



High Conservation Value interpretation in Cameroon

Setting identification criteria and indicators in Cameroon – Version for public consultation

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ACRONYMS

C&I	Criteria and Indicators
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CR, EN,VU	Critically, Endangered, Vulnerable (IUCN status of species)
FSC	Forest Stewardship Council
FPIC	Free Prior and Informed Consent
IFL	Intact Forest Landscapes
IUCN	International Union for the Conservation of Nature
HCV	High Conservation Value
NBSAP	National Biodiversity Strategy Action Plan
RTE	Rare, Threatened and Endangered (species)
UNESCO	United Nations' Educational Scientific and Cultural Organization

DEFINITIONS

Intact Forest Landscape (IFL) is an unbroken expanse of natural ecosystems within the zone of current forest extent, showing no signs of significant human activity and large enough that all native biodiversity, including viable populations of wide-ranging species, could be maintained. Although all IFL are within the forest zone, some may contain extensive naturally tree-less areas, including grasslands, wetlands, lakes, alpine areas, and ice. (Official definition: <http://www.intactforests.org/concept.html>)

Threatened and Endangered species:

In this document threatened and endangered species include:

- Species with an international or national IUCN status which is CR or EN or VU
- Species under the Appendix I and II of the CITES

Protected species

“Protected species” are understood as the species fully protected by Cameroonian legal texts, they fall under the legal category A.

1. INTRODUCTION

1.1 Context and Objective

“A High Conservation Value (HCV) is a biological, ecological, social or cultural value of outstanding significance or critical importance” (HCV RN, 2013).

High Conservation Values have been a tool used in many different contexts to manage appropriately resource use and conservation planning most of the time through certification schemes.

To engage in a national interpretation of the six HCVs is an effective way to ensure some consistency in HCV assessments in Cameroon and furthermore to frame the development of industrial activities in the country.

Cameroon has decided to engage in this process and the first step of this process consisted in setting criteria and indicators (C&I) for the identification of HCV at the national level. A draft document with these C&I was submitted to the validation of the NBSAP national group in charge of the strategic goal B, objective 6 during a validation workshop held in Kribi in November 2015.

The current report presents the results of this workshop which last three days and gathered over thirty people. The objective of the workshop was to validate the criteria and indicators proposed to identify HCVs in Cameroon as well as the suggested identification methodologies.

It was recognised that some further work is needed to use the criteria and indicators for direct identification such as:

- collecting relevant information or testing different hypothesis/thresholds to be able to use the indicators in the process of HCV identification;
- identifying relevant sources of information to use the indicators or test the hypothesis/thresholds.

1.2 Methodology

Setting criteria and indicators for the identification of High Conservation Values in Cameroon followed the following process:

- Criteria were set to define the aspects the International/generic definition covered in Cameroon;
-
- Indicators were defined to be as precise as possible.

HCV identification criteria and indicators were defined at the national level. Therefore they aim at being valid for the territory. Two scales were considered: the project area (forest concession, palm oil permit, etc.) and the national scale.

For each indicator an identification methodology has been suggested.

2. APPLICATION OF HCV INTERNATIONAL DEFINITIONS IN CAMEROON

2.1 HVC 1: Biodiversity concentrations

The common guidance (2013, HCV RN) gives the following generic definition of the first High Conservation Value:

Concentrations of biological diversity including endemic species and Rare, Threatened or Endangered (RTE) species that are significant at global, regional or national levels.

2.1.1 Interpretation of HCV 1 at the national scale

Four criteria have been set at the national scale:

- 1.a: Areas with high level of biodiversity with international or national status;
- 1.b: Concentrations of Rare Threatened and Endangered, endemic, restricted range or protected species;
- 1.c: Internationally or nationally recognised sites/habitats with high level of endemism;
- 1.d Internationally or nationally recognised sites used temporarily by CR, EN, VU, endemic, protected or restricted range species.

2.1.1.1 Criterion 1.a: Areas with high level of biodiversity with international or national status

Indicators	Suggested methodology
<ul style="list-style-type: none"> - Classified areas for strict protection by forest and environment legal texts in force. - Classified areas for strict protection by International Conventions ratified by The Republic of Cameroon (UNESCO, Ramsar, etc.) 	List and map (with a detailed legend) all the concerned areas. It would be useful to define for each area the characteristics for which they have been classified.

Indicators	Suggested methodology
<ul style="list-style-type: none"> - Recognized areas with high biodiversity by other institutions: Important Bird Areas (IBA), Key Biodiversity Areas, Alliance for Zero Extinction sites, Centres of Plant Diversity, Core areas of Reserves of Biosphere, etc. 	List and map (with a detailed legend) all the concerned areas. It would be useful to define for each area the characteristics for which they have been recognized.

Recommendations:

For this indicator, it has been recommended to assess:

- ✓ the consequences in terms of surface covered at the national scale ;
- ✓ the relevance of identifying the whole surface of each component as some of them might be already quite degraded and because some of the concerned areas might already bear some agro-industries.

2.1.1.2 Criterion 1.b: concentrations of Rare Threatened and Endangered, endemic, restricted range or protected species

Indicators	Methodology : recommendations
<p>- Concentration of Rare Threatened and Endangered, endemic, restricted range or protected species of large animal species of international and national importance or a combination of the above species</p>	<p>The recommended methodology to identify the extent of this criterion is the one used by the Gabon HCV project presented in Annexe 1.</p> <p>In order to test the applicability of this methodology, it is needed in the first place to identify the species or the combination of species on which this methodology could be used (enough data, relevant to criteria and indicator, etc.).</p> <p>Examples given: elephants, great apes, large carnivores, etc.</p> <p>The species or the combination of species for which the methodology will be applied must either be Rare Threatened and Endangered, endemic, restricted range or protected species</p> <p>Once this pre-requisite is set, it is important to assess the consequences in terms of surface covered by testing different “concentration thresholds” (see Annexe 1 for more details).</p>
<p>- Concentration of restricted range species</p>	<p>For this indicator it is recommended to consult specialists/experts of mammals, birds, amphibians, reptiles, fish, plants etc. to assess which species and sites would be concerned by this indicator at the national scale.</p> <p>The lack of available data for this indicator might not allow to determinate exhaustively the sites with concentration of restricted range species. This indicator should therefore be defined at the national scale on current knowledge and updated regularly.</p> <p>(example Cross river Gorilla, Ebo gorilla, manatee, etc.)</p>

2.1.1.3 Criterion 1.c: Internationally or nationally recognised sites/habitats with high level of endemism

Indicators	Suggested methodology
- recognized areas with high level of plant endemism	Some research/expertise is on-going in Cameroon (especially on the Atlantic area of Cameroon) to identify areas with a high level of endemism of some families of plants (see Professeur Sonké and Docteur Droissart on-going research). It is recommended to assess with the concerned specialists/experts the consequences in terms of surface covered by setting different thresholds of endemism.
- recognized areas with high level of fish endemism	It is recommended to consult specialists/experts in ichthyology to determine which site(s) would fit the definition of the criteria. For example crater lakes
- recognized areas with high level of endemism for other taxa: birds, small mammals, reptiles and amphibians	It is recommended to consult specialists/experts for each taxon to determine which site(s) would fit the definition of the criteria.

2.1.1.4 Criterion 1.d: Internationally or nationally recognised sites used temporarily by CR, EN, VU, endemic, protected or restricted range species

Indicators	Suggested methodology
- Internationally or nationally recognised sites used temporarily by migratory species (birds, sea turtles, etc.)	It is recommended to consult specialists/experts to determine which site(s) would fit the definition of the criteria.
- Nationally recognised fauna or flora corridors	It is recommended to consult specialists/experts to determine which site(s)/area(s) would fit the definition of the criteria.
- Internationally or nationally recognized refugia for fauna and flora.	It is recommended to consult specialists/experts to determine which site(s)/area(s) would fit the definition of the criteria.

2.1.2 Interpretation of HCV 1 at the project area scale

Four criteria have been set at the project area scale:

- 1.e Areas within the project area which directly supports the biodiversity of an HCV 1 defined at the national scale
- 1.f Concentrations of CR, EN, VU, endemic, restricted range or protected species
- 1.g Sites used temporarily by CR, EN, VU, endemic, protected or restricted range species
- 1.h Sites/habitats with high level of endemism.

2.1.2.1 Criterion 1.e: Areas within the project area which directly supports the biodiversity of an HCV 1 defined at the national scale

Indicators	Suggested methodology
- Upstream permanent and seasonal watercourses flowing through HCV 1 area defined at the national scale.	It is recommended to identify all watercourses upstream of an HCV 1 defined at the national scale. N.B.: The permanent watercourses will be more easily identifiable than the seasonal ones.

2.1.2.2 Concentrations of CR, EN, VU, endemic, restricted range or protected species

Indicators	Suggested methodology
- Presence of one or more CR species individuals	It is recommended to assess the presence of CR species within the results of fauna and flora inventories undertaken in the frame of the project (HCV assessment or Environmental and Social Impact Assessment, etc.)
- Concentration of the EN, VU, endemic, protected species	For this criteria, it was recommended during the workshop to consult experts/specialists on how to set a “concentration” (threshold). Examples were given : - From the Vietnamese HCV interpretation: 1% 1% of threatened and/or endangered species found in the area compared to the total number listed on the Viet Nam red list 2007 and Decree 32/2006/ NĐ-CP. - From the Indonesian HCV interpretation: one or more individuals EN, VU, species.
- Presence of rivers with forested banks	The recommendation to identify rivers with forested banks is to use a recent vegetation cover image or accurate map and identify the rivers that have forested river banks (flowing through a forest, covered by a gallery forest, etc.)

Indicators	Suggested methodology
<p>- Presence of types of habitats that are known to support high biodiversity</p>	<p>It is recommended to consult specialists to identify the types of habitats that supports remarkably high level of biodiversity and to set indicators one can use to identify them.</p> <p>It was pointed out during the workshop that some work has already been undertaken to identify different kind of forests in Cameroun in the REDD process. It identifies “mature forests” which could fit into the definition of this criterion.</p>
<p>- harvestable trees with a diameter structure in shape of a bell (species with a deficit in regeneration)</p> <p>(in the case of a forest concession)</p>	<p>Recommended methodology:</p> <ol style="list-style-type: none"> 1. Establish the diameter structure of <u>each harvestable species</u> 2. Identify the species having a diameter structure in the shape of a bell
<p>- Harvestable trees presenting a total density lower than XXX stems/ha</p> <p>(in the case of a forest concession)</p>	<ol style="list-style-type: none"> 1 Calculate the density (stem/hectare) of <u>each harvestable species</u> 2. If the density is lower than XXX (threshold to be fixed), the species meets the characteristics of the indicator.

2.1.2.3 Sites used temporarily by CR, EN, VU, endemic, protected or restricted range species

Indicators	Suggested methodology
<p>- Presence of natural wetlands : riparian forests, floodable and flooded forests, marshes, (for birds, fish, reptiles, amphibians)</p>	<p>1. At the project area scale, from the forest stratification and flora inventory, estimate the spread of wetlands</p> <p>2. This estimation can be refined with the analysis of a Digital Elevation Model and detailed inventories (e.g. harvesting inventories)</p>
<p>- concentration of trees that bear fruits eaten by medium and large mammals</p> <p>Applicable in the case of :</p> <ul style="list-style-type: none"> • a permanent forest concession, • If the area to conserve the concentration of trees is adjacent or can directly be connected to an area not to be converted. 	<p>N.B.: Identification feasible mostly from precise inventories, e.g. harvesting inventories that cover 100% of an area</p> <p>Suggested methodology:</p> <p>1. Identify the location or distribution of trees that bear fruits eaten by large mammals</p> <p>It was recommended to set indicators to interpret the “concentration of trees”.</p>
<p>- presence of a baiï / natural forest clearings (clairières naturelles)/ “saline”/ « saline wetlands »</p>	<p>N.B.: Identification feasible mostly from precise inventories, e.g. harvesting inventories that cover 100% of an area</p>

2.1.2.4 Ecosystems/habitats with high level of endemism

Indicators	Suggested methodology
<p>- Presence of ecosystems with signs of high level of endemism</p>	<p>Recommended methodology</p> <p>1. Establish a forest stratification map</p> <p>2. Analyse the presence of indicators of high level of endemism and the extent of the ecosystem/habitat via a stratification.</p> <p>It was recommended to consult experts/specialists to establish a list of indicators of high endemism.</p>

2.2 HVC 2: Landscapes

The common guidance (2013, HCV RN) gives the following generic definition of the second High Conservation Value:

Large landscapes-level ecosystems and ecosystems mosaics, that are significant at global, regional or national levels, and that contains viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

By definition, HCV 2 are only identified at the national (or regional) scale

The identification of HCV 2 has always raised problems in the Congo Basin. Since the 2014 FSC General Assembly Intact Forest Landscapes (IFL) have been recognized as category of HCV 2 in the frame of FSC certification. A second motion has been accepted which requests National Standards to define indicators aiming at protecting the large majority of IFLs overlapping with FSC forest concessions. This second motion is currently the subject of an international debate especially on the implementation of this motion.

During the workshop, no consensus was found on the identification criteria and indicator of HCV 2 in Cameroon. Therefore, it was recommended to wait and see the outcomes of the international debate regarding IFLs and HCV 2 before defining criteria and indicators for HCV 2 in Cameroon.

N.B.: Since the workshop, the HVC Resource Network has included IFLs in its HCV 2 definition.

2.3 HVC 3: Ecosystems and habitats

The common guidance (2013, HCV RN) gives the following generic definition of the third High Conservation Value:

Rare threatened or endangered ecosystems, habitats or refugia

2.3.1 Interpretation of HCV 3 at the national scale

Three criteria have been set at the national scale:

- 3.a Protected ecosystems by the law
- 3.b Threatened ecosystems
- 3.c Rare ecosystems

Recommendations for the indicators of this criterion:

There is a need to define a relevant and accurate ecosystem/vegetation map on which the assessment could be undertaken.

2.3.1.1 Criterion 3.a: Protected ecosystem by the law

Indicators	Suggested methodology
-Protected ecosystems by forest and environment legal texts in force	It was recommended to analyse the protected ecosystems by the different relevant legal texts.

2.3.1.2 Criterion 3.b: Threatened ecosystems

Indicators	Suggested methodology
Ecosystem extent that has decreased of XX% or more from date/period (?) in the agro-ecological zones/ bio-geographical regions/ centres of endemism where it occurs	<p>The methodology suggested for this indicator is the one used in the Indonesian Interpretation (Annex 4 of the 2010 version).</p> <p>N.B.: The presentation of this methodology could not be found.</p> <p>It was recommended during the workshop to:</p> <ul style="list-style-type: none"> - validate the approach by specialists/experts; - determine on which “entity” it is more relevant to undertake the approach (agro-ecological zones, bio-geographical regions, centres of endemism, etc.) - set the percentage of decrease (for example in Indonesia it was set at 50%); - define the period on which to do the analysis;
Ecosystem which extent is expected to decline by more than XX% in the future (period?) in the agro-ecological zones/bio-geographical regions/ centres of endemism where it occurs	<p>Same recommendations as above.</p> <p>The methodology proposed for this indicator is the one used in the Indonesian Interpretation (Annex 4 of the 2010 version) but it could not be found.</p> <p>It was recommended during the workshop to:</p> <ul style="list-style-type: none"> - validate the approach by specialists/experts; - determine on which “entity” it is more relevant to undertake the approach (agro-ecological zones, bio-geographical regions, centres of endemism, etc.) - set the percentage of decrease (for example in Indonesia it was set at 75%); - define the period on which the methodology should be tested.

2.3.1.3 Criterion 3.c: Rare ecosystems

Indicators	Suggested methodology
Ecosystem that covers less than XX% of the agro-ecological zones/bio-geographical regions/centres of endemism where it occurs	After having set the threshold, all the ecosystem presenting an extent under the established threshold are considered rare.

2.3.2 Interpretation of HCV 3 at the project area scale

One criterion has been set at the project area scale:

- 2.d Fragile or sensitive ecosystems

2.3.2.1 Criterion 3.d: Fragile or sensitive ecosystems

Indicators	Suggested methodology
- Presence of fragile or sensitive ecosystems: mangroves, cloud forests, marshes, rocky forests, inselbergs, baïis, lakes, savannah (maximal size?) included into a dense forested area, forest areas (maximal size) included into a savannah area, afro-mountainous/sub-mountainous/mountainous, caves, cliffs, etc.	It is recommended to have experts/specialists identify as exhaustively as possible the fragile/sensitive ecosystems potentially present in Cameroon and their means/indicators of identification. The methodologies to identify fragile and sensitive ecosystems will be determined when the means/indicator of identification will be known.

2.4 HVC 4: Ecosystem services

The common guidance (2013, HCV RN) gives the following generic definition of the fourth High Conservation Value:

Basic ecosystem services in critical situations including protection of water catchments and control of erosion of vulnerable soils and slopes.

2.4.1 Interpretation of HCV 4 at the national scale

Two criteria have been set at the national scale:

- 4.a Protected watershed by the law
- 4.b Core of aquifers of interest

2.4.1.1 Criterion 4.a: Protected watershed by the law

Indicators	Suggested methodology
- areas protected by law for water quality or quantity reasons	It was recommended to analyse the relevant legal texts to highlight what areas or types of areas are protected in the frame of watershed protection in Cameroon as well as the level of protection associated to each type of area.

2.4.1.2 Criterion 4.b: core of aquifers of interest (water quality and quantity)

Indicators	Suggested methodology
Presence of a core of an aquifer of interest Will be identified as aquifer of interest, if one of the indicator below is met: <ul style="list-style-type: none">• Of interest for human activities (drinking water, irrigation, etc.)• Large hydrogeological potentiality• Vulnerable aquifers	It was recommended to consult experts/specialists on the methodology to be used to identify and delineate aquifers of interest and their cores.

2.4.2 Interpretation of HCV 4 at the project area scale

Five criteria have been set at the project area scale:

- 4.c Areas where surface erosion risk of the project upstream of important national infrastructure and of local population drinking water catchments is considered unacceptably high
- 4.d Areas within the project area found to play a role in the production of drinking water for downstream populations (including urban population if relevant))
- 4.e Ecosystems playing an important role in the water cycle
- 4.f Areas in a savannah-forest transition landscape preventing the spread of fires
- 4.g Existing vegetation barriers against wind erosion and extreme events

2.4.2.1 Criterion 4.c: Areas where surface erosion risk of the project upstream of important national infrastructure and of local population drinking water catchments is considered unacceptably high

For this criteria, a methodology was proposed but the participants of the validation workshop did not feel they were knowledgeable enough to analyse the relevance of the proposed indicators.

Therefore indicators for this criteria still need to be further developed. The participants of the workshop recommended that relevant experts are consulted on the proposed indicators or propose other indicators.

2.4.2.2 Criterion 4.d: Areas within the concession found to play a role in the production of drinking water for downstream populations (including urban population if relevant)

Indicators	Suggested methodology
<p>- Rivers and springs present within the project area found to play a role in the production of drinking water for downstream population (including urban population if relevant))</p>	<p>It is recommended to Identify through local consultation which rivers and/or springs are used for drinking water.</p>

2.4.2.3 Criterion 4.e: Ecosystems recognized to play a role in the water cycle

Indicators	Suggested methodology
<p>- Presence of ecosystems recognized to play a role in the water cycle: cloud forest, marshes, forest on soils sensitive to salt, forest on steep slopes, riparian forest, floodable/flooded forests, forests ponds (FAO, 2009)</p>	<p>It is recommended to have experts/specialists identify as exhaustively as possible the ecosystems recognized to play a role in the water cycle potentially present in Cameroon and their means of identification.</p> <p>The methodologies to identify fragile and sensitive ecosystems will be determined when the means of identification will be known.</p> <p>For forest on steep slopes: a threshold will have to be defined according to thresholds present in the legal texts of Cameroon.</p>

2.4.2.4 Criterion 4.f: Areas in a savannah-forest transition landscape which could be useful to prevent the spread of fires

Indicators	Suggested methodology
<p>- In a savannah-forest transition landscape, presence of natural fire breaks : wetlands, river banks, lakes, etc.</p>	<p>It is recommended to have experts/specialists identify as exhaustively as possible what kind of pattern/ecosystem/sites could be identified as natural fire breaks potentially present in Cameroon and their means of identification.</p> <p>The methodologies to identify natural fire breaks will be determined when the means of identification will be known.</p>

2.4.2.5 Criterion 4.g: Existing vegetation barriers against wind erosion and extreme events

Indicators	Suggested methodology
Presence of existing vegetation barriers against extreme events : storms, tsunamis, etc.	<p>It is recommended to have experts/specialists identify as exhaustively as possible what kind of pattern/ecosystem/sites could be identified as existing vegetation barriers against extreme events potentially present in Cameroon and their means of identification.</p> <p>The methodologies to identify existing vegetation barriers against extreme events will be determined when the means of identification will be known.</p>

2.5 HVC 5: Basic needs of local populations

The common guidance (2013, HCV RN) gives the following generic definition of the fifth High Conservation Value:

Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for example for livelihoods, health, nutrition, water) identified through engagement with these local communities or indigenous peoples

N.B.: Identifying HCV 5 can only be done at the project area scale as it requires engagement with these local communities or indigenous peoples.

One criterion has been identified at the project area scale: Sites and resources within the concession satisfying basic needs (criterion 5.a).

2.5.1 Interpretation of HCV 5 at the project area scale

The common guidance (2013) gives the following basic needs to be determined with the local communities:

- | | |
|---|---|
| <ul style="list-style-type: none"> a. Food b. Water c. Clothing d. Materials for building and tools | <ul style="list-style-type: none"> e. Firewood f. Medicines g. Fodder for livestock. |
|---|---|

A previous work has been undertaken for HCV identification in Community forests in Cameroon (Mbolo, 2008). This section resumes the findings of this publication attributes related to HCV 5 in Cameroon:

- ✓ Non Timber Forest Products
- ✓ Bushmeat
- ✓ Fish
- ✓ Medicinal products
- ✓ Fuelwood or wood for charcoal
- ✓ Timber
- ✓ Watershed
- ✓ Land
- ✓ Ecotourism.

It is important to recognize that a lot of local households depend on the sale of agricultural products and NTFPs for their “basic needs”. Therefore the “commercial scale” needed to be carefully and pragmatically estimated by HCV assessors.

The inclusion of “land” and in particular “agricultural land” as in the interpretation for Community Forests in Cameroon was thoroughly discussed during the validation workshop

The common guidance (2013) states that : “Until this question is resolved through further work, it is recommended that in every HCV assessment, specific attention should be given to the question of subsistence farming and how this impacts food security. Traditional agricultural systems that maintain associated biodiversity may qualify as HCV, but this should be determined on a case by case basis.” It was decided to be on the same page in Cameroon.

It was asked that the recommended methodology for HCV 5 and HCV 6 carefully takes into account gender issues.

2.5.1.1 Criterion 5.a: Sites and resources within the concession satisfying basic needs

Indicators	Suggested methodology
<ul style="list-style-type: none"> - Sites (restricted range) - Resources (diffuse/spread not limited to a site) 	<p>The recommended methodology to identify HCV 5 was through a socio-economic study along with a participatory mapping exercise which could include a GPS location of the different elements of HCV 5.</p> <p>Some aspects are of importance when identifying HCV 5: irreplaceability of the resources/sites, the “sustainability” of the management of HCV 5 and gender issues, etc.</p>

2.6 HCV 6: Cultural values

The common guidance (2013, HCV RN) gives the following generic definition of the sixth High Conservation Value:

Sites, resource, habitats and landscapes of global or national cultural archaeological or historical significance and/or critical, ecological economic or religious/sacred importance for the traditional cultures of local communities or local peoples identified through engagement with these local communities or indigenous peoples

N.B.: Identifying HCV 6 can only be done at the project area scale as it requires engagement with these local communities or indigenous peoples.

2.6.1 Interpretation of HCV 6 at the national scale

One criterion has been identified at the project area scale: Sites with an internationally or nationally historical or archaeological status

2.6.1.1 Criterion 6.a: Sites with an internationally or nationally historical or archaeological status

Indicators	Suggested methodology
UNESCO cultural heritage sites Sites with a national status	Identify and locate the relevant sites in the legal texts and recognise by international conventions

2.6.2 Interpretation of HCV 6 at the project area scale

One criterion has been identified at the project area scale: areas important for maintaining the cultural identity or unique characteristics of a local community and indigenous peoples

2.6.2.1 Areas important for maintaining the cultural identity or unique characteristics of a local community and indigenous peoples

Indicators	Suggested methodology
Sites with religious/sacred/traditional/cultural/historical significance: for rituals, collection of ingredients necessary for rituals and festivals, important for traditional identity, etc.	Identification of relevant areas within the concession through engagement with local communities and a participatory mapping exercise (first on paper or on the ground then with a GPS location if possible)
Ecosystems with religious-sacred-traditional-cultural significance	

3. REFERENCES ON HCVs

About High Conservation Values

HCV RN, 2013. Common Guidance for the identification of High Conservation Values. A good practice guide for identifying HCVs across different ecosystems and production systems.

Mbolo, 2008. Toolkit of HCV process for small and low intensity managed forest in Cameroon.

Visit the HCV resource Network documentation: <https://www.hcvnetwork.org/resources>

4. ANNEXES

Annexe 1 : Methodology used concentration of elephants and great apes in the Gabon HCV Project

Annexe 1 : Methodology used
concentration of elephants and great
apes in the Gabon HCV Project

Methodology of identification of the HCV 1 criteria: Concentration of CR, EN, VU, protected endemic and restricted range large animal species of international and national importance (elephants, great apes, large carnivores, etc.) or a combination of the above species

Extracts from the annual reports of the project “Defining HCV Thresholds in Gabon: ABCG B 2 High Conservation Value forest assessment”.

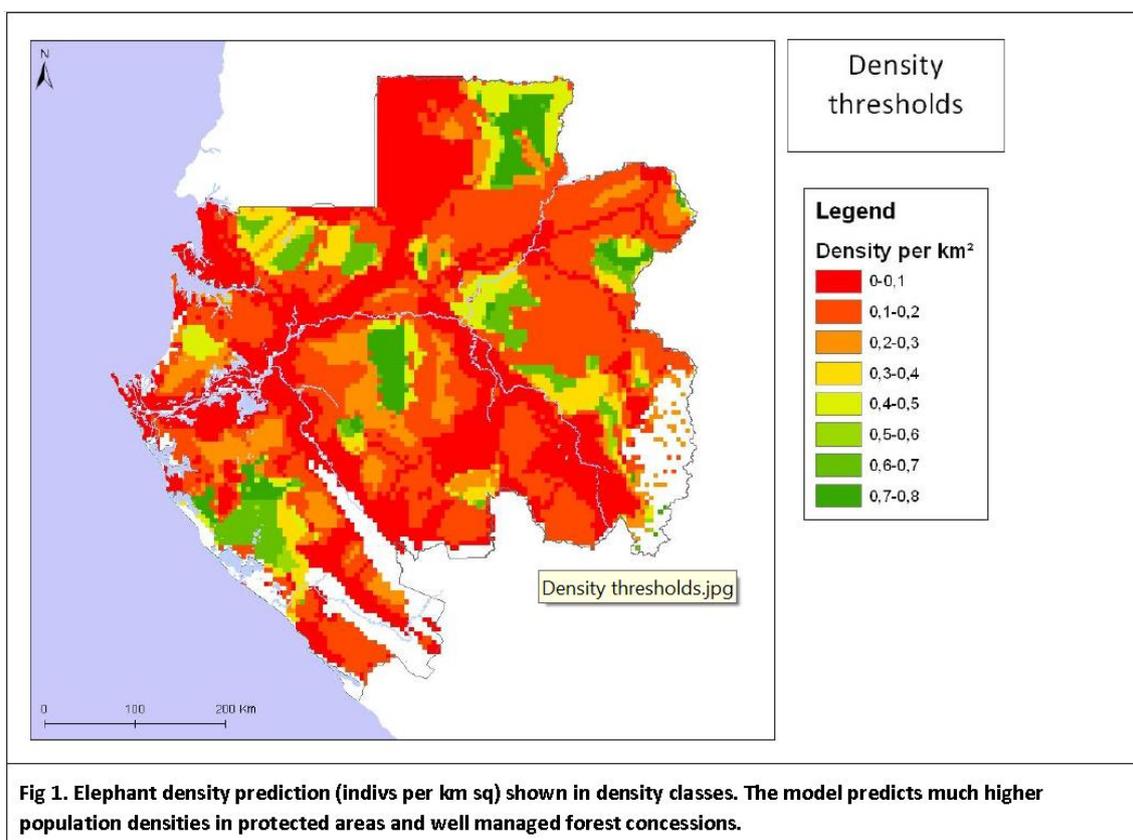
“The aim of this project is to establish a model approach to setting these thresholds for certain HCV attributes. The HCV attributes considered for this project are those for which a reasonable amount of data exists, and those which will contribute added value to the process of land use planning currently underway in Gabon.”

The project has chosen to focus on two umbrellas species: **elephants and great apes.**

“The aim of the approach is to develop a method to define the areas of elephant habitat that should be maintained to ensure long term maintenance of the species.”

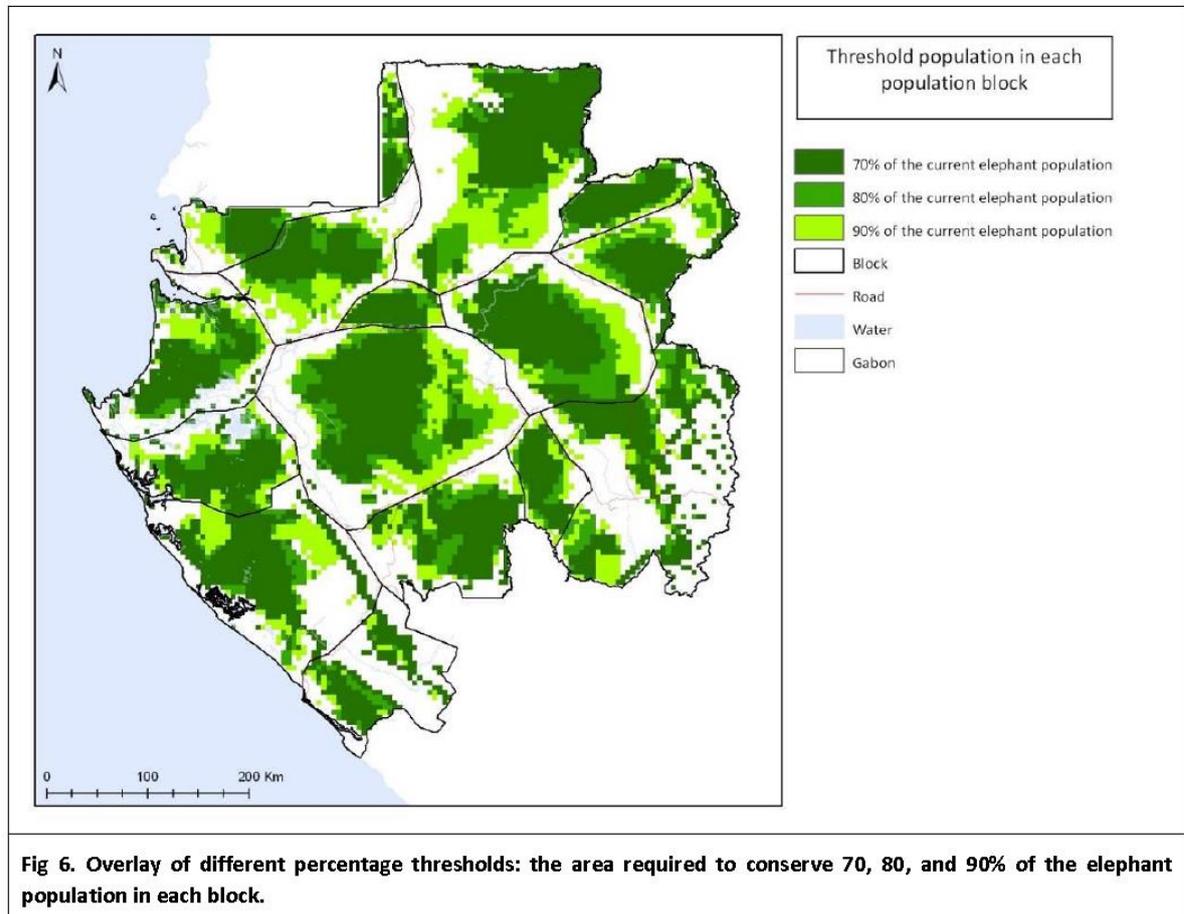
The first step of the project was to model and map elephant/gorilla population concentrations on the Gabonese territory.

“The approach use[d] a population distribution and density model [...] (Maisels et al. 2013) that takes account of the species’ wide ranging behaviour and lack of particular habitat specificity.



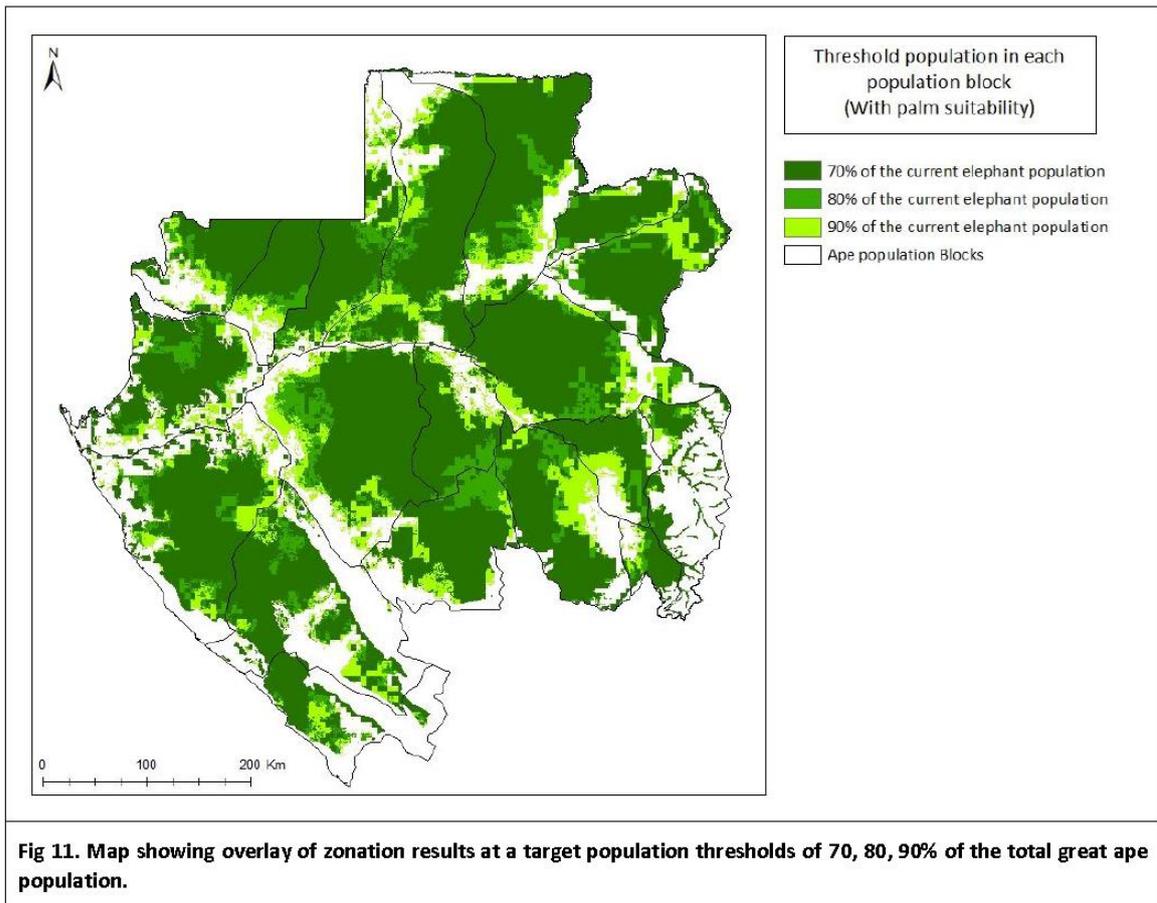
The second step was to delineate contiguous blocks of habitat for viable elephant population based on certain assumptions. In each block the objective was to model the “optimal area of land required to conserve” a certain percentage of the elephant population.

“Repeating this analysis at different percentage target thresholds is informative, as it shows how much more land would be required under forest if the target percentage is increased.”

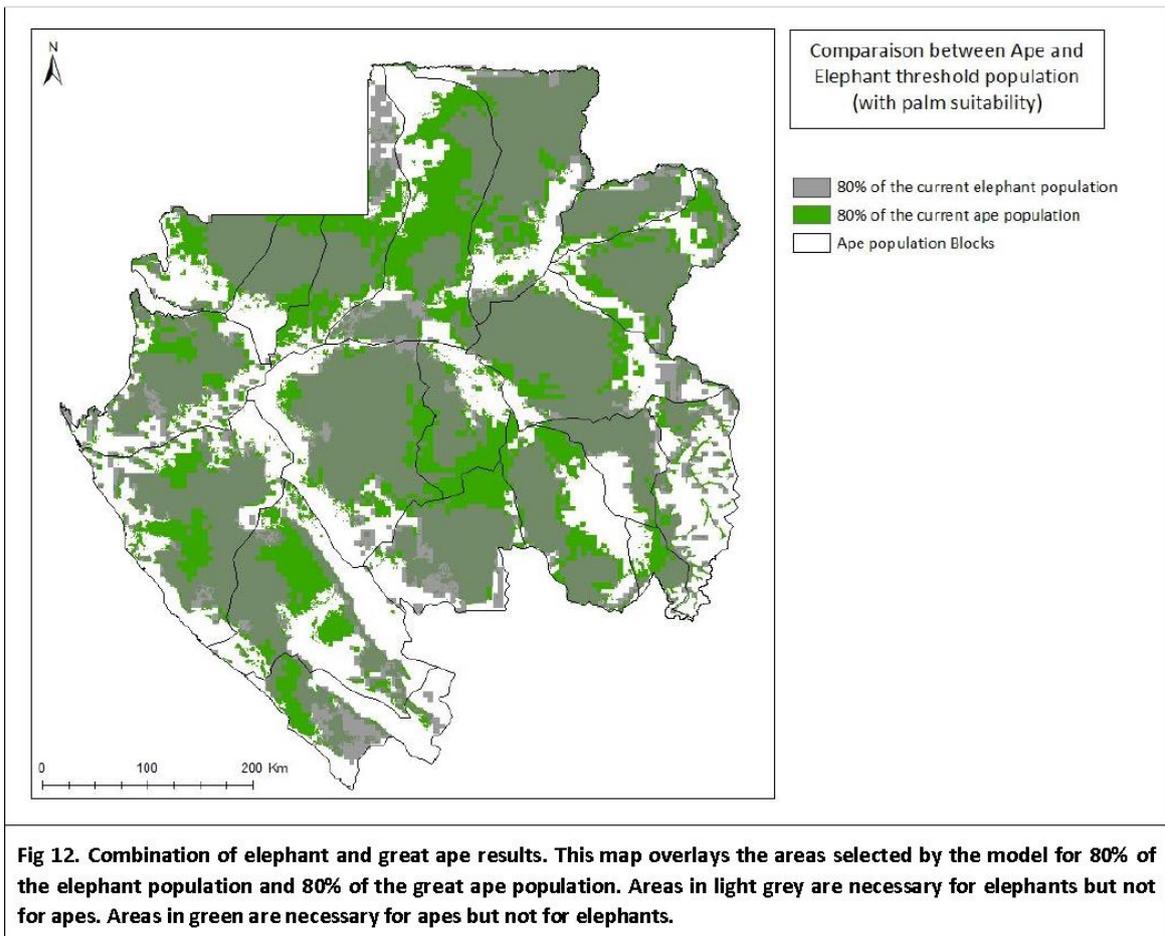


“A similar approach to the modelling of elephant populations has been undertaken for great apes by Fiona Maisels and Samantha Strindberg of WCS.”

Here are the results they obtained.



And then they tried to combine both 80% population target area for elephants and great apes.



Means to identify forest types HCV 3

The second phase of the work is statistical analysis of inventory plot data. It allows different forest types to be defined by mapping the alpha and the beta diversity from logging inventories. Different statistical approaches are used that correct for uneven sampling, and give more weight to abundant species.

In order to identify forest vegetation types, tree species turnover is analyzed using Non-Symmetric Correspondence Analysis (NSCA).

The final stage is the mapping of the different forest types. In order to interpret the variation in tree species composition spatially, the scores along the NSCA axes are mapped. Vegetation types can then be identified using a similarity matrix and the Ward clustering method. Results from NSCA are used to check the clustering approach and to document the different vegetation types identified.