

At dawn, above the swamps of Kasanka, Near Threatened straw-coloured fruit bats return to their roosts in huge numbers. Each night they cover up to 100km, searching for the fruit-rich harvest in a 30,000km<sup>2</sup> area of woodland around the national park.



# *Migrating* *into the classroom*

Africa's greatest animal migration sees 10 million bats take to the skies over Zambia. Photographer **Nick Garbutt** witnesses the spectacle and discovers a unique school conservation project.



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A continent away and the theme is strangely familiar. Despite having one of Africa's greatest wildlife spectacles on their doorstep, the children living near Kasanka National Park have grown increasingly detached from nature.

"The younger generation in Zambia has a very limited direct experience of wildlife," says Frank Willems, ecologist at Kasanka National Park. "The country is seeing a rapid transition from a rural society to an urban one, and there has been a massive decline in wildlife outside of protected areas. But we want to make sure that future generations take care of the local species by encouraging a sense of ownership."

So the Chitambo Education Project has given thousands of children the opportunity to experience one of Africa's great migrations: the arrival of up to 10 million straw-coloured fruit bats *Eidolon helvum* that come each year to feed on the fruit-rich harvest. "Just a decade ago there was very little appreciation of the crucial role the bats play here, but we now have a much better understanding of how vital they are for pollination and seed dispersal," says Willems. "Also, they can have a significant impact on the trees in which they roost, such the fast-growing and flexible swamp fig. Each fruit bat weighs only 300g, but when they roost en masse they can cause many trees to collapse."

Research is also advancing our understanding of why the bats arrive when they do. "Away from the central rainforests, the onset of the seasonal rains triggers a clear peak of fruit availability, and they seem to time their movements with this harvest," says Willems. "Our monitoring data suggests that they are arriving earlier each year, too, I think because of the good protection at the roost and the relative safety of Kasanka, rather than climate change." And, at dusk, local children are able to watch from platforms outside the park as 10 million bats begin circling the forest. Willems says the experience is mesmerising – "It should be on everyone's must-see list."



**ABOVE** Bats first start arriving in mid-October. Research suggests this date is getting earlier and that the straw-coloured fruit bats are staying in Kasanka longer. With an estimated 10 million bats in the park, this is considered the highest density of mammalian biomass on the planet and the greatest mammal migration, outstripping even the movement of wildebeest across the Serengeti.

**RIGHT** In 2013 over 1,000 children from 33 local schools were invited to the park to witness the spectacle. The pupils are thrilled to be wearing their highly prized Kasanka Bat t-shirts, which gives each of them the position of ambassador for conservation in their local communities.



**ABOVE** Water berry *Syzygium cordatum* is one of the key food sources. The bats are responsible for 60 per cent of the seed dispersal in Africa's rainforest trees, including economically important timber such as iroko, as well as cashew, mango and fig.



## THE LOCATION

**KASANKA NP** One of Zambia's smallest national parks at 350km², Kasanka is privately managed by the Kasanka Trust and comprises a range of habitats including the *mushitu* or 'swamp forest', which is the key roosting habitat for the bats. Other species in the park include sitatunga and puku antelope, warthog, Kudu baboon, and the vervet and rare blue monkeys.



## PHOTOS BY

**NICK GARBUTT**

Nick is an award-winning photographer and author who has spent 25 years visiting many of the best wildlife locations on the planet. "Kasanka has to be one of the world's greatest natural spectacles," he says.





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**ABOVE** Sunlight illuminates the network of blood vessels in this straw-coloured fruit bat's wings – they feed the muscles holding the skin membrane taught. The pointed wings, which span 80cm in total, are designed for endurance and distance, rather than agility.

**RIGHT** Two children inspect the skeleton of a straw-coloured fruit bat on display at Kasanka National Park. “Establishing a sense of ownership and pride is the only way that future generations will look after their environment,” says Frank Willems. “These visits make children realise they have one of the world’s biggest wildlife spectacles in their back yard.”



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There have been concerns that the fruit bats may be a factor in the transmission of the Ebola virus, but Frank Willems says no potentially dangerous viruses have been found in the colony in Kasanka, and Ebola normally only passes from animals to humans via the consumption of bushmeat. So there is no serious health risk associated with the bats' presence.





**ABOVE** Excited schoolchildren watch as the bats leave their roost at dusk on their way to nocturnal feeding areas. "While in the forest the millions of bats create a wall of sound. But in flight they are silent," says Frank Willems. The bats almost blacken the sky as they take off at a rate of 10,000 per second.

**RIGHT TOP** Females tend to synchronise reproductive cycles, but the variation in stages of pregnancy found at Kasanka suggested that the bats came from multiple colonies. Research has shown that there are essentially two separate populations: one from north of the equator, and the other from the south.

**RIGHT BOTTOM** Poachers used to kill the bats for bushmeat, and start fires in the park which reduced the surface of evergreen swamp forest suitable for roosting. But in recent years an increase in the number of guards, constant monitoring and firebreaks have kept the bats safe.



**+ FIND OUT MORE**

See more of Nick's photographs at [www.nickgarbutt.com](http://www.nickgarbutt.com), and you can enjoy footage of the spectacle at [www.bbc.co.uk/nature/life/Straw-coloured\\_Fruit\\_Bat#p004vb0b](http://www.bbc.co.uk/nature/life/Straw-coloured_Fruit_Bat#p004vb0b)