JEJANE KHALUMA

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DECEMBER 2009

COMMENT

As the year ends conservation of our environment in one form or another dominates the daily news. Head of the list of course is the United Nations Climate Change Conference in Copenhagen. Whilst warning bells have been sounded for a number of years by environmentalists and climatologists there are still the sceptics who maintain that the apparent effects of global warming are merely the results of a normal long term climate cycle. Then there are those that sacrifice the future of the planet on the altar of political expediency, avarice and self aggrandizement. I quote from a report in the Guardian[1]; "Several scientists said the G20 summit in London, where climate change was barely considered, had convinced them the action required would not be taken. Simon Lewis, a climate researcher at the University of Leeds, said: "The summit shows that political leaders do not regard climate change as an urgent issue. They were tasked to re-configure the global economy and they chose to re-affirm the old model, and not move to a low-carbon economy as scientists have urged. The summit was more of an end-of-the-world order than a new world order." The rhetoric is profound but as confirmed in a poll conducted by the Guardian at a climate conference last month in Copenhagen exposes the gulf between political rhetoric and scientific thinking. Of more than 250 experts surveyed, more than half said the 2C [Kyoto] target could still be achieved but only 18 thought that it would be. By the end of the century, most thought average temperatures would rise by some 4C. The figure is not plucked from their imaginations. The authoritative report from the Intergovernmental Panel on Climate Change (IPCC) in 2007 laid it out in simple terms. If carbon emissions continue to rise at present rates, then the IPCC's best guess is a 4C rise by 2100. The Guardian poll merely highlights a belief that the warning has simply failed to penetrate. As one said: "I think a full understanding of what must be done quickly, and the consequences of insufficient action, is lacking among the policy makers and the public." Another said: "Current government actions are playing into the hands of ... an electorate that doesn't quite understand how serious climate change is."

Closer to home we too are consistently destroying our environment. For example according to a recent report from Bird Life South Africa[2]; "The White-bellied Korhaan is listed as "Vulnerable" in the Red Data Book, mainly because its habitat has been altered at a dramatic rate through urbanization, agriculture, commercial afforestation, burning of grasslands, and

[1] **http://www.guardian.co.uk/environment/copenhagen**
[2] **http://www.birdlife.org.za/**

mining. This bustard occurs at very low densities, and the subpopulations are becoming highly fragmented which may threaten its genetic integrity. Six of the ten bustards/korhaans which occur in South Africa are listed in The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. These birds face a multitude of threats, and all six species have ranges which are contracting and populations which are declining."

Further afield evidence of environmental degradation as human needs expand is to be found in the State of Assam in India where US aid has been sought to find ways to solve the human/elephant conflict in that province and to conserve the dwindling elephant population there which constitutes 58% of the elephant population in North East India. A noted elephant expert in the area commenting on the vulnerability of elephant population in that area commented: ""We must protect our elephants now, otherwise their population will gradually dwindle and a day might come when we get to see their images in books only and not in reality," whilst wildlife expert Anwaruddin Choudhury said "discussions should be held on providing inviolate spaces to elephants within their habitats by relocating the settlers".

One must pose the question; are we the "settlers" on Jejane and neighbouring environs guilty of usurping the responsibility of our privileged custodianship? Is our conduct and stewardship in the best interests of protecting our environment for our future generations? Do we really care or are we guilty of the avarice and self indulgence at the expense of the environment that we condemn in others? Give it some thought – do we really care? And what can we do to really make a difference? Just a snippet to consider – in the past 9 months we have consumed 927 bags of firewood on Jejane – that is approximately 11 metric tonnes of firewood!

Many of you will be travelling from home as we celebrate the holiday season. Please take care - be safe – drive safely and above all have a peaceful and enjoyable break with family and friends. May 2010 bring you only happiness, contentment, good health and more opportunities to enjoy Jejane.

FEEDBACK AND NEWS

December has been very quiet – not a single report. Jejane is expected to be busy over the December holiday period and I look forward to receiving those reports and photographs of your visit early in the New Year.

ANNUAL ECOLOGICAL MONITORING: One report that has been received by the Board is the annual Ecological Monitoring Report produced by the ARC-Animal Production Institute for 2009. Dr Mike Peel and his team have been conducting an ecological "audit' on Jejane for the past 19 years. The data is incorporated into and is part of a monitoring programme covering some 450,000hectares of the Lowveld. The objective of the monitoring programme is to ascertain the trends and resources of the reserve and includes measurement and description of plant species composition and structure; the quantification of the relations between various aspects of the vegetation; management practices such as stocking rates,

	AVERAGE RAINFALL (MM'S)						
	Jul	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*YTD Total*
2009/2010	-	*10.4*	-	-	*104.0*	*69.1*	***183.5***
2008/2009	-	-	-	*12.9*	*96.8*	*96.7*	***206.4***

fire and bush clearing; soils, rainfall other climatic variables and the woody/herbaceous ratio. This information is of particular relevance and importance to adaptive management of the environment and our resources and is particularly important as weather conditions become less and less predictable and more variable as we experience climate change. There is a prediction that we are likely to experience greater variability and extremes in rainfall with wetter wet seasons and drier dry seasons. Interestingly there has been a lack of clear "wet" or "dry" cycles in recent years.

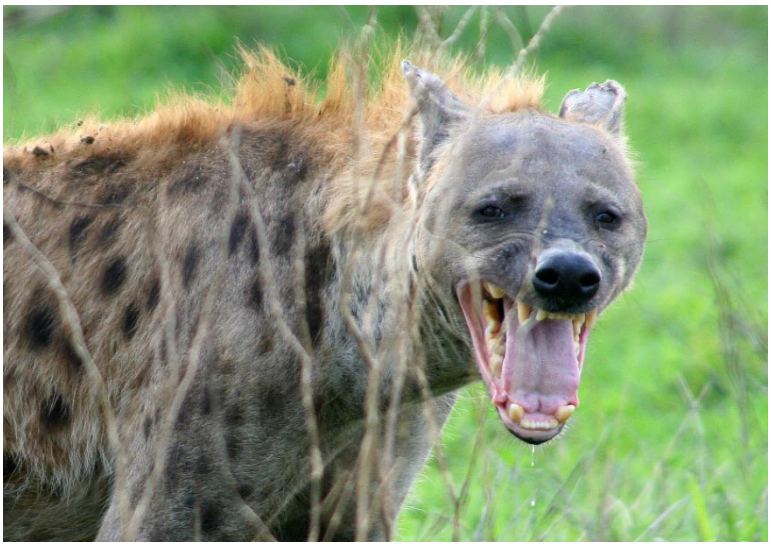
Not surprisingly the ongoing dispute and our inability to manage our game numbers for the past three to four years has reflected negatively in the assessment of our veld condition. The grass standing crop at the end of the 2008/9 season has again been rated as low – a concerning trend.

Provided we have good rains coupled with the planned reduction in game numbers in the early 2010 together with re-implementation of adaptive management programmes should see a marked improvement in the reserve's perennial component back to Jejane's previous exemplary status.

For the first time a preliminary assessment of elephant impact was undertaken during the 2008/9 survey. The data recognized fluctuating levels of elephant presence ranging from a single bull to the current 5 or 6 animals. It is still early to draw definite conclusions and a clearer picture of elephant damage will obviously emerge as the monitoring programme continues. The programme is not an in-depth study but more an attempt to attempt to broadly quantify impact on a reserve scale.

HYENA (CROCUTA CROCUTA): The young hyena belonging to the Mohlabetsi Nyala clan, which was the focus of much shareholder viewing, are now approaching adulthood and are the subject of regular sightings across the reserve. No doubt because of the traffic in the vicinity of the den they are reasonably well habituated to vehicles and people. There have been frequent sightings of hyena in the residential area at night as evidenced by the lovely photograph by Geran de Klerk (Site 43) of a hyena on their stoep. (a second hyena just out of frame to the left). On another occasion at dusk one evening recently, Anne Impey of Site 16 was watering a young tree that they have planted on their site. Roy came out to see how she was doing and found two sub adult hyenas lying at the base of the steps to the bungalow just watching her. Anne calmly [or so I am led to believe?] switched the hose off and walked back to the house, passing between the two animals that proceeded to watch her progress without any concern on their part. It was like having two dogs at the front step. A word of caution – these animals are wild, they are completely

unpredictable and the biggest temptation is to treat them as “pets” and to feed them. Please don’t. There are numerous examples of the problems that are caused by feeding hyena. Whilst they are reputed to be cowardly and timid they can also be bold and dangerous and can inflict severe damage to a hand or leg. Watch them and enjoy them but do not feed them as you could be helping to sign their ultimate death warrant.



Hyenas mark and patrol their territories by depositing a strong-smelling substance produced by the anal glands on stalks of grass along the boundaries. On your game drives you may very well have come across hyena “latrines” where members of the clan deposit their highly visible chalky white droppings which are a sign of the high mineral content of the bones which they consume.

Hyena calls during the night are one of the quintessential calls of the bushveld and are so exciting to hear when seated around the fire. The hyena communicates through these specific calls together with postures and signals. Their posture indicates their various intentions – tail carried straight indicates attack; tail carried up and forward over the back indicates excitement, whilst when the hyena is frightened or nervous they tuck their tail between the legs and flat against their belly much like a dog in trouble and like a dog’s behavior then skulk away.

A full grown hyena weighs between 41 and 86 kilograms – females being dominant over males and usually heavier. It is difficult to distinguish male and female hyenas in the bush. Contrary to urban legend they are not hermaphrodite and nor can they change their sex at will. Although the external female genitalia closely resemble those of the male they are nonetheless female organs and only the females bear and nurse young.

There is evidence that in ancient Egypt hyenas were domesticated, fattened and eaten. Over the years the hyena have had occasion to reverse the process and have in turn killed and eaten humans!![3]

Interestingly on the subject of interbreeding, researchers at the University of Sheffield in the UK and Leibniz Institute for Zoo and Wildlife Research (IZW) in Berlin, Germany, have found that female hyenas avoid inbreeding with their male relatives by giving them little choice but to leave their birth group. Animals generally avoid inbreeding because it is genetically hazardous. They can either do this by moving away from home or, like humans, by learning who their relatives are and not mating with them.

Like most mammals though, male hyenas do not contribute to the rearing of their offspring, making it highly unlikely that females know who their father is. Instead males decide to leave the group, in which they were raised, resulting in a low level of inbreeding.[4]

[3] With acknowledgement to African Wildlife Foundation and Out Of Africa.nl

You may well wonder how this information was determined. According to Dr Oliver Höner of the IZW the results of their study were only possible because they were able to monitor the decisions made by male hyenas in all eight residential hyena groups on the floor of the Ngorongoro Crater. Through this research they were able to genetically determine paternity for most offspring produced in a 10-year mentoring period.

The hyena is not the buffoon that Walt Disney would portray as evidenced by the following research just recently published which shows a completely different side to the spotted hyena.

Hyenas Cooperate, Problem-Solve Better Than Primates[5]

Captive pairs of spotted hyenas *(Crocuta crocuta)* that needed to tug two ropes in unison to earn a food reward cooperated successfully and learned the maneuvers quickly with no training. Experienced hyenas even helped inexperienced partners do the trick. When confronted with a similar task, chimpanzees and other primates often require extensive training and cooperation between individuals may not be easy, said Christine Drea, an evolutionary anthropologist at Duke University.

Drea's research published online in the October issue of *Animal Behavior*, shows that social carnivores like spotted hyenas that hunt in packs may be good models for investigating cooperative problem solving and the evolution of social intelligence. She performed these experiments in the mid-1990s but struggled to find a journal that was interested in non-primate social cognition.

"No one wanted anything but primate cognition studies back then," Drea said. "But what this study shows is that spotted hyenas are more adept at these sorts of cooperation and problem-solving studies in the lab than chimps are. There is a natural parallel of working together for food in the laboratory and group hunting in the wild."

Drea and co-author Allisa N. Carter of the Univ. of California at Berkeley, designed a series of food-reward tasks that modeled group hunting strategies in order to single out the cognitive aspects of cooperative problem solving. They selected spotted hyenas to see whether a species' performance in the tests might be linked to their feeding ecology in the wild.

Spotted hyena pairs at the Field Station for the Study of Behavior, Ecology and Reproduction in Berkeley, Calif. were brought into a large pen where they were

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[4] With acknowledgement to University of Sheffield via EurekAlert!
[5] Science Daily (Sept 29, 2009)

confronted with a choice between two identical platforms 10 feet above the ground. Two ropes dangled from each platform. When both ropes on a platform were pulled down hard in unison -- a similar action to bringing down large prey -- a trap door opened and spilled bone chips and a sticky meatball. The double-rope design prevented a hyena from solving the task alone, and the choice between two platforms ensured that a pair would not solve either task by chance.

The first experiment sought to determine if three pairs of captive hyenas could solve the task without training. "The first pair walked in to the pen and figured it out in less than two minutes," Drea said. "My jaw literally dropped."

Drea and Carter studied the actions of 13 combinations of hyena pairs and found that they synchronized their timing on the ropes, revealing that the animals understood the ropes must be tugged in unison. They also showed that they understood both ropes had to be on the same platform. After an animal was experienced, the number of times it pulled on a rope without its partner present dropped sharply, indicating the animal understood its partner's role.

"One thing that was different about the captive hyena's behavior was that these problems were solved largely in silence," Drea said. Their non-verbal communication included matching gazes and following one another. "In the wild, they use a vocalization called a whoop when they are hunting together."

In the second and third experiments, Drea found that social factors affected the hyenas' performance in both positive and negative ways. When an audience of extra hyenas was present, experienced animals solved the task faster. But when dominant animals were paired, they performed poorly, even if they had been successful in previous trials with a subordinate partner.

"When the dominant females were paired, they didn't play nicely together," Drea said. "Their aggression toward each other led to a failure to cooperate." [I thought that this behaviour only related to humans!! – Jim]

When a naïve animal unfamiliar with the feeding platforms was paired with a dominant, experienced animal, the dominant animals switched social roles and submissively followed the lower-ranking, naïve animal. Once the naïve animal became experienced, they switched back.

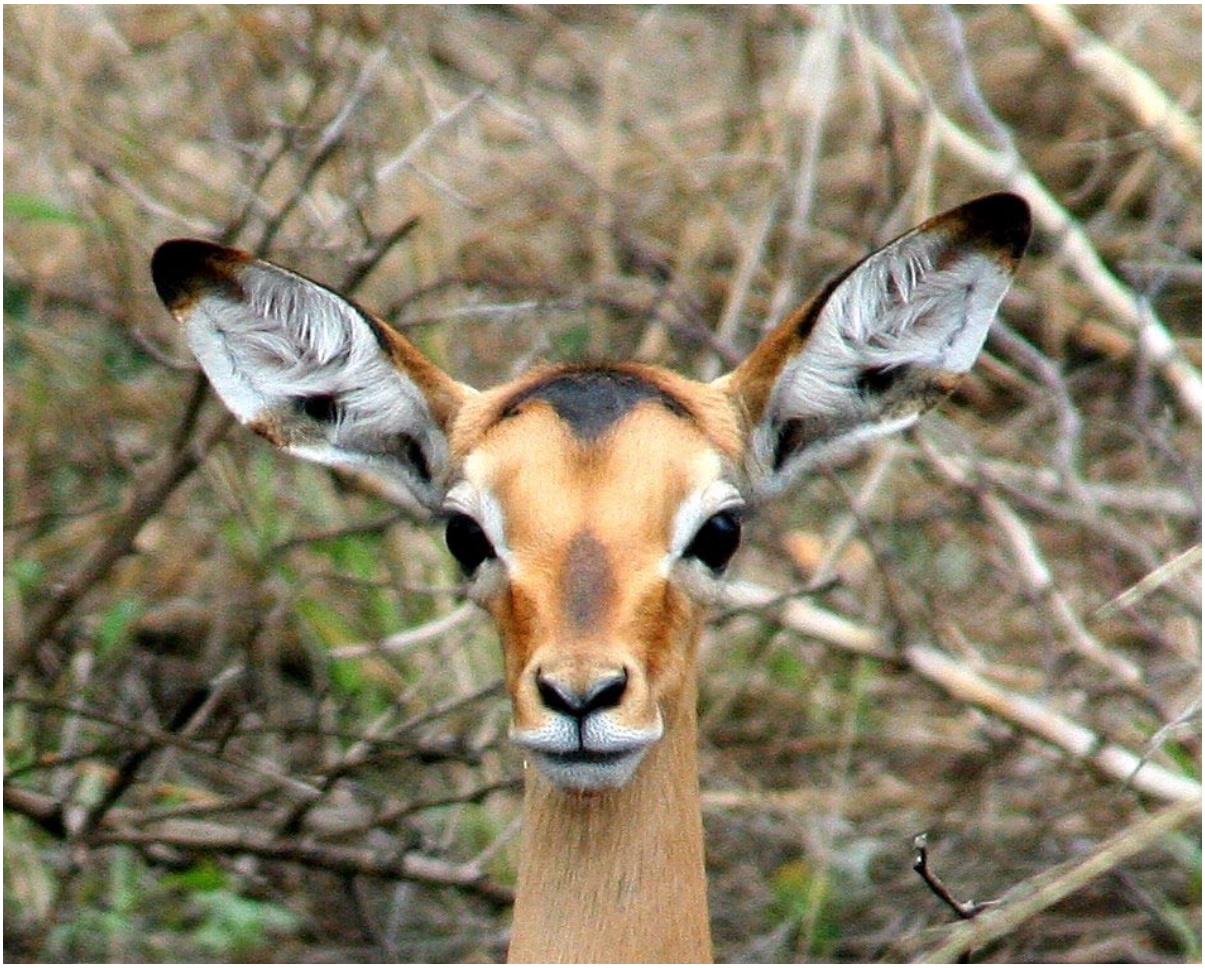
Both the audience and the role-switching trials revealed that spotted hyenas self-adjust their behavior based upon social context.

It was not a big surprise that the animals were strongly inclined to help each other obtain food, said Kay Holekamp, a professor of zoology at Michigan State University who studies the behavioral ecology of spotted hyenas.

"But I did find it somewhat surprising that the hyenas' performance was socially modulated by both party size and pair membership," Holekamp said. "And I found it particularly intriguing that the animals were sensitive to the naïveté of their potential collaborators."

Researchers have focused on primates for decades with an assumption that higher cognitive functioning in large-brained animals should enable organized teamwork. But Drea's study demonstrates that social carnivores, including dogs, may be very good at cooperative problem solving, even though their brains are comparatively smaller.

"I'm not saying that spotted hyenas are smarter than chimps," Drea said. "I'm saying that these experiments show that they are more hard-wired for social cooperation than chimpanzees



Visitors to Jejane at this time of the year will have witnessed the arrival of the season's crop of impala lambs – magic moment for the younger visitors – lots of "ag shame" no doubt. The lambing season is also a time of opportunity for the various predators and already cheetahs have been sighted on the property as well as leopard and of course the resident pride of lion. The smaller predators such as the hyena, caracal and Black-backed jackal will also play their role. It will be a good time to brush up on vulture identification – please remember to let us have any details of tag numbers that you may see on vultures attending kills on the reserve. The tag is yellow plastic and attached to the wing with fairly prominent numbering.

This is also a good time to start identifying the flora on Jejane – the initial rains have given the veld a kick start and one can expect to see the emergence of the wild chincerinchees (Ornithogalum sp) for instance which appear in profusion at Jejane dam and along Leguaan drive in the vicinity of the pylons. The Brunsvigia's have already flowered and the resultant "tumble weeds" may be seen along Warthog drive in particular. The beautiful crinum lilies should be close to flowering as well. If conditions are good the seldom seen "sand lily" (pictured on the next page) with its spiral shaped leaves could put in an appearance particularly on the Jejane section of the reserve.

The trees should now be in full leaf – a good time to learn to identify the numerous different species on Jejane.

On the birding front – the migrants are back including the owner of one of the most beautiful sounds of the bushveld – that of the Woodland Kingfisher. We have a pair nesting in a log at our house which have now visited us for the past three years and we look forward to their return again this year.

Then of course this is also the time of year that the insects proliferate. Beetles of every size and hue – if you have not done so before, plan to spend some time at a rhino midden and watch the different sizes and colours of beatles frantically collecting dung to procreate. No trip to Jejane is complete without an evening visit to one of the pans to experience the magic of a frog chorus. The tree frogs have already mated with the advent of the rains and you will find the remnants of the foam nests above every pan carrying a puddle of water. Just keep a careful eye open for snakes – they also welcome the frog chorus but for a different reason!

Images courtesy of: Page 3 – Geran de Klerk; Page 4 – Zane Keller; Page 5 – Duke University; Page 7 – Zane Keller; Page 8 – Sand Lily Jim Thomson; Page 8 – Bullfrog – Colin Anderson.

Randburg - December 11 2009

Jejane Khaluma is a private newsletter edited and distributed on a voluntary basis and without cost to members and friends of Jejane Private Nature Reserve and for those who may be interested in environmental issues.

Opinions expressed are not necessarily those of the editor, or the Directors and Management of Jejane Private Nature Reserve. Whilst every care is taken in the preparation of this newsletter, no responsibility is accepted for errors. Edited by: Jim Thomson Email: vgfthoms@global.co.za