BIRDS · BEHAVIOUR & HUMAN–WILDLIFE PARTNERSHIP

Honeyguides: The Bird That Works With People

A wild bird that leads people to bees' nests, answers their calls — and, as a chick, kills its foster siblings in the dark.

SERIES **SAFARI NOTES** FORMAT **FIELD & GUIDING NOTES** PUBLISHED BY **THE SAFARI SHOW**

> The Greater Honeyguide is a wild bird that cooperates with people. It leads honey-hunters to bees' nests, the people open the nest, and the bird gets the wax. Scientists have now shown that the partnership runs both ways: people call the birds, and the birds appear to learn the local call.

01 Meet the Greater Honeyguide

SPECIES

Indicator indicator

Family Indicatoridae, in the order Piciformes with the woodpeckers. At about 20 cm it is the largest honeyguide; males average 48.9 g, females 46.8 g.

HOW TO TELL THEM APART

Male vs female

Males have a pink bill, black throat, pale grey ear patch and nearly white breast. Females are plainer greyish-brown, without the throat and cheek patches. Juveniles, in yellow-gold and olive-brown, look different again.

WHERE

Range & habitat

Widely distributed in sub-Saharan Africa, in open habitats such as savanna, shrubland, forest edges and riverine areas. Absent from part of the arid south-west of the continent.

STATUS

Least Concern

Listed as Least Concern on the IUCN Red List.

ZIMBABWE CONNECTION

The Greater Honeyguide is on the bird checklist published by Mukuvisi Woodland (species "often seen by members of BirdLife Zimbabwe"), alongside the Lesser, Brown-backed and Green-backed Honeyguides — and BirdLife Zimbabwe's own journal is named *Honeyguide*.

02 What the bird is after

Honeyguides eat bee eggs, larvae and pupae, waxworms — and **beeswax**. Wax is hard to digest: before 1988 only one bird, the Lesser Honeyguide, had been shown experimentally to digest beeswax, and a 1988 study confirmed the Greater Honeyguide can too. The problem is getting at it: wild bees' nests are usually inside trees, and angry bees can and do sting honeyguides to death. That's where a partner who can open the nest comes in.

03 How guiding works

1. **The bird finds the people.** A honeyguide approaches and gives a special call to get attention.
2. **It leads the way.** It flies from tree to tree in the direction of a bees' nest, calling as it goes. People have followed honeyguides for over a kilometre.
3. **It signals arrival.** A classic 1989 study with Boran honey-hunters in Kenya confirmed their claim that the bird's flight pattern, perching height and calls tell them the *direction* and *distance* to the nest, and when they have *arrived*.
4. **People open the nest.** They smoke out the stinging bees, usually fell the tree and take the honey.
5. **The bird gets the wax.** The honeyguide feeds on the wax and brood left behind — so the two partners aren't competing for the same prize.

04 People call the birds — in local dialects

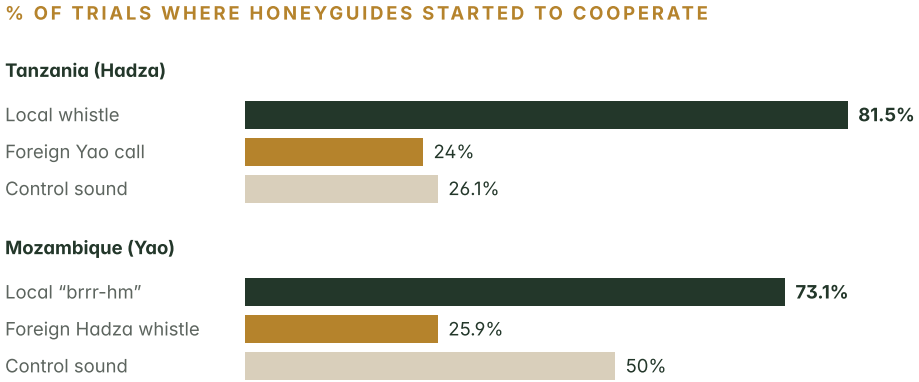
In Mozambique's Niassa Reserve, Yao honey-hunters call honeyguides with a loud trill followed by a grunt: **"brrr-hm"**. In northern Tanzania, Hadza honey-hunters use a **melodic whistle** instead.

2016: THE CALL WORKS

In playback experiments in Niassa, the traditional "brrr-hm" call — compared with control sounds — raised the chance of being guided by a honeyguide from **33% to 66%**, and the chance of being shown a bees' nest from **16% to 54%**.

2023: THE BIRDS LEARN THE LOCAL CALL

Researchers then played both calls in both places. Honeyguides responded far more to their *local* human signal than to the foreign one — and sound transmission didn't explain the difference. The authors concluded the results are best explained by the birds learning the local call, and proposed this as an example of **cultural coevolution** between humans and a wild animal.



Spottiswoode & Wood (2023), Science. Local signals made cooperation 3.26 times more likely in Tanzania and 1.96 times more likely in Mozambique than foreign and control sounds combined.

05 What the people get

+560%

HADZA, TANZANIA

Honeyguides raised the rate at which Hadza foragers found bees' nests by 560%, and the nests the birds led them to yielded more honey.

8–10%

OF THE HADZA DIET

An estimated 8–10% of the Hadza's total diet is acquired with honeyguides' help.

Among the Yao in Niassa, nearly three-quarters of 149 bees' nests found involved help from a honeyguide.

TO REWARD THE BIRD, OR KEEP IT HUNGRY?

Communities treat their partner differently. **Yao** hunters leave the wax for the birds, sometimes placing chunks on a bed of leaves as a reward. **Hadza** hunters hide, bury or burn honeycomb — they told researchers this keeps the birds hungry so they will keep leading them to more nests. Either way, the birds usually still get some scraps.

06 An ancient partnership

A Portuguese missionary wrote about honeyguides leading people to honey in **1588**, in what is now Mozambique. The partnership is likely far older: researchers suggest it may go back thousands of years, possibly to our hominin ancestors — though this is informed speculation rather than something that can be dated directly.

07 The dark side: a killer chick

The Greater Honeyguide is a **brood parasite**. Like a cuckoo, the female lays her eggs in other birds' nests and leaves the host parents to raise her young.

- **Sabotage at laying:** the female punctures host eggs when she lays her own, and holds her egg internally for an extra day so her chick hatches first.
- **Built-in weapon:** the chick hatches with a pair of needle-sharp hooks at the tip of its bill. While still blind and naked, just a few days old, it uses them on any host chicks that hatch.
- **In the dark:** at a Zambian study site the most common hosts were Little Bee-eaters, which nest in underground tunnels — often in the roofs of old aardvark burrows — so the attacks happen in pitch darkness. One to five minutes of biting was enough to kill a host chick, though some took over seven hours to die.
- **No evidence left:** the bill hooks are gone by the time the young honeyguide leaves the nest, after about a month of care from its foster parents.

Recorded hosts include several bee-eaters (White-fronted, Little, Swallow-tailed, Southern Carmine), barbets, kingfishers, starlings and Golden-tailed Woodpeckers.

MYTH CHECK: DO HONEYGUIDES LEAD HONEY BADGERS?

This story is repeated in books and documentaries, but the evidence is weak. A 2023 study by 26 researchers found that the scientific accounts rely on **incomplete and second-hand reports**. Of 394 honey-hunters interviewed in 11 communities across nine African countries, 19% said they had seen badgers and honeyguides interact; most were doubtful. A famous scene in the 1974 comic nature film *Animals Are Beautiful People* was staged with a tame badger following a stuffed bird pulled on a fishing line.

The authors judged the most likely scenario to be that the interaction **does occur but is highly localised** (reports were concentrated in parts of Tanzania) **or extremely hard to observe**, or both — while stressing that substantial uncertainty remains. Best told to guests as unconfirmed.

08 A partnership in decline

Honeyguide–human cooperation has already disappeared from many parts of Africa. Researchers point to beekeeping, urbanisation and the exclusion of people from protected areas as threats.

WHEN A HONEYGUIDE CALLS TO YOU — HOW TO SAY IT

"That bird is trying to get our attention. It's a Greater Honeyguide, and in parts of Africa it leads people to wild bees' nests. The people open the nest and take the honey, and the bird gets the wax — a bird that can actually digest wax. In Mozambique, honey-hunters call it with a 'brrr-hm'; in Tanzania they whistle. And scientists found the birds respond best to their local call — most likely because they learn it."

IF GUESTS ASK ABOUT HONEY BADGERS

"It's a lovely story, but it hasn't been confirmed. Researchers think it may happen in a few places, but if so it's rare or very hard to see."

09 Key terms

Mutualism	A relationship between two species in which both benefit.
Brood parasite	A bird that lays its eggs in other species' nests and leaves them to raise its young.
Honey-hunting call	A traditional sound people use to recruit honeyguides — the Yao "brrr-hm", the Hadza whistle.
Cultural coevolution	Learned traditions in two species shaping each other over time — here, local human calls and honeyguides' learned responses.
Playback experiment	Playing recorded sounds to animals in the wild to test how they respond.

In summary

- The Greater Honeyguide leads people to bees' nests and eats the **wax** left behind.
- Its flight and calls tell people the **direction, distance and arrival** at the nest.
- People call the birds with local signals, and honeyguides respond best to — and probably **learn** — their local call.
- The partnership was recorded in Mozambique in **1588** and is declining in many areas.
- It is also a **brood parasite** whose hook-billed chicks kill host chicks.
- The honey badger partnership is **unconfirmed**.

SOURCES

- Spottiswoode, C.N., Begg, K.S. & Begg, C.M. (2016). Reciprocal signaling in honeyguide–human mutualism. *Science* 353(6297): 387–389. doi:10.1126/science.aaf4885. Summary: University of Cambridge — https://www.cam.ac.uk/research/news/how-humans-and-wild-birds-collaborate-to-get-precious-resources-of-honey-and-wax
- Spottiswoode, C.N. & Wood, B.M. (2023). Culturally determined interspecies communication between humans and honeyguides. *Science* 382: 1155–1158. doi:10.1126/science.adh4129 — https://par.nsf.gov/servlets/purl/10524235; AAAS summary — https://www.aaas.org/news/honeyguide-birds-learn-culturally-distinct-calls-made-honey-hunters
- Isack, H.A. & Reyer, H.-U. (1989). Honeyguides and honey gatherers: interspecific communication in a symbiotic relationship. *Science* 243: 1343–1346. doi:10.1126/science.243.4896.1343
- Wood, B.M., Pontzer, H., Raichlen, D.A. & Marlowe, F.W. (2014). Mutualism and manipulation in Hadza–honeyguide interactions. *Evolution and Human Behavior* 35(6): 540–546. doi:10.1016/j.evolhumbehav.2014.07.007. Summary: Yale News — https://news.yale.edu/2014/09/11/hadza-foragers-say-hungry-honeyguides-lead-them-more-honey; BirdGuides — https://www.birdguides.com/articles/honeyguides-lead-people-to-honey-study-finds/
- Dunn, R. *The Call of the Honeyguide* (book excerpt): Portuguese priest in Mozambique — https://www.sciencefriday.com/articles/call-of-the-honeyguide-book-excerpt/
- Science News (2016). Humans, birds communicate to collaborate — https://www.sciencenews.org/article/humans-birds-communicate-collaborate
- van der Wal, J.E.M. et al. (2023). Do honey badgers and greater honeyguide birds cooperate to access bees' nests? Ecological evidence and honey-hunter accounts. *Journal of Zoology* 321: 22–32. doi:10.1111/jzo.13093 — https://ueaeprints.uea.ac.uk/97629/1/vanderWal_etal_2023_JZoology.pdf
- Spottiswoode, C.N. & Koorevaar, J. (2011). A stab in the dark: chick killing by brood parasitic honeyguides. *Biology Letters*. doi:10.1098/rsbl.2011.0739 — https://www.cam.ac.uk/research/news/natural-born-killers; https://www.sciencedaily.com/releases/2011/09/110908210115.htm
- Wax digestion by Black-throated Honey-guides *Indicator indicator* (1988). *Ibis* 130(6): 558–561. doi:10.1111/j.1474-919x.1988.tb02724.x
- Animal Diversity Web, University of Michigan. *Indicator indicator* — https://animaldiversity.org/accounts/Indicator_indicator/ (classification: https://animaldiversity.org/accounts/Indicator_indicator/classification/)
- BirdLife International (2016). *Indicator indicator*. IUCN Red List of Threatened Species. doi:10.2305/IUCN.UK.2016-3.RLTS.T22680616A92868613.en
- Mukuvisi Woodland. Bird list ("species often seen by members of BirdLife Zimbabwe") — https://mukuvisiwoodland.co.zw/wp-content/uploads/2024/05/Mukuvisi-Woodlands-Bird-List-2016-Roberts-Numbers-Order-a.pdf; *Honeyguide* journal archive — BirdLife Zimbabwe, https://birdlifezimbabwe.org/category/publications/honeyguide/page/2

— SAFARI NOTES · THE SAFARI SHOW —