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Eyes on Africa: Conservation Sense or Nonsense

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Thank you for allowing me to be the last speaker at this conference. We had three wonderful days of sharing what we know best. I have noted a lot of sense – conservation sense supported by science. I learned of the value of historical data, the interaction between wildlife management, conservation and ecotourism. I learnt of landscape ecology as a platform for conservation research and the importance restoration in conservation. I also learnt of leopards and elephants. We had outstanding contributions from a new generation of young scientists, we ate well, we laughed a lot and all in all we have had a good symposium – most of it in the name of conservation. Most of what we listened to make sense – I therefore will spend some of our closing minutes on things that do not make sense with the hope of balancing sense with nonsense.



I often wonder why we do what we do. For most of us it certainly is not for money or fame – the likelihood that any of our activities in conservation will earn us money and fame is limited. It is different for this chap. I photographed Carlos before crossing a border post between Mozambique and Malawi. Carlos certainly seems to have a lot of money and he spends his days making even more. Fame and conservation is not on his mind.



The situation is different for Stuart Pimm. Fame is continuously on Stuart's mind as I have learnt over the past ten years while sharing wonderful times with him here in Africa. Stuart's success results from him making a point thereof to find the exception to the rule and then to expand on exactly that. This approach certainly brought Stuart fame. His citation record exceeds 3000 and even that of OE Wilson. Conservation excites Stuart and he is more than prepared to share his passion for conservation, and for fame.



This is Hendrik Otsub. Hendrik is a wildlife manager in the Khaudum Game Reserve in northern Namibia. For some 30 years he maintained the 12 boreholes in the reserve. He is not into this for fame or money – he understands that without water there will be far fewer elephants in the reserve than what there are now. He is close to conservation in practice, much closer than I. You can imagine his total disbelief when I told him that it is the water and not the elephants that is the problem in Khaudum.



John is the tsetse fly control officer at one of the entry gates to the Kafue National Park in Zambia. He has been doing this for some 16 years and is employed as a veterinary control officer. He uses a net made of a stretched stocking to kill tsetse flies in and around every car that enters or leaves the park. To John his responsibility makes sense for it keeps people healthy. John thus is important to his society and is not doing this for money, or fame or conservation.



Why did I bother to introduce you to these gentlemen? To me they present the essence of conservation sense and nonsense – the aspirations and actions of two of them makes conservation sense while those of the other two may not make sense. Carlos in essence represents capitalism, Stuart science, Hendrik wildlife management, and John veterinarian services. As far as these actions are concerned it is up to you to decide which makes sense and which does not. However, allow me some indoctrination.



I recently spend a few days in Denmark. There are 5 million Danes. The country comprises a few islands and a mere 43000km² in area; – it has no minerals, hardly has a species to conserve or to declare endangered (all have gone extinct) but their yearly GDP is ten times higher than that of South Africa. On top of that they have a social support system admired by most of the world and a standard of living that most westerners can only strive for. How on earth do they managed that, I wondered.



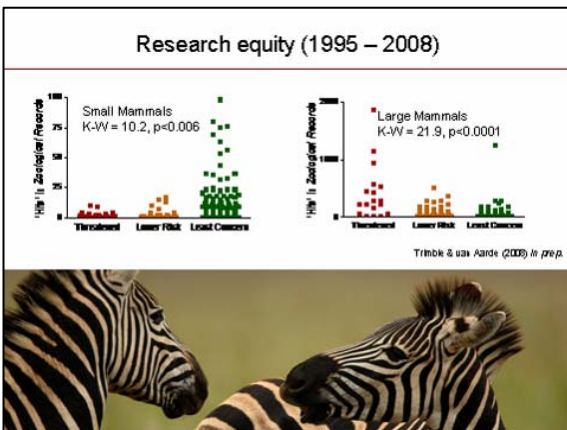
With the northern Germans they sport the highest incidence of use of anti-depressants and Viagra. When I asked a Dane how they manage to maintain such a high standard of living, he smiled and said: “we are intelligent and we export intelligence”. The Danes have taken to the habit of patenting all they can, anything from toys to containers. No wonder they are not poor and that they have money to spend on odd activities that they consider conservation



The Danes are keen on conservation. They also have a zoo and two million of the five million Danes visit the Copenhagen Zoo every year. Here they recently have spent some 300 million Crone (~R500 million) on a new house for their seven Indian elephants – the Danes like it and to them it makes sense, also conservation sense, for this house provide them the opportunity to breed endangered species.



All of us are very aware of the efforts that are going into conservation projects that focus on endangered, threatened or rare species. We know that we have a better chance to find support for our research, management and conservation efforts by declaring the species that we deal with as threatened. This certainly also holds for scientific endeavours. To shed some light on the influence of conservation status on scientific output I asked Morgan Trimble of my research group to look into the matter. She placed southern African mammals into one of three status classes – ‘threatened; at low risk; least concern’. She then searched the *Zoological Records* for hits on them. What did she find?



Morgan distinguished small (mole rats, hedgehogs, rodents, bats, hyraces, rabbits and hares) mammals from large ones. Her quick survey suggested that more research goes into large than small mammals. Among small mammals significantly more effort is going into studying common species of least concern, such as the multi-mammate mouse and other pest species. Among large mammals the trend was the complete opposite – here most effort is going into studying threatened

species such as the great apes and elephants. Among large mammals significantly less effort is made to study

species at a low risk or of least conservation concern. The exception and outlier on the graph, is the leopard. This is fascinating – it is fascinating in the sense of our understanding of the contribution that scientists are making to the conservation. But what is the point I try to make?

Drivers of conservation priorities

- Extinction risk of iconic species
- Iconic places rich in threatened species
- Keystone, flagship, umbrella, indicator species

Common, population depletion and conservation biology
Kevin J. Gaston and Richard A. Fuller
Published in *Conservation Biology*, 2002, 16(1), 1-10



Some of you may be aware of recent calls to favour the conservation of common species and commonness. Kevin Gaston, in an opinion paper, really makes the point. He indicates that extinction risk, iconic status, iconic places and assigned status such as umbrella, flagship, and indicators often drive conservation initiatives. However, this is a problem, as far as he is concerned. Such species are not necessary the drivers of ecological and evolutionary processes. Emphasis on them rather than on common species may neglect the essence of the conservation ideology. Efforts to ‘reduce the risk of extinction’ or

to ‘delay extinction’ as a focus of conservation also may be much too expensive. That brings me to my next concern:

Conservation and Policy

The How-Much-Is-Enough Myth

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I could not find an African example to illustrate the cost of reducing extinction risk and relied on a recent paper that George Wilhere published in *Conservation Biology*. George assessed the costs to reduce the likelihood of extinction. His ‘extinction risk-cost curve’ shows that to reduce the probability of extinction from 0.925 to 0.985 requires a 30 fold increase in cost!! He quotes a study on spotted owl to illustrate the costs of securing an endangered species from extinction. The cost increases steeply with a per-unit increase in survival probability – US\$ 1.4 billion to increase survival likelihood from 0.90 to 0.91,

and US\$3.8 billion to increase it from 0.94 to 0.95!! All of this is clearly beyond the realm of our conservation budgets.

What is wildlife management?

- Efforts to increase the numbers of rare or ‘beneficial’ species
- Efforts to reduce numbers of ‘nuisance’ species
- Monitoring response to management and utilization



But what has this to do with wildlife management?

The want to reduce extinction risks is embedded in wildlife management actions. However, wildlife management is much more than taking care of endangered species. In this slide I made an attempt to define wildlife management. Wildlife management may include ‘efforts to increase the abundances of rare or beneficial species’. It also involves ‘efforts to reduce the abundances of nuisance species’. This is in total agreement with our research actions mainly being devoted to nuisance or rare species, as I indicated in an earlier slide. We also know that

wildlife management involves the monitoring of responses of species population to management and utilization’. We thus tend to focus on numbers and changes in numbers. But allow me to move onto some anecdotal stuff.



I now would like to move onto the notions that African communities can benefit greatly from conservation based operations that enhances tourism. My anecdotal case is from Zambia, this time the Bangweulu swamp area, an area that African Parks earmarked for conservation development to benefit communities and species. I went onto the swamp on invitation from WWF-SARPO to design a research program to investigate poaching. People go to Bangweulu swamp to see the Shoebills and black lechwes, but there are

more than these species to the swamp that extends over an area at least some 3 000km². The black lechwe herd now may comprise some 80 000 to 100 000 lechwes and has recovered from a former low of some 30 000 to 40 000 about thirty years ago.



David Livingstone died here but the Brits took the tree where his innards was buried and put it in a museum somewhere else. The Bangweulu is impressive. Some 13 000 people live in the region, mostly in villages along the perimeter of the swamps and in temporary dwellings constructed on high-lying ground and made from grass, reeds and mud. Intricate networks of channels dug over many years allow them to navigate their wooden canoes across the swamps to attend to fishing nets and lines. Fish is important to the people here and is part to an exchange economy. Cash is scarce.



People living here are poor and uneasy to communicate with, especially in the presence of officials. The stand-off stems from the apparent conflict between the local people, mostly of the Batwa tribe, and ZAWA officials, mostly from the Bisa tribe. This swamp is not a conservation area but the lechwe and other animals are protected from a dilapidated ZAWA office at the edge of the swamp.



But for the beauty of the area I was struck by several things. First, by the sizes of the fish delivered by netting - from this slide you must be noting that most of the fish that this lady is holding in her hand is particularly small. I was also told that the fish is getting smaller and scarcer. Why would that be?



One reason for the decline in the catch is a community development program. A few years ago WWF embarked in a social uplifting program to control malaria that is typical of life on the swamp. They issued the fishermen with mosquito nets. As you may have expected, these ended up as custom made fishing nets and thus the indiscriminant over exploitation of fish.



Second, it came to my attention that by not having enough fish the Batwa now became reliant on meat and with plenty and an apparent increasing lechwe population their actions would be obvious. However, this is totally against the wishes of ZAWA that issues quotas for professional hunters to hunt lechwes, hartebeest and oribi on the swamps! And here lies the root of the problem. The Bisa blames the Batwa of indiscriminant poaching. This seems politically loaded and part to a long standing intertribal conflict.



The area is earmarked for conservation development by African Parks. I was told that the development needs the 13 000 people to move out of the swamp and that the declaration of the areas as a National Park will enhance tourism that will cater for the people, albeit that the people will have to change their way of living!! Imagine my outcry! You, as well as I, know of several scientific investigations that show that community based conservation development is little more than an ideology maintained by advocacy. But let we move on to another account of conservation nonsense – this time trophy hunting in the Luangwa valley.



This is the Luangwa valley in central Zambia. It is a spectacular stretch of land at the base of the African rift valley that once supported lots of elephants and maybe some 16 000 black rhino. All the rhino and nearly 80% of elephants in the valley succumbed to poaching during the 1980's.

The Luangwa valley comprises several national parks.

The best known of these are the South Luangwa National Park and the North Luangwa National Park. These parks are surrounded by Game Management Areas where few people live and where a variety of species are hunted. The hunt includes the so-called 'classic' package that comprises lion, leopard, buffalo and a choice of other species.



Hunting of lion in the Luangwa has been continuing for some 40 years and reports have it that some 1400 to 2000 were killed during the 20 years from 1960 to 1980. In the Luangwa, like elsewhere, lions are an important source of tourist entertainment. An operator living here for some 24 years said to me, and I quote "Lions, no we do not have a lion problem. We see them everyday, there must be hundreds in my area and as long as the tourists can see lion we have no problem". Another had a different story to tell. He guides for the operator I just referred to, and has been doing so for some seven years. He told me "We see lion every day because we know where they live. We have a big problem for we know longer see big old males".



ZAWA dictates the hunting quota which in essence is determined by the Professional Hunter in liaison with the local community of a specific Game Management Area. The quota is paid up front and in advance of the hunt. The money for the quota goes in part to maintain ZAWA and to the local communities. There are no rebates for quotas not fulfilled! This is where the problem starts.



The Game Management areas have few lions and apparently operate as dispersal sinks from the North and South Luangwa National Parks that may function as sources for these sinks. To fulfil the quota the operators lure lions from the parks by putting bait all along the boundaries of the parks. For one hunter that I spoke to these baits extended over 20 km of riverfront. The consequences of all of this for the core lion populations yet have to be defined, but a few casual observations are worth noting.



During a recent visit to the valley I had the pleasure of watching lions mating in the late afternoon light. About 30 meters from the mating pair laid this female, clearly full of lust. She wanted to be part to what the pair was up to.



At some point her desperate urge had her approaching the pair that was resting after a mating bout, something that they did about every twenty minutes on the clock. She whisked her tail and curved her back in full lordosis, a sight that should be respected by any well-mannered male lion.



Without notice, but a single growl, the male left his partner and charge straight to the approaching female, and attacked her with violent bites and claspings claws! She rushed off, and he then he proudly sneaked back to his partner, who went into the mating posture to let him return to the task at hand. This was followed by him returning to do what lions do best, that is to sleep.



This episode stirs. These females were from different prides and both left their prides. There were no adult males in their prides and they sought the company of a nomadic male – not only nomadic but younger than typical pride males that do the mating elsewhere. The shortage of males and the lack of older males ruined the social fabric of prides, thus creating a sort of Allee effect. The lion problem in the Luangwa is clearly multi-facet and the solution a socio-economic one. To some of you there is not much new in this. From papers in influential journals such as *Nature* and *TREE* we know how to address the problem, but who read these?



Why do I get this uneasy feeling of science being ignored in wildlife conservation management? We must admit that it is sometimes a tall order to expect society to take some of us series. Our cynical views can easily be interpreted as sceptical without us meaning so. Take for instance our way of communicating our science.

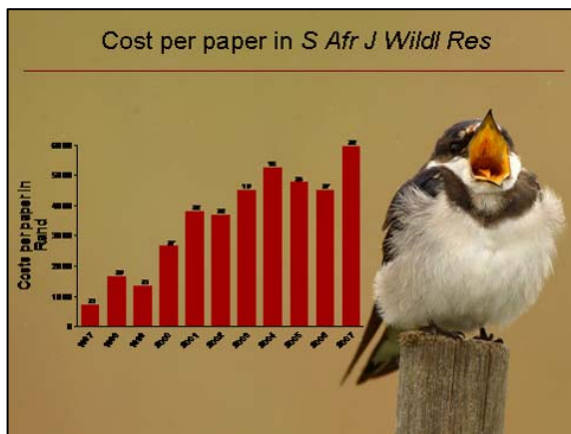


Many of us strive to publish our work in the best of journals – this is the way we know we have to follow if we wish to be taken serious and to be respected by our fellow scientists. We spend a lot of time and money to get resources or positions that will allow us to study our pet subjects or topics. We format our findings into manuscripts that we submit to journals of our choice. The editor either rejects it immediately, or sends it out for refereeing. Months of torture are often followed by a 'dear Johnny' to explain why the work is not publishable – that is the business of our existence.

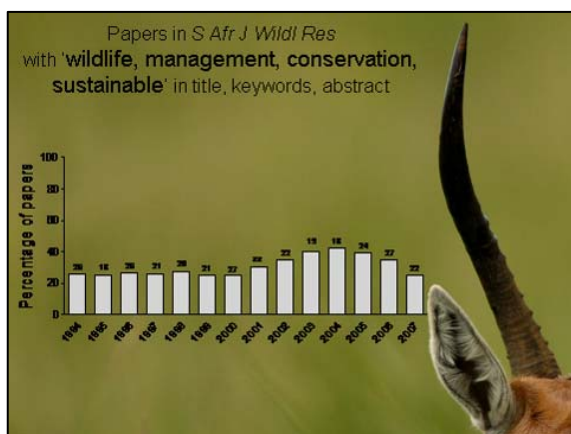


A recent editorial in the *New Scientist*, a magazine that aims to inform society on what scientists do, points to a further predicament that we as conservation scientists, like medical scientists, may experience. The system in which we operate demands that we publish in respected international journals, journals that certainly will not be read by local conservation practitioners or policymakers. No wonder that these people do not know of us. For conservation and for wildlife management, calls to publish in local journals therefore make sense. This is not easy if your fellow scientist frown upon you for

doing so!!



Our society supports a local journal. Our journal is doing well and our citation record stands high among South African journals. Our journal has been in existence for more than 30 years. Some 20 papers are published every year. Our direct publication costs are relatively low and boils down to about R6 000 per paper. I appreciate that this is a tiny fraction of the real costs of submitting the manuscript and conducting the research. Still it is a real cost and most of your membership fees go into paying for the publication of papers.



But what do we publish? Do the papers that we publish have anything to do with wildlife management as I have defined earlier? This is difficult to assess. I therefore asked Jo Fourie of my group to look into this. Jo searched for certain words in the title, keywords and abstracts of papers published over the last 15 years in our journal. These key words reflect on the ideology of our society. The words were “management, wildlife, conservation, sustainable” in any combination thereof. What did he find? I think the finding is rather clear. Less than a third of the papers we publish in the journal apparently deals with the topics relevant to our Society’s intend.

It would be very interesting to know who read our journal, but let us then not get upset when our ideas are not being applied in conservation.



Part of the problem of communicating conservation and wildlife management probably lies in the view of the public on conservation. A few weeks ago I asked some of my people at CERU to assess that general understanding of conservation and of biodiversity on the campus of the University of Pretoria. We asked four questions: - What sex are you? What do you study? What is conservation? Have you ever heard of biodiversity? Great was the surprise:

- The self-assignment to gender was correct in all cases and study fields ranged from plant sciences to engineering.
- 71% of the students had no idea what conservation was about. Most consider it as something to do with the environment.
- About 52% have heard the word biodiversity before and 12% knew what it means. A PhD student in plant pathology, who has spend 12 years on campus, counted among those that could not define biodiversity!!

What can we conclude form this? It seems that society is pretty well misinformed on what we are about. What can we do about it? I seriously do not have an answer yet. However, I can make suggestions on what we should continue to strive to do.

Challenge Brief

Fusion or Failure? The Future of Conservation Biology

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- Put conservation plans into action
- Mainstream conservation into everyday decisions
- Improve understanding of ecosystem change
- Conserve ecological and evolutionary processes

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I think most of us should continue to do what we do and what we do best. As a word of caution, I continue to be concerned that much of what some of us do is done in isolation and without a clearly defined framework. Richard Cowling has gone a long way to provide something of a framework. One of his papers published back in 2006 and co-authored by Andre Balmford get to the point. Among other things they suggested that we need to 1) put conservation plans into action, 2) mainstream conservation into everyday decisions, 3) improve understanding of ecosystem change and 4) conserve ecological and evolutionary processes. What I liked most of their paper is their call for well-balanced individuals to lead and develop inter-disciplinary activities and research to further conservation - hence the title of their paper.

As a final word I think the change in classical wildlife management is unavoidable. We may well find ourselves moving from managing wildlife to managing landscapes. For this paradigm shift a whole new set of rules and principles needs to be developed urgently.

Thank you.