DISEASE *decimates* Cape Parrots

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The Cape Parrot *Poicephalus robustus* is one of the most endangered birds in South Africa and is the most endangered parrot on the continent. Shortly after launching the Cape Parrot Project in May 2009, we began noticing that many wild Cape Parrots were in poor condition and, alarmingly, we began to receive reports from the Amathole region in the Eastern Cape of Cape Parrots showing advanced symptoms of psittacine beak and feather disease (PBFD).

Over a six-month period, we were sent photographs from throughout the Eastern Cape: from East London, then Hogsback, Alice, Stutterheim and finally King William's Town. By September 2009 we realised that we could be in the grip of an epidemic, as PBFD symptoms had not previously been observed in the wild.

This debilitating disease is caused by a circovirus that attacks the bird's immune system, affecting the skin, feathers and beak, and results in death caused by exposure, organ failure or secondary infection. It is airborne and highly contagious, but very little else is known about this 'super-virus', which is specific to parrots. There is at present no known cure and vaccines are only now being developed. It is clear that the Cape Parrots remaining in the wild (numbering fewer than 1 200) are eminently at risk of extinction.

Since being granted ethical clearance and issued with research permits, we have caught several wild Cape Parrots in a pecan orchard near Alice. Blood and feather samples as well as body and weight measurements were taken from each bird before it was photographed and then released back to the circling flock. Care was taken to minimise stress to the birds, and strict measures were in place to avoid healthy parrots becoming infected while being handled. The samples taken from the birds were then sent to the University of Cape Town to confirm the incidence of PBFD in this wild population.

Although we had been expecting the worst because of the shocking condition of the parrots that we handled, we were nonetheless horrified at the preliminary results we received: more than 60 per cent of the blood and feather samples tested positive for PBFD. These findings corresponded precisely with our assessment of body condition and symptoms, which indicated that the 25–35 per cent of the population that we were seeing with these symptoms also had the virus. Compounding our concerns was the fact that our 2010 annual count results were as much as 50 per cent lower than in 2009.

The Cape Parrots in our study area comprise up to 35 per cent of the local population and 15 per cent of the global population, and up to 75 per cent of these birds aggregate in adjacent trees in the same pecan orchard each morning to feed. But as we can safely assume that the entire study population has been exposed to the virus, why are they not all infected and showing symptoms?

PBFD has long been recognised as a disease that affects the young, old, stressed and malnourished birds in a population. We are seeing more young birds with symptoms, but infections in adult Cape Parrots raise significant questions: is this population ageing, stressed or malnourished?

Some 50 years ago Cape Parrots were relatively abundant in the Amathole region, with reports received of flocks of more than 100 birds flying over Kidd's Beach, Bathurst, Grahamstown, Alexandra, Fort Beaufort and Fort Fordyce, places where they are no longer resident or even seen. By 1970, increased logging of yellowwood trees had decimated their natural habitat and driven the population to seek other available food resources. In 1971, the parrots 'discovered' pecan nuts and have loved them ever since, aggregating in large flocks to feed on these plentiful, fatty nuts. The farmers reacted to the flocks of seemingly abundant Cape Parrots destroying their crop by shooting, catching, snaring and generally scaring the birds away. Hundreds of Cape Parrots were killed and many more were sold or taken into captivity.

Today Cape Parrots seldom feed in their natural habitat as they prefer the regularity and abundance of new, exotic food resources, such as the pecan nuts, apples, plums, cherries, acorns, *Eucalyptus* flowers and wattle seeds found on farms and smallholdings. Parrots are active, intelligent creatures, and Cape Parrots are trying to solve the problems presented to them, one of which is the lack of food in their natural habitat resulting from logging, habitat disturbance and climate change. Are they getting it right or is their new diet contributing to their apparent susceptibility to PBFD?

Pecan shuck (the green, fleshy covering of the nut) contains very high levels of tannins, myotoxins and aflatoxins, while the nut itself has a fat content of more than 68 per cent. Consuming pecans almost exclusively for more than three months could prove very damaging to parrots over the course of several years and could result in health problems such as liver failure and declining body condition. In addition, the kernels of the cherries and plums that are also targeted by Cape Parrots contain low levels of cyanide. Perhaps the loss of the anti-microbial activity of yellowwood nuts in their diet is significant?

STEVE BOYES

Maybe the increased stress of feeding closer to the ground and struggling to find viable food resources is supporting the manifestation of this disease? Or is this a new, more virulent genotype of the PBFD virus that has entered the wild population?

We are taking as many samples of indigenous and exotic food resources as possible to answer some of these questions. Importantly, we are also involving Cape Parrot breeders throughout South Africa in this process, as their insights into dietary intake and disease have proved to be invaluable.

Since receiving the shocking results back from the lab, we have noticed that more than 75 per cent of the diseased Cape Parrots that we had been observing are no longer present at feeding sites. On inspecting roosts in and around Alice we found two carcasses, both showing advanced symptoms of PBFD infection and confirming that these Cape Parrots were dying during the cold, wintry conditions at the time. Winters in the parrot's mountain strongholds in the Amathole region are harsh, with recurrent snow, rain and strong winds, and I do not expect any of the infected Cape Parrots we saw to survive. They were far too underweight and had deep fissures on their beaks, blackened mouths and ceres, poor feather cover and development, and very low blood pressure.

We need to act now to understand the dynamics that have caused this PBFD outbreak and do our best to solve the problem. It is going to require a collective effort by all South Africans, necessitating as much public participation and financial investment as possible. The Cape Parrot is endemic to South Africa and we face the real risk of losing this ambassador of our last-remaining afromontane forest patches and mountain wilderness areas.

STEVE BOYES

Above *This young Cape Parrot with advanced symptoms of PBFD infection was too tired to flush out of a tree with the rest of the flock.*

Left *Blood and feather samples from this young male Cape Parrot tested positive for PBFD. He was 30 per cent underweight, had fleas and intestinal flukes, and was not expected to survive the winter.*

Opposite *A healthy female Cape Parrot in flight.*

ACT NOW

The Wild Bird Trust, BirdLife South Africa and the Percy FitzPatrick Institute of African Ornithology are committed to saving this 'green and gold' icon and species of natural heritage.

Cape Parrots need all the help they can get and your donation will make a huge difference. The Wild Bird Trust is a tax-exempt registered charity whose sole mission is to advance the research in, education about and conservation of all birds in the wild, as well as their habitats. Post donations to PO Box 820, Constantia, 7848, South Africa, or e-mail Dr Steve Boyes on *rs.boyes@uct.ac.za*

For further information on how you too can get involved, join the Cape Parrot Project group on Facebook.