Status of Painted dog *Lycaon pictus* in the Bénoué Ecosystem, North Cameroon

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BACKGROUND INFORMATION

The present report summarizes the results of the Painted dog Conservation Project in the Bénoué Ecosystem, North Cameroon, which was funded through WWF-NL and which had as objectives to:

1) Determine the status and distribution of Painted dog and other threatened large carnivores in the Bénoué Ecosystem in the North Province of Cameroon;

2) Enhance survey methodologies to monitor Painted dog and other large carnivores in the region

3) Raising awareness among local stakeholders on Painted dog ecology and conservation

4) Training local field staff to successfully monitor Painted dog and other large carnivores in the region

SUMMARY

Over the past three years intensive surveys have been conducted in the Bénoué Complex, north Cameroon to identify the status of the Painted Dog *Lycaon pictus*. Data also revealed valuable information on the status of other large carnivores, such as the endangered cheetah, leopard, spotted hyena and lion. Survey techniques included opportunistic interviews, camera trapping and spoor counts.

Through training and capacity building the current project achieved an active, participative attitude from local stakeholders such as park staff, hunting zone managers and local communities. Developed field capacities and provided materials allow for the continuation of surveys as part of future monitoring of large carnivores in the region.

Most species of larger carnivores are present in low densities throughout the complex, except for Painted dog and cheetah. The latter two species may thus be considered as *functionally extirpated* from this region.

This status may largely reflect the situation of these two threatened species in the entire region of West- and Central Africa, although future survey efforts throughout their former distributional range are urgently required. Main reasons for the current population crash of both Painted dog and cheetah are habitat destruction, poaching by local communities, loss of prey and with reference to Painted dog targeted and illegal killing by managers of hunting zones.

Consequently only if wildlife conservation strategies are drastically improved, Painted dog populations may recover into the coming decades. The species is resilient and will profit from improved management regimes and habitat quality.

The research understandings acquired during the current project will lead to the development of conservation tools with a focus capacity and tools to identify presence of Painted dog, as well as a conservation strategy comprising research, direct awareness of dogs, conservation education, integrated community involvement and legislation to curb illegal hunting in the hunting areas adjacent to the reserves.

These activities will continue under the Umbrella of the Large Carnivore Initiative for West- and Central Africa (LCI) which has recently been founded by a number of organizations (Appendix 1).

1 INTRODUCTION

Over the past 20 years Painted dog population numbers have declined dramatically in north Cameroon and elsewhere in its distributional range (Woodroffe et al. 2004). Major causes for this decline have been cited as poaching, contributing to indirect killing and prey loss, nomadic herders destroying dens, trophy hunting, which officially ceased in 1999 and habitat loss caused by human encroachment. Painted dog is listed as endangered on the IUCN red list of threatened species (IUCN 2010). The last irrefutable evidence for the existence of a viable pack of Painted dog in Cameroon dates from 1967. Incidental observations of Painted dog have been reported until 2000 in and around Bénoué NP, none of these observations have ever been confirmed. Furthermore intensive interviews by (GR) indicate that the last probable occurrence of a pack in Benoue was in 1994 in North Benoue. Other species of large carnivores, such as lion, leopard, spotted hyena and cheetah, also suffered from these same threats. For cheetah reliable observations even date back to the eighties, whereas recently no reliable observations have been reported.

Evidence from interviews with local communities and park staff indicated that sightings of Painted dog have declined dramatically over the past 10-20 years. Interviews further confirmed that Painted dog were being deliberately shot by trophy hunters and concessionaires, either as illegal trophies, or on the premise that the dogs are vermin that compete for prey. A pilot survey conducted in 2007 using a combined method of track

identification on dirt roads and placing camera traps registered all species of larger carnivores which are known to be historically present in the region, except for Painted dog and cheetah.

Due to the precarious nature of the species' survival, the presence of Painted dog in Cameroon needs to be seen as a priority because not only does its status as a flagship species indicates good conservation practice, but also, as it has yet to be determined if Painted dog in West and Central Africa is a genetically distinct eco-type, as pan African priority, the Cameroonian population may well be a geographically important core refuge, for this species in the Sahelian eco-region in West Africa (McNutt et al. 2008).

As has been demonstrated in Zimbabwe, if multi-factorial conservation practice is implemented that develops an intrinsic benefit for the species, the decline can be reversed as Painted dog has proven to respond to good conservation practice. Such practice includes a sustainable prey base, and a persecution free environment either through enforced legislation or through programmes that promote conservation.

Studies in Zimbabwe revealed that sociality in this species is an obligate condition and that to maintain successful growth a minimum pack size of six is required for packs to persist in a region in the long term. The results demonstrating the effect of pack size, emphasized that not only did small packs have smaller litters, survivorship was also poor and they were less able to rear their young (Fig 1, from (Angulo & Rasmussen in prep).

Such effects of pack size were further highlighted when it was demonstrated that smaller packs had to leave their young without a pup-guard (Courchamp, Rasmussen and Macdonald 2002).

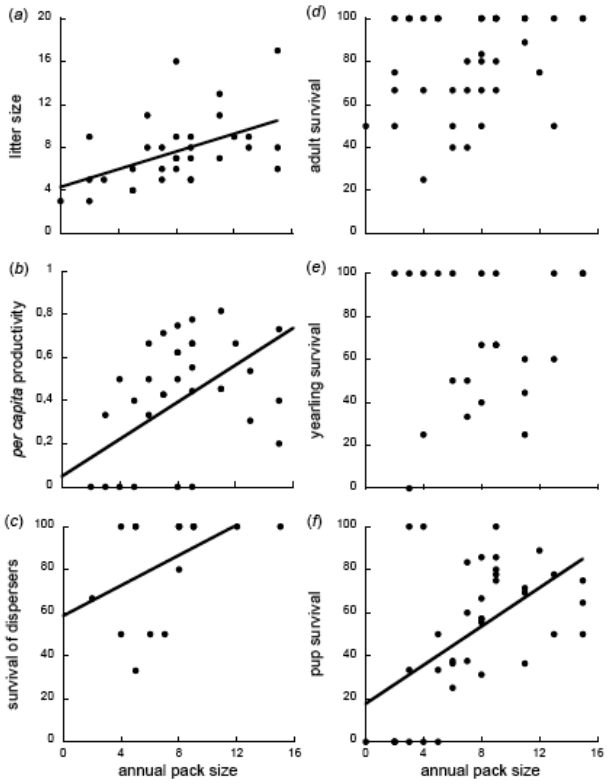

***Figure 1**. The effect of pack size on demographics in Lycaon pictus. Data from* Painted dog *Conservation Hwange*

The data from Zimbabwe also highlighted the extent of anthropogenic damage and its root causes: (a) Prejudice and lack of knowledge of the species by the European community, (b) Poverty and lack of knowledge as to the value of the species by indigenous people. For example, mortality data showed that anthropogenically biased impact from shooting by ranchers, snaring and road mortalities accounted for 85% of all deaths to adults and yearlings (Rasmussen 1997). Ironically the rationale for the shooting, as suggested by the European ranchers, was that Painted dog were 'putative cattle killers' though this reason was strongly undermined in a case study which demonstrated that the dogs were not to blame for most of the losses to domestic stock and that prejudice was to blame (Rasmussen 1999).

More tragically, however, modelling of pup birth and survival data highlighted the huge interactive impact that the loss of a few individuals could have on the survival of the pack (Figure 2). This data driven model highlights the fate of packs of different start-up sizes and demonstrates how different rate of mortality to helpers (adults or yearlings), not only effects pack growth rates but also the ability of the pack to persist at all. For example, at the one end of the scale it can be seen that the rate of increase of pack size goes up substantially with pack size, and if there is zero helper mortality, under natural conditions, larger packs can easily treble their initial numbers over a three year period, with pairs only succeeding in doubling their numbers over a three year period, considering naturally expected birth rates and mortalities. In other words, after three years, a pack of two would only number four individuals, yet a pack of six with a growth rate of 3.3 would number 20 individuals after three years. Conversely, the data highlight how vulnerable packs are to the loss of helpers. In this case should a hunter kill only two individuals per annum from a resident pack all packs below seven dogs will have negative growth and thus become extirpated from the system. While still considering an annual offtake of two individuals, even in a pack of seven, pup

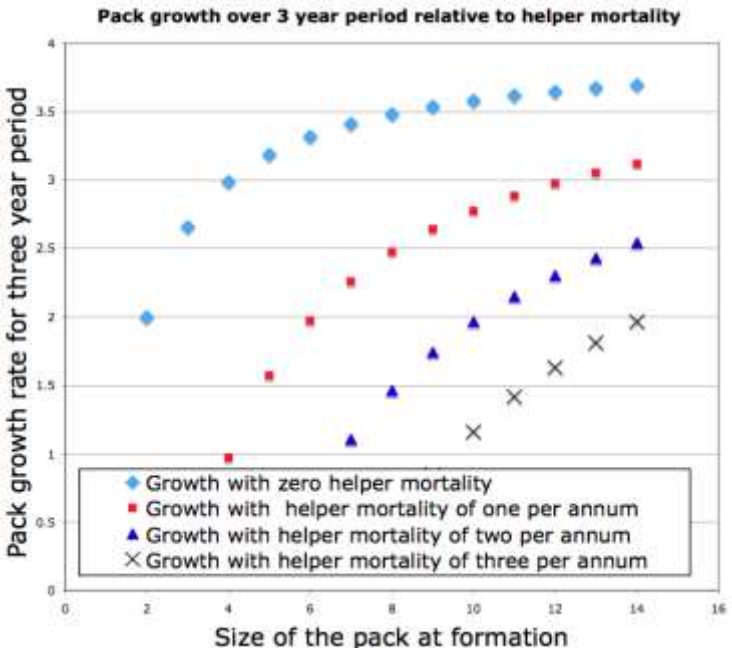

Figure 2. Pack growth rates based on data (Rasmussen and Angulo submitted) and modelled for different pack sizes with variable helper losses.

survivorship equals mortality and after three years such a pack will still only number seven. These data therefore highlight both the capacity of Painted dog as a species to bounce back whilst at the same time the inability of it to recover in the face of high helper mortality and low pack sizes. In short, on the one hand communal social structure gives competitive advantage whilst conversely, disruption to these equilibria via disturbance makes them very susceptible to pack extirpation.

Exacerbating the problem of contact with humans is the fact that the dogs are nomads and have drifting territories of approximately 750 km2, thus limiting the effectiveness of protected areas to conserve and hold this species. This however emphasizes the need for both active protection and human tolerance for the species inside and outside protected areas.

2. STUDY AREA

The North Province of Cameroon (Figure 3) is covered for 44% in natural woodland, containing three national parks and 28 hunting zones. Poaching is a threat to wildlife in the area, although management of both the national parks and the hunting zones are targeting this problem. Conservatively set hunting quota on most wildlife species in the hunting zones is a further potential threat to large carnivores (Kwabong 2008). Human population growth is relatively high at around 5% and mostly results from immigration of people from other provinces or neighboring countries with a diverse ethnic background (Mayaka 2002).

Though Painted dog is known to be able to utilise a number of different habitats, some of which may be regarded as marginal from the point of view of prey exploitation, the habitat in the central Bénoué Ecosystem can be considered optimal from the point of view of its good cover and habitat mosaics making it ideal to reduce prey flight distances and increase the likelihood of capture. In essence the habitat seems good, and prey at least appears sufficient, though if this is the case, it would then beg the question as to if Painted dog is not present, then why not?

One of the major concerns is the fact that the protected park areas to serve as sources are too small on their own for viable populations. However, if the wider area is taken as a whole then the area being some 40,000 km2 is ample for this wide ranging species. The concern here however is that large sections of the wildlife area is composed of hunting zones which represent 75% of the entire wildlife area. These hunting zones are mainly managed by European hunters who receive relatively few guidelines or enforcement where guidelines do

exist. Furthermore scientifically based wildlife population surveys to re-establish hunting quota on a regular basis are lacking. As a result, a climate for blatant exploitation of both predators and prey alike exists within these hunting zones. Overall stringent management of these areas and where necessary expertise to manage these areas is therefore regarded as a high priority.

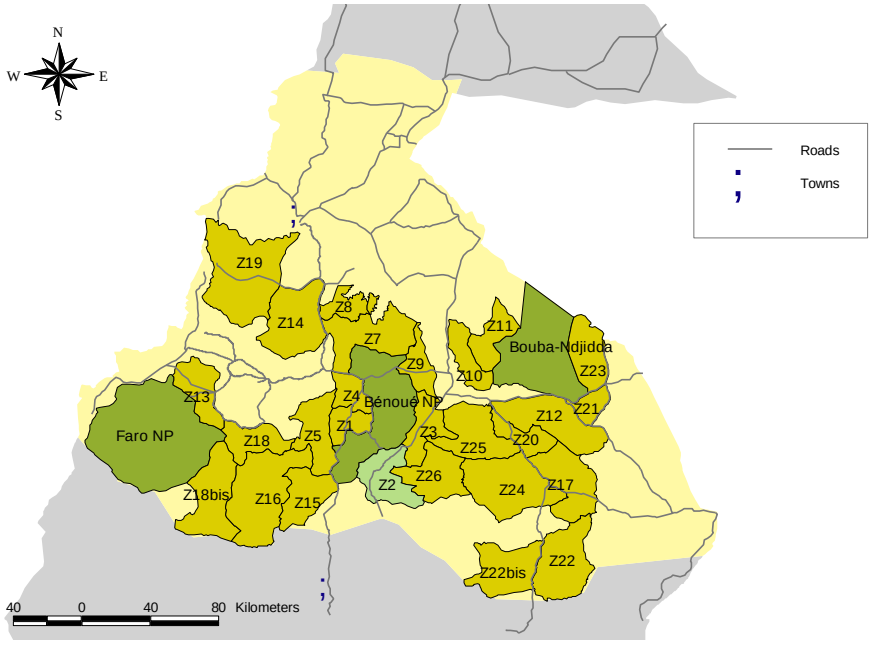

Figure 3. *The Bénoué Ecosystem in the North Province of Cameroon, comprising three national parks (Faro NP, Bénoué NP, Bouba Ndjidda NP) and 28 hunting zones (Z1-Z26)*

3 OBJECTIVES AND METHODS

Methods focused on 4 main objectives:

1) Determine the status and distribution of Painted dog and other threatened large carnivores (such as cheetah) in the Bénoué Ecosystem in the North Province of Cameroon;

2) Enhance survey methodologies to monitor Painted dog and other large carnivores (such as cheetah) in the region

3) Raising awareness among local stakeholders on Painted dog ecology and conservation

4) Training local field staff to successfully monitor Painted dog and other large carnivores in the region

3.1 Opportunistic interviews

Selected persons of each stakeholder group (Professional hunters, local communities, park personnel) are asked if they have seen Painted dog and to indicate when and where it was last seen. To ascertain the likelihood of the report being a correct identification, those being interviewed are given no prior description of the dogs and are asked to describe in detail the

characteristics and nature of the observed individuals as well as specifications on how the encounter took place. The results of these interviews are scored for reliability (0-10) according to believed validity. In cases where the score of the interviewees was higher than 8 and within the last 12 months, effort was made to go to the exact site of the sighting report and assess the likelihood of the report being valid, as well as to take a GPS location for the purpose of this study and for future reference. Key points for scoring on interviews were the knowledge of the interviewee to nature in general and the ability to reliably identify tracks, as well as knowledge of the main diagnostic feature of the dogs namely, ear shape and size, white on tail, and the noises dogs make, in particular the hoo call and the alarm call given by the dogs when they detect danger.

3.2 Follow-up on den site observations

Reports of observations of Painted dog den sites were suggested to be a reliable method of finding evidence of Painted dog presence (Rasmussen xx) and should be a crucial part of any monitoring effort of this elusive species.

A team of two guides on motorbike visited communities throughout the study area to investigate people's knowledge of the presence of den sites in the area. These surveys were based on a "reward after proof approach", meaning that those people who would be involved in finding an active Painted dog den would receive a considerable reward (CFA 100,000 divided by the number of people that would claim to have contributed), after providing evidence in the form of a photo of a Painted dog from the camera trap.

The team visited village chiefs of various villages in the area and explained the objectives of the project. The survey team was often referred to one or more persons in the village who claimed to have recently come across Painted dogs or their signs.

A basic questionnaire, as described under 3.1 was used to find out whether the observed signs were likely to belong to our target species. The team accompanied the reporter to the potential den site and placed camera traps at the den site when the den appeared to be in use. The cameras were left in active modus at the site for 1 week to enhance the possibility of capturing the inhabitant of the den on camera.

3.3 Monitoring surveys

3.3.1 Surveys on motorbike

To cover an extensive area of the Central Bénoué area, track surveys were conducted on motorbike by two of the five guides that were trained during the course of this project. For

this purpose, a Honda motorbike was purchased which allowed guides to cover considerable distances on roads and trails which would be inaccessible or difficult to navigate with a 4x4 vehicle.

Road transects were selected on the basis of a number of characteristics. Roads should:

- Cover an uninterrupted stretch of at least 30 km
- Contain a large proportion of suitable Painted dog habitat
- Run through an area with acceptable densities of natural prey

The presence of an excessive grass layer throughout the study region between August and November renders track surveys during this period impossible since tracks were hardly visible. The surveys therefore started beginning December, right after the first fires which cleared most of the roads from excessive grass cover allowing for a better view of the underground and continued well into June when rivers tended to fill up, making it impossible to cross.

Transects were repeatedly (once every one or two days) surveyed during a period of 2-3 weeks after which a different stretch of road was selected. By repeating the same stretch of road with as short as possible intervals, chances of detecting a specific group moving through a certain zone were enhanced.

Lion track with ruler and GPS device

Transects started in the morning at first light. The survey team recorded start time of transect and GPS position at starting point. The team was equipped with a Super track-stick, a basic GPS tool that stores GPS position data automatically every 10 seconds, thus mapping the route and speed of the tracking team throughout their activities.

When a track of either lion, spotted hyena, leopard or Painted dog was found the tracker recorded species, time, kilometre indication, GPS position, number of individuals and the age of each individual. A picture was taken of each track encountered, displaying a ruler and a GPS device next to it.

Surveys were conducted on 8 different stretches of road, covering a total of xx kilometres. Each stretch of road was surveyed on average 10 times.

3.3.2 Combined track surveys and camera trapping technique

Efficient and reliable methods for rapid assessment of species richness and abundance are crucial to determine conservation priorities. Tracking animals by following footprints in dust, mud, sand or snow, is probably the oldest known method of identifying mammal's presence on suitable underground. On the other hand, camera trapping as a survey method is a relatively new technique that has been strongly developed the past few years and is considered ideal for sampling presence and abundance of a variety of cryptic and wide-ranging large carnivore species, in various habitat types .

StealthCam camera traps were placed at fixed intervals (2,5 km) along selected 25-km roads Throughout the Bénoué Ecosystem. Camera trap sites were set-up at 30-50 meters from the road, concealed from potential trespassers, and were baited with remains from hunted game pinned to the ground with a blood trail radiating 500 m from the bait in 2 directions. All three national parks were surveyed in this way, as well as 7 Hunting Zones surrounding the national parks. During surveys for tracks along these roads, position- and habitat data were recorded for each observed track of all large carnivores (leopard, spotted hyena, lion, Painted dog).

Trackers attaching a camera trap

The combined camera trapping and track survey techniques were conducted in 2007, 2008 and 2009. Between January and May of 2007, a pilot survey was conducted to test methods, by a team of 2 Msc students of Leiden University and a local tracker along a dirt road in the Bénoué National Park and along a road running through Hunting Zone 2 and 3. In May and June 2008, a team of 4 post-academic students of the Garoua Wildlife Colege's Wildlife Management Course and a local tracker conducted surveys in Boubandjida National Park and Hunting Zone 10. Finally, between January and May 2010 a team of two BSc students of Leiden University and a local tracker conducted surveys in Faro National park and in Hunting zone 18 and the Bantadjé Community Hunting Zone.

Track surveys were conducted by vehicle with a chair constructed in front of the vehicle for the tracker to have an optimal view on the ground. Track surveys were repeated 8-10 times on each road transect while cameras were left hanging during 15-20 days in the same place, with visits to check the cameras and replace the bait every 5-6 days.

3.4 Training and awareness raising

3.4.1 - Field training

Training activities conducted during this project were diverse and were executed at several levels. On-site training of guides, field assistants and students as well as awareness raising campaigns among local people for the plight of endangered carnivores were conducted throughout the duration of the project. In addition, 5 local guides were selected to be trained as large carnivore monitoring experts. These guides were trained in tracking skills and camera trapping and their skills were tested after 2 months during intensive 2-day sessions in the field with the main field researcher.

3.4.2 - Seminars

Two international seminars on the conservation of large carnivores in Sub-Saharan Africa have been organized and were co-sponsored by WWF-NL during the course of the current project. Both seminars took place at the Centre d'Etude de l'Environnement et du Développement (CEDC) in Maroua, Cameroon. The main aims of these seminars were to provide local and international large carnivore conservationists the opportunity to discuss various aspects of large carnivore conservation, including priorities for Painted dog conservation in the region.

3.4.3 Distribution of flyers

We developed a Painted dog Flyer to stimulate people to actively contribute to our project by reporting observations of Painted dog and possible den sites. The flyer also contained important information on the natural behaviour of the species in two languages.

The Painted dog *Flyer*

4 RESULTS

4.1 Opportunistic Interviews

In total, 24 village chiefs have been approached between January 2008 and May 2010. In 18 of these villages, at least 1 person responded positively to the question whether any observations of Painted dog sign had taken place over the past 6 months. 17 of these observations concerned possible den sites (see 4.2). One observation was of a group of 3 Painted dog crossing a dirt road in the Central Bénoué area. However, no evidence was found after visiting the site.

A major challenge which arrived after the introduction of the “reward after proof approach” is that people are difficult to be motivated to invest time and effort in search activities before they actually get rewarded. An additional difficulty could arise when evidence is made up.

Village chiefs in the Central Bénoué area, during opportunistic interviews

Opportunistic interviews with hunting zone managers (HZM) revealed that perception of Painted dog is exceptionally negative. HZM’s clearly indicated that they do not wish to have Painted dog in their area since they tend to “destroy all valuable game”. This lack of understanding of general Painted dog behaviour and ecology was further highlighted by the believe of one HZM that a “hybrid species” between Painted dog and domestic dog existed in the area until not long ago. Although hybridisation between wolves and domestic dogs has been reported, as Painted dog is a separate genus there is no possibility that hybridisation can occur between Painted dog and domestic dogs. Whilst HZM’s indicated that particularly nomadic cattle owners were those responsible for persecuting Painted dog in the past, and the reason for their absence now, there was no evidence to support this. On the contrary

there was evidence of illegal killing of Painted dog by the HZM's. The interviews with HZM's also revealed a poor understanding of the ecology of other large carnivore species. E.g. lions are perhaps conveniently perceived to live in much higher densities than is actually the case, due to a mis-interpretation of the actual distances covered by lions. HZM's interpretation of lion numbers inside their hunting zones is often based on observations of lions in different locations, which would be identified as different individuals while a single individual could very well cover that distance. Our research on collared lions in the Bénoué National Park revealed that a single male lion could cover a distance of up to 60 kms in a few days. This emphasizes the importance of regular monitoring surveys of large carnivores, using objective techniques, particularly to adjust current hunting quota.

4.2 Follow-up on den site observations

After further questioning 17 interviewed persons who claimed to have observed an active den site, 9 observations proved to concern a different species than Painted dog or appeared to refer to an old den site. All 8 cases of observations which seemed to concern a potential Painted dog den site were visited. Six of the sites appeared to be old and abandoned hyena den sites. At two den sites, which seemed to be occupied, 3 camera traps were installed. After the photos were developed, the den sites appeared to belong to spotted hyena.

A local villager at a reported den site which appeared to be abandoned by spotted hyena

In February 2009 our field team was approached by members of CAMNARES (Cameroon National Resources), a recently established NGO based in Yaounde, Cameroon. A team of CAMNARES claimed to have found potential evidence of a Painted dog den site during a short survey in the centre of the Bénoué Park. A carcass of a carnivore was found close to the den site. As the carcass had five toes and not four it was irrefutably not Painted dog however species verification was still undertaken by comparing pictures taken of the carcass found in Cameroon with a collection of skeletons of a variety of large carnivores which were

available at Naturalis museum in Leiden. Relative measurements of limb lengths and comparison concluded that the remains belonged to a leopard. This animal was almost certainly illegally hunted since it was clearly that of a skinned trophy animal for it was 'found "without the head, tail and the claws, while remains were burnt. The carcass was most probably intentionally placed at the supposed Painted dog den site. Fresh tracks which were photographed at this potential den site, belonged to spotted hyena.

A rib case of a leopard at Naturalis next to a picture of the Cameroon leopard rib case

4.3 Monitoring surveys

4.3.1 Track surveys on motorbike

Whereas tracks of other large carnivore species have been encountered regularly, Painted dog tracks were only encountered once in the northern section of the Bénoué National Park. These tracks were of 2 adult individuals and were observed at 7,8 km distance from the nearest village, rendering it unlikely but not impossible to belong to a domestic dog. The size of the track (7,2 centimetres total length) is in favour of either Painted dog or a large domestic dog. More research is needed to create a comparative database for future comparison between Painted dog tracks and those of domestic dogs in the region.

The tracking team, at the start of a survey

Surveys were conducted on dirt roads throughout the Bénoué complex, together covering 360 kms. The purchased Honda motorbike proved to be an excellent tool to cover extensive distances through suitable habitat, being able to navigate on tracks that are not suitable for vehicles. The motorbike is available for future monitoring surveys in the complex.

The team encountered fresh tracks of lion, spotted hyena and leopard on several occasions. An extensive database has been created for each species with GPS location data, and a picture with size indication of each track. These data are currently being analyzed and will be published together with the results of the combined track- and camera trapping surveys.

The Super Trackstick device proved to be an excellent tool to 1) easily map all movements of the tracking team, 2) motivate the tracking team to properly execute their tasks. The trackers were intrigued by this device and were absolutely eager to use it every time they went on a mission. As such, the Super Trackstick is an essential tool when working in remote areas, along extensive distances and with changing teams of trackers.

4.3.2 Combined track survey and camera trapping technique

During the structural surveys conducted by students and one tracker, using a vehicle, not a single track of Painted dog or cheetah was found. Camera traps did not capture Painted dog nor cheetah. These results thus support the general notion that these two species occur at best at very low densities in the central Bénoué Ecosystem and then probably only in the more remote parts of the protected area network.

Taking into consideration known characteristics of Painted dog ecology, we can conclude that under current management strategies for the Bénoué Complex, the Painted dog population cannot be viable.

Knowing, however, that the species is resilient and capable of recuperating as soon as conditions are improved, Painted dog numbers are likely to increase to viable population numbers, provided that management regimes for the entire complex are urgently and drastically improved. As long as this is not the case, we may consider Painted dog as “functionally extirpated” for the complex. Under present conditions with a high hunting pressure and an unfavourable attitude among Hunting Zone Managers, hunters and poachers, restoration of the Painted dog population is unlikely and a further decrease of densities of other large carnivores during the period to come can be anticipated.

On the other hand, the used method appears to be successful in determining status and distribution of most other (large) carnivore species. The large carnivore monitoring surveys have contributed to a general understanding of large carnivore ecology and behaviour in the complex.

A large variety of medium- to large sized nocturnal mammals were photographed by camera traps during the surveys

Abundance indices from spoor counts are effective in predicting the presence and relative abundance of the more common species of large carnivores such as lion, leopard and spotted hyena. These three species of large carnivores occur throughout the entire Bénoué area, in a variety of habitats, although they tend to avoid the edges of national parks (all three species) and villages (spotted hyena and leopard), stressing their vulnerability to human induced threats.

The camera trapping surveys are thus especially suitable in recording presence of a diverse range of species. I.e. where spoor counts failed to record presence of rare and elusive carnivores such as caracal and serval, camera traps did record these species. The camera traps are also useful to recognise individual carnivores and to determine sex composition and social structure. The surveys further showed that abundance of all large carnivore

species increased towards the centre of protected areas while leopard and spotted hyena were less abundant near villages. The technique used during our surveys is repeatable, can be conducted by trained eco-guards and is cost-effective, especially since materials and skills are now present in the complex. With this combined method, we have thus developed an effective method to monitor medium- to large sized carnivores in a variety of habitats. We recommend that monitoring of large carnivores will be continued on a regular basis through the Ecole de Faune in Garoua.

4.5 Training and capacity building

4.5.1 – Field training

Five trackers have been trained in the framework of this project and are now capable of identifying all species of carnivores that exist in the region, and possess advanced knowledge on survey techniques, in particular camera trapping methodology.

The training of trackers took place in the field, during actual surveys. The principle field researcher would accompany one experienced tracker and a student tracker during a tracking and camera trapping survey. This training method ensured direct hands on experience for the student tracker who would be ready to work together with a colleague after 2 days of intensive training.

The trackers are now well trained to work in teams of two, under primitive circumstances and during long days of work in the bush. The training of trackers proved to enhance the training of students and vice versa. E.g. where trackers were often more skilled in interpreting tracks and signs, students could teach the trackers more about survey methodology.

In strict contrast, at the beginning of the study, trackers and parks staff tested on spoor knowledge showed not only the inability to reliably discriminate between lion spoor and hyena, but they also regularly confused hyena spoor with Painted dog.

Two trackers are being trained on the use of camera traps

Students of the Garoua Wildlife College were initially trained in survey methodologies during an intensive 1-day course at the school, after which they were trained in the field, during a 3-day field trip in Boubandjida National Park. MSc students of Leiden University were mostly trained in the field, during surveys with a vehicle.

4.4.2 – Seminars

Researchers from a variety of countries (e.g. The Netherlands, Benin, Chad, Niger, Equatorial Guinea, Cameroon, Kenya, Zimbabwe and South Africa) were invited to present scientific papers and to discuss various aspects of large carnivore conservation during two seminars which were organized in Maroua in 2008 and 2009. Important invitees included His Excellency the Ambassador of the Netherlands in Cameroon, the Delegates of the Ministry of forests and wildlife of both Northern Provinces, representatives of ministries of Chad, Niger and Equatorial Guinea and hunting zone managing staff.

Participants at the 2008 seminar

The subjects addressed during the seminars were diverse, often focussing on carnivore-livestock conflicts which are considered to be of the highest conservation priority for most large carnivores. It became evident from the majority of the presentations that large carnivore conservation should not only incorporate aspects of carnivore ecology but should equally involve the development of strategies for the improvement of socio-economic standards in local communities, especially where carnivores are causing problems by depredating on livestock. Moreover, incorporating hunting- and buffer zones into large carnivore management strategies is becoming more crucial to their future survival as viable populations need large areas with suitable habitat.

During the 2008 seminar, Gregory Rasmussen from Painted Dog Conservation Zimbabwe presented an update of “The Painted dog Initiative”, including a database for Painted dog sightings in the West- and Central African sub-region. Preliminary results of the current project were presented by Barbara Croes during the 2009 seminar.

Participants at the 2009 Seminar

Preparations are ongoing for an international large carnivore workshop during 3 and 4 November 2010. The final results of the current project will be presented during this workshop. Also, the Large Carnivore Initiative (LCI) for the West- and Central African region will be launched during the workshop. This project, which is supported by the prins Bernhard Natuurfonds, has the following objectives: 1) Establishment and strengthening of a network for large carnivore conservation in the region while practising human-carnivore-conflict mitigation. 2) Capacity building and support of members of the newly established Large Carnivore Network in the region and 3) Communication of the results of research. The LCI-W&C AFRICA network is a collaboration between the Leo Foundation, the Netherlands, SPOTS the Netherlands, the Regional Lion Network in West and Central Africa (ROCAL), The African Lion Working Group (South Africa), Panthera foundation, the Painted Dog Foundation (Zimbabwe), the Ecole de Faune in Garoua (Cameroon), the Centre of Environment and Development Studies (CEDC) of the University of Dschang (Cameroon), the Laboratoire Ecologique of the University of Abomey (Benin), Department of Nature Conservation Tshwane University (South Africa) and the Institute of Environmental Sciences of Leiden University (Netherlands). It has been financially supported by the Prins Bernhard Natuurfonds.

The LCI-W&C AFRICA is also collaborating with the IUCN Cat specialist group, The IUCN Hyena specialist group and the IUCN Canid specialist group.

This initiative builds on the experience with the Regional Lion Conservation Strategy for West and Central Africa (ROCAL), supported by CML, CEDC and the Leo foundation, which has a main focus on the African lion (*Panthera leo*)

Through this project, the existing Regional Lion Network in West and Central Africa (ROCAL) will expand with new members in currently unrepresented countries and will expand its scope to other large carnivores such as cheetah, leopard, Painted dog and (striped and spotted) hyena. In addition participants will be able to follow a training session on the use of GIS/telemetry for large carnivore conservation.

4.4.3 – Distribution of flyers

The flyers which were developed for this project have been distributed between April 2008 and March 2010 and were handed out by park staff on an opportunistic basis throughout the project period. In total, 250 flyers have been distributed, mainly throughout communities located in the central Benoue area, and in the hunting zones between Bénoué National park and Faro National Park.

Despite the presence of a telephone number on the flyer with a message that urged people to report any sighting of a potential Painted dog den site, only 3 phone calls were received by the principle field researcher. Verification by camera traps showed that these reports turned out to be of observations of other species than Painted dog. The distribution of flyers did cause a major increase of awareness of the project throughout the region. People were aware of the basic objectives of the project and enthusiastically welcomed the tracking team when they arrived to conduct interviews.

5 CONCLUSIONS AND RECOMMENDATIONS FOR CONSERVATION ACTION

We can conclude that in North Cameroon, there is no evidence for the existence of a viable Painted dog population. Furthermore as all reports are of packs numbering less than three, under present circumstances, current small pack sizes will not allow for the recovery of a healthy Painted dog population in this region. The Painted dog can therefore be regarded as *functionally extirpated* from Cameroon.

The greatest threat appears to come from uncontrolled targeted illegal killing in the hunting zones, detrimentally benefiting from weak law enforcement, a lack of capacity of the law enforcers, poor perception combined with little knowledge of the species, coupled with a lack of any form of either financial or intrinsic benefit of the presence of the dogs to either the hunters or the local communities.

Using lessons learnt in Zimbabwe, we know that the species is resilient and capable to regain healthy population numbers, provided that conditions are considerably improved. E.g. results from 17 years of conservation efforts in Zimbabwe resulted in a doubling of the species range and numbers, altered perception and national effort toward the species ranging from tolerance to active participation at both the local and government level, conservation facilitation and protected status for the species. Furthermore, by utilizing Painted dog as a flagship species, under the umbrella of Painted dog Conservation, rural communities have been able to interact positively with, and benefit from the species through education, capacity building and employment.

The research understandings acquired during the Cameroon project should lead to the development of conservation tools with a focus on maintaining pack sizes, as well as a conservation strategy containing five major components, namely: Continued research, direct conservation of the dogs, conservation education, capacity building for the future and community development.

Raising awareness on Painted dog ecology but also on wildlife ecology in general, appeared to be crucial for the Bénoué complex. Hunters in particular appeared to have a negative perception of Painted dog. They perceive Painted dog as fierce killers of their valuable game and some even admit to persecute any individual he would encounter in his zone. Some hunters even deny the very existence of Painted dog in the complex. To change local perceptions, education should be part of any follow-up project. Most importantly, however, changes in laws and regulations at the level of the government are crucial to change current management strategies.

Painted dog Conservation Strategy

Components of a strategy to improve the conservation status of Painted dog fall under three major categories: Research, Legislation and Education.

Research needs to continue to try to identify the presence of Painted dog both within protected areas and community areas. The methodologies developed as well as materials and capacity provided during the project should form an integral part of future monitoring efforts. Methodologies could further easily be adapted by conservationists in other potential strongholds for Painted dog in the West- and Central African sub-region.

Apart from gaining valuable information on presence, ranging behaviour and social structure of a large variety of large carnivore species, the results of the current project need to serve a

variety of purposes so as to satisfy the views of different stakeholders. To commercial hunters for example, research outcomes should encourage official interest in conserving Painted dog by the wildlife authorities and should further stimulate that the plight of Painted dog is being taken seriously. Current legislations need to be reinforced and new laws and legislations should be developed to stimulate the protection of Painted dog as well as other wildlife inhabiting the same areas. Education could then serve as a tool for the reinforcement of laws, through creating awareness among local stakeholders and consequently improve conservation actions while having all parties involved in active law reinforcement.

Communities should be engaged to highlight the possible benefits as per the Zimbabwe model where the presence of the species provides intrinsic benefits such as education, capacity building and employment simply by utilising the dog's presence as a flagship species in the region. I.e. in regions where Painted dog is positively identified as being alive, through either collaring or camera trapping, programmes should be implemented for community education with a particular emphasis on local children, to develop income generating projects and capacity building.

Future Conservation strategies should also include reinforcement of legislation to increase the protected status to the highest available level as say for the gorilla. The objective behind this is that it will enable those trying to assist to justify why they are helping. This point was brought up numerous times in conversation with local communities who stated that they would like to help in finding the dogs and not giving assistance to those that were actively killing them, but felt they needed to know that what they were doing came with official sanction. In order to achieve this, communities and hunters in particular need to be made aware that Painted dog is regarded as high priority animal, particularly by authorities.

We also suggest to adopt Painted dog as the flagship species for north Cameroon. The principle being that, apart from being regarded as a flagship species, the Painted dog serves as an indicator for good management of both predators and prey in areas where Painted dog still exists. Consequently, areas where it exists should be deemed special management areas where trophies of other high value species for safari hunting (e.g. Derby eland, lion) could be assigned, while in areas where Painted dog has been extirpated trophies should be withheld. At this point it is conjectured that it would be of great value to also increase the value of lions by doubling the trophy fee to then halve the quota, thus making this species a more valuable trophy to be given in areas where Painted dog are proven to exist through camera trapping.

Finally, considering our results showing that only few packs of 3-5 individuals would currently inhabit the wildlife areas of North Cameroon and taking into account the data driven model (figure 2) highlighting that these packs are unlikely to sustain any more killing before becoming extinct in Cameroon, the authors of this report feel it needs to be stressed that the above actions are implemented immediately for the benefit of Painted dog conservation in Cameroon.

The Large Carnivore Initiative for West- and Central Africa (LCI, Appendix 1) which was recently established by a number of conservation organizations and which will officially be launched during a regional workshop organized at the CEDC in Maroua during 3-4 November, will provide an excellent instrument for the continuation of future surveys and conservation efforts for Painted dog and other threatened large carnivores in the entire region.

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APPENDIX 1. LARGE CARNIVORE INITIATIVE FOR WEST AND CENTRAL AFRICA

Background

The LCI_W&C AFRICA has the following objectives:

1) Estabishment and strengthening of a network for large carnivore conservation in the region while practising human-carnivore-conflict mitigation.

2) Capacity building and support of members of the newly established Large Carnivore Network in the region and

3) Communication of the results of research.

Collaboration

The LCI-W&C AFRICA network is a collaboration between the Leo Foundation, the Netherlands, SPOTS the Netherlands, the Regional Lion Network in West and Central Africa (ROCAL), The African Lion Working Group (South Africa), the Centre of Environment and Development Studies (CEDC) of the University of Dschang (Cameroon), the Laboratoire Ecologique of the University of Abomey (Benin), Department of Nature Conservation Tshwane University (South Africa) and the Institute of Environmental Sciences of Leiden University (Netherlands). It has been financially supported by the Prins Bernhard Natuurfonds.

The LCI-W&C AFRICA is also collaborating with the IUCN Cat specialist group, The IUCN Hyena specialist group and the IUCN Canid specialist group.

This initiative builds on the experience with the Regional Lion Conservation Strategy for West and Central Africa (ROCAL), supported by CML, CEDC and the Leo foundation, which has a main focus on the African lion (*Panthera leo*)

West and Central African Lion network

LCI-W&C ARICA intends to build on the success of ROCAL and to expand with new members in currently unrepresented countries in W and C Africa and will expand its scope to other large carnivores such Leopard (*Panthera pardus*), Cheetah (*Acinonyx jubatus*), Spotted hyena (*Crocutta crocutta*) and Striped hyena (*Hyaena hyaena*), which also threatened and persecuted and need as much protection as the lion. Cheetah and Wild African dog are extinct in most of their range and only small scattered populations survive in large park areas. Leopard and hyena species are heavily persecuted by livestock owners and killed on a regular basis with shot guns, poison and traps.

Regional and National Conservation Strategies

In 2005, IUCN and WCS organized a Range Wide Priority Setting exercise for the lion in two workshops which were reported in two lion strategy documents. These strategy documents showed a large recent reduction in lion range, with currently between 23,000 and 40,000 lions left of which only 10% in West and Central Africa (around 3000 lions). Lions in West and Central Africa have been classified as “Regionally Endangered“ and show a decline in numbers. Indiscriminate killing came out as the most serious threat and presumably most of this killing is retaliatory or pre-emptive killing by pastoralists. Prey depletion is almost equally threatening, followed by small population size and its inherent extinction risks.

In this context, the progress with the implementation of the Lion Conservation Strategy for West and Central Africa as well as the National Lion Conservation Action plans is an important instrument for conservation. The aim of the strategy is to assure the sustainable conservation and management of the lion in West and Central Africa. The development and implementation of these Lion Conservation Strategies is also important for other large carnivores in the region of West and Central Africa, like Leopard (*Panthera pardus*), Cheetah (*Acinonyx jubatus*), Spotted hyena (*Crocutta crocutta*) and Striped hyena (*Hyaena hyaena*) .

Actions

It is the first time that conservation efforts for large carnivores will be bundled in the region of West and Central Africa. Until recent conservation efforts were mainly focused on lions, whereas other carnivores received little attention. Also conservation efforts for cheetah, leopard and Painted dog were taken up by different conservation groups, who often worked in isolation and were not coordinated. This initiative will result in mutual strengthening of conservation efforts in the region. The actions planned in the near future are ;

- The organisation of the Launch of the LCI-W&C AFRICA during a regional large carnivore workshop organised on 3 and 4 November in Maroua, North Cameroon

- The promotion of the protection of the large carnivores in West and Central Africa through national focal points

- The promotion of responsible management of large carnivores in West and Central Africa, with special attention to responsible tourism, local income generation and mitigation of conflicts

- The promotion of responsible management of other large carnivores in West and Central Africa

- Support of research on large carnivores in West and Central Africa the

- The stimulation of the exchange of knowledge and knowledge gathering on the subjects mentioned above

- To inform and create awareness among policy makers and the larger public on the threats faced by lions large carnivores in West and Central Africa associated and on conservation action needed to protect them