



AFI MOUNTAIN WILDLIFE SANCTUARY QUARTERLY REPORT: JANUARY-MARCH, 2021



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Summary

This report presents results from ranger patrols of Afi Mountain Wildlife Sanctuary (AMWS) conducted from January to March 2021 by the Wildlife Conservation Society (WCS). It also describes activities implemented during the same period to raise levels of conservation awareness and improve local livelihoods. A total of 14 patrols were completed this quarter covering 511 kilometers over 98 patrol days (652 man-days). The patrols covered the Esekwe Camp, Base Camp, Nkayang-Kakubok, Katche-Asuben, Olum Hills, Njua Lowland, Katabang, Buanchor-Drill Ranch, and Ebakken-Boje-Asuben sectors of the sanctuary. One hunter was arrested and a shotgun and a bundle of snare wires were confiscated. A total of 243 wire snares were removed and six hunting camps were dismantled. In addition to hunting, 22 illegal farms were encountered, mostly in the Olum Hills area. Great apes were not sighted directly during this period, but 12 nest sites were observed: nine gorilla, two chimpanzee and one unidentified. Monkeys sighted include Mona monkey *Cercopithecus mona* (37 sightings), drill *Mandrillus leucophaeus* (24 sightings); and putty-nosed monkey *Cercopithecus nictitans* (22 sightings). Other large mammals recorded include yellow-backed duiker (*Cephalophus silvicultor*), red river hog (*Potamochoerus porcus*), African civet (*Civettictis civetta*), and blue duiker (*Philantomba monticola*). In addition to regular patrols of the sanctuary, “Gorilla Guardians” trained and supported by WCS surveyed adjoining community forests in the Bitiah-Kakwagom-Kakubok, Esekwe-Ndemechang, and Olum-Bubong areas to monitor gorilla presence. The Afi gorillas are known to occasionally move out of the sanctuary into these areas in search of food. Two gorilla nest sites were encountered in the Esekwe-Ndemechang forest by the Gorilla Guardians.

Activities implemented to raise awareness include great ape film shows in four villages reaching 914 people, six exchange visits between conservation clubs involving 645 students, six guided field trips, 10 community meetings and 10 school visits. A total of 160 customized notebooks designed to promote conservation of Cross River gorillas and forest elephants were distributed during the school visits.

This quarter WCS organized training in fire management for 84 cocoa farmers (54 male and 30 female) in four communities around Afi Mountain Wildlife Sanctuary (Buanchor, Olum, Esekwe and Kakubok). Training focused on prevention of bush fires and creation of effective firebreaks, using practical demonstration sessions.

Methods

Four to five patrols were completed per month each lasting 6-10 days. The patrols targeted hotspots of illegal human activities determined based on data from previous patrols and intelligence gathered from surrounding communities. Offenders encountered were arrested and all wire snares and hunting camps found were destroyed. Data were collected and analyzed using SMART software. The patrols covered the Esekwe Camp, Base Camp, Nkayang-Kakubok, Katche-Asuben, Olum Hills, Njua, Katabang, Buanchor-Drill Ranch, and Ebakken-Boje-Asuben axes sectors of the sanctuary (Figure 1).

Results

Patrol effort

Fourteen patrols were completed this quarter covering a total distance of 511.3 kilometers over 98 patrol days (652 man-days) (Figure 1; Table 1).

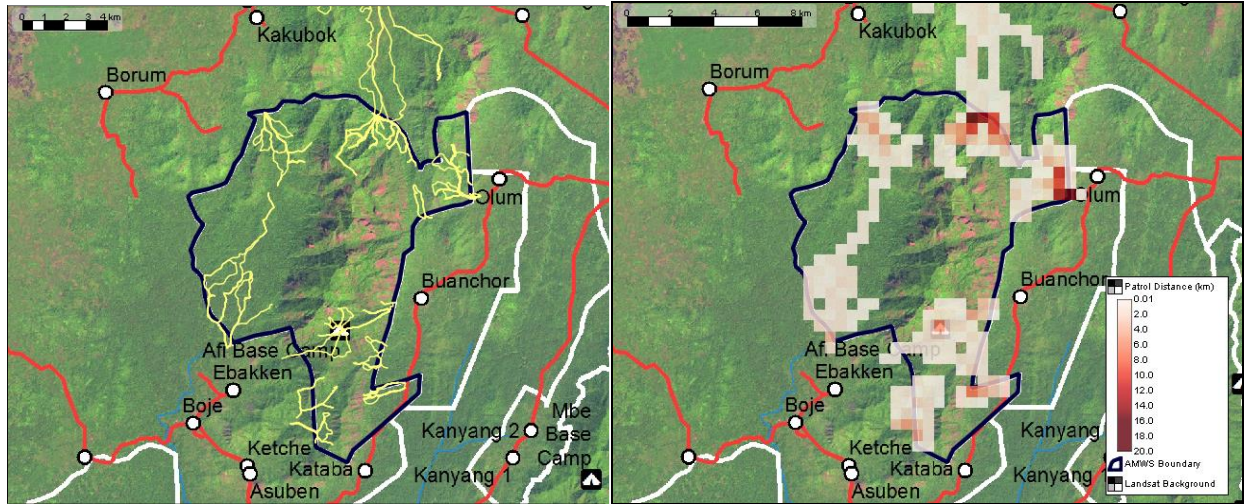


Figure 1. Patrol tracklogs and patrol effort in km walked per grid cell from January to March, 2021. Darker red color indicates areas of more intense patrol coverage.

Table 1. Summary of patrol effort by patrol area for the period January to March, 2021.

Area	Number of Patrols	Patrol Days	Patrol Hours	Distance (km)	Person - Days
Base Camp	1	7	48.6	21.5	35
Buanchor-Drill Ranch	3	22	143.8	75.0	122
Esekwe Camp	4	27	238.7	177.1	199
Esekwe Hills					
Kakwagom-Bitiah	1	5	36.3	37.3	25
Katabang Axis					
Ketyche-Asuben	1	8	45.3	35.9	53
Njua Lowland	1	7	43.9	50.1	42
Nkanyang-Kakubo	1	7	41.4	40.7	56
Olum Axis	2	15	126.3	73.7	120
Total	14	98	724.3	511.3	652

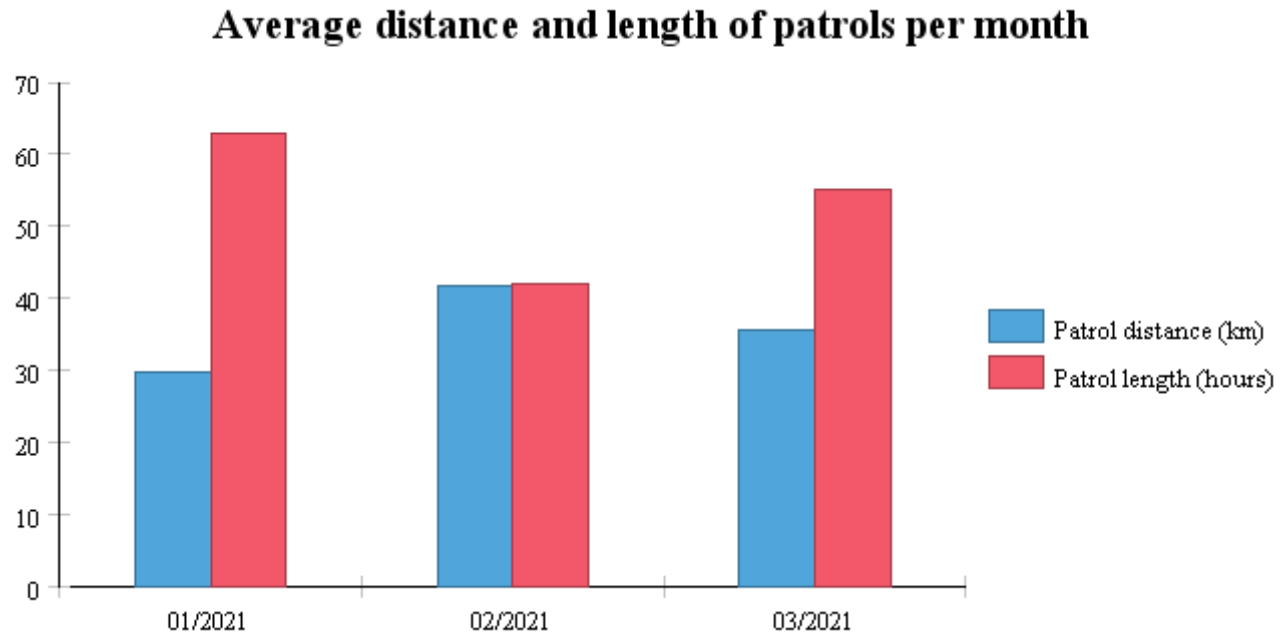


Figure 2. Average distance covered and time taken per patrol per month for the period January to March, 2021.

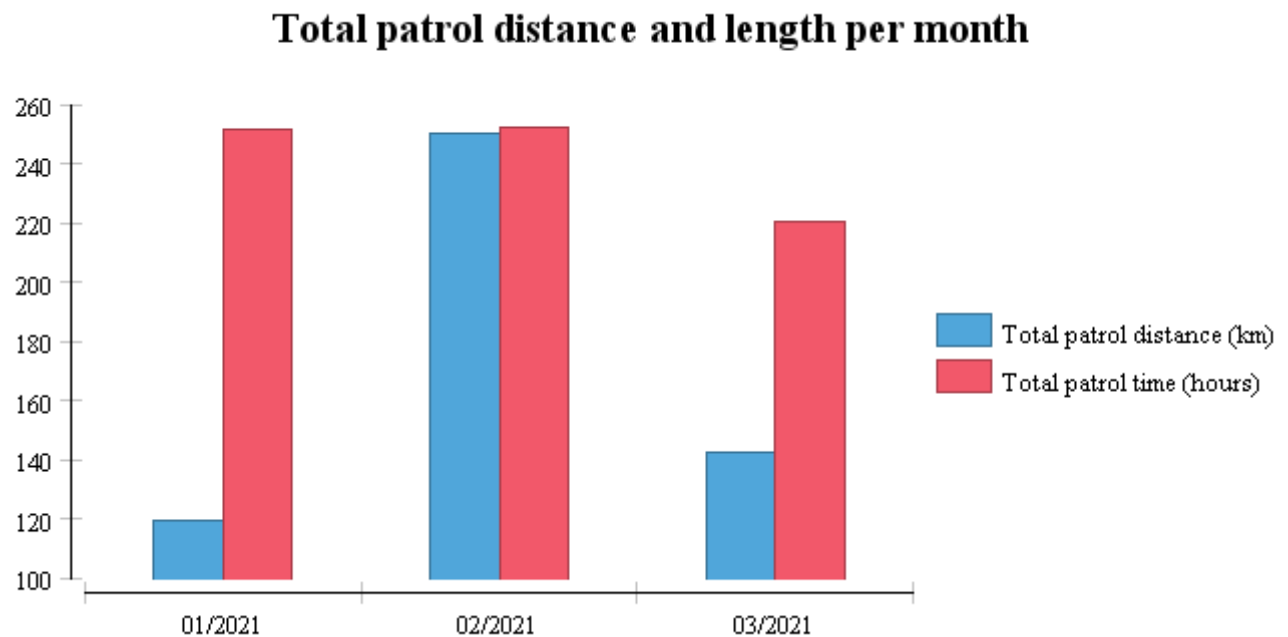


Figure 3. Total patrol distance and time per month for the period January to March, 2021.

Law Enforcement

Patrols this quarter removed 243 wire snares and dismantled six hunting camps (Table 5). One hunter was arrested in the Olum Hills area; three others seen escaped. A shotgun and snare wires were confiscated from the arrested hunter. Other signs of hunting observed include 103 empty cartridges and 12 gunshots heard (Table 5). Four new farms and several old farms were encountered (Table 4).

Table 2. Summary of arrests and other law enforcement for the period January to March, 2021.

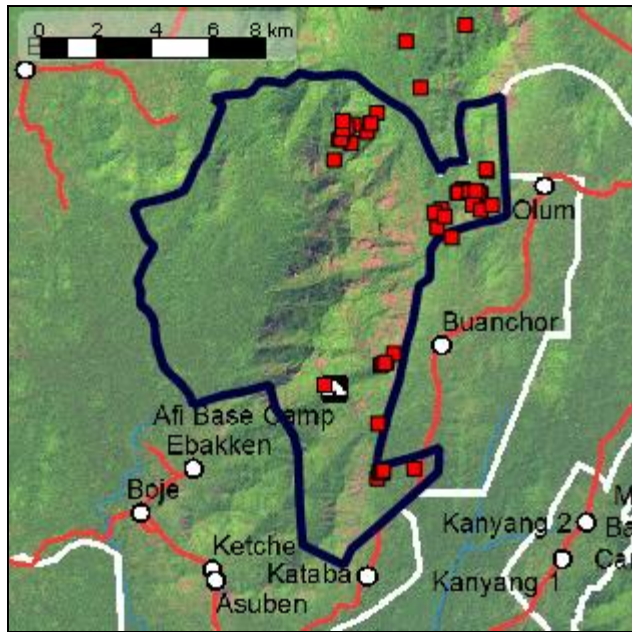
Station	Leader	Date	Action Taken - People	Home Village	Name	Threat
Kakwagom-Biti	Esekwe Gorilla Guardian	Feb 20, 2021	Verbal Warning	NA	NA	Trapping
Kakwagom-Biti	Esekwe Gorilla Guardian	Feb 21, 2021	Observed Only	NA	NA	Burning
Olum Axis	George Mgbang	Mar 23, 2021	Observed Only	NA	NA	Farming
Olum Axis	George Mgbang	Jan 27, 2021	Apprehended and reported	Olum	Esabe Oteh	Gun hunting

Table 3. Number of people seen as threat from January to March, 2021.

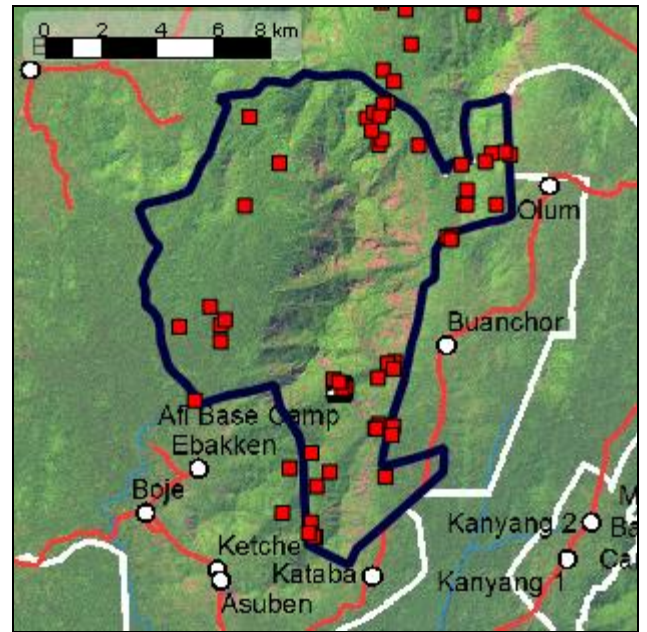
Threat	Number of People	Encounter Rate per km
Burning	1	0.002
Farming	1	0.002
Hunting	2	0.004

Table 4. Total encounter rates of signs of human activity from January to March, 2021

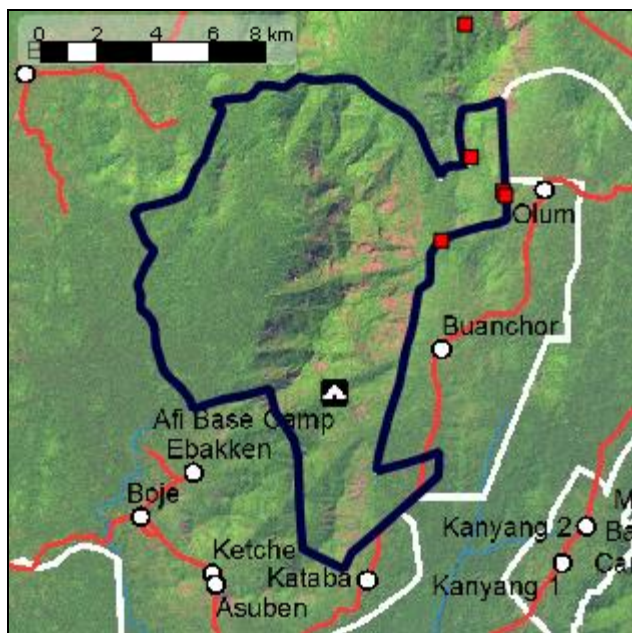
Activity	Number of Incidents	Encounter Rate per km
Domestic Animals		
Farming and Land Clearing	22	0.043
Gunshot heard	12	0.023
Human Sign	27	0.053
People seen	4	0.008
Shed or Camp	8	0.016
Traps, Weapons & Equipment	169	0.330



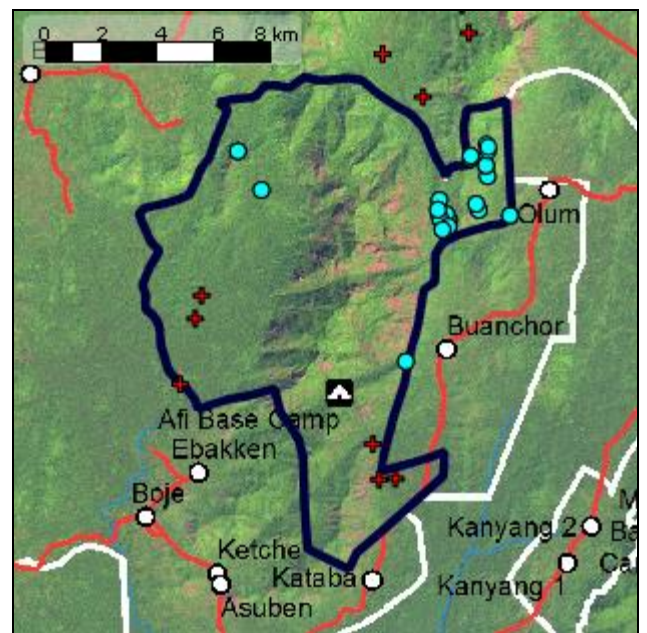
a) Wire snares



b) Empty cartridges



c) Sheds and camps



d) Farms (circles), gunshots heard (crosses)

Figure 4. Distribution of all signs of human activity recorded in January to March, 2021.

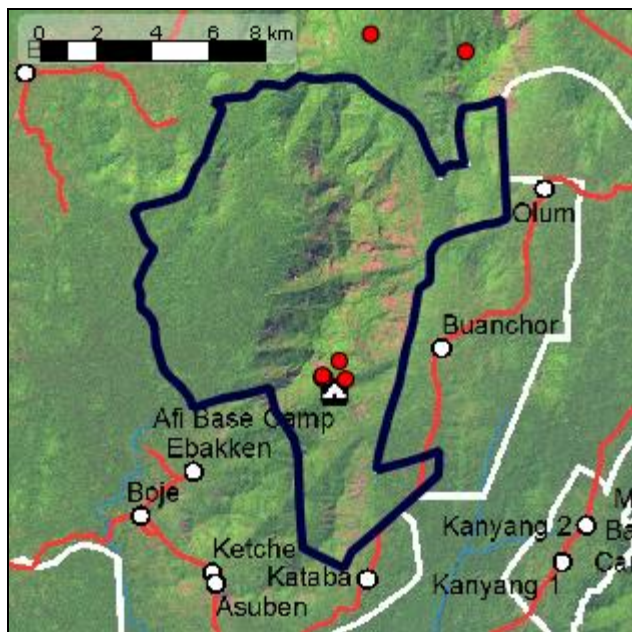
Table 5. Hunting signs recorded for the period January to March, 2021.

Sign	Number of Observations	Encounter Rate per km
Gunshots heard	12	0.023
Set wire snares	243	0.475
Unset wire snares	5	0.010
Empty cartridges	103	0.201
Hunting camps	6	0.012

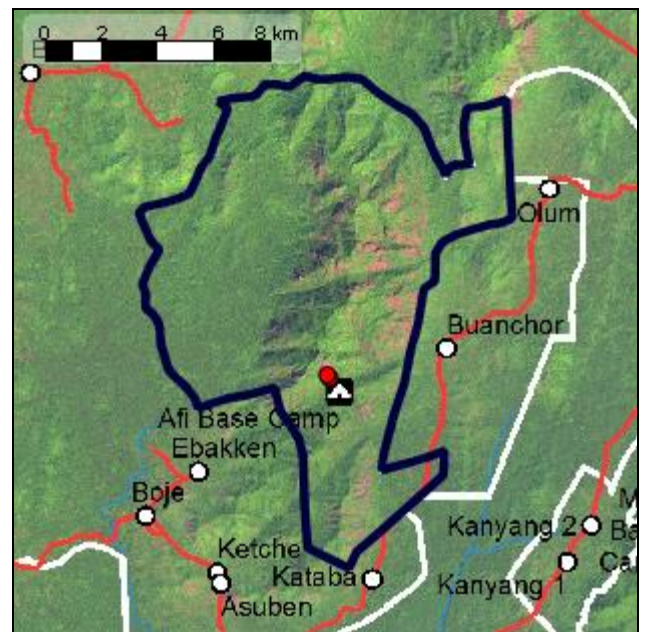
Wildlife Observations

Great apes

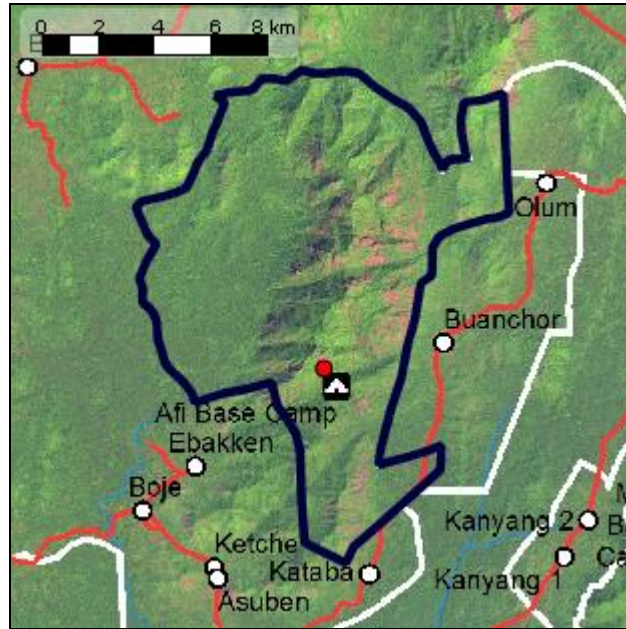
Great apes were not sighted this quarter, but 12 nest sites were observed: 9 gorilla (including two sighted by Gorilla Guardians in the Esekwe-Ndemechang axis of the sanctuary), 2 chimpanzee, and 1 unidentified.



a) Gorillas



b) Chimpanzees



c) Unidentified apes

Figure 5. Ape sightings and nest sites recorded from January to March, 2021. Nest sites shown as circles, sightings shown as crosses.

Table 6. Number and encounter rate of nest sites recorded for the period January to March, 2021.

Species	Number of nest sites	Encounter rate of nest sites per km
Chimpanzee	2	0.004
Gorilla	9	0.018
Unidentified great ape	1	0.002

Table 7. Nest sites recorded from January to March, 2021.

Species	Nest site type	Age of Sign	Dung present	Number of ground nests	Total number of nests
Chimpanzee	Night nest(s)	Recent	true	0	7
Chimpanzee	Night nest(s)	Recent	true	9	9
Gorilla	Day nest(s)	Fresh	true	0	1
Gorilla	Unknown	Old	true	1	1
Gorilla	Unknown	Recent	true	1	2
Gorilla	Night nest(s)	Recent	true	1	1
Gorilla	Night nest(s)	Fresh	true	4	4
Gorilla	Day nest(s)	Fresh	true	6	6
Gorilla	Night nest(s)	Fresh	true	1	1
Gorilla	Night nest(s)	Recent	true	4	4
Gorilla	Night nest(s)	Old	true	1	1
Unidentified great ape	Night nest(s)	Recent	true	8	8

Monkey sightings

Monkeys sighted this quarter include drill (*Mandrillus leucophaeus*), Mona monkey (*Cercopithecus mona*) and putty-nosed monkey (*Cercopithecus nictitans*). See Figure 5 and Table 6. Vocalizations were also heard frequently during the patrols, mostly drills.

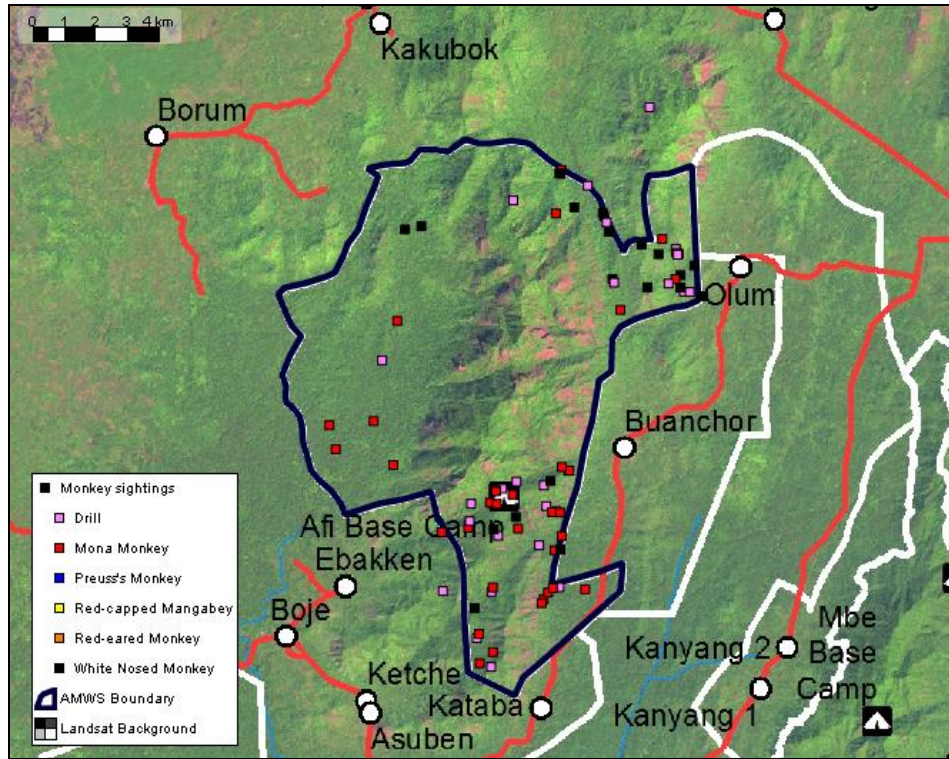


Figure 6. Monkey species observed for the period January to March, 2021

Table 8. Monkey species sighted from January to March, 2021.

Species	Number of observations	Encounter rate per km
Drill	24	0.047
Mona monkey	37	0.072
Putty-nosed monkey	22	0.043

Other Wildlife

Encounter rates of all the animal signs (including sightings) are presented in Appendix II below. Blue duiker (*Philantomba monticola*), brush-tailed porcupine (*Atherurus africanus*) and red river hog (*Potamochoerus porcus*) were the most frequently observed.

Visit of the Cross River State Forestry Commission Chairman and his team to Afi Communities

With support from WCS, the management of the Cross River State Forestry Commission (CRSFC) visited some AMWS communities including Boje, Buanchor, and Esekwe. Nearby communities were also supported by WCS to attend the meeting.

Some of the highlights of the meeting include:

- Reminder to all communities by the CRSFC that AMWS is still a protected area backed by the Cross River State Forestry Law and other extant laws;
- That anybody trespassing and carrying out any illegal activity including hunting, farming, logging, etc, does so at his/her own risk and if caught will be treated in line with existing laws including community laws;
- Support should be given to organizations such as WCS and Pandrillus who are investing their time and resources to protect AMWS;
- Communities present also highlighted some of their needs including:
 - government should be more responsible in the protection of AMWS including the surrounding forest as loggers have almost finished their forest
 - provision of alternative livelihood to support household that don't have where to farm
 - involvement of the youths in the protection of the forest as this will provide much-needed employment and reduce pressure on the forest.



Conservation Education and awareness

Exchange Visit

During this period, WCS facilitated six exchange visits between conservation clubs in Afi involving 645 students (Table 9). Exchange visits facilitate conservation knowledge and experience sharing among schoolchildren. The students were guided through various competitive activities such as conservation games, quiz competition and conservation drama designed to raise conservation awareness.

Table 9: School Exchange visits and number of participants

Date	Schools	Site	No of students
25/1/2021	Community Secondary School Irruan and Rev. Father Idaku Memorial College Bunyia	Afi	109
27/1/2021	Government Primary School Bitiah and Government Primary School Kakwagom	Afi	114
8/2/2021	Government Primary School Ebok and Migrant Primary School Ebranta	Afi	106
17/2/2021	Community Secondary School Olum and Community Secondary School Buanchor	Afi	112
19/3/2021	Government Primary School Bitiah and Primary School Kakwagom	Afi	118
19/3/2021	Primary School Nkanyan and Primary School Kakubok	Afi	86
Total			645



Exchange visits between Community Secondary School Buanchor and Community Secondary School Olum (right), and Adventist International Nursery/Primary and St Michael's International Nursery/Primary School Bateriko (left).

Field Trips

Field trips are a valuable way to connect young people to nature. They create lasting experiences that help inspire young people to value and support nature conservation. WCS regularly organizes field trips for conservation clubs at the sites where we work in Cross River to build that connection. This quarter, WCS organized six guided field trips for conservation clubs in Afi, with a total of 135 students participating (Table 10). The field trips provided pupils/students the opportunity to learn about the rainforest, threats to wildlife, and ongoing efforts to save species from extinction. WCS and CRSFC field staff shared their knowledge and experiences with the students during the field trips.

Table 10: Field trips organized for schoolchildren in Afi January to March 2021

Date	Schools	site	No of pupils/students
26/1/2021	Government Primary School Esekwe	Afi	20
27/1/2021	Community Secondary School Irruan	Afi	25
6/2/2021	Government Primary School Ebok	Afi	24
12/2/2021	Community Secondary School Buanchor	Afi	20
15/3/2021	Government Primary School Enyi	Afi	22
16/3/2021	Government Primary School Buanchor	Afi	24
Total			135



Field trip with Community Secondary School Irruan

School Visits

WCS education staff visited 10 schools to create conservation awareness (Table 11). Lessons and outdoor activities were organized to teach the children about conservation and natural resource management. Other activities conducted include visit to logging sites, quiz competition and conservation games including puppet show. A total of 160 customized notebooks produced to promote conservation awareness for forest elephants were distributed to conservation club members and teachers. Posters were distributed during the visits to raise awareness and support for watershed protection.

Table 11: Schools visited in Afi January to March 2021

Date	School visited	Site	Notebooks distributed
25/1/2021	Rev. Father Idaku Memorial Academy Bunyia Irruan	Afi	15
25/1/2021	Community Secondary School Irruan (EBONA)	Afi	15
25/1/2021	Government Primary School Esekwe	Afi	15
8/2/2021	Government Primary School Ebok	Afi	15
8/2/2021	Migrant Primary School Ebranta	Afi	15
8/2/2021	Pope John Paul Primary School Enyi Boje	Afi	15
8/2/2021	Community Secondary School Boje	Afi	15
17/2/2021	Community Secondary School Olum	Afi	15
15/3/2021	Government Primary School Enyi	Afi	20
16/3/2021	Primary School Kache-Asuben	Afi	20
Total			160



Pupils of Primary School Bateriko during a school visit

Film Shows

Great Apes films were presented in four communities in Afi during this quarter to create conservation awareness (Table 12). The films were viewed by a total attendance of 914. Threats such as farm encroachment, illegal logging, bush burning, river poisoning and hunting were discussed at the end of the films.

Table 12: Villages and schools in Afi visited for film show and estimated number of viewers

Date	Name of Community	Site	Attendance
22/1/2021	Mbanya-Buanchor	Afi	118
23/1/2021	Katabang	Afi	96
25/1/2021	C.S.S Irruan (EBONA)	Afi	120
26/1/2021	Bitiah	Afi	300
30/1/2021	Olum	Afi	101
7/2/2021	Ebok	Afi	149
18/2/2021	Kakubok	Afi	81
22/2/2021	Nkanya	Afi	101
23/1/2021	Kakwagom	Afi	250
14/3/2021	Asuben	Afi	200
15/3/2021	Enyi	Afi	145
20/3/2021	Bitiah	Afi	81
21/3/2021	Primary School Nkanyan	Afi	190
Total			1932



Film show for students of Community Secondary School Irruan

Community Meetings

During this period, WCS facilitated 10 community meetings in Afi (Table 13) including one with the Paramount Ruler of Boki and other community chiefs, representatives of the Cross River State Forestry Commission, WCS, and Pandrillus that held in Olum. The meetings discussed the various threats to the sanctuary including hunting, farm encroachment, illegal logging and bush burning, with a particular focus on the increasing illegal logging in the sanctuary and the adjoining Afi River Forest Reserve. A reported case of the killing of a drill monkey in the sanctuary was also discussed with investigations ongoing to arrest and prosecute the culprit identified as a hunter from Buanchor village.

Table 13. Villages visited in Afi January to March 2021 and attendance

Date	Community	Site	Attendance
26/1/2021	Esekwe	Afi	19
27/1/2021	Bitiah	Afi	21
31/1/2021	Olum	Afi	11
6/2/2021	Ebok	Afi	20
7/2/2021	Ebranta	Afi	19
13/2/2021	Buanchor	Afi	97
21/2/2021	Kakwagom	Afi	20
23/2/2021	Nkanya	Afi	30
15/3/2021	Enyi	Afi	20
16/3/2021	Asuben-Boje	Afi	19
Total			276

Support to improved local livelihood

The quarter WCS organized training in fire management for 84 cocoa farmers (54 male and 30 female) in four communities around Afi Mountain Wildlife Sanctuary (Buanchor, Olum, Esekwe and Kakubok). Training focused on prevention of bush fires and creation of effective firebreaks, using practical demonstration session sessions.

Acknowledgements

We are grateful to the Great Ape Conservation Fund of the United States Fish and Wildlife Service who have constantly provided financial support to the WCS Nigeria program. We also appreciate the funding from Critical Ecosystem Partnership Fund (CEPF), Kolmården Zoo, AZA, Zoo New England, and Dutch Gorilla Foundation. WCS is formally registered in Nigeria with the Ministry of Budget and National Planning of the Federal Republic of Nigeria. The Government of Cross River State is also appreciated for giving WCS the enabling environment to operate. WCS works at Afi Mountain Wildlife Sanctuary in collaboration with the Ministry of Climate Change and Forestry and the Cross River State Forestry Commission.

Recommendations

- The lack of presence of the CRSFC on the ground at Afi weakens law enforcement efforts, and may be one of the reasons why law enforcement activities are being resisted by communities.
- Lack of prosecutions of arrested defaulters is encouraging communities to perpetrate illegal activities in the sanctuary. The CRSFC should take action to prosecute arrested offenders.
- Decisive action is needed to deal with the problem of farm encroachment at Afi. Numerous farms were seen in the sanctuary during patrols this quarter.
- There is need to have a camp (permanent or temporary) in the Kakubok axis of the sanctuary to deal with the increasing illegal activities in the area.
- Regular meetings between stakeholders increasing the CRSFC, Ministry of Climate Change, Boki LGA, communities around AMWS is encouraged to generate interest and support.
- The existing synergy between the WCS law enforcement, education and livelihood teams should be strengthened and sustained.
- The sanctuary boundary should be cleared regularly to facilitate law enforcement, as most people seen in the sanctuary claimed ignorance of the sanctuary boundary, which is overgrown in many places.
- In addition to clearing, signposts should be placed at strategic locations along the boundary with information on prohibited activities to reduce illegal activities.
- Prosecution is key to reducing illegal logging in and around the sanctuary. The CRSFC should arrest and prosecute defaulters to discourage illegal logging.
- Forestry checkpoints on the roads should be established within logging hotspots around the sanctuary to complement the work of rangers.
- The Boje forest office that was moved from Boje to Ntamante during the Boje crisis with Eso-Bendeghe should be moved back to Boje as peace has been restored.

Appendix I. Patrol effort statistics from January to March, 2021.

Date	Number of Patrols	Distance (km)	Number of Hours	Number of Rangers
2021-01-13	2	8.1	15.2	13
2021-01-14	2	10.2	15.6	13
2021-01-15	2	8.9	25.6	13
2021-01-16	2	6.5	31.6	13
2021-01-17	2	12.6	22.0	13
2021-01-18	2	7.7	16.8	13
2021-01-19	2	6.5	14.3	13
2021-01-24	2	8.9	13.9	13
2021-01-25	2	8.7	17.1	13
2021-01-26	2	10.2	16.6	13
2021-01-27	2	9.7	16.8	13
2021-01-28	2	6.8	16.5	13
2021-01-29	2	6.3	15.5	13
2021-01-30	2	8.1	14.1	13
2021-02-10	2	8.2	12.1	12
2021-02-11	3	25.3	21.3	17
2021-02-12	3	19.9	21.6	17
2021-02-13	3	26.7	21.4	18
2021-02-14	3	12.0	20.8	18
2021-02-15	3	19.8	20.8	18
2021-02-16	2	9.8	12.5	13
2021-02-20	3	19.0	17.0	18
2021-02-21	3	20.3	18.3	18
2021-02-22	2	16.4	14.1	13
2021-02-23	3	22.6	21.1	18
2021-02-24	3	22.0	18.4	18
2021-02-25	2	11.5	11.8	13
2021-02-26	2	9.3	14.1	13
2021-02-27	1	7.3	6.9	6
2021-03-10	2	10.5	11.8	14
2021-03-11	2	10.8	9.8	14
2021-03-12	2	7.6	10.1	14
2021-03-13	2	11.2	13.8	14
2021-03-14	2	7.6	14.2	14
2021-03-15	2	7.6	14.2	14
2021-03-16	2	10.4	13.7	14
2021-03-17	2	10.7	10.8	14
2021-03-22	2	12.6	14.2	14
2021-03-23	2	8.1	15.5	14
2021-03-24	2	8.1	15.2	14

Date	Number of Patrols	Distance (km)	Number of Hours	Number of Rangers
2021-03-25	2	7.3	16.7	14
2021-03-26	2	7.4	16.8	14
2021-03-27	2	8.0	16.9	14
2021-03-28	2	5.7	13.0	14
2021-03-29	2	8.6	13.8	14

Appendix II. Encounter rate of wildlife species observed during patrols from January to March, 2021. Species not encountered during patrols are not shown.

Species	Number of observations	Encounter rate per km
Blue duiker	<i>Philantomba monticola</i>	0.886
Brush-tailed porcupine	<i>Atherurus africanus</i>	0.657
Red river hog	<i>Potamochoerus porcus</i>	0.647
Drill	<i>Mandrillus leucophaeus</i>	0.487
Mona monkey	<i>Cercopithecus mona</i>	0.403
Mongoose	<i>Crossarchus spp.</i>	0.274
Yellow-backed duiker	<i>Cephalophus silvicultor</i>	0.256
Unidentified monkey	-	0.248
White-nosed monkey	<i>Cercopithecus nictitans</i>	0.240
Bay duiker	<i>Cephalophus dorsalis</i>	0.176
African civet	<i>Civettictis civetta</i>	0.137
Cane rat	<i>Thryonomys swinderianus</i>	0.115
Cross river gorilla	<i>Gorilla gorilla diehli</i>	0.084
Tree pangolin	<i>Phataginus tricuspis</i>	0.078
Nigeria-Cameroon chimpanzee	<i>Pan troglodytes ellioti</i>	0.059
Palm civet	<i>Nandinia binotata</i>	0.051
Unidentified large duiker	-	0.031
Rock fowl	<i>Picathartes oreas</i>	0.025
Unidentified medium duiker	-	0.020
Genet	-	0.018
Unidentified small duiker	-	0.014
Unidentified great ape	-	0.010

Appendix III. Ranger work time January to March, 2021.

Name of Ranger	Category of Ranger	Number of Patrols	Number of Patrol Days	Number Patrol Hours	Total Patrol Distance (km)
Alphonsus Oweh	WCS community ranger	8	52	390.0	262.2
Anthony Osang	WCS community ranger	6	44	281.5	182.5
Bernard Akpa	WCS community ranger	6	44	371.3	230.7
David Otu	WCS community ranger	6	44	281.5	182.5
Donald Ojie	WCS community ranger	7	45	288.4	186.2
Gorilla Guardian (Esekwe)	WCS Gorilla Guardian	2	10	71.4	98.3
Etta Joseph	WCS community ranger	6	44	281.5	182.5
George Mgbang	WCS community ranger	6	44	371.3	230.7
Henry Achua	WCS community ranger	6	44	371.3	230.7
Gorilla Guardian (Katabang)	WCS Gorilla Guardian	4	26	193.0	178.4
Gorilla Guardian (Ofambe)	WCS Gorilla Guardian	2	10	71.4	98.3
Gorilla Guardian (Okiro)	WCS Gorilla Guardian	2	10	71.4	98.3
Gorilla Guardian (Olum)	WCS Gorilla Guardian	2	10	71.4	98.3
Patrick Bankong	WCS community ranger	6	44	371.3	230.7
Patrick Kejie	WCS community ranger	6	44	281.5	182.5
Peter Nsan	WCS community ranger	7	49	398.6	254.4
Philip Ashijua	WCS community ranger	6	44	371.3	230.7
Vincent Ayang	WCS AMWS project manager	6	44	371.3	230.7