

Statement on the handling of bats in times of Covid-19 regarding the IUCN Bat Specialists Group recommendation on the suspension of field activities for the protection of bats

Erfurt, 17.04.2020

Melber, M., Fleischmann, D., Gloza-Rausch, F., Voigt, Christian C.

We are currently facing a pandemic spread of SARS-CoV-2-induced Covid-19 disease. This highly infectious disease which involves relatively high mortality rates is changing the lives of everyone around the world. In this situation, the society asks for guidance to reduce the risk of infection and to deal with the disease. Also questions about the origin of SARS-CoV-2 are also frequently raised. In this context, bats have been repeatedly called by some scientists and the press since the onset of the pandemic. Although there is still no unambiguous evidence that this virus has been transmitted directly from bats to humans, this group of mammals is often in the focus of media. Recently, a consortium of German NGOs and scientific institutions [1] has compiled the scientific facts about the current state of knowledge regarding the likely origin of SARS-CoV-2. Additionally, this consortium has highlighted repeatedly that European bat species are not infected by SARS-CoV-2. Based on the current state of knowledge, we can infer that it is virtually impossible that humans might catch a SARS-CoV-2 infection from a European bat species.

Recently, a discussion has emerged on whether people infected with SARS-CoV-2, or suffering from Covid-19, might infect bats and can thus trigger a so-called spill-back. As a result, the IUCN Bat Specialists Group (BSG) published a statement on April 12, 2020 with the heading "Emerging: Recommended Suspension of Field Activities for the Protection of Bats" [2]. In this statement, the BSG points to the fact that experimental infection of captive bats with SARS-CoV-2 has been proven successful. The BSG judges the situation as still uncertain with respect to the possibility that the virus may be transmitted from humans via aerosols to bats. However based on the precautionary principle, the BSG recommended to halt any direct work with bats and to not enter roosts (unless a minimum distance of 3 m between humans and bats can be maintained). This recommendation has been put forward until there is scientific evidence about the still open question if SARS-CoV-2 can be transmitted from Covid-19 patients directly to bats.

The BVF summarizes that the bat origin of SARS-CoV-2 is still under debate. Recent studies have shown that bats are a large reservoir for a multitude of virus strains, yet a recent meta-analysis highlights that bats are not outstanding with respect to their zoonotic potential compared to other vertebrate groups [3]. Research on the likelihood for a so-called spill-back, i.e. the transmission of the SARS-CoV-2 from humans to wild animals and livestock, is still ongoing. First results demonstrate that an infection of e.g. pets (cats, ferrets) is possible. In an experiment involving captive bats, researchers demonstrated that Egyptian fruit bats (*Rousettus aegyptiacus*) can be infected by SARS-COV-2 when the virus is administered directly to the nasal epithelia [4]. One of the subjects was infected

successfully with SARS-CoV-2, but subsequently showed no symptoms of a disease. Until this point, there was no efficient transfer of the virus to conspecifics in this captive population. We stress out that it is impossible to extrapolate the findings obtained from Egyptian fruit bats under experimental conditions to European bats of the families Vespertilionidae and Rhinolophidae, particularly in a non-captive situation involving wild bats. Therefore, we consider it premature to infer that a future spill-back of the virus from humans to bats might cause European bats to form a natural reservoir for SARS-CoV-2.

Thus far, evidence is too scarce to conclude unambiguously that bats were at the centre of the current pandemic. In addition, evidence from laboratory experiment suggests that fruit bats might become infected when a dosage of SARS-CoV-2 is administered directly into the nose of animals. We consider this evidence as too weak to substantiate the concern that bats can establish as a reservoir for SARS-CoV-2. Furthermore, current evidence suggests that fruit bats do not suffer from symptoms after infection with SARS-CoV-2, yet more research is warranted for this and other bat species to draw sound conclusions. Yet, it is important to acknowledge that we lack any evidence for a coronavirus related mortality in wild bats worldwide.

In light of these facts, BVF recommends to objectify the discussion and strongly warns not to jeopardize the huge achievements of bat conservation from recent decades by hastily recommending actions without scientific basis. Effective bat conservation is always closely linked to efficient, targeted communication. Bat conservation would turn impossible without effective public outreach and knowledge transfer about scientific evidences. During this crisis, society strives to obtain simple answers to understand the complexity of the current situation. From a communication point of view, we consider it disastrous to suggest bats as a likely reservoir host for SARS-CoV-2 in future, particularly when warnings are articulated to the public in social media such as Facebook and twitter, where a sound discussion of the matter is almost impossible.

The precautionary principle should always be the top priority in species conservation. For this reason, it is understandable that warnings about a possible reservoir function have been discussed. But the precautionary principle also applies to communication. In this respect, nature conservation has a lot to lose when premature inferences are made and oversimplified statements are launched [5]. Further, a - deliberately - misunderstood warning could be viewed as an admission of guilt of "bats" by the sensational press. We fear that such a media response could no longer be contained by providing appropriate facts. On the contrary, we assume that many press organs would no longer only present bats as the cause of the pandemic, but they would further call for actions against the protection of bats. Such a worst-case scenario is already apparent in some federal countries of Germany, e.g. Thuringia [6]. Decades of efficient public outreach in support of bat conservation would irretrievably be lost within a short time, house owners would no longer accept the presence of bat roosts, myths about bats, which we have actively corrected over and over during past decades would emerge again, requiring endless efforts to invalidate these false claims.

For this reason, the BVF calls for an objective discussion about the current state of scientific evidence and a joint, targeted communication on the topic of SARS-CoV-2 and bats. In the opinion of the BVF, this discussion and communication strategy must rely on existing and established measures. Bats are wild animals. As such, they must not be kept in captivity close to humans unless this is for the purpose of academic research. This includes in particular the maintenance of bats in close vicinity to other wildlife animals to prevent any pathogens from crossing the species barrier. When handling wild animals, effective measures of hygiene must always be applied to protect not only humans, but also the animals. This includes the obligatory wearing of single-use gloves and the relevant measures of hygiene such as washing hands and disinfecting working equipment. Based on the experience with the white-nose syndrome in North-America, it may also be possible to discuss wearing mouth guards when handling bats directly. Most importantly, bat workers and conservationists suffering from Covid-19 shall stop working with bats while being infectious, which is anyways mandatory in Germany and other EU countries by quarantine regulations.

In summary, the BVF currently sees no need for a comprehensive restriction of field work involving direct interactions with bats. Working with bats can be continued if the general hygiene standards are met and particular care is taken to prevent any cross-infections. We highlight the need for more research in this area to obtain scientific evidence that could eventually inform decision makers. We also explicitly point out the effects of a handling ban, which could throw back not only science and species monitoring but also environmental impact assessments for example in the critical areas of wind energy industry and road construction.

Literature:

- 1 2020: Informationsblatt – Einheimische Fledermäuse und SARS-CoV 2
<https://bvfledermaus.de/wp-content/uploads/2020/04/Informationsblatt-Fledermaeuse-und-SARS-CoV-2.pdf>
- 2 IUCN BSG: <https://www.iucnbsg.org/>
- 3 Mollentze, N., & Streicker, D. G. (2020). Viral zoonotic risk is homogenous among taxonomic orders of mammalian and avian reservoir hosts. *Proceedings of the National Academy of Sciences*. (<https://doi.org/10.1073/pnas.1919176117>)
- 4 Friedrich-Loeffler-Institut 2020: Pressemitteilung vom 03.04.2020.
<https://bit.ly/3exboic>
- 5 Bild.de <https://bit.ly/2RKKjhL>
- 6 OSTTHÜRINGER Zeitung vom 31.03.2020. Oh weh, oh graus, die Fledermaus: Corona-Tagebuch von OTZ-Chefredakteur Jörg Riebartsch.
<https://bit.ly/3esy0R2>

Contact: Bundesverband für Fledermauskunde Deutschland e.V. (BVF)
Schmidtstedter Str. 30a, 99084 Erfurt
eMail: markus.melber@bvfledermaus.de
Phone: 0049 361 302 58 331