



Malaysian National  
Interpretation for the  
Management and  
Monitoring of **High HCV**  
**Conservation**  
**Values**





Malaysian National Interpretation  
for the Management and  
Monitoring of  
**High Conservation Values**

This document is the Malaysian National Interpretation of the *Common Guidance for the Management and Monitoring of High Conservation Values (HCVs)* which was originally produced by the HCV Resource Network (HCV RN), now known as the HCV Network (HCVN). It supersedes the High Conservation Value Forest (HCVF) Toolkit for Malaysia published by WWF-Malaysia in 2009.

The production of this National Interpretation document was spearheaded by the HCV Malaysia Toolkit Steering Committee with inputs from the Technical Working Group and technical guidance from the HCVN.

As this document is based on the HCVN's *Common Guidance for the Management and Monitoring of HCVs*, some sections of the text borrow heavily from the Common Guidance document with permission from the HCVN.

The HCV Malaysia Toolkit Steering Committee comprises the Forest Stewardship Council® (FSC®) Malaysia, the Malaysian Palm Oil Association (MPOA), the Malaysian Timber Certification Council (MTCC), the Roundtable for Sustainable Palm Oil (RSPO) and WWF-Malaysia.

The production of this document was supported through funding from WWF-Malaysia and the RSPO.



The production of this guidance document was facilitated by Proforest.



The Technical Working Group (TWG) of the HCV Malaysia Toolkit Steering Committee comprises the following organisations: Acacia Forest Industries Sdn. Bhd., Asrama Raya Sdn. Bhd., BQAS Certification (M) Sdn. Bhd., BSI Group, Dayak Oil Palm Planters Association (DOPPA), DQS CFS Certification (M) Sdn. Bhd., Federal Land Development Authority (FELDA), FGV Holdings Berhad, Forest Research Institute of Malaysia (FRIM), FORMADAT Sabah (Forum Masyarakat Adat Dataran Tinggi Borneo), Forestry Department Peninsular Malaysia, Genting Plantations Berhad, Global Environment Centre (GEC), GP Pusaka Sdn. Bhd., **Institute of Biodiversity and Environmental Conservation (IBEC) UNIMAS**, IOI Corporation Berhad, Johor National Park Corporation, Kiviheng Environmental Consultants Sdn. Bhd., Kuala Lumpur Kepong (KLK) Berhad, Kulim (Malaysia) Berhad, LESTARI (UKM), Malaysian Nature Society (MNS), Preferred by Nature (previously NEPCon), Perak State Parks Corporation, Persatuan Dayak Sarawak (PEDAS), Platinum Shauffmanz Veritas Sdn. Bhd., Borneo Conservation Trust, Sabah Forestry Department, Sabah Forest Industries Sdn. Bhd., Sabah Softwoods Berhad, Sabah Timber Industries Association, Sarawak Dayak Iban Association (SADIA), Sarawak Forestry Corporation (SFC), Sarawak Oil Palm Plantation Owners Association (SOPPOA), Sarawak Timber Association (STA), Sarawak Timber Industry Development Corporation (STIDC), Sime Darby Plantation Berhad, Southeast Asia Rainforest Research Partnership (SEARRP), SIRIM QAS International, East Malaysia Planters Association (EMPA), Tuv Nord (Malaysia) Sdn. Bhd., University of Nottingham Malaysia, Wild Asia, Wildlife Conservation Society (WCS) Malaysia, Wilmar International Limited, WWF-Malaysia, Yayasan Sime Darby.

The HCV Malaysia Toolkit Steering Committee would like to thank all involved in the national interpretation process including the TWG, participants of the stakeholder consultations, Proforest and the HCVN.

As the development of this toolkit involved a multi-stakeholder consultation process, the outputs are not meant to belong to any individual party and should be freely available to all practitioners of the HCV approach.

Suggested citation: **HCV Malaysia Toolkit Steering Committee. 2021. Malaysian National Interpretation for the Management and Monitoring of High Conservation Values. HCV Malaysia Toolkit Steering Committee, Kuala Lumpur, Malaysia.**

For further information please contact Proforest at: [Southeastasia@proforest.net](mailto:Southeastasia@proforest.net)

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# Acronyms and abbreviations

a.s.l.	Above sea level
BMP	Best Management Practice
BRIMAS	Borneo Resources Institute
CFS	Central Forest Spine (Peninsular Malaysia)
CG	Common Guidance documents by the HCVN
CITES	Convention on International Trade in Endangered Species of Wild Fauna & Flora
COAC	Center for Orang Asli Concerns
CR	Critically Endangered (IUCN)
DD	Data Deficient (IUCN)
DID	Department of Irrigation and Drainage
DOSM	Department of Statistics Malaysia
DTCP	Department of Town and Country Planning
DWNP	Department of Wildlife and National Parks (Peninsular Malaysia)/ <i>Jabatan Perlindungan Hidupan Liar dan Taman Negara (PERHILITAN)</i>
EN	Endangered (IUCN)
EPD	Environment Protection Department (Sabah)
ESA	Environmentally Sensitive Area
FDRS	Fire Danger Rating System
FMU	Forest Management Unit
FPIC	Free, Prior and Informed Consent
FRA	Forest Resource Assessment
FSC®	Forest Stewardship Council®
FRIM	Forest Research Institute Malaysia
GEC	Global Environment Centre
GIS	Geographical Information System
HCV	High Conservation Value
HCVA	High Conservation Value Area
HCVMA	High Conservation Value Management Area
HCVN	High Conservation Value Network
HCVNI	High Conservation Value National Interpretation
HCVRN	High Conservation Value Resource Network, now HCVN (see above)
HEC	Human-Elephant Conflict
HoB	Heart of Borneo
IBA	Important Bird and Biodiversity Area
IFL	Intact Forest Landscape
IUCN	International Union for the Conservation of Nature
JAKOA	<i>Jabatan Kemajuan Orang Asli</i> (Department for Orang Asli Development)
JOAS	<i>Jaringan Orang Asal Se-Malaysia</i> (Indigenous Peoples Network of Malaysia)
JUPEM	<i>Jabatan Ukur dan Pemetaan</i> (Department of Survey and Mapping)
KDCA	Kadazan Dusun Cultural Association
KPI	Key Performance Indicators.
MPOA	Malaysian Palm Oil Association
MTCC	Malaysian Timber Certification Council
MTCS	Malaysian Timber Certification Scheme
MU	Management Unit
MyBIS	Malaysia Biodiversity Information System
MYNI	Malaysian National Interpretation

NCR	Native Customary Rights
NCZPP	National Coastal Zone Physical Plan
NECAP	National Elephant Conservation Action Plan
NFI	National Forest Inventory
NI	National Interpretation
NPBD	National Policy on Biological Diversity
NQWS	National Water Quality Standard
NREB	Natural Resources & Environment Board (Sarawak)
NSPSF	North Selangor Peat Swamp Forest
NT	Near Threatened (IUCN)
NTCAP	National Tiger Conservation Action Plan
NTFP	Non-Timber Forest Product; Non-Timber Forest Produce (in the case of Sabah)
P&C	Principles & Criteria
REDD	Reduction of Emission from Deforestation and Forest Degradation
RIL	Reduced Impact Logging
RSPO	Roundtable on Sustainable Palm Oil
RTE	Rare, Threatened and Endangered
SADIA	Sarawak Dayak Iban Association
SC	HCV Malaysia Toolkit Steering Committee
SFM	Sustainable Forest Management
SFMLA	Sustainable Forest Management License Agreement
SIA	Social Impact Assessment
SMART	<i>Specific, Measurable, Achievable, Realistic, and Time-bound</i>
SMART	Spatial Monitoring and Reporting System
SOP	Standard Operating Procedure
TEK	Traditional Ecological Knowledge
TRCRC	Tropical Rainforest Conservation & Research Centre
UAV	Unmanned Aerial Vehicle
VU	Vulnerable (IUCN)
WCS	Wildlife Conservation Society

# Glossary

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Biological diversity/ Biodiversity	The variety of life on Earth including all plants, animals, micro-organisms, the ecosystems to which they belong, and the diversity within species, between species, and of ecosystems. Biodiversity also refers to the complex relationships among living things, and between living things and their environment.
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Conservation areas	Areas that have been identified by credible sources as harbouring significant biodiversity or being important important for maintaining ecosystem services. In the Malaysian context, conservation areas include legally constituted (gazetted) protected areas according to the Protected Areas Master List but also proposed protected areas, Important Bird and Biodiversity Areas, Ramsar sites and Environmentally Sensitive Areas Rank 1.
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Ecological type	See definition for ecosystem below.
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Ecosystem	<p>A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.</p> <p>In the context of this document, ecosystem is used interchangeably with “ecological type” to describe a geographic area which has plant and animal communities within a defined, and thus mappable, geophysical area. This can contain many habitats for many different entities, e.g. lowland forest.</p>
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Ecosystem services	Benefits people obtain from ecosystems, including provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other non-material benefits.
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Free, Prior, and Informed Consent (FPIC)	<p>The right of indigenous peoples and local communities to give or withhold consent to any project that may affect their lands, livelihoods and environment. This consent should be given or withheld freely, and through communities’ own freely chosen representatives such as their customary or other institutions. It should be sought prior to commencement of activities and respecting the time requirements of indigenous consultation processes. Communities must have access to and be provided with comprehensive and impartial information on the project, including: the nature and purpose of the project; its scale, location, reversibility and scope; all possible economic, social, cultural and environmental impacts, including potential risks and benefits; and an assurance that the costs and benefits of alternative development options can be considered by the community with, or offered by, any other parties who wish to do so, with whom the community is free to engage. It is an iterative process of collective consultation, the demonstration of good faith in negotiations, transparent and mutually respectful dialogue, and broad and equitable participation.</p>
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Habitat	<p>An ecological or environmental area that is inhabited by a particular species of animal, plant, or other type of organism. The term typically refers to the zone in which the organism lives and where it can find food, shelter, protection and mates for reproduction. It is the natural environment in which an organism lives, or the physical environment that surrounds a species population.</p> <p>In the context of this document, habitat is used to describe the range and conditions where a particular species or type of plant or animal are limited to. Habitats can range across many different ecosystems, e.g. habitat of an elephant.</p>
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Hyperendemic	A plant or animal species whose distribution is highly restricted to a certain place.
Intensity	A measure of the force, severity or strength of a production activity or other occurrence affecting the nature of the activity's impacts.
Local community	Communities of any size that are in or adjacent to the Management Unit, and also those that are close enough to have a significant impact on the economy or the environmental values of the Management Unit or to have their economies, rights or environments significantly affected by the management activities or the biophysical aspects of the Management Unit.
Niche	The total sum of the adaptations of an individual, a population, or a species of which conforms to its particular environment. This includes the organism's abilities to interface with, use, and exploit its environment. In simpler terms it is what a microbe, fungus, plant or animal does in an ecological community.
Orang Asal	A collective term used for indigenous peoples in Malaysia.
Organisation	A person or entity (family, community, cooperative, government, corporation, concession holder, etc.) who is responsible for the management and monitoring of HCVs.
Precautionary approach	The precautionary approach requires 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 Organisation 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.
Refugia	Areas in which a population of organisms can survive through a period of unfavourable conditions (singular = refugium).
Riparian area/zone	An ecological concept used to describe the land adjacent to streams and rivers which is a unique transitional area between aquatic and terrestrial habitats.
River/riparian buffer	A vegetated area next to a river which partially protects the river from the impact of adjacent land uses.
River/riparian reserve	An area next to a river that has been gazetted for protection purposes under a relevant national or state law.
Risk	The probability of an unacceptable negative (environmental or social) impact arising from an activity in the MU combined with its seriousness in terms of consequences.
Saltlick	Any mineral spring or ground containing or bearing salt or any other mineral, the consumption of which is conducive to the health or wellbeing of wildlife.
Scale	A measure of the extent to which a production activity or event affects an environmental or social value or a Management Unit (MU), in time or space. An activity with a small spatial scale occurs over a small area, and an activity that occurs infrequently (i.e. at long intervals) has a 'small temporal scale'.

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Species	<p>The scientific definition according to the Biological Species Concept is: Groups of actually or potentially interbreeding natural populations, which are reproductively isolated from other such groups.</p> <p>However, there are many partial exceptions to this rule in particular taxa. Operationally, the term species is a generally agreed fundamental taxonomic unit, based on morphological or genetic similarity, that once described and accepted is associated with a unique scientific name. (source: Millennium Ecosystem Assessment: Ecosystems and Human Well-being, Volume 1, Current State and Trends).</p>
Species diversity	Biodiversity at the species level, often combining aspects of species richness, their relative abundance, and their dissimilarity.
Wetlands	Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.

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# Background to this document

**The High Conservation Value (HCV)** approach was first developed in 1997 and incorporated in the Principles & Criteria (P&Cs) of the Forest Stewardship Council (FSC) in 1998 for identifying and managing environmental and social values in forest landscapes. A three-part High Conservation Value Toolkit (the 'Global Toolkit') was produced in 2003 by Proforest.

The HCV Network (HCVN, formerly known as the High Conservation Value Resource Network) was established in 2005 and in the subsequent years, the HCVN and FSC worked together to revise the HCV definitions. In order to promote a common interpretation of the HCV definitions and thus a more consistent application across different natural resource sectors or geographies, the global HCV definitions were amended as part of the revision of the FSC P&C (2012).

In the intervening years, the HCV approach had evolved with greater emphasis given to values rather than areas, and its scope expanded beyond forests ecosystems. At the global level, HCV is now widely used in certification standards (forestry and agriculture systems) and more generally for resource use and conservation planning.

Although Malaysian national policies do not describe conservation values along the lines of the HCV approach, it should be noted that the HCV approach is not an externally imposed concept. Over the years, there has been a progressive recognition of values that need to be conserved for the benefit of the country and its people. The importance of protecting forests and wildlife has been recognised as far back as the early 1900s as evidenced by laws on forest and wildlife protection. The protected areas that have been established and the lists of protected species included in the wildlife legislations of Peninsular Malaysia, Sabah and Sarawak are examples of the country's recognition of rare, threatened and endangered species (HCV 1). Awareness about impacts from agriculture and other development activities on ecosystem services (HCV 4) led to the formulation of environmental laws in the 1970s and subsequent national policy documents such as the National Physical Plan, which includes the concept of Environmentally Sensitive Areas. Malaysia's ratification of the Convention on Biological Diversity and the adoption of the National Policy on Biological Diversity in the 1990s are a manifestation of concern over the protection of HCVs 1-3.

At the global level, there has been a consultative process since 2012 led by then the HCVN to develop a new set of practical user manuals for HCV practitioners. The first document produced under this initiative was the Common Guidance for the Identification of HCVs (Brown *et al.*, 2013) to clarify the use of HCV to other ecosystems and to provide guidance on the updated HCV definitions, as well as examples from practical field experience. This was followed by the Common Guidance for the Management and Monitoring of HCVs (Brown & Senior, 2014).

In Malaysia, a guidance document called "High Conservation Value Forest (HCVF) Toolkit for Malaysia: A national guide for identifying, managing and monitoring High Conservation Value Forests" was published in 2009 based on the earlier Global Toolkit in an initiative led by WWF-Malaysia. As its name suggests, the toolkit was mainly aimed for use by the forestry sector and for forest ecosystems. Since then, there has been an increased demand for the application of the HCV approach within the palm oil certification context. Significant developments have also happened at the national level with regard to laws and policies related to natural resources management e.g. the formulation of the National Physical Plan and the Central Forest Spine Master Plan in Peninsular Malaysia; the replacement of the Protection of Wild Life Act 1972 with the Wildlife Conservation Act 2010 in Peninsular Malaysia; progress in the implementation of the Heart of Borneo initiative in Sabah and Sarawak; and more recently the launch of the National Policy on Biological Diversity 2016-2025 and the Sabah Structure Plan 2016-2033.

As such, there was an urgent need to develop a new Malaysian HCV toolkit which would be applicable to various terrestrial ecosystems (including non-forested ecosystems) in Malaysia, and which would be aligned to the HCVN Common Guidance documents.

In 2015, a Steering Committee (SC) and a Technical Working Group (TWG) was formed to develop the HCV

Malaysia toolkit. The first document in the toolkit was published in 2018, i.e. the Malaysian National Interpretation for the Identification of High Conservation Values.

The SC and the TWG were reconvened in 2020 for the production of the second guidance document published under the banner of the HCV Malaysia toolkit. The SC for the HCV Malaysia Toolkit in 2020-2021 comprised the Forest Stewardship Council® (FSC®) Malaysia, Malaysian Timber Certification Council (MTCC), Malaysian Palm Oil Association (MPOA), Roundtable on Sustainable Palm Oil (RSPO) and WWF-Malaysia.

The TWG is a group of subject matter specialists and relevant stakeholders which provide advice and technical inputs for the development of the HCV Malaysia toolkit. The TWG is structured in accordance with the three geographical regions in Malaysia, namely Sabah, Sarawak, and Peninsular Malaysia, as these three regions vary substantially in legal frameworks, pace of economic development and environmental conditions.<sup>1</sup> In each geographic region efforts were made towards ensuring adequate representation from the different key stakeholder groups. In addition to inputs from the TWG, stakeholder consultations were held to obtain inputs on the draft document from a wider set of stakeholders in Malaysia. A stakeholder consultation period of 30 days was conducted from 15 September to 14 October 2020 during which three regional stakeholder consultation online sessions were conducted for Sabah, Sarawak and Peninsular Malaysia on 23 September, 5 October and 7 October respectively. A second stakeholder consultation period was conducted for 30 days from 7 December 2020 to 6 January 2021 during which national stakeholder consultation online sessions were held on 8-10 December 2020. Annex 8 provides a list of the stakeholder consultation workshops and the organisations that participated in the workshops.

## How to use this document

This National Interpretation (NI) document is not a stand-alone document and should be used together with the Malaysian National Interpretation for the Identification of High Conservation Values (2018), and the HCVN Common Guidance for the Management and Monitoring of High Conservation Values (Brown & Senior, 2014). Where there is lack of guidance on any particular item, please refer to the relevant section(s) in the Common Guidance (CG). Where there is a conflict or discrepancy, the global HCV guidance and definitions take precedence over national interpretations. However, where the NI goes beyond the CG, it is NOT a conflict or discrepancy, including instances where the NI requirements may be more stringent than those of the CG.

**This NI document is intended primarily for HCV assessors, resource managers, and auditors.** As in the case of the CG, it is not a binding document, but rather a guide to “best practice”. Further details on requirements relating to managing and monitoring HCVs should be sought from the relevant certification scheme.

**The introduction sections of this document provide the context for how the HCV approach should be used, and why national interpretations of the HCVN Common Guidance are needed.** The main sections provide detailed guidance on national interpretation of how HCVs should be managed and monitored, particularly the interpretation of key terms and concepts; reference documents related to management and monitoring of HCVs; and illustrative case studies and examples.

This guidance is mainly aimed at **larger commodity producers** who are aiming to achieve and or maintain certification status for a range of commodities (including timber and palm oil). While it is well acknowledged that a significant proportion of agricultural commodities is produced by smallholders, they do not have access to the same level of technical expertise and financial resources as large companies. Therefore, some of the guidance

<sup>1</sup>Malaysia is a federation of 13 states of which 11 are located in Peninsular Malaysia while two states, namely Sabah and Sarawak, are located on Borneo island. Due to historical reasons and the Federal Constitution, Sabah and Sarawak have more autonomy over their natural resources compared to the Peninsular Malaysia states. In addition, there are also regional differences in terms of socio-cultural context. Therefore, the applicable national and state laws and policies need to be taken into account when identifying, managing and monitoring HCVs. Throughout this document, due recognition is given to these regional differences and, where relevant, the laws, policies and data sources that are specific to each region are clearly stated.

in this document will be beyond the reach of many small producers. The HCVN is currently producing additional guidance documents and developing simplified approaches for smallholders and national interpretations for these documents may be produced in future.

The management and monitoring examples, text boxes and case studies included in this guidance are not authoritative guides on how HCVs should be managed and monitored, but instead are meant to provide some examples of implementation on the ground. The Organisation should use their own discretion in deciding which aspects of the examples provided are suitable in the context of HCV management and monitoring within their MU.

To test the effectiveness of the FIA tool, a scientific study was conducted by scientists at the Universities of Oxford, York and Northumbria, as well as the Southeast Asia Rainforest Research Partnership (SEARPP). Surveys were completed at 16 forest sites in Sabah, ranging in disturbance level from primary forest in the Danum Valley conservation area to small, degraded forest patches embedded within oil palm plantations. Sixty-two volunteers, who ranged widely in terms of their prior knowledge and experience of forest ecology and conservation, were enlisted to conduct the surveys. The survey scores were then statistically compared with pre-existing scientific data on forest structure, carbon stocks and biodiversity for the same sites. The scores were found to correlate strongly, indicating that the FIA survey method is robust in measuring the quality of forest, and can be used effectively, even by those with very little prior knowledge of forests (Suggitt *et al.*, 2021).

The results of this study were used to further improve the FIA tool, particularly in reducing variability in scores among surveyors. The FIA tool is currently being developed as a smartphone application with a supporting web dashboard. This will allow forest managers to map MUs and plots, collate and organise data centrally, and quickly visualise and export data and results. The tool also provides a management decision-support package to aid interpretation of results for conservation management. There is also a feature for recording observations of key focal species on an *ad hoc* basis. These records do not contribute to survey scores, but can be invaluable when used in conjunction with survey scores to inform management.

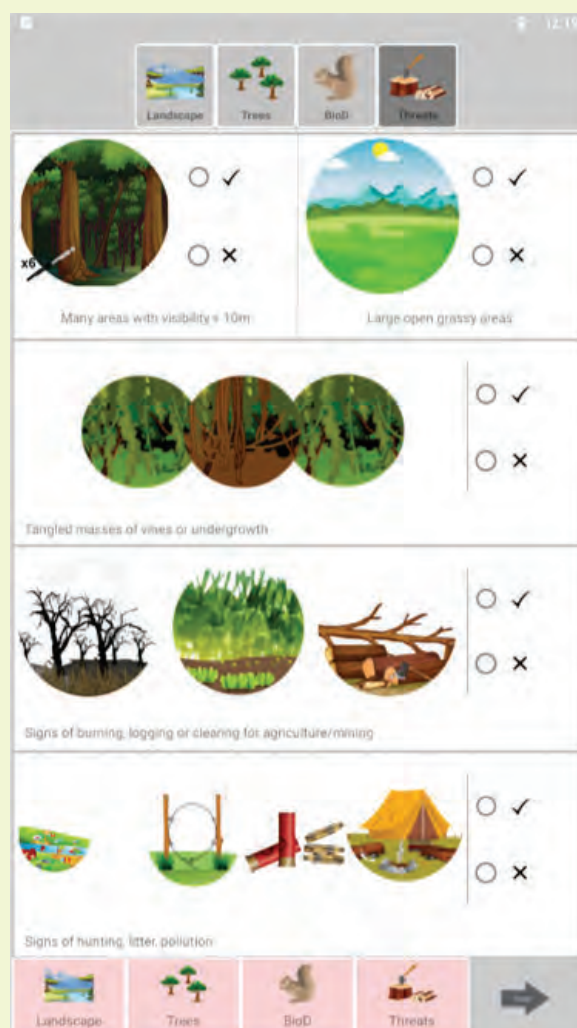
A beta version of the smartphone application will be available for SE Asia in mid 2021 and the developers are keen to work with companies to continue to develop the tool to meet user needs.

More information on FIA can be obtained from: <http://fiatool.web.ox.ac.uk>

**Reference:**

Suggitt, A.J., K.L. Yeong, A. Lindhe, A. Agama, K.C. Hamer, G. Reynolds, J.K. Hill & J.M. Lucey. 2021. Testing the effectiveness of the forest integrity assessment: A field-based tool for estimating the condition of tropical forest. *Ecological Solutions and Evidence* 2(2): p.e12067. DOI: 10.1002/2688-8319.12067

**Contributor:** Dr. Jennifer Lucey, University of Oxford



A screen shot of the FIA survey

Camera traps are increasingly being used for wildlife monitoring as they can be deployed in areas that would be difficult to monitor frequently by foot patrol, amongst other reasons. It may be more practical for the Organisation to collaborate with an external research institution or NGO to conduct a long-term camera trapping survey, as described in Case Study 11.

### Case study 11: The use of camera traps to monitor medium to large mammals in HCVA, Wilmar Oil Palm Plantation, Miri, Sarawak

Wilmar has a long-term collaboration with UNIMAS since 2013 to conduct biodiversity monitoring (including camera trapping for monitoring mammals) at its oil palm estates in the Miri Division in Sarawak. The biodiversity monitoring sites consist of three HCVA that are located within the estates. These forested areas are designated as HCVA as they contain substantial proportions of remnant native biodiversity.

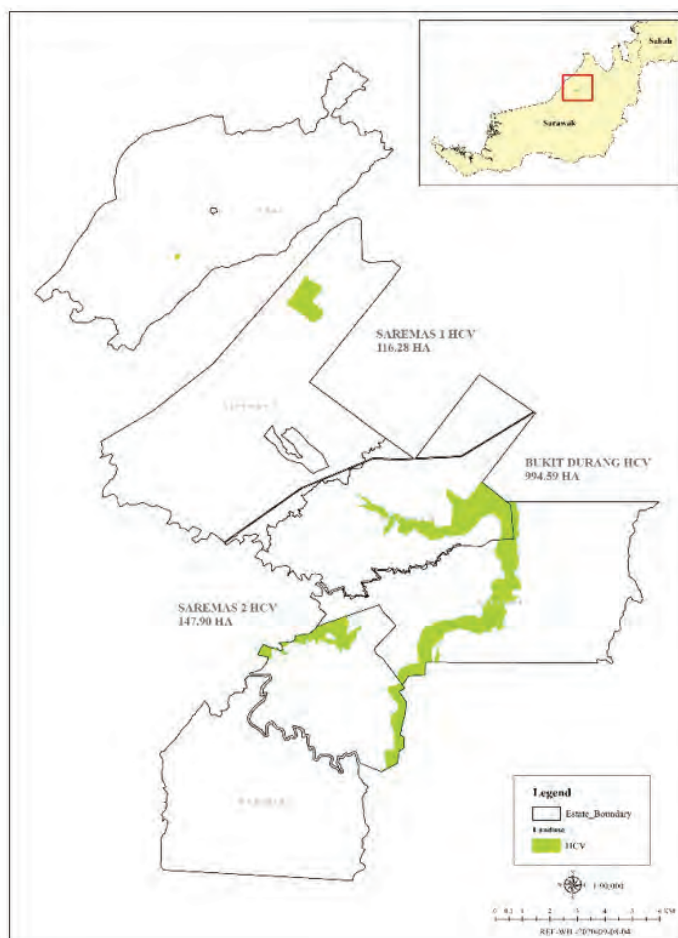
Camera trapping has been extensively used in wildlife research as it is highly efficient and cost-effective for monitoring mammals (Tobler *et al.*, 2008; Rovero *et al.*, 2014), especially in the case of tropical rainforests where species can be cryptic and elusive in nature (Azlan, 2006). Three mammalian surveys via camera trapping were conducted in the Wilmar Oil Palm Plantation, Miri, Sarawak in years 2013-2014, 2014-2015 and 2018-2020.

Study sites consisted of three High Conservation Value Areas (HCVA) that are located within the estates of Saremas 1, Saremas 2 and Segarmas. Bukit Durang is the largest HCVA measuring 989.9ha, Segarmas HCVA is 147.9ha and the smallest is Saremas 1 HCVA at 116.3ha (see accompanying map). Bukit Durang HCVA is classified as HCV 1 while Saremas 1 and Saremas 2 HCVA are classed as HCV 4. These forests were designated as HCVA as they contain substantial proportions of remnant native biodiversity. The HCVA are managed by Wilmar's Eco Management Unit (EMU) under the Sustainability Division and financed by the individual estates. Wilmar Oil Palm Plantation is certified by MSPO, ISCC and RSPO.

Both studies in 2013-2014 and 2014-2015 recorded a total of 20 species with a total effort of 2,372 and 3,789 camera trap photos respectively, while the current study (2018-2020) recorded an additional 5 new species bringing the total to 25 species (including 4 domestic species) with a total effort of 8,067 camera trap photos. The non-detection of the marbled cat (*Pardofelis mamorata*) during the latest study raises concerns that this species occurs in low density, which may require additional surveys using cat lures to confirm its presence. Cumulatively, a total record of 25 species were observed in the areas of Wilmar Oil Palm Plantation during the period of 2013-2020.

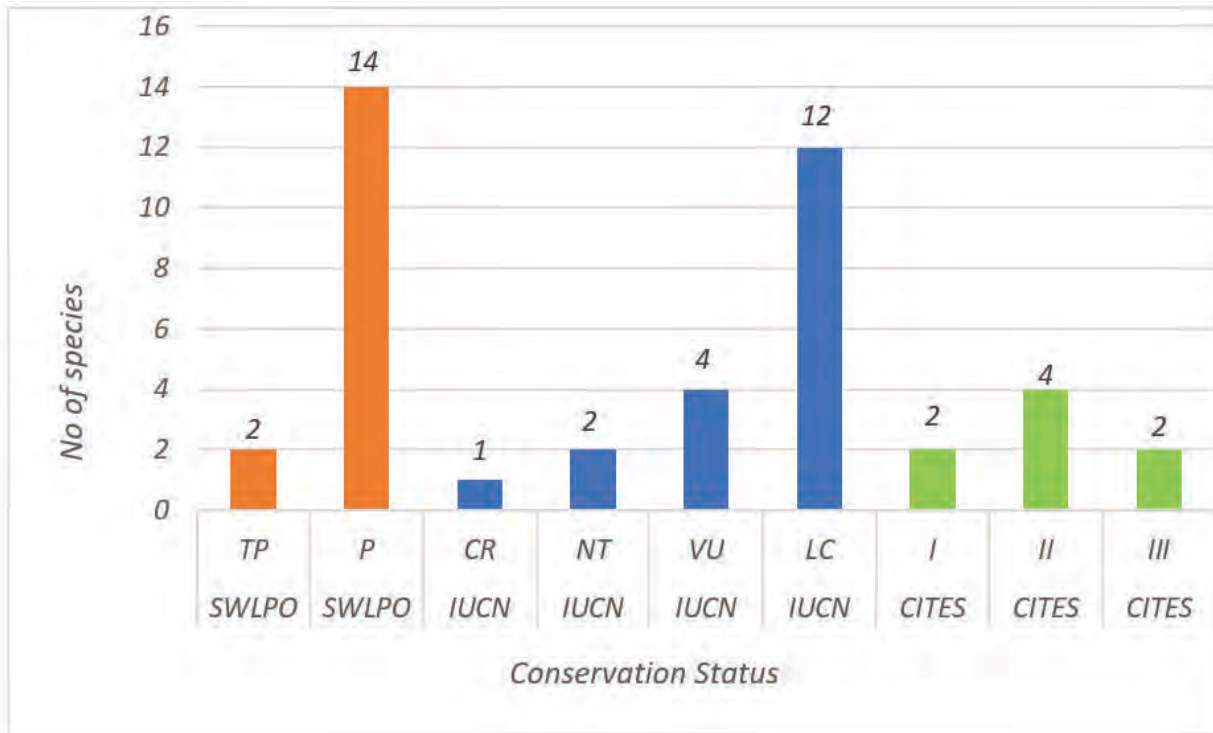
The Sunda pangolin (*Manis javanica*) and Sun bear (*Helarctos malayanus*) are of high conservation importance. Both are listed under the IUCN Red List of Threatened Species as Critically Endangered (Sunda pangolin) and Vulnerable (Sun bear) (IUCN, 2019).

This comparative description needs to be viewed cautiously as the camera trapping effort was not equal for the different sampling periods and therefore additional analysis is needed in order to factor in this difference. However, almost all the species previously detected appear to continue occurring in the study area with additional species recorded in





the current study, suggesting that this area is able to provide resources for the long-term persistence of the selected species. The HCV areas in Wilmar's Oil Palm plantations in Sarawak appear to sustain some species of conservation importance and therefore existing HCV management and monitoring tools should be continued.



The total number of species with conservational importance recorded in HCV areas, Sarawak. SWLPO = Sarawak Wild Life Protection Ordinance;

During the assessment, a few potential threats such as illegal extraction and intrusion, invasive feral species (e.g. cats & dogs) and rubbish pollution were also observed. Areas that were further away from the management units required more emphasis on signage and regular patrolling to curb encroachment. Various actions such as strengthening patrolling and monitoring, capacity building for HCV staff, and the Wildlife Rangers Programme are being undertaken to mitigate the threats and to improve HCV management.



Sambar deer (*Rusa unicolor*) detected in the Saremas 1 HCVA.



Sun bear (*Helarctos malayanus*) recorded in Bukit Durang HCVA

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**Contributors:** Dr. Jayasilan Mohd-Azlan & Lisa Lok Choy Hong, UNIMAS; Ginny Ng Siew Ling, Chin Sing Yun, Marcie Elene Marcus Jopony & James Wong Tai Hock, Wilmar.

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