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A wolf hidden in plain sight

Until recently, if anyone asked about the occurrence of wolves in Africa, the standard answer would have been that there is only one - the Ethiopian Wolf (*Canis simensis*) - a denizen of the Highlands of that country. It was always believed that the closest that grey wolves (*Canis lupus*) were known to occur to Africa was the Sinai peninsula, yet now an ancient member of the grey wolf lineage has been discovered hiding in plain sight in north Africa.

As long ago as the late 19th century, biologist Thomas Huxley had suspicions that a grey wolf did in fact exist in Africa, but there was no means available at the time to prove it. Other biologists too expressed similar opinions and more recently a photograph of a "wolf" in the company of side striped jackals was submitted from Senegal.



Now an animal that was previously thought to be a subspecies of the golden jackal (*Canis aureus*) has been found to be more closely related to the grey wolves of India (*Canis lupus pallipes*) and the Himalayas (*Canis lupus chanco*). It is to be called the African wolf. The study was published in PLoS-ONE under the title "**The Cryptic African Wolf: *Canis aureus lupaster* Is Not a Golden Jackal and Is Not Endemic to Egypt**".

Elephant damaged vegetation shelters more frogs and reptiles

Elephants have been termed ecological engineers because they are able to alter the shape and appearance of the landscape in which they live and feed. This ability to destroy vegetation has been at the top of elephant conservation agendas throughout Africa, but another side to it has recently been revealed.

A study conducted by a team from Georgia Southern University was published recently in the African Journal of Ecology. The study was conducted at Ndarakwai Ranch, a 4,300 hectare site of mixed savanna woodlands (dominated by two *Acacia* species) and open savanna in North-East Tanzania, between August 2007 and February 2008.

The levels of vegetation damage they assessed and monitored were;

- High - main trunk pushed over and/or up-rooted.
- Medium - damage to the main trunk and more than 50% of branches and foliage damaged.
- Low - no damage to the main trunk and minimal damage to branches and foliage

These damage categories were compared to a 250 Ha control area that was fenced off to completely protect it from large herbivores. The various areas were then assessed for species richness of amphibians and reptiles.



The team discovered a strong trend towards higher species diversity in the areas where elephant damage was greater. In high damage areas 18 species were sampled, in medium areas 12 were found and in low areas only 11 were found - compared to only 8 in the completely protected area. The conclusion reached was that the difference was probably a result of engineering by elephants, generating new habitats.

The craters and coarse woody debris formed by uprooted and broken trees probably increased the the number of shelters against predators, while at the same time forming suitable habitat for a wide range of insects which served as prey for the frogs. Dr Schulte (team leader) said "*What this study points towards is that although things may not look particularly pretty to a human eye does not necessarily mean that it is detrimental to all the life that is there.*"

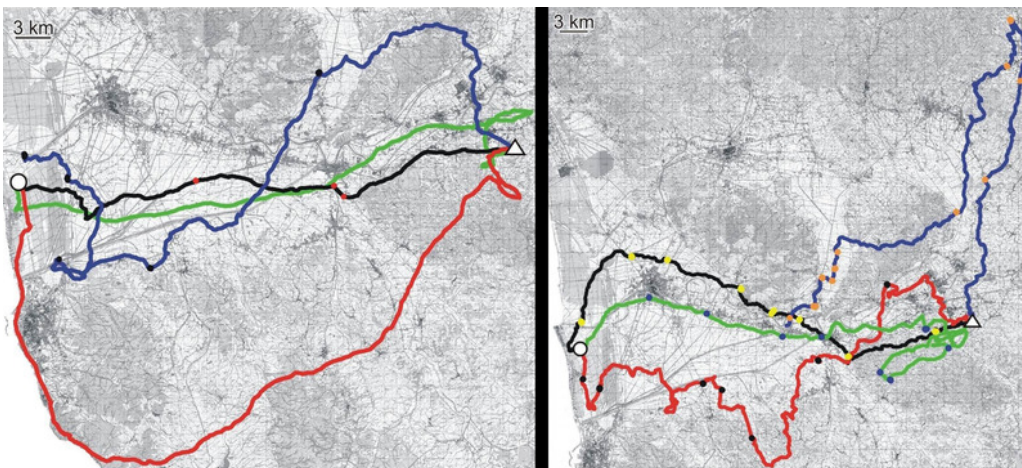
"The only real valuable thing is intuition."

Albert Einstein

"Follow your nostril" - how pigeons find their way home

The ability of pigeons to find their way back to their loft is legendary and has been known for centuries. How they achieve this accuracy and sense of direction is something that has been studied for many years, and now new research indicates that they do it with their nostrils - their right nostril to be precise!

Scientists from the Max Planck Institute for Ornithology in Radolfzell, Anna Gagliardo from the University of Pisa, and their colleagues at the University of Trient report in the Journal of Experimental Biology, that pigeons with a blocked right nostril are unable to create a "smell map" that guides them on their journey.



What they discovered is that the birds learn about an array of odours as they sit in their lofts, including the direction from which the odours come. They then seem to construct a mental map of the odours and use this to locate their home again. To test this, the team plugged the right or left nostril of a group

of pigeons and then released them 40 km away from their loft. The birds were fitted with GPS tracking devices and the paths they took were compared upon arrival at the loft. The birds with the plugged right nostril took much more complex routes (right hand figure), than did the ones with plugged left nostrils indicating that they had difficulty accessing information from their mental smell maps. This indicates that the smell processing centre and hence navigation centre is located in the left hemisphere of the bird's brain. Pigeons are also known to use the earth's magnetism to help them navigate, but says Dr Gagliardo, the sense of smell helps them to "***understand where they are with respect to home***".

African Pythons may be breeding in Florida

The presence of Burmese pythons in Florida USA is well documented and I wrote about it in a past issue. Now it seems that the northern African python (*Python sebae*) has been added to the list of species slowly carving out a niche for themselves in a foreign land.

At least seven of these African pythons have been recovered from a single 2500 hectare area in Florida since 2002. Of these, one was a 4.7 m adult female with eggs forming in the oviduct, others were reproductively active

males, and there were several young-of-the-year snakes. The ages and sexes of these snakes, and their proximity to one another, suggests a breeding population. Another important fact is that the capture site is less than 2 km from the border of the Everglades, an immense habitat that could easily hide other African pythons.

Research on shark vision may help with their conservation

The amount of a shark's brain dedicated to visual senses and the size of their eyes tells us that vision is very important for them. However, an analysis of their retinas shows that they are limited almost completely to monochrome vision (black and white). A study lead by Nathan Scott Hart of the University of Western Australia found that in 17 species of sharks analysed, 10 had no cones (colour sensitive cells) while the remaining 7 had only one type of cone which is sensitive to green wavelengths. By comparison, human retinas have 3 types of cones, and birds have 4. The scientists used a sophisticated technique called microspectrophotometry to recognise which wavelengths of light can be seen by a shark's retina.



[Photo Credit](#)

This does not come as much of a surprise because of the low light levels in the ocean and the limited penetration of blue spectrum light into the water. The interesting thing is the way that this information could be used to help in shark conservation. ***“Our study shows that contrast against the background, rather than colour per se, may be important for object detection by sharks,”*** Hart said. ***“This may help us to design long-line fishing lures that are less attractive to sharks, as well as to design swimming attire and surf craft that have a lower visual contrast to sharks and therefore are less attractive to them.”*** The study was posted in January in the journal *Naturwissenschaften - The Science of Nature*.

Human hormone pollution - another frog nightmare

The last few years have seen a major decline in frog numbers caused by a range of threats from fungi to heavy metals. Another threat has now been identified, and ironically it has to do with human fertility. It seems that human contraception hormones, hormone replacement therapy drugs and cancer drugs are affecting the ability of frogs to breed. For example, tadpoles that swim in water containing low levels of progesterone are subject to abnormal ovarian and oviduct development which results in adult sterility. The hormones are passed in the urine of people receiving hormone therapy or taking contraceptive hormones and from there make their way into the environment from sewage treatment plants.

The exquisite sight, sound, and smell of wilderness is many times more powerful if it is earned through physical achievement, if it comes at the end of a long and fatiguing trip for which vigorous good health is necessary. Practically speaking, this means that no one should be able to enter a wilderness by mechanical means.

Garrett Hardin

What is It?

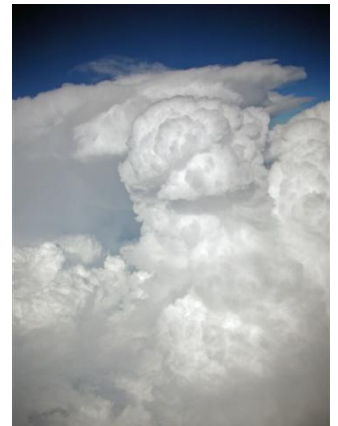
This little worm is the larva of an adult insect that is very well known to most nature guides. The larvae are better known to gardeners who often dig them up in the soil among vegetable and other plants.



How to forecast weather using natural signs

Keep an eye on the clouds

- Cloud layers moving in different directions (one travelling west and another north for example) often indicates approaching bad weather.
- Look for Cumulus Castellanus (also called Cumulus Congestus) clouds which often predict for thunder showers later in the day when they may develop into cumulonimbus clouds. **(Image right)**
- Mammatus clouds are caused by air that is sinking and thus represent a dissipating thunder storm - not one that is developing.
- Cloud cover on a winter night will cause warmer weather the next day because the layer traps heat and prevents it being lost to the atmosphere.
- Cirrus clouds often precede warm fronts which are then followed by a frontal rain system. Therefore expect poor weather within 36 hours after the appearance of these clouds. The same goes for Altopcumulus clouds (often called mackerel skin or scales) as indicated by the old sailors rhyme "*mare's tails and mackerel scales, tall ships carry short sails*".



A town is saved, not more by the righteous men in it than by the woods and swamps that surround it.

Unknown

Lions in crisis - time to act effectively

The number of lions on this planet have halved in two thirds of my lifetime - a population collapse that has largely gone unnoticed and unsung until recent years. The African lion is now seriously threatened and if nothing is done to change the situation it will soon be in the same situation as the tiger. The best estimates of scientists and conservators throughout the continent put the number of wild lions at between 23000 and 39000 animals of which between 25% and 50% occur in one country - Tanzania. (<http://www.selouslion.org/>)

The cause of the decline is well understood, but is hard to stop. At the head of the list is the burgeoning African population which is bringing humans into direct competition with lions for both space and resources. This loss of habitat and the consequent loss of prey species is having a massive impact on their numbers to the point where the species is only able to survive in protected areas. The most sinister of all pressures they face is ironically caused by the scarcity of their close cousins the tiger. Tiger bone wine and tiger penis are widely used as medicinal remedies and panaceas in Asia, but the difficulty in obtaining their parts has now turned the attention of criminals to the lion. This is potentially one of the biggest threats they face, since large numbers can be quickly poached and removed. African game departments are underfunded, understaffed and are largely incapable of halting the efforts of those intent of pillaging their natural resources. To top it all, lions are also facing pressure from trophy hunting that has reportedly reached unsustainable levels in some countries.

The United States is the largest importer of lion trophies in the world, and the the Born Free Foundation is making an attempt to do something about the decline. They are petitioning the US and UK governments to list the African lion on their endangered species lists, thereby making it illegal to import lion parts and trophies into those countries. The idea is that although this would have a small impact on lion numbers generally, it would send a message to the world that they are at least trying to do something about it.

Being a sceptic when it comes to organisations like this, I cannot help but feel that this is just another attempt to cripple the lion hunting industry rather than a genuine attempt to save lion numbers. The sort of efforts needed now

