

# Bustard or bustdead: Are we understating the threat from power lines?



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A September 2014 power line survey along the Aries- Helios line in the Northern Cape revealed a trail of dead bustards and other species.

➤ In 52 km of road survey under the 400 kV Aries-Helios line we found 27 dead birds:

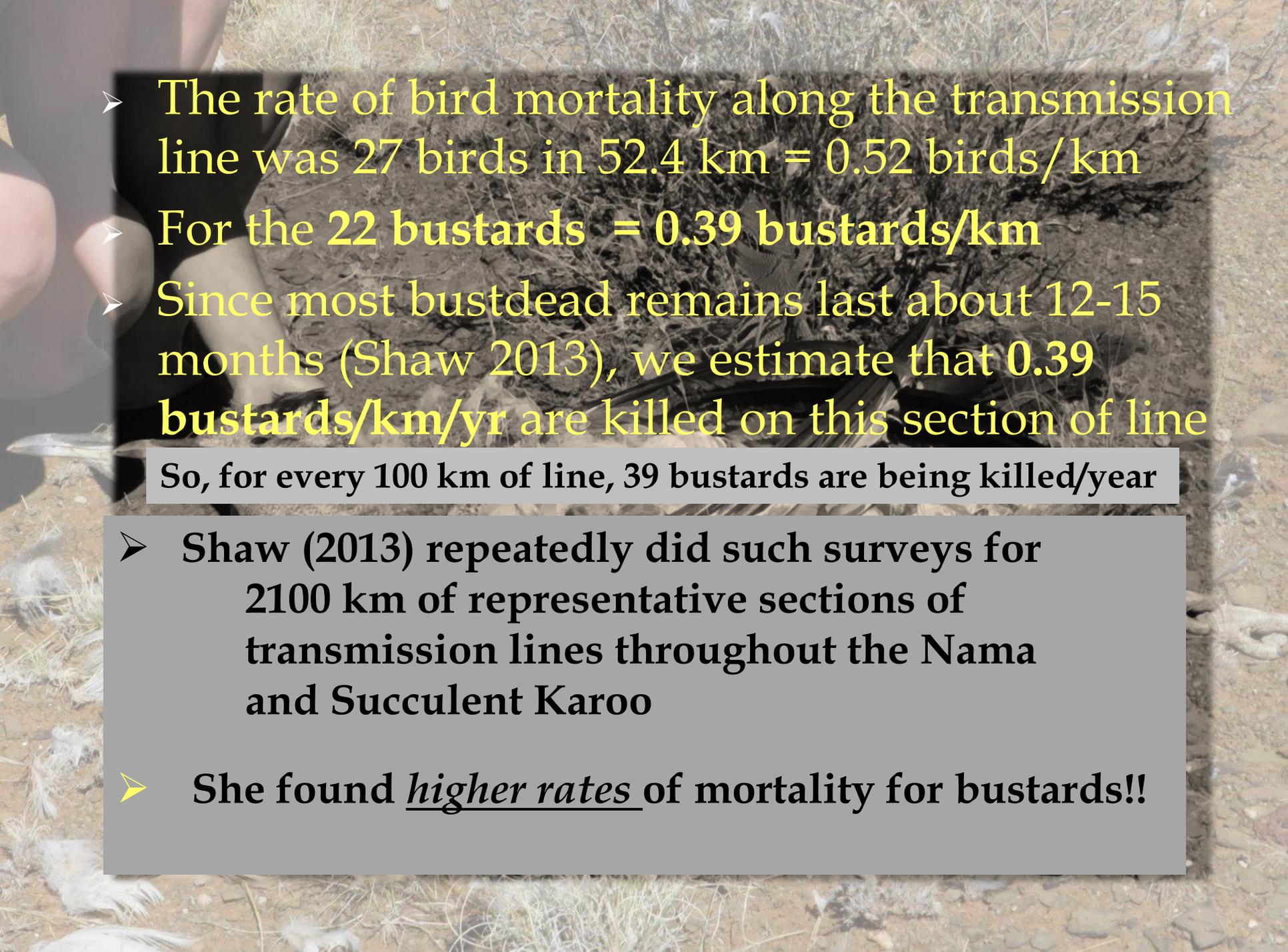
- **21 Ludwig's Bustards**
- **1 Kori Bustard**
- **1 Martial Eagle (juv)**
- **1 Karoo Korhaan**
- **1 Pale Chanting Goshawk**
- **1 Greater Kestrel**
- **1 duck sp.**



Following a thunderstorm the previous night we found a freshly dead **Kori Bustard** ....



The bird's scapular area was smashed and it was so fresh we could have eaten it

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- The rate of bird mortality along the transmission line was 27 birds in 52.4 km = 0.52 birds/km
  - For the 22 bustards = 0.39 bustards/km
  - Since most bustard remains last about 12-15 months (Shaw 2013), we estimate that 0.39 bustards/km/yr are killed on this section of line

So, for every 100 km of line, 39 bustards are being killed/year

- Shaw (2013) repeatedly did such surveys for 2100 km of representative sections of transmission lines throughout the Nama and Succulent Karoo
- She found higher rates of mortality for bustards!!

# Shaw 2013....

- Bustard mortality rate (all Karoo transmission lines)  
= **0.48 bustards/km/yr**
- Correcting for biases (predator removal, maimed birds and observer non-detection)  
= **1.05 bustards/km/yr**
- Multiply these rates by the length of transmission lines in SA (14,500 km)  
= **15,225 bustards killed per year**
- Add in all the lower voltage distribution lines (58 000 km) (with lower rates of mortality) gives a conservative estimate of
- **46 900 bustards killed per year in South Africa**
- For a red data species with a world population estimated at 114 000 birds this is a massive annual mortality and almost certainly unsustainable

# Kruger 2014



- **Bearded Vultures (Critically Endangered)** are susceptible to future wind farms in Lesotho
- But they are also susceptible to power lines..
- Birds found dead in Sonja's study in Maloti-Drakensberg mts (2000-2014) are as follows:
- Poisoned: 10 (53%)
- Power line: 4 (21%)
- Trapped: 3 (16%)
- Natural: 2 (11%)

Kruger SC 2014. An investigation into the decline of the Bearded Vulture *Gypaetus barbatus* in southern Africa. PhD thesis FitzPatrick Institute, UCT

- Every power-producing plant in South Africa must have the energy generated transported away - and that means more power lines
- More unmarked power lines = more dead bustards (and vultures and cranes and korhaans ...)
- Yet distribution lines under 132 kV don't require any sort of impact assessment!
- Moreover, according to the EWT-Eskom partnership the lower the voltage (i.e. distribution lines) the higher the number of avian electrocutions
- So while we are focussing closely and in fine detail on **wind farms** (and **solar plants**) there is an elephant in the room here - the associated infrastructure (i.e. the power lines)

# The elephant in the room...

- There is unlikely to be any wind farm built in South Africa (or the world) that will annually kill 47 000 individuals of any red data species.
- (For comparison all wind farms in the USA kill ~7000 birds per year)
- If there was such a WEF to be developed it would meet a wall of environmental resistance and would never be built.
- Alternatively, if the SA power grid were predicted to kill thousands of red data birds per year they too would never be given an environmental authorization!
- So we must highlight and solve this problem

# Solutions.....

- EWT-Eskom partnership has been around for a long time and we know very well which species are being killed. But before the work of Anderson, Jenkins, Smallie and Shaw the number of birds had never been calculated.
- Now we know the sheer scale of the mortality (at least for bustards, vultures, cranes and korhaans) we cannot ignore the problem.
- **All the consultants/researchers in this room should be doing power line surveys ... AND reporting all mortality rates along known-lengths of line.**
- These should then be reported directly to Constant Hoogstad (EWT-Eskom partnership 0860-111-535)

# Solutions....

- If it proves to be a mortality hotspot EWT will then target that line for mitigation
- Experiments to test the efficacy of bird-diverters to reduce collisions of bustards and Blue Cranes (set up by Jess Shaw and carried on by EWT) is showing promising results (C. Hoogstad)
- Up to 95% reduction in bird mortality is reported for species such as cranes and bustards in the Karoo (C. Hoogstad)
- Night-time bird diverters have also been developed and are being tested as we speak...

# Solutions....

- However, the best method is the pro-active marking of all transmission and distribution lines with bird diverters by Eskom as the line is erected.
- This makes it more affordable and easily put in place.

# Summary

- Power lines in South Africa are a bigger threat to Red data birds than wind farms and solar arrays
- They presently kill about 47 000 *Endangered* Ludwig's Bustards per year... and thousands of other red data birds (Jenkins et al. 2011, Shaw 2013, Krüger 2014).
- This mortality will rise as more lines are erected
- All consultants should therefore record avian mortality rates along existing power lines and report them to the EWT-Eskom partnership
- We should all recommend that ALL new lines should be affixed with bird diverters
- All existing lines with identifiable hot spots should also be fitted with bird diverters and monitored annually to gauge success of the marking methods

Thank you – Questions?

