REPORT ON A SURVEY OF THE AKARA RIVER

FOREST RESERVE

BY

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DEPARTMENT OF GAME
POST OFFICE BOX
MINISTRY POST OFFICE
ACCRA
Introduction

The Ankasa River Forest Reserve was inspected and surveyed on request of the Chief Game and Wildlife Officer (Ref. No. CGW/31/Vol.II/I15). The objective of this survey was to collect information on assets and liabilities, access roads, current operations in the area, wildlife etc. in view of a future constitution of the area as a National Park.

The area was visited on two occasions. The first survey was conducted from March 1 to 5, by a team consisting of Dr. C. Martin, Game Warden, Mr. M.O. Okyir, Assistant Game Warden, Mr. F.A. Kpodua, Game Ranger and two labourers. The second survey took place from May 18 to 21, 1976 by a team consisting of Dr. C. Martin, Mr. F.A. Kpodua, Mrs. A. Marz and two labourers. The departmental Toyota-Landcruiser GX 6897 was used for transportation from Assompaneye to the Ankasa River Forest Reserve and back on both occasions. Prior to the first survey the Chief Technical Officer Forestry Department in Takoradi visited the Reserve for background information on the Reserve. Further information was supplied by the Forest Ranger stationed in Azin.

The base from where surveys in the Reserve were carried out was set up at Nkwanta, the only settlement situated inside the Reserve. A tent served as accommodation for part of the survey team, the others were given free accommodation at Nkwanta. The Reserve was surveyed on one-day trips into the eastern, western, northern and southern parts of the Reserve starting from Nkwanta. Old caterpillar tracks in the vicinity of this settlement and hunter's tracks compartment lines in more distant areas were used for locomotion. A line was cut for about 2 miles into the northern part of the Reserve beyond the Suhiem-River where no trails were available. Two hunters from Nkwanta served as guides on all journeys through the Reserve. All wildlife as well as other features encountered while walking through the forest were recorded. A total of 3 random samples of the vegetation were taken in the north, south and west of the Reserve. A considerable amount of information could be gathered from the people of Nkwanta, particularly from Edole Kuo, the old man of the settlement.
Location and History

The Ankasa River F.R. is located between latitudes 5° 10' and 5° 25' north and longitudes 2° 52' and 2° 45' west and comprises an area of 212 square miles of which 0,617 square miles are admitted farms. The Reserve is demarcated by boundary lines which are regularly cleaned by the staff of the Forestry Department. A total of 13 boundary pillars mark the edges of the reserve. The Ankasa River F.R. on its southeastern side is adjacent to the Draw River Forest Reserve. In the northeast the boundary follows the Mini-River up to about 2 miles of the confluence with the Tano-River. In the northwest the boundary follows a line parallel to the Tano River in a distance of about 2 miles south. The Ankasa River forms the boundary of the Reserve on part of its length in the south (see attached map). The Reserve was noticed in September 1931 and demarcation of boundaries were completed in 1933. There were some disputes as to the ownership of land for the blocks A and B which are dealt with in the "Record of Proceedings and Judgement in the proposed Ankasa River Forest Reserve" by C.H. Cooke Esq. C.I.E., 1955. The remaining area was reserved as the Ankasa River (Main Block) Forest Reserve. The Chief Technical Officer in Tarkwa did not know of any other proceedings concerning the Reserve since that date. In fact the information which was available from the Forestry Department on the area was rather limited. This Department made the impression to be poorly organised and informed at least what concerned the Ankasa River Forest Reserve. Only 4 Forest Guards are permanently stationed around the Reserve, which are mostly busy with cleaning boundary or compartment lines.

Access Roads

There is only one road leading directly into the Reserve. This road branches from the main inland road Agbim-Half Assini at Mpataba and crosses the reserve boundary and the Ankasa River approximately 9 miles from Mpataba. Thence it leads into the Reserve on a north bearing for about 5 miles up to within half a mile of the Nwanta village in the centre of the Reserve. Thence the road turns towards west and continues on a west bearing up to Elubo, a border-town approximately 3 miles to the west of the Forest Reserve boundary. Due to numerous streams and swampy places the road has...
been raised on most of its course through the Reserve. There seems to exist a project which intends to enlarge this road into an international road from Ivory Coast. On the Survey of Ghana maps 1: 62'500 and 1: 250'000 there is a road indicated linking the Mwanta-village with Tanosa on the Tano-River in the north. No traces of this road could be found. It seems to be either an artefact or has deteriorated since the land survey of 1923.

Human Settlements and Farming

On the Ankasa River Forest Reserve Progress map, 1971 of the Forestry Department 18 admitted farms are indicated within the Reserve boundaries with a total surface of 0,617 square miles. None of these farms exceeds an area of approximately 1/10 of a square mile except the farm of the Mwanta village. They are all situated along the southern boundary and along the road between the bridge over the Ankasa-River and the Mwanta village. According to the information from the Chief Technical Officer, Forestry Department there is no illegal farming within the Reserve boundaries besides those admitted farms. By far the largest farm in the Reserve belongs to the Mwanta village, the only settlement in the Reserve. It is a small village of 9 huts with about the same number of kitchens and a population of 50-60 persons. The settlement was established in the 1930ies by Edel Kwao, a man now in his 60ies, who is still living in Mwanta with his extended kindred and a number of new-comers. Edel Kwao was initially attracted by the abundance of bush meat in the area, which he used to sell on local markets in Mpata and neighbouring villages. Only later did he take to farming also. Yet, hunting remained a major source of income as will be shown later. The main products from farming of the people of Mwanta are coconuts and cassava. It is their cash crop and sold chiefly in Elubo. Besides these crops little else is cultivated. Gooyam and plantain are in short supply and not sufficient even for the small population of Mwanta. Though not all land allotted to this settlement has as yet been cleared, the old man, Edel Kwao, is making efforts to get more land for farming from the Forestry Department.

Assets and Liabilities

Land owning stools for the Reserve are Mpon, Naba, Tukobo II, Mpataha, Samengyi, Ezuri, Naurese and Elubo. According to the Forest Ranger in Axin the land is under the jurisdiction of the paramount chief of Boyin.

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Holder of all timber concessions for the Reserve is Mr. George Grant jun. Concessions in Block A were leased to Messrs. Mengels (W.A.) Ltd. in the 1950's. Another subcontractor, Mr. Said & Co., was felling from 1974 to 1975.

Admitted unrestricted communal rights are hunting, fishing and snail collecting as well as unrestricted use of fuel wood. Permits will be issued free by the Forestry Department for digging and gold washing as well as collection of minor forest produce. Permits will be issued on payment of royalties for cutting and extraction of silk cotton trees for canoes and palm trees for palm wine.

Tectonics and Vegetation

The whole of the Ankasa River F.R. is rugged to hilly. Altitudes vary between 50 and 450 ft above mean sea level. The Reserve is drained by a multitude of small rivulets and streams. At least three sizeable and perennial rivers flow through the Reserve or form the boundary of it: The Mini-River which forms the north eastern boundary; the Sulien-River which crosses the Reserve from east to west; and the Ankasa River which forms part of the southern boundary and drains the southeastern part of the Reserve. All three rivers are tributaries of the Tano-River. When walking through the Reserve it is hardly ever possible to move on even ground. Dense Raphia palm swamps along rivulets alternate with lighter forest on the hilltops. The soil is of a loamy texture and classified as "forest oxisol".

The vegetation of the Ankasa River F.R. has been classified as the Cynometra-Lophira - Tarrieta association by TAYLOR (1960). The Reserve falls into the distribution zone of true Tropical Rain Forest. Average annual rainfall according to the Survey of Ghana, 1961, is between 70 and 80 inches. The undergrowth is continuous and dense particularly on the bottom of valleys and ravines, entanglements of climbers and vines of Raphia palms hinder the locomotion. Trees with stilt-roots are common. However, the top canopy is rarely closed and considerably lower than in the more northern forest zones. Trees rarely reach a height of 50 metres. The composition of the tree vegetation was randomly sampled in three places using the "point-centered quarter method" by COTT.M AND CURTIS (1956).
This method involves measurement of the distance to the nearest trees in each of the four quarters around a sample point. The quarters are given by the compass line of traverse along which the sample points are distributed in regular intervals. The diameter and species of the four nearest trees to the sample points are recorded also. From the distances the density of trees and single species trees per area may be calculated: 

\[ D = \frac{1}{d} \]

where \( D \) = Density per area, \( d \) = mean distance to nearest individual.

In this case only trees with diameters above 1 ft above the buttresses were considered. Distances to nearest trees were measured in steps and later transformed to metres. In general less than 40 quarter distances are required to yield a standard error of less than 4.6% of the mean.

The first sample was taken along a compartment line 1 mile northwest of Mwanta, the second sample was taken along a compartment line east of Mpataba-Mwanta road in the southern part of the Reserve, and the third sample along a line cut into the northern part of the Reserve, north of the Shilim-River. The data from these three samples are compared with two random samples from lines near Camp 2 and Camp 3 in Bia National Park which is known to be a valuable timber area.

The subjective impression of the Ankasa River F.R. was confirmed by these samples (Tab. 1); The forest is composed of more individual trees above 1 ft diameter per area (65.7 trees per ha) than in the Bia National Park (37.3 trees per ha). The average stem diameter of trees above 1 ft diameter is, however, less with 58.6 cm in the Ankasa River F.R. than in the Bia National Park (67.0 cm). In other words; The forest is composed of more, but thinner trees per area. Remarkable is the fact, that the percentage of trees belonging to timber class I and II is considerably lower in the Ankasa River F.R. (3.5% class I and 2.5% class II) as compared to the Bia National Park (11.5% class I and 11.5% class II). Tab. 2 shows the percentage of species comprised in the three samples. According to TAYLOR (1960) in an area of 120 acres about 90 trees species are represented in the Ankasa River F.R. Apart from the fact that the Reserve is difficult to exploit due to the rugged surface, the value of the forest in terms of timber is considerably lower than in Bia National Park. There are less timber species per area and they do not reach the same diameters as in Bia National Park. This contributes to the generally lower top canopy of the forest.
According to TAYLOR (1960) the marked scarcity of Entandrophragma and Khaya in parts of the Ankasa River F.R. is due to exploitation which began in 1891 in the area of the tropical rain forest. Such forest was (formed) depleted forest" by RICHARDS (1952). This may, however, apply to a small part of the Reserve. Most of the areas remained untouched so far. All three random samples taken (Tab. 1) show the same tendency. Since the whole of the Reserve is rugged and hilly it seems likely that these samples are representative for the whole of the Ankasa River F.R. An economical timber-exploitation of the area, even if the Reserve would be less rugged and easier accessible, seems therefore hardly possible.

Timber Operation

Apart from the timber operations which are mentioned by TAYLOR (1960) to have taken place in the Ankasa River F.R. after 1891, the subcontractor Messrs. Mengels (W...) Ltd., was felling for the concession holder, George Grant, in the 1950ies in the southern part of the Reserve. Mr. Said & Co., did some salvage felling of trees above 7 ft diameter for the same concession holder in 1974/75. Timber operations were subsequently discontinued.

Hauling tracks leading from the Npehala-Mwanta road into the southern part of the Reserve, east of the road, give evidence of past timber operations. Hauling tracks lead also upto about 1 mile to the east and west of Mwanta.

Compartment lines extend through the south and east of the Reserve, but not to the north of the Suhien-River. Due to the rugged surface hauling tracks are mostly steep and improvised passages made out of logs were constructed across the numerous streams and swampy places. Caterpillars left half-meter deep scars in the soft lumpy soil. Due to the rugged surface and soft soil the transportation of logs to the main road obviously was problematic, which is shown by numerous logs marked "GG" (George Grant) left along hauling tracks. Parts of machinery and broken-down timber lorries and caterpillars in Mwanta show further evidence of a fruitless attempt to exploit the Ankasa River F.R. According to the information received from the Chief Technical Officer, Forestry Department Ankasa there are no further plans for the future exploitation of the Reserve. However,
Table I  Vegetational sta from random samples collected in the Ankasa River F.R., and Bia National Park using the point-centered quarter method by CONTAM and CURTIS (1956)

<table>
<thead>
<tr>
<th></th>
<th>Indiv. above 1 ft diameter per ha.</th>
<th>Average stem diameter of trees above 1 ft. diameter (cm)</th>
<th>Percentage belonging to timber class I</th>
<th>Percentage belonging to timber class II</th>
<th>Percentage belonging to timber class III &amp; IV</th>
<th>Number of trees sampled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ankasa North</td>
<td>39.1</td>
<td>65.3</td>
<td>2.1</td>
<td>2.1</td>
<td>95.6</td>
<td>48</td>
</tr>
<tr>
<td>South</td>
<td>78.0</td>
<td>52.2</td>
<td>2.5</td>
<td>3.8</td>
<td>95.7</td>
<td>80</td>
</tr>
<tr>
<td>West</td>
<td>74.6</td>
<td>60.6</td>
<td>5.6</td>
<td>1.4</td>
<td>95.0</td>
<td>72</td>
</tr>
<tr>
<td>Total Sample</td>
<td>65.7</td>
<td>58.6</td>
<td>3.5</td>
<td>2.5</td>
<td>94.0</td>
<td>200</td>
</tr>
<tr>
<td>Bia Camp 2</td>
<td>44.1</td>
<td>56.7</td>
<td>13.2</td>
<td>9.7</td>
<td>75.4</td>
<td>72</td>
</tr>
<tr>
<td>Camp 3</td>
<td>33.1</td>
<td>74.7</td>
<td>10.5</td>
<td>13.5</td>
<td>75.1</td>
<td>96</td>
</tr>
<tr>
<td>Total Sample</td>
<td>37.3</td>
<td>67.0</td>
<td>11.9</td>
<td>11.9</td>
<td>76.2</td>
<td>168</td>
</tr>
</tbody>
</table>

\[\text{\ldots/3}\]
Table 2. Percentage of single species comprised in a random sample of 200 trees in the Ankasa River F.R.

<table>
<thead>
<tr>
<th>Species</th>
<th>Percentage</th>
<th>Species</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afzelia africana</td>
<td>0.5</td>
<td>Entandrophragma angolense</td>
<td>1.0</td>
</tr>
<tr>
<td>Afzelia bella</td>
<td>5.0</td>
<td>Entandrophragma candolli</td>
<td>0.5</td>
</tr>
<tr>
<td>Albizia adianthifolia</td>
<td>0.5</td>
<td>Fagara macrophylla</td>
<td>1.5</td>
</tr>
<tr>
<td>Aningeria robusta</td>
<td>0.5</td>
<td>Funtumia africana</td>
<td>2.0</td>
</tr>
<tr>
<td>Anogeissus leiocarpos</td>
<td>0.5</td>
<td>Funtumia elastica</td>
<td>1.0</td>
</tr>
<tr>
<td>Aubrevillea korstenii</td>
<td>0.5</td>
<td>Guibourtia olea</td>
<td>0.5</td>
</tr>
<tr>
<td>Baphia nitida</td>
<td>1.0</td>
<td>Khaya anthotheca</td>
<td>2.5</td>
</tr>
<tr>
<td>Bilharia repida</td>
<td>0.5</td>
<td>Lophira alata</td>
<td>2.5</td>
</tr>
<tr>
<td>Bussea occidentalis</td>
<td>5.5</td>
<td>Monodora myristica</td>
<td>1.0</td>
</tr>
<tr>
<td>Capparis crythrocarpus</td>
<td>10.5</td>
<td>Musanga cecropioides</td>
<td>1.0</td>
</tr>
<tr>
<td>Chrysophyllum albidiun</td>
<td>3.0</td>
<td>Nequandenia papuverifera</td>
<td>1.5</td>
</tr>
<tr>
<td>Chrysophyllum perpulchran</td>
<td>0.5</td>
<td>Piptadeniastrum africamun</td>
<td>0.5</td>
</tr>
<tr>
<td>Cleistopholis patens</td>
<td>0.5</td>
<td>Pychnanthus angolensis</td>
<td>1.0</td>
</tr>
<tr>
<td>Cola gigantea</td>
<td>2.5</td>
<td>Trichilia lanata</td>
<td>4.5</td>
</tr>
<tr>
<td>Cola nitida</td>
<td>1.5</td>
<td>Sterculia oblonga</td>
<td>8.0</td>
</tr>
<tr>
<td>Corynanthe pachyceras</td>
<td>7.0</td>
<td>Stereosia glaucescens</td>
<td>2.5</td>
</tr>
<tr>
<td>Cylicodiscus gabunensis</td>
<td>0.5</td>
<td>Other species</td>
<td>26.0</td>
</tr>
<tr>
<td>Distemonanthus benthamianus</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ekebergia senegalensis</td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
since 1958 the Forestry Department does enrichment planting of "Terminalia ivorenensis, Entandrophragma utile, Khaya ivorenensis and Tieghemella beckelii" near boundary pillar 11 in the south of the Reserve.

**Wildlife**

In order to receive evidence of the wildlife in the Reserve, several transects were walked with two local hunters, who together with the old man of Nkamta, Edolo Kwao, gave further information. These people were remarkably unprejudiced in their statements concerning their hunting activities since they were not aware of any restrictions on hunting or protected species.

Although no comprehensive list of the wildlife could be established, it seems likely that all species characteristic of the high forest zone are represented in the Kinshasa River Forest Reserve. The following is a consideration of those species, of which some kind of evidence could be collected:

- **Elephant (Loxodonta africana cyclotis)**
  
  Tracks frequent in the eastern and northeastern part of the Reserve. The range of the forest elephant is likely to extend into the Draw River F.R.

- **Bongo (forest) (Tragelaphus euryceros)**
  
  Frequent tracks all around the Nkamta village on caterpillar tracks and compartment lines. Two bongos (1 male, 1 female) were shot in the week between May 10 and 16 near Nkwanta. One pair of bongo horns was collected in Nkwanta. The density of tracks suggests that the bongo occurs in higher density than in Bia National Park.

- **Red River Hog (Potamochoerus porcus) and Giant Forest Hog (Hylochoerum mephitiformi)**
  
  Frequent tracks of red river hog can be found along streams and Raphia swamps. No evidence of the giant forest hog could be found, however, its occurrence in small numbers is likely.
Duikers (Cephalophus spp.)
Duiker tracks are common all over the area. Maxwell's duiker (C. monticola maxwelli) are commonly shot or snared. One Maxwell's duiker was observed swimming across the Sukien River on 13th May, 1976. Bay duiker (C. dorsalis) and black duiker (C. niger) occur as well and are occasionally shot or snared. No evidence of the yellow backed duiker (C. silviculter) could be found, yet, its occurrence is likely.

Bushbuck (Tragelaphus scriptus) and Royal Antelope (Neotragus pygmaeus)
Occasionally snared or shot in the vicinity of Mwanta.

Colobus spp.
All three colobus species, i.e. western black and white colobus (C. polykomos), western red colobus (C. badius), and olive colobus (C. verus) are present. Black and white colobus are commonly heard within 1 - 3 miles of the Mwanta village often associated with diana monkeys. Red Colobus were heard only once. According to Mule Kwa the red colobus was not represented some 15 - 20 years ago but migrated into the Reserve from Ivory Coast. Although this seems unlikely, it is true that the red colobus presently occurs in low density, and might be suffering under too heavy hunting pressure. However, olive colobus are occasionally shot.

Cercopithecidae monkeys
Mona monkey (Cercopithecus mona), diana monkey (C. diana), spot nosed monkey (C. petersi) and white collared mangabey (Cercocebus torquatus) were all heard or seen. Apart from the mona monkey the diana monkey seems to be the most common among them.
Chimpanzees (Pan troglodytes)
Chimpanzees were reported to occur particularly west of Mwanta. They were said to have retreated further towards west after the logging took place west of Mwanta in 1974/75, which seems to have disturbed them. Traces of recent use by chimpanzees were, however, found about 2 miles west of Mwanta. The chimpanzee is not being hunted for food due to its resemblance to men.

Carnivora
No evidence of carnivores was found. The people of Mwanta, however confirmed, that the civet cat (Vivera civetta), the genet cat (Genetta pardina) and the leopard (Panthera pardus) are present. The palm civet (Nandinia binotata), the retel (Mellivorina capensis), the golden cat (Felis aurata) and mongoose species are likely to occur in the area also.

Pongolins (Manis spp.)
All three species, i.e. tree pangolin (Manis tricuspis), long tailed pangolin (Manis longicaudata) and giant pangolin (Manis gigantea) are said to occur.

Brush tailed porcupine (Atherurus africanus)
Commonly shot in the area.

Tree hyrax (Dendrohyrax arboreus)
Heard near Mwanta.

Other mammals expected to occur are:
Bosman's potto (Perodicticus potto), dwarf galago (Calamides demidovii), giant forest squirrel (Protoxerus atrocarus), small forest squirrel (Heliosciurus mmctatus), side striped ground squirrel (Sperus pyrrophus), Pel's flying squirrel (Pomalurus peli), Water chevrotain (Hyemoschus aquaticus).

....../12.
Pygmy Hippo (Choeropsis liberiensis)

No evidence was found of the pygmy hippo.

The inhabitants of Liberia have never heard of this animal, it is thus unlikely to occur in the area.

Wildlife Density

In a tropical rain forest it is problematic to observe wildlife due to dense cover. The frequency of observed tracks in general is an unreliable indicator of wildlife density due to varying persistence of tracks on different terrain and the washing away of tracks after rains. The only means of assessing wildlife density in a quick survey is by judging upon the frequency of encountered monkey species. They are the easiest wildlife to record because they can relatively easily be spotted or detected by their vocalizations. In an area where wildlife is hunted more or less without regard to species the density of the monkey populations may, however, be used as an indicator of general wildlife density.

The frequency of observation of the seven species: mena monkey, diana monkey, spot nosed monkey, white collared mangabey, red colobus, black and white colobus and olive colobus was determined for 6 areas in Bia National Park by NUCKE (1975). These frequencies are compared with the frequency of observation of the same species made on 14 1/2 hours of walking transects in the Ankasa River F.P. (Tab.3). The frequency of observation in general is somewhat higher for the Ankasa River F.P. As indicated it may be assumed that this is true also for other wildlife species. It indicates, that even in those areas of the Ankasa River F.P. which are regularly scoured by hunters the wildlife persists with considerable density.
Tab. 3: Frequency of observation per hour of seven monkey species in Bia National Park (from RUCKS 1973) and Inkasa River F.R.

<table>
<thead>
<tr>
<th>Species</th>
<th>Bia National Park</th>
<th>Mean</th>
<th>Inkasa F.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black and White colobus</td>
<td>0.11</td>
<td>0.25</td>
<td>0.19</td>
</tr>
<tr>
<td>Red Colobus</td>
<td>-</td>
<td>-</td>
<td>0.04</td>
</tr>
<tr>
<td>Olive Colobus</td>
<td>0.11</td>
<td>0.05</td>
<td>0.04</td>
</tr>
<tr>
<td>Diana Monkey</td>
<td>0.07</td>
<td>0.05</td>
<td>0.12</td>
</tr>
<tr>
<td>Kona monkey</td>
<td>0.14</td>
<td>0.11</td>
<td>0.21</td>
</tr>
<tr>
<td>Spot nosed monkey</td>
<td>0.07</td>
<td>0.05</td>
<td>0.10</td>
</tr>
<tr>
<td>White collared mangabey</td>
<td>0.04</td>
<td>-</td>
<td>0.06</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>1.16</td>
</tr>
</tbody>
</table>

Note: March 76 Inkasa F.R. 14.5 hrs.
Hunting Intensity and Bushmeat Sales

At present there are 4 shot guns in the Mavanta village and about 40 wire snares are permanently in use within a radius of 1-2 miles around the settlement. The amount of bushmeat obtained without much effort seems always to have been sufficient that part of the meat could be sold on the markets of Kapata, Tukobo and Klubo. According to Edes Kwao the bushmeat has always been plentiful and he feels that there is no sign of a decrease. As a matter of fact the sales of bushmeat seem to outmatch the income from sales of farm products. The area where the people of Mavanta hunt extends little more than 3 miles east, north and west of the village. Thereby the area north of the Suliem-River is not frequented at all. There are no paths known to them north of this river. However, they believe that some hunters occasionally penetrate this area from villages along the northern boundary of the Reserve. Apart from the hunting activities of the people of Mavanta there are 3 hunting camps in the Reserve, which are de facto admitted by the Forestry Staff. At least 3 full-time hunters from Ivory Coast frequent there also. Hunting is mainly carried out at night with artificial lights since this method is more effective. According to one hunter at Mavanta it is not uncommon that a single gun yields 6-8 duikers per night. Bushmeat is being sold to at least two market woman who come to Mavanta in weekly intervals. Those sell the meat mainly to chop bars of the Food Production Corporation at Kapata and Tukobo. Occasionally the Food Production Corporation comes with a vehicle to collect the bushmeat. Mavanta is considered the most important centre of bushmeat production in the area.

The weekly amount of bushmeat sold to traders was identified for the week of May 17 – 22. The meat was sold smoked in two lots of a total weight of 105 pounds for a price of £92.00. This does not include the meat consumed by the people of Mavanta themselves.
The total number of animals killed during the week was as follows:

- Cercopithecus monkeys 11
  (mainly Diana monkeys)
- Colobus spp. 7
  (mainly black and white colobus)
- Harwell's duikers 15
- Other duikers 9
- Red River hog 2
- Brush-tailed porcupine 6
- Monitor lizard 1
- Bell's hinged tortoise 2

Everything points to it that this is about the scale of regular weekly bushmeat production of Mkwanta.

It not only supplies the inhabitants of Mkwanta with sufficient meat but makes up for their main cash income. As mentioned earlier they are not aware that practically all of this bushmeat is obtained illegally.

No doubt the productivity of these forests in terms of bushmeat is considerable. It seems almost certain that the supply of bushmeat for a small population like the one from Mkwanta could work on a sustained yield basis. Yet, the magnitude of commercial hunting to which the people of Mkwanta have resorted is bound to deplete the centre of the Reserve of its wildlife. If not all the species, then at least the more easily accessible ones, e.g. the colobus are likely to disappear.
Conclusion

The Ankasa River F.R. is a unique area of tropical rain forest which has remained remarkably undisturbed into present times. Efforts to exploit the timber of the area has been chiefly unsuccessful due to low density and small diameters of timber species and the unaccessibility of the rugged and well drained terrain. This fact, no doubt, has contributed to the preservation of the area from human intrusion. Already the fact that there seem to be no further plans for the exploitation of the area is advantageous to a conversion into a National Park. The area also from the point of view of size and shape of the Reserve, water availability and niche-effect is suitable for a National Park. Apart from the fact that the Ankasa River F.R. would be the only area of this vegetation type in Ghana which would be preserved as a National Park, the occurrence of endangered species according to the IUCN red data book makes a strong case for the strict conservation of the wildlife in the Ankasa River F.R. Such species are the red colobus, the olive colobus, the chimpanzee and others.

A conversion into a National Park would, however, imply that the Mwanta village in the centre of the Reserve would be resettled. Since the cash income of the people of Mwanta is largely dependent upon the bushmeat resources, and a continued reduction of wildlife is not consistent with the nature of a National Park, the further subsistence of the Mwanta settlement solely on the basis of farming would in any case be critical, even if excluded from the area of a National Park. A resettlement of the Mwanta population outside of the Reserve boundaries, if somehow feasible, should therefore be preferred to any other solution. But, whatever the future of the Ankasa River F.R. is, it is strongly recommended, that the Department of Game and Wildlife acquires a means of controlling illegal hunting which is presently practiced by the inhabitants of the Reserve. Hence, under all circumstances this Department should consider to establish a base in the Ankasa River F.R.
Literature cited


RICHARDS, P.V., 1952. The tropical rain forest, Cambridge.

