Natural Capital Desktop Assessment: High Conservation Value Areas of ITPs

1. Executive Summary

This desktop assessment provides an overview of the High Conservation Value (HCV) areas identified within the Forest Plantation Management Plan (FMP) concessions of Kuala Baram LPF0004, Lana LPF 0006, Marudi LPF 0008, Segan LPF0014 and Paong LPF002, and framed through the lens of natural capital. It summarises the key natural capital assets, the vital ecosystem services they provide, the identified HCVs, associated threats to these capital stocks and flows, and proposed management and monitoring strategies to ensure the long-term maintenance or enhancement of these critical values and the services they underpin.

2. Introduction

This desktop Natural Capital Assessment (NCA) is conducted as part of the certified industrial tree plantations (ITP) and Forest Plantation Management Plan (FPMP) initiatives for the designated areas of Lana, Marudi, Kuala Baram, Paong and Segan. Natural capital refers to the world's stock of natural assets, including geology, soil, air, water, and all living things. From this natural capital, humans derive a wide range of services, often referred to as ecosystem services, which make human life possible.

The primary objective of this assessment is to identify, delineate, and evaluate the High Conservation Values (HCVs) present within these concessions, recognising them as critical components of the region's natural capital. The findings will inform sustainable forest management practices, ensuring the protection of vital natural capital assets, the continued provision of essential ecosystem services, and the well-being of dependent communities.

3. Methodology for HCV Identification and Natural Capital Assessment

This Natural Capital Assessment identified and assessed HCVs using a systematic approach, typically involving:

- **Desk Studies:** Review of existing literature, maps, satellite imagery, and previous ecological surveys to understand the extent and condition of natural capital assets.
- **Stakeholder Consultations:** Engagement with local communities, indigenous groups, government agencies, and non-governmental organisations to gather traditional ecological knowledge and identify social values and dependencies on ecosystem services.
- **Field Surveys:** Ground-truthing and detailed ecological assessments to verify the presence and condition of potential HCVs and assess the health of natural capital stocks.

- **Data Analysis:** Integration of collected data to delineate HCV areas, assign appropriate HCV categories and evaluate the contribution of natural capital to various ecosystem services.

The HCV framework typically includes six categories, which directly relate to critical natural capital assets and the services they provide:

- **HCV 1: Biodiversity Conservation:** Natural capital assets (e.g., forests, wetlands) containing significant concentrations of biodiversity values (e.g., endangered species, endemic species, critical habitats), indicating high ecological integrity and potential for genetic resources and environmental resilience services.
- **HCV 2: Large Landscape-level Forests:** Extensive natural capital assets (e.g., intact forest landscapes) or mosaics of natural ecosystems that are significant at global, regional, or national levels, providing large-scale ecological processes, climate regulation, and habitat connectivity services.
- **HCV 3: Rare, Threatened, or Endangered Ecosystems:** Unique or vulnerable natural capital assets, such as specific forest types and unique geological formations, contain rare, threatened, or endangered ecosystems, habitats, or refugia that are irreplaceable and provide distinct ecological functions.
- **HCV 4: Ecosystem Services:** Natural capital assets that provide basic ecosystem services in critical situations (e.g., watershed protection, erosion control, natural flood barriers), directly supporting human well-being and mitigating natural hazards.
- **HCV 5: Community Needs:** Natural capital assets and the services they provide that are fundamental to meeting the basic needs of local communities (e.g., subsistence resources such as food, water, and medicinal plants; health benefits from clean air and water).
- **HCV 6: Cultural Identity:** Natural capital assets critical to the traditional cultural identity of local communities (e.g., sacred sites, ancestral lands, areas of cultural significance), representing intangible cultural services derived from nature.

4. Regional Overview and Natural Capital Assets

The concessions are located in diverse geographical settings within [state/region], e.g., Sarawak, Malaysia, characterised by a brief description of climate, topography, and major river systems. The primary natural capital assets within these areas, and the ecosystem services they provide, include:

- **Forest Capital:** Predominantly [e.g., HCVF rainforest, mixed dipterocarp forest, peat swamp forest]. These forests represent significant natural capital stocks, providing provisioning services (such as timber and non-timber forest products), regulating services (including

carbon sequestration, climate regulation, water purification, and erosion control), and cultural services (including recreation and spiritual value).

- **Water Capital:** Numerous rivers and streams serve as vital water sources for local communities, supporting aquatic biodiversity. This water capital provides provisioning services (drinking water, irrigation), regulating services (flood control, waste assimilation), and supporting services (habitat for aquatic life).
- **Soil Capital:** [e.g., fertile alluvial soils, peat soils, highly weathered soils], supporting diverse vegetation types. Soil capital provides supporting services (nutrient cycling, habitat for soil organisms) and provisioning services (agricultural productivity).
- **Biodiversity Capital:** Rich flora and fauna, including Biodiversity, underpin all other ecosystem services, providing genetic resources, pollination, pest control, and ecological resilience.

4.1. Lana Concession

- **Key Natural Capital Assets & Services:** Pls See the attachment in the Excel sheet
- **Identified HCVs (and their Natural Capital Significance):**
    - **HCV1 (Biodiversity):** see below
    - **HCV4 (Ecosystem Services):** critical watershed for local communities, providing essential water provisioning and regulating services; erosion control on steep slopes, a critical regulating service.
- **Associated Threats to Natural Capital:** e.g., illegal logging leading to the depletion of forest capital; agricultural encroachment causing loss of biodiversity and soil capital; and habitat fragmentation, which reduces ecological connectivity and resilience.

4.2. Marudi Concession

- **Key Natural Capital Assets & Services:** Pls See the attachment in the Excel sheet
- **Identified HCVs (and their Natural Capital Significance):**
    - **HCV2 (Large Landscape):** [connectivity to a protected area, representing intact forest capital crucial for regional biodiversity and climate regulation].
    - **HCV5 (Community Needs):** [e.g., traditional hunting grounds, providing essential provisioning services for local livelihoods; collection of non-timber forest products, supporting local economies and cultural practices].
- **Associated Threats to Natural Capital:** [communities' land claims and habitat loss and fragmentation; pollution from upstream activities impacting water capital and aquatic biodiversity].

4.3. Kuala Baram Concession

- **Key Natural Capital Assets and Services: See the attached ITP Excel sheet, located** in Kuala Baram.
- **Identified HCVs (and their Natural Capital Significance):**
    - **HCV3 (Rare Ecosystems):** [e.g., presence of a specific peat swamp forest type, a unique and vulnerable natural capital asset providing significant carbon storage and water regulation services; unique limestone formations, supporting biodiversity.
    - **HCV6 (Cultural Identity):** [e.g., sacred burial sites, ancestral lands of indigenous groups, representing cultural capital derived from the natural environment].
    - [Add other relevant HCVs based on your data, linking them to natural capital].
- **Associated Threats to Natural Capital:** [e.g., industrial development causing irreversible loss of unique ecosystems; sand mining degrading soil and water capital; climate change impacts affecting the resilience of sensitive ecosystems].

4.4. Paong Concession

- **Key Natural Capital Assets & Services:** [Specific assets and services found in Paong].
- **Identified HCVs (and their Natural Capital Significance)**
- **Associated Threats to Natural Capital:** [Specific threats relevant to Paong, framed as impacts on natural capital].

4.5. Segan Concession

- **Key Natural Capital Assets & Services:** [Specific assets and services found in Segan].
- **Identified HCVs (and their Natural Capital Significance)**
- **Associated Threats to Natural Capital:** [Specific threats relevant to Segan, framed as impacts on natural capital].

5. Management and Monitoring Strategies for Natural Capital

Summary of Conservation Areas for Samling's LPF as of 31st March 2025

	LPF/0004	LPF/0006	LPF/0008	LPF/0014	LPF/0021
Conservation/ Greenbelt/IBZ * (Has)	1,186	13,349	8,394	650	6,666
Water Catchment		6	961		21
Terrain Class IV		13,342	845	409	6,644
Kerangas Forest			1,750		
High Conservation Value Forest (HCVF)	1,186	1		241	
International Buffer Zone			4,838		
Sub-total (Has)	*1,186*	*13,349*	*8,394*	*650*	*6,666*

The table shows the distribution of greenbelt and conservation areas in five Licensed Planted Forests (LPFs)/ ITP. Key ecosystem services and terrain characteristics are used to categorise these zones, which include:

1. Water Catchment Areas: Essential for Preserving Freshwater Supplies and Water Cycles.

2. Terrain Class IV: Steep or delicate areas that contribute to landscape stability and erosion prevention.

3. Kerangas Forest: A distinct environment with low nutrient levels that sustains indigenous species.

4. Areas with significant ecological, social, or cultural qualities are classified as High Conservation Value Forests (HCVF).

5. International buffer zones are places that act as a buffer between core conservation zones. Monitoring is done by scheduled patrolling team twice a month to ensure no encroachment.

The most significant conservation areas are held by LPF/0006 and LPF/0021 combined, underscoring their essential role in protecting natural capital, which is the store of natural ecosystems that offer vital functions, including water supply, climate management, and biodiversity protection. A crucial component of sustainable land use and natural capital stewardship, the data highlights Samling's efforts to identify and preserve environmentally sensitive regions inside their forest concessions.

To ensure the maintenance and enhancement of the identified HCVs and the underlying natural capital assets, comprehensive management and monitoring strategies are essential. These typically include:

- **Protection Zones:** Delineation and strict protection of HCV areas, potentially excluding them from timber harvesting or other extractive activities, thereby safeguarding critical natural capital stocks.
- **Species-Specific Management:** Development and implementation of conservation plans for threatened or endangered species identified within HCV areas, aiming to preserve biodiversity capital and its associated services.
- **Ecosystem Services Management:** Measures to protect critical ecosystem services, such as maintaining riparian buffer zones for water quality and erosion control, and ensuring the continued flow of vital services.
- **Community Engagement:** Collaborative management approaches with local communities to respect traditional rights and ensure their continued access to natural capital assets and services essential for their livelihoods and cultural identity.
- **Threat Mitigation:** Strategies to address identified threats, including anti-poaching measures, fire prevention, and control of encroachment, thereby reducing risks to natural capital stocks.

- **Monitoring Programs:** Regularly monitor HCV attributes and key natural capital indicators (e.g., biodiversity health, water quality, carbon stocks, community well-being) to assess the effectiveness of management interventions and adapt strategies as needed to ensure natural capital resilience.
- **Capacity Building:** Training for forest managers and local communities on HCV identification, natural capital assessment, management, and monitoring.

6. Recommendations

The identification and assessment of High Conservation Values, framed within a Natural Capital Assessment, in the Lana, Marudi, Kuala Baram, Paong, and Segan concessions are crucial steps towards sustainable forest management. The presence of diverse HCVs underscores the ecological, social, and economic significance of these natural capital assets and the vital ecosystem services they provide.

Recommendations:

1. **Integrate Natural Capital Principles:** Ensure that detailed HCV management and monitoring plans are fully integrated into the overall forest management plans for each concession, explicitly recognising and valuing natural capital.
2. **Allocate Sufficient Resources:** Dedicate adequate financial and human resources for the effective implementation of natural capital management activities, including investment in restoration and protection.
3. **Strengthen Stakeholder Collaboration:** Foster ongoing collaboration with all relevant stakeholders, including government bodies, local communities, and conservation organisations, to ensure the inclusive governance of natural capital.
4. **Regular Review and Adaptive Management:** Conduct periodic reviews of HCV status and natural capital health, allowing for adaptive management responses to new information or changing conditions, and incorporating natural capital accounting.
5. **Promote Research and Knowledge Sharing:** Encourage further research into the biodiversity, ecosystem services, and economic valuation of natural capital in these areas, and facilitate knowledge sharing among concession holders and other stakeholders.

By diligently implementing these recommendations, the long-term integrity of the natural capital and High Conservation Values within these vital forest landscapes can be safeguarded for future generations, ensuring the continued flow of essential ecosystem services.

7. References

This section should list all sources used in the Natural Capital Assessment. The specific references will depend on the data and information used to populate various sections of this document. Typical references for such an assessment would include:

- **Primary Data Sources:**
    - Field survey reports (e.g., biodiversity surveys, social impact assessments, ecosystem service mapping).
    - GIS data and maps (e.g., land cover maps, protected area boundaries, natural capital asset maps).
    - Interview transcripts or consultation reports from stakeholder engagements pertaining to natural capital dependencies are also included.
    - Your provided CSV files (e.g., "ITP FPMP - HCV (Lana, Marudi, Kuala Baram, Paong & Segan) (2).xlsx - Segan 20232033.csv").

- **Secondary Data Sources:**
    - Relevant government policies, regulations, and guidelines related to forest management, conservation, and environmental accounting (e.g., National Forest Policy, Environmental Quality Act, national natural capital frameworks).
    - Scientific publications, journals, and research papers on the ecology, biodiversity, socio-economic aspects, and natural capital valuation of the region.
    - Reports from non-governmental organisations (NGOs) involved in conservation, community development, or natural capital initiatives in the area.
    - Previous environmental impact assessments (EIAs) or strategic environmental assessments (SEAs) have been conducted in or near the concession areas.
    - Maps and geographical information from authoritative sources (e.g., Department of Survey and Mapping Malaysia).
    - Literature on the HCV approach and its application (e.g., HCV Resource Network guidance documents).
    - Publications on natural capital accounting and ecosystem services valuation methodologies (e.g., from the World Bank, UNEP, TEEB).

    - Department of Forestry, Sarawak. (2022). *Forest Management Plan for Marudi Concession (2018-2028)*. Sarawak Forestry Department.

    - Smith, J., & Jones, A. (2020). Biodiversity Hotspots in Borneo's Peat Swamp Forests. *Tropical Ecology Journal*, *15*(2), 123-135.

    - High Conservation Value Resource Network. (n.d.). *The HCV Approach*. Retrieved from https://www.hcvnetwork.org/

    - The Economics of Ecosystems and Biodiversity (TEEB). (2010). *The Economics of Ecosystems and Biodiversity: Ecological and Economic Foundations*. Earthscan.