High Conservation Value Public Summary

Golden Veroleum Liberia's Barclayville, Grand Cess, Gblebo and Trembo Districts Grand Kru County, Liberia

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  Contact: +44-7780-662-800
- Location of assessment: Barclayville, Grand Cess, Gblebo and Trembo Districts in Grand Kru County, Southern Eastern Liberia
- Dates of assessment: November 2015 - May 2016
- Size of assessment area: 24,593 ha
- Total HCVMA mapped: Finalized HCVMA = 2,097 ha. Draft HCVMA = an additional 1,027 ha mapped. The draft HCVMAs have been identified, described and mapped indicatively where possible, but will require definitive mapping by GVL to be included in the finalized HCVMA.
- Planned land use(s) for assessment area: Oil palm plantation
- Certification scheme: RSPO

Abbreviations

AOI	Area of Interest
CI	Conservation International
CDA	County Development Agency
DEM	Digital Elevation Model
DBH	Diameter at Breast Height
ESIA	Environmental and Social Impact Assessment
FCP	Forest Conservation Policy
FDA	Forestry Development Authority
FFI	Fauna and Flora International
FGD	Focus Group Discussion
FSC	Forest Stewardship Council
GAR	Golden Agri-Resources
GIS	Geographical Information System
GOL	Government of Liberia
GVL	Golden Veroleum Liberia Inc.
HCV	High Conservation Value
HCS	High Carbon Stock
HCVMA	High Conservation Value Management Area
HDF / HK3	High Density Forest (an HCS category)
IUCN	International Union for the Conservation of Nature
KBA	Key Biodiversity Area
LDF / HK1	Low Density Forest (an HCS category)
LP	Lahan pengusaha (company land)
MDF / HK2	Medium Density Forest (an HCS category)
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
NPP	New Planting Procedure
NTFP	Non-Forest Timber Product
OL / LT	Open Land (an HCS category)
RBA	Rapid Biodiversity Assessment
RF	Regenerating Forest
RSPO	Round Table on Sustainable Palm Oil
SRV	Short Regenerating Vegetation
S / BM	Scrub (an HCS category)
SAMFU	Save My Future Foundation
SCNL	Society for the Conservation of Nature in Liberia
SOP	Standard Operating Procedures
SNF	Short Stature Natural Forest
TA	Tanah Air (wetland)
TFT	The Forest Trust
TNF	Tall Stature Natural Forest
WCF	Wild Chimpanzee Foundation
WWF	World Wide Fund for Nature
YRF / BT	Young Regenerating Forest

Introduction & Background

HCV Assessment & Company Background

This Public Summary describes the results of a High Conservation Value (HCV) Assessment undertaken by Green Consulting Liberia for a proposed oil palm development by Golden Veroleum Liberia Inc. (GVL) in Grand Kru County, Liberia (Map 1).

HCV Assessment

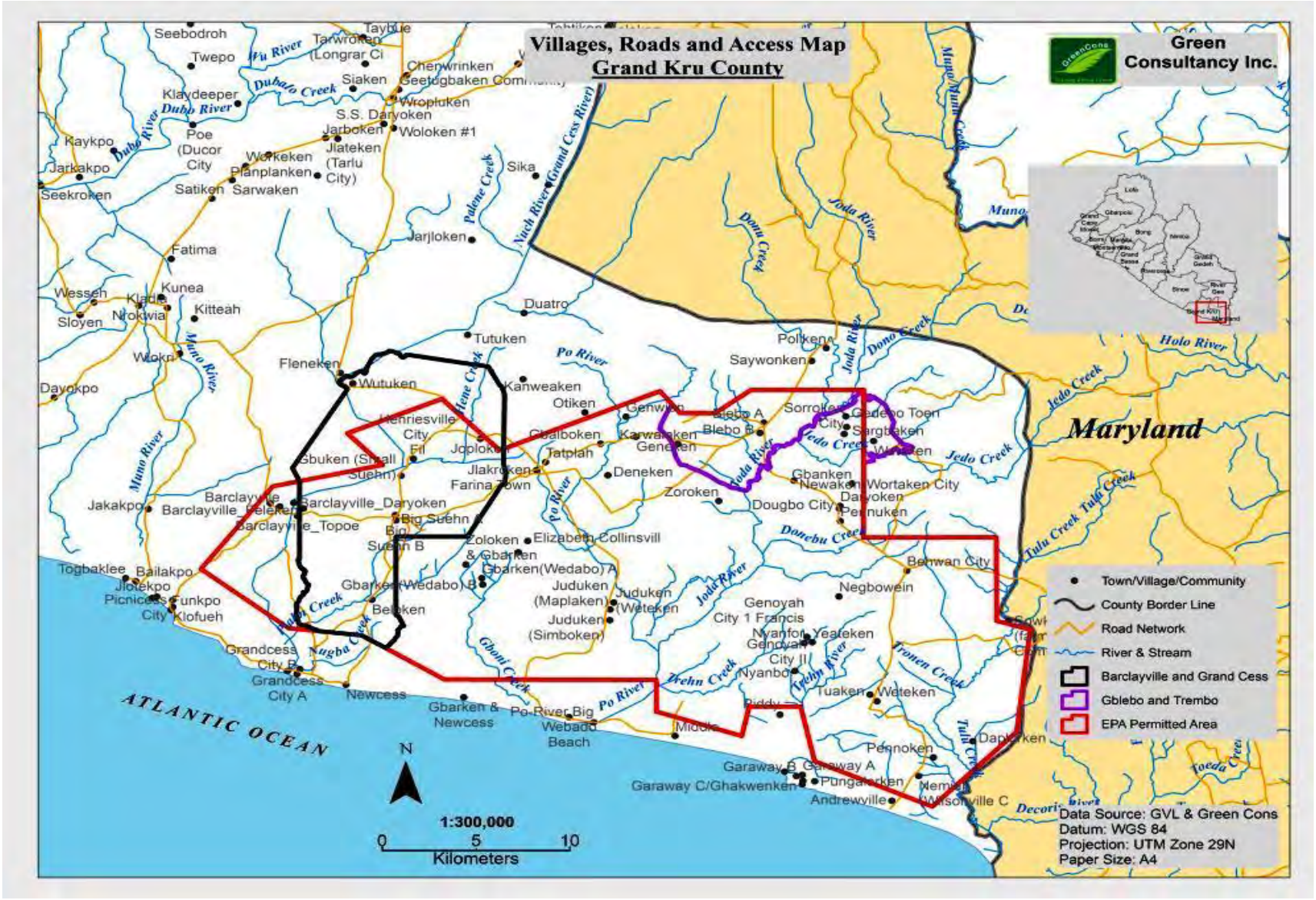
The HCV concept was developed in 1999 by the Forest Stewardship Council (FSC) as Principle 9 of the FSC standard for certified responsible forestry. The HCV approach aims to help land managers improve the social and environmental sustainability of production, first, by identifying areas with exceptionally high social, cultural or biological value (the HCV areas), and second, by developing a stakeholder supported management plan that permits resource utilization and ensures maintenance of these values. Common Guidance on the Identification of HCVs was developed by the HCV Resource Network (2013), followed by a Common Guidance on Management and Monitoring HCVs. Liberia developed a draft National Interpretation in 2012/13, led by Fauna & Flora International and Proforest. For this assessment, the HCV Draft National Interpretation for Liberia (January 2013) was used to identify HCVs (Table 1) and develop management recommendations. The HCVs in the Liberian Toolkit closely mirror that of the HCV Resource Network's Common Guidance document, as shown in Table 1. Any divergences from the these Toolkits are noted in the text. Additional guidance was drawn through communications with both local and HCV experts prior, during and after the field survey.

This HCV assessment took place from November 2015 to March 2017. David Rothchild, Director of GVL, is the company contact responsible for the commissioning of this assessment. Contact: +44-7780-662-800, +231-88-644-8525 and david.rothchild@veroleum.com

Company Background

Golden Veroleum Liberia Inc. (GVL) is duly recognized under the laws of the Republic of Liberia with its offices in Monrovia, Liberia. The company is owned by U.S.-based Verdant Fund LP, whose sole investor is Singapore-listed Golden Agri-Resources (GAR). GAR is one of the world's largest oil palm cultivators. The parent company is working closely with Greenpeace and The Forest Trust (TFT) on a Forest Conservation Policy (FCP) that "focuses on no development on HCS forests, High Conservation Value (HCV) areas and peat lands; free, prior and informed consent from indigenous and local communities; and compliance with all relevant laws and internationally accepted certification principles and criteria (TFT 2012)." The policy also covers all of GVL operations in Liberia. GAR and GVL are both Roundtable on Sustainable Palm Oil (RSPO) members and have committed to a zero-deforestation policy for all of their palm oil operations.

As part of the ratified Concession Agreement passed into law on September 1, 2010, GVL is entitled to develop up to 220,000 ha of land for oil palm. The company has already made a significant investment in the two south eastern counties of Sinoe and Grand Kru. In compliance with the Laws of Liberia and the principles and criteria of the RSPO, GVL has completed a number of ESIA and NPP assessments. GVL has commissioned an ESIA for an area of 33,000 ha in Butaw, 74,000 ha in Kpayan and 15,000 ha in Tarjuowon Districts, Sinoe County and an additional 97,000 ha in Grand Kru County. In Grand Kru County, the RSPO New Planting Procedure (NPP) requirements have been met for 28,000 ha in Trembo District and Wedabo and development of a nursery in Sorroken, Trembo. The total areas planted in Sorroken, Garraway and Wedabo Estates are 712 ha, 2,874 ha and 1,480 ha respectively. All activities within the current assessment area, or Area of Interest (AOI), will be a new expansion.



Map 1. Map of concession areas with settlements, rivers and roads. The AOI Barclayville/Grand Cess AOI is outlined in green and adjacent Gblebo and Trembo AOIs in purple.

Table 1. The High Conservation Values for Liberia as defined in the draft HCV Toolkit for Liberia (2013) alongside the HCVs as listed in the HCVRN Common Guidance (2013).

Liberia Toolkit (2013)			HCVRN Common Guidance (2013)
HCV 1 – Concentrations of Biodiversity Values	1.1	Protected areas	HCV 1: Concentrations of biological diversity including endemic species, and rare, threatened or endangered (RTE) species that are significant at global, regional or national levels.
	1.2	Concentrations of rare, threatened and endangered species	
	1.3	Concentrations of endemic species	
	1.4	Critical temporal concentrations of species	
HCV 2 – Landscape Level Ecosystems and Mosaics	2	Natural ecosystems or ecosystem mosaics which are large in extent, un-fragmented, form a significant components of the landscape or are of significant importance at a local, regional of national level, and which contain most of the naturally occurring species.	HCV 2: Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.
HCV 3 – Ecosystems and Habitats	3	Ecosystems that are naturally rare, have become rare due to historical processes, or threatened by present or future processes.	HCV 3: Rare, threatened, or endangered ecosystems, habitats or refugia.
HCV 4 – Critical Ecosystem Services	4.1	Areas critical to water catchments	HCV 4: Basic ecosystem services in critical situations including protection of water catchments and control of erosion of vulnerable soils and slopes.
	4.2	Areas critical for soil erosion	
	4.3	Areas critical for fire prevention	
HCV 5 - Basic Needs of Local Communities	5	Sites and resources fundamental for the basic necessities of local communities or indigenous peoples.	HCV 5: 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 communities or indigenous peoples.
HCV 6 - Cultural Values	6	Cultural values critical to the traditional cultural identity of local communities, including areas of cultural, ecological, economic, religious or archaeological significance.	HCV 6: Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.

Site Description

LOCATION, PERMITTING AND OPERATIONS

The AOI is situated between latitudes 4°34'30"N and 4°46'0"N and longitudes 8°15'0"W and 7°51'0"W in the Districts of Barclayville, Grand Cess, Gblebo and Trembo in Grand Kru County, Liberia. Grand Kru County is located along the southern Atlantic Coast of Liberia. The western boundary of Grand Kru borders Sinoe County. To the north is River Gee County and the eastern boundary is with Maryland County. Grand Kru County has a total land area of 2,299 km^2 (Grand Kru CDA). The proposed AOI covers 24,593 ha, including the major communities of Sorroken, Wutuken, Gblebo communities, Gborlopu Communities, Suehn Communities, Topoh communities and Grand Cess communities. These communities are considered parent bodies (big towns) to the more than 22 towns and villages in and around the AOI (Map 1).

In keeping with Section 11 of the Environmental protection and Management Law of the Republic of Liberia (2003) and Annex 1 (Section 6), all new projects that fall under the Environmental Laws of Liberia EIA mandatory listing, including plantation, are subject to an Environmental study. In compliance to this Law, GVL in July 2011 commission the conduct of an Environmental Social Impact Assessment studies within 97,000 ha of land. Upon completion of the studies, the area was permitted by the EPAL and GVL given the right to begin development within the area. However, as a compliant to the RSPO NPP process, GVL has commissioned studies for 24,593 ha which include 6,496 ha which fall outside of the permitted area required for NPP. ESIA Studies within these 6,496 ha have already been commissioned by GVL following permit application to the EPAL. These areas are found in the northern ends of the of the Grand Cess and Sorroken areas connecting to the permitted areas. These studies are expected to be completed prior to the completion of the HCV assessment report.

As a result of the company's commitment to sustainable agriculture and the involvement of its host communities, the AOI is expected to reduce to 12,970 ha proposed area within the available AOI. The company has already signed a number of memorandums of understanding with host communities. The remaining MOUs will be signed prior to NPP approval by RSPO and the clearing of any land for planting. The MOU involves setting aside enough land area for communities' present and future farmland usages, as well as additional areas for community cemeteries, sacred sites, other HCVs, and HCS areas. All of these proposed areas are part of the NPP assessment within the AOI. The proposed development areas will include planting areas, nursery, roads, and building infrastructure. The estimated net plantable area projected by GVL within the AOI is put at 2,100 ha for the Sorroken area, 2,011 ha for the Wedabo areas and 9,500 ha for the Barclayville, Picnic Cess and Sasstown areas. Fruit harvested from the plantation will be processed at GVL's proposed mill, which will be located in or near the AOIs in accordance with operational requirements.

LAND COVER

Grand Kru County has a total land area of 2,299 km^2 with significant areas of unexploited forest resources. The coastal areas include a large area of savannah that is suitable and often used for animal husbandry.

The AOI is dominated by scrub and open land as a result of increase in slash and burn agriculture and scattered human settlements. The land cover consists of active agricultural fields mixed with regenerating fallow vegetation following agriculture, agro-forestry and remnant natural vegetation varies from short stature natural forest to scattered sections of tall stature natural forest. The limited, low scale (compared with other counties) logging activities identified in the AOI are concentrated in areas with tall stature natural forest. Several swamps and wetlands are scattered throughout the area, especially through areas of short regenerating vegetation and along the slopes of the savannah reflecting local hydrological characteristics, and concentration of mangroves are found immediately near the coast. Stretching from the coast 15 to 20 miles inland are the savannah vegetation.

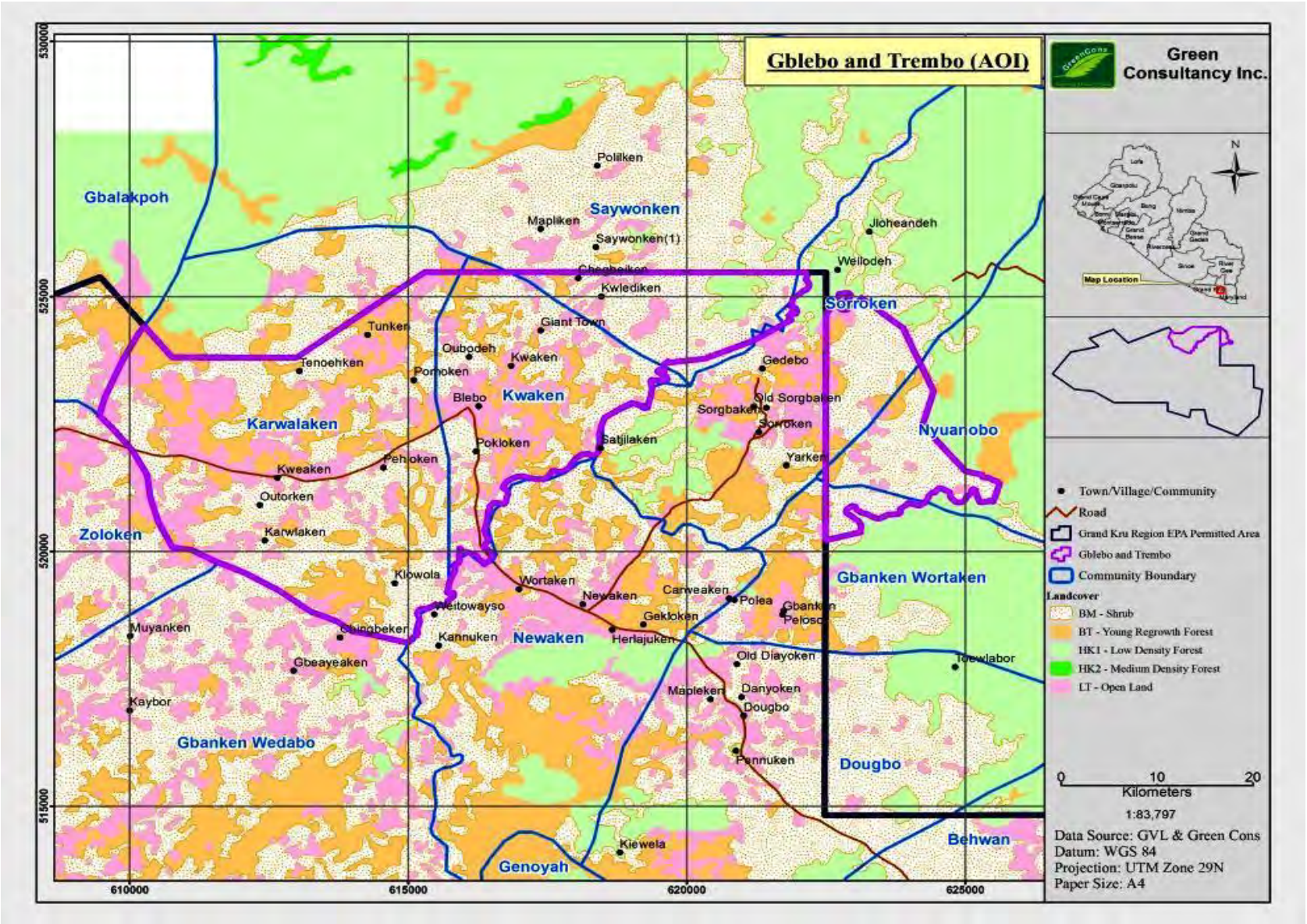
GVL's land cover mapping from 2013 was used as the base map for this HCV assessment (Table 2 and Maps 2 and 3 and other maps throughout the report). Their mapping uses the High Carbon Stock Assessment vegetation categories as described in the HCS Assessment Toolkit (HCS Steering Group, 2015) (Table 3). The HCV assessment team used land cover categories that were broadly aligned with descriptions of the HCS categories, based on the HCS Toolkit descriptions, but with a different nomenclature (Table 3). Based on GVL's land cover mapping land cover of the AOI is dominated by Scrub (14,554 ha), with much less Young Regenerating Forest (3,128 ha) and Low Density Forest (498 ha) (Table 2, Maps 2 and 3).

Some inconsistencies between the GVL land cover map and the vegetation assessment of our field team. These are describe in the next pages.

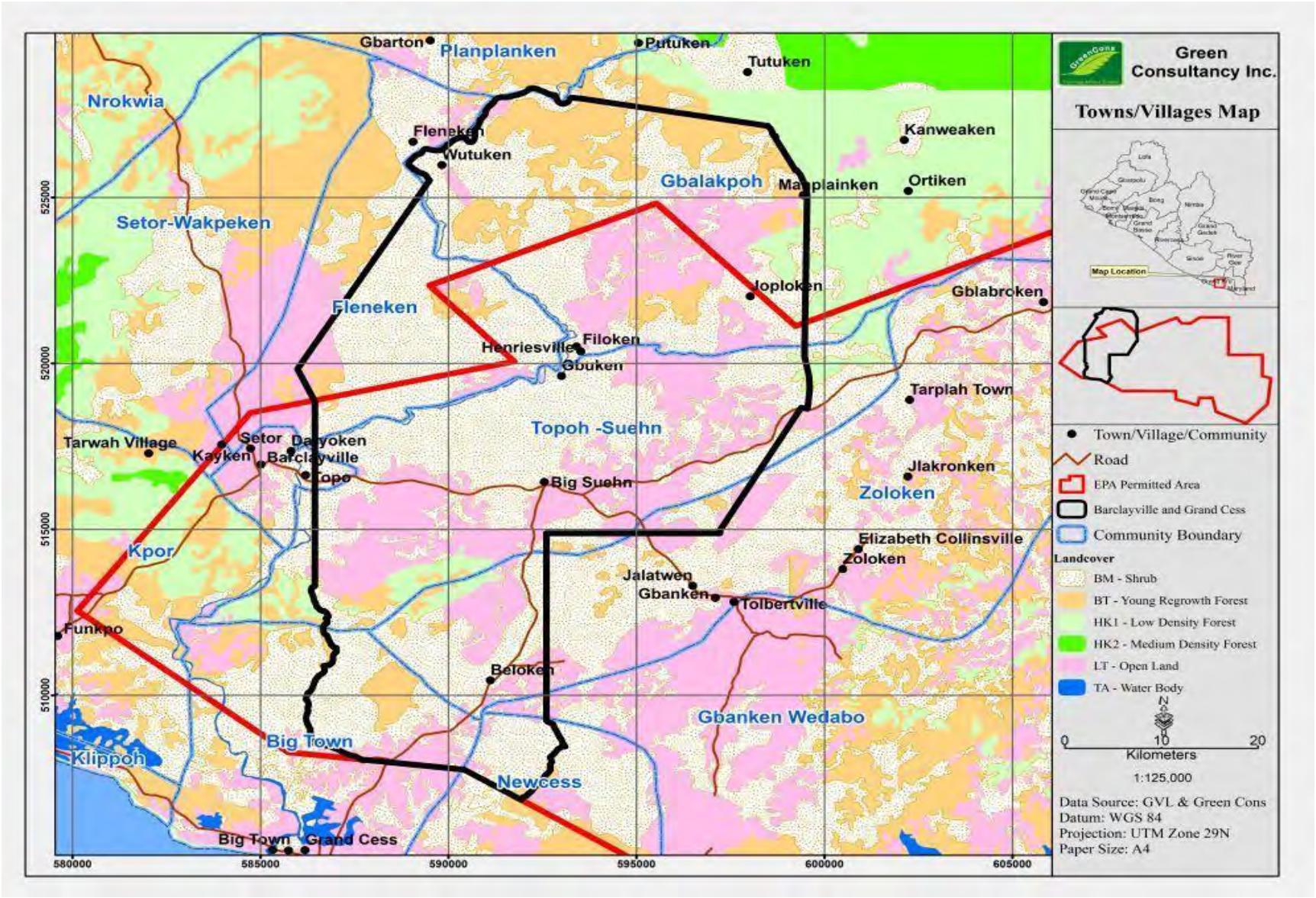
Table 2. Area of each land cover category in the AOI based on High Carbon Stock definitions in the HCS Assessment Toolkit. Note that this method focuses on forest cover mapping, not ecosystem mapping that would identify native savannahs.

HCS land cover category*	Area (Ha)
Cleared/Open Land (OL) - Recently cleared land with mostly grass or crops. Few woody plants.	5,112
Water Body (OL)	1,301
Scrub (S) - Land areas that were once forest but have been cleared in the recent past. Dominated by low scrub with limited canopy closure. Includes areas of tall grass and fern with scattered pioneer tree species. Occasional patches of older forest may be found within this category.	14,554
Young Regenerating Forest (YRF) - Highly disturbed forest or forest areas regenerating to their original structure. Diameter distribution dominated by trees 10-30 cm and with higher frequency of pioneer species compared to LDF. This land cover class may contain small areas of smallholder agriculture.	3,128
Low density forest (LDF) - Closed canopy natural forest ranging from high density to low density forest. Inventory data indicates presence of trees with diameter > 30 cm and dominance of climax species.	498
Medium density forest (MDF) – As above, but denser	0
High Density Forest (HDF)	0
TOTAL	24,593

* HCS Assessment Toolkit (HCS Steering Group, 2015) : http://highcarbonstock.org/the-hcs-approach-toolkit/



Map 2. Location of villages within the Gblebo and Trembo AOI and land cover. Note: The land cover / vegetation cover categories used in this map and other maps in the report are from a High Carbon Stock assessment undertaken by GVL in 2013. Table 3 describes the relationship between these categories and the ones used by the HCV assessment team.



Map 3. Location of villages within the Barclayville and Grand Cess AOI and land cover. Note: The land cover / vegetation cover categories used in this map and other maps in the report are from a High Carbon Stock assessment undertaken by GVL in 2013. Table 3 describes the relationship between these categories and the ones used by the HCV assessment team.

Table 3: Land cover category descriptions used in this report to vegetation cover observations

Vegetation Cover Category	Abbreviation	Description
Open land	OL	Recently cleared land with limited woody vegetation cover, dominated mainly by grass or cultivated crops. • Roughly equivalent to HCS Toolkit class Open (OL)*
Short Regenerating Vegetation	SRV	Land areas supporting early successional vegetation types, usually formed by recent disturbance. Dominated by low statured, often shrubby vegetation with uneven canopy closure. Includes areas of tall grass and fern with scattered pioneer tree species. Occasional patches of older forest may be found within this category. • Roughly equivalent to HCS Toolkit class Scrub (S)*
Regenerating Forest	RF	Taller statured regenerating forest, with canopy height ranging from 2 to 5 meters, and diameter distribution dominated by trees 10-30 cm. TRF has variable species composition, but with higher frequency of pioneer species compared to both Natural Forest classes. This land cover class may contain small areas of smallholder agriculture. • Roughly equivalent to HCS Toolkit class Young Regenerating Forest (YRF)*
Short Stature Natural Forest	SNF	Closed canopy natural forest, dominated by climax species, with canopy height ranging form 5 to 10 meters, and larger trees ranging from 30 to 60 cm in diameter. • Roughly equivalent to HCS Toolkit class Low Density Forest (LDF)*
Tall Stature Natural Forest	TNF	Closed canopy natural forest, dominated by climax species, with canopy height ranging form 10 to 15 meters, and larger trees ranging from > 60 cm in diameter. • Roughly equivalent to HCS Toolkit class Medium Density Forest (MDF)*
Wetland	W	Wetlands
Savannah lands	SL	Bunch-grass pyroclimax with scattered fire-resistant trees and small groves. Soils are coarse sands and extremely infertile (J.V.Thirgood, Land use Problem of the Liberian Coastal Savannah, 1965)

* HCS Assessment Toolkit (HCS Steering Group, 2015) : http://highcarbonstock.org/the-hcs-approach-toolkit/ Toolkithttp://www.goldenagri.com.sg/pdfs/misc/High_Carbon_Stock_Forest_Study_Report.pdf

Table 4: Potential areas for new plantings cleared for oil palm base on covered area data on 2005

tCO2e/t CPO

	Scenario 1	Scenario 2	Scenario 3
Land conversion	3.64	3.11	2.73
Crop sequestration	-3.29	-3.29	-3.29
Conservation sequestration	0.00	-0.05	-0.14
Fertiliser	0.35	0.35	0.35
N2O Emissions	0.28	0.28	0.28
Fuel consumption	0.24	0.24	0.24
Net estate emission	1.22	0.64	0.16
POME	0.63	0.63	0.63
Diesel fuel	0.03	0.03	0.03
Purchased Electricity	0.00	0.00	0.00
Credit (excess electricity exported)	0.00	0.00	0.00
Net mill emission	0.66	0.66	0.66
Net GHG emission	1.88	1.30	**0.83**

Table 4: Potential areas for new plantings cleared for oil palm base on covered area data on 2005 cont.....

tCO2e/t CPO

	Scenario 1	Scenario 2	Scenario 3
Land conversion	3.64	3.11	2.73
Crop sequestration	-3.29	-3.29	-3.29
Conservation sequestration	0.00	-0.05	-0.14
Fertiliser	0.35	0.35	0.35
N2O Emissions	0.28	0.28	0.28
Fuel consumption	0.24	0.24	0.24
POME	0.63	0.63	0.63
Diesel fuel	0.03	0.03	0.03
Purchased Electricity	0.00	0.00	0.00
Credit	0.00	0.00	0.00

tCO2e

	Scenario 3
Land conversion	155625.62
Crop sequestration	-188073.32
Conservation sequestration	-8192.77
Fertiliser	20223.75
N2O Emissions	16131.12
Fuel consumption	13638.43
POME	36110.53
Diesel fuel	1666.84
Purchased Electricity	0.00
Credit (excess electricity exported)	0.00

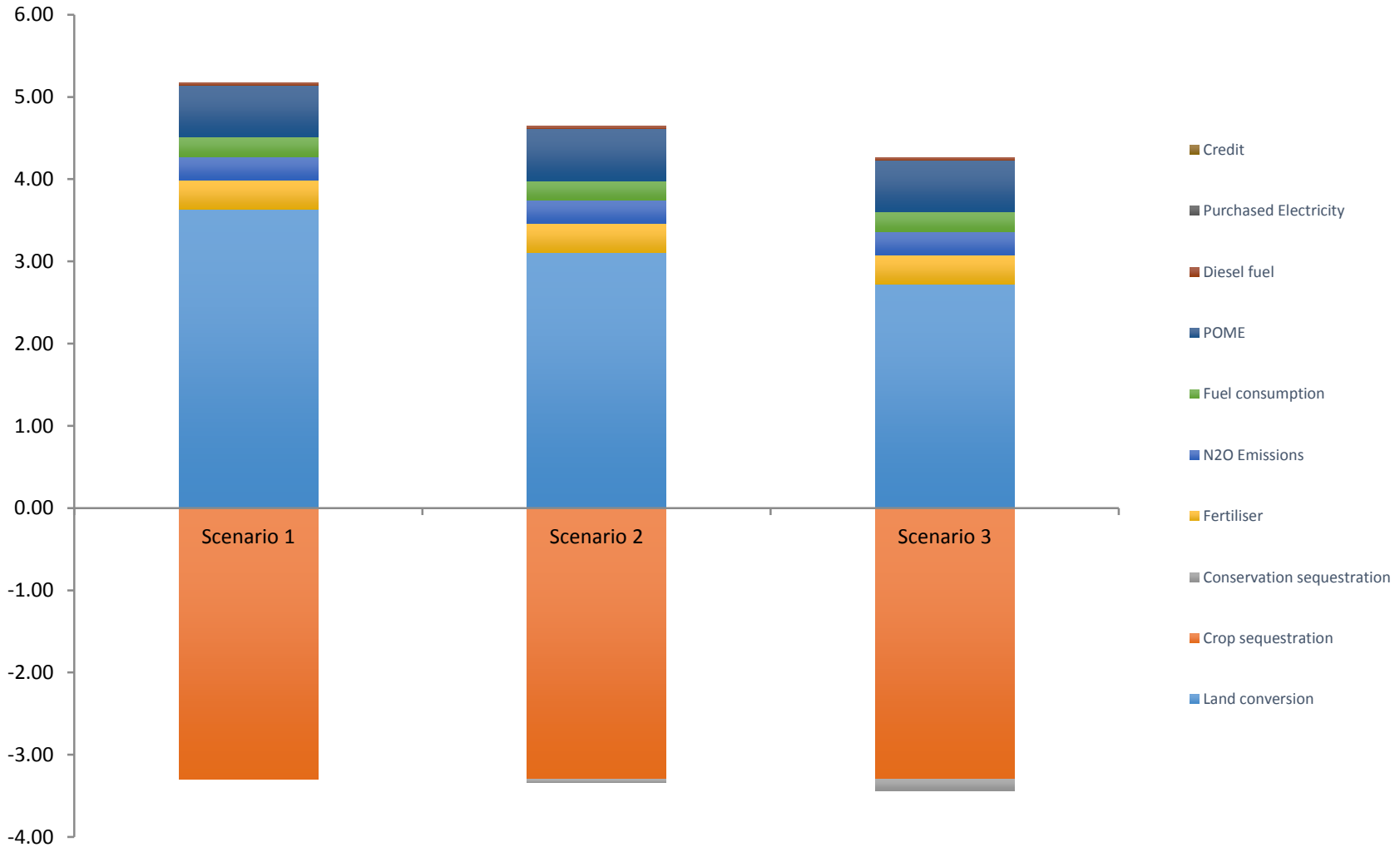


Figure 1: Potential areas for new plantings cleared for oil palm base on covered area data on 2005 cont.....

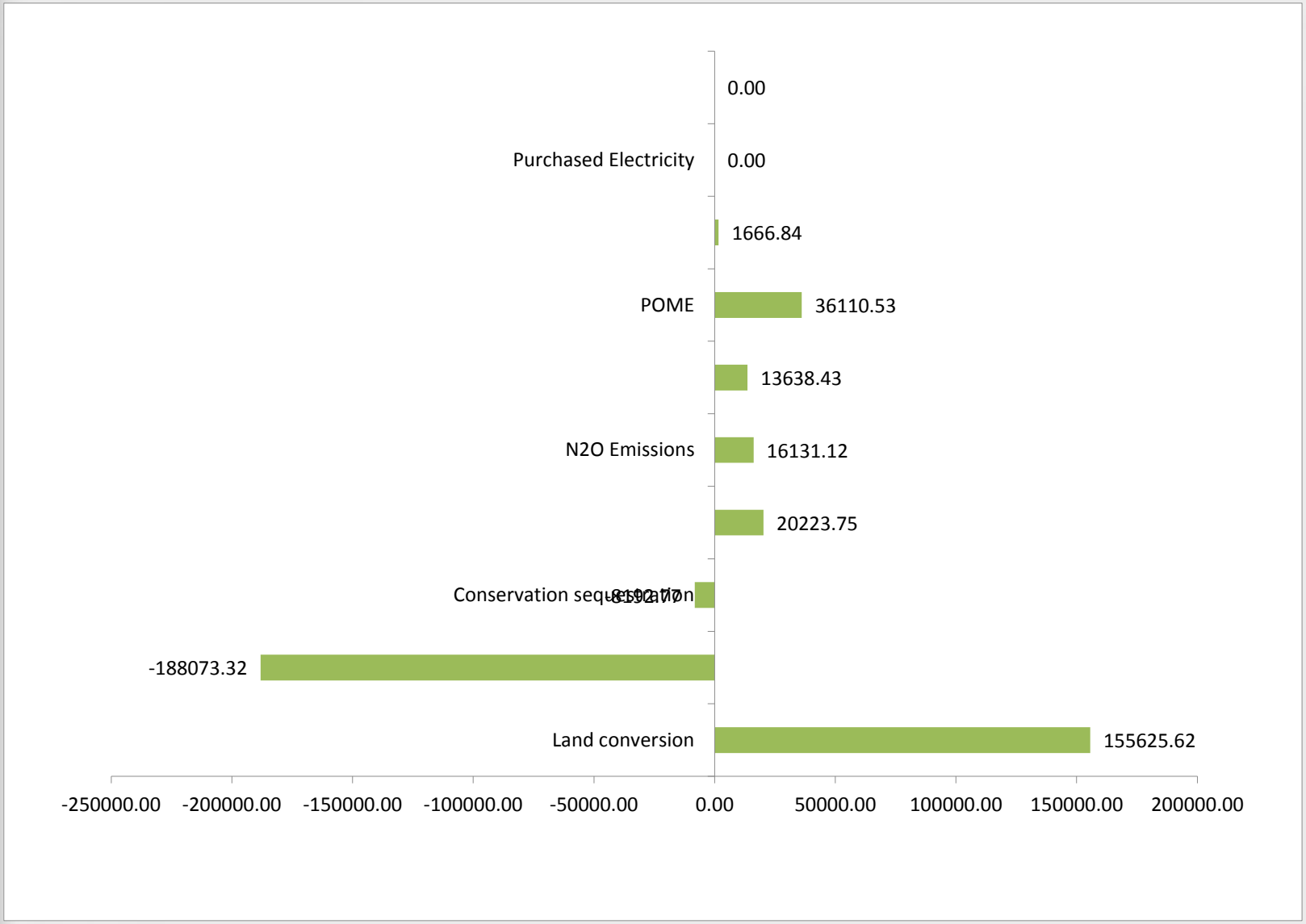
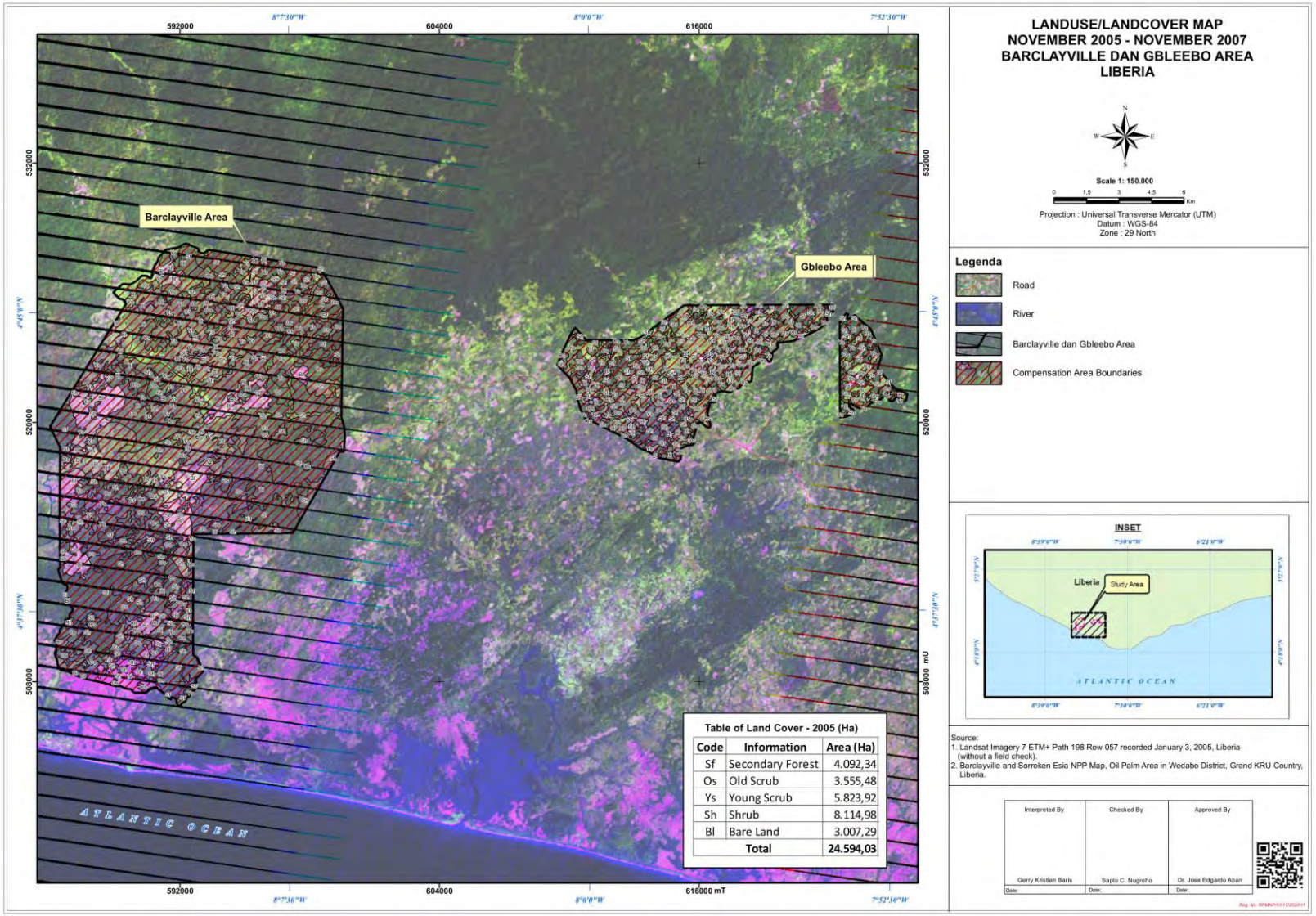
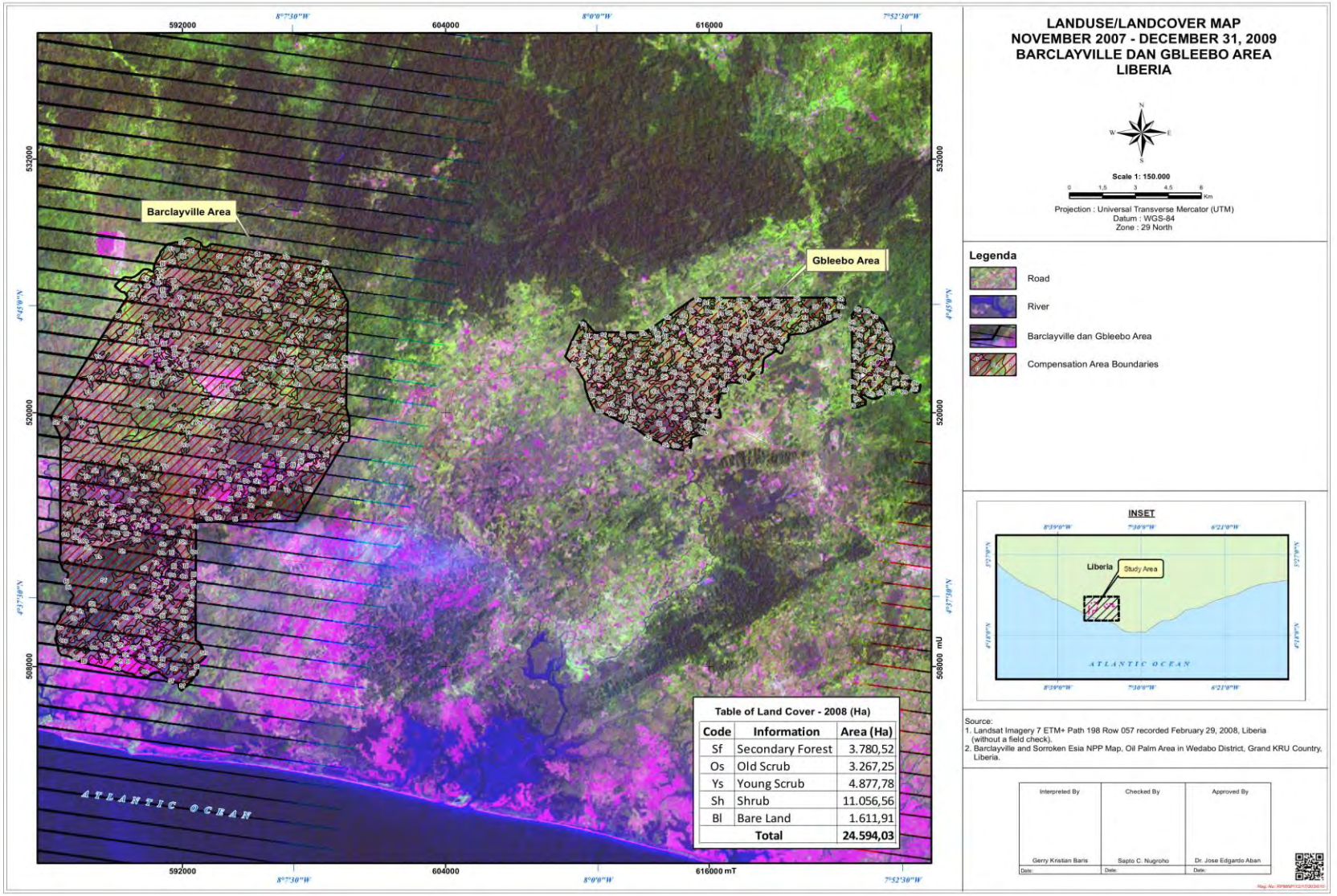


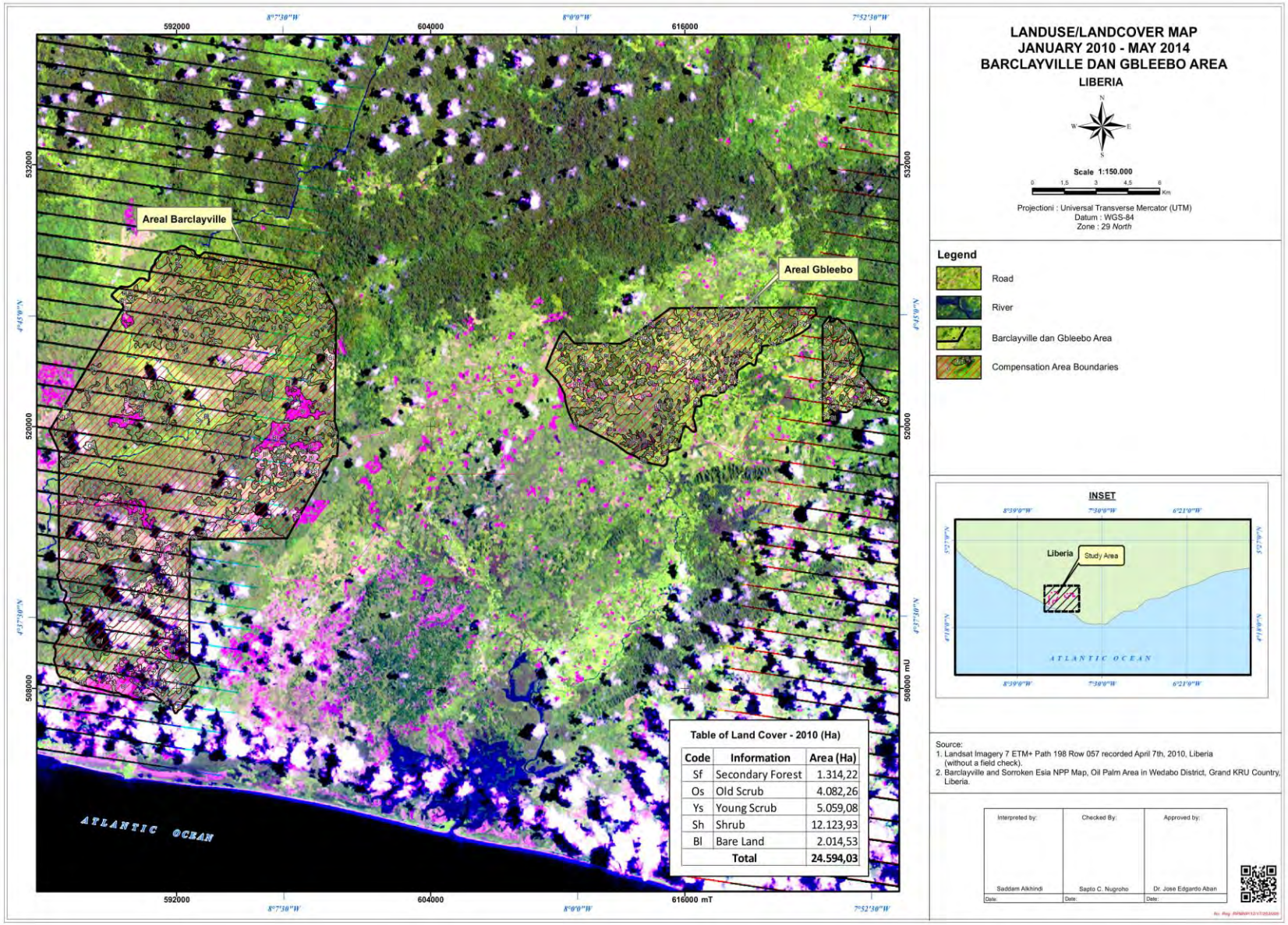
Figure 2: Potential areas for new plantings cleared for oil palm base on covered area data on 2005 cont.....



Map 4:Landuse/Land cover map…November 2005-November 2007



Map 5:Landuse/Land cover map…November 2007-November 2009



Map 6:Landuse/Land cover map…January 2010-May 2014

Methods

Assessment Methods

Land Cover Mapping

The methodology used by GVL for the HCS forest mapping involved translating and analyzing satellite images into vegetation classes. Field sample plots are then created and carbon stock is estimate for each vegetation class. As a result, the land cover categories described in Table 3 were identified. Transect walks through different locations of the proposed project site also identified wetlands and savannah woodlands that were not recorded as such on the HCS map. Revision of the land cover map to include these other land cover categories and correct discrepancies in their forest classification has been proposed to GVL.

Transect Selection

Thirty-five 2-km transects were selected for survey. Initial selection was based on transect lines placed strategically across different sections of the AOI, intentionally bridging different vegetation categories based on the HCS map provided by GVL. During the scoping assessment the transect locations were adjusted to the final transects locations based on input from specialists on the scoping visit and input from local communities. The vegetation and mammal surveys focused specifically on these transects, while the bird, reptiles and amphibian surveys used the transects, but also explored surrounding vegetation along the transects.

Pre-Assessment – Identifying HCV 1.2 species

Each taxonomic specialist established a list of potentially present species in the AOI prior to field work, identifying which species qualify as HCV 1.2. For each IUCN threatened species (VU, EN, or CR) not recorded during the assessment, the species was deemed Potentially or Unlikely present based on habitat availability in the AOI and surrounding landscape and the specialist's expert opinion. This prediction was taken into account in developing HCV 1.2 management recommendations.

Mammal Survey

Medium and large mammals were surveyed by walking a total of 35 line transects (Maps 20 and 21), each 2 km in length and recording signs (foot prints, dung, feeding and nesting sites), calls and direct sightings. Nearby vegetation which are not within direct line of the transects were also assessed by the team to identify any signs of mammals. Interviews were conducted with hunters to identify the species of mammal they hunt or observe within the project area and its immediate surrounds; mammal field guides were used to clearly assist host communities identify all mammals they have seen, killed or observed. Opportunistic observations were also recorded.

Bird Survey

Birds were surveyed along 2 km long by 1 m wide line transects randomly placed across the area of interest. Surveys were done between 7 am and 12 noon and between 2 pm and 5 pm daily. Birds seen and heard were recorded along with their abundance (number of individuals per observation) and species in the party and their cluster sizes as suggested by Buckland et al (2001). Birds were sighted using an 8 x 42 pair of Nikon Binocular and identified using Birds of Western Africa field guide by Borrow and Demey (2004) and African bird sounds by Chapuis (2000). Opportunistic observations were also recorded.

Fish Survey

The fish survey focused on interviews with community fishermen and the use of a fresh water fish identification field guide. Major rivers and creeks within the project terrain were visited and the catch by local fishermen inspected for species identification.

Vegetation Survey

The 35 transects were assessed to determined existing vegetation in reference to HCS map, different plant species, their relative abundance and those of threatened conservation status including ecological sensitive areas. Nearby vegetation were also walked

Assessment Methods (continued)

through to understand and investigate the integrity of the existing area. which are not within direct line of the transects were also assessed by the team to identify any signs of mammals. Inventory of all standing tree species above 20cm (dbh) along the transect trail (5m on both sides of the trail). There were also four sampling plot (25 m x 25 m) established on alternate sides of the 2 km lines at 500 m intervals. All tree species > 10 cm (dbh) were recorded for each sample plot.

HERPETOFAUNA SURVEY

Reptiles and amphibians were surveyed along the 35 transects. Specimens were mainly recorded opportunistically during visual surveys. The surveys were undertaken during the day and searching techniques included visual scanning of the terrain and investigation of potential refuges as well as acoustical monitoring (Heyer et al. 1994; Rödel and Bangoura 2004). Most of the records were thus done by visual encounters. The nomenclature of amphibians mainly follows Frost (2004). Positions were recorded using a hand-held GPS.

SOCIOECONOMIC SURVEY

Desktop studies and non-local stakeholder consultations were conducted. The desk study generated information from documentary sources (reports and online materials) related to social studies conducted in Liberia, particularly in Grand Kru County. Stakeholders meetings with regulatory authorities, NGOs and other parties who have vested interest in the project were held in Monrovia. Those consulted include Skills & Agriculture Development Services, Society for the Conservation of Nature of Liberia, Forestry Development Authority, Environmental Protection Agency and the Environmental Protection Agency. These consultations, from a social perspective, focused on issues such as natural resource use and local people's rights, food security, culture and socio-economic development. Once Grand Kru, local government offices were also consulted.

All communities that were located inside or adjacent to the AOI or had land or use resources in the AOI were surveyed. Communities in the AOI are arranged by Districts, within which communities arrange themselves via "mother communities" – a term used by community members to point out the fact that the other towns and communities were developed out of this mother community. As a result of this tribute to the community which gave birth to the smaller towns, community member always requested that any meeting or consultation on behalf of all the people be held in their "mother community". Consultations therefore took place at the mother community level (of which there are 7 in the AOI) with representation from smaller towns and communities in attendance (Table 4 and Map 4). All smaller towns and communities within the mother communities were subsequently visited and surveyed.

Broad-based town hall meetings were held in the mother communities, as well as broad-based focus group discussions and other local stakeholder consultations. Town hall meetings were usually well attended as information about the HCV team visit was circulated well in advance. Documentation of these consultations were always left in the mother community and sometimes also the District. Decision of the selection of town/community representatives to accompany our survey team for subsequent stakeholder meetings and consultations were done in these mother community consultations.

Smaller town/community assessments were undertaken using Participatory Rural Appraisal (PRA) techniques, including focus group discussions, key informant interview, and non-participant observations. An SIA was undertaken concurrently by the HCV assessment team. We identified HCVs 5 and 6 with with community members, identifying their existence (e.g, sacred sites/graves, old towns) and collecting GPS points for these towns and the HCV sites they were willing to have mapped. The town/community visits also included transect walks through the town/community and its surrounds.

Assessment Methods (continued)

In each community, key informants interviews were conducted with at least 15 local authorities, elders and resources persons who have good knowledge of the culture and history of the community. These interviews allow for the free expression of views in an unstructured form, but on issue concerning HCVs as well as other socio-economic and company related issues.

Open-ended and pre-coded questionnaires were also used. One hundred (100) questionnaires were administered across the surveyed communities to target groups to obtain their views on the proposed project and its perceived impacts. The main target groups were household members within the project area and the households surrounding the proposed project area, aiming to get a diversity of respondents based on gender, age and socio-economic status.

Such efforts to survey a broad spectrum of stakeholder groups within communities (including diverse ages, gender, social and economic status, marital status, and employment) were undertaken in each of the survey methods described in this section,

For non-participant observations, researchers observed members of the community during the short period of time they interacted with them. The observers conducted transect walks through the communities, past houses and farms, wherein they observed and drew conclusions on the social aspects of life in the communities.

Mapping HCVs 5 & 6

Running parellel to our HCV assessment of HCVs 5 and 6 was an SIA that we were undertaking on the same area and FPIC participatory mapping being undertakne by GVL to identify and map out areas for development. GVL was systematically mapping all farmlands, community forests, and other aspects of HCV 5 and 6 (that we were also investigating) in order to identify lands where communities agreed for them to develop and areas that needed to be avoided based on community requests. In addition to our own mapping of HCVs 5 and 6 in mother communities where GVL was already engaging with communities, we sought to verify that their process was accurately capturing HCVs 5 and 6 – noting that some elements of what can be considereed HCV 5 and 6 (e.g., old towns, areas used for hunting) were being relinquished to GVL by due to community preference for oil plam in these areas over maintenance of their previous function or value due to the availability of other lands to meet those needs.

To verify GVL participatory mapping that had recently taken place in some communities (and was concurrently taking place in others), we conducted an exercise to gain an understanding of the communities' understanding of participatory mapping as well as the comprehensiveness and accuracy of the results. For this exercise, participants were facilitated to sketch a resource map of their community (an embodiment of the larger community, satellite villages, cultural assets, rivers, forest areas, reserve farm lands and areas communities have identified for GVL operations). Transect walks were done to confirm the information from the discussions and resource mapping, and and observations were made on physical and environmental conditions.

The results were impressive, with communities showing a detailed understanding of the value and an ability to represent them accurately on a hand drawn map (e.g., Figure 1). The FPIC process and participatory mapping being undertaken by GVL with communities provides greater detail and a more accurate reflection of complex community interactions and decisions on releasing or maintaining potential HCVs, especially those that are owned communally. Definitive mapping of HCVs that communities decide to maintain will be expected to be unsertaken by GVL. We concluded that GVL's participatory mapping implementation in the AOI has so far been comprehensive and accurate. Map 5 identifies the areas where these participatory mapping exercises took place.

Assessment Methods (continued)

Post field assessment stakeholder consultations

To ensure that all concerns and inputs from national as well as local stakeholders are fully consider in the HCV report, a national stakeholder meeting was conducted by the assessors. The consultation brought together all stakeholders who had been contracted prior to and during the field assessment. The consultation was meant to present the initial HCV findings and management recommendations and to received inputs and recommendation in relation to the findings presented. At the end of the one day consultation, different inputs and recommendations to improve or address issues identified in the HCV findings and recommendations presented by our team were collectively agreed on by stakeholders and included as input into the final HCV report.

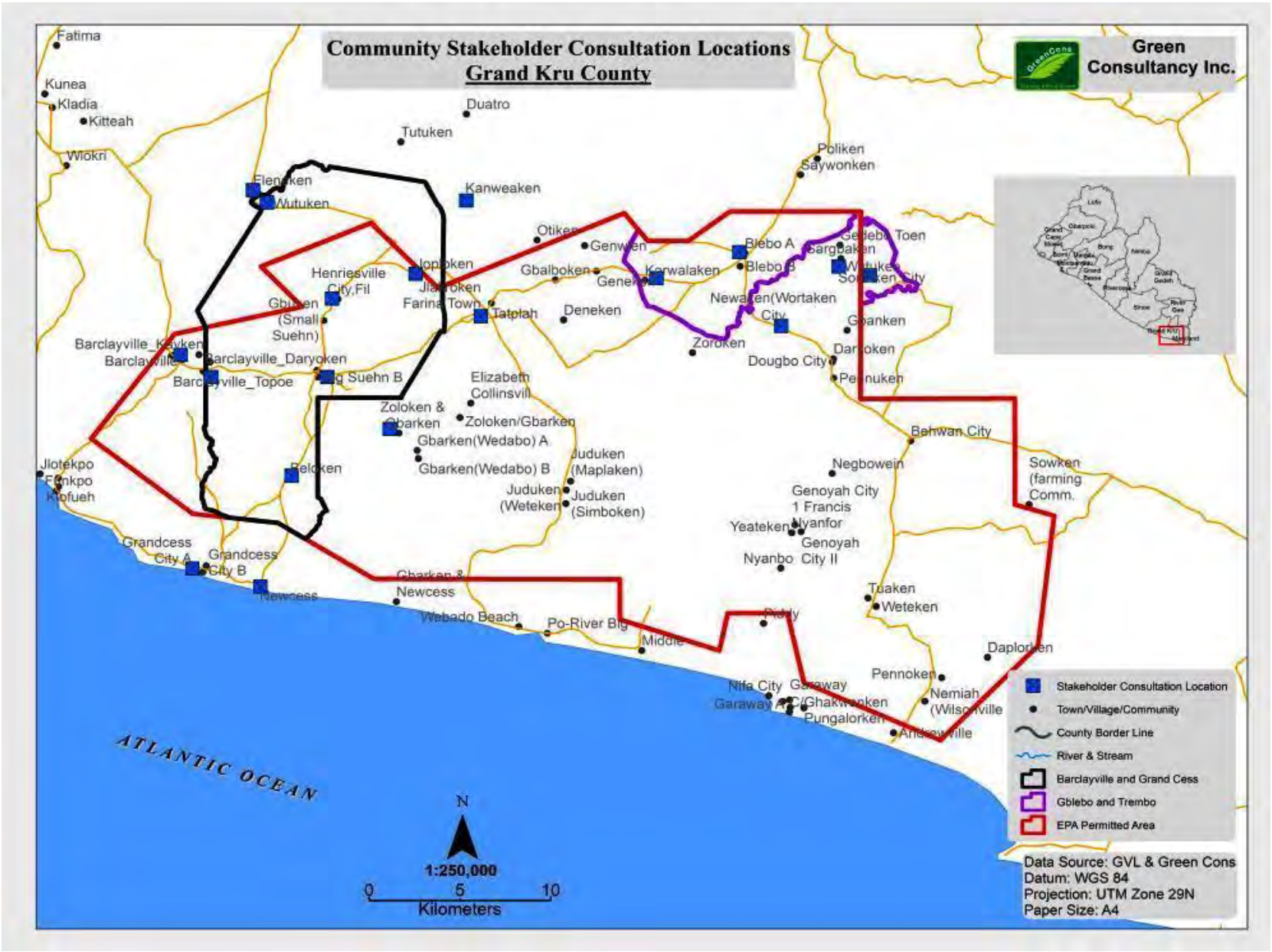
Additionally, a post-field assessment, local stakeholder meeting was also held near the assessment site, in Barclayville City, so that all communities were able to attend. The initial results of the HCV assessment were presented at this meeting to receive confirmation of the accuracy of the assessment results and input on the management and monitoring recommendations. Communities choose their representatives to attend, selecting people they deemed well-suited to represent the community concerns as they relate to the study and findings. Issues raised by the communities are captured in this report.

Assessment team and schedule

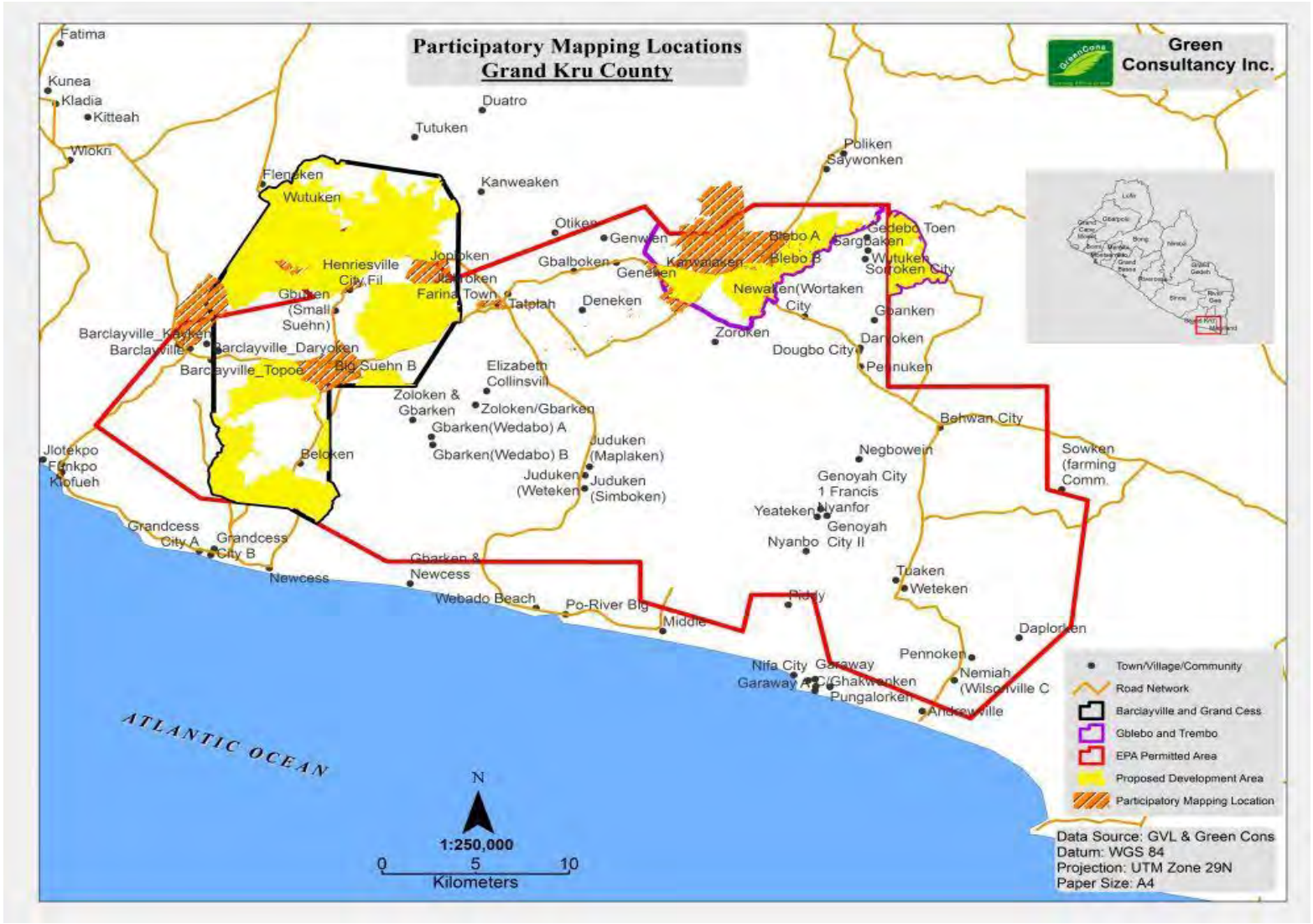
The assessment team, their role in the assessment and qualifications are listed in Table 5. The assessment schedule (activities and dates completed) are listed in Tables 6 and 7.

Table 5. Name, location and population of communities where full community consultations to identify HCVs 5 & 6 took place

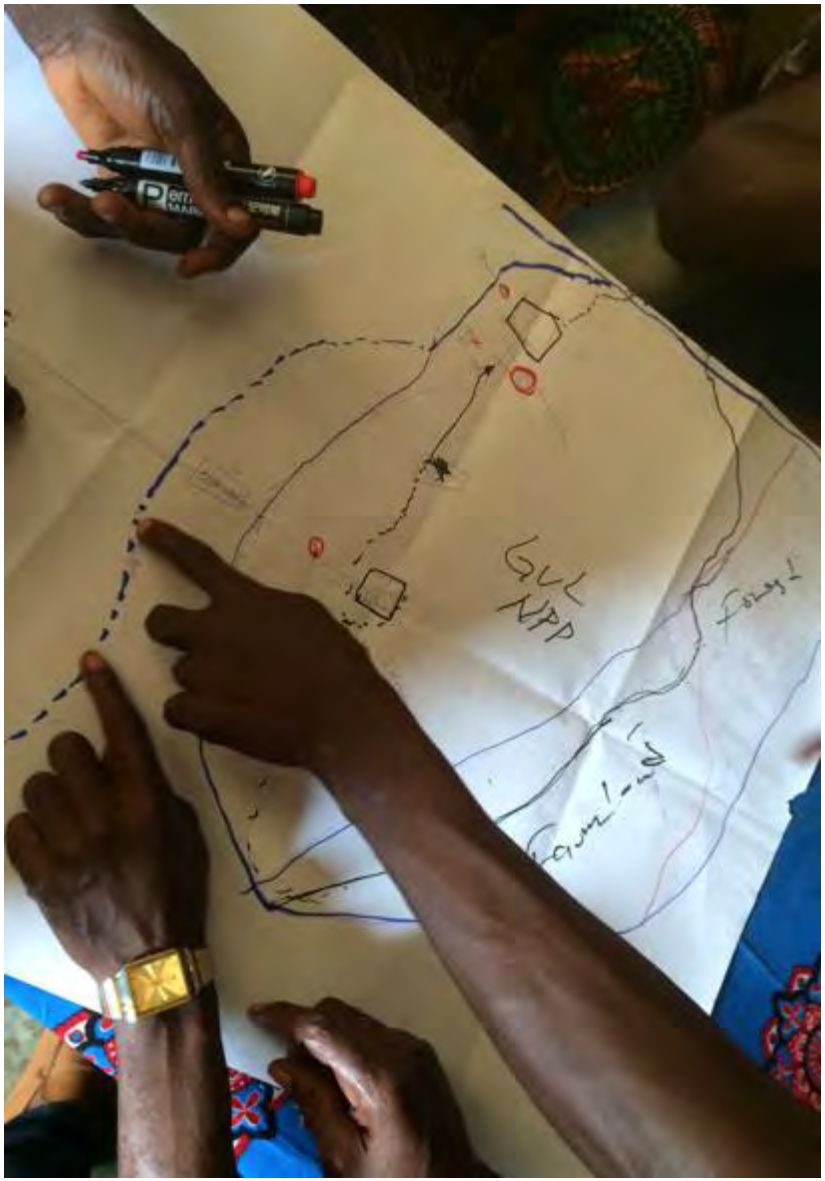
District	Mother Community	Community Name	Community Coordinates	
			X	Y
Trehn	Trembo (pop c. 3,700)	1. Sorroken	621297	522336
		2. Nyanobo Wutuken	623020	521836
	Gblebo (pop. c. 3,500)	3. Gblebo	615822	523144
		4. Karwalaken	611264	521676
		5. Newaken	618132	518957
Barclayville	Gbalakpo (pop. c. 6,000)	6. Filorken	593407	520511
		7. Wutuken	589827	525973
		8. Japloken	598007	521920
		9. Sector	585066	517301
		10. Karweaken	600797	526086
	Fleneken (pop. c. 750)	11.Fleneken	589057	526678
	Suehn (pop. c. 1,300)	12. Big Suehn	593143	516040
		13. Jlakronken (Farina Town)	601595	519503
		14. Topoh	586751	516040
Grand Cess/ Wedabo	Grand Cess (pop. c. 1,700)	15. Grand Cess	585722	505158
		16. New Cess	589462	504133
	Wedabo (pop. c. 5,550)	17. Beloken	591183	510439
		18. Ylatwen	596583	513093



Map 7. Locations where full community consultations took place to identify HCVs 5 and 6. Additional towns and villages inside and outside of the AOI were visited to identify their relationship with the AOI. The villages inside the AOI not marked as stakeholder consultation locations were surveyed as part of larger neighboring communities as per the request of the community members from the smaller villages.



Map 8. Location in the AOI where GVL participatory mapping has already been completed. This exercise was done by GVL Community team and the local communities. The process involves a request from any local community requesting the company to invest on their land. The request is then followed up by the Community Affairs team headed by a local of any of the community, but works with GVL. Several meetings are held to understanding land issues (area, representatives, owners, communities occupying the land, land they are interested in developing, etc) are conducted. All these are carried out in full view of the county's local authority to include the Ministry of Agriculture, the Land Commission, the Development Superintendent, FDA, local NGOs and community groups. When all the arrangements are made about the land, GVL, representatives from the communities offering the land and these local County authorities partake in the participatory mapping of the land.



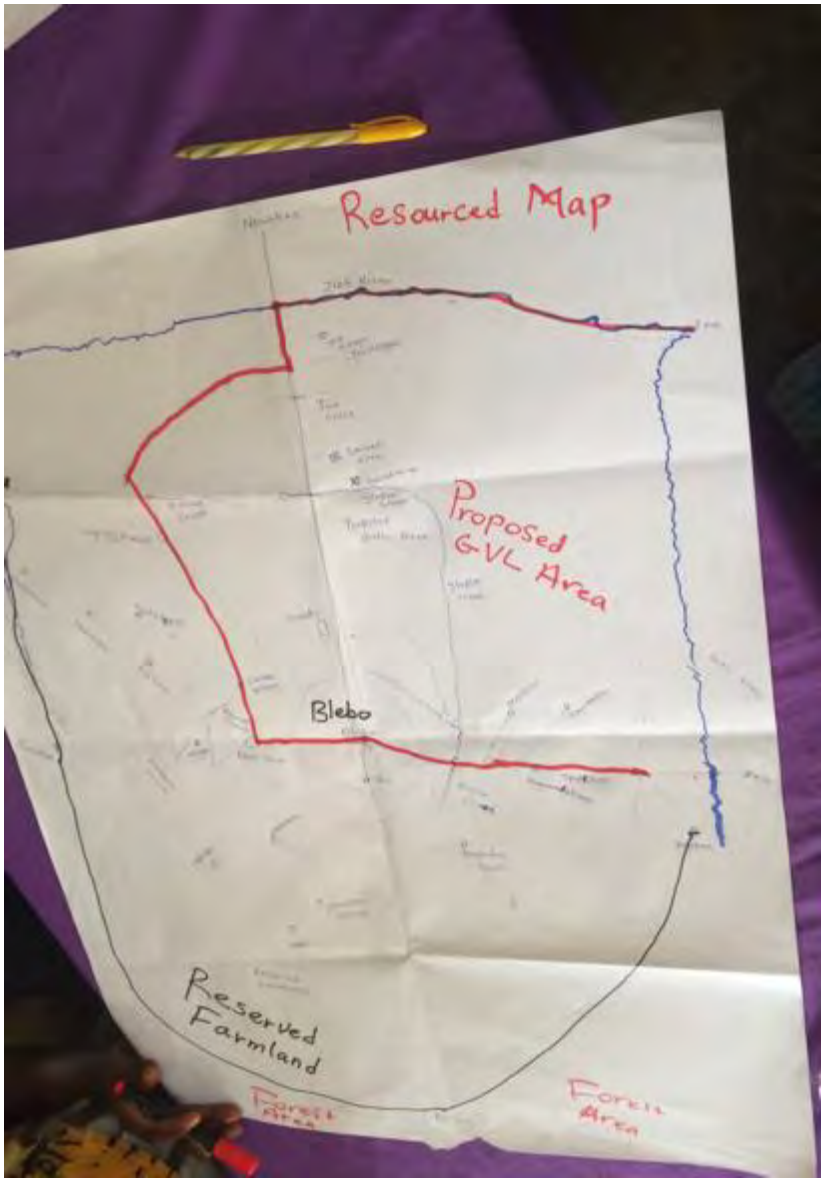


Figure 3: Demonstration of resource mapping by communities. Photos demonstrating resource mapping undertaken by communities with our assessment team at community consultation meetings during the field assessment. Community members that participated seemed to have a clear understanding of the participatory mapping process.

Table 6. Assessment Team

Name	ALS License	Institution	Role	Expertise
Solomon P. Wright BSc. (Cum Laude). General Forestry MSc Regional Planning	Provisional (ALS140014SW)	Green Consultancy Inc. solopwt@yahoo.com Cell: +231 777001933	Team Leader	plant taxonomist/Ecology, HCV general
E. Abraham T. Tumbey Jr. BSc. Biology MSc.(Honor) Regional Planning	Provisional (ALS140015AT)	Green Consultancy Inc. abtumbey@yahoo.com Cell: +231 880530870	Social Economic Expert	Social Economic
James Kpadyeah BSc. General Forestry MS Forest Botany/Taxonomy		Forestry Development Authority (FDA)	Field Survey Expert	Plant taxonomist and plant systematics (Botanist)
Benedictus Freeman BSc. General Forestry MSc. Conservation Biology		Flora and Fauna International (FFI)	Field Survey Expert	Bird (Ornithologist)
Menladi M. Lormie BSc. General Forestry		Forestry Development Authority (FDA)	Field Survey Expert	Mammals
Jerry C. Garteh BSc. Biology MSc. Biodiversity Conservation		Society for the Conservation of Nature in Liberia(SCNL	Field Survey Expert	Bird (Ornithologist) Herpetologist
Michael F. Garbo BSc. General Forestry		Society for the Conservation of Nature in Liberia (SCNL)	Field Survey Expert	Bird (Ornithologist)

Table 6. Assessment Team (continued)

Name	ALS License	Institution	Role	Expertise
James Kokolo. General Forestry MSc. Regional Planning		Forestry Training Institute (FTI)	Field Survey Expert	Plant taxonomist
Steve N. Davies		Forestry Development Authority	Field Survey Expert	Mammals
Abraham Dioh BSc. General Forestry Candidate MSc Environmental Science		Green Consultancy Inc	Field Survey Assistant	Soil and water analysis
Patrick Garterh		Forestry Training Institute (FTI)	Field Survey Expert	Plant taxonomist

Table 7. HCV pre-assessment process and associated timeline for this assessment based on the ALS HCV Assessment Manual (2014)

Phase	Step	Dates & Notes on Implementation
Pre-Assessment Phase	Information Exchange	Oct. 20-28, 2015: request for shape files and maps of project area land cover and HCS Nov. 1, 2015 : requested shape files and maps sent by GVL in drop box. Nov. 2, 2015 : request to GVL disaggregate shape files for new ESIA and ESIA upgrade and GVL answer to request; clarity sought from GVL on number of ESIA and HCV reports to be done and clarity provided to GVL on request. Dec. 24, 2015: request from GVL by the assessor any national chip survey report and answer from GVL to provide such
	Tier Rating	Oct. 27, 2015: GVL is briefed on tier rating as a High Risk due to the area to be cleared being > 500 ha and people living on the land, assessor provisional; status; GVL agreed to tier rating
	Information Gathering/ Stakeholder Consultation (Desktop)	Nov. 1-13, 2015: information gaps are identified and these Government and NGO institutions are consulted: Forestry Development Authority (FDA), Land Commission, Ministry of Agriculture (MOA), Environmental Protection Agency (EPA), Grand Kru Legislative Caucus, Development Superintendent-Grand Kru County, Wild chimpanzee Foundation (WCF), Flora and Fauna International (FFI), Conservation International (CI), Society for the Conservation of Nature in Liberia (SCNL), GVL NGOs Coalition, Green Advocate, South Eastern Women Organization.
	Preparation and Planning for Scoping Study	Nov. 6, 2015: Practical Training and Planning Workshop. Review of land cover maps, review of HCV definition and interpretation, identifying locations for initial assessment, review of social issues.
	Scoping Study (Field Study and Stakeholder Consultation)	Dec. 16-22, 2015: Involving the team leader, a plant taxonomist, a mammal expert, a social expert and two local assistants. Consultation was made with GVL representatives, comparison and modifications were made on maps already obtained, three field transects were assessed, consultations were made with local authorities, community meetings held and additional understanding of the project area gathered, finalized methodology for different field studies and collected initial field baseline data.
	Preparation and Planning for full HCV assessment	Dec. 26-Jan. 3, 2016 : Planning and preparation for the field assessment, selection of relevant expertise for the field work, projecting what HCVs are present, survey methods and approach, social economic issues to be addressed, understanding the participatory principle, understanding threats to HCVs.

Table 8. HCV Assessment Phase process and associated timeline based on the ALS HCV Assessment Manual (2014)

Phase	Step	Dates & Notes on Implementation
Assessment Phase	HCV Identification	Jan. 4-20, 2016: results from transects walk by mammals, plant, reptile and amphibian experts, identifying different taxo group, conservation status and social economic issue with the company, host communities, stakeholders and local government authorities to make informed decisions and recommendations regarding all the HCVs present within and surrounding the immediate vicinity of the proposed project area.
	HCV Findings and Recommendations	Jan. 4-20, 2016: Considers the findings of the various HCVs, justifies and authenticates these identified HCVs, interpret the HCVs findings
	Reporting	Jan. 25-March. 30, 2016: Compilation of different expert reports separately, integrate these reports into one HCV report according to the ALS HCV assessment template addressing each HCV separately; using the the HCV findings for HCVs management and monitoring within the project area
	Public consultations to report interim HCV findings and management recommendations and receive feedback from affected communities and other stakeholders	October 13 & November 3, 2016: Initial HCVs findings and recommendation shared with stakeholders(National level and Local community level), stakeholders recommend additional management techniques for HCVs, stakeholders concerns and questions answers
	Report revision based on public consultation feedback	November 7-14, 2016: Feedbacks on stakeholders recommendation are inserted into HCV report and shared by soft copy on disc for stakeholders consideration
	Peer Review by an HCVRN ALS certified peer reviewer	February 19, 2017: Final draft HCV report reviewed
	Report finalization and submission to RSPO	September 1, 2017: Report posted on RSPO website

Table 9. Detailed itinerary for pre-assessment scoping visit

SCOPING ITINERARY (DEC 17-20)

Activities per day	Timing								
	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
DAY 1, December 17									
Meeting with GVL representatives • Discussion of scoping plan and objectives; • Identify sources of data/information on socio-economic surveys, mapping etc • identifying GVL field staff and local field work force that will conduct cutting of transects for biological surveys									
• Field orientation of transect cutting team with respect to size of transects and protocols									
• Meeting with local county political/traditional authorities									
• Initiate planning for logistics for GC field team									
DAY 2, December 18									
• Bio survey team commence ground thruthing/reconnaissance									
• Verifying locations for physical sampling									
• Meeting with NGOs									
• Meeting with local county authorities (government ministries and agencies-MOA, EPA, LC, FDA etc)									
DAY 3, December 19									
• Bio survey team continues ground thruthing/reconnaissance									
• Compiling and collecting socio-economic data, GIS data and other info from GVL designated staff									
DAY 4, December 20									
Bio survey team continues ground thruthing/reconnaissance									
Verifying locations for physical sampling									
Set appointment for dates and venues of local meetings and socio-economic surveys verification for HCV/ESIA assessment									
Set appointment for follow up meetings with NGOs, local authorities and other government representatives for HCV/ESIA assessment									

Findings / Results

National and Regional Context

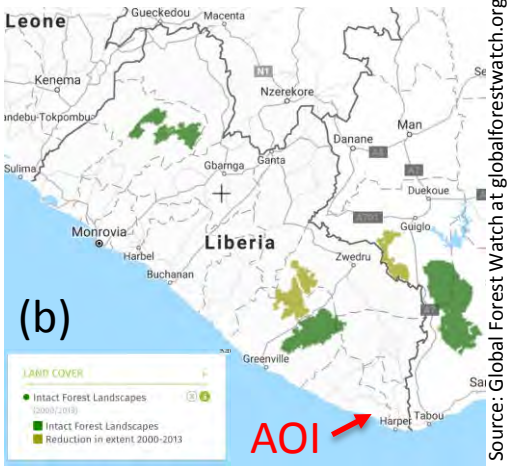
BIOGEOGRAPHIC CONTEXT: UPPER GUINEA FORESTS

The Upper Guinean forest is classified as a tropical moist forest region of West Africa West. It follows the Atlantic coast, extending from Guinea and Sierra Leone right through Liberia, Côte d'Ivoire, Ghana and to Togo in the East (Map 9a). The forest stretches a few hundred kilometers inland from the Atlantic coast in the South. A few enclaves of montane forest lie further inland in the mountains of central Guinea and central Togo and Benin. In the drier interior, the Upper Guinean forests yield to the Guinean forest-savannah mosaic, a belt of dry forests and savannahs that lies between the coastal forests and the savannahs and grasslands of the Sudan further north. The Dahomey Gap, a region of Togo and Benin where the Guinean forest-savannah mosaic extends to the Atlantic coast, separates the Upper Guinean forests from the Lower Guinean forests to the east, which extend from eastern Benin through Nigeria, Cameroon, and south along the coast of the Gulf of Guinea. The World Wide Fund for Nature (WWF) has designated the Upper Guinean forests as one of its Global 200 critical regions for conservation.

The Upper Guinea Forest is among the world's 25 biodiversity hotspots and ranks first in terms of mammalian species diversity (Conservation International 2001). Conservation International (1999), estimates that 20 per cent of the original extent remains and is highly fragmented. Species of conservation significance include the rarest subspecies of gorilla and the Cross River Gorilla (*Gorilla gorilla diehli*) which is known in fragments of this forest in Nigeria and Cameroon, and is critically endangered (Butynski 2001) The forest is renowned for its high primate diversity, with more than 30 distinct species. The Upper Guinea Forest is estimated to support up to 9,000 vascular plant species (20% of which are considered endemic), more than 785 bird species (of which 78 are known to be endemic), 320 mammal species (of which >60 are known to be endemic).

The largest continuous section of the Upper Guinean forest is found in Liberia, though few Intact Forest Landscapes remain in Liberia (Map 9b). As a result of the 14 years civil conflicts, which saw the massive destruction of the Liberian Forest for timber extraction, pit saw, illegal mining, fuel wood and charcoal production, conservation activities were disrupted. Several recent initiatives are underway, however, in Côte d'Ivoire, Equatorial Guinea, Ghana, Guinea, Liberia, Nigeria, Sierra Leone and Togo to manage the forest and protect endangered species. Among the most recent initiative in Liberia is formation of the National Interpretation HCV toolkit for Liberia, containing the last two remaining blocks of the Upper Guinea Forest of West Africa, making it an exceptionally high priority for conservation.

Source: Conservation International at www.unep.org



Source: Global Forest Watch at globalforestwatch.org

Map 6. (a) Range of Upper Guinean Forests and (b) Intact Forest Landscapes (IFLs) in Liberia showing no IFLs in close proximity to the AOI.

Photo source: ARKive www.arkive.org (two lower photos) GreenCons (top photo)

Figure 4: Photos of some regional mammal species

Regional Biodiversity

Liberia's forest supports 568 species of birds, 9 of which are endangered, as well as a wide range of plant and animal life. The forest is home to several rare species, such as the white-breasted guinea fowl, Jentink's duiker (a deer-like creature, the rarest in the world), pygmy hippopotamus, Diana monkey and Liberian mongoose. Additional animal populations include the giant forest hog, chimpanzees, red colobus, bongo antelope, leopard and the golden cat.

Earliest efforts to conserve habitat for these species dates back to the Forest Act of 1953. Historically, two leading threats to this biodiversity are logging and the bush meat trade. Other threats include slash and burn agriculture, which has led to massive clearing, charcoal production which contributed to deforestation, and pit sawing and mining, which impact biodiversity as camps are set up for these activities and hunting is carried out. While selective logging practices may not extract large numbers of trees, roads attract agriculturalists and hunters into the forests. Additionally, the practice of “high grading” (taking the largest, most robust trees) is likely contributing to overall genetic decline in high value tree populations (Russell and Sieber, 2005).

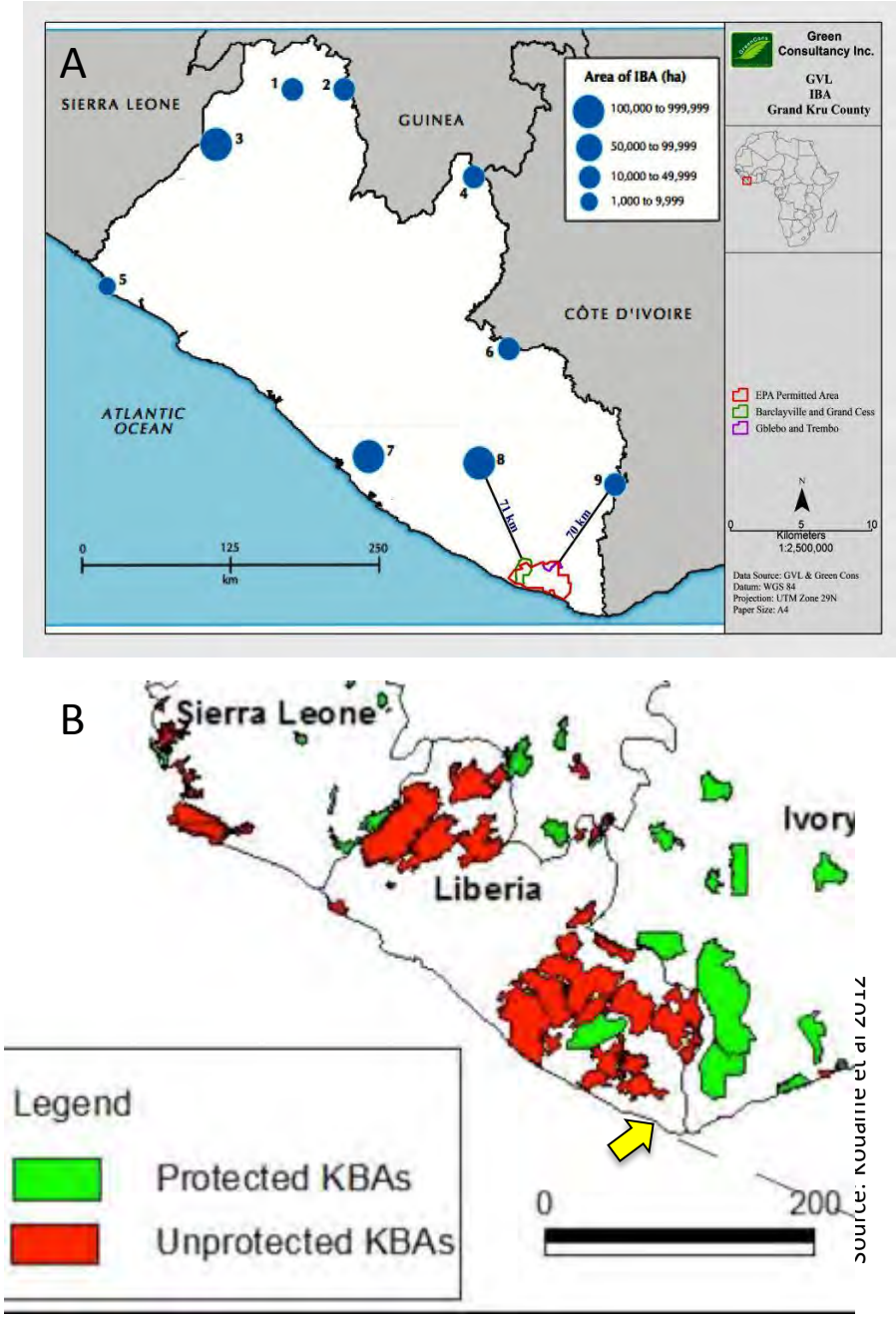
Human development and habitat conversion have caused the retreat of these threatened species into diminishing parcels of forest, which are becoming fragmented and insular. Reducing the prevalence of slash and burn agriculture is a severe challenge. The practice is done all over Liberia, even in dry agro climates where savannah grasses predominate, and as a rule, productivity is very low. Government institutions like the FDA and EPA have requisite trained technicians but are unable to control conservation threats due to lack of funding. NGOs such as Flora and Fauna International (FFI) and Conservation International (CI), have been working in partnership with FDA, together with local NGOs such as Society for the Conservation of Nature in Liberia (SCNL) and Save my Future Foundation (SAMFU) .

Priority Conservation Areas

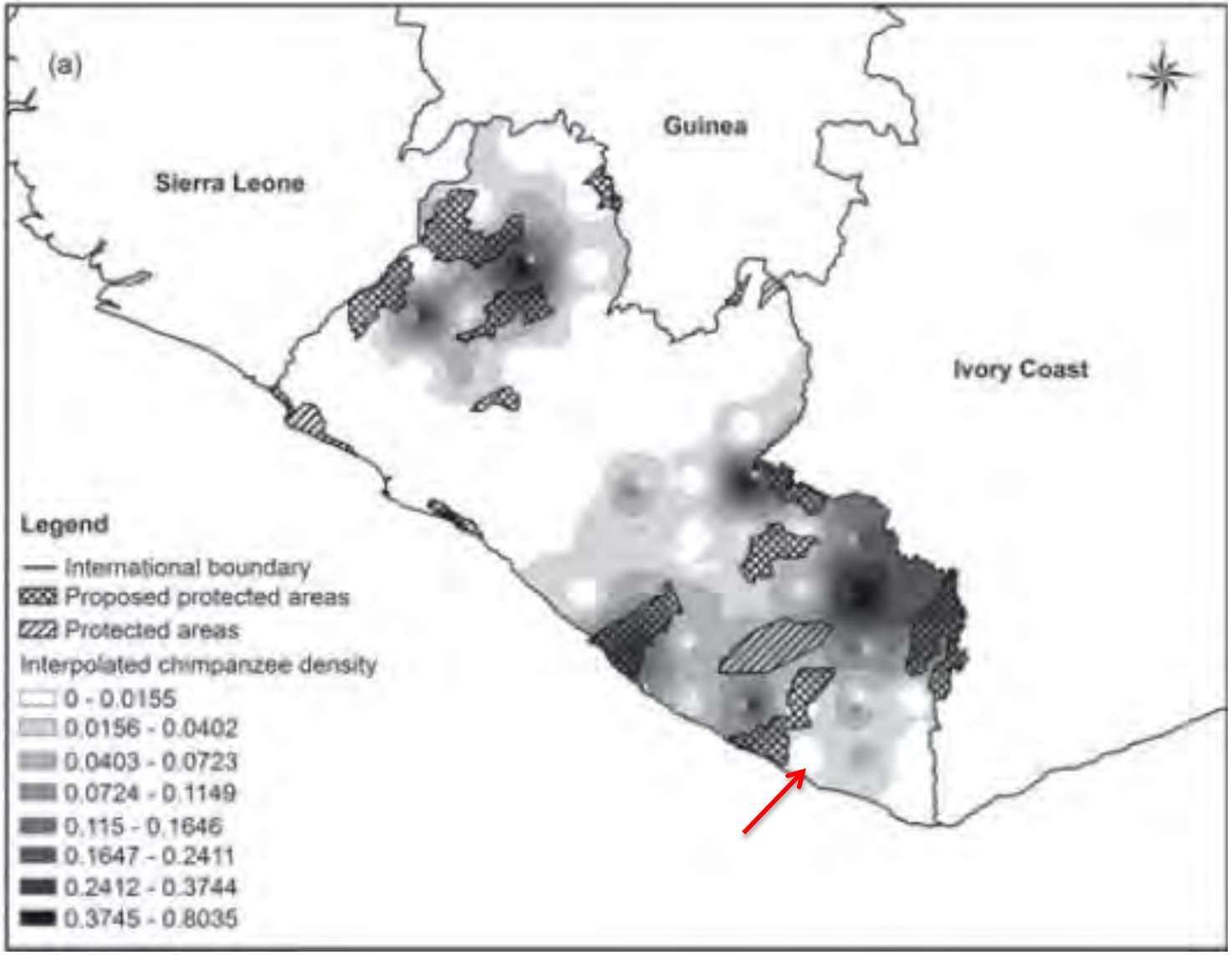
As mentioned earlier, the proposed AOIs are distant from protected areas. They are also distant from Liberia's Important Bird Areas as identified by Birdlife International (Map 7A), with the closest Important Bird Area (IBA) c. 100 km northwest of the AOIs.

IUCN has identified key biodiversity areas (KBA) defined as "places of international importance for the conservation of biodiversity through protected areas and other governance mechanisms. They are identified nationally using simple, standard criteria, based on their importance in maintaining species populations. As the building blocks for designing the ecosystem approach and maintaining effective ecological networks, key biodiversity areas are the starting point for conservation planning at landscape level. Governments, intergovernmental organizations, NGOs, the private sector, and other stakeholders can use key biodiversity areas as a tool for identifying national networks of internationally important sites for conservation."

There is a cluster of KBAs identified for the Upper Guinea Forest approximately 70 km north of the AOIs (Map 7B).



Map 10. (A) Map of of Important Bird Areas (IBAs) in Liberia, showing no overlap with the AOI. (B) Map of Key Biodiversity Areas in the Upper Guinea Forest, showing KBAs north of the AOI, but not close by.



Map 11. Chimpanzee population density map

CHIMPANZEE DISTRIBUTION

The Wild Chimpanzee Foundation provided Map 8 showing modeled chimpanzee densities across Liberia based on a recent national survey of chimpanzees and large mammals (Tweh et al 2014). Based on the map the proposed AOI is situated in one of the lower density areas (red arrow in map). Notwithstanding, chimpanzee conservation within and surrounding the AOI is addressed and further discussed in HCV 1.2.

Summary of Findings

Table 10: HCVs confirmed or likely present in the Barclayville and Grand Cess / Gblebo and Trembo AOI and adjacent landscape.

HCV 1 – Concentrations of Biodiversity Values	1.1	Protected areas	Absent
	1.2	Concentrations of rare, threatened and endangered species	Present
	1.3	Concentrations of endemic species	Potentially Present
	1.4	Critical temporal concentrations of species	Potentially Present
HCV 2 – Landscape Level Ecosystems and Mosaics	2	Natural ecosystems or ecosystem mosaics which are large in extent, un-fragmented, form a significant components of the landscape or are of significant importance at a local, regional of national level, and which contain most of the naturally occurring species.	Present
HCV 3 – Ecosystems and Habitats	3	Ecosystems that are naturally rare, have become rare due to historical processes, or threatened by present or future processes.	Present
HCV 4 – Critical Ecosystem Services	4.1	Areas critical to water catchments	Present
	4.2	Areas critical for soil erosion	Present
	4.3	Areas critical for fire prevention	Absent
HCV 5 - Basic Needs of Local Communities	5	Sites and resources fundamental for the basic necessities of local communities or indigenous peoples.	Present
HCV 6 - Cultural Values	6	Cultural values critical to the traditional cultural identity of local communities, including areas of cultural, ecological, economic, religious or archaeological significance.	Present

HCV 1.1

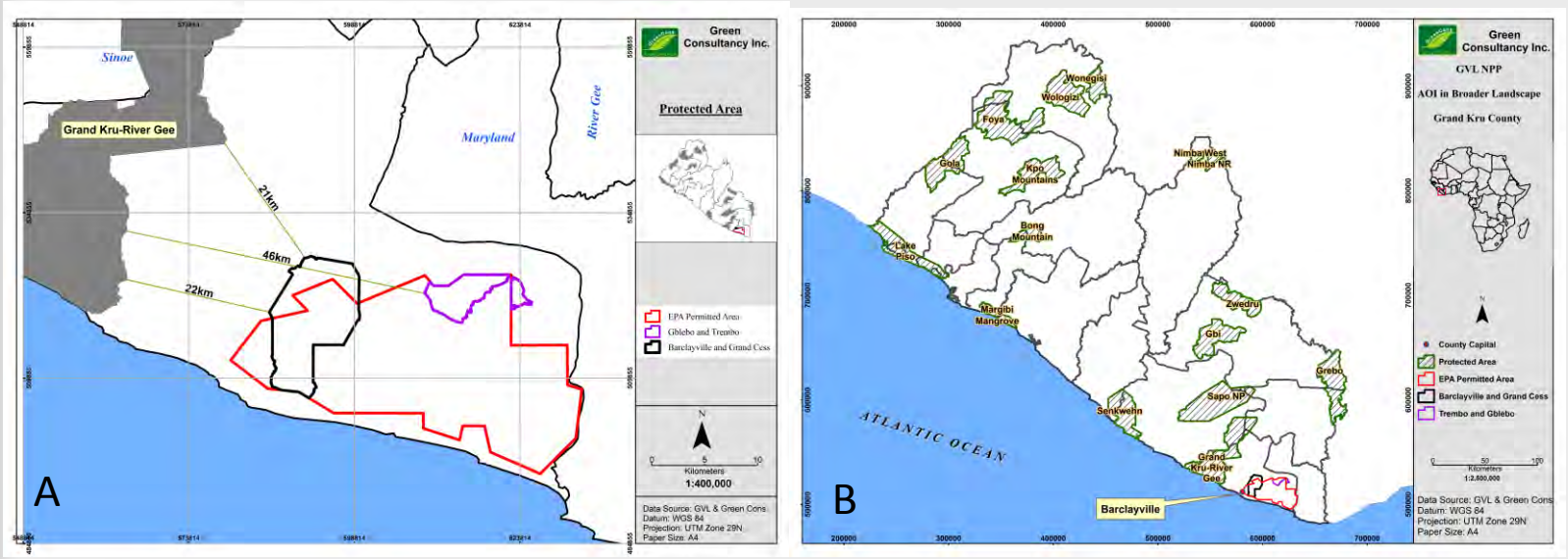
Protected Areas

Key Question: Does the AOI or surrounding landscape contain any of the following categories of Protected Areas?

Absent

Accordingly, the NI considers the present of HCV 1.1 if any of these exist: (1) National Parks IUCN Category II (e.g., Sapo National Park), (2) Strict Nature Reserve IUCN Category IA, (3) Nature Reserve (e.g., East Nimba Reserve), (4) Cultural Sites, (5) Game Reserves, (6) Wetlands of International Significance (e.g., RAMSAR), (7) The Gola Transboundary Peace Park, (8) Proposed protected areas

The proposed Grand Kru-River Gee Protected Forest (GKRG), located 21 km to the NW of the AOI at its nearest point, is the closest protected area in the immediate landscape (Map 9A). Based on desktop studies by GVL and GreenCons using GIS data from the GoL, consultation with environmental NGOs, and field verification (site visit and community interviews), the AOI does not pose a direct threat to GKRG. By FDA requirement, development around any of such protected area is expected to leave a buffer of 3 km. The AOI is far from such a buffer. This HCV is therefore considered absent.



Map 12. (A) Protected areas of Liberia, (B) Proximity of AOI to the nearest protected area, Grand Kru-River Gee proposed national park.

HCV 1.2

Concentrations of Rare, Threatened and Endangered Species

Present

Key Question: Is the AOI or the adjoining landscape known or likely to contain areas with significant concentrations of rare, threatened, or endangered plant or animal species?

As per the HCV Toolkit for Liberia, a site may be considered HCV 1.2 status if it contains:

1) Viable populations of rare, threatened or endangered species belonging to any of the following IUCN categories of Critically Endangered (CR), Endangered (EN), or Convention on International Trade in Endangered Species (CITES) Appendix I and II or on the list of fully protected species under national regulation.
2) Any breeding pair of species considered to be of exceptional conservation significance at the local or national level by general stakeholder consensus. This will include species such as the pygmy hippo, elephant, zebra duiker, bongo and the Diana monkey, etc.
3) Any species that is CR on the IUCN Red List. For Liberia, this will include species such as the bird called the Liberian Greenbul. For critically endangered species, each individual is extremely important as a potential progenitor of future generations, and hence the presence of an individual of this species will be considered as HCV1.2.

HCV 1.2 also requires consideration of habitats required for the protection of such species and populations.

Species that meet the criteria for HCV 1.2 (as described above) are present in the AOI for all taxonomic groups sampled – plants, mammals, birds, reptiles, amphibians, and fish – but were generally present in greater, what we consider to be "significant" concentrations in better quality forest areas located in the northern part of the Barclayville and Grand Cess AOI, a smaller of forest in the south of the same AOI, and in the northern points where the Trembo and Gblebo AOI polygons meet (Map 10). These areas also showed highest species richness and likely presence of HCV 1.2 species. Although HCV 1.2 species were identified in other parts of the AOI, the current diminished habitat quality in much of the AOI along with ongoing anthropogenic disturbances (including farmlands, roads and hunting) would likely lead to a unsustainable populations in the long term. HCVMAs were therefore selected based on the best habitat for long term survival of populations of HCV 1.2 species confirmed present or considered potentially present in the AOI and surrounding landscape. They are described by taxonomic group on the following pages, but the key HCV management areas for protecting concentrations of HCV 1.2 species were therefore identified as: 1) The most intact forest areas that are contiguous with large forest blocks to the north and those connecting to the proposed GKRG NP, 2) Rivers and riparian forests, and 3) Wetlands.

One particular area was identified as having potential HCV 1.2 significance, but further investigation was deemed warranted before identifying it as an HCV 1.2 "no-go" zone. This area is referred to as a Recommended Conservation Area (RCA) in Map 15 and it is recommended that GVL employ a mammal specialist to further investigate the potential importance of this area, especially for chimpanzees, elephants and pygmy hippos.

HCV 1.2 - Mammals

A total of 220 mammal signs, calls and sightings were recorded during our transect surveys, accounting for 14 species, though other species were identified through opportunistic sightings and interviews. Of the 20 non-marine mammal species in Liberia that are listed as threatened (VU, EN or CR) on the IUCN Red List, six were confirmed present in the AOI (zebra duiker, Jentkin's duiker, diana monkey, red colobus, chimpanzee and pygmy hippo), while another 10 were considered potentially present based on known distribution, habitat availability and community interviews (the forest elephant, West African linsang, three pangolin species – all very likely - as well as the golden cat, leopard, Liberian mongoose, Bourlon's Genet, western pied colobus) (Table 8). Additionally, five species that qualify for HCV 1.2 based on their CITES, national protection, and/or endemicity were also identified as present in the AOI: Africa forest buffalo, Sooty mangabey, Bongo, Olive monkey, and red river hog (refer to full report for more information, scientific names and conservation status of each species).

No significant concentrations of any particular mammal species was identified during the transect walks, with the exception of the red river hog in almost all the wetlands (swampy areas). This is not surprising due to dry season (reducing track visibility) and extensive hunting in most areas (likely suppressing populations and forcing individuals to be more elusive). Higher quality (denser) forests and riverine habitats are the predominant preferred habitat for HCV 1.2 mammal species in the AOI and surrounding landscape. Some species, especially ungulates and pangolins, will regularly use degraded habitat areas, but are particularly vulnerable to hunting in these higher human use habitats in the AOI. Wetlands are used by fewer species, but notably important for the pygmy hippo (Table 8). Savannas, present in the south of the Barclayville and Grand Cess AOI, can be used by chimpanzees and species such as the African golden cat (but exist only in an area where these species are unlikely present) and are expected to be far less important than forest, riverine habitat and wetlands for these species and the overall HCV 1.2 mammal community.

Figure 5: Western Chimpanzee (*Pan troglodytes verus*) nest seen in the forest around Transect 12, northern Barclayville/ Grand Cess AOI

Figure 6: Print of a Pygmy hippopotamus *(Choeropsis liberiensis)* found along one of the transects (Gblebo area)

HCV 1.2 – Mammals continued

Map 11 displays the locations where HCV 1.2 mammal species were confirmed present in the AOI and its immediate surrounds. The presence of farmlands, communities, roads were taken into consideration in identifying HCV areas thought significant (i.e., sufficient quality and quantity of habitat to maintain populations) of the HCV 1.2 species identified. One regenerating forest area in the south of the Barclayville and Grand Cess AOI documented three HCV 1.2 primate species as well as the zebra duiker (Map 11). This area was not included in the HCV 1.2 management area because of the presence of a nearby village, the lack of a larger forest block of contiguous forest nearby, and the convergence of roads in this area making it more vulnerable to hunting. These species, as well as the other forest dependent HCV 1.2 species identified on the previous page, are expected to have the highest concentrations and best chance long-term survival in the AOI and surrounding landscape by maintaining the forest areas marked as no-go zones in Map 15. Riparian/riverine forests and wetlands will also need to be maintained and well managed for HCV 1.2 species that use these habitats.

Foot prints of the pygmy hippo were detected once along the bank of the Joda River (locally known as the Kooler River) in the extreme north of the Gblebo AOI during a transect walk (Figure 4). Tracks were also seen by local interviewees in the north of the Barclayville/Grand Cess AOI. The African elephant is confirmed present in Sapo NP (approximately 60 km NW of the AOI). Although no direct signs were observed during our survey, interviews confirmed the presence of this species in the forests to the north of the Barclayville/Grand Cess AOI. Western chimpanzees are expected to occur in the area based on a recent national chimpanzee survey which predicts medium to low densities of the species in the AOI landscape (Map 12). Signs of this species were observed in the north of the Barclayville/Grand Cess AOI at the border of the AOI adjoining the larger landscape. The area had an old nest which was almost scattered and a fresh nest seen far into the trees (Figure 3).

Interviews with local hunter and community members in this area also said they hearing the cries and calls in of chimpanzees in distant forest areas away from their town. These areas will require further biodiversity assessments by qualified chimpanzee experts to deem the importance of these habitat for the chimpanzee population.

Although better habitat for these species is located in forests adjoining to the larger landscape of the AOI, signs of these species were detected in the Short Stature Natural Forest and Tall Stature Natural Forest (HK 1-2) land cover categories in the north of AOI (areas mapped as Regenerating Forest (RF) and Short Regenerating Vegetation (SRV) in GVL's HCS land cover map). Rapid Biodiversity Assessments of degraded habitat in areas adjacent to these areas, especially in the RCA as previously described and mapped in Map 15, will be necessary prior to development. It is assumed that Short Regenerating Vegetation (SRV) areas will have reduced concentrations and frequency of use than in neighboring forests, notwithstanding, these areas potentially make up part of a home range for all three of these species.

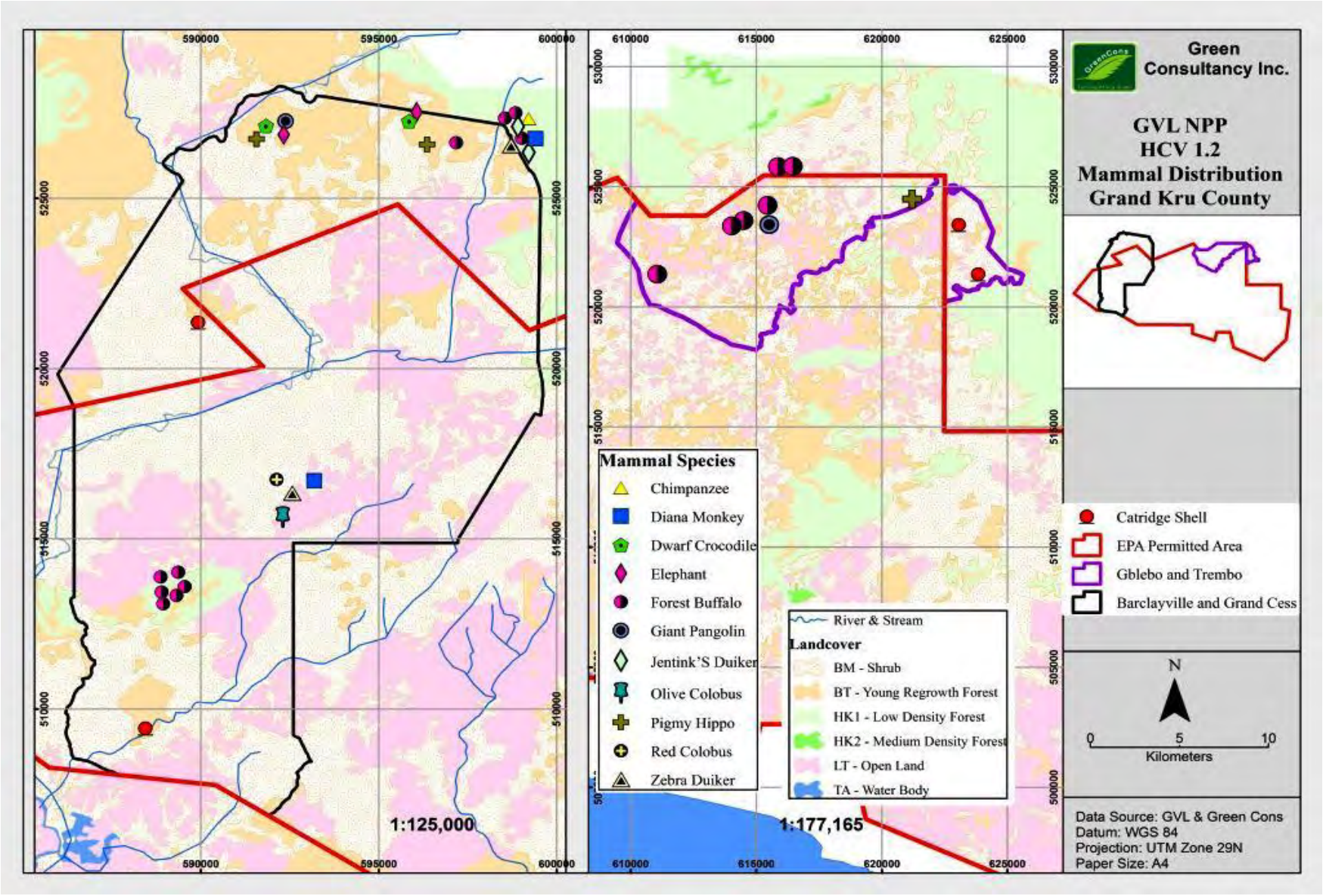
For mammals, as well as other taxonomic groups, assessment results show higher biodiversity and more intact habitat in the northern parts of all AOIs. This includes all wetlands, swamps and riparian zones in these areas and is consistent with species richness modeling undertaken in a recent national survey of large mammals (Map 13).

Table 11. HCV 1.2 IUCN Red List Threatened mammals species and their presence in the AOI (determined based on known distributions, field survey observations, habitat availability and interview data).

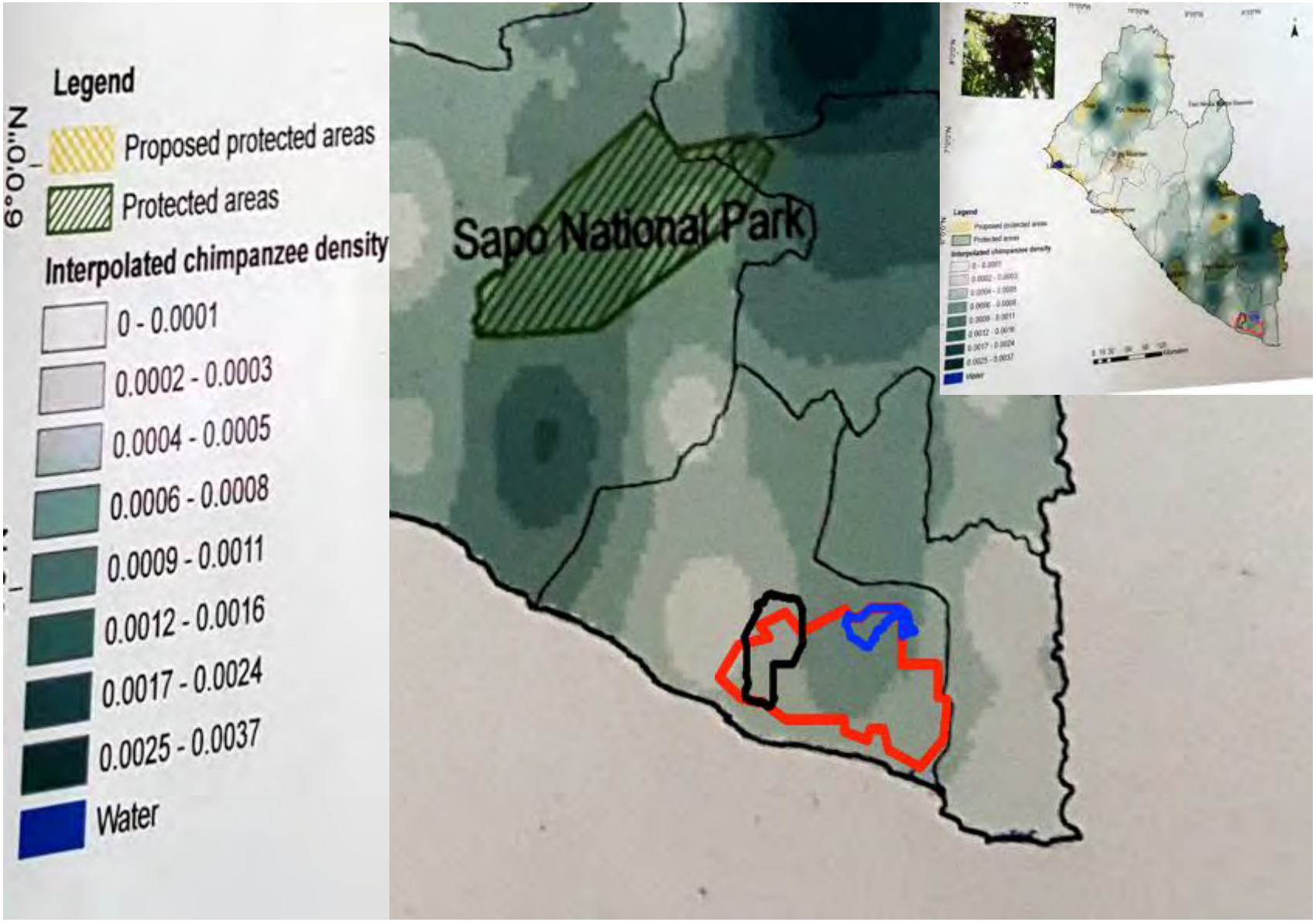
Genus	Species	Common names (Eng)	IUCN Red List	Presence in AOIs	FOR-EST	RIV-ERINE	WET-LANDS	SAV-ANNAS	Notes
Caracal	*aurata*	African Golden Cat	VU	Potentially	x			x	Habitat: Mainly in primary moist equatorial forest, although on the periphery of its range it penetrates savanna regions along riverine forest. Naturally rare, but often absent in areas of human disturbance.
Panthera	*pardus*	Leopard	VU	Potentially	x				Known to Sapo NP in Liberia, but mapped as known distribution approaches the AOI. Likely forest dependent in Liberia. If present in the AOI landscape, likely to be in the HCV 2 block of ofrest to the north.
Liberiictis	*kuhni*	Liberian Mongoose	VU	Potentially	x	x	x		Distribution: Historical presence in SE Liberia likely. Habitat: Primary and secondary forests, and is found mainly in swamp forest and streambeds with deep sandy soils where earthworms are abundant. Although present in secondary forests, the lack of den sites may restrict the species's distribution
Genetta	*bourloni*	Bourlon's Genet	VU	Potentially	x				Habitat: Rainforest. Hunted and eaten as bushmeat. Rarely observed or detected in the wild.
Poiana	*leightoni*	West African Linsang	VU	Potentially	x				Known distribution inland from the AOI. Habitat: Rainforest canopy.
Cephalophus	*zebra*	Zebra Duiker	VU	Confirmed	x				Confirmed with interviews. Habitat: Primary lowland forest, but also occurs in low mountain and hill forests and sometimes in secondary growth and swidden cultivation. Least tolerant of duiker species to deforestation and hunting.
Cephalophus	*jentinki*	Jentink's Duiker	EN	Confirmed	x				Known distribution far north of AOI. Habitat: Predominantly in primary high forest, but it may enter adjacent secondary growth, plantations and farmbush. Requires diversity of fruiting trees and very dense shelter rather than a specific forest type. May consume cocoa pods, mangoes and palm nuts in plantations. Bushmeat target.
Hippopotamus	*amphibius*	Hippopotamus	VU	Unlikely					Only two previous records in Liberia. Crrently deemed absent from the country.
Choeropsis	*liberiensis*	Pygmy Hippopotamus	EN	Confirmed		x	x		Habitat: Associated with streams in wet forests and swamps. Hunted opportunisitcally.
Hipposideros	*marisae*	Aellen's Roundleaf Bat	VU	Unlikely					Known distribution far inland from seven localities on the border of Liberia, Guniea and Ivory Coast. Appears to be a associated with undisturbed tropical moist forest. Roost sites include natural caves, boulder caves and overhanging cliffs.

Table 11 (continued). HCV 1.2 IUCN Red List Threatened mammals species and their presence in the AOI (determined based on known distributions, field survey observations, habitat availability and interview data).

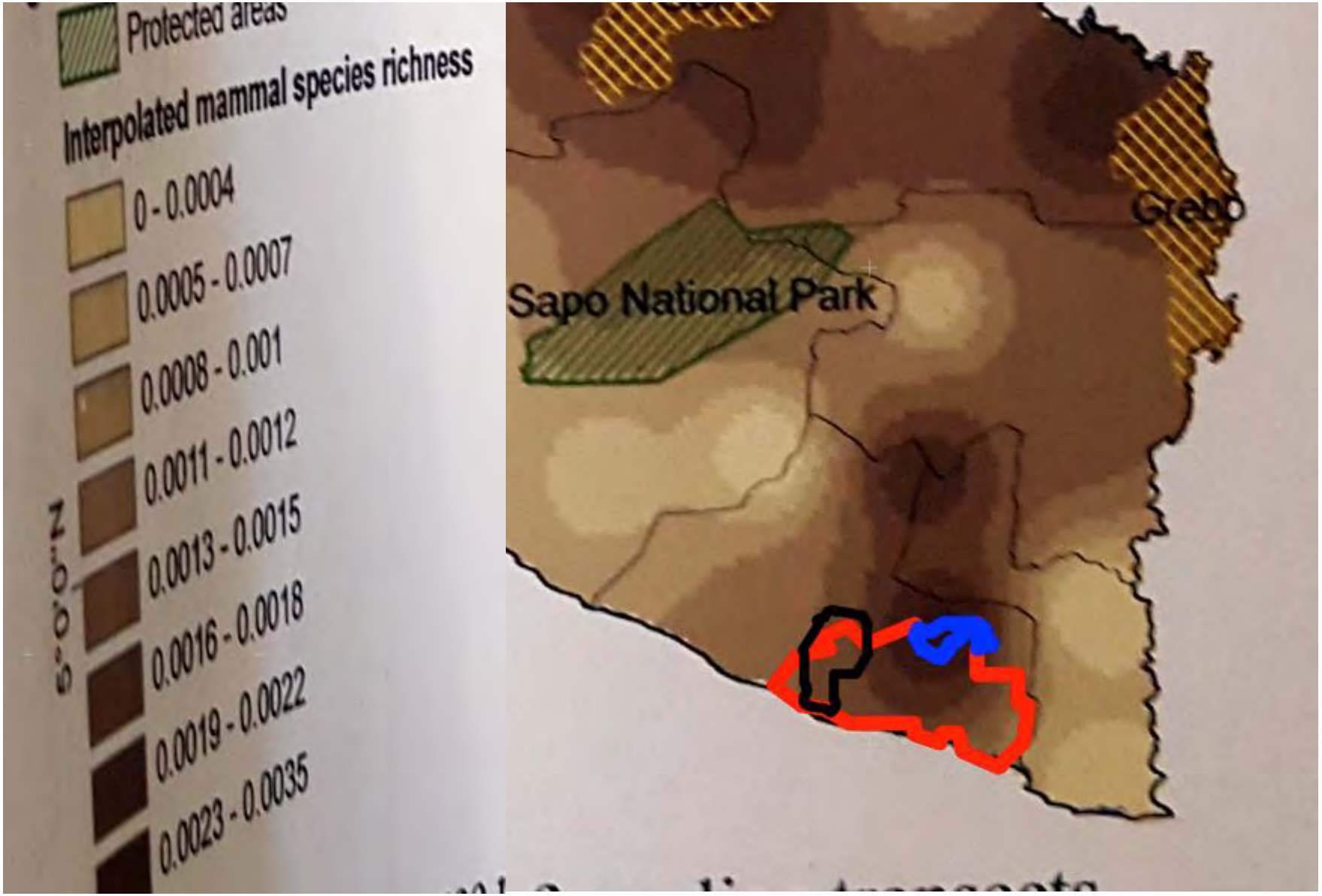
Genus	Species	Common names (Eng)	IUCN Red List	Presence in AOIs	FOR-EST	RIV-ERINE	WET-LANDS	SAV-ANNAS	Notes
Rhinolophus	*guineensis*	Guinean Horseshoe Bat	VU	Unlikely					Only known to NE Liberia. Habitat: Montane tropical moist forest, and to a lesser extent from moist savanna
Rhinolophus	*ziama*	Ziama Horseshoe Bat	EN	Unlikely					Only known to two localities in the Guinea Highlands (c. 600 m asl) of southeast Guinea (Ziama Forest) and north-west Liberia.
Phataginus	*tetradactyla*	Black-bellied Pangolin,	VU	Potentially	x	x	x		The most arboreal and least frequently recorded of all African pangolin species. Found in riverine and swamp forests typically dominated by palms (including rattans) and specialized swamp trees such as Uapaca, Pseudospondis and Mitragina. Has been recorded in primary and secondary forests and farmlands. Is never far from permanent water and water course. Hunted for food, medicine and trade.
Phataginus	*tricuspis*	White-bellied Pangolin	VU	Potentially	x				Confirmed with interviews. The most common of the African forest pangolins, reaching relatively high densities in suitable habitat - both primary and secondary rainforests, altered forests (bush) and in farmlands (agricultural areas of former lowland rainforests), including oil palm.
Smutsia	*gigantea*	Giant Ground Pangolin	VU	Potentially		x	x	x	Highly likely present. Habitat: Lowland tropical moist and swamp forest, and in forest-savanna-cultivation mosaic habitats. Feeds exclusively on termites. Hunted for meat and medicine and traded.
Cercopithecus	*diana*	Diana Monkey	VU	Confirmed	x	x			Confirmed with interviews. Largely arboreal, uses canopy of primary and old secondary lowland moist forest, and riverine and gallery forest. Rare in degraded forest, but appears it can survive in lightly logged forest where the canopy remains. Frequently hunted.
Colobus	*polykomos*	Western Black-and-White Colobus	VU	Potentially	x	x			Habitat: Rainforest and forest galleries are preferred, the species is rarely found in degraded habitat, though sometimes in secondary forests.
Piliocolobus	*badius*	Western Red Colobus	EN	Confirmed	x	x			Confirmed by interviews. Habitat: Arboreal species, found in a variety of forest types including primary, secondary, and riverine or gallery forest. Prefers primary or mature old growth moist forest.
Pan	*troglodytes*	Chimpanzee	CR	Confirmed	x	x		x	Habitat: Dry and moist lowland tropical forests, and forest galleries extending into savannah woodlands. In West Africa, occur in fallow-agricultural matrices dominated by wild or feral oil palm.
Loxodonta	*africana*	African Elephant	VU	Potentially	x				Confirmed by inteviews. Known distribution shows possible extant population inland (east) from the AOI. Habitat: densely wooded rainforests.



Map 13. HCV 1.2 mammal species identified during transect walks and opportunistic observations while surveying the AOI with our team and community member guides and interviews with the guides during the transect walks.



Map 14. Map showing the AOI in relation to chimpanzee density estimations from Tweh et al. (2014). The Gblebo and Trembo AOIs occur in an area expected to have a medium to low density of chimpanzees, while the model shows the Barclayville/Grand Cess AOI as likely to have a low density of chimpanzees.



Map 15. Mammal species richness modeled from data collected on a recent national survey of chimpanzees and large mammals (Tweh et al 2014). Compared to the rest of Liberia, the AOI is expected to have medium to high levels of large mammal diversity.

HCV 1.2 - Birds

A total of 124 bird species were recorded during the survey. The majority of species (80%; 876 records) were recorded along transects, while the remainder were recorded during opportunistic encounters not along transects. Of the 12 bird species in Liberia that are listed as threatened (VU, EN or CR) on the IUCN Red List, only one was confirmed present in the AOI (the Yellow-casqued Hornbill (*Ceratogymna elata*)), while another 9 were considered potentially present based on known distribution, habitat availability and community interviews (Table 9). Two other HCV 1.2 species were identified in the AOI: an IUCN Near Threatened species, the Copper-tailed Glossy Starling (*Lamprotornis cupreocauda*); and the Upper Guinea Forest endemic Sharpe's Apalis (*Apalis sharpii*). Several Guinea-Congo biome restricted species were also recorded.

Habitat preference for birds was divided into two categories: Forest specialist (completely forest dependent birds) and Generalist (birds adapted to both undisturbed and disturbed forest habitats). When grouped according to their habitat preferences, 63 species (51%) of species recorded during the survey were forest specialist while 61 species (49%) were generalist species. The high percentage of forest specialist indicates that there is a good amount of tall and short stature natural forest in the AOI. Species richness was highest in the vegetation of the Filoken area in the center of the Barclayville/Grand Cess AOI and Sorroken/Wutuken areas in the NE of the Gblebo AOI. Map 14 shows locations of these HCV 1.2 species identified.

The most abundant species recorded during this assessment was the Yellow-whiskered Greenbul followed by the Olive Sunbird and Little Greenbul while the least abundant species included the Little Grey Greenbul, Golden Greebul and Grey Longbill. We did not detect the Liberian Greenbul (*Phyllastrephus leucolepis*), a Critically Endangered bird endemic to Liberia, nor did any interview respondents identify the species as present.

Management areas for HCV 1.2 birds should focus on maintaining large blocks of dense forest in the AOI for forest dependent species and maintain riverine forests throughout the landscape. Generalist species will make use of the mixed agriculture and regenerating forest mosaic that communities land use creates, so the focus should be on accommodating forest dependent species. Wetlands are also likely to be used by many bird species, though no wetland dependent HCV 1.2 species were identified. Management should also include extensive efforts to reduce community hunting and trade of HCV 1.2 species. In this context, HCVMA 1.2 for birds should coincide with mammal HCVMA areas – larger blocks of dense forest habitat, riverine forests and as a precautionary measure, wetlands, as displayed in the no-go areas, riparian buffers and wetlands in Map 15. The RCA area will likely benefit birds if maintained, but is not thought to be particularly significant for birds, so is not considered HCVMA 1.2 for this taxonomic group.

Figure 7: Photo Crested Guineafowl (LC) killed by a hunter.

Table 12. HCV 1.2 IUCN Red List Threatened bird species and their presence in the AOI (determined based on known distributions, field survey observations, habitat availability and interview data).

Genus	Species	Common names (Eng)	IUCN Red List	Presence in AOIs	FOREST DEPENDENT	FOREST and NON-FOREST	Notes
Agelastes	*meleagrides*	White-breasted Guineafowl	VU	Potentially		x	Closest known remaining distribution far inland, bridging border with Ivory Coast. Suitable habitats were observed. Species is in Sapo National Park and other major forest blocks in the southeast.
Bycanistes	*cylindricus*	Brown-cheeked Hornbill	VU	Potentially	x		Dependent on mature forest, but will live on edge of disturbed areas, including plantations.
Ceratogymna	*elata*	Yellow-casqued Hornbill	VU	Confirmed		x	Lowland primary forest but also occurs in logged and secondary forest, riverine forest and oil-palm plantations. Has also been recorded in predominantly agricultural landscapes.
Criniger	*olivaceus*	Yellow-bearded Greenbul	VU	Potentially	x		Habitat: Primary forest, mature secondary forest, forest-grassland mosaic and gallery forest.
Lobotos	*lobatus*	Western Wattled Cuckoo-shrike	VU	Potentially	x		Habitat: Canopy of tall trees in lowland rainforest, both primary and logged forest (usually at heights of between 30-50 m)
Malimbus	*ballmanni*	Gola Malimbe	EN	Potentially	x		Known distribution north of, and distant from, the AOI. Habitat primary or very old secondary forests. There are habitats suitable for species in the AOI.
Melaenornis	*annamarulae*	Nimba Flycatcher	VU	Potentially	x		Known distribution inland, but not too distant, from AOI. Habitat: closed-canopy lowland primary forest.
Necrosyrtes	*monachus*	Hooded Vulture	CR	Unlikely			Only known to the far north of Liberia.
Picathartes	*gymnocephalus*	White-necked Rockfowl	VU	Potentially		x	Most records from northern highlands. All known colonies very distant from AOI (nearest Sinoe and and NE Grand Gede). Habitat: Lowland primary and secondary forest, forest clearings, and gallery forest mainly in rocky, hilly terrain but has survived at highly degraded sites and close to urban centres.

Table 13 (continued). HCV 1.2 IUCN Red List Threatened bird species and their presence in the AOI (determined based on known distributions, field survey observations, habitat availability and interview data).

Genus	Species	Common names (Eng)	IUCN Red List	Presence in AOIs	FOREST DEPENDENT	FOREST and NON-FOREST	Notes
Psittacus	*timneh*	Timneh Parrot	EN	Potentially	x	x	Heavily traded. Habitat: Typically inhabiting dense forest, they are commonly observed at forest edges, clearings, gallery forest, mangroves, wooded savannah, cultivated areas, and even gardens. Distribution: No evidence of "substantial" populations elsewhere in their range beyond Sapo NP Liberia and Gola NP Sierra Leone.
Schistolais	*leontica*	Sierra Leone Prinia	VU	Unlikely			Known distribution in Liberia in Mt Nimba - far from the AOI.
Scotopelia	*ussheri*	Rufous Fishing-owl	VU	Potentially		x	Patchy distribution at low densitites. Prefered habitat riverine rainforest and mangroves, but can use a variety of habitats, including gallery forests, coffee plantations, and open floodplains.

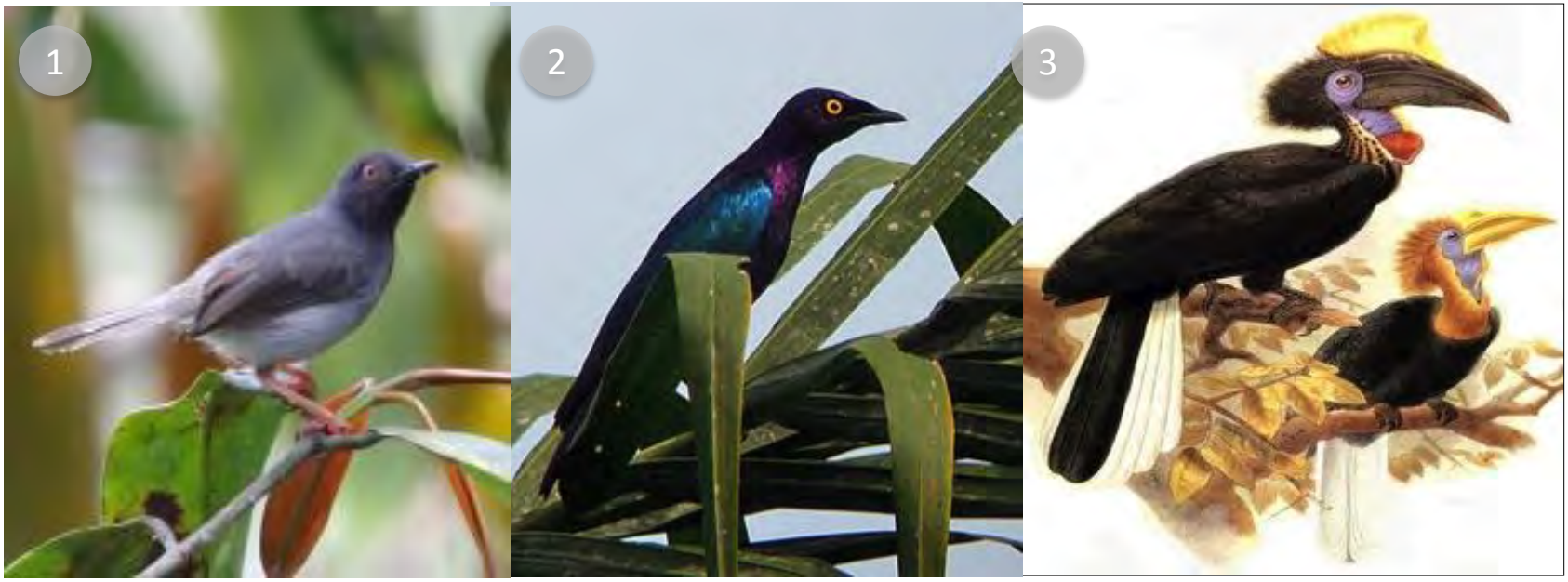
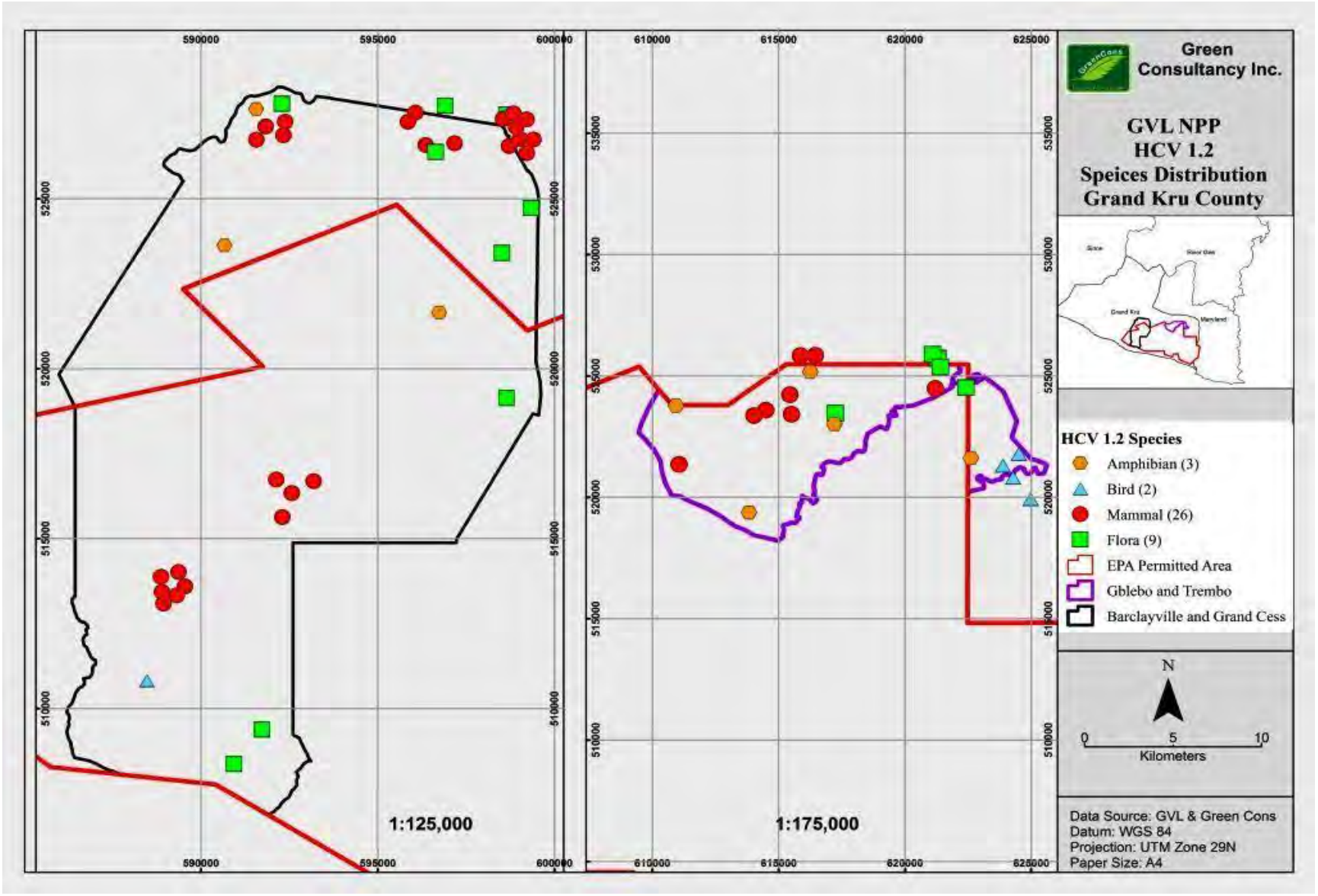


Figure 8: Examples of the three HCV 1.2 bird species detected in the AOI: (1) Sharpe's apalis, (2) Copper-tailed Glossy-starling, (3) Yellow-casqued Hornbill



Map 16. HCV 1.2 map showing the locations of detections of HCV 1.2 species in each taxonomic group.

HCV 1.2 – Reptiles and Amphibians

The herpetological survey of the AOI recorded 144 amphibians belonging to 18 species in 7 families and three reptiles species (Figures 7 and 8). Out of the 18 amphibian species record, six species are restricted to the Upper Guinea forest and six species are endemic to West Africa.

Of the 5 reptile species in Liberia that are listed as threatened (VU, EN or CR) on the IUCN Red List, only one was confirmed present in the AOI (the critically endangered African Dwarf crocodile) while another three (Slender-snouted crocodile (CR), Home's Hinge-back Tortoise (VU) and Senegal Flapshell Turtle (VU)) were considered potentially present based on known distribution and habitat preferences (Table 10).

Of the 4 amphibian species in Liberia that are listed as threatened (VU, EN or CR) on the IUCN Red List, two were confirmed present in the AOI during our transect walks (the Ivory Coast Frog and Allen's slippery frog, both VU) while one (the Ringed River Frog (EN) was considered potentially present based on known distribution and habitat preferences (Table 10). Four other HCV 1.2 frog and toad species were also identified in the AOI, all IUCN Near Threatened, CITES Appendix I, and protected by the Liberian government (Table 10).

Only a few species HCV 1.2 species identified are forest specialists, with HCV 1.2 species identified in varying habitats across the AOIs (Map 14). The field survey took place in the middle of the dry season in Liberia making it difficult for more herpetofauna detection. Further research is needed to comment on the districts' comprehensive herpetological diversity. Although the assessment provided only a rough picture of the biodiversity of the region, it is recommended that any kind of remaining forests (especially gallery forests) as well as all fresh water habitats within the region should be protected, otherwise there is no place left where amphibians can survive during the dry season, and in the case of forest dependent species, even during the rainy season.

Taking into account the many different habitat preferences and habitats needed for the different reproductive modes of amphibians, there should be an effort to maintain as diverse of a range of habitats as possible. In general, more herpetological investigations during the rainy season are highly recommended for the Grand Kru region.

While a diverse range of habitats are acknowledged as important for maintaining herpetofauna diversity, but wetlands and riverine habitats are especially crucial for the HCV 1.2 crocodiles and frogs and toads. For forest dependent species, such as the Endangered Ivory Coast frog, maintenance of intact forest habitat is also important. Therefore the larger, more intact blocks of forest as discussed under the mammal section will also be considered HCV 1.2 for herps. The HCVMA for this taxonomic group will therefore mirror that for mammals and birds, with special emphasis on the importance of wetland and riverine habitats.

Hunting of HCV 1.2 crocodiles, turtles and tortoises will diminish their populations and reducing this threat should be a top priority for GVL's community outreach program.

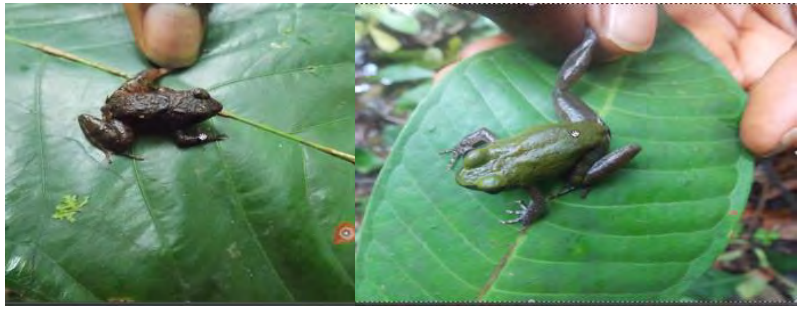
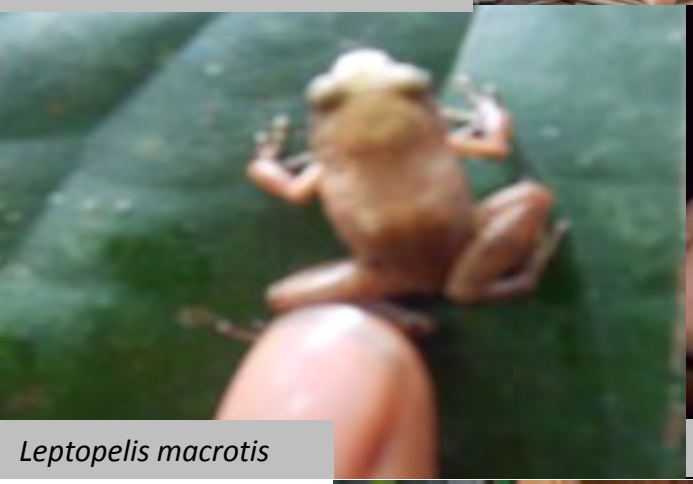


Figure 9: Photos of *Phrynobatrachus alleni* (left) and *Phrynobatrachus liberiansis*.

Table 14. HCV 1.2 IUCN Red List Threatened reptile and amphibian species and their presence in the AOI (determined based on known distributions, field survey observations, habitat availability and interview data).

Class	Genus	Species	Common names (Eng)	IUCN Red List	Presence in AOIs	FOR-EST	RIV-ERINE	WET-LANDS	SAV-ANNAS	Notes
AMPHIBIA	*Amnirana*	*occidentalis*	Ivory Coast Frog	EN	Confirmed	x				Only known from Mt Nimba in Liberia, but found at AOI. Habitat: Lowland forest, and is known only from undisturbed primary forest. It presumably breeds in temporary pools.
	Conraua	*alleni*	Allen's Slippery Frog	VU	Confirmed	x	x			Liberia wide. Habitat: Lives in or near fast-flowing permanent streams in rainforest in hilly country. It is forest-dependent, and is not found in open areas.
	Nimbaphrynoides	*occidentalis*	Mount Nimba Viviparous Toad	CR	Unlikely					Montane species known only from 7 km2 area in the Mount Nimba region.
	Phrynobatrachus	*annulatus*	Ringed River Frog	EN	Potentially	x				Known only to Mt Nimba in Liberia, but recorded in neighboring Ivory Coast. Might be more widely distributed. Habitat: Primary forest close to inselbergs in leaf-litter. Uses drier parts of the forest so likely not dependent on water for breeding.
REPTILIA	*Cnemaspis*	*occidentalis*	Western Gecko	EN	Unlikely					Habitat: Montane. Only known location in Liberia is on border with Guinea.
	Cyclanorbis	*senegalensis*	Senegal Flapshell Turtle	VU	Potentially		x	x		AOI on the edge of its known distribution. Habitat: Will utilize nearly any freshwater body in its range (including rivers), but strong emphasis on ponds, puddles and marshes with high productivity and amphibian aggregations. Will use riverine forests and ponds in savanna zones. Commonly traded and consumed locally.
	Kinixys	*homeana*	Home's Hinge-back Tortoise	VU	Potentially	x		x		Thought to be widespread in Liberia. Commonly eaten and sold. Known habitats: lowland evergreen forest, linked to zones of secondary dry forest around mangroves and in zones with secondary swamp-forest. Habitat use likely more variable when not exploited, but due to exploitation, forest patches with very dense vegetation where access for human hunters is difficult important for tortoises.
	Mecistops	*cataphractus*	Slender-snouted Crocodile	CR	Potentially		x			Likely extinct in Liberia due to historical exploitation. Habitat: Prefers forested rivers and other densely vegetated bodies of water (e.g. reservoirs and freshwater lagoons), but has also been found in sparsely vegetated, gallery habitats within savanna woodland.
	Osteolaemus	*tetraspis*	African Dwarf Crocodile	CR	Confirmed		x	x		Confirmed with interviews.

Bothrophthalmus lineatus



Leptopelis macrotis

Phrynobatrachus alleni

Arthroleptis sp.

Figure 10: Photos of herpetofauna seen during assessment

HCV 1.2 - Plants

A total of thirty-five 2 km-long transects were survey within the AOI for the flora assessment. The sampling process listed all standing tree species > 20cm dbh along the transect trail (5m on both sides of the trail) and all trees species that were above 10cm dbh sighted within each sample area/plot (25m x 25m). During the survey a total of 47 different tree species were identified with more than 1071 trees recorded. Eleven tree species are considered HCV 1.2 based on their IUCN status (5 VU species), CITES status (9 App I species), or protected status by the government of Liberia (9 species) (Table 11). A full listing of the plant species identified during the survey and the different vegetation categories found within the AOI is found in Annex 5.

Of the 50+ plant species in Liberia identified as threatened (VU, EN or CR) on the IUCN Red List (Annex 5), eight were confirmed present in the AOI during our transect walks (timber species mostly in the families Leguminosae and Rubiaceae) while six others were considered potentially present based on known distribution and habitat preferences (Table 11). Four other HCV 1.2 timber species were also identified in the AOI, all IUCN Near Threatened, CITES Appendix I, and/or protected by the Liberian government (Table 11 and Figure 9). The species identified are predominantly forest species, with some preferring swampy or riverine areas. Most have use as timber.

The AOI is dominated by Short Regenerating Vegetation and open land as a result of an increase in slash and burn agriculture, mining and scattered human settlements. The land cover consists of active agricultural fields mixed with regenerating fallow vegetation following agriculture, agro-forestry and remnant natural vegetation that varies from short stature natural forest to scattered sections of tall stature natural forest. Logging activities within the AOI is concentrated along area with tall stature natural forest but at a a lesser scale. Several swamps and wetlands are scattered throughout the area, especially through young Short Regenerating Vegetation and along the slopes of the savanna reflecting local hydrological characteristics, and concentration of mangroves are found immediately near the coast far outside the AOI. The savanna vegetation is found near the coast stretching from 15 to 20 miles inland.

Due to the preferred habitats of the HCV 1.2 plant species identified and their increased prevalence in more intact areas in the AOI, HCV 1.2 for plants is identified as the most intact forest areas in the AOI, wetlands, and riverine forests. These areas align well with HCV 1.2 areas identified for other taxonomic groups.

Figure 11: Photo of a huge *Lophira alata* (Ekki). This huge tree, listed as Vulnerable on the IUCN Red List, was found in the HCVMA 1.2 No Go Zone in the north of the Barclayville and Grand Cess AOI). The botanist and two other people are trying to measure the DBH.

Table 15. HCV 1.2 plant species recorded or potentially present in the AOI and adjacent landscape

Family	Genus	Species	IUCN Red List	CITES; GoL (P = protected)	Presence in AOIs	Forest	Riverine	Wetland	Savanna	Notes on habitat and distribution, including in AOI
APOCYNACEAE	*Alafia*	*whytei*	VU		Potentially	x		x		Liana growing in lowland evergreen forest; certain to be found within the AOI
COMBRETACEAE	*Terminalia*	*ivorensis*	VU	App I; P	Potentially	x				Mostly found in forest and along road side
EUPHORBIACEAE	*Amanoa*	*bracteosa*	VU		Potentially			x		A species found in swamp forest or along stream banks in wet evergreen forest, threatened mainly by agriculture and mining activites
FABACEAE	*Calpocalyz*	*aubrevillei*	VU	App I; P	Confirmed	x	x			Rainforest in valleys and on river banks. Local use food, medicine and wood.
FABACEAE	*Dalbergia*	*spp.*		App I; P	Confirmed	x				Rosewood. Harvested for timber and traded.
FABACEAE	*Erythrophleum*	*ivorensis*	NT	App I; P	Confirmed	x				Evergreen primary and secondary forests. Harvested for timber, traded internationally, and medicinal use.
GUTTIFERAE	*Garcinia*	*kola*	VU		Potentially	x				It is abundantly found in evergreen forest
LEGUMINOSAE	*Afzelia*	*bella*	VU	App I; P	Confirmed	x				Closed forest. International trade banned.
LEGUMINOSAE	*Berlinia*	*occidentalis*	VU		Confirmed		x			Wet lowland evergreen forest/swampy areas; extensive loss due to forestry and mining
LEGUMINOSAE	*Monopetalanthus*	*compactus*	VU		Potentially	x				The largest part of the species' range lies in Liberia. It extends from the south-west tip of Côte d'Ivoire towards the Nimba region of Liberia extending into Sierra Leone.
LEGUMINOSAE	*Tetraberlinia*	*tubmaniana*	VU	App I; P	Confirmed	x				A lowland forest species native to Liberia
MELIACEAE	*Lovoa*	*trichilioides*	VU	App I; P	Confirmed	x				Occurs in evergreen and deciduous forest, generally in moist sites. Regeneration occurs only in canopy gaps. Hevily exploited for timber.
OCHNACEAE	*Lophira*	*alata*	VU	App I	Confirmed	x				A pioneer species and occurs abundantly in wet evergreen forest. Widespread and regenerates easily in many areasin Cameroon, however, this is evidently not the case in other parts of its range. Slow growing and overexploited as timber.
PHYLLANTHACEAE	*Bridelia*	*grandis*	NT	App I; P	Confirmed	x		x		Pioneer species. Seedlings and saplings are more abundant in recently logged forest than in undisturbed forest. Prefers moist conditions, especially in swamps.

Table 15 (continued). HCV 1.2 plant species recorded or potentially present in the AOI and adjacent landscape

Family	Genus	Species	IUCN Red List	CITES; GoL (P = protected)	Presence in AOIs	Forest	Riverine	Wetland	Savanna	Notes on habitat and distribution, including in AOI
RHIZOPHORACEAE	*Anopyxis*	*klaineana*	VU		Potentially	x	x	x		Timber mostly found in wet ecosystem
RUBIACEAE	*Hallea*	*ciliata*	VU		Confirmed	x		x		Freshwater swamps in rain forests, extending into coastal, semi-deciduous formations
RUBIACEAE	*Nauclea*	*diderrichii*	VU		Confirmed					Mostly found in lowland evergreen forest
SIMAROUBACEAE	*Hannoa*	*klaineana*	NT	P	Confirmed	x				Common in evergreen, deciduous, fringing and secondary forests

HCV 1.2 – Freshwater fish

Twenty-four species of freshwater fish were identified through interviews with local communities and the use of a field fish guide. No fish identified in the area appeared to be of conservation concern though five IUCN Red List threatened species (VU, EN or CR) were identified as potentially present in the AOI based on known distribution and habitat needs (Table 12). All of the fish identified during the survey are similar to those in most of the rivers and streams around Liberia and West Africa.

Three tilapia (in the Cichlidae family) are]likely present in the AOI or surrounding landscape and of particular conservation concern in Liberia due to overharvesting: *Tilapia coffea* (Critically Endangered), *Tilapia walteri* (a Near Threatened demersal species), and *Tilapia joka* (a Vulnerable, benthopelagic species) (Figure 10). Habitat for tilapias is threatened by deforestation, mining, and human collection. Although these species were not identified during interviews, they are potentially present in local ponds, streams, rivers and lakes and water quality will be important for maintenance of these potentially present species.

Table 16. HCV 1.2 freshwater fish species potentially present in the AOI and adjacent landscape

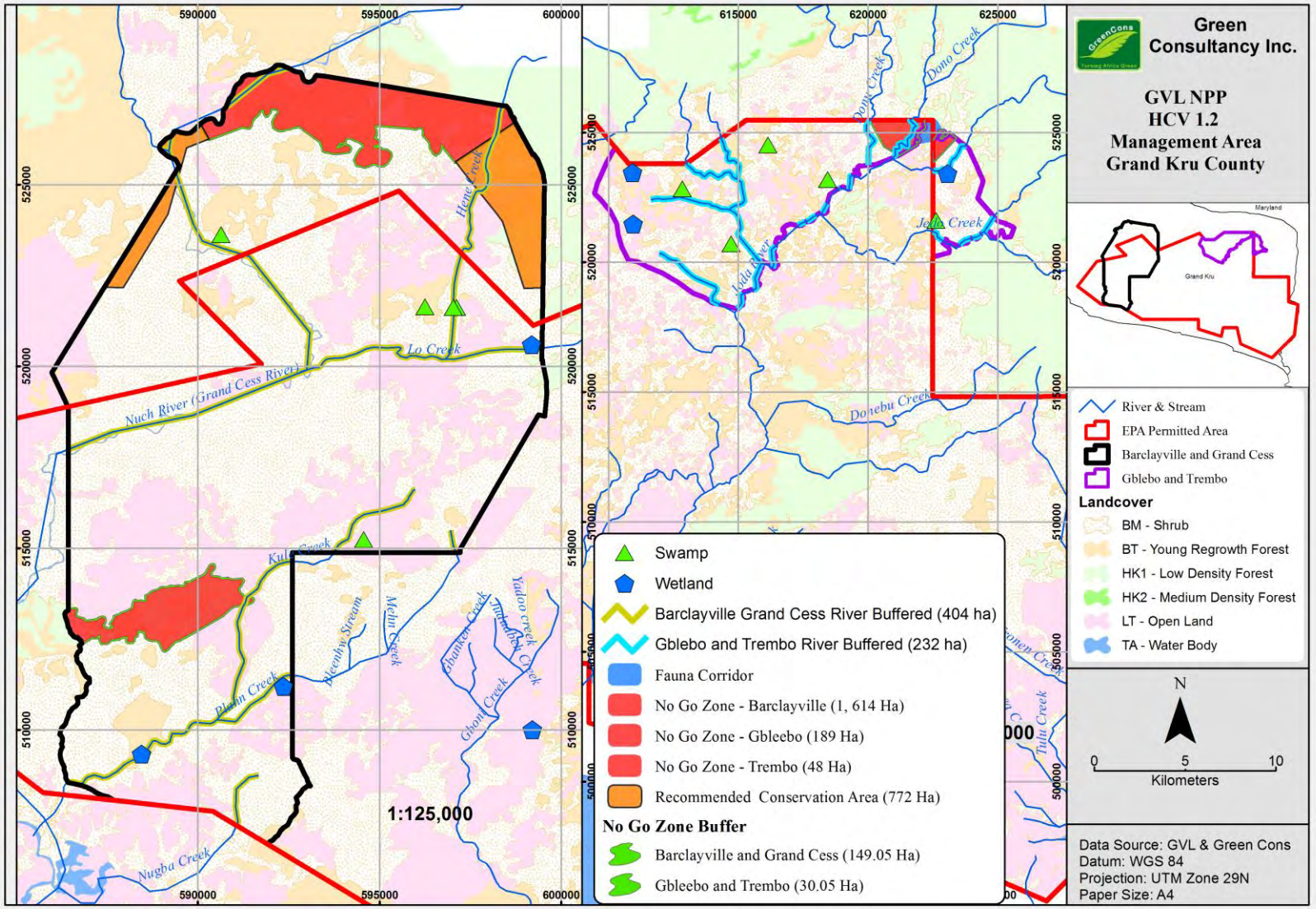
Family	Genus	Species	IUCN Red List	Presence in AOIs	Notes on habitat and distribution, including in AOI
CICHLIDAE	*Tilapia*	*coffea*	CR	Potentially	Potential habitat found within the fresh waters within the AOI
CICHLIDAE	*Tilapia*	*joka*	VU	Potentially	Potential habitat within the fresh waters within the AOI
CLAROTEIDAE	*Chrysichthys*	*teugelsi*	EN	Potentially	The species is found within the upper course of Rivercess and north eastern part of Liberia.
NOTHOBRANCHIIDAE	*Epiplatys*	*roloffi*	EN	Potentially	Mostly found in swamps and smaller creeks mostly in the north of Liberia
NOTHOBRANCHIIDAE	*Epiplatys*	*ruhkopfi*	CR	Potentially	The exact location of this species is unknown but mostly recorded in the northern parts of Liberia and in smaller streams and swamps in Liberia

Tilapia walteri

Tilapia coffea

Tilapia joka

Figure 12: Photos depicting type of fresh water fishes observed during assessment



Map 17 (draft map). HCV 1.2 map reflecting biodiversity related management recommendations for the AOI. Some HCV 1.2 areas have been definitively mapped and are considered “final” (the No Go Zones and their buffers), while others need to be definitively mapped by GVL and communities and are therefore considered “draft” (river, riparian buffers, wetlands, swamps, and the RCA). The faunal corridor is located outside of the AOIs, but is an area that connects HCVMA in the AOI and therefore should be identified for communities as an area to be maintained for its biodiversity value.

HCVMA 1.2 Summary

Map 15 displays all HCVMA 1.2 areas which identified - including forested areas with documented and expected high levels of biodiversity, wetlands and swamps, rivers and riparian buffers, and a wildlife corridor outside of the AOI, but wedged between two forests within the AOI. These areas were identified as areas with the most significant concentrations of HCV 1.2 species in the landscape and with the greatest likelihood of long term maintenance considering community use of the landscape. Each taxonomic group, and each species, habitat needs vary, but these ecosystems in the locations identified encompass the most important habitat for the persistence of the HCV 1.2 species in the AOI and surrounding landscape. The large number of HCV 1.2 species identified as "present" and "potentially present" in the AOI demonstrates the species richness and forest integrity of the areas in which they were found. The presence of these HCV 1.2 species makes managing the surrounding landscape (forests outside of the AOI) essential for the protection and conservation of these species. Almost all the present and potentially present species are found within, or expected to be found in, the red highlight area considered as "No Go Zones". In addition to the No Go Zones, we also identified two areas of relatively rich vegetation adjacent to the northern Barclayville and Grand Cess AOI "No Go Zone" where, through interviews, HCV 1.2 species have been deemed present. These areas have been described as HCVMA 1.2 and are referred to as Recommended Conservation Areas (RCAs).

The "No Go Zones" are demarcated area set aside to be avoided for any activities. These areas will serve as continuous breeding ground and habitat for HCV 1.2 species and as a corridor to the larger landscape outside to the north and south west of the AOI respectively. Hunting, farming, poaching and settlement, etc, are not allow and considered prohibited in these the areas. These areas have also been assigned a 50 m buffer, labelled "No Go Zone Buffer", as requested by communities during the post-assessment consultation, to help prevent encroachment into these areas.

The Recommended Conservation Area (RCA) is treated as a "No Go Zone" until, and in the event where, independent studies find the area insignificant to biodiversity presence, then the company will be obliged to develop the portion of this area that is not HCV 2 or HCV 3 (as there is overlap). The study is recommended to be conducted by independent conservation or biodiversity NGO(s) that specialize in large mammals, with chimpanzees, pygmy hippos and elephants of particular concern for this area. The findings of their work should be shared with relevant private and governmental institutions through a public consultation. This will enable others to provide their inputs into the study results and management recommendations for the area. Not withstanding, until that is done, the area is to operate as a "No Go Zone" as described above.

Wetlands, swamps, riparian buffers, and rivers are all considered HCV 1.2 management areas and their management should follow that recommended in HCV 4.1 – maintaining and providing a buffer around wetlands, swamps and rivers. These areas are particularly important for HCV 1.2 amphibians, reptiles and freshwater fish.

HCV 1.3

Concentrations of Endemic Species

Key Question: Is the AOI or the adjoining landscape known or likely to contain concentrations of endemic species?

Potentially Present

According to World Conservation Monitoring Center, IUCN, FAO and NBSAP, Liberia has a total of 111 endemic plants, mammals, birds, reptiles, amphibians, molluscs, fishes and other invertebrates, 90 of which are threatened. The list includes one bird, one mollusk, two reptiles, four amphibians, and 103 plants. Of these, only one was identified during the survey, the tree species *Tetraberlina tubmaniana.* Although endemic, this species is widespread throughout Liberia and the finding at this site is not considered to be a particularly unique concentration of this species.

Regionally endemic species and species endemic to the Upper Guinea Forests, are numerous, for example tree species endemic to West Africa *(*e.g., *Daniella thurifera, Atnonotha fragrans* and *Calpocalyz aubrevillei*) and mammal species such as the the pygmy hippo, chimpanzee and Royal antelope (*Neotragus pygmaeus*), the world's smallest antelope endemic to West Africa and common bush meat target. Survey effort was not sufficient to determine the significance of the concentrations observed, but they are thought to be low and insignificant within the AOI as compared to more forested areas north of the AOI. As a precautionary measure this HCV is identified as present with threats, management and monitoring and mapping of HCV 1.3 species expected to overlap directly with HCV 1.2 and therefore no further detail is provided on these topics for HCV 1.3.

HCV 1.4

Critical Temporal Concentrations of Species

Potentially Present

Key Question: Is the AOI or the adjoining landscape known or likely to contain critical temporal concentrations of species?

The Liberian Toolkit states that HCV 1.4 concentration could exist as a result of available feeding or breeding resources, shelter or refuge from climate change such as flooding and drought. HCV 1.4 areas include the total area responsible for ensuring that such seasonal or temporal shelter maintain its refuge significance. Example of HCV 1.4 areas include hills, mangroves swamps, water holes found at high elevations during the dry season, and flowering and fruiting trees as temporary ground for large and small mammals, including insects. According to the Draft NI, other examples of sites such HCVx include sites of Palearctic migrants such as European Pied Flycatcher (*Ficedula Hypoleuca) and* Spotted Flycatcher (*Muscicapa stritata*), among others.

No critical temporal congregations of species were documented during field surveys, which included interviews with local communities. This said, precautionary measures would support conserving swamps and other wetlands for potential temporal congregations of birds because surveys were temporally incomplete (not covering all parts of the year). Swamp and wetland conservation will also be part of HCV 4. Recommendations for HCV 4 will therefore accommodate this potentially present HCV.

HCV 2 Summary of Findings

Landscape Level Ecosystems and Mosaics

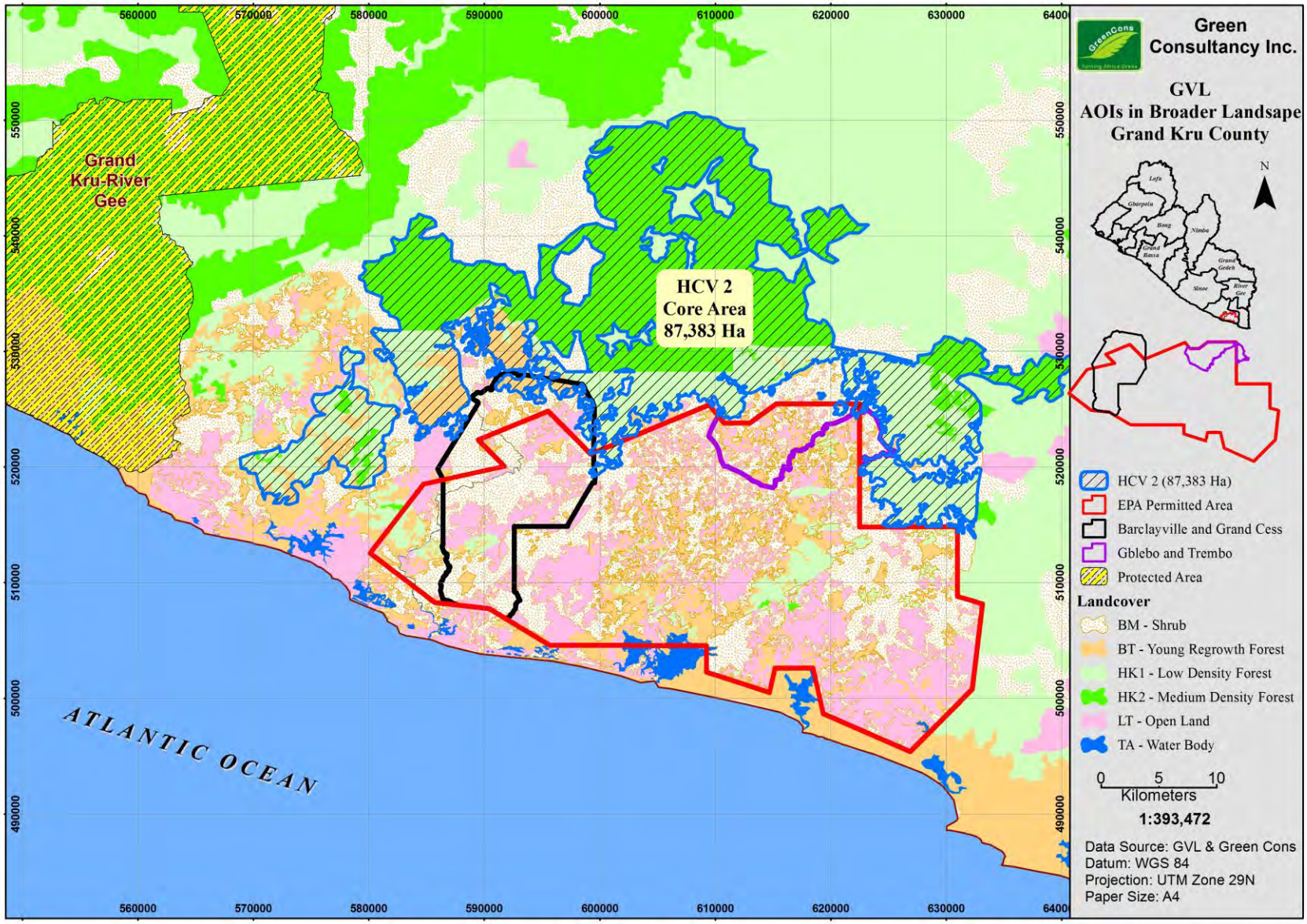
Key Question: Does the AOI or surrounding landscape contain natural ecosystems or ecosystem mosaics which are large in extent, largely un-fragmented, form a significant components of the landscape or are of significant importance at a local, regional of national level, and which contain most of the naturally occurring species?

Present

The Liberian Toolkit sets a minimum threshold of 50,000 ha for HCV 2 landscapes.

HCV 2 is defined to refer to a contiguous block of unfragmented large landscape level forest, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance. Although no Intact Forest Landscapes (or IFL) are present in the vicinity of the AOI (Map 17b), what we consider an HCV 2 landscape based on the above definition is present in the forest block connected to the proposed GKRG National Park and in extension to the Sapo National Park (Map 16). Based on FDA 2004 land cover data, this landscape level forests measures approximately > 87,000 ha (1,199 ha of which are inside the AOI). For site level delineation, all dense forests areas that are contiguous with this HCV 2 forest block are considered HCV 2 and should be maintained. As such, some small areas of HCV 2 forest are located inside the AOI in the north and east. These overlap with forest outside the AOI stretching toward the Grand Kru River Gee proposed protected areas and moving towards the Sapo National Park. Such area already overlap with the HCV 1 areas identified for protection.

There is also a large stretch of open savannah forest within the south of the AOI, particularly within the Grand Cess area. However, as a result of the fragmentation cause by approaching regenerating forest, swamp forest and patches of short regenerating vegetation, the open savannah land is not continuous as one gets closer; additionally, the block of open savanna land including the different fragmentation from the swamps, regenerating forest and patches of short regenerating vegetation does account for less than a 1000 hectares, beyond the minimum threshold of 50,000 ha for HCV 2 landscapes set by the Liberian Toolkit. Additionally, there are smaller patches of scattered savanna vegetation in different parts of the AOI. The largest landscape of such vegetation is found outside the AOI, south of Grandcess AOI spreading towards the coast of the Atlantic Ocean.



Map 18 (final map). HCV 2 map depicting a large, landscape level forests in close proximity to the AOI. Land cover used to identify HCV 2 includes FDA 2004 forest cover in the larger landscape (where GVL HCS land cover was not available) and GVL HCS land cover where (in the AOI and neighboring areas). Small areas of contiguous forest with the HCV 2 block enter into the AOI. This includes some areas mapped as BT – Young Regrowth Forest and HK1 – Low Density Forest. The inclusion of the former was based on questions on the possibility of underrepresenting dense forest in the HCS land cover mapping, as described in the land cover section of this report. The HCVMA (portion of HCV 2 in the AOI, is 1,199 ha.

HCV 3

Ecosystems and Habitats

Key Question: Does the AOI or surrounding landscape contain ecosystems that are naturally rare, have become rare due to past processes, or threatened by current and future processes?

Present

HCV 3 is present in the AOI and adjacent areas in the form of dense lowland forests (586 ha) and wetlands (Map 30). All forest areas surveyed, including the most dense in the AOI, had previous disturbance, so none fit the pure 'primary' category, but based on threat level nationally and locally, dense forest is becoming increasingly rare due to human activity. For the lowland forest aspect of HCV 3, all dense forests should be maintained as HCV 3 areas. As currently mapped, high and medium density forests are absent in the AOI, and there are only small areas of low density forest, yet because of questions of the land cover category accuracy, Young Regenerating Forest (YRF or BT) in the AOI should be reassessed because it is likely some of these areas are actually low or medium density forest. The dense forest area currently mapped as HCV 3 is 88 ha higher than the total dense forest listed in Table 2 (498 ha) due to an effort to reduce forest edges in the area mapped, therefore including some YRF in the HCVMA for HCV 3.

Wetlands that are (1) inundated year-round, or (2) inundated seasonally and associated with water courses are considered HCV 3 areas. These wetlands should be mapped with communities, maintained, and buffered 100 m of natural vegetation to protect these areas from potential impacts from plantation operations and run off.

Other seasonally inundated wetlands should be visited and discussed with communities to decide the value and uniqueness of the ecosystem. If there is question as to the value or uniqueness of the ecosystem, a wetland specialist should be brought in to evaluate the area and determine HCV 3 status. All wetland areas identified during field surveys have been mapped as potential HCV 3 areas for further investigation by GVL.

Also, a naturally rare landscape in the AOI was also identified in the northern part of the Barclayville/Grand Cess AOI (in the the Gbalakpoh area) where there is a long stretch of tall stature natural forest surrounding large rock cave (approximately 30 feet high) adjacent to a flowing stream (Figure 11). The unique terrain is likely a result of an out pouring of water over large boulders rushing down a rocky valley through the AOI. The vegetation also harbors two of the significant HCV species observed; the Endangered Western Chimpanzee and Vulnerable Yellow-casqued Hornbill. The uniqueness of the site qualifies it for HCV 3 which also overlaps with an HCV 1 management area for these species. The site also seems to be a major source of water for streams and rivers flowing across the landscape.

The savanna area in the south of the Barclayville and Grand Cess AOI was not deemed HCV 3 based on the extent of anthropogenic disturbance to the area.

HCV 3

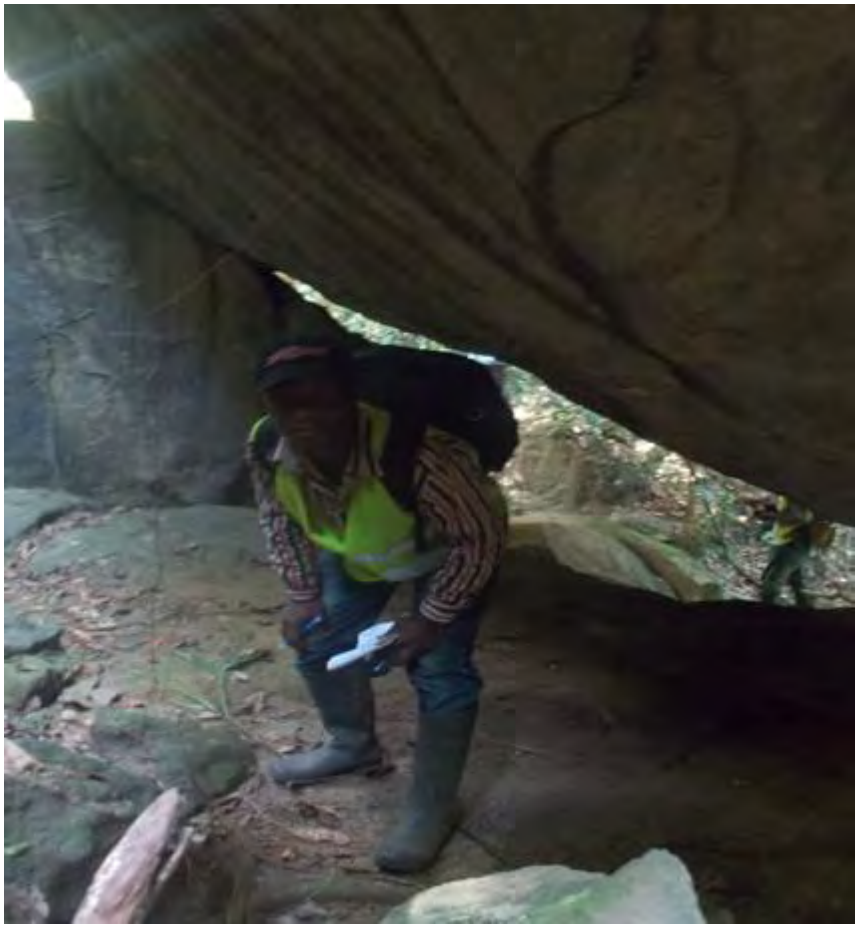
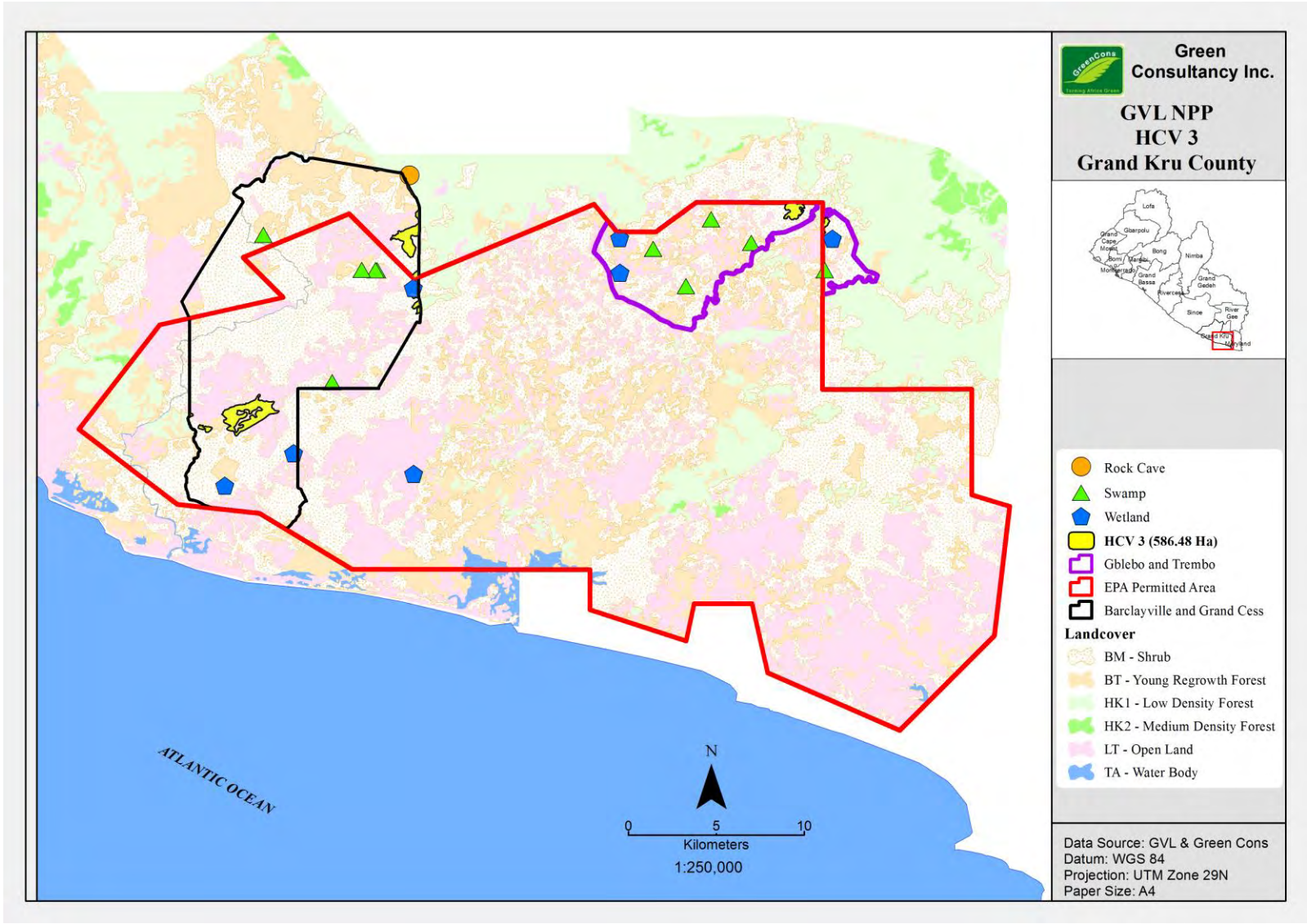


Figure 13: Photos of Ecosystems threatened by current and future processes

Left: A naturally rare ecosystem (large rock cave with a flowing stream) identified in the Gbalakpoh area of the Barclayville/Grand Cess AOI.

Above: An example of a large swamp forest ecosystem observed during the assessment. Swamp forest ecosystems are considered threatened by current and future processes.



Map 19 (draft). HCV 3 map depicting ecosystems in the AOI that are naturally rare, have become rare due to historical processes, or threatened by present or future processes. Dense forest, wetlands, littoral zones and a unique rock cave were identified as HCV 3. HCV 3 is extremely limited in extent within the AOI. In the map, only low density forest is present within the AOIs. It is likely however that low density forests (HK1) and medium density forests (HK2) are likely under-represented in this land cover map and some forest areas mapped as Young Regenerating Forest (YRF) are actually HK1 or Medium Density Forest (HK2). GVL needs to do field surveys to reassess and revise the land cover map to accurately reflect HK1 and HK2 forest that assessors believe are present the AOI.

HCV 4.1

Areas Critical to Water Catchments

Present

Key Question: Does the AOI or surrounding landscape contain areas that are critical to the protection of water catchments?

The Liberian Toolkit considers areas as HCV 4.1 if they are critical for the maintenance of fragile or rare aquatic ecosystems, essential for the regulation of the flow of rivers and streams, preventing severe floods, or maintaining water quality. This includes riparian and catchment vegetation, wetlands of international significance and/or critical local importance.

All rivers in the AOIs are considered upstream, therefore all remaining riparian and floodplain forests will help moderate siltation and flooding downstream. Headwaters of three rivers/tributaries are located in the AOI (Map 18), but forest is largely already lost in these areas.

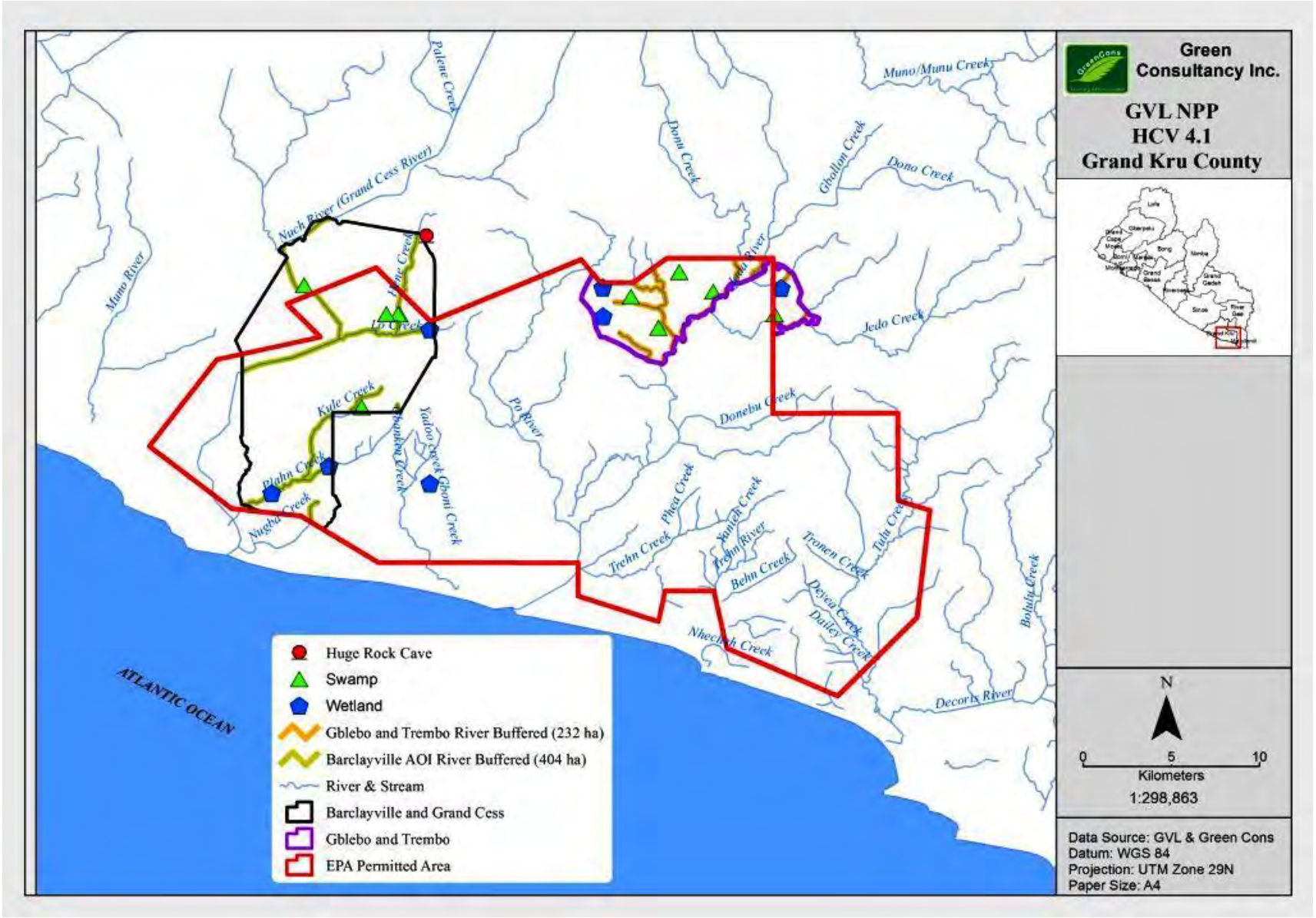
HCV 4.1 areas identified in the AOI include:

- Riparian forest buffers of natural vegetation are HCV 4.1 and should be maintained or, where absent, reestablished as per widths listed in Table 13. All areas within the riparian buffers, regardless of vegetative state, are considered HCV 4.1. Width measurement is taken from the edge of the river, stream or floodplain at peak annual flow (or known floodplain boundary), and buffers added onto that edge. One of the major river flows through the project areas, the Joda River (locally known as the Kooler River), and there are several other smaller streams which are tributaries of the Joda River (Kooler River). Indicative buffers are mapped in Map 18.

- Wetlands and swamps are HCV 4.1 and will need to be maintained and buffered as described in HCV 3 (100m).

Table 17. Riparian buffer width requirement for either side of the river as measured from the wet season high water mark.

Stream/River Width	Minimum Buffer Width
>40m	50m
20m - 40m	40m
10m - 20m	20m
5m - 10m	10m
3m - 5m	5m



Map 20 (draft). HCV 4.1 map, with indicative riparian buffers, shown as 40 m on both sides shown for larger rivers (20-40 m wide) running through the AOI. Indicative markers are also provided for wetlands (boggy soils with with seasonal flooding), swamps (standing water). Forest buffers need to be maintained on all rivers, streams and floodplain areas as per recommendations in Table 13.

HCV 4.2

Areas Critical for Soil Erosion

Present

Key Question: Does the AOI or surrounding landscape contain areas that are critical for preventing soil erosion?

The Liberian Toolkit emphasizes areas where consequences could potentially be severe in terms of loss of productive land or ecosystems, cause damage or loss of human life. It states that conversion of forest on steep slopes should be avoided, with steep slopes to be defined by national and local regulations, based on the nature of soils and rainfall regimes. It states that steep slopes can vary from 25 – 35 degrees.

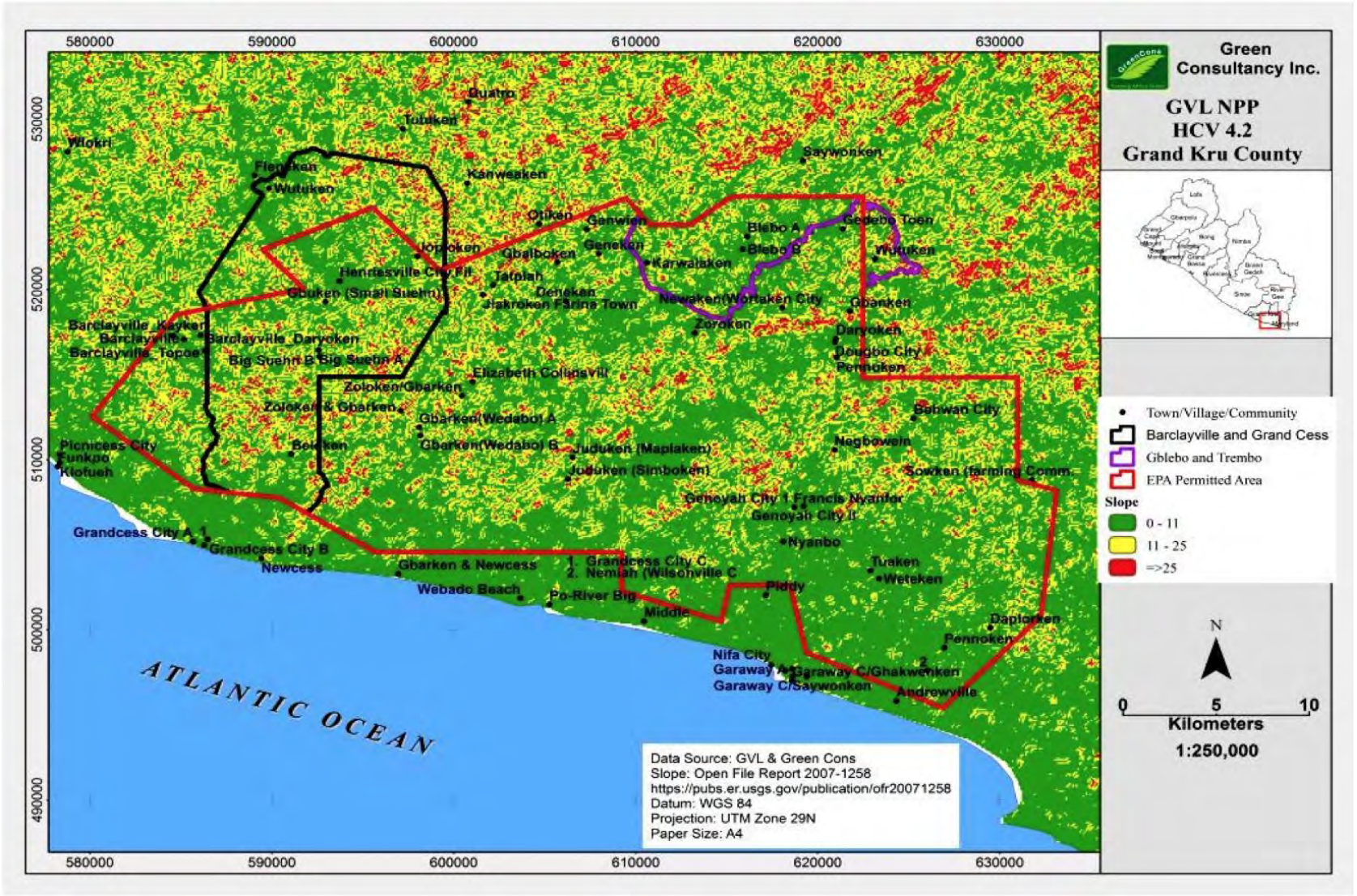
In this assessment, steep slopes in the AOI are identified as slopes greater than 25 degrees. This is a precautionary measure (selecting the lowest of the 25-35 range in the Liberian Toolkit) based on the high level of community vulnerability and dependency on the natural landscape and healthy ecosystem functioning. Leading oil palm experts and best practices often set the maximum slope at 20 degrees, which can be considered by GVL for practical and precautionary reasons.

Terracing is also an important feature of soil protection. Based on Yayasan Sabah Forest Management Area soil protection protocol in Malaysia, we recommend that slopes over 12° be terraced to prevent soil erosion. Based on RSPO in Indonesia, a more conservative 10° could be used and should be considered by GVL.

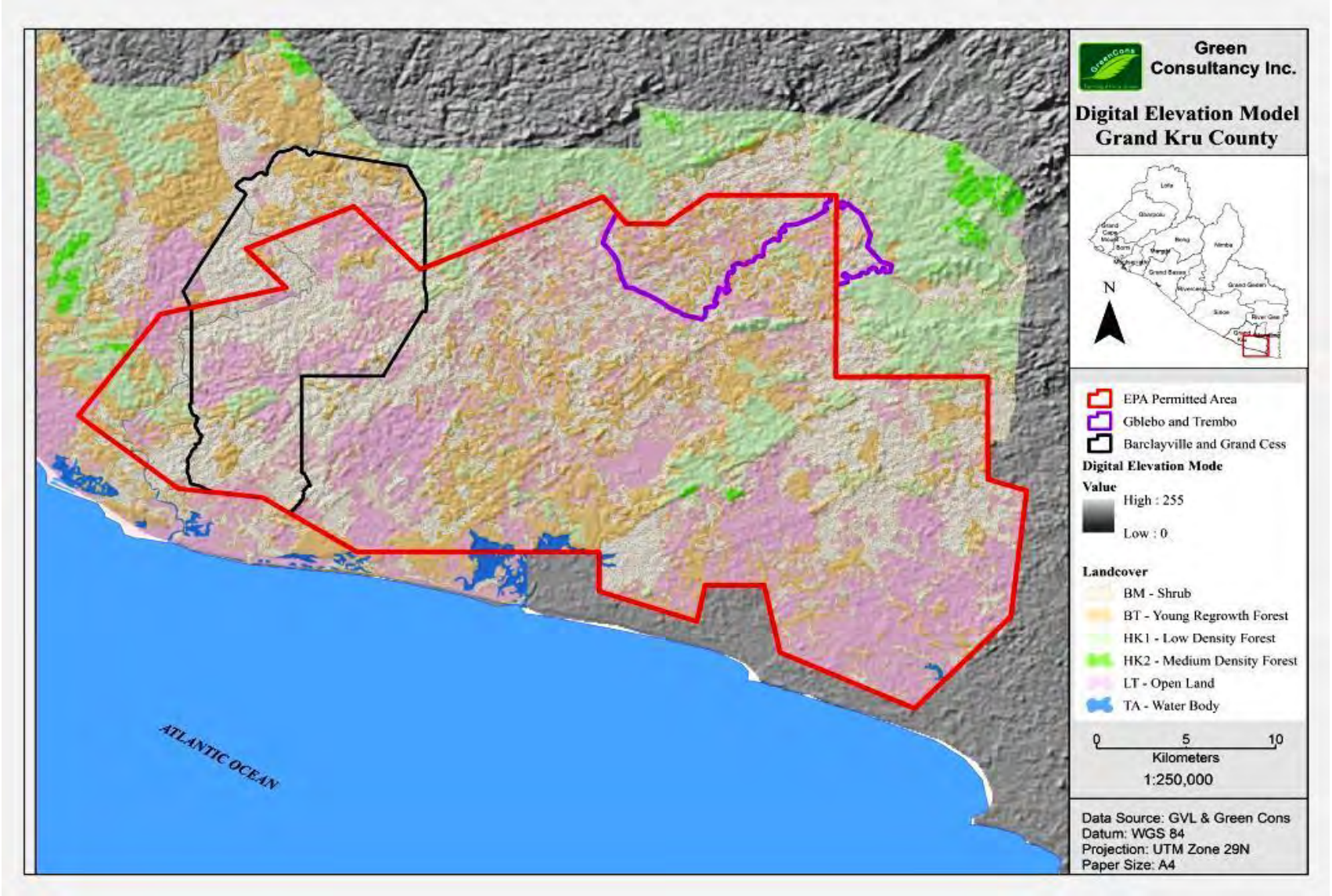
An indicative map of HCV 4.2 areas is presented in Map 33. Areas in the AOI that are 12-25 degrees in slope (yellow in Map 19) are relatively abundant in the landscape and should be terraced to prevent erosion. Areas with a slope of >25 degrees are rare in the AOI (red in Map 19) and should not be planted. Areas in green are relatively low risk for erosion. Map 20 overlays land cover with a topographic map. Forested areas on steep slopes will be particularly important for maintaining water quality.

Riparian buffers as described in HCV 4.1 are also identified as HCV 4.2 and will also be essential to preventing erosion.

SOPs typical of best practices in oil palm plantation management will also be necessary, for example, establishing ground cover quickly after land clearing and developing roads in accordance with best practices to prevent erosion.



Map 21 (final). Indicative slope map showing locations of HCV 4.2 across the AOI. Areas that are 12-25 degrees in slope (yellow) should be terraced, while areas >25 degrees in slope (red) should not be planted. Areas in green are relatively low risk for erosion. All riparian buffers, as described under HCV 4.1, are also considered HCV 4.2, but are not mapped here.



Map 22. Digital elevation map overlaid with forest cover displaying vegetation cover in hilly areas near villages that should be considered prior to development. There were no steep slope discovered near any village, however, particularly consideration should be given to the issue of steep slope.

HCV 4.3

Areas Critical for Fire Prevention

Absent

Key Question: Does the AOI or surrounding landscape contain areas that are critical for fire prevention?

The Liberian Toolkit identifies areas of high rainfall and moist forests as being at reduced risk of fire. Though degraded moist forests, exotic tree plantations and savannahs are highlighted as examples of potential fire risk areas.

The AOI and its surrounding landscape do not have a history of fire regardless of the degraded state of the forests in the AOI and the traditional use of slash-and-burn agriculture techniques. Savanna areas within the AOI is a threat to the spread of fire as most often during the dry season these places are lit by villagers to gain access through the grasses which at times are more than four feet tall. As a result, the fire spreads widely and either goes out by itself or by the interception of the surrounding vegetation surrounding these savanna areas. Most of the surrounding vegetation are mainly swamp areas but are not large enough to be considered fire break. These areas are already protected as they found HCV 4.1. No large, continually inundated wetlands exist in areas that would be considered an important, natural fire buffer to forests or villages. Based on these two factors, no areas in the AOI or surrounding landscape are considered to be critical for the prevention of fire.

This said, remaining forested areas in the AOI and neighboring landscape can still be vulnerable to wildfire. It is important that GVL management manage this risk with SOPs disallowing the use of fire for land clearing when developing oil palm plantation areas and have a plan in place to address fires and fire risks especially during the dry season when it is eminent.

HCV 5

Basic Needs of Local Communities

Present

Key Question: Does the AOI or surrounding landscape contain sites and resources fundamental for the basic necessities of local communities or indigenous peoples?

The Liberian Toolkit considers the following as indicators of HCV 5:

- Area where human settlements are located close to the forest
- Regions with high unemployment rates and lack of alternative livelihood options
- Inaccessible/remote communities
- Absence of livestock raising/animal husbandry
- Traditional practices of hunting/fishing
- Fishing (for internal consumption as well as for sale) in coastal forests
- Traditional hunter-gatherer communities

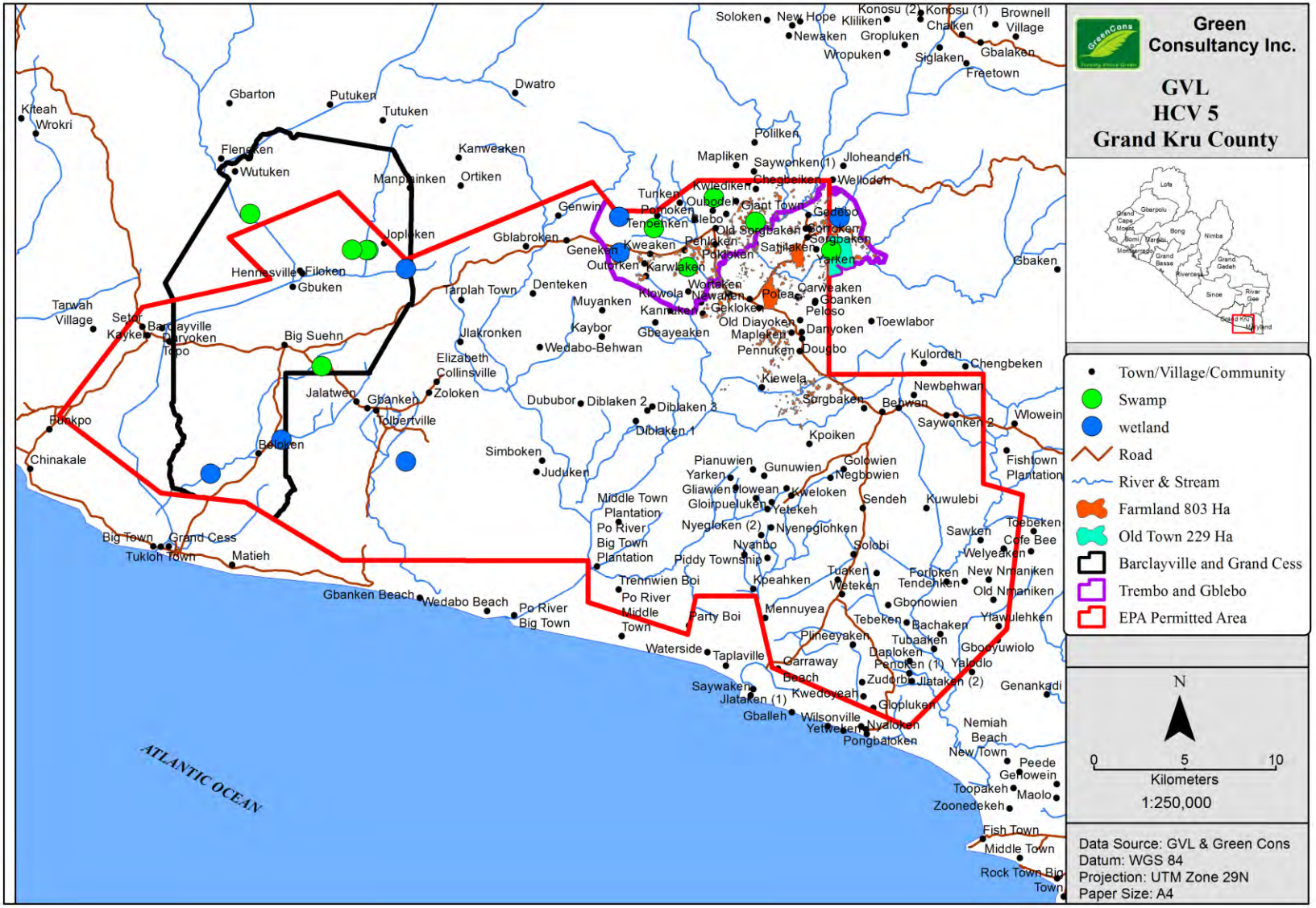
All communities in the AOI trigger some (if not all) of these HV 5 indicators, with the exception of traditional hunter-gather communities. Though communities in the AOI still engage in hunting and gathering, it's not on a large scale and they also farm. Notwithstanding, some of these HCV 5 areas are found within land areas designated to GVL by the local communities for planting of oil palm, but caution should be exercised by GVL while clearing and communication with local communities should be continuous to ensure that sufficient land is demarcated for future community use, especially where more pressure will now be placed on areas outside of the land designated for oil palm.

Community consultations revealed the following HCV 5 areas within the AOI: farmlands, old towns (places previously inhabited and now abandoned, but still maintaining fruit trees and other cash crops), swamps and wetlands which containing a large portion of the NTFPs used by communities, rivers for fishing and other basic water needs and community forests (including riparian vegetation) where hunting and NTFP collection takes place (Table 14). The HCVMA for most of these values are still being defined based on internal community negotiations on their value. Hunting is not commercialize to a large scale within the AOI and is dispersed throughout the landscape, usually in areas relatively close to villages as opposed to distant forests. Map 21 identifies swamps and other wetlands that are likely important for community NTFP collection as well as farm lands that have already been mapped by GVL and the communities through a participatory mapping process. This process is still ongoing and all identified farmlands should be included in HCV 5, and areas identified by communities as hunting grounds and NTFP collection sites. In situations where hunting contradicts HCV 1 management, an effort should be made by the company to meet both management goals of maintaining HCV 1 species and habitat and communities having access to what they consider an acceptable source of protein.

Table 18. Summary table of HCV 5 and 6 findings.

				HCV 5 & 6 Identification										
				HCV 5						HCV 6				
	District	Mother Community	Community Name	* Farmlands	* Old towns (fruit trees and farmlands)	Swamps and wetlands (NTFPs)	Rivers (fishing & water)	Hunting grounds	# Community forest (NTFPs and hunting)	* Old towns (prayer sites, yearly sacrifices, graveyards)	Burial grounds	Sacred forest	# Community forest (sacred sites)
1	Tren	Trembo	Sorroken(Sorroken City)	X	X	MH	X	X	MG	X	X	X	MG
2			Nyanobo Wutuken	MG		MH	X	X	MG		X	X	MG
3		Gblebo	Gblebo	MG	MH	MH	X	X	MG	MH	MH	MH	MG
4			Karwalaken	MG	X	MH	MH	X	MG	X	X	X	MG
5			Newaken	MG	MH	MH	X	X	MG	MH	MH	MH	MG
6	Barclayville	Gbalakpo	Filorken	X	MH	MH	X	X	X	X	X	X	X
7			Wutuken	MG	MH	MG	X	X	MG	X	X	X	MG
8			Japloken	MG		MH	MH	X	MG		X	X	MG
9			Sector	X	X	X	X	X	X	X	X	X	X
10			Karweaken	X	X	X	X	X	X	X	X	X	X
11		Fleneken	Fleneken	X	X	X	MH	X	X	X	X	X	X
12		Suehn	Big Suehn	MG	MH	MH	MH	X	MG	X	X	X	MG
13			Jlakronken (Farina Town)	MG		X	X	X	MG		X	X	MG
14			Topoh	MG		X	X	X	MG		X	X	MG
15	Grand Cess/ Wedabo	Grand Cess	Grand Cess	X	MH	MH	MH	X	X	MH	MH	MH	X
16			New Cess	X	X	X	X	X	X	X	X	X	X
17		Wedabo	Beloken	MG	MH	MH	MH	X	MG	MH	MH	MH	MG
18			Ylatwen	X	X	X	X	X	X	X	X	X	X

X = Identified as present through direct surveys with people from this community, but not mapped. To be mapped by GVL through participatory mapping.
MH = Mapped by HCV team. Identified as present and GPS point location taken by HCV team.
MG = Mapped by GVL team. Identified / confirmed present by HCV team, but mapping took place by GVL.
IMPORTANT NOTES:
*Many old towns were placed into the area of land given by the community to GVL for operation and so were identified but not mapped.
Community forests will not be part of land given to GVL for operation, but may be used for community farming.



Map 23 (draft). HCV 5 map depicting farmlands, old towns swamps and wetlands with confirmed HCV 5 values. In some locations these have been mapped definitively through GVL's participatory mapping with communities. Refer to Table 17 for a list of HCV 5 values that still need to be mapped.

HCV 6

Cultural Values

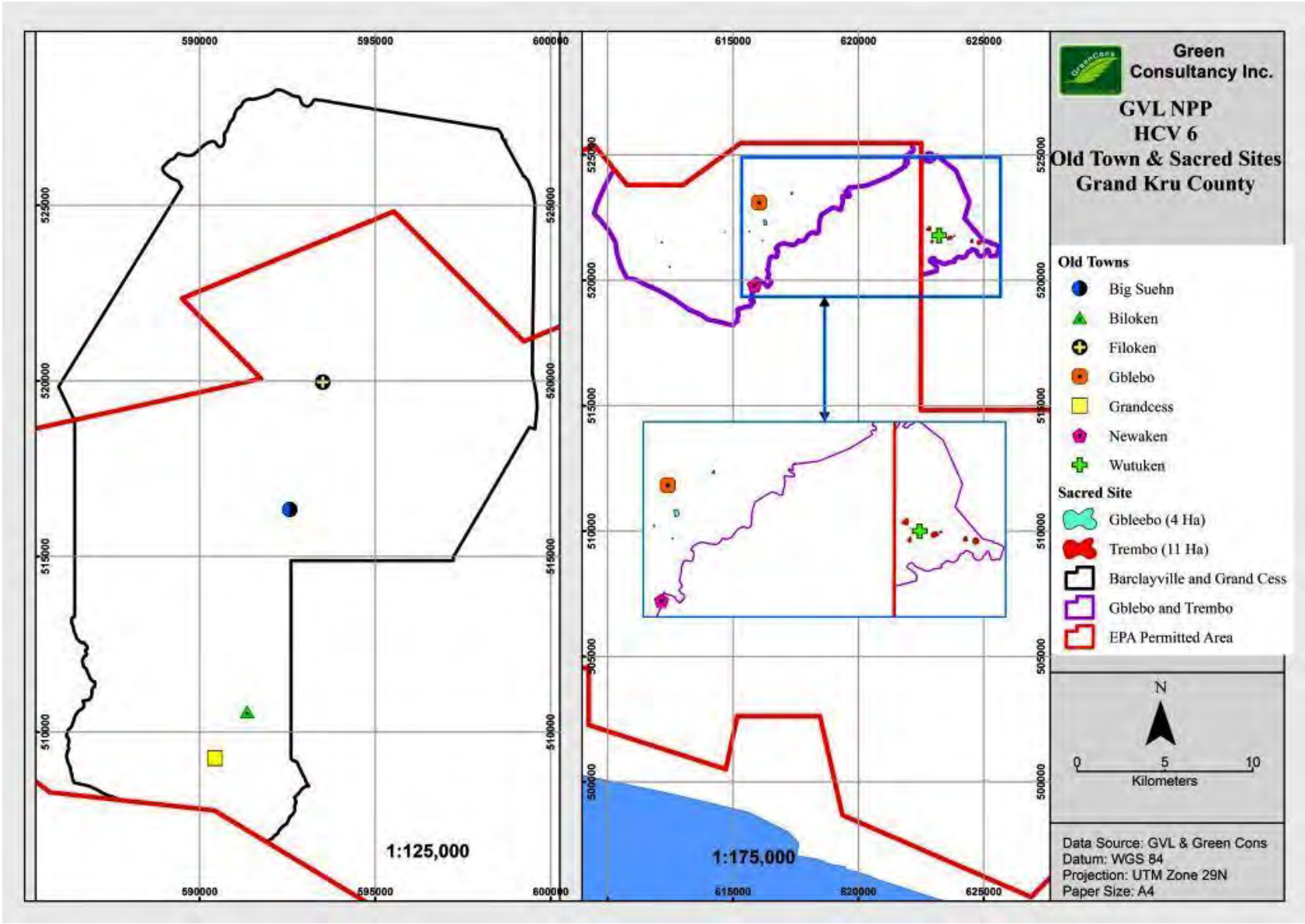
Key Question: Does the AOI or surrounding landscape contain areas that are tied to cultural values critical to the traditional cultural identity of local communities, including areas of cultural, ecological, economic, religious or archaeological significance?

Present

The following categories of HCV 6 sites were identified and are shown in Table 17:

- Old towns
- Burial grounds in every town
- Sacred forests located in some towns
- Community forests

HCV 6 values identified during the HCV assessment include: old towns (which include prayer sites, yearly sacrifices and grave yards), burial grounds, sacred forests and community forests (which can contain sacred sites) (Table 14). The towns survey identified that all “mother” communities have a community forest in which land is available and given to all surrounding towns and villages to farm. A number of sacred areas were also identified, amongst these include Hall Korlo Torbor in Wutuken, Normankplo, Gblomakuo Nyanatu in Gblebo, Gbanakuo in Newaken B, Jedeh in Filoken, Malogay and Gbalejay in Topoe, and three sacred rocks called Mata Rock, Kpakor and Seklay (Map 22). As a result to traditional norms and practices, other traditional and sacred sites could not be accessed and thereby serve as a limitation to the study. This is demonstrated in the HCV 6 map (Map 22) of old towns and sacred sites. Apart from these sacred sites, all of the given towns and villages have either cemeteries or burial grounds with the graves of prominent elders sometimes located within the community.



Map 24 (draft). Indicative HCV 6 map depicting sacred sites, cemeteries, community forests, and old towns documented during the assessment. Some of the sacred sites or forests are not shown on this map as it was forbidden to go to the sites. Prior to land clearing GVL and the communities are expected to collaborate in finding mechanism to demarcates these sites. This map is considered a draft because further sites will need to be documented and these sites will need to be mapped and provided an appropriate buffer as determined appropriate by communities.

Stakeholder Consultation

A range of stakeholders were consulted during the pre-assessment and full assessment stages, including local communities, environmental NGOs, social NGOs, local government, and GVL workers and employees. Stakeholder input focused on opinions and concerns about GVL's proposed development of the AOI and specific input on biodiversity issues, environmental services, local livelihoods and other issues of concern to local communities and broader stakeholder groups. Community stakeholder and other stakeholder input are summarized in Tables 15 and 16. The method used for community stakeholder consultation was a systematic investigation based on a Participatory Rural Appraisal (PRA) methodology, with social survey techniques used which included community consultations, key informant interviews, non-participant observations, focus group discussions (Figure 12) and a desktop study of available resources.

During the scoping phase all stakeholder groups were contacted through written letter to ascertain inputs, comments, concern, and recommendations as it relates to this GVL proposed development and existing development in areas neighbouring the AOI. Information about the project, project land covers maps and other information about the project were enclosed within each letter presented to stakeholders to better inform them prior to every consultation. Follow up through visitations and phone calls were made to set up a convenient meeting time with these stakeholders to discuss whatever inputs, comments, concern, and recommendations and these points received from the pre-assessment phase were used to strengthen the field assessment phase.

The field assessment phase was a detailed assessment of eighteen communities within the project area (and additional ones outside) with specific input on biodiversity issues, environmental services, local livelihoods and other issues of concern to local communities and broader stakeholder groups. Concerns raised from the stakeholders during the reassessment phase were considered in the execution of the field assessment.

Prior to submission of the HCV report, a national stakeholders consultation was conducted with the objective of presenting the HCV findings and soliciting stakeholder input and comments on the HCVs findings and management recommendations (Table 15 and Figure 13). Additionally, another stakeholders consultation for host communities, local government authority leaders and other community based organizations was also conducted (Table 16, Figures 14 and 15). This took place as a collective consultation in Barclayville on 6 Nov 2013 after the conclusion of the assessment to present the results of the HCV assessment to representatives from all communities. The one-day joint consultation took place in Barclayville post field assessment to present HCV assessment findings to the communities and other local stakeholders. Communities were informed about the consultation in advance and each town selected key persons to represent their towns by taking their community's concerns and/or recommendation to the consultation. Twelve communities were in attendance and, at a minimum, all mother communities had representatives present Table 4).

Figure 14: Focus group discussion in the town of Joploken

Table 19. Stakeholders consulted, their key concerns and recommendations, and how they were addressed in this assessment

Name	Title / Role	Organization / Social Group	Key concerns & recommendations / assessment team response
Darlington SRV. Tuagben Konikay Nimely James Kpadyeah Steve Nahdoe Davis Phiilip Jokole	Deputy Managing Director Manager-EIA Botanist & Project Liaison Wildlife Licensing & Permit Officer National Authorizing Officer	Forestry Development Authority (FDA)	The assessor reminded the FDA staff about the scoping consultation and the project to be undertaking by GVL. The FDA staff members were further informed that a map of the project area and description on the project has since been communicated with the authority. The FDA staff requested an additional meeting to be held with his technical staff and requested additional land cover map to be sent. The meeting was rescheduled and the maps were sent by the assessor. A number of concerns were raised by the FDA staff: 1. Concern about the clearance of regeneration forest which could lead to habitat lost as the regeneration forest give rise to the development of mature forest; 2. Raised concern on the felling of merchantable timbers which could be found within the AOI at the time of land clearing,. What are the procedures for addressing this? 3. The staff were concern about the entrapment of fauna species and whether corridor(s) will be made for their migration at the time of land clearing and what will happen to the forest at the border of the concession area. 4. Raised concern about the findings within the savanna area since FDA has no record on the historicity of such vegetation. The FDA promised, after clarification from the assessor to send an official communication to outline her inputs to the study (see below). <u>Assessor response:</u> The assessor promised to assess regeneration forest, especially those bordering tall stature natural forest, and recommend its not cleared due to its high potential of fauna and flora habitat; that large timber species according to the concession agreement will be harvested by the company for the construction of roads and bridges; that all major forest areas within the AOI will be used as a corridor to the surrounding landscape for free movement of fauna species and HCV areas will be a no go zone protecting water resources and other flora species of conservation concern; the assessor promised to assess the savanna area and share any significance finding with the FDA. The findings were shared during the presentation of the HCV findings to stakeholders.

Table 19 continued (2 of 6)

Name	Title / Role	Organization / Social Group	Key concerns & recommendations / assessment team response
Konikay Nimely	Manager-EIA	Forestry Development Authority (FDA)	**Response via email:** Dear Solomon. Please see attachment! Cheers! FDA INPUT After carefully reviewing the necessary documents pertaining to GVL propose operation in Grand Kru County, we are please to make our input which represent our technical understanding of the subject under discussion. For the establishment of oil palm plantation in Grand Kru along the vast savanna land along the coast and stretching inward we think it is environmentally prudent and in the right direction as this will reduce pressure on the already threaten natural forest with HCV and HCS. Also reviewing the maps, we observed primary and secondary forest cover that is earmark for clearing as part of the second phase of operation. We think it is important that your client work closely with the FDA In carrying this task. The FDA is not in the position to see large tracts of forest (Primary forest) with HCV and HCS status been cleared. **Konikay A.Nimely** ***Manager Environmental Impact Assessment*** ***FORESTRY DEVELOPMENT AUTHORITY*** ***0FFICE # +231776497143*** ***CELL# + 231886562134*** ***EMAIL: Konikaya.nimely@yahoo.com, kondema79@gmail.com***
Micahel F. Garbo	Executive Director	Society for the Conservation of Nature in Liberia (SCNL)	Raise concern about the herpetological and ornithological characteristic within the AOI and was concern to know the level of these species concentration within the AOI; the staff recommend that there be experience experts to give findings on these species. Assessor Response: The assessor promised to have within the team experienced personnel responsible for the herpetological and ornithological studies and will liaised with SCNL in terms of experienced personnel when the need arise.

Table 19 continued (3 of 6)

Name	Title / Role	Organization / Social Group	Key concerns & recommendations / assessment team response
Dr. Mary Molokwu-Odozi Benedictus B.G. Freeman	Country & Operation Manager-Liberia Technical Assistant	Fauna & Flora International (FFI)	What is the distance of the project site in relation to surrounding protected areas and will want to see such map. Concern about what is done with places found to have vulnerable and threatened species and concern about treading sacred areas for operation land with aim of addressing employment opportunities. Assessor Response: The assessor states that the AOI is distant from any protected or proposed protected areas and a map was sent; the concern was addressed that no sacred areas have been used for operation areas in the name of employment owning to past experiences and that communities are made aware of the process of HCV identification and demarcation and an FPIC process is being undertaken. Additionally, management recommendation address the issues of threaten and vulnerable species.
Liam Walsh	Technical Director	Conservation International (CI)	That CI has no work currently in the area of the AOI and is therefore unfamiliar with the vegetation but will be glad to be kept up to date with the assessment finding and express interest in the final stakeholders consultative meeting on presentation of findings from the study. Assessor Response: The assessor promised to keep CI informed and include CI as part of the stakeholder during the HCV presentation. Liam Walsh was informed about some of the team findings from the field on the issue of protected areas and species as well as vegetation cover.
Dervla Dowd	Director	Wild Chimpanzee Foundation (WCF)	The assessor explained the project and requested for inputs as the assessment was in its Scoping phase and map or any information as it relates to chimps concentration within the AOI. A map was shown to the assessor on chimp concentrations in Liberia indicating that according to the map, chimp concentrations might be found in the northern part of the AOI though in very low densities. The assessor was told to consult Jessica Junker studies on chimps distribution. which was also shared with GVL. Assessor Response: This information was shared with GVL. GVL has hired a previous WCF employee to conduct follow-up surveys for chimpanzees and other species of concern in the north of the AOI. The report on Chimps distribution sent to GVL by J. Junker was used as resource material for the mammals studies.
Aloysius Kotee	Assistant Manager-ESIA	Environmental Protection Agency (EPA)	Raised concern about the local peoples' involvement in understanding the project leading to the giving of land for oil palm production. Assessor Response: He mentioned that the FPIC process is one of the paramount steps of the HCV process which will be done and will involve communities understanding of the entire process . Mr. Kotee was also told that each community are involved with participatory mapping, where communities along with GVL demarcate land area suitable for them and those available to be given to the company.

Table 19 continued (4 of 6)

Name	Title / Role	Org,/Group	Key concerns & recommendations / assessment team response
Mr. Thomas Tellewoyan –t., WRI – 0886826967	Technical Asst.	World Resources Institute / Global Forest Watch)	Mr. Tellewoyan of WRI expressed his appreciation to the GreenCons for the continue support in safeguarding and ensuring a sustainable environment and the sharing of project related documents with his Institution. He noted that document will be review along with the National Coordinator – Mr. Joel Gamys and inputs will be send via mail ASAP to GreenCons. GreenCons has not received any input or concern yet. Assessor Response: A reminder email was sent to Mr. Tellewoyan(guguflomo@gmail.com) in which he was asked to send his response to GreenCons and copy GVL.
Madam Tenneh Freeman Chea Garley	Office Secretary Asst. Minister, Technical Services	Ministry of Agriculture	The Secretary explained that the communication is still on the Assistant Minister's (Chea B. Garley) desk. Mr. Garley noted that the assessment should take into full consideration all RSPO procedures, ensuring that the HCV areas are identified and adhere to. The Minister also noted that the assessment should considered the FPIC process as the issue of land conflict is of paramount concern with in some parts of the GVL Concession area. Proper demarcation of land and sacred site as well as compensation for crops Assessor Response: Mr. Garley was inform that the FPIC process is one of the paramount steps of the HCV process which will be done and will involve communities understanding of the entire process . He also inform the minister that participatory mapping of community land will be carry out in the process by the communities and GVL staff.
Mr. Jenkins Pelerd –	Office Staff	Grand Kru Legislative Caucus, Capitol Building	That the Caucus is in full support of GVL operation and that the company is performing well, but caution that the issue of land acquisition and job for the people within the county should be given serious consideration. In his response, the assessor inform Mr. Peleard that no land are taken from the people without an MOU and the full consent of the communities. The assessor also noted that job for project communities is always paramount to GVL for host communities.
Green Advocates International			No comment was received from this institution. On numerous occasion Mr. Aaron Abbam – Administrator, Green Advocates International phone (088647452) was called on the issue but each time he promised to get to GreenCons by email. On other occasion he explain that his boss was out of town and will get back to GreenCons with their comments. Other times the assessor has callled the phone and there has been no response.
Steven Toe Jarbo	GrandCess City Major, Grand Kru County	Grand Kru County	The City Major informed the assessor that all of the proposed land area that were given to GVL by the Community is being seized by GVL, adding that GVL is completely denying them access to it. Assessor Response: The assessor informed the Mayor on how the land issue works, clarifying that when a Community gives a particular land for concession, they (the Community) rights are somehow limited especially during the usage of the land by GVL because if there is any bridge of violation of national and international policies on said land, the Company will be held reliable and not the Community. The assessor explains to the Mayor the entire FPIC process and how no land are acquired except consent from the communities. He encourage the Major to express his grievance through the GVL Community Affaire team. The assessor inform GVL management about the concern about the City Major and the company promised to address the issue.

Table 19 continued (5 of 6)

Name	Title / Role	Organization / Social Group	Key concerns & recommendations / assessment team response
Steven Toe Jarbo	GrandCess City Major, Grand Kru County	Grand Kru County	The City Major informed the assessor that all of the proposed land area that were given to GVL by the Community is being seized by GVL, adding that GVL is completely denying them access to it. Assessor Response: The assessor informed the Mayor on how the land issue works, clarifying that when a Community gives a particular land for concession, they (the Community) rights are somehow limited especially during the usage of the land by GVL because if there is any bridge of violation of national and international policies on said land, the Company will be held reliable and not the Community. The assessor explains to the Mayor the entire FPIC process and how no land are acquired except consent from the communities. He encourage the Major to express his grievance through the GVL Community Affaire team. The assessor inform GVL management about the concern about the City Major and the company promised to address the issue.
T. Michael Wesseh	Development Superintendent	Grand Kru County	He advise the need for more sensitization by GVL on its employment process and scheme, specifically the number of persons to be employed in every area. This he said the people are yet to understand. He also advised that communities need more education on their land provided GVL (hectares and acres); something he said most of the locals have not yet understood. Hon. Wesseh also said that there still remains an existing land conflict between the Wedabo-Zoluken people and the Trembo people that is yet to be resolved and he was glad GVL did not allow herself to be given such disputed land area. Regarding the Savannah Land, the Superintendent said, "I grew up and saw it in existence, but it is believed to have been in existence for more than 100 years and human activities keep enlarging it". Assessor Response: The assessor informed the Superintendent that assisting local communities understand every activities of the company operation was one of the reasons the assessment is being done, and that he will ensure that such understanding is made clear to communities.
Madam Doris Ylaton	Chairperson/ Focal Person	Southeastern Women Development Association, Civil Society of Liberia(Market women, community Based Organization-CBO, Youth group, Grand Kru Women Association).	Madam Ylaton commended GVL for the level of corporation and cordial relationship between the company and the people adding, that though her group focuses on the Rule of Law Awareness, Violence against Women and Women Participation in Decision Making, she sees GVL as a major partner in the growth and development of Grand Kru County. She appreciated the level of involvement of the women and civil society groups in the crafting and formulation of the MOU for employment and land use by GVL. Concerning her view on the savannah land when asked, she alluded that the land has been in existence since her birth. Assessor Response: The assessor informed Madam Ylaton that the team visit in the county was to speak to major stakeholders on their views and concern about the proposed project by GVL and that they would provide GVL with her feedback.

Table 19 continued (6 of 6)

Name	Title / Role	Organization / Social Group	Key concerns & recommendations / assessment team response
Hon. David J. Togba	Land Commissioner	Grand Kru County	Honorable Togba stated that the presence of GVL has been very much helpful in terms of development; naming road network, schools and partial basic social services. Hon. Togba also added that, even though the Land Commission of Grand Kru County has not been directly involved with the crafting process of the Land MOU which has been consider as the primary yardstick for employment (more land equals more employment),he still watch the process closely. He said the commission only come in at the closing phase of the process and often served as witness to the signing ceremony, something he said needs to be looked at seriously, because issues arising from land crisis borders directly with his scope of operations as land Commissioner of the County. Hon. Togba raised concern over the understanding of communities of the total land to be given to GVL, adding, there still seem to be unclear understanding of hectares and acres to some communities. This he said would confused communities when the actual land size is curved out. He then recommended and advise that GVL should not promise any developmental or employment package to the locals that will not be implemented or is not in the Company's policy. This will breed mistrust and confusion. Assessor response: The consultant agreed to take the advise to GVL and the GVL staff was later informed of this and promised to work on their public engagement strategies.
Mr. Joe Weah , Mr. James Jeh Doe , Mr. Tommy Klor, Sr , Mr. Benedict Jardeh , Mr. Tolbert Jeh	Elders	Elder Council	Stated that, the Elder Council and Women group of the Community wholeheartedly welcome the process by GVL but some youth under the auspices of 'the Concern Citizens for Development' are the ones rejecting GVL operations. He said the rumors indicate that GVL promises of development on land and the building of a factory is not true and that these are only strategy from the company to be given land by them. A meeting was then suggested for Wednesday, December 23, 2015 @ 8:00 am at the George Toe Washington Auditorium in Grand Kru County to be held with GVL staff and the community to vividly address some of these issues. At the meeting, community members including Concern Citizens for Development youth were made aware that factories are not just built anywhere just because land has been given, and that it was not true that GVL will promise things that they will not do. GVL then cautioned the community that her promises to them are true. Assessor response: The issue was reported to GVL and addressed by GVL.

Figure 15: Monrovia public consultation photos. A cross section of stakeholders during the HCV findings and management recommendation presentation.

Table 20. Stakeholder input from post-HCV field assessment stakeholder consultation held in Barclayville on 3 November 2016 for communities and local stakeholders (1 of 2)

Community	Feedback/Input
Sorroken	The community representative (Michael Collins) commended GREENCONS for the work done and the level of interest shown from GREENCONS in helping his people properly understand the issues concerning the proposed development by GVL. He also said that it is important for GVL to allow the community use areas that they (GVL) will not develop due to HCV reasons. Responding to his comments, the assessor said that set-aside areas should be considered as a 'no go zone' for both GVL and the community. He also said that in order to make development more sustainable in the community, they (the community) must take ownership of the project by ensuring that all set aside areas are protected from both hunting and farming.
Topoh	Why should buffer be considered as a major requirement for land development after the community has decided to give their land? Response: the assessor commented that GVL is an international company that subscribes to international best practices to guide its oil palm development agenda. As such, the company must make sure that its development is environmental friendly and respects the wellbeing of humans despite the status, this is the basis upon which the company uses the HCV toolkit as guidance and the six (6) HCVs must be strictly adhered to.
Sorroken	District Commissioner Napoleon S. Toe said, in his opinion lamented GVL is the one holding back the development because as far as he's concern the community has given GVL more land and GVL herself has developed so much laws that is preventing her from initiating development. Responding to his assertion, the assessor clarify, GVL as an international company has not created laws for herself but is ensuring that all its land development is in compliance with the RSPO guidelines for sustainable oil palm development.
Gbalakpo	Considering the reduction in the land given by the community only because of HCV reasons, it is better that the buffer for set aside areas be taken from within the "NO GO ZONE "rather than portion of the land accepted for development. Response: The assessor inform the communities that additional land area serving as buffer to "NO GO ZONE " was important to protect such area and caution intruder thereby preventing immediate access to the "NO GO ZONE ". The communities agree to 50m buffer and the assessor promised to consult the FDA on this. Consultation with the FDA was made and accepted based on the fact that none of these "NO GO ZONES" are close to any protected areas.
Swen	There is a need to settle the existing land conflict within the Swen Community before the project commencement. Responding to his concern, the assessor inform the communities, GVL has put aside all conflict areas until it is fully resolved by the community themselves. He further stated that the company has indicated that they will not develop any area that is in conflict.

Table 20. Stakeholder input from post-HCV field assessment stakeholder consultation held in Barclayville on 3 November 2016 for communities and local stakeholders (2 of 2)

Community	Date	Feedback/Input
Ministry of Internal Affairs (MIA)	November 3, 2016	The representative from the local government institution, Ministry of Internal Affairs, Mr. Jluplay Mayian indicate there is a need for the maps to clearly indicate specific land areas that has been accepted for each community, so that each community representative can understand the amount of land they have in the entire project area. Response: That the final land allocation from each community will be clearly seen and marked on the map following the final approval from RSPO and the completion of the MOU of each community
Community Relation Council (CRC) Chairman ,Gbalakpoh	November 3, 2016	The community has willingly accepted GVL and is looking forward to build a community conservation team to work alongside with GVL so that proposed conservation areas can be prevented from farming and hunting by locals
CRC Gbalakopoh	November 3, 2016	Hope that GVL will abide by the recommendations of GREENCONS so that their drinking water and other water sources should not be destroy during the land clearing. She also hopes that the project will employ their people so as to improve their lives. Response: The assessor reassure the communities that GVL has promised to abide by every recommendation in the report as the recommendation is in compliance to best practices
Ministry of Agriculture	November 3, 2016	The Ministry expressed thanks to GVL for the undertaken and recommends that the project also consider out growers development so as to encourage farmers to invest in oil palm. Response: The assessor assure the Ministry that accordingly, out grower scheme for host communities is part of GVL concession agreement.
Development Superintendent	November 3, 2016	Mr. Wesseh on behalf of the superintendent thanked GREENCONS for the exercise and expressed special thanks to GVL for the proposed project. He also said that the county officially welcomes GVL and the project in particular and looked forward to the company creating more jobs to change the lives of the citizens of Grand Kru County

Figure 16a: Post-assessment Community Consultation and attendance sheet

GreenCone

HIGH CONSERVATION VALUE (HCV)

POST ASSESSMENT CONSULTATION

BARCLAYVILLE, GRAND KRU COUNTY

Thursday, November 3, 2016

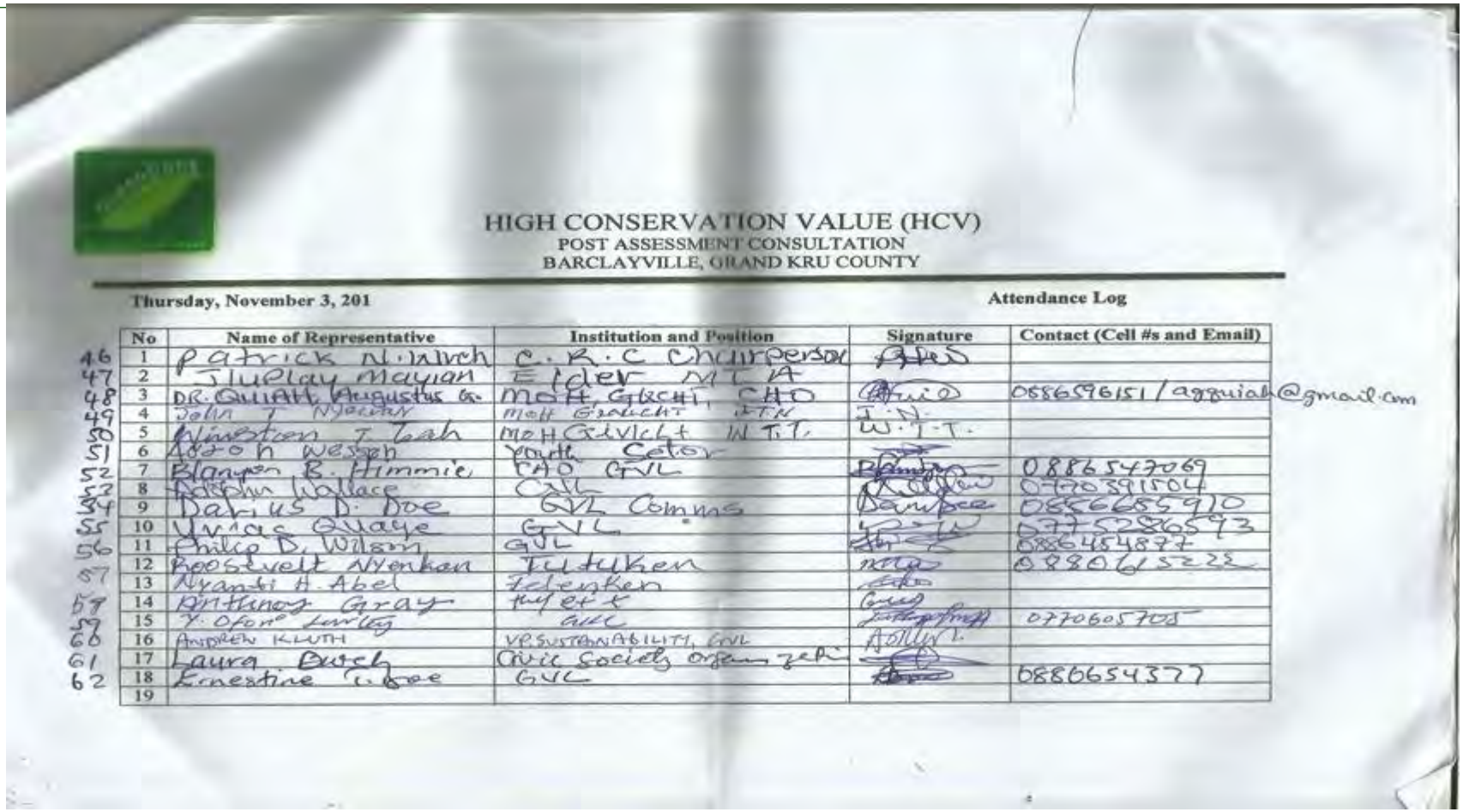
Attendance Log

No	Name of Representative	Institution and Position	Signature	Contact (Cell #s and Email)
1	PETER B. KPALO	ELDER Rep. Sorroken	[illegible]	0777323824
2	Abraham M. Karulie	CRC Member Gblakpo	[illegible]	0886-43-86-92
3	Rebcca Nyanti	CRC Member Gblakpo	R. Nyanti	
4	Michael N. Collins	CRC chairMan Sorroken	[illegible]	0777604029
5	Gabriel T. Doe	Youth Chairman Sorroken	[illegible]	0880122675
6	Isaac Teah Toparh	G.R.C Chairman	[illegible]	— — —
7	Napoleon S. Toe	Dist Commissioner Trembo	N. S. Toe	0777948010
8	Joseph B. Kpph, Jr	Dist commissioner Gblebo	[illegible]	0776972734
9	Joe H. Bloh	CRC member Gblebo	Joe H. Bloh	0776288182
10	Wilson Worries	ELDER Rep Blebo	[illegible]	
11	Alice T. Welch	Women head Gblebo	A. Welch	
12	Socrates D.S. Wleh	Youth president Gblebo	[illegible]	0775224905
13	Anthony Koffa	Grbo Ke town Chief		
14	Emmanuel Nybelue	Farina Town Elder		
15	Teah Sakar-dee	Women Big Suehn		
16	Victor Nyanfal	Sector	[illegible]	0888030889
17	Augustine A. Koffa	Sector	[illegible]	
18	N. Konmana Nyanneh, Sr	Dist. Commissioner Grandcess/Wedabo	[illegible]	0886948717
19	James Nyking Suah	LBS Coorespondent	[illegible]	0776358371

Figure 16b: Post-assessment Community Consultation and attendance sheet

No	Name of Representative	Institution and Position	Signature	Contact (Cell #s and Email)
20	J. Kaydio Wreh	Dist. Supt. Grand Gedeh	[signature]	0886896217
21	Helena Kumeh	Woman Leader Jopoe	[signature]	
22	Koffa Toe	Elder Setor	[signature]	
23	Decontee Mah	Setor	[signature]	
24	C. NIMELY DORMU	C.R.C.	[signature]	0776736422
25	Gabriel C. Jabo Sr.	elder Topoh	[signature]	077854887
26	J. DORKU GARR	YOUTH Rep.	[signature]	0777836086
27	J. Cisco Wesseh	CRC-CHAIRMAN	[signature]	0880675129
27	Agnes J Weller	Security Hospital	[signature]	0880267677
29	Philip Nyepan	Maintenance Supt. [illegible]	[signature]	0886329197
30	Mombo Tarbor	elder Grandcess Big Town	[signature]	0886226171
31	Francis Nah Nimene	CBC member, Grand Cess	[signature]	0881128094
32	James Teh Doe	CRC [illegible] Setor Community	[signature]	0886953911
33	David J. Tagba	Land Commissioner	[signature]	0886-33-0048
34	Chris N. Gbolo	EPA/WODA	[signature]	0888818243
35	D. Sirmulred Juah	MOL - Labour Commissioner	[signature]	0777923378
36	Benjamin W. Bedell	MOA - Agric. Coordinator	[signature]	0886827126
37	Joseph N. Doe	MIA - Dev. Supt. Office	[signature]	0886364825
38	Harrison T Teah	MIA Student Setor	[signature]	0886879754
39	Elizabeth N. Dempster	Supt.	[signature]	0886403737
40	Benedict M. Jardeh	Acting District Commissioner	[signature]	088881 6147
41	J. Michael Wisseh	MIA / Dev. Supt.	[signature]	0880639218
42	Taryonnoh B. Willeh	Security [illegible] Office	[signature]	0777210240
43	Mary K. Jarbo	women leader Wutuken	[signature]	
No	Name of Representative	Institution and Position	Signature	Contact (Cell #s and Email)
44	Kwiah Kue	Elder Wutuken		
45	Albert C. Nebo	MIA C. Engineer	[signature]	0776325311

Table 16c: Post-assessment Community Consultation and attendance sheet



HIGH CONSERVATION VALUE (HCV)
POST ASSESSMENT CONSULTATION
BARCLAYVILLE, GRAND KRU COUNTY

Thursday, November 3, 201 — Attendance Log

No	Name of Representative	Institution and Position	Signature	Contact (Cell #s and Email)
1	Patrick N. Isiah	C.R.C Chairperson		
2	Jluplay Mayian	Elder M T A		
3	DR. Quiah, Augustus G.	MoH, Gbichi, CHO		0886596151 / aggquiah@gmail.com
4	John T Nyachay	MoH Gbarnga ITN	J.N.	
5	Winston T. Tah	MoH Gbarnga IN T.T.	W.T.T.	
6	Aaron Wesseh	Youth Setor		
7	Blamoe B. Himmie	CHO GVL		0886547069
8	Dolphin Wallace	GVL		0770391504
9	Darius D. Doe	GVL Comms		0886685970
10	Uriah Quaye	GVL		077-5286593
11	Philip D. Wilson	GVL		0886454877
12	Roosevelt Nyenkan	Tuteken		0880615223
13	Nyanti H. Abel	Tchenken		
14	Anthony Gray	Chief		
15	Y. Ofori Lartey	GVL		0770605705
16	Andrew Kluth	VP Sustainability, GVL		
17	Laura Bush	Civil Society Organization Rep		
18	Ernestine Toe	GVL		0886654377
19				

The consultation done here was post field assessment and presentation of findings to the community. Communities were informed about the consultation and town selected key persons to represent their towns by taking to the consultation the town's concerns and or recommendation. Cross cutting issues were captured as one issue even if it came from more than one town. Though there are five key issues raised from four towns, there issue cut across the floor during the consultation and represent the concerns of the representatives of the more than 12 towns present (see attendance records key representatives and towns present during the consultation).

Figure 17: Post-assessment Community Consultation photos showing the HCV Findings and Management Recommendation presentation during the community meeting.

HCV Management & Monitoring

Synthesis of Management and Monitoring Recommendations

The Barclayville and Grand Cess AOI and the Trembo and Gblebo AOI are dominated by scrub and open land as a result of increase in slash and burn agriculture and scattered human settlements. The land cover consists of active agricultural fields mixed with regenerating fallow vegetation following agriculture, agro-forestry and remnant natural vegetation varies from short stature natural forest to scattered sections of tall stature natural forest. Rural human population densities are generally low but variable throughout the AOI, as are levels of dependency of communities on natural ecosystems for provision of basic needs (subsistence) or cultural practices.

The HCV assessment was carried out to identify and delineate key environmental, social and cultural attributes present within and near the AOI, and to develop management plans to maintain them in the context of GVL's planned oil palm development. The assessment significantly combined more than 10 different areas of expertise and consultations with local communities, local and international NGOs, ad hoc experts specializing in areas of importance to the assessment (e.g., chimpanzee conservation), as well as GVL itself. Results of HCV full assessment identified all HCVs as Present (or Potentially Present) within the AOI and adjacent landscape, with the exception of HCV 1.1 – Protected Areas and HCV 4.3 – Areas Critical for Fire Prevention. Many areas were identified as HCVMA for multiple HCVs. The HCVMAs identified are described below.

Dense Forests: Threatened species of both fauna and flora were mostly found in the northern sections of the Barclayville and Grand Cess AOI and the Trembo AOI (HCV No Go areas in Map 23). Dense forests in these areas and the southern part of the Barclayville and Grand Cess AOI were identified as a combination of HCVMAs 1-3. These areas have high biodiversity value, including populations of chimpanzees, elephants and pygmy hippos in some locations. Dense forests are also areas that are likely to be targeted for logging and hunting, threats which will need to be mitigated by joint management efforts in strong partnership with communities, but initiated and consistently driven by GVL. These areas are mostly removed from communities, with low levels of human activities, but as the area develops they could become increasingly vulnerable to human encroachment. In instances where HCV 5 needs are met in areas mapped as "No Go" locations for HCVs 1-3, GVL will need to work with communities to identify ways in which these HCV 5 needs can be satisfactorily met in other locations or in a way that does not threaten the biodiversity values identified. Such co

Due to good forest quality and connectivity with the large surrounding landscape, a fauna corridor has been recommended at a point where there is a gap between the Gblebo and Trembo boundaries in the Gblebo and Trembo AOI. This corridor is to allow for free movement of HCV 1.2 species found in the HCVMA 1.2 areas identified in the AOI and the larger landscape to the north. The HCVMA areas in the AOI are "no go" zones and considered potential habitat for chimpanzee, pygmy hippo, forest buffalo, red river hog and Diana monkey populations. The connectivity provided by the fauna corridor area is also essential for fauna species on both side of the Kooler River (the large river flowing through the "NO GO" zone mapped in this AOI). These areas should not be developed and all efforts should be made to ensure complete maintenance and management of the areas.

Further biological surveys (a Rapid Biodiversity Assessment) were recommended in an area in the north of the Barclayville and Grand Cess AOI (referred to as Recommended Conservation Areas) where forest was not as dense as other locations, to better understand the population of HCV 1.2 species. Biodiversity is expected to be high in this area based on community interviews and forest quality.

Wetlands and swamps: Wetlands (bogged or seasonally flooded) and swamps (areas with standing water) also hold multiple HCVs and were identified as HCVMA 1.2, 3, 4.1 and 5 (mainly for collection of NTFPs and water). All swamps areas actively being used by communities for domestic purposes (often small swamps near villages and towns) should be retained for use by these communities. Communities should be provided with information and guidance on best management of such sites to maintain their multiple HCV values. Wetland and swamp areas that are not being regularly used by communities should be set aside as "no go" areas.

Rivers, riparian forest buffers, and floodplains: Rivers and their riparian buffers and floodplains were also identified as HCVMA 1.2, 3, 4.1 and 5. All the rivers flowing through the AOI and their floodplains will need to be given a buffer zone, with buffer width increasing as the river width increases (as prescribed in detail in the report). The identification and marking of buffer zones will need to commence prior to land clearing activities to avoid destruction and pollution to water bodies and damage of vegetation along water ways. Buffers areas that no longer contain native vegetation or forest cover should be rehabilitated to reestablish the original, native vegetation cover. This will improve the biodiversity value of these areas as well as protect water quality.

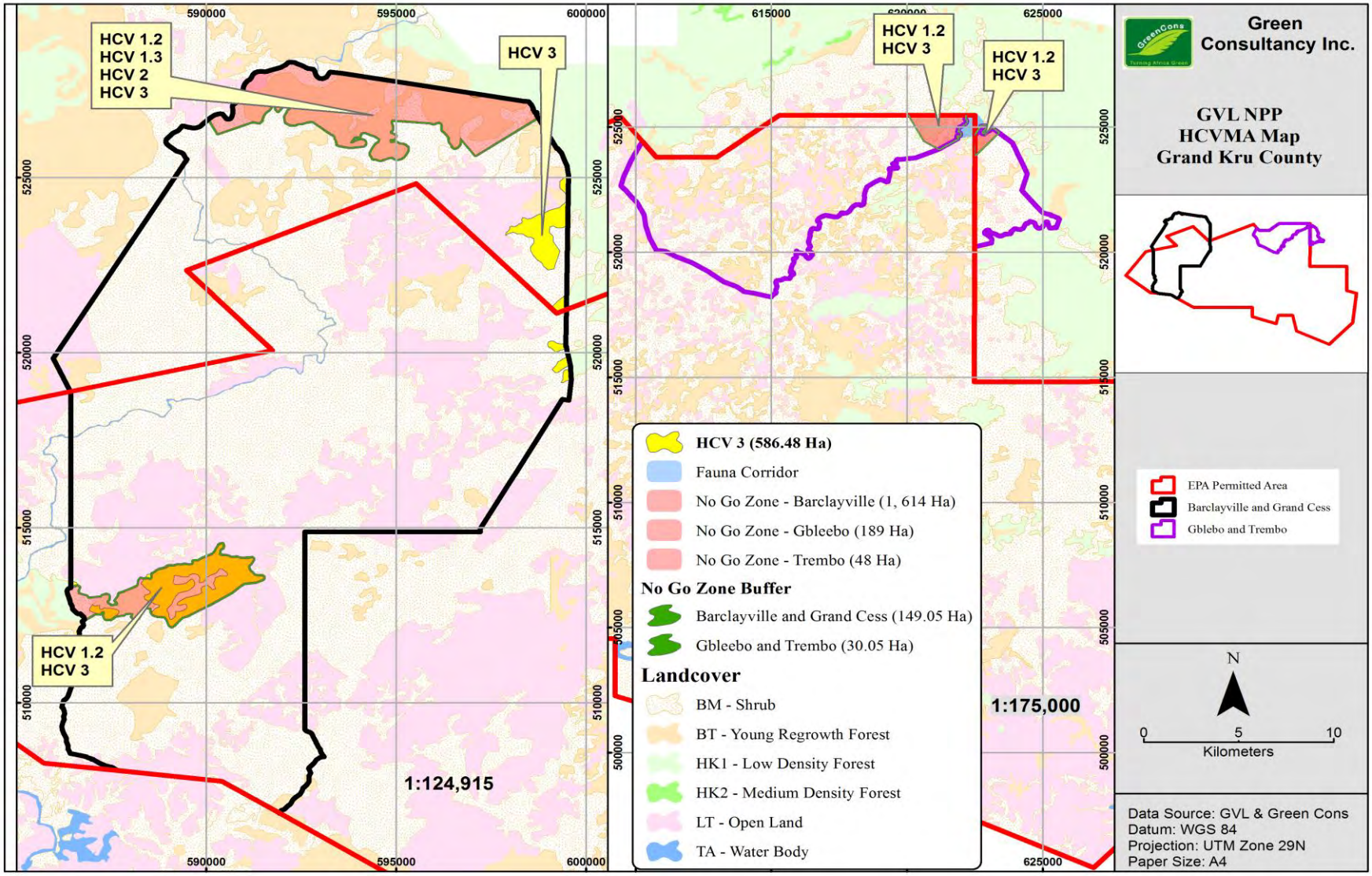
Other natural areas: A unique ecosystem, a rock cave of approximately 30 feet high with an adjacent flowing stream, was identified in the north of the Barclayville and Grand Cess AOI. This site was identified as HCVMA 3 and is within the HCVMA 1 "no go" area. A long large stretch of open savannah forest exists in the south of the Barclayville and Grand Cess AOI, but was not deemed HCV as a result of the anthropogenic disturbances – regular use of fire and livestock grazing. The savanna is punctuated with forests at various stages of regeneration (including swamp forests that were identified as HCVMA 3). Similar savanna vegetation is found in many different parts of Grand Kru including Garraway and Zoloken. Steep slopes were also identified as HCVMA 4.1 and their erosion risk to be managed by terracing moderately slopes (> 12°) areas and avoiding development of steep slopes (> 25°) .

Social and cultural values: Our assessment revealed numerous HCV 5 and HCV 6 values and locales within the AOIs. HCV 5 included: farmlands, old towns (places previously inhabited and now abandoned, but still maintaining fruit trees and other cash crops), swamps and wetlands which containing a large portion of the NTFPs used by communities, rivers for fishing and other basic water needs and community forests (including riparian vegetation) where hunting and NTFP collection takes place. HCV 6 values identified included: old towns (which include prayer sites, yearly sacrifices and grave yards), burial grounds, sacred forests and community forests (which can contain sacred sites). The HCVMA for most of these values are still being defined. Our HCV assessment identified and mapped out swamps and other wetlands that are important for community NTFP collection as well as some locations of old towns, burial ground and sacred sites. Some farmlands and old towns, which are sacred to the communities due to their ancestral graves, have been identified and set aside by the communities, while others are being handed over (with compensation) to GVL for development through the company's extensive FPIC and participatory mapping process. This process is still ongoing and their final determination as HCV and HCVMA will be determined by the communities themselves. As a precautionary measure, all such sites were identified as HCVMA until the FPIC and mapping process are completed. Some sites were not able to be mapped by the HCV team due to communities not wanting to share the location of sacred locations.

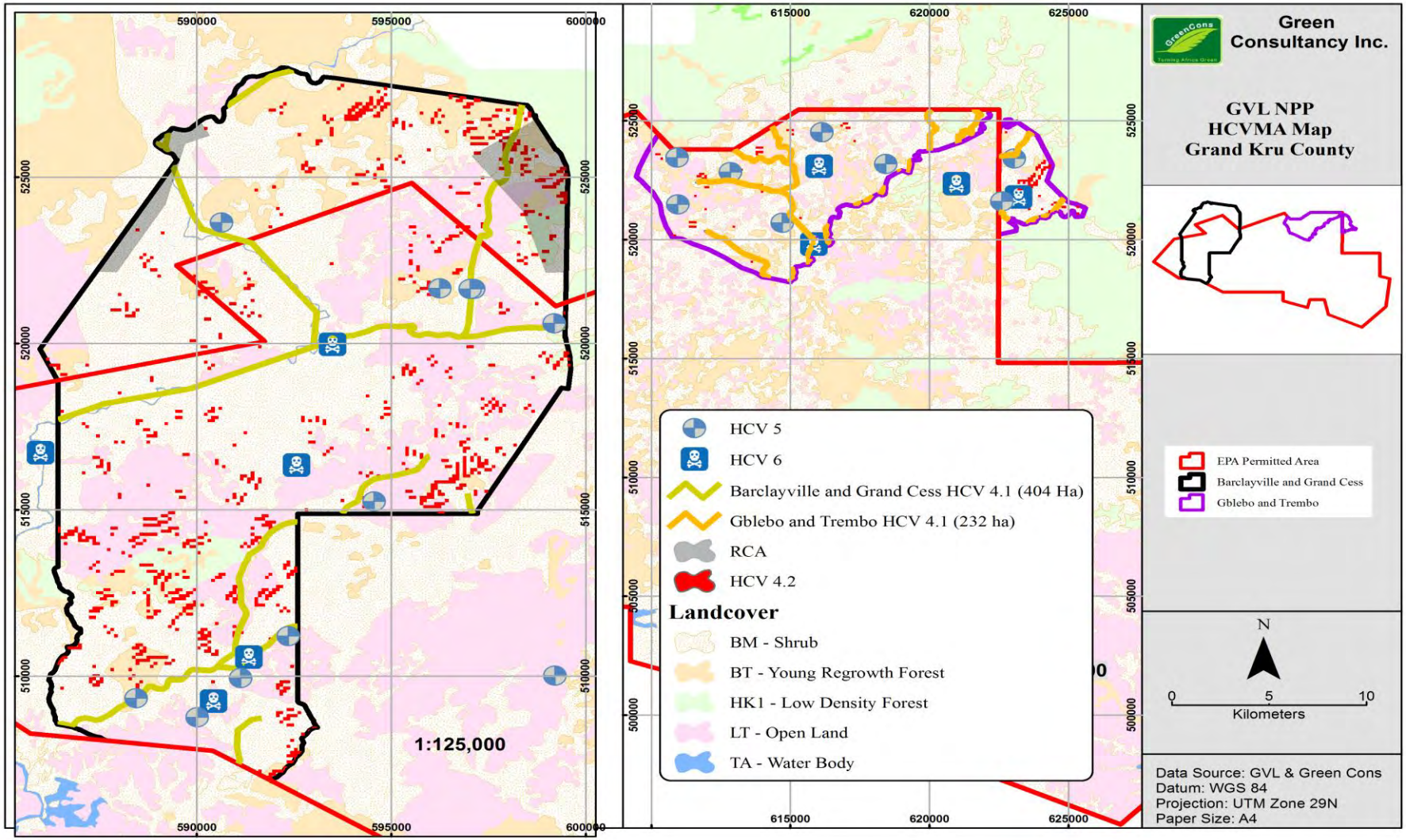
Synthesis of Management and Monitoring Recommendations

Competing interests for HCVMA use: Conflicts of interest between the conservation of biodiversity areas (HCVs 1-3), water quality management (HCV 4) and community use areas (HCV 5) are likely to produce challenges to maintaining the biodiversity and environmental values within HCVMAs 1-4, but swamp and forest areas are the most likely areas for such conflicts. It is important that efforts to maintain HCVMA 1-3 No Go Zones (as already agreed with GVL and communities during HCV assessment process) and maintain water quality in HCVMA 4 areas are continually communicated with local communities and the areas are managed with full community participation and involvement such that people do not feel that their land has been forcibly taken from them which might breed mistrust, trouble and unrest. It should be noted that while communities have offered particular land areas for development, GVL should take caution and still set aside those identified HCV 5 areas, especially sufficient farmlands, for community needs. Without these lands the HCVMA 1-3 will undergo increasing pressure.

Summary of HCV and development areas mapped: As a result of the company's commitment to sustainable agriculture and the involving of the host communities, the company estimated that its operational area will reduce to approximately 12,970 ha of the originally proposed 24,593 ha AOI. To date, 2,097 ha of finalized HCVMA have been definitively mapped and are recommended for conservation to maintain HCVs within the AOI (and the adjacent landscape) (Map 23 and Table 17). As mentioned previously, other HCVAs and their associated HCVMAs exist, but have not been definitively mapped (Map 24 and Table 17). These have been identified and described in this report and mapped indicatively where possible (current mapping totaling 1,408 ha, an additional 1,027 ha from the finalized HCVMA when removing overlap), but will require definitive mapping by GVL, including: HCV 1.2: finalizing the RCA, riparian and floodplain buffers, wetlands and swamps; HCV 3: All remnants of dense forest (revisiting areas currently mapped as YRF), wetlands and swamps, buffer around a rock cave identified; HCV 4.1: All wetlands and swamps and riparian and floodplain forests with recommended buffers; HCV 4.2: Steep slope areas, and river and floodplain buffers; HCVs 5 & 6: Farmlands, old towns, swamps and wetlands, river (including riparian vegetation and buffer zones), burial grounds, sacred forests and community forests. GVL is actively mapping HCVs 5 and 6 with communities using a participatory mapping process that was ongoing during the HCV assessment. HCVs 1, 3 and 4 will be mapped by GVL, with community oversight, prior to land clearing. Detailed explanation of threats and associated management activities required are outlined in the threats tables (Tables 18 and 19) and management and monitoring summary table (Table 20) that follows.



Map 25 (Final). Map reflecting all HCVs present and which have been agreed upon as designated places. The finalized areas mapped add up to 2,097 ha (with overlap removed).



Map 26 (draft). Map showing HCVs identified that have not been definitively mapped. These HCVMAs have been identified and described in this report and mapped indicatively where possible, but will require definitive mapping by GVL, and include all of the values listed in Table 21. Such areas, currently amount to 1,408 ha (accounting for overlap, an additional 1,027 ha beyond finalized HCVMA areas presented in Map 23). This area will increase with definitive mapping. All definitive mapping of these draft HCVMAs will happen with community agreement and participatory mapping prior to land clearing.

Table 21. Summary of HCVMA summarizing those that have been mapped and are final and those that need to be definitively mapped by GVL as follow-up to this assessment. Note that there are area overlaps between the HCVs so the cumulative total HCVMA will be less than the sum of the areas listed.

HCV	Complete (Map 23)	Area (ha)	To be completed by GVL (Map 24)
1.2	Areas of forest with high levels of biodiversity and buffers mapped as "No Go Zones" and "No Go Zone Buffer"	2,031	1) Rapid biodiversity assessment in RCA area (772 ha) and delineation of HCV 1.2 area based on biodiversity specialist input. 2) Wetlands and swamps and riparian forests and flood plains as per HCV 4.1
1.3	As per HCV 1.2	2,031	As per HCV 1.2
2	Forest in the AOI that are connected to the large block of forest north of the AOI.	1,199	Mapping complete
3	Dense forest blocks remaining in the AOI.	586	1) Areas of Young Regrowth Forest (YRF) adjacent to mapped areas of HCV 3 Low Density Forest (HK1) to verify if they are indeed YRF or should be reassigned to HK1. If reassigned to HK1, then these areas become HCV 3. This situation exists in a few small areas in the AOI and overlaps with HCV 1.2 areas identified. 2) Wetlands and swamps – map with required buffers. 3) Large rock cave with buffer
4.1	Mapping incomplete		Indicative: Wetland and swamp points and large river buffer estimates provided (rivers c. 636 ha). 1) Wetlands and swamps – map with required buffers. 2) Rivers and floodplains and the required buffers
4.2	Mapping incomplete		Indicative areas of steep slope and large river buffer estimates (c. 636 ha) provided. 1) Ground confirmation and mapping of steep slope areas. 2) Rivers and floodplains and the required buffers
5	Mapping incomplete		Indicative points provided as per Table 17. Definitive, participatory mapping of HCV 5 values (as per Table 17) with communities.
6	Mapping incomplete		Indicative points provided as per Table 17. Definitive, participatory mapping of HCV 6 values (as per Table 17) with communities. Buffers agreed upon by communities need to be added.

Threat Assessment

A threat analysis was used to assess the likely scope (or extent) and severity of impact of the current and potential threats identified. The analysis uses a scale that scores the risk of impact of each threat as either High, Medium, Low, or Negligible. Each threat in Table 22 was assessed separately based on information gathered during the assessment, including literature reviews, field surveys, stakeholder interviews, expert consultation, development and land use change trends in the area, and current governance structures. The threat assessment is undertaken considering (1) the current threat level and (2) the threat level if the project goes forward and successfully implements all of the mitigation measures recommended in this report (Table 22).

The greatest risk to the HCVs identified in the AOI is expansion of community activities (e.g., farming, hunting, NTFP collection, encroachment/clearing of riparian forests) into HCV areas in the AOI and neighboring forests outside of the AOI. These risks are considered Medium at highest (Table 23) based on the scoring shown in Table 22 below. The greatest risk to HCV 1.2 species identified in the AOI and surrounding landscape will be hunting and habitat loss in HCV areas in the AOI (Table 23), but most importantly are forests to the north of the AOI. Management and monitoring recommendations are focused on mitigating these threats (Table 22).

Table 22. Threat analysis table

Threats (Current and Potential)	Severity: What is the likely impact of the threat on the HCVA or HCV species population in the landscape?			
Scope: How much of the HCVA (or HCV species population) in the landscape is likely to be impacted by the threat?	Likely to cause very rapid declines (>50% over 10 years) (Points = 3)	Likely to cause rapid declines (20–50% decline over 10 years) (Points = 2)	Likely to cause relatively slow but significant declines (<20% over 10 years) (Points = 1)	Likely to cause negligible or no declines (Points = 0)
Whole: Affects the whole HCVA (>90%) (Points = 3)	6	5	4	3
Majority: Affects the majority of the HCVA (50-90%) (Points = 2)	5	4	3	2
Minority: Affects the minority of the HCVA (<50%) (Points = 1)	4	3	2	1
Negligible affect on the HCVA (Points = 0)	3	2	1	0

Impact Coding:	High	Medium	Low	No/Negligible

Threats

Table 23. Threats to the HCVs identified in the AOI and the risk level based on the threat assessment scale in Table 18 above.

HCV	Threat	Potential Risk Level
1	Reduced biodiversity due to land clearing (land cover change to oil palm)	Low
1, 2, 3	Increased hunting and wildlife exploitation within areas earmarked by GVL for conservation (including forests adjacent to the AOI) by communities and migrants due to overall reduction of wildlife and its habitat in previous area, improved access via roads, and increasing human population	Medium
1, 2, 3	Increased forest exploitation (timber, NTFPs and illegal mining) in forests adjacent to the AOI and HCV 2 and 3 areas	Medium
1, 3, 4.1	Reduced water quality in rivers and wetlands from erosion and agricultural runoff impacting integrity of HCV 1 species populations and habitat and diminishing or altering ecosystem functioning	High
1, 4.1, 5	Land use change for agriculture in riparian buffers and forests neighboring the AOI	High
4.1	Conversion of upstream forests essential for regulation of the flow of rivers and streams, preventing severe floods, or maintaining water quality	Medium
4.2	Development of sloped areas	Medium
4.2	Road development	Medium
4.2	Encroachment and clearing of riparian buffers	High
4.2	Land clearing of HCV 4.2 areas for plantation development	Low
5	Conversion of HCV 5 areas to oil palm, especially in light of initial community enthusiasm to provide land for development. The potential exists for inadequate allocation of necessary resources with the expectation that GVL will meet needs previously met by HCV 5 areas.	High
6	Accidental conversion (land clearing) of HCV 6 areas	Low
6	Degradation of sacred sites due to a changing landscape and higher levels of human traffic	Medium

Table 24. Management & Monitoring Recommendations (1 of 6)

Threat	Management Recommendation	Monitoring Recommendation
Reduced biodiversity due to land clearing (land cover change to oil palm)	✦ Establish a biodiversity management and monitoring program with assistance of specialists in this area ✦ Conduct Rapid Biodiversity Assessments (RBA) in areas where chimpanzees, elephants and hippos have been documented in the AOI and or reported by community members or workers. The RBAs should be undertaken by species experts. ✦ Establish a human-wildlife conflict plan focusing on chimpanzees and elephants ✦ Ensure land clearing is undertaken such that it flushes wildlife into adjacent forests rather than isolating individuals in small forests or areas that will be cleared ✦ Reduce hunting pressure, including discouraging the eating and sales of bush meat within GVL operational areas; establish hunter check points within different parts of the plantation in collaboration with local community members to discourage the bringing in of wildlife (dead or alive) into GVL operational area ✦ Collaborate with local communities to maintain environmental values. This will be especially important in areas where biodiversity HCVs conflict with HCV 5 needs.	✦ Ongoing monitoring of land cover change in the AOI and surrounding landscape ✦ Ensure the completion of a rapid biodiversity assessment (RBA) by species specialists prior to development of areas ✦ Biodiversity monitoring of important species and their habitat (species of conservation concern and indicator species) ✦ Monitor the success of community engagement initiatives to offset environmental impacts (e.g., reduce hunting of HCV species) ✦ Use of adaptive management to evaluate and adjust management and monitoring activities as necessary
Intruding into faunal corridor	✦ Develop a conservation plan along with the local communities involvement and endorsement on protection of such set aside area; ✦ Explain to the local communities GVL hunting and poaching policy with the support from the FDA ✦ Signs of no intruders and no hunting should be posted and the essence of conserving such area should be fully explain to surrounding communities to seek their endorsement in also protecting the area.	✦ Monthly monitoring of the area should be highly considered and Periodic investigative assessment be made around the zoned area to ensure signage requirements are being adhere to; ✦ Commission annually a rapid biodiversity assessment within the set aside area along with local residents to ensure such place remain in tack.
Clearing of the Recommended Conservation Areas (RCA)	✦ Ensure the completion of a rapid biodiversity assessment (RBA) for the Recommendation Conservation Areas (RCA) by species specialists and a subsequent management plan for the species and HCV areas identified by the specialist established prior to development of any of these areas.	✦ Monitor the RCA prior to any land clearing to determine the absence of biodiversity concentration, Regenerating Forest, Short Stature Natural Forest or Tall Stature Natural Forest to consider area suitable for clearing. Ongoing biodiversity threat monitoring of HCV area identified

Table 24: Management & Monitoring Recommendations (2 of 6)

Threat	Management Recommendation	Monitoring Recommendation
Reduced biodiversity due to land clearing (land cover change to oil palm)	✦ Establish a biodiversity management and monitoring program with assistance of specialists in this area ✦ Conduct RBAs in areas where chimpanzees, elephants and hippos have been documented in the AOI (RCA areas in Map 24 and other areas subsequently identified by the company) and or reported by community members or workers. The RBAs should be undertaken by species experts. ✦ Establish a human-wildlife conflict plan focusing on chimpanzees and elephants ✦ Ensure land clearing is undertaken such that it flushes wildlife into adjacent forests rather than isolating individuals in small forests or areas that will be cleared ✦ Reduce hunting pressure ✦ Collaborate with local communities to maintain environmental values	✦ Ongoing monitoring of land cover change in the AOI and surrounding landscape ✦ Ensure the completion of a rapid biodiversity assessment (RBA) by species specialists prior to development ✦ Biodiversity monitoring of important species and their habitat (species of conservation concern and indicator species) ✦ Monitor the success of community engagement initiatives to offset environmental impacts (e.g., reduce hunting of HCV species) ✦ Use of adaptive management to evaluate and adjust management and monitoring activities as necessary
Increased hunting and wildlife exploitation in areas zoned by GVL for conservation (including forests adjacent to the AOI) by communities and migrants due to overall reduction in habitat, improved access via roads, and increasing human population	✦ Develop a conservation plan along with the local communities involvement and endorsement on protection of such set aside area; ✦ Place signage in strategic places about the set aside areas in language understood by the community and workers depicting activities which are prohibited within such area; ✦ Explain to the local communities GVL hunting and poaching policy with the support from the FDA ✦ Discourage the buying of wildlife by expatriates and the selling, buying or eating of of bush meat within the concession camps ✦ Support the raising of domestic livestock by communities ✦ Support a NO HUNTING policy within your operation area;	✦ Community knowledge level about the protection of the area zone by GVL and benefits of biodiversity conservation; ✦ Periodic investigative assessment be made around the zoned area to ensure signage requirements are being adhere to; ✦ Have a local representatives survey and document the quantity of meat brought dead into the village and sold as an indicator of trends and reasons behind increases or decreases in supply ✦ Commission annually a rapid biodiversity assessment within the set aside area along with local residents to ensure such place remain in tack.

Table 24: Management & Monitoring Recommendations (3 of 6)

Threat	Management Recommendation	Monitoring Recommendation
Reduced water quality in rivers and wetlands from erosion and agricultural runoff impacting integrity of HCV 1 species populations and habitat; Offsite deposition of sediments and the clogging of waterway by soil suspended as solids in water column; Contaminated waterways by the transportation of fertilizer, pesticide and other agrochemicals through soil erosion and diminishing or altering ecosystem functioning;	✦ Demarcate boundaries of HCV areas ✦ Maintain and establish riparian buffers at widths shown in Table 16 ✦ Maintain and buffer wetlands ✦ Maintain and buffer forests identified as HCV ✦ Do not develop oil palm in areas of steep slope and those identified as "No-go Zones" ✦ Do not leave soil uncover for a long period of time during land clearing especially during the time of rain; ✦ Maintain or improve water quality in all rivers in the area of operations ✦ Planting of leguminous cover crops, promotion of natural predators for pest and disease control, integrated pest management (IPM), minimal use of pesticides, establishment of nature conservatories, conservation of riparian strips, permanent green belts around specific sites, effective zoning, land use planning and enforcement, and soil conservation and management strategies (Henson, 2003; Clay, 2004; Hashim *et al*., 2005).	✦ Ongoing, routine monitoring of riparian buffer condition ✦ Routine water quality surveys in rivers and wetlands; using Before After – Control Impact (BACI) study design ✦ Monitor rate of establishment of ground cover (is it working quickly enough and well enough to prevent erosion) ✦ Blanket spraying, paying less attention to the upkeep of in-field and planting density of the oil palm, can affect biodiversity and as such should be monitored especially during such time these activities are undertaken. ✦ Use of adaptive management to evaluate and adjust management and monitoring activities as necessary
Land-Use change for agriculture in riparian buffers and forests neighboring the AOI	✦ Educate communities in the continuous usage of their farm plot for agriculture purposes; ✦ Erect road signage board on different sides of the riparian buffers with drawing of NO GO activities;	✦ Ongoing, routine monitoring of riparian buffer condition along with community members; ✦ Ensure signage boards are properly placed and understood by the communities.

Table 24: Management & Monitoring Recommendations (4 of 6)

Threat	Management Recommendation	Monitoring Recommendation
Conversion of riparian and floodplain forests essential for regulation of the flow of rivers and streams, preventing severe floods, or maintaining water quality	✦ Educate the local residents on the importance of maintaining such areas by doing a video documentary on maintaining water quality and the effect thereof if such actions are not adhere to, this will attract the communities as pictures portray deeper message; ✦ Ensure buffer zones to upstream forests are kept in tact and reestablished where absent ✦ Proposed communities development credits which could lead to GVL undertaking additional community developmental initiative for all communities ensuring proper management of set aside areas	✦ Conduct periodic monitoring of upstream forest to ensure the integrity of the forest is not tempered with; ✦ Monitor buffering area to the upstream forest to ensure such area has not become a regular GO ZONE; ✦ Ensure community development credits(CDC) are understood by communities and able to be monitored and calculated by themselves
Development of sloped areas	✦ Establish clear SOPs for identifying high erosion risk areas and how to prevent erosion; including slope limitations for development and terracing as discussed under HCV 4.2 ✦ Demarcate boundaries of HCV areas ✦ Maintain and establish riparian buffers ✦ Collaborate with local communities to maintain environmental values	✦ Ongoing, routine monitoring of land clearing operations to ensure SOPs are being followed ✦ Ongoing, routine monitoring of riparian buffer condition ✦ Routine water quality surveys in rivers and wetlands ✦ Ongoing monitoring of land cover change in HCV 4.2 areas ✦ Monitor the success of community engagement initiatives to offset environmental impacts (e.g., encroachment into riparian forests) ✦ Use of adaptive management to evaluate and adjust management and monitoring activities as necessary
Road development	✦ Use best practices in road development, choosing site location for construction of roads (as well as bridges, culverts and drains) to avoid increase in soil erosion and flooding	✦ Monitor road development during construction to ensure best practices and SOPs are being followed and roads are being placed where they should be; ✦ Conduct regular ongoing road maintenance

Table 24: Management & Monitoring Recommendations (5 of 6)

Threat	Management Recommendation	Monitoring Recommendation
Encroachment and clearing of riparian buffers	✦ Demarcate boundaries of HCV areas ✦ Maintain and establish riparian buffers ✦ Maintain and buffer wetlands (including mangroves) ✦ Collaborate with local communities to maintain environmental values ✦ Maintain or improve water quality in all rivers in the area of operations	✦ Ongoing, routine monitoring of riparian buffer condition ✦ Routine water quality surveys in rivers and wetlands ✦ Ongoing monitoring of land cover change in HCV 4.1 areas ✦ Monitor the success of community engagement initiatives to offset environmental impacts (e.g., encroachment into riparian forests) ✦ Use of adaptive management to evaluate and adjust management and monitoring activities as necessary
Land clearing for plantation development, including the use of fire	✦ That all bear soil is not left uncover during land clearing for a long period of time especially during the time of rain, there should planting of leguminous cover crops; ✦ Recommend a NO BURNING policy within all GVL development area with the endorsement and involvement of local communities; ✦ All incidences which will spike fire should be documented; ✦ Signage on NO BURNING should be set up around fire- prone areas like savanna forest	✦ Monitor all clearing by ensuring that bear soil are planted with leguminous cover crops in order to protect the soil against rain and superficial runoff; ✦ Conduct regular patrol of fire-prone areas with staffer of GVL and communities representatives especially during the dry season where vegetation are dry; ✦ Monitor all incidences which are likely to cause and attract fire ignition
Conversion of HCV 5 areas to oil palm, especially in light of initial community enthusiasm to provide land for development. The potential exists for inadequate allocation of necessary resources with the expectation that GVL will meet needs previously met by HCV 5 areas.	✦ Collaborate with local communities to realistically and accurately calculate HCV 5 resource needs and ensure enough area is allocated to meet these needs. ✦ Demarcate boundaries of HCV areas ✦ Participatory mapping of important NTFP collection sites ✦ Maintain and establish riparian buffers ✦ Maintain or improve water quality in all rivers in the area of operations ✦ Maintain and buffer wetlands (including mangroves)	✦ Ongoing, routine monitoring of riparian buffer condition ✦ Routine water quality surveys in rivers and wetlands ✦ Ongoing monitoring of land cover change in HCV 4.1 areas ✦ Monitor the success of community engagement initiatives to meet HCV 5 needs (e.g., protein needs, farm lands) ✦ Use of adaptive management to evaluate and adjust management and monitoring activities as necessary

Table 24: Management & Monitoring Recommendations (6 of 6)

Threat	Management Recommendation	Monitoring Recommendation
Accidental conversion (land clearing) of HCV 6 areas	✦ Collaborate with local communities to definitively map HCV 6 areas and appropriate buffer zones necessary to protect these sites. During land clearing, clearly demarcate boundaries of HCV 6 areas to prevent unintentional clearing. Recruit appropriate community member(s) to be present onsite during land clearing to ensure no mistakes are made. ✦ Establish an SOP that provides a clear system of communication between communities and GVL and within GVL that insures that any issues involving HCV 6 sites are addressed immediately.	✦ Onsite monitoring of land clearing activities by communities when operating near HCV 6 sites ✦ Monitor the success of SOPs designed to avoid HCV 6 areas ✦ Monitor community satisfaction with company performance and ability to maintain HCV 6 values amidst oil palm plantation operations ✦ Use of adaptive management to evaluate and adjust management and monitoring activities as necessary
Degradation of sacred sites due to a changing landscape and higher levels of human traffic	✦ Placement of visible signage board around all sacred sites with a NO GO ENTRY; ✦ All sites should be named and such name given by the communities concern; ✦ Involve local residents in the management of all site, especially with the elders and local leaders of the host communities;	✦ Ensure unhindered and periodic monitoring of all sites by local communities;
Fire	✦ Recommend a NO BURNING policy within all GVL development area with the endorsement and involvement of local communities ✦ All incidences which will spike fire should be documented; ✦ Signage on NO BURNING should be set up around fire- prone areas like savanna forest	✦ Conduct regular patrol of fire-prone areas with staffer of GVL and communities representatives especially during the dry season where vegetation are dry; ✦ Monitor all incidences which are likely to cause and attract fire ignition ;

VERIFICATION STATEMENT:

GVL GOLDEN VEROLEUM LIBERIA

Golden Veroleum (Liberia) Inc.
Monrovia Office: Unit 305, Wazni Building,
13th Street and Tubman Boulevard,
Sinkor, Monrovia, Liberia
Registered: R. Fole Sherman Law Building,
17th Street & Cheeseman Ave

VERIFICATION STATEMENT:

RSPO Assessor Licensing Scheme (ALS) Provisional HCV Licensed Assessors Solomon P. Wright of Green Consultancy Inc. has submitted an HCV Public Summary Report on behalf of Golden Veroleum Liberian (GVL) for review to the Assessor Licensing Scheme (ALS) Quality Manager (QM) and Quality Panel (QP) for evaluation.

An approved peer reviewer from the peer reviewer listing reviewed the report from 15th to 19th of February 2017, along with other relevant documents for the proposed 24,593 hectares for planting of oil palm. In light of the review, the assessors have made all the necessary corrections and thus submitted it for verification purpose.

The Assessors testify that GVL operation follows Liberian legislation. Environmental Impact Assessment for most of the new HCV assessment was completed in July 2011 but was reviewed and revised from March to May 2016 to bring GVL into alignment with the RSPO NPP process with the objective of verifying its operations. Additionally, the new ESIA report covering 6,496 hectares for the remaining of the sites were completed in May 2016. Inputs and corrections from GVL from the ESIA and HCV Reports were incorporated into both documents.

It is the earnest opinion of the Assessors that the HCV assessment report was detail, comprehensive and professionally carried out in compliance with HCVRN guidance in terms of structure and content and in compliance with the New Public Summary Template outline and contents.

Signing on behalf of the Assessors and behalf of Golden Veroleum (Liberia) Inc.

Solomon P. Wright
Lead Assessor

Flomo P. Molubah
General Manager,
Sustainability, GVL

NPP VERIFICATION AND STATEMENT REPORT

Date of Notification	
Name of Grower	**Golden Veroleum Liberia Inc.**
Name of Subsidiary (if any)	**-**
RSPO Membership number	**1-0102-11-000.00**
Location of proposed new planting:	
(i) Grower Address	**17th St, Cheeseman Avenue, Monrovia, Liberia**
(ii) Business Permit	**Concession Agreement between The Republic of Liberia and Golden Veroleum Liberia Inc. dated on 16th August 2010. It was ratified into law by the Liberian Legislature dated on 1st September 2010**
(iii) Type of Business	**Oil Palm Plantation**
(iv) Size (ha) proposed for NPP	**6,496 ha**
(v) Contact persons	**Mr. Alwi Hafiz**
(vi) E-mail address	alwi.hafiz@veroleum.com
(vii) Geographical location	**Barclayville and Trembo Statutory Districts in Grand Kru County, Liberia**
(viii) Spatial Reference (GPS Coordinates)((e.g. N 1° 50' 5.0" E 103°27' 47.23")	**Latitudes N 5°12' and N 4°54' and Longitudes W 9°3' and W 8°33'**
(ix) Boundary map	***Provided on the last page of this report.***
(x) Areas and time plan for new plantings	**New Planting Schedule:**

Activity	Area (ha)	
	2017	2018
Land Clearing	3000	3788
Planting	3000	3788

Statement of Acceptance of Responsibility for NPP	***TBU***

Name of Grower: Golden Veroleum Liberia Inc.

Name of Person Responsible: Mr. Alwi Hafiz

Position: Sustainability Advisor

Signed:

Date:

Auditor finding:

1. The new areas proposed for NPP (6 496 ha) actually outside of the areas covered on the concession areas above. To date, the document of legal ownership or lease, history of land tenure (confirmation from community leaders based on history of customary land tenure, recognised Native Customary Right (NCR) land) and the actual legal use of the land of this proposed NPP area has yet

concession areas above. To date, the document of legal ownership or lease, history of land tenure (confirmation from community leaders based on history of customary land tenure, recognised Native Customary Right (NCR) land) and the actual legal use of the land of this proposed NPP area has yet presented to SGS. (Indicator 2.2.1)
GVL Response: GVL Concession Agreement (CA) gives the right to GVL to assess suitability and explore community acceptance for oil palm cultivation in specified counties in Liberia including Grand Kru (see Appendix I of CA: http://goldenveroleumliberia.com/images/pdf/2014-09-30.2_GVL_Concession_Agreement.pdf). The proposed new areas are within Grand Kru County and therefore lie within areas allowed in the CA. (Abu – please confirm all areas are within GK County)

2. No evidence presented to SGS that the proposed NPP areas has been fair compensation, having proof of legal acquisition of title and no dispute. Therefore, the FPIC during land acquisition of this proposed NPP areas are not justified (Indicator 2.2.3)
GVL Response: Section 2, Step 2 of the RSPO NPP 2015 states that a condition for the NPP is that "Stakeholder engagement and FPIC process initiated" and also that "It is neither realistic nor desirable that, at the early stage in plantation planning when a grower submits the NPP report, that the grower has completed the FPIC process". The FPIC process in the relevant areas has been initiated (evidence enclosed – letter from community on community representation – Abu to check with Roosevelt) but has not been completed. Therefore details on compensation and other matters related to agreements with communities and land owners are not finalised and available yet. GVL's FPIC SOP allows development to start only upon the signing of a Memorandum of Understanding (MoU) with relevant communities which will contain such details.

3. No evidence presented to SGS regarding information of proposed benefit sharing and legal arrangement of the proposed NPP areas with the local communities (Indicator 2.3.3)
GVL Response: See the response for item 2 on FPIC.

4. No evidence presented to SGS that communities are represented through institutions or representatives of their own choosing, including legal counse (Indicator 2.3.4)
GVL Response: See the response for item 2 on FPIC

5. No evidence presented to SGS that the process and outcome of any compensation claims has been documented and made publicly available.**(Indicator 7.6.5)**

GVL Response: See the response for item 2 on FPIC

6. **No evidence presented to SGS that the company has made adequate efforts to enable affected communities and rights holders to have access to information and advice that is independent of the project proponent, concerning the legal, economic, environmental and social implications of the proposed operations on their lands. (Indicator 7.6.6)**
   GVL Response: See the response for item 2 on FPIC

7. The HCV assessment has been includes stakeholder consultation as presented on the table 15 and 16. However, the assessment does not includes a land use change analysis to determine changes to the vegetation since November 2005.(Indicator 7.3.2)
GVL Response: To insert LUCA

8. According to the management plan as defined on the SEIA document, such areas will not be cultivated and will include hill-tops and very steep slopes having gradient of 25% or more. However, no specific strategy in place for plantings on slopes between 9 and 25 degrees. The SOP must be established for planting with slope in between 9 – 25 degrees. (Indicator 4.3.2)
GVL Response: Quote the strategy for such slopes in reference to GVL Agronomy SOP (Abu to check). In the absence of which, to refer to GAR SOP

9. No evidence presented to SGS regarding soil suitability maps.(Indicator 7.2.1)
GVL Response: Enclose soil suitability maps / reports (Abu to check with GIS)

10. No evidence presented to SGS regarding HCS assessment. However, on the such part of the HCV assessment, refer to HSC assessment assessment of the AOI on year 2013. (**Indicator 7.8.1**)
GVL Response: Enclose evidence that HCS assessment done (Abu to check on availability, if not present, to get contact from Indonesia PNMP and retrieve)

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