grey ghosts OF THE WETLANDS

TEXT & PHOTOGRAPHS **RALF MULLERS**

Swamps heave with many different life forms: leeches, mosquitoes and damselflies, snakes and crocodiles, fish and fishermen, birds and birders... In swamps in Central and eastern Africa, the birders are almost certainly braving insects and reptiles in the hope of seeing something more rare: a prehistoric-looking creature that seldom moves and is extremely hard to find – a Shoebill.

LOOKING FOR A Shoebill *Balaeniceps rex* is undoubtedly a challenge. Quite apart from the travails of scouring swamps, the species' habitat is often remote and inaccessible and the political situation in some of its range states is far from inviting. But a successful search is well worth the effort, for this weird bird is truly mesmerising.

For such a sought-after species, surprisingly little is known about the Shoebill's general biology, distribution and demography. At present we think there are between 5 000 and 8 000 individuals, although we cannot even be sure of these numbers. Some populations were last monitored and counted in the 1980s and updates of their status are urgently needed. What we do know is that all populations are in decline, thanks to the degradation and destruction of their habitat, human encroachment into their habitat, and the loss of individuals to the live bird trade. We urgently need to learn more about this enigmatic species so that we can protect it before it goes the way of that other strange-looking bird, the Dodo.

The Bangweulu Wetlands in Zambia were my home for two years while I studied Shoebills for a research project at the FitzPatrick Institute at UCT. It didn't take me long to come to terms with the fact that most of my trips into the swamps would result in no data. For hours I would paddle my boat or pull it over floating vegetation as I searched for one of these elusive birds or tried to follow a particular individual. Visiting a nest often involved hours of wading through water and mud, jumping over fish weirs and trying to balance on an unsteady mat of floating vegetation, all while swatting away mosquitoes. The local people are swift and light-footed, but the big *muzungu* had difficulty in moving gracefully – or, indeed, moving forward at all. It was easy to develop a respect for each and every creature that lives in this tough environment.

The first year of the Shoebill research project generated little data as it was discovered that there was a lively, and illegal, trade in Shoebill chicks. Because of their bizarre appearance, the birds are sought not only by birders but by private collectors too. The trade proved to be more extensive than anticipated and was clearly posing a serious threat to the population in the Bangweulu Wetlands.

So to begin with, reports read more like detective stories than surveys. 'The team met as arranged and proceeded at 06h00 towards the Shoebill location in >

above *Humans and Shoebills share the same wetlands but they do not compete for the same food source because they have different hunting strategies.*

opposite *Shoebills spend a considerable amount of time loafing around. You are lucky if you see a Shoebill catch its prey; we estimated that they take only one item roughly every 10 hours.*

Typically, Shoebills lay two eggs, both of which hatch. However, invariably only one chick fledges because the weaker sibling is driven from the nest. It takes about 100 days for the surviving chick to fledge.

the same vehicle,' wrote researcher David Ngwenyama, describing an undercover operation set up by the Zambia Wildlife Authority (ZAWA). 'At 06h15 I made contact and began negotiating a sale... At 06h40 I negotiated the "price" down to K7-million [about US$1 400] and got positive confirmation that the bird was in the house. At this time I phoned the scouts in the taxi ('my driver') and gave them the agreed codeword for the raid to go ahead. The arrest and retrieval was carried out successfully with both suspects and the Shoebill chick... The Shoebill was transported to Chikuni where it arrived after 16h00.'

The decision was made to hand-rear the chick at the research station at Chikuni, where it was welcomed by another Shoebill. Given the name Kapotwe, this bird had been confiscated a few weeks previously from a fisherman who had taken it from its nest and kept it in his hut to show to tourists. Chicks in this situation seldom survive their upbringing by humans as they do not have parents to teach them crucial survival skills, such as how to catch fish.

The management of Bangweulu Wetlands (a partnership between African Parks, ZAWA and the community resource boards of six chiefdoms) transported the chick to Chikuni, built an enclosure for it and hand-reared it with the intention to release it back into the wild.

The chick that had been rescued from the traders, named Bwalya, was ready to fledge and stayed only a few weeks at Chikuni. It was fed plenty of catfish to gain weight and then fitted with a GPS transmitter before being set free in the swamps about 3.5 kilometres from the research station. It was monitored at the release site for a few days to make sure it caught fish and found shelter at night, and researchers were relieved to see that it appeared to be coping well.

Bwalya initially stayed close to where it had been released but then gradually moved to an area with more suitable habitat and plenty of catfish. It remained there for more than 18 months, only leaving in 2013 when the water levels were very low. It then moved deeper into the swamps, where to date it still seems to be doing fine.

CHICKS [REMOVED FROM THEIR NEST] SELDOM SURVIVE THEIR UPBRINGING BY HUMANS AS THEY **DO NOT HAVE PARENTS TO TEACH THEM CRUCIAL SURVIVAL SKILLS**, SUCH AS HOW TO CATCH FISH

At about only five weeks old when confiscated, Kapotwe proved to be a far more difficult subject for release. The female chick became quite habituated during the long period of rehabilitation and growth, which made her preparation for departure a lengthy process. We dug a pond in her enclosure and kept it supplied with catfish that she eventually managed to catch for herself, albeit somewhat clumsily. When she was fully grown we opened the gate so that she could move freely around the research station, and this she did by day but always returned to the enclosure at night.

Kapotwe's first foraging spot was the pond in front of the research station, although she was seldom successful. The small fish she caught from time to time were not enough to sustain her and she began to lose weight. Still responsible for her wellbeing, we gave her additional fish, but that resulted in her becoming very at ease with people. Whenever researchers or scouts went outside or visitors arrived at Chikuni, she would go up to them and beg for food. Tourists' cameras were tested for their fishiness, and one evening I had difficulty drinking a whisky in front of the house because Kapotwe took a liking to the glass. Then one day she made a great discovery: the fishermen's nets on the flooded plain were full of fish. She began feeding from them, but once she had driven the fishermen away from the plain she needed to look for an alternative food source.

This marked the beginning of a period when Kapotwe would move from one fishing camp to the next to take a share of the catch. At first the fishermen found this quite amusing, but soon they had had enough of losing part of their income to a large bird too lazy to catch her own food. We needed to make a plan. The strategy we'd >

above *Foraging on the flooded plain in front of the research station at Chikuni, Kapotwe did not seem to be fussed by the attention she elicited from some local community members.*

left *An easy catch. Helping the fishermen to empty their nets made Kapotwe slightly less popular with the community. It took only a week for all the fishermen who set nets on the flooded plain to move elsewhere.*

Bwalya (on the left, note the GPS transmitter on her back) interacting with another Shoebill in the wild. These two birds foraged in the same area, but never together.

used for Bwalya did not work for Kapotwe; when we transported her into the swamps she simply walked into the nearest fishing camp.

The troublesome Shoebill returned to Chikuni, but then she left of her own accord. Again she went to a fishing camp, but this time she kept her distance and caught her own fish. Gradually she moved further into the swamps and we received reports that she was keeping more to herself and was managing to forage independently. We had been seriously concerned that we were responsible for having produced a habituated Shoebill but, it seemed, that was not what she wanted to be.

There were two more incidents with Kapotwe before she finally disappeared from our radar. First she swallowed a hooked fish and was rescued by two fishermen. We examined her and let her go again. On the second occasion, a couple of fishermen caught her, tied her down and, thinking that she had escaped from Chikuni, reported to us. We released her and, unbeknown to us, this was the last time we saw her. We heard that she'd moved deeper into the swamps, but we've had no further news of her for more than a year. We hope this is a good sign.

There was obviously an urgent need to protect the Shoebill population in the Bangweulu Wetlands, as we found evidence of other chicks having been taken from their nests or killed by fires or people. In 2012 the management body, in collaboration with the research team, decided to involve the local community in protecting the birds and to employ fishermen at some key breeding sites to monitor and look after a nest. These Shoebill Guards would receive a salary to protect the nest during the breeding season, assist the management and researchers if necessary, educate their neighbours about Shoebill conservation and, if it were feasible, guide tourists to the nest.

After some start-up problems, the programme proved to be a wonderful success and in 2014 Bangweulu Wetlands management hopes to employ 10 Shoebill Guards and their assistants. In this way, the local community will benefit directly from looking after the Shoebills while the birds, by >

above *Kapotwe enjoying the sunrise at Chikuni. She stayed around the research station for several months, entertaining scouts, visitors and photographers.*

below *Kapotwe's first steps to freedom. We opened the gate of her enclosure, allowing her to move around freely and seek shelter if she wanted to. Initially she was reluctant to venture any distance, but after a few months she would disappear for days at a time.*

WATCH an adult Shoebill as it pours water over its chick to cool it in the nest: *www.youtube.com/watch?v=J4Tc6Mo2k1s&feature=youtu.be* or scan this QR code to go directly to the link.

Photographed in the Bangweulu Wetlands in Zambia by Ralf Mullers.

above *Kapotwe taking a bath in the pond at the research station or testing an alternative method of fishing. With Kapotwe, either behaviour was equally likely.*

having their nests protected, will hopefully breed more successfully and their recruitment rate will increase. How the Shoebill Guards contribute to their charges' breeding success was demonstrated in 2013 when a fire raged through an area where there was a nest with a chick that could not yet fly. The guards and their neighbours built a fire-break around the nest, thereby saving the chick. In the same year, two chicks fledged from one of the nests. Shoebills seldom raise more than one chick of a clutch because the weaker sibling usually does not survive beyond its first weeks.

We hope that by intensively monitoring the Shoebills in the Bangweulu Wetlands and adapting conservation management if necessary, we shall be able to arrest the population's decline. But we don't really know to what extent the species as a whole is threatened, and most other populations are less protected. The Single Species Action Plan for the Conservation of the Shoebill, recently formulated by the African–Eurasian Waterbird Agreement (AEWA), stresses the urgency of monitoring Shoebill populations and collecting data to find out how the species is faring. This would require international collaboration and researchers who would be willing to venture into inaccessible regions.

It is still possible to enjoy the sight of Shoebills in several locations, including the Bangweulu Wetlands in Zambia. It is not too late to protect this species and its habitat. And, by the way, the fisherman who took Kapotwe from her nest to show to tourists is now a Shoebill Guard guiding tourists to nests. ◆

RALF MULLERS is not a birder, but rather a behavioural ecologist who happened to do all his research on birds.

'I obtained my PhD at the University of Groningen in The Netherlands. During my PhD I studied the behavioural mechanisms underlying the population trends in Cape Gannets, conducting fieldwork on the South African and Namibian islands of Malgas and Ichaboe. In 2011, I changed from a small confined area with thousands of birds to an area of thousands of square kilometres with very few birds, or at least few of my study species, the elusive Shoebill,' he says.

'For two years I lived in the Bangweulu Wetlands in Zambia and together with Brighton and Elijah, two local guys, I collected data on Shoebill foraging and nesting behaviour, chick growth and breeding success as part of a research project at the FitzPatrick Institute. We also conducted annual aerial surveys, counting Shoebills and nests, to ultimately estimate the population size. All these data, and my experiences in the field and with the local communities, were used to formulate a management plan for the conservation of the Shoebill population in the Bangweulu, which is currently being implemented. Conditions in the swamp were tough, but the direct applications of our findings made it worthwhile.'