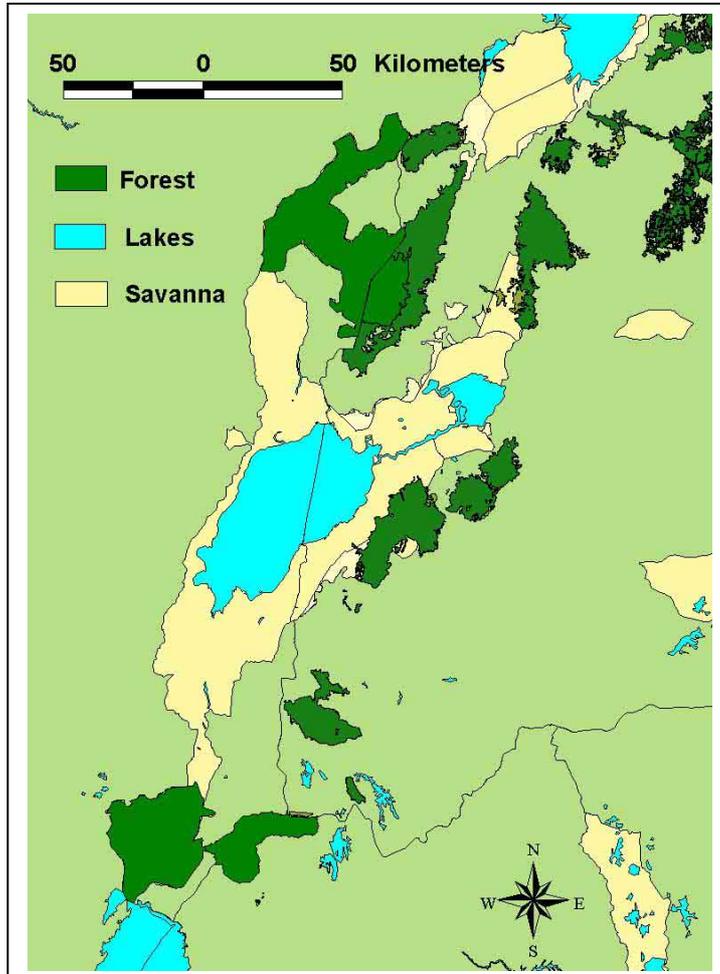# Regional Meeting Report

Selection of Landscape Species for the Greater Virunga Landscape

## Andrew Plumptre, Deo Kujirakwinja, & Adrian Treves
2004

Introduction

This report is the product of a regional meeting funded by the Wildlife Conservation Society (WCS) and held in collaboration with the Institut Congolais pour la Conservation de la Nature (ICCN) and the Uganda Wildlife Authority (UWA). The meeting brought together these protected area authorities and all their partners working in the Greater Virunga Landscape to a) share with each other what we are all doing, b) review the existing planning processes that have taken place or will take place in the near future and c) assess the need for specific wildlife conservation action within these planning processes. During the meeting WCS introduced the participants to their Landscape Species program, a program that specifically puts wildlife in the centre of the assessment of threats and conservation action.

The meeting was held in the Hotel Beni in eastern Democratic Republic of Congo (DRC) nad was hosted by ICCN between 23-25th March 2004.

This report summarises the planning processes and the results of the first draft in a species selection process for the Greater Virunga Landscape. A brief summary of ongoing activities is provided in the appendix.

The Greater Virunga Landscape

The Greater Virunga Landscape (GVL) comprises the Virunga National Park in the Democratic Republic of Congo (DRC) and the contiguous protected areas in Rwanda (Parc National des Volcans) and Uganda (Semuliki, Rwenzori, Queen Elizabeth, Kibale, Bwindi Impenetrable and Mgahinga Gorilla National Parks, Kasyoha-Kitomi and Kalinzu Forest Reserves and Kyambura Wildlife Reserve). This landscape is proving to be the most species rich for mammals and birds in Africa and contains more endemic vertebrates than any other landscape on the continent. It has suffered greatly from civil wars in the region and currently the Virunga National Park is in a critical condition with many people settled within its borders. However, as peace is slowly taking root in DRC it has been possible to start evicting some of these encroachers (see Appendix).
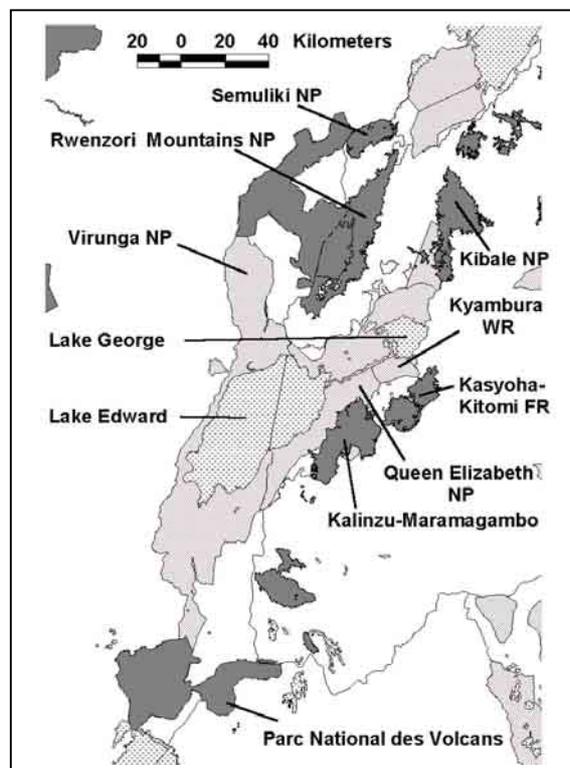
Figure 1. The Greater Virunga Landscape. (dark grey =forested areas, light grey=savanna/woodland)

The name of the GVL is somewhat contentious with a desire expressed by ICCN and UWA to select a name that captures what is common to all countries rather than emphasize the name of one park, although it is the Virunga park that links all the other sites. Other names that have been proposed include the 'Central Albertine Rift' but this is not ideal because it is not in the centre of the Albertine Rift or the 'Rwenzori-Volcanoes Landscape'. As yet no term has been agreed to so for the purposes of this report we are remaining with the GVL.

Summary of Planning Processes

Dr Andrew Plumptre (WCS Albertine Rift) gave a presentation about existing planning processes that have taken place or are about to. He emphasised that these planning processes are looking at various scales from the scale of the whole Albertine Rift down to the scale of individual protected areas and that they aim therefore to complement each other rather than compete with each other. A brief summary is given for each process below:

1. Albertine Rift Strategic Framework plan

Since February 2001 the MacArthur Foundation has been supporting a process to develop a strategic framework for the Albertine Rift. This process was launched in Cyangugu with a meeting that brought the protected area authorities from Burundi, DRC, Rwanda, Tanzania and Uganda together with local and international NGOs and donors to look at threats to conservation of the Albertine Rift. The meeting participants decided to support a process to develop a regional strategic plan and a monitoring plan and elected a steering group comprised of NGOs/institutions with a regional interest. This steering group started to compile the information to help promote the conservation of the Albertine Rift and in June 2002 held a meeting of expert biologists to work on the draft species lists that had been compiled by WCS. At this meeting WWF introduced participants to its Ecoregion planning process and threats to protected areas in the Rift were assessed. The biological information was synthesised in a report published in April 2003 (Plumptre et al. 2003). This report showed that the Albertine Rift was the most important site in Africa for vertebrate conservation. A third meeting was held in Entebbe in April 2003 to develop a strategic framework for the Albertine Rift, which was organised by the Albertine Rift Conservation Society (ARCOS). This used a process of identifying threats to species, habitats and processes in the Albertine Rift to identify priority objectives needed to address these. A common vision, goal and objectives for conservation in this region were identified at this meeting. Six planning units were selected in the rift to capture all sites for more detailed regional planning. The aim of these regional plans is to have protected area authorities and NGOs work together to develop ONE goal, set of objectives and activities that is common to all partners and then identify which partner will support what activities in order to reduce duplication of effort between partners. One of the regional planning units is the GVL, which will be the first site to develop a regional plan in 2004.

2. AWF's Heartland Conservation Plan

In February 2003 the African Wildlife Foundation (AWF) held a meeting to develop a plan for its Virunga Heartland (which includes Bwindi Impenetrable, Mgahinga, Volcanoes parks and Virunga Park (sector south). The process used to develop this plan identified conservation targets, the stresses to these targets, the stakeholders involved and finally the strategies and actions needed to address the stresses and how these would impact the stakeholders. This plan to date has been used primarily within AWF.

3. Transboundary plan for the GVL

At a meeting of the three executive directors of ICCN, ORTPN and UWA in January 2004 it was decided that there was a need to develop a regional transboundary conservation plan for the GVL. International Gorilla Conservation Programme (IGCP) was elected to facilitate this process given their long history of working to promote transboundary conservation in the southern part of the GVL. This process will probably take place some time in 2004.

4. Strategic Planning by Protected Area Authorities
UWA has already developed a strategic plan and ICCN and ORTPN are in the process of completing theirs. These plans aim to guide the actions of the protected area authorities over a period of about 10 years and include their mission, objectives and strategies for management. UWA's plan has 12 strategic programs with objectives and activities associated with each of the twelve. These plans do not get to the detail of describing what happens on the ground but aim to guide the organisation in the direction it is taking.

5. General Management Plans
General management plans are produced for each protected area in order to guide the management actions over a 5-10 year period. The main components of such a plan include identifying the problems/issues/concerns, what is the purpose of the protected area, compiling biological and socioeconomic information, identifying protected area values and exceptional significance, identifying management objectives and zoning plans and identifying where environmental impact assessments are needed and establishing a monitoring plan.

6. Sub-plans of the General Management Plans
Many general management plans include sub plans such as Tourism Plans, Business Development Plans and Monitoring and Research Plans, which detail subcomponents of the general plan.

7. Annual Operation Plans
Annual operation plans are developed to help implement the general management plan and are the most specific of all the plans. These detail what will be done, who will be responsible for it, when it will start and be completed and what it will cost.

It is important that we are sure that these plans capture all the conservation management needs. Most plans have used a process, which include the identification of conservation targets, assessing threats to these targets and then identifying objectives and activities to address these threats. All plans are useless unless implemented and there is a need to ensure this implementation happens.

Incorporating Species Conservation Needs in Planning

An assessment was made as to how well the regional plans that have already been developed to date have captured animal species and their needs. Dr Plumptre gave a presentation about the need to consider species biological needs when planning conservation management action because often simply protecting the boundaries of a protected area is not enough to ensure the long-term survival of certain wildlife species that use large areas or need resources beyond the confines of a single protected area. Case studies included cheetahs in the Serengeti Park in Tanzania that would die out if only the park were protected. Their cubs suffer from very high mortality because lions and hyaenas, which are at high density in the park, kill them. Outside the park on Masaai lands lions and hyaenas are rare and cheetahs survive and actually recolonise the Serengeti. Protecting this species demands a specific management focus on the landscape outside the park. Another case study was of elephants in Tarangire Park, which require access to the east of the park in drought years to find water; otherwise there is high mortality. Only long term monitoring of this species over several years identified this need. These two case studies called attention to conditions that require us to manage habitat outside parks and the need to monitor far-ranging wildlife.

The Albertine Rift planning process identified the following species as targets:
1. Mammals: Gorillas, Okapis, Wild dogs, Chimpanzees, Elephants
2. Birds: Shoebill, Crowned Eagle, Grauer's Rush Warbler
3. Plants: Mahoganies

The AWF Heartland plan identified reptiles, amphibians, birds, large mammals, great apes and fish as conservation targets.

In both cases the selection of species reflected the ideas and interests of the participants present without structured decisions about the criteria that might help managers to focus on species needs or might help managers to win the attention and resources they need for effective wildlife management.

WCS' Landscape Species Analysis

WCS has been developing a process to help managers focus on wildlife as conservation targets and focus to meet wildlife needs rather than simply protecting a conservation area. Dr Adrian Treves from WCS' Living Landscapes Program came to the workshop to help participants structure their planning for wildlife. He helped them through the process of identifying a suite of landscape species that will meet managers' needs and address the challenge of conservation at the scale of a landscape. Six biological criteria of wildlife have been identified as useful to managers in communicating with stakeholders and drawing attention to wildlife needs. Certain characteristics of wildlife are more helpful in addressing specific threats therefore certain wildlife species are more helpful to managers than are others. Dr. Treves described the process that helps people think logically about the needs of wildlife species and their conservation. Participants at this workshop went through this process to identify a draft list of Landscape Species and also to identify where threats to these species occur in the GVL.

1. *Threats assessment*

Each participant was asked to identify the three most important threats to the wildlife and habitats where they worked. They were further asked to classify the 3 threats in one of the following four categories:

1. Exotic Species Invasion (plant, animal or micro-organism),
2. Habitat Loss (conversion or degradation),
3. Pollution (biochemical agents or temperature changes) or
4. Species Depletion (removing animals)

Overall, habitat loss, followed closely by species depletion, were seen as the most common direct threats to wildlife and habitats across the landscape. However participants from the central region perceived more species depletion than habitat loss, which contrasted with the other regions (Table 1).[1]

Table 1. Distribution of direct threats by region (North= northern Virunga National Park (PNVi hereafter) + Ruwenzori NP + Semuliki NP + Kibale NP, Central=central and east PNVi + Queen Elizabeth NP, South=southern PNVi + Parc National des Volcans + Mgahinga NP + Bwindi Impenetrable NP)

	North	Central	South	*Total*
	n=31	n=41	n=33	*n=105*
Exotic Species Invasion	1	4	2	*7*
Habitat loss	17	15	22	*54*
Pollution	3	2	1	*6*
Species depletion	10	20	8	38

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[1] If a human activity or natural disaster produces two or more direct threats, the participant was asked to identify the worst impact and assign the appropriate direct threat.

After identifying and classifying direct threats, each participant identified the most proximate indirect threat corresponding to each direct threat (i.e., the factor most responsible for the human activity that generated a direct threat) and classify this indirect threat in one of four ways. If the factor most directly leading to the threat was illegal use of habitat (e.g., encroachment on a national park) or illegal use of wildlife (poaching), the participants were asked to classify the indirect threat as UH or UW respectively. If users were not illegally settled or not engaged in illegal activities, the participants would then classify the indirect threat as P if they felt that inadequate policy or political will was most directly responsible. If laws, policy and political will were adequate, the participants might classify the indirect threat as M, reflecting inadequate management (e.g., inadequate monitoring, interventions or communication of rules)[2].

Participants most often identified management (M) and illegal use of habitats (UH) as the indirect threats responsible for the direct threats in Table 1. Illegal use of wildlife also represented a large proportion of indirect threats whereas law, policy and political will (P) were rarely mentioned (Table 2). However the central region again differed from northern and southern regions. In the central region, illegal use of wildlife (UW) exceeded illegal use of habitats (UH).

Table 2. Indirect threats split by region (as above)

	North	Central	South	*Total*
	n=30	n=39	n=31	*n=100*
P	5	5	3	*13*
M	9	15	8	*32*
UH	11	6	14	*31*
UW	5	13	6	*24*

Finally, Table 3 shows that habitat loss was more often blamed on management factors (M) than was species depletion. As one might expect, illegal use of habitat (UH) and of wildlife (UW) were most often blamed for habitat loss and species depletion respectively.

Table 3. Direct and indirect threats compared

	P	M	UH	UW
Exotic Species Invasion	1	4	0	1
Habitat loss	4	18	31	0
Pollution	2	1	0	0
Species depletion	6	9	0	23

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[2] As the workshop was nearing completion, participants made us aware that threats such as volcanic eruptions and other natural disasters have no human cause and hence no clear indirect threat if one uses our scheme. As natural disasters are often unpredictable and unstoppable, one cannot identify an indirect threat for such threats. Nevertheless, no natural disasters emerged as serious in this analysis.

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2. Landscape Species Selection
WCS has identified six criteria/characteristics that can help select species that may need more detailed management and whose management can help capture the needs of other species. These are:
   1.   area needs (species that would require relatively large areas to maintain a minimum population of 100-200 breeding individuals);
   2.   distribution (species endemic to the Albertine Rift or listed as threatened in the IUCN Red Book listings);
   3.   functionality (species that act as important pollinators, seed dispersers, ecological engineers, keystone prey or keystone predators);
   4.   heterogeneity (species that depend on more than one habitat for breeding, raising young, sheltering and foraging);
   5.   socioeconomic significance (species that have strong positive or negative value to local residents or national and international stakeholders); and
   6.   vulnerability (species that either suffered many threats Vm or were particularly sensitive to a single threat so they could serve as an indicator species, Vi).

Armed with a list of vertebrate species (mammals, birds, reptiles, and amphibians) present in the Albertine Rift, participants were split into three groups to identify candidate species that displayed key biological criteria deemed important to management and conservation. Each group included a facilitator to help clarify the characteristics. Many species were listed under each criterion but the groups were asked to select the 8-10 species that best represented the group.
Species identified for each criterion within the GVL included:
   1.   Area: Lion, elephant, leopard, buffalo, flamingo, lappet faced vulture, blue swallow, hyaena, saddle-billed stork
   2.   Distribution: Rwenzori strange-horned chamaeleon, Rwenzori duiker, gorilla, leopard, chimpanzee and lion
   3.   Functionality: Lion, chimpanzee, elephant, hippo, leopard, tilapia, bees, lappet-faced vulture, lungfish, black-fronted duiker, crocodile, crowned eagle, Uganda kob and termites
   4.   Heterogeneity: Hippo, buffalo, sitatunga, crowned crane, fish eagle, frogs, giant forest hog, hammerkop
   5.   Socioeconomic significance: Quelea, lion, chimpanzee, elephant, hippo, gorilla, tilapia, bees
   6.   Vulnerability: Lion, chimpanzee, elephant, hippo, leopard, gorilla, tilapia, lesser flamingo, okapi, grey parrot

Then all three working groups collated their lists and these lists were sorted by each species' summed number of key biological characteristics (1-6). The resulting draft list of Landscape Species contained 32 species including several guilds (e.g., bees, tilapia). Eleven species appeared under more than one criteria and these were reviewed to see how well they captured habitats. It was decided that afroalpine and swamp habitat was not covered so the Rwenzori duiker and sitatunga ware added to include these two habitats respectively. The result was 13 preliminary Landscape Species. The list was reviewed and discussed over two days but no major changes were proposed other than condensing some similar entries (e.g., leopards & Ruwenzori leopards). It was suggested that Topi be assessed to see whether they should be added. Taking the final list of 13 Landscape Species we reviewed the classifications to ensure each of the 6 key biological criteria were considered for each species. The final result is shown in Table 4.

**Table 4.** The 13 Landscape species selected by the participants present.

| Species	Area	Dist.	Funct.	Hetero.	Socioecon.	Vuln.	Total score
Lion	1	1	1		1	1	5
Chimpanzee		1	1		1	1	4
Elephant	1		1		1	1	4
Hippopotamus			1	1	1	1	4
Leopard	1	1	1			1	4
Gorilla		1			1	1	3
Tilapia			1		1	1	3
Bees			1		1		2
Buffalo	1			1			2
Lesser Flamingo	1					1	2
Vulture (lappet faced)	1		1				2
Rwenzori Duiker		1					1
Sitatunga				1			1

3. Mapping threats to Landscape Species
Finally, four working groups mapped the spatial distribution of threats to each species within the suite of Landscape Species for the region in which they work (splitting the north into northern PNVi and northern Uganda national parks). Working groups were instructed to draw polygons reflecting (a) the distribution of a given Landscape Species as known from systematic observations, and (b) partially or fully overlapping polygons depicting the location and configuration of direct threats. Each threat polygon was then characterized as follows:

- type of direct threat (using the four categories described above), when during the year the threat occurred?
- Has the threat increased or decreased in the last 10 years?
  a) -2 = much less than in the past
  b) -1 = somewhat less than in the past
  c) 0 = the same as in the past
  d) +1 = somewhat greater than the past
  e) +2 = much greater than in the past

- Estimated time to recover once the threat is no longer damaging?
  a) 0 = Immediate recovery or less than 1 year
  b) 1 = Recovery within 1-10 years.
  c) 2 = Recovery within 10-100 years.
  d) 3 = Recovery more than 100 years or would never occur

- Estimated severity of the threats to the landscape species
  a) 0 = None or positive
  b) 1 = Little - measurable but small effect (<20% mortality)
  c) 2 = Some - substantial effect but complete loss unlikely (20-75% mortality)
 d) 3 = Serious – extirpation likely (>75% mortality)

Maps of nine of the 13 species are presented below in figure 2. The other species that are not presented were either very widespread or had few threats (eg. bees and tilapia) or people did not have much information about their distribution and threats to their existence (lesser flamingo and leopard).
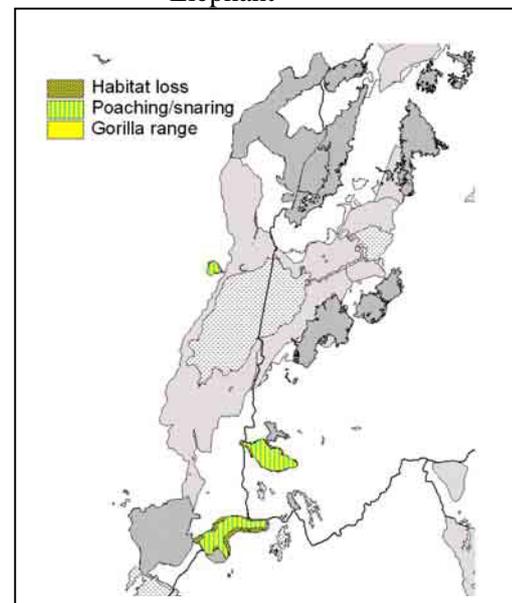
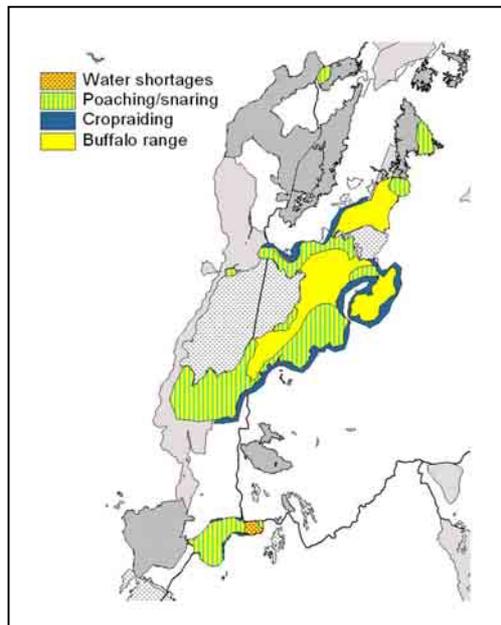*Wildlife Conservation Society*
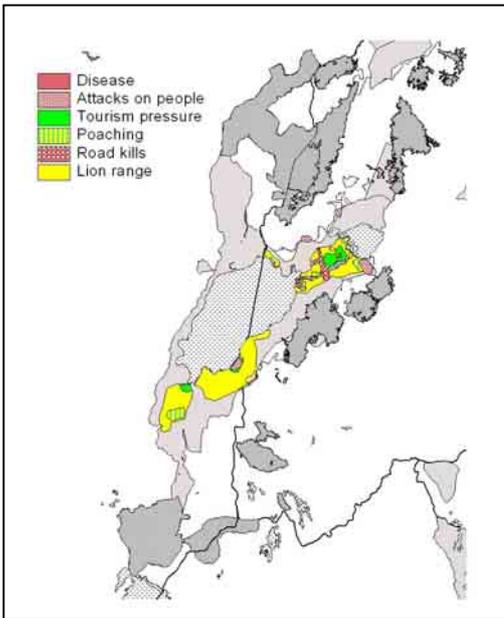
Lion
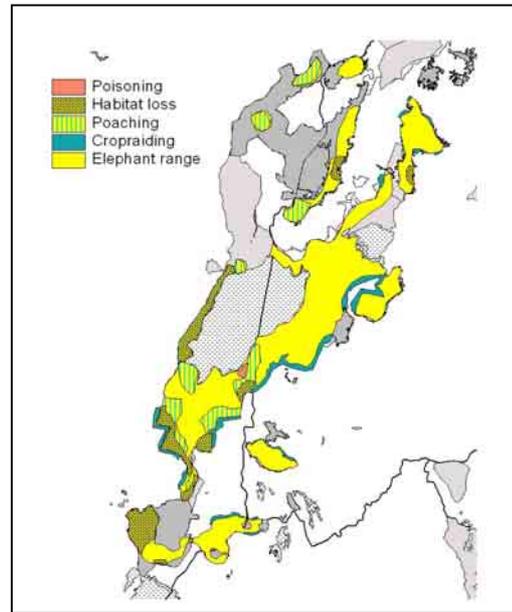
Elephant
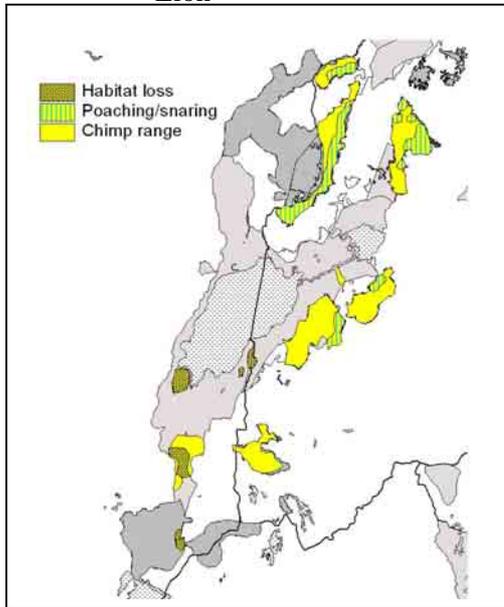
Chimpanzee

Gorilla

Buffalo

Hippopotamus

Sitatunga

Lappet-faced Vulture

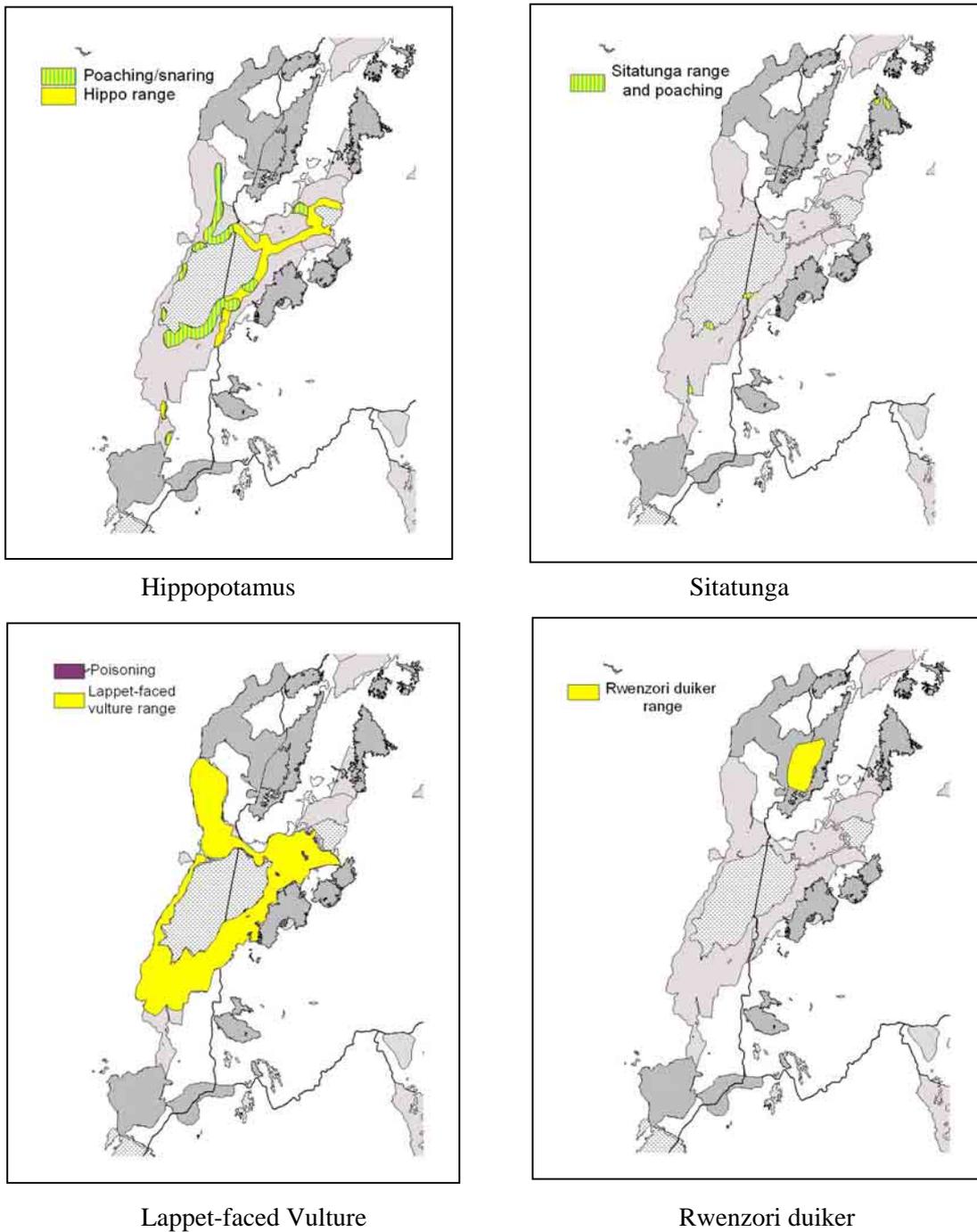Rwenzori duiker

Figure 2. The known distribution for nine of the 13 Landscape Species and threats to their survival. Where nothing was known about distribution by the workshop participants the maps were left blank.

Analysing the threats to the nine species shows that poaching ranks highest (40.9% of all polygons) followed by habitat loss (19.1%) and crop-raiding (14.8%). Human –predator conflict ranked fourth with 7.8% of polygons. Again poaching ranked higher for the central part of the GVL (QENP and PNVi centre and East) than in the north or south (table 5).

Table 5. The percentage of polygons for the main threats allocated by the three regions of the GVL.

	North	**Central**	**South**
Poaching	15.7	20.0	7.0
Habitat loss	6.1	7.0	6.1
Crop-raiding	0.0	7.0	5.2
Predator-human conflict	0.0	7.0	0.0
Disease	0.0	1.7	0.9
Other	4.4	5.2	1.7

Looking at whether the participants thought that the threats were increasing or decreasing for the three regions of the GVL and for individual species, there are indications that in the central area threats are decreasing (probably because they have been severe and ICCN is now regaining control) but there are still a fair few threats increasing, in the north there are many increasing threats (mainly in DRC) but in the south the threats are more stable (table 6).

Table 6. Perceptions about whether threats are increasing stable or decreasing. The numbers represent the percentage of threats polygons.

	Much less	**Somewhat less**	**No change**	**Somewhat greater**	**Much greater**
North	3.3	16.7	30.0	16.7	33.3
Central	23.6	25.5	9.1	21.8	20.0
South	0.0	21.4	42.9	35.7	0.0
Buffalo	0.0	34.8	13.0	34.8	17.4
Chimp	0.0	30.8	30.8	38.5	0.0
Elephant	3.1	28.1	18.8	18.8	31.3
Gorilla	0.0	0.0	50.0	16.7	33.3
Hippo	0.0	0.0	26.7	33.3	40.0
Lappet-Faced Vulture	100.0	0.0	0.0	0.0	0.0
Lion	52.6	10.5	0.0	15.8	21.1
Rwenzori duiker	0.0	100.0	0.0	0.0	0.0
Sitatunga	60.0	0.0	40.0	0.0	0.0

Species such as buffalo, elephant and hippo are facing increasing threats whereas species such as Lappet-faced vulture, sitatunga and Rwenzori duiker face reduced threats. Note that this does not measure the magnitude of the threat, only how the threats are changing.

Perceptions of the severity of the threat varied between sites and between species (table 7). Lion and hippo are facing particularly severe threats at present, while gorilla, Lappet-faced vulture and Rwenzori duikers are facing substantial threats (mainly because any loss of individuals can have a substantial impact on small populations). Most of the categories where severity =none was where the animals crop raid but are not killed for doing so although this is potentially a threat if local people become too annoyed with them.

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Table 7. The percentage of threat polygons with varying severity scores.

	None	**Little**	**Substantial**	**Severe**
North	0.0	30.0	70.0	0.0
Central	12.7	36.4	32.7	18.2
South	0.0	40.7	44.4	14.8
Buffalo	0.0	69.6	26.1	4.3
Chimp	30.8	15.4	46.2	7.7
Elephant	9.4	40.6	40.6	9.4
Gorilla	0.0	0.0	100.0	0.0
Hippo	0.0	13.3	60.0	26.7
Lappet-Faced Vulture	0.0	0.0	100.0	0.0
Lion	0.0	15.8	47.4	36.8
Rwenzori duiker	0.0	0.0	100.0	0.0
Sitatunga	0.0	100.0	0.0	0.0

Next steps

These are preliminary analyses of Landscape Species in the GVL and were made somewhat hurriedly during the process of the workshop. There is a need to refine both the species list and also their distribution and threats to their existence. The species list with the criteria will first be circulated to other scientists and conservationists to obtain further input and identify possible additional species for consideration as landscape species. Following a refining of the list we will identify and select those that most need attention from wildlife managers (i.e. are suffering serious threats) and will start work on mapping their abundance within the landscape and where threats are occurring to them. These maps will be used to highlight key areas for management action in order to conserve the species.

Conclusions

In summing up Dr. Georges Mwamba of ICCN and Mr. Edgar Buhanga of UWA thanked all the participants for their efforts during the workshop. It was agreed that the Landscape Species approach was a useful tool for conservation and management planning and should be promoted within UWA and ICCN. It is a process that requires information that is often lacking and there is a need to support research on some of these species. The involvement of many partners will be needed to assure both protected area and species conservation. WCS was thanked for organising the workshop and sharing their expertise.

Appendix 1. Summaries from the field activities, both protected area authorities and NGOs.

1. Protected area authorities
Virunga Park – N. Mushenzi
The situation in Virunga Park is improving slowly. ICCN is able to negotiate with local politicians and has been successful in removing some of the people who have settled in the park. The security situation is also improving but some pockets of rebels still remain. Delimitation of the park is still seen as a priority activity as well as trying to reduce the poaching, particularly in the central and eastern sectors. Reducing the size of legal fishing villages and closing illegal ones is also a priority.

Over the past 8 months ICCN has been involved in patrols of the park, reclamation of land from people who have encroached to farm. 45 guards were trained by the WCS funded training in data collection with WWF. ICCN staff took part in the recent gorilla census of the Virunga Volcanoes and in the subsequent WCS/DFGFI plant and bird surveys of the same area. Tourism to mountain gorillas opened at Jomba and will be starting in April to the Rwenzori peaks.

Several difficulties and constraints exist: there is insufficient funds to do all that is needed and there is an urgent need to rehabilitate infrastructure in the park. There is a need to remove the military from the park while at the same time ensuring security. There is also a need for the local political authorities to work with ICCN and strengthen ICCN's activities. There is also an urgent need for salaries for all park staff.

There is a need to develop monitoring and research throughout the park, to find additional funds to support the financial and material needs of the park and also to look at possibilities of using one plane for the whole GVL.

Queen Elizabeth National Park – J-B. Nuwe
The coordinated patrols between UWA and ICCN have been taking place in October, November and February and succeeded in arresting 6 people burning charcoal, and recovering a pair of tusks. There have been some problems with communication along the boundaries but these are being resolved. The RDC Kasese and the Governor of Beni met recently about the Hema who have settled in PNVi and resolved to form a commission to address this problem.

Sharing of information between PNVi and QENP has been useful in reducing poaching in QENP. A poacher was arrested in Ishasha as a result.

It was recommended that collaboration between ICCN and UWA be strengthened and try to ease border restrictions for the two agencies, monitoring of wildlife trafficking is needed, monitoring transboundary poaching, educate customs officials.

Rwenzori Mountains National Park - N. Guma
Nelson Guma pointed out he was new to Rwenzori and had only been there 2 months. Recent patrolling with the army have shown no sign of rebel activity in the park and that the park is safe. UWA is using both ranger and joint patrols with the military to protect the park. A new warden monitoring and research has been deployed to the park, which will strengthen RBDC. The demarcation of the park boundary is 50% completed and pillar and live tree marking is following this. A general management concept plan has been produced and is being reviewed by senior management. Tourism is at about 40% of the 1990-95 visitor levels and tourism has increased since 2001 by 60%. Management challenges include ensuring the security of visitors, maintenance of trails and tackling the high demand for bamboo. Movements of livestock from Kabarole to Bundibugiyo are also an issue as are the land mines in the park.

Kibale-Semuliki parks – J. Masereka
Johnson Masereka was also new to the post and had been in Kibale 2 months. Semuliki had been insecure again in the last 6-8 months and UWA is working with the UPDF, UN and DSO's to ensure

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security for their staff. A major problem at the moment is the displaced people with their cattle who have come from DRC to the Toro-Semliki Wildlife Reserve. The President of Uganda had agreed to settle these people in the reserve despite the laws that exist against settling refugees at a border. Timber and the trafficking of Grey Parrots through the Bundibugiyo border is a major issue.

2. NGOs
Zoological Society of London – U. Ngobobo
ZSL recently opened an office in Goma (shared with WCS) but had been supporting activities in the PNVi before that. Over the last 8 months they supported training of rangers, supported the 'common pool' supported the surveys of plants and birds in the Virunga Volcanoes. They plan to undertake a bushmeat survey of the markets and movements of bushmeat in the region around the PNVi. This study would look at the commercialisation of the trade, markets, who is involved and where are the profits made. ZSL also plans to support ICCN in the future, particularly if successful in obtaining EU support.

Dian Fossey Gorilla Fund-Europe- Z. Chifundera
DFGF-E has been supporting the conservation of the Mt Tshiaberimu gorillas. This has involved monitoring the gorillas, looking at their ecology and behaviour, working with Max Plank to look at the genetics of these animals. In the last 8 months they have completed a botanical and herpetological survey of the mount and will be doing a survey in future of birds and small mammals. These will be compared with the 1933 surveys to see how things have changed. They have been working with communities around the forest to educate them on the need to protect the forest. They have been working with WWF/PEVi Kacheche to build a patrol post and work to ensure the corridor of park linking the mount to the rest of the park is protected. The last elephant seen in this part of the park was killed in 1995 but there is still a possibility they can return if the corridor is maintained.

Frankfurt Zoological Society – R. Muir
FZS started the support to gorilla conservation and in the past provided support to the park. They habituated the gorillas at Jomba and the chimps at Tonga. Support stopped before the war but has recently started again and they have opened an office in Goma. They have been scouting out what the needs are in the park before finalising their interventions and will be consulting with other partners to ICCN. From what they have seen though they want to support protected area operations by providing equipment and rehabilitating buildings, provide fuel and rations for patrols, improve radio communication, work on a general management plan and tourism plan with other partners, support ranger training and work with local communities to find alternative income generating activities.

International Gorilla Conservation Programme – A. Kayitare
While IGCP is involved in many projects, Anecto chose to focus on the Transboundary planning that will be taking place this year. In January 2004 the three Executive Directors of ICCN, ORTPN and UWA met to formalise Transboundary activities between themselves by signing an MOU. The objectives of the MOU were to: a) promote cooperative conservation of biodiversity across boundaries, b)promote landscape level ecosystems, c)advocate for integrated bioregional land use planning, d) have a common vision for Transboundary management, e) share resources, skills and experiences, f)enhance conservation benefits at a regional level, g)strengthen cooperation in monitoring and research, h) ensure conservation of biodiversity reduces poverty. A secretariat was created to develop a transboundary plan made up of each director and IGCP was asked to facilitate the planning process.

Dian Fossey Gorilla Fund-International – J-P. Shabantu
Historically DFGF-I has worked in Rwanda but more recently it has been involved in eastern DRC. In 1998 it helped establish the Tayna community reserve and is expanding this model to other places. Activities include the establishment of a research station at Kabara in the Virunga volcanoes, undertake gorilla research in Rwanda and DRC and use camera trapping techniques to identify new species for the parks. They are providing institutional support to ICCN in Goma and support joint patrols in the Virunga Volcanoes. A research project has been looking at the impacts of tourism on

Wildlife Conservation Society

gorillas, monitoring behaviour before, during and after tourists visit. They plan to repeat this study with groups in DRC. Urine and dung are being used to measure stress in gorillas.

World Wide Fund for Nature – P. Banza
Since 1999 PEVi Kacheche has been supporting ICCN with boundary demarcation, integrated natural resource management, capacity building and working with local communities. They have also been involved in biological surveys, collection of ground control points for maps and protection of vulnerable species (gorillas and chimps). Recently they have been working with a Solar cooker NGO in Uganda to look at using this technology to reduce fuelwood consumption in the PNVi, encouraged plantation establishment for fuelwood, have worked in a community forest, Mwenda, near Rwenzori mountains, and undertaken botanical inventories of this forest and the Lubilya corridor which was encroached. 24 signposts have been placed along roads and 98 GPS points collected for SYGIAP or on illegal activities. 51 km o boundary marker trees have been planted. 112 pygmies are being supported with education and they have been working with other partners to survey hippos (ZSL) and support salaries (UNF/UNESCO, IGCP, WCS, ZSL).

Wildlife Conservation Society – I. Owiunji
WCS has been supporting transboundary collaboration between UWA and ICCN in the GVL north of the southern sector of PNVi and Bwindi. This includes support to joint patrols, communication equipment, wardens meetings and supporting meetings between local politicians to resolve some of the settlement problems. WCS has also been involved in the gorilla and pant/birds surveys of the Virunga Volcanoes, supporting the development of monitoring and research plans in Uganda and supporting ranger-based monitoring training in both Uganda and DRC. Wardens of UWA were trained in DISTANCE analysis, wardens of ICCN and UWA were trained in MIST, and rangers in Uganda and ICCN were trained in data collection and use of GPS units. WCS is also providing computers for databases in Goma, Rwenzori and Kibale-Semuliki.

Mountain Gorilla Veterinary Project – J. Iyanya
MGVP is supported by the Morris Animal Foundation and is involved in monitoring gorilla health, providing medication and treatment to gorillas, conducting specific health studies and disseminating information about health issues. They have recently started a program of data collection by gorilla guides using hand-held computers to quantify the health status of the gorillas.

3. Research projects
Avian surveys – C. Dranzoa
 Dr C. Dranzoa at Makerere University (WARM) has been involved in avian surveys in the region. A lot is known about large herbivores but little about birds. Birds are good candidates for monitoring ecosystem health but have limited sources of funding for research. African Fish Eagles were surveyed in the mid 1970s along the Kazinga channel. A recent survey indicates they have declined greatly. There are indications that environmental pollutants may be responsible. There is a need to monitor species such as Grey Parrots which are being traded widely and are overwhelming UWEC. Other species that need monitoring include pelicans, marabous, other storks and Nahan's francolin.

MIKE – E. Nuwamanya
MIKE is involved in monitoring the elephant populations at selected sites in Africa and Asia of which Virunga and QENP are both sites. Training of ICCN and UWA staff in the use of the MIKE database took place last year and data are in the process of being collected. They recently facilitated ICCN and UWA to look at the ivory trade between the countries. MIKE is short of funds at present but hopes for EU funding in April 2005.

Elephants, Crops and People project – M. Keigwin
The ECP project has been monitoring elephants in the Ishasha sector of QENP since 1998. The border with DRC is monitored each week over a 35 km stretch and the composition of groups recorded. This area has the largest and most viable population of elephants in QENP with numbers rising above 1000 animals at times although more commonly numbers are 6-700. The population

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seems to be growing with many calves, as well as migratory elephants from DRC. The population structure is highly skewed to younger animals and few animals exceed 40 years old. Tusklessness is prevalent, and elephants remain under the canopy during the day making aerial counting difficult. It is recommended that seasonal surveys are made and that joint surveys with surveys in DRC are made to look at the population as a whole. Recently there has been an increase in gunfire and reports of elephant deaths in DRC across the Ishasha River. No elephants have been recorded moving to the north of Maramagambo to crop raid but they do raid around Ishasha.

Large Predators Project – L. Siefert
Few people believe the lion is threatened but the opposite is true. Lions are in great demand by tourists and should be a key species for management if tourists are helping pay for the costs of management. But lions also cause costs, and kill people or their livestock. They have important functions in that they select the ill ungulates and hence eliminate diseases, which can reduce veterinary costs to local communities. The lion project has been identifying individual lions, leopards and hyaenas, looking at population trends and risks to the populations. Also looking at the conflicts between local people and predators with UWA. About 67 lions occur in northern QENP, 20 in Kidepo and 5 hyaenas in both Kidepo and Lake Mburo with about 54 in northern QENP. Populations are therefore very small. Any disease such as Variant Canine Distemper, which occurred in Tanzania, could wipe out such small populations. Rabies is also a major threat. More recently tourism has become a major threat with tourists putting the lions in QENP under a lot of stress. Road kills along the main highway through the park have also killed several animals. Between 1999-2002 14 lions died in QENP out of the population of 67. But over 100 people have also been killed since 1990-1999, but most killed were drunk at the time. Looking at ways to reduce livestock loss around the parks and how to reduce lion-human conflicts.