

Use of the HCV framework in China



*A guidance document for
forest managers*

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1. Introduction

Established in the FSC Principles and Criteria in 1999, the concept of High Conservation Value Forests (HCVF) has provided a useful new approach to defining and managing forest/woodland areas of *critical conservation significance*. The concept provides a framework for understanding what gives an area an exceptional value, and for defining how to manage such areas appropriately. The FSC requires that each forest area is assessed for the presence of HCVs. If attributes consistent with these HCVs are thought to be present in the forest area, then *specific actions* need to be outlined in the management plan. These must show how the value(s) will be '*maintained or enhanced*'.

Different conservation values:

A forest area may have many different attributes of conservation value, including threatened species and habitats, ecosystem service provision and social or cultural significance. Some of these may be considered High Conservation Values, if the aspect in question is *exceptional at the national, regional or international level*. Some High Conservation Values will be safeguarded by existing conservation measures and plans already in place. But some may require *specific additional actions* that go beyond what is already in the management plan or required by the law.

The six High Conservation Values

The HCV concept describes six high conservation values. These are six distinct attributes that give an area a critical conservation significance. The six values are shown in the table below. These come directly from the FSC definition of HCVF (see Annex 2). They are described in greater detail in the Global HCVF Toolkit¹.

Table 1 The six High Conservation Values

The six high conservation values	
HCV1	Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia).
HCV2	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.
HCV3	Forest areas that are in or contain rare, threatened or endangered ecosystems.
HCV4	Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control).
HCV5	Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence,

¹ Global HCVF Toolkit (ProForest 2003)

	health).
HCV6	Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

These headings are broad and general. In order to assess a forest area against these values, and develop appropriate management plans, more specific guidance is needed. This can be achieved if each value is *interpreted* in a national context.

The requirements to identify, manage and monitor HCVF go above and beyond other requirements of the standard for the protection of biodiversity (in Principle 6), and the protection of culturally important sites (in Principle 3). They also go beyond what is typically required by forest law. This is because an assessment must be made, on a case by case basis, and decisions about protection of the values must be made in light of this assessment².

The HCVF concept requires an investigation to determine if any part of the forest possesses an aspect of value that is significant at a *national, regional or global level*. If such attributes are present, Principle 9 requires that *additional* safeguards are in place to ensure these features are not damaged or degraded by forestry operations.

Principle 6 requirements relating to conservation:

Principle 6 of the FSC standard contains four requirements relating to the conservation of biodiversity. These are:

- An assessment of environmental impact must be carried out
- Safeguards to protect rare threatened and endangered species must exist
- Ecological functions must be maintained intact (regeneration, ecosystem diversity and natural cycles)
- Representative samples of existing ecosystems must be protected

Therefore, Principle 6 already mandates a number of measures that will safeguard important features of the forest/woodland area. This principle must be applied in all cases.

Principle 9 requirements for HCVF

However, if an attribute is considered to be an HCV the forest manager is required to go beyond the specific measures set out in P6 (above) and to do whatever is necessary to maintain or enhance the identified value.

Designating a forest (or part of a forest) as HCVF does not automatically preclude management operations such as timber harvesting. However, it does mean that management activities must be planned and implemented in a way that ensures that the values in question are maintained or enhanced. The approach taken must be

² Forest law in many countries requires specific set aside areas to be created, often regardless of the specific forest conditions, up to a certain percentage of the forest area.

based on the specific values identified and tailored to the area of forest in which the specific value is found.

1.1. Development and use of the HCV concept in China

Since the introduction of the HCVF toolkit in 2003, the use of the HCV concept in China has been driven forward by WWF China. The initial focus of work was on:

- Defining and interpreting the six values in the North East region (Dongbei), and
- Mapping areas of potential HCV at the Dongbei regional level

A report entitled 'Research on Classification and Mapping of HCVFs in Northeast China and Inner Mongolia' was completed in 2005. This report summarised the findings of a GIS based mapping process, the research for which was compiled by Dr Wu Bo, of Chinese Academy of Forestry (results available from WWF China). GIS datasets were compiled for forest areas with particular species compositions, and forest areas within the known ranges of a selection of protected species.

1.2. The Beijing workshop:

A training workshop on the use of the HCV concept and its use in forest management was held in Beijing from the 9th to 11th January 2008. The goal of the workshop was to share experience with the use of the HCV approach and to build capacity amongst forestry staff to apply the approach in practice. The workshop was facilitated by WWF China and run by ProForest. The objectives of the workshop were to:

- Provide an introduction to the use of HCVF in forest management certification
- Review existing examples of the use of HCVF in China
- Highlight best practice approaches and provide technical guidance
- Discuss the relationship between the existing forest planning framework and the requirements of HCVF



Fig 1. Participants at the Beijing workshop (Image: WWF)

1.3. The role of HCVF assessment in forest planning and management

FSC certification in general and HCVF assessment in particular must be seen in the context of the existing framework of forest planning in China.

Any forestry organisation that wishes to become FSC certified must first be compliant with all applicable national laws. Therefore compliance with the law is a necessary pre-requisite for certification. This will include compliance with forest law relating to land use planning and forest land zoning.

The State Forest Administration (SFA) requires that the forest area is zoned according to commercial and environmental protection criteria. The forest management area must be zoned into:

- Commercial forest
- Public beneficial forest
- Key public beneficial forest

Some timber extraction may be allowed in Public beneficial forest, (if best management and selective logging practices are followed). However, key public benefit forest (KPBF) must be completely protected from all forms of disturbance.

The zoning of each forest area into these three land use types is carried out at the level of the Provincial forest authority, on the basis of a forest inventory made every ten years of each forest bureau. The zoning decision provides the basis for operational management (timber harvest planning) at the level of the Forest Bureau and its respective forest management units.

Therefore many decisions relating to conservation priorities are taken at the stage of this zoning process. The rationale for the zoning methodology is outlined in "The

Guidelines for Identifying National Public Beneficial Forests" (issued by SFA in 2001); "Approaches Of Zoning Key Public Beneficial Forests" (Issued by SFA and MOF,2004). But in summary, forest will be zoned for protection if the area is important for:

- Water catchment protection
- River & stream protection
- Wind protection
- National defence
- Steep areas
- Existing reserves

If an individual forest management unit or bureau is to pursue forest certification under the FSC standard, these land zoning decisions will be the *starting point* for meeting the conservation related requirements. However, *in addition* to this process, the FSC standard requires that an assessment of each forest area is made for the presence of HCVs. The list of HCVs includes some characteristics of forest areas that may not have been considered in the land zoning process.

To meet the FSC standard, the forest manager is therefore required to:

1. Assess the forest area for the potential presence of HCVs
2. Evaluate to what extent the existing land zoning plan will *effectively safeguard* these values
3. Take whatever *additional* steps are required to ensure the HCVs are maintained or enhanced

Some values (such as rare species or community use values) may be present in areas of the forest that have been zoned for commercial timber production. *The fact that this area is HCVF does not rule out commercial timber production in these areas.* However, if timber cutting is to go ahead, the forest management plan must outline how these values will be maintained.

The diagram below illustrates the potential role of an HCVF assessment in the forest planning and management process. HCVF Assessment is required to investigate any High Conservation Values that occur, and to identify what will be necessary to *maintain or enhance* the identified values. Where HCVs are present, it is necessary to consider:

1. If the value can be effectively maintained by the existing forest zoning approach
2. If additional measures will be needed to ensure the value is maintained

The assessment must consider if the existing protection is sufficient to maintain or enhance the HCV. Where existing measures appear in-sufficient, *specific additional actions* will need to be identified. These additional actions must be outlined in the management plan, implemented and monitored.

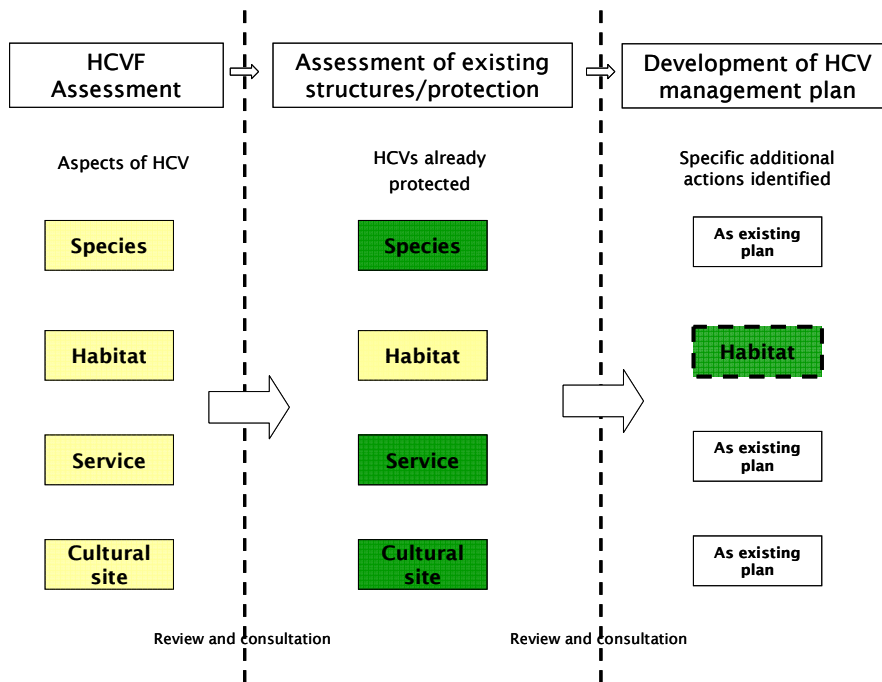


Fig 2. The role of HCVF assessment in identifying specific additional actions

It is important to remember that Principle 9 of the FSC standard requires that where high conservation values are identified, the specific additional actions must be described in the management plan. This must show how the value will be maintained or enhanced.

These measures must be developed in consultation with relevant stakeholders and experts where necessary, and must be based on the precautionary approach. The measures taken must be monitored to ensure that they are being effective and that the values in question are being maintained.

Identify:	An assessment must be conducted to identify the presence of any High Conservation Values
Manage:	Values must be maintained or enhanced through measures developed <i>in consultation</i> with relevant stakeholders and experts. Management should be based on the precautionary approach
Monitor:	Measures to maintain values must be monitored to ensure they are effective

Fig 3. The HCV process

In summary, the requirement to assess, manage and monitor HCVF goes some way beyond the basic requirements of forest law in most countries. This is because:

- An assessment of the forest area is required to identify the potential presence of any of the six HCVs.
- The assessment must be case specific, accounting for the area of forest in question and its landscape context.
- The assessment must inform specific additional actions that are spelt out in the management plan, and appropriate to the specific values identified.

2. Practical guidance on assessment, management and monitoring of HCVs

In the following sections, some practical pointers are provided for the use of the HCV framework in China. This section discusses the three elements of the HCV process in turn, namely: identification/assessment, management and monitoring. The examples and best practice suggestions provided are drawn from discussions at the Beijing workshop.

2.1. Identification and Assessment

Sources of information:

In any identification process, maps of the forest area, the forest stand types, and topography will be essential. Maps of the forest area showing settlements and major water courses will also be necessary. It will also be important to show the forest area in the district or regional context to establish:

- The area of forest relative to the region (or other neighbouring areas)
- The condition of the forest relative to the region (or other neighbouring areas)

The following sources of information should be regarded as a starting point:

- Forest zoning maps
- 10 year inventory results (including characterisation of forest types/stands)
- Wildlife survey
- Socio-economic survey

It is clear from experience to date that the forest inventory surveys should be the primary source of information for the identification of potential HCVs. Any specific information available from the provincial authority concerning the basis for land zoning decisions will also be useful.

In some cases, wildlife surveys will have been carried out at the FMU level as part of the preparation of the management plan. These survey results should be reviewed, together with the methods used to carry out the survey.

Follow up

It may be possible to derive an HCVF management plan from the existing information without any further work. However, the forest manager must ask: *is the available information sufficient to make decisions about HCVs, including delineation of areas that contain them?* If it is not, careful consideration must be given to what additional information is required.

Examples:
1. Socio-economic surveys are a useful basis for the identification of potential HCV5 and HCV6 areas. However they may not provide sufficient detail on the products that local people collect from the forest or more importantly the exact areas on which they are most heavily dependent. Follow up consultation

should be designed to fill these information gaps.

2. Information of the potential presence of endangered species may not indicate the type of habitat on which the species are critically dependent or the features likely to give rise to concentrations of these species. It may be necessary to consult with independent wildlife biologists to make a decision about the parts of the forest area that will be most significant. In some cases local wildlife protection staff may have more specific information about the locations and distributions of particular species.

Is it a High Conservation Value?

This decision must be made in light of the HCVF toolkit definitions of the values and any *credible interpretation* that has taken place at a national or regional level. If no interpretation is available, the forest manager should explain clearly the rationale for when an aspect will be considered a High Conservation Value. For further guidance on interpretation, consult the Global HCVF Toolkit Part II³

2.2. HCV management: Good practice guidance

If attributes of High Conservation Value are found to be present in the FMU, the management plan for the forest area must spell out the actions that will be taken to ensure these attributes will be maintained or enhanced. In writing any management plan it is important to outline the objectives, and the specific steps that will ensure these objectives are met.

Good practice for the management of HCVs should follow the five-step process outlined below:

1. Define the *management objective* for each value you are seeking to maintain

This means clearly describing the value and identifying what can be done to maintain it. The more specific the management objective, the better.

2. Identify and *quantify* the major threats to this objective

This means determining the current sources of threat and clarifying *to what extent* these are impacting the value. Some form of impact assessment should be conducted.

3. Identify suitable mitigation measures

This means deciding what measures can be taken to reduce or remove the source of threat. It may include both direct measures by the forest management authority and indirect measures such as community education and development.

4. Define precautionary management

This means, once measures to reduce or remove threats have been taken, other operations may be resumed *in conjunction with a programme of monitoring*.

5. Develop long term monitoring based on detailed information

³ Available from www.hcvnetwork.org

This means gathering the detailed information necessary to prove that an HCV is actually being maintained, including measuring changes to levels and populations. This may include long term/on-going data collection and analysis.

2.2.1. Example 1: the management of *Taxus cuspidata* in Heilongjiang Province

Taxus cuspidata (Chinese yew) is a regionally endemic tree species that is now protected by forest law in NE China. In the northeast, it is likely to be considered a High Conservation Value species. The protection of this species should be achieved through a number of specific measures, outlined below.



Fig 4. *Taxus cuspidata* (Chinese yew)

Management objective:
<ul style="list-style-type: none"> The objective is to maintain the presence and successful regeneration of this species where it currently occurs in the forest area.
Threats:
<ul style="list-style-type: none"> Due to the fact that this species can only regenerate successfully in relatively stable, shady conditions, canopy disturbance from logging activity even when <i>Taxus</i> trees are not harvested, may threaten the species' regeneration. Illegal cutting of the trees themselves is a direct threat. Cutting is sometimes carried out illegally by local people. The extent and severity of this threat needs to be evaluated on a case by case basis.
Mitigation measures:
<ul style="list-style-type: none"> Protection of stands: stands containing a large number of mature trees of this species, or where the species occurs in some form of concentration will be designated for complete protection. These stands will be identified and designated on the basis of an FMU level inventory. Protection of individual trees: Where individual trees occur within normal harvesting compartments they will be marked/identified before harvesting begins. Care will be taken to avoid damage to these trees through: modification of harvesting rate to maintain canopy cover of 0.5 – 0.7, directional felling away from protected trees, and extraction using domestic animals only. Patrols and road check points: These will be maintained on access roads to check/control access to the forest area. These will prevent the illegal extraction of yew logs by unauthorised means.
Precautionary management:
<ul style="list-style-type: none"> Protection stands are identified and demarcated. Timber harvesting teams are trained in the additional requirements for the protection of this species. Timber harvesting otherwise continues following normal processes.
Long term monitoring

Monitoring will concentrate on the maintenance and protection of set aside areas, and the implementation of measures to reduce illegal cutting. (Monitoring approaches are explained in more detail in section 3)

2.2.2. Example 2: the management of *Mergus squamatus* (scaly sided merganser)

This is a forest dependent aquatic bird native to eastern Russia and northeast China. breeds below c.900 m in mountainous areas, along rivers with tall riverine forest, mainly within the temperate conifer-broadleaf forest zone. It is largely confined to primary forests, with an abundance of potential nest-holes. On passage and in winter it feeds along large rivers. It is listed by IUCN as Endangered, and is therefore likely to be considered a High Conservation Value species.



Fig 5. Scaly sided merganser (Image: Birdlife International)

In this example we introduce the idea of **precautionary management**. An assessment of the FMU has indicated the presence of *suitable habitat* for the species, but, as this species is endangered, it is unlikely to have been sighted, and forestry staff may be unsure if the bird is definitely present in the FMU.

Nevertheless, the existence of suitable **habitat** within the known range of the species may be sufficient to make a **precautionary assumption** that the bird is present in the forest area.

Management of the area is based on the assumption that the species is present, and is therefore adapted to take account of this. In the longer term, detailed surveys and monitoring should be carried out to establish the actual distribution and population of this species. But, in the meantime, the management plan for this HCV should be based on the precautionary principle. A number of measures can be taken to ensure its protection, as outlined below.

Management objective:
<ul style="list-style-type: none"> To maintain suitable breeding habitat for this species where it occurs in the forest area
Threats:
<p>The loss/degradation of old forest stands along river banks and riparian areas. This can occur through:</p> <ul style="list-style-type: none"> Timber harvesting Agricultural settlement
Mitigation measures:

<ul style="list-style-type: none"> • Identify and demarcate areas of suitable habitat, based on secondary inventory results, aerial photographs or rapid surveys of river banks by relevant species experts • Establish protection zones around examples of suitable habitat, or widen riparian corridors where necessary to ensure suitable habitat is included. • Discuss these sites with local communities and request that they be avoided by wood cutters and collectors. • Identify and protect areas of riparian forest that can develop into suitable habitat if protected, and consider other restoration measures in consultation with local/international bird conservation groups
Precautionary management:
<ul style="list-style-type: none"> • Ensure all areas of suitable habitat are demarcated and avoided during forestry operations and road building • Ensure all forestry staff are aware of the need to protect these areas • Inform local community of existence of protection areas
Long term monitoring
<ul style="list-style-type: none"> • Ensure set aside areas are protected from forestry and road building operations • Ensure local communities are aware of these protection areas • Liaise with local bird conservation groups to organise detailed surveys of the indicated sites. • Carry out regular survey (e.g. bi-annual) to collect data on <ul style="list-style-type: none"> ○ distribution and population size ○ nesting success

2.3. HCV Monitoring: Good practice guidance

Monitoring is an essential part of the HCV management process. It is necessary to demonstrate that the chosen management approach is being effective. It is also necessary to inform the forest manager of changes and effects, so that procedures can be altered. Thus monitoring is central to the forest management process, not something that is done ‘on the side’, or ‘after the event’.

The role of monitoring in the adaptive management cycle is shown in figure 6 below.

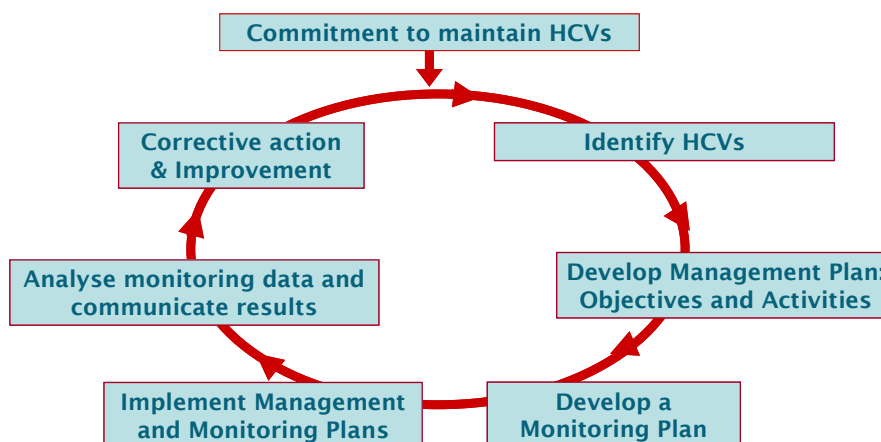


Fig 6. The adaptive management cycle

2.3.1. Operational and strategic monitoring

It is often assumed that monitoring of HCVs needs to involve complex science. This is not true. However, a successful approach to monitoring should have two features.

- The first level is the monitoring of the basic operational procedures that have been put in place in the management plan (e.g. the establishment of a buffer zone, the implementation of a new road building plan). This is usually referred to as *operational monitoring*.
- The second level is defined by the management objective that is to be achieved. In the case of the HCV example above, the objective is to maintain examples of good forest habitat for a threatened species, and ensure that the species is still present in this habitat. Thus monitoring must check that the *quality* of the habitat is still suitable and that the species is still using the habitat. This is necessary to demonstrate that the *strategic* objective is being achieved, and i.e. usually referred to as *strategic monitoring*.

2.3.2. Example 1: Monitoring of Environmental service values

In this example, an area of forest has been identified as HCVF because it protects a water course that is feeding an important wetland habitat. A potential threat to the habitat is siltation and pollution coming from the area of forest up-stream which is about to be logged, which would affect the wetland's ability to support a number of threatened plant and amphibian species.



Fig 7. wetland habitat

It as been proposed that the management to maintain this HCV will involve the following measures:

- Delineation of a buffer zone around the wetland and the stream that feeds it
- Review of the route of a proposed new road that will be built to extract the logs
- Implementation of a new road building best management practice
- The use of silt traps and culverts on all minor stream crossings

- Reduction by 30% of the permitted timber harvest volume

Monitoring strategy:

There are two things that need to be monitored:

1. That these management measures are followed
2. That they are effectively mitigating the risk of sedimentation and pollution

First, operational monitoring checks should be made to ensure these measures are followed. Thus the monitoring strategy will include:

- Checks that the buffer zone has been delineated, and that forestry staff know where the boundary is and why it is there
- Checks that new roads conform to the best practice guidelines
- Checks that silt traps and proper culverts have been installed in the right places

These checks should be regular, and they should be documented (written up and recorded).

Second, strategic monitoring will be necessary to ensure that the wetland is not affected by siltation or pollution, that is, to check that the objective has been achieved. This may be achieved through water quality monitoring. Some samples should be taken before any operations commence to establish baseline data.

However, detailed regular water quality monitoring may not be necessary if a simple visual inspection can show that siltation has been controlled. In fact, these visual inspections may be sufficient to demonstrate that the strategic objective is being achieved. Water quality monitoring could be used over long time intervals to detect slower less obvious changes. But monitoring of the wetland vegetation over long time scales may still be easier, cheaper and a more efficient way of detecting potential problems.

2.3.3. Example 2: Monitoring of species values

The same approach to monitoring should be followed where the objective is to maintain an HCV that is an individual species or a group of species.

The management plan should identify certain practical measures that can be taken to minimise threats to the species in question. These could be:

- Setting aside certain areas of habitat
- Efforts to prevent hunting
- Measures to avoid pollution of land or water

As with the example above, monitoring of the maintenance of this HCV means checks that these measures have been carried out (operational monitoring), and checks to ensure the species are still present (strategic monitoring).

Monitoring strategy:

The operational monitoring measures will be similar to those described in Example 1. However, for strategic monitoring, when the focus of the action is a particular species (e.g. *Mergus squamatus*) the forest manager must make a decision on whether to monitor the species **directly** or to choose some **indirect** indicators.

Direct measurement means observing the animal itself, making counts, estimating population size etc. However, with many rare species that are considered HCVs (e.g. Amur tiger) direct monitoring is very difficult, and can be very expensive. In these situations it is more appropriate to use indirect measures. These could include:

- The availability of food/habitat
- The amount or quality of available habitat
- Other secondary signs of the animals' presence (nests, feeding sites)

The forest manager should carry out regular monitoring of indirect measures, and seek to ensure the quantity and quality of suitable habitat is maintained. However, in these situations, it is recommended that the forest manager looks for opportunities to collaborate with interested stakeholders to achieve the overall target. Local interest groups (such as Birdlife International or local partners) could carry out the actual population surveys for certain species or groups of species, and collect the direct observational data to back up the indirect measures. The results from both approaches should be reviewed together with the relevant partner.

2.3.4. Use of the results:

To complete the adaptive management loop, the results of all monitoring efforts must be analysed and fed back into the management plan. There must be documented evidence that this is done, and that the management approach has been changed when the evidence from monitoring has shown an undesirable effect. Remember monitoring where the results are not analysed and used is effort wasted.

Annex 1 The requirements of FSC Principle 9

FSC Principle 9: the four criteria governing management of High Conservation Value Forests

Criterion 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.

The purpose of this criterion is to ensure that any outstanding or critical values (i.e., HCVs) that occur within a forest management unit are identified. This will entail the demarcation of the forest necessary to maintain and enhance the value (i.e., the HCVF) on operational planning maps.

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

This criterion requires forest managers to consult with stakeholders on the options for the maintenance of any High Conservation Values that are identified. This requirement allows stakeholders to raise issues that may be important in maintaining or enhancing the identified HCV.

Criterion 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.

This criterion specifies the general goal of management of HCVF – to maintain or enhance the HCV – as well as ensuring that stakeholders are informed about the proposed management regime for the HCVF.

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

Where values are of such importance that they have been designated as HCVs, there is clearly a need to ensure that the management of them is effectively maintaining them. Therefore, monitoring should be conducted to assess this.