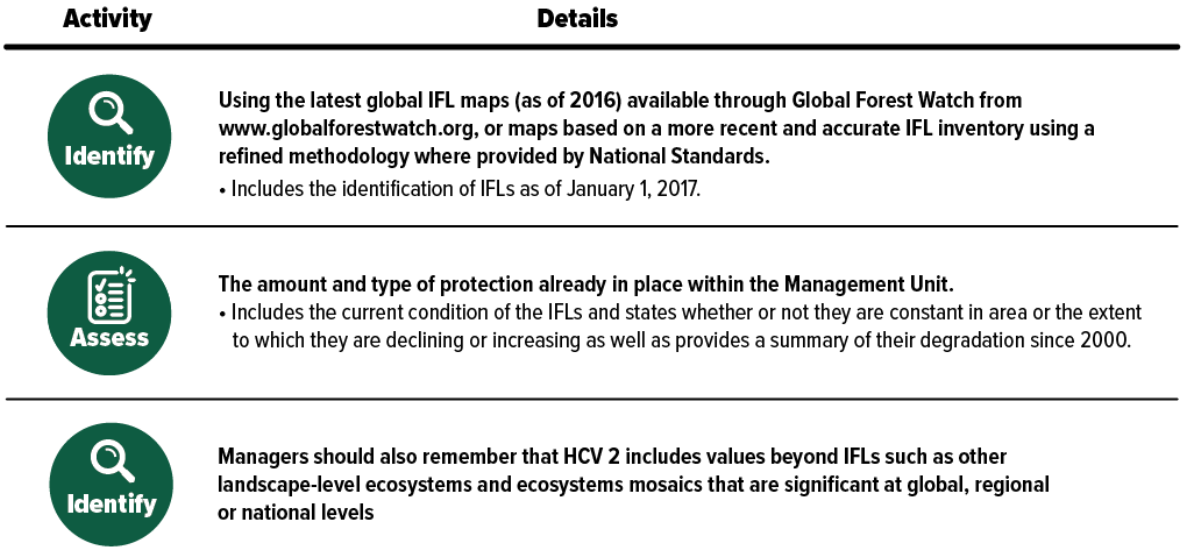


Figure 5: Steps to identify IFLs and ICLs

3.2 Steps to Assess Intact Forest Landscapes

9.1.1 An assessment is completed using *Best Available Information** that records the location and status of *High Conservation Value** Categories 1-6, as defined in *Criterion** 9.1; the *High Conservation Value Areas** they rely upon, and their condition.

9.1.2 This assessment includes identification of *Intact Forest Landscapes**, as of January 1, 2017

Areas with evidence of certain types of human influence are considered disturbed and consequently not eligible for inclusion in an IFL, including:

- Timber production areas, agricultural lands and human settlements with a buffer zone of 1 km;
- Primary and secondary forest roads and skid trails, with a buffer zone of 1 km on either side;
- Areas, where industrial activities occurred during the last 30-70 years, such as logging, mining, oil and gas exploration and extraction, peat extraction, etc.

Areas with evidence of low-intensity and old disturbances are treated as subject to "background" influence and are eligible for inclusion in an IFL. Sources of background

influence include local shifting cultivation activities, diffuse grazing by domestic animals, low-intensity selective logging for non-commercial purposes, and hunting.

The steps set out in Figure 6 can be used to assess IFLs:

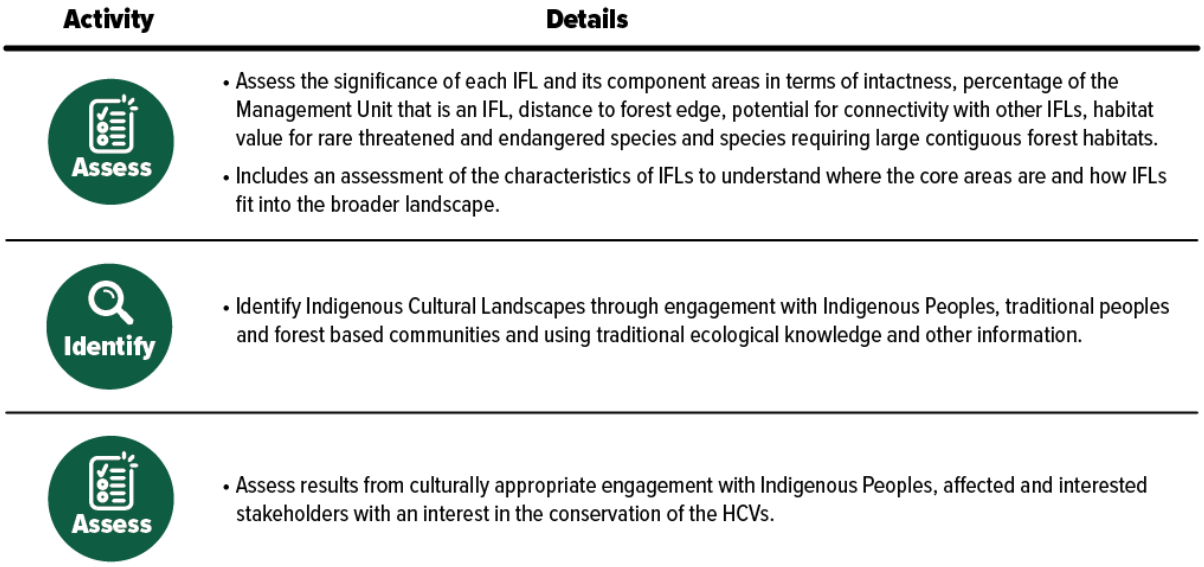


Figure 6: Steps to assess IFLs

3.3 Identification and Assessment of IFL Core Areas

9.2.4 Management strategies are developed to *protect* core areas**

9.2.5 The vast *majority** of each *Intact Forest Landscape** is designated as *core area**

The vast majority of IFLs shall be designated as core areas consistent with IGI 9.2.5. If protection strategies for IFL core areas are not developed in Forest Stewardship Standards (NFSS) and implemented by January 1, 2017, then 80% of the total area of IFLs within the Management Unit shall be protected as a core area(s). Unless otherwise stated in the respective NFSS the default definition for vast majority of an IFL is 80% of the IFL.

As in the IFL Assessment, managers shall use Best Available information and solicit input from experts when developing management strategies and actions.

Core areas must meet the basic definition of an IFL and their area shall not be less than 50,000 ha. Core area size determination shall be based on the effective date of January 1, 2017.

IFL Core Areas

The portion of each Intact Forest Landscape designated to contain the most important cultural and ecological values. Core areas are managed to exclude industrial activity. Core Areas meet or exceed the definition of Intact Forest Landscape.

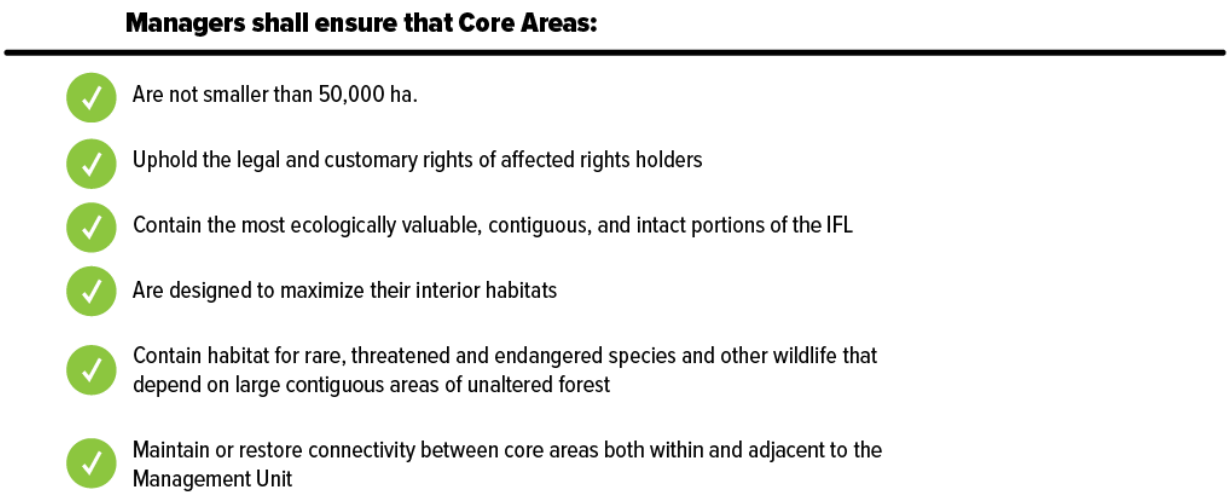


Figure 7: Core Area Elements

For further information please refer to ADVICE-20-007018 *Advice Note for the interpretation of the default clause of Motion 65* in FSC-DIR-20-007 *FSC Directive on FSC Forest Management Evaluations*.

3.4 Strategies for the Maintenance of IFL Core Areas

9.2.6 The strategies developed are effective to maintain and/or enhance the *High Conservation Values**.

9.3.3 *Core areas** are *protected** consistent with *Criterion** 9.2.

Managers shall use Best Available Information and solicit input from experts when developing management strategies and actions. Management strategies shall be developed with appropriate measures for protecting core areas, and addressing identified threats.

This means that strategies should maintain the extent and intactness of the forest ecosystems and the viability of their biodiversity concentrations, including plant and animal indicator species, keystone species, and/or guilds associated with large intact natural forest ecosystems.

In order to do so, managers shall:

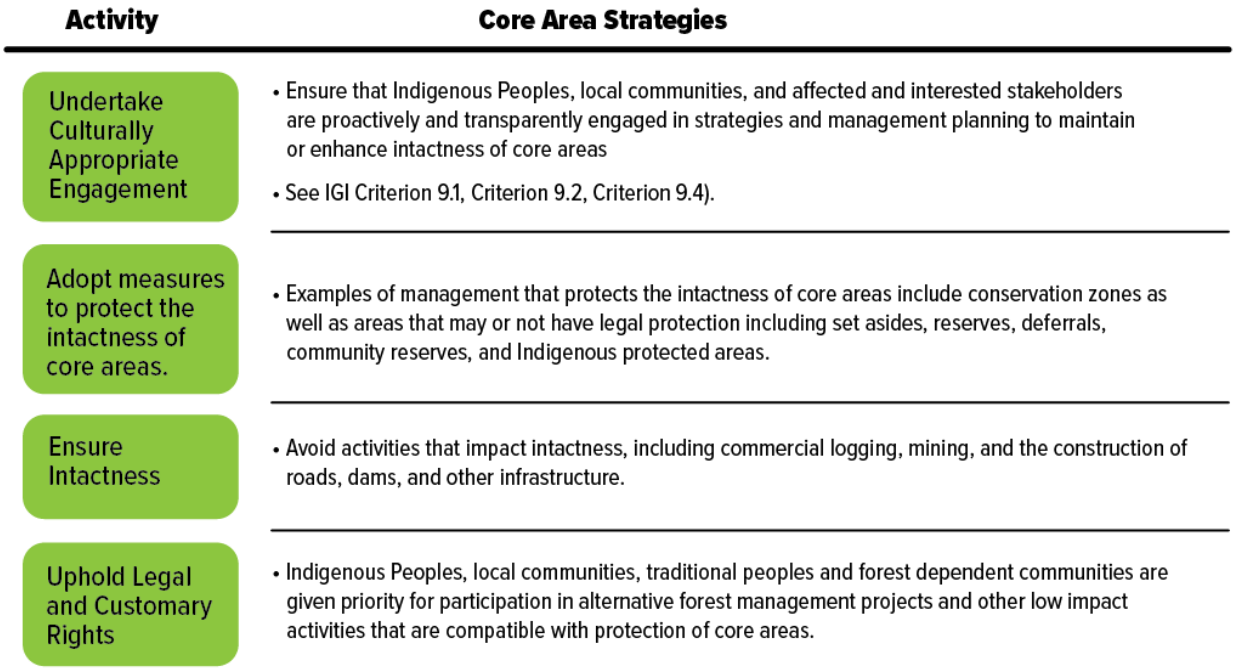


Figure 8: Key Elements Management Strategies for IFL Core Area

Forest managers shall also identify all Indigenous Peoples, local communities and interested and affected stakeholders with an interest in the IFL. This may include forest dwellers, local or traditional communities, neighbouring landowners, local processors, local businesses, forest workers, land use right holders, social and environmental organizations with an interest in the management unit and its resources, and organizations comprising or acting on behalf of interested and affected stakeholders, for example other social and environmental organizations and labour unions. If possible, forest managers are encouraged to explore collaborative opportunities for the co-management of IFLs.

IFL Core Area Protection

Examples of management that protects the intactness of core areas include conservation zones as well as areas that may or not have legal* protection such as set asides, reserves, deferrals, community reserves, and Indigenous protected areas.

The inclusion of Indigenous Peoples and local communities in strategies and management planning is an essential component of FPIC. In cases where Indigenous Peoples or local communities have legal or customary rights a binding agreement shall be negotiated through FPIC before any management activities commence. Outside of any FPIC process, communication with Indigenous Peoples, local communities and stakeholders is essential in order to ensure concerns, desires, needs, rights and opportunities are included when drafting and implementing strategies and actions.

All strategies and actions to maintain core areas shall be incorporated into the Management Plan and implemented in a timely manner. Forest managers should attempt to secure long-term protection for IFL core areas.

9.2.7 Management strategies allow limited *industrial activity** within *core areas** only if all effects of *industrial activity** including *fragmentation**:

a) Are restricted to a very limited portion of the core area*;

b) Do not reduce the core area* below 50,000 ha, and

c) Will produce clear, substantial, additional, long-term conservation and social benefits.

9.3.4 Limited *industrial activity** in *core areas** is consistent with Indicator 9.2.7.

Limited industrial activity within IFL core areas is allowed only if all effects of industrial activity meet the following requirements:

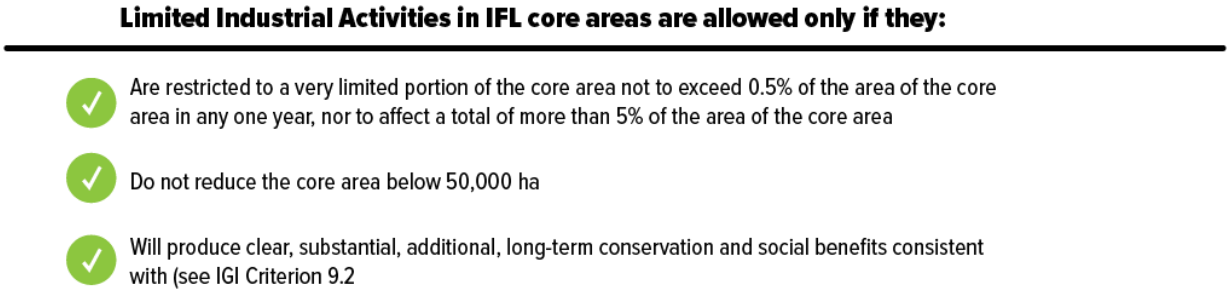


Figure 9: Limited Industrial Activity in IFL Core Areas

3.5 Strategies for the Maintenance of IFLs Non-Core Areas

Those portions of IFLs that are not designated as core areas shall be managed to protect and/or maintain their broader HCV Category 2 values.

Managers shall use Best Available Information and solicit input from experts when developing management strategies and actions for non-core areas and other HCV 2 areas. Management strategies shall be developed with appropriate measures for maintaining non-core areas of IFLs and addressing identified threats. This means that strategies shall maintain the forest ecosystems and the viability of their biodiversity concentrations, including plant and animal indicator species, keystone species, and/or guilds associated with large intact natural forest ecosystems.

To protect IFL non-core areas, managers shall ensure that their management strategies:

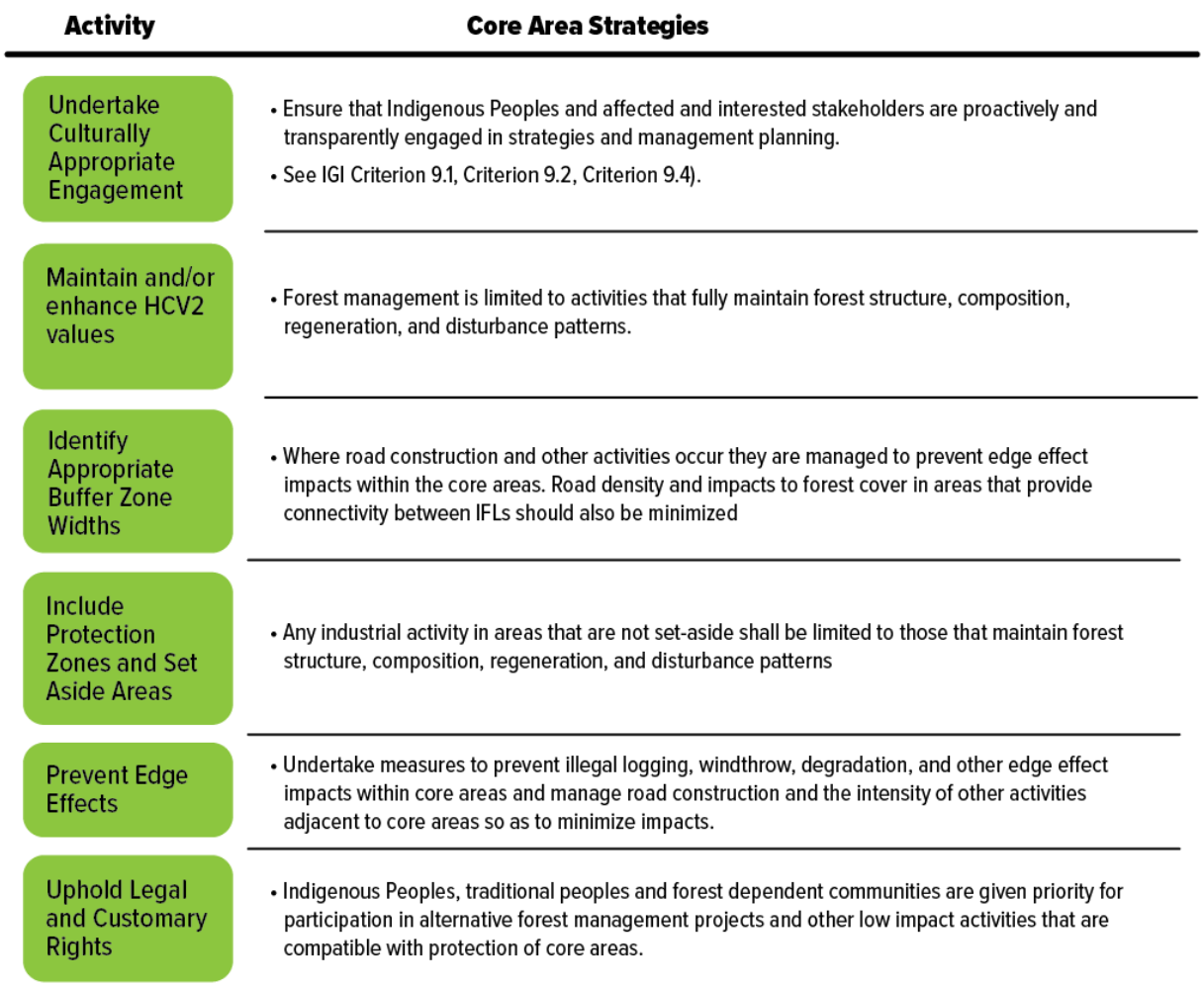


Figure 10: Key Elements Management Strategies for IFL Non-Core Area

Where IFLs occur, they should also contribute to the Conservation Area Network consistent with Criterion 6.5. In non-core areas, buffer zones widths will be situation dependent. What is important is that forest managers identify appropriate buffer zone widths adjacent to core areas where road construction and other activities are managed to prevent edge effect impacts within the core areas.

Annex 2 summarizes Reduced Impact Logging elements to maintain non-core areas.

3.6 Threats, Impacts and Maintenance

The management plan shall include measures to assess, prevent, and mitigate negative impacts of management activities on IFLs and core areas, as identified in Principle 9. It shall also include direct threats from activities such as road construction and timber harvesting as well as indirect threats such as the risks of forest fires and forest health issues within and outside of the

Managing Outside Threats

The Organization shall manage threats from its own activities and shall also, where it is reasonable to do so, manage threats from the activities of other entities.

Management Unit. Threats include both those from the Organization's own activities, as well as the activities of other entities that may have an impact on the Management Unit.

Threats shall be identified using Best Available Information, culturally appropriate engagement with Indigenous Peoples, local communities and affected and interested stakeholders and consultation with experts.

Some examples of threats to Intact Forest Landscapes include threats posed by:

- Forest management activities such as road building and logging;
- Non-forestry activities, such as climate change, poaching, slash and burn farming and invasive species; and
- Other industrial activities such as urban development, mining, the construction of roads, dams, and other infrastructure.

If occurring together, these threats can also result in cumulative impacts to the IFL. This possibility should be taken into account.

9.3.5 Activities that harm *High Conservation Values** cease immediately and actions are taken to *restore** and protect the *High Conservation Values**.

3.7 Monitoring the Impacts of Forest Activities

6.5 *The Organization** *shall** identify and protect representative sample areas of native *ecosystems** and/or *restore** them to more *natural conditions**. Where *representative sample areas** do not exist or are insufficient, *The Organization** *shall** *restore** a proportion of the *Management Unit** to more *natural conditions**. The size of the areas and the measures taken for their protection or restoration, including within plantations, *shall** be proportionate to the *conservation** status and value of the *ecosystems** at the *landscape** level, and *the scale, intensity and risk** of management activities.

9.4.2 The monitoring program includes *engagement** with *affected** rights holders, *affected and interested stakeholders** and experts.

9.4.3 The monitoring program has sufficient scope, detail and frequency to detect changes in *High Conservation Values**, relative to the initial assessment and status identified for each *High Conservation Value**.

When creating a monitoring program, forest managers incorporate both trends and impacts of management activities. The baseline condition of any variable is key, as trends and effectiveness may change over time. The specific risks to a particular or core area should also be key in guiding the elements monitored.

Both engagement and ecological protection strategies are fundamental to a working monitoring program. In the case of engagement, the following checklist should be used:

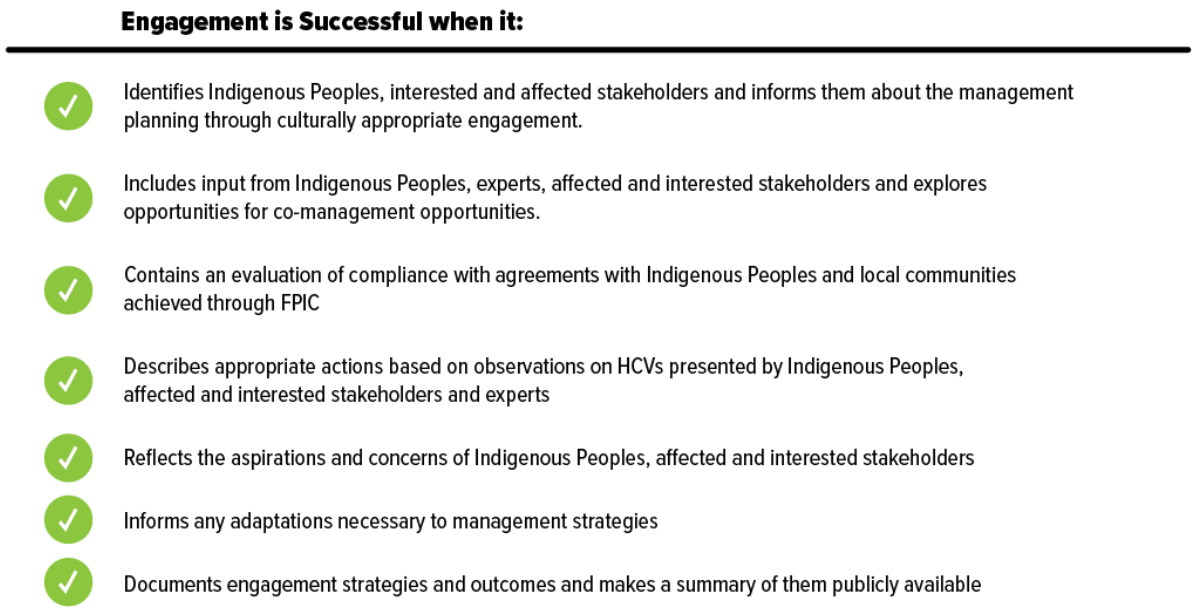


Figure 11: Engagement Outcomes Checklist

When developing and implementing a monitoring program, Indigenous Peoples, local communities, affected and interested stakeholders and experts shall be involved. These groups shall be given the opportunity to review monitoring results, conduct field inspections to check the quality of the monitoring program, and suggest improvements to the monitoring system. In the case of an FPIC agreement, monitoring practices shall align with the requirements as outlined in the FPIC Guidance. In these cases, Indigenous Peoples and local communities are critically involved in the creation and implementation of any monitoring program.

Monitoring IFLs

Global Land Analysis and Discovery (GLAD) lab at the University of Maryland, provides monitoring data on the forest cover with “early warning” alerts system to detect areas of likely deforestation on a weekly basis in the tropics (between the latitudes 30 degrees north and 30 degrees south). Forest managers are recommended to make use of this type of open source tools for monitoring the status of IFLs, including illegal harvesting by third parties in remote Management Units.

The effectiveness of the engagement process shall also be monitored and adjusted when improvements can be made. Monitoring the engagement process itself shall be an integral part of the implementation of forest management strategies and this monitoring shall be maintained at a steady and continuous pace in order to ensure continuity in the data and information collected. In general, the engagement process shall be based on the interests of the communities and shall aim to facilitate these. When monitoring actions and results are shared in a transparent manner, the successful communication of different parties understandings and views will be more likely.

In the case of ecological protection, the following checklist should be used:

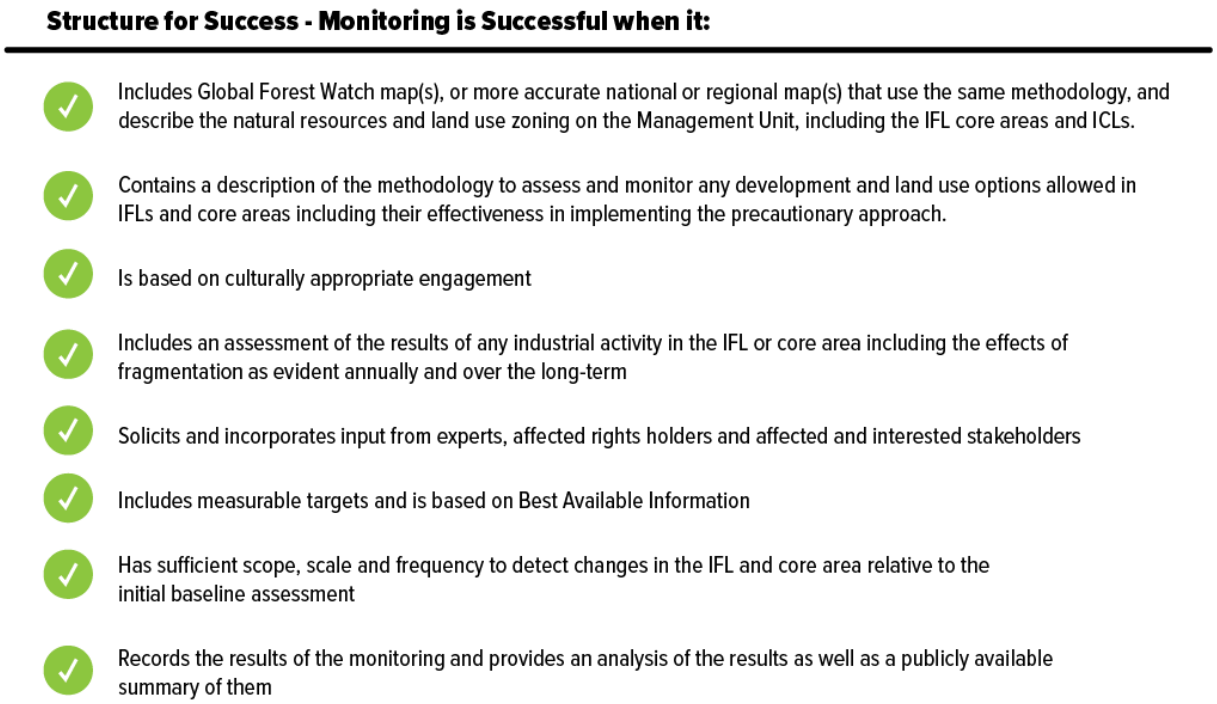


Figure 12: Ecological Monitoring Checklist

Some HCV elements, such as IFLs, should be monitored annually to ensure there as been no change. Others, such as carbon sequestration will likely not need to be monitored as intensively, depending on the nature of management operations.

When monitoring, adaptive management should be practiced, defined as: “the systematic process of continually improving management policies and practices by learning from the outcomes of existing measures” (World Conservation Union (IUCN)). This means that the identification, assessment, maintenance and monitoring of HCVs is framed within the adaptive management framework.

3.8 Responding to Impacts to IFLs and Core Areas

Management strategies and actions shall be modified immediately to address the results of monitoring to ensure the maintenance and/or enhancement of HCVs. In keeping with IGI Criterion 9.3, if monitoring indicates that activities are harming HCVs then these shall cease immediately and actions shall be taken to restore and protect the HCVs.

If the management activities contribute to harming the IFL, then they are expected to restore it (Criterion 9.3).

For core areas, if monitoring indicates that strategies are ineffective or result in damage, actions shall be taken to repair the damage and ensure protection. Managers should also be aware of how they or others may be affecting core areas. They should be observant of potential gaps or weaknesses in their management strategies and take any additional steps that might be required at different times to protect core areas.

Annex 1: Management of IFL Non-Core Area: Reduced Impact Logging in Tropical Natural Forests

Reduced impact logging (RIL) has been defined by the International Tropical Timber Organization as the intensively planned and carefully controlled implementation of timber harvesting operations to minimize the environmental impact on forest stands and soils. The elements of RIL can be introduced to the HCV Framework to guide management of IFL non-core areas or they may be incorporated as indicators to the body of National Forest Stewardship Standard (NFSS).

A literature review of Kleinschroth & Healey[1] (2017) provides a good overview of logging road related issues that need to be addressed in RIL. The authors used a database of 1,100 publication related to road ecology and tropical forest management to conduct full-text searches for information on the impacts of logging roads. Other relevant sources of information for RIL have been published by FAO [2] and there are also country-specific RIL rules, for example in Malaysia and Indonesia[3].

The checklists below and the global reference figures (underlined) are chosen predominately from the Kleinschroth and Healey's review. The use of these checklists is voluntary. They are intended to help the Standards Developers to identify elements that could be included in NFSS. Standards Developers are advised to adapt these checklists and the global reference figures in their NFSS.

The illustration of the forest road network and the photo with the parameters of a forest road are intended to bring consistency and clarity to standard setting.

[1] F. Kleinschroth and J.R. Healey 2017 Impacts of logging roads on tropical forests BIOTROPICA 1–16

[2] (Dykstra and Heinrich 1996 http://www.fao.org/docrep/V6530E/V6530E00.htm)

[3] Pinard, Putz, Tay and Sullivan, 1995, Creating Timber Harvest Guidelines for a Reduced-Impact Logging Project in Malaysia, Journal of Forestry. See also: http://www.tff-indonesia.org/index.php/r-i-l/what-is-ril

RIL requirements for a pre-harvest inventory of individual trees *(Criterion 5.2.)*

- ☐ Scientific name, local name and local uses;
- ☐ Protection status by law;
- ☐ Diameter;
- ☐ Location on the map and with coordinates for GIS;
- ☐ Quality, including the presence of rot;
- ☐ Presence of bird nests or harbouring of any other animals;
- ☐ Obstacles for directed felling such as lianas, protected trees, distance to skid trail etc.;
- ☐ Potential for natural regeneration of each species within the Annual Production Unit such as the presence of young trees, seed trees, vegetative reproduction); and
- ☐ Management decisions, such as harvest or set aside, and paint marking of the trees accordingly.

RIL requirements for strategic landscape-level planning *(Criterion 6.8)*

The location of the Annual Production Unit shows:

- ☐ Area with the least fragmentation;
- ☐ Area with the least damage by forest roads to the soil, water courses, flora and fauna;
- ☐ Discouragement to encroachment; and
- ☐ Discouragement to poaching.

RIL requirements for monitoring and post-harvest actions *(Criterion 8.2)*

Monitoring of impacts to roads includes:

- ☐ Fire incidence;
- ☐ Road kills, including the number of over-ride birds, reptiles and other animals;
- ☐ Soil erosion;
- ☐ Landslides;
- ☐ Sediment accumulation in streams;
- ☐ Presence of invasive plants and animals;
- ☐ Human encroachment with roads, trails or harvesting;
- ☐ Hunting;
- ☐ Slash and burn agriculture;
- ☐ Vegetation recovery;

Sustaining the timber yield *(Criterion 5.2)*

In case long-term monitoring indicates reducing timber yields in the managed forests, it is recommended that, as a part of post-harvest and pre-harvest management:

- ☐ Future crop trees are liberated from overhead shading trees in forests with adequate stocking, and
- ☐ Enrichment planting, if necessary is conducted either by strip planting or some variation of it, e.g. gap planting, with native commercial species in forests with good access, gentle terrain and poor stocking.

In all cases, it is imperative that management activities are carried out in ways that minimize damage to residual stands and soils.

The remaining primary forests with high timber stocks and difficult terrain should be set aside for protection or managed with very low intensity logging.

RIL requirements for low-impact harvesting *(Criterion 10.11)*

RIL harvesting takes place as follows:

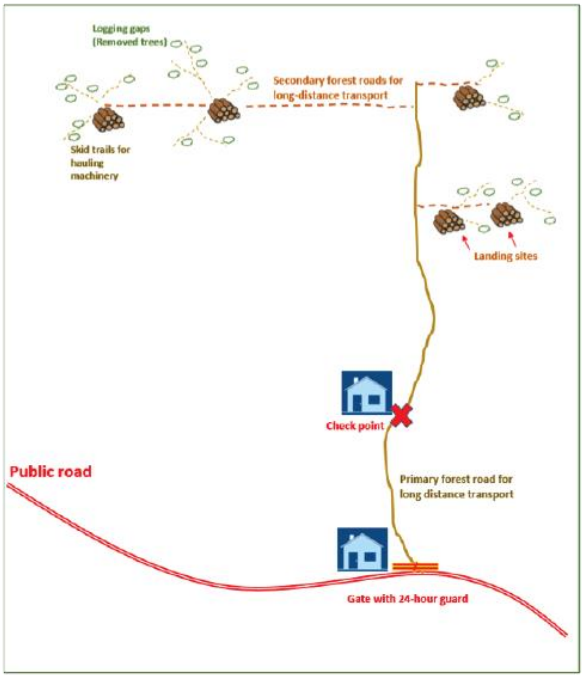
- ☐ Harvesting is limited to the dry season;
- ☐ At least 2 canopy bridges per km connect the canopies above the secondary roads;
- ☐ Generally, rotation cycle for harvesting is longer than 35 years and the annual harvest level remains below 18 m3/ha within the Annual Production Unit, while the local research may justify applying other thresholds, for example in Malaysia and Indonesia;
- ☐ Directed felling is practiced and lianas are cut at least 6 months before felling, for example during the pre-harvest inventory;
- ☐ Logging is based on animal hauling, such as buffalos, horses, mules, elephants, cable hauling or other means of low impact mechanized logging, such as combination of cable and ground based yarding;
- ☐ When the mechanized logging is applied, operation planning and the choice of technology demonstrate reduced impact compared to alternative methodologies, for example road construction excavators rather than bulldozers are used to minimize the width and impacts to adjacent vegetation;
- ☐ When skidding machines are used, they remain on the pre-planned and marked trails at all times;
- ☐ Choice of harvested trees is based on permanent monitoring plots and operational monitoring plots, aiming to maintain or diversify the range of rare and threatened species (RTE) within the Management Unit;
- ☐ The largest trees are retained;
- ☐ Trees having stem rot, identified for example by boring, or plunge test, are not harvested;
- ☐ Trees having nests or feeding or resting sites for RTE species are not harvested;
- ☐ Trees having spiritual, cultural or NTFP value to the local community are not harvested;
- ☐ Trees having diameter below 55 cm, which may vary by species and country, are not harvested;
- ☐ At least 10%, and no less than 3 individual trees of each commercial tree species exceeding minimum harvesting diameter, are preserved in each 100 ha;
- ☐ A portion of the area opened by harvesting activities, including skid trails, log yards, forest roads and logging gaps, covers less than 5% of the Annual Production Unit;
- ☐ In forest dependent community lands, points above may be modified based on community development plans;
- ☐ Activities that damage High Conservation Values cease immediately and steps are taken to restore and protect High Conservation and Values.

RIL requirements for the forest road network

(Criterion 10.10)

Road design and construction takes place as follows:

- ☐ Secondary road crossing points of water courses remains below 1 per 5 km within the Management Unit;
- ☐ The location of skid trails is planned in advance. They should not cross water courses and they should be marked in the field;
- ☐ River bank soil texture at crossing points must provide sturdy basis for culverts and bridges;
- ☐ River crossings do not change the speed of the river flow;
- ☐ Erosion prone soils are avoided;
- ☐ East-west orientation is favoured to maximize drainage by sunshine;
- ☐ Loss of forest cover caused by the road construction remains below 1.7% within the Annual Production Unit;
- ☐ The average width of the road track remains below 5 meters and the average corridor width remains below 12 meters. Once the road is not used any more, it is blocked;
- ☐ Speed limitations are established to control the road kills of wildlife;
- ☐ Skid trails are revegetated to the same level as in the surrounding forest within 4 years;
- ☐ Skid trails are established under canopy and blocked for motorized access within 1 year; and
- ☐ Guarded gates and check points are established between the forest roads and the public road;



Some key concepts for road building:

- Logging gap
- Skid trail
- Landing site
- Secondary forest road
- Primary forest road
- Check point
- Forest gate

Basic road dimensions:

- Road track: x meters
- Road edge: x meters
- Full width of road corridor: x meters
- Canopy opening: x meters

(See Kleinschroth & Healey 2017, Biotropica)

Annex 2: Notes on development of this guide

This document has been developed for FSC purposes and is based on the document discussed at the FSC HCV2 / IFL Workshop in Bonn, in October 2012 and revised according to the participants' feedback at 2013 by FSC IC Performance and Standards Unit. Subsequently, FSC formed the HCV Technical Working Group in June 2015 to revise existing HCV Guidance, develop International Generic Indicators consistent with Motion 65 for Intact Forest Landscapes and develop an HCV template to support the development of National HCV Frameworks by Standards Development Groups

Parallel to this, the HCV Resource Network has produced Common Guidance for the Identification of HCVs (2013), intended to provide a holistic identification of High Conservation Values, both for FSC stakeholders as well as for the wider audience.

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