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<ch.breitenmoser@kora.ch>

Associate Editors: Juan Reppucci Sugoto Roy Giridhar Malla Maximilian Allen Roland Bürki

Technical Editor: Laila Bahaa-el-din

Cover Photo: Rusty-spotted cat Photo: Ben Cranke

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MALCOLM HUNTER<sup>1\*</sup>, ARAM CALHOUN<sup>1</sup>, NICHOLAS MCPHEE<sup>2</sup>, MAURICO PEÑARANDA DEL CARPIO<sup>2</sup>, JAMES SHIFFER<sup>3</sup> AND CHARLES FOLEY<sup>4</sup>

# A puma, a tapir, and a stalking horse

We witnessed a puma *Puma concolor* apparently exhibiting "stalking horse" behaviour, i.e. shadowing the movements of a lowland tapir *Tapirus terrestris* to use it as cover while hunting. The puma followed the tapir closely as they walked down a road for approximately 700 meters and 20 minutes in the Kaa-lya del Gran Chaco National Park of Bolivia. This phenomenon, long known for human hunters, was first described in the biological literature in August 2023 for trumpetfish *Aulostomus maculatus* and other coral reef species and has been reported anecdotally for leopards *Panthera pardus*. We discuss and reject alternative explanations for our observations, and conclude that this is the first case of a wild mammal using another animal as a "stalking horse" to be documented in the scientific literature.

In the evolutionary "arms race" between predators and prey, the stakes are high and the adaptations are remarkably diverse. For both predator and prey, concealment is a common theme; sometimes it is achieved by morphology, sometimes by behaviour (such as selecting appropriate cover; Viana et al. 2022). An interesting form of concealment for humans when hunting has been used for at least 400 years and is known in English by the term "stalking horse". This term refers to the strategy in which hunters use a horse or other domestic animal to provide concealment or distract prey while approaching them, exemplified by hunting waterfowl in a pasture.

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Recently stalking-horse behaviour was reported for trumpetfish that shadow the movements of parrotfish *Sparisoma viride* and other species while hunting – and this interpretation was corroborated with behavioural experiments (Matchette et al 2023). There have been many anecdotal reports of leopards in Tanzania, South Africa, and Botswana using this tactic with safari vehicles to enhance their hunting success (see Supporting Online



**Fig. 1.**This puma appears to be using a tapir as a "stalking horse" (Photo Charles Foley).

Material for URLs of videos), but these have not been documented by scientists to our knowledge. Here, we report an incident in which we hypothesise that a puma was using a lowland tapir as a stalking horse.

#### **Observation**

We were spot-lighting from a vehicle along the main road (18.498980 S/ 61.031960 W) through Kaa-lya del Gran Chaco Park of Bolivia at 19:35 h, 20 September 2023, when we witnessed an unusual interaction between a puma and a lowland tapir. An adult tapir emerged from the dense roadside thicket onto a dirt road about 4 m wide and was immediately followed by an adult puma (Fig. 1). The tapir was aware of the puma's presence, looking directly at it on at least three occasions, but otherwise ignored it. The puma sometimes walked alongside the tapir at a distance of approximately 1.5 m, but mostly followed directly behind the tapir at a distance varying between 3-8 m. The puma appeared to be hunting, stopping to smell the vegetation by the side of the road or sniff the air. If the puma fell behind when it had stopped to investigate something, it would trot to catch up and reposition itself behind the tapir. On two occasions the tapir went off the road, possibly to forage; the puma followed it but then both returned in less than a minute. We followed them at a distance of no less than 50 m for about 20 minutes and 700 m. after which the tapir moved off the road into the dense thicket, closely followed by the puma, and did not return.

## Discussion

In addition to the stalking-horse hypothesis, we have considered three alternative or additive explanations for what we witnessed and discussed these with experienced observers of carnivore behaviour (see Acknowledgements). First, perhaps the puma was using the tapir as a "beater" to flush prey in the same manner that diverse birds, from flycatchers to egrets, use large mammals to flush insects, sometimes riding on the mammal's back (Sazima and Sazima 2010). Among mammals, it appears that coyotes Canis latrans use American badgers Taxidea taxus as beaters, in a cooperative relationship between two predators (Thornton et al. 2018). When the tapir and puma were walking side by side, they might have flushed more puma prey collectively than the puma would have alone. We saw many tapeti (i.e. Brazilian cottontail, Sylvilagus brasiliensis) at this site, usually crouching in the grass beside the road to hide. Presumably they would flush to avoid being trampled by a tapir. However, most of the time the tapir and puma were in the road and the puma was 3–8 m behind the tapir and thus quite far from any flushed prey. This supports the stalkinghorse hypothesis behaviour rather than the beater hypothesis, although the two strategies are not incompatible.

Second, perhaps the puma was following the tapir with the intent to prey on it later. Apparently, pumas do not regularly prey on tapirs (Azevedo et al. 2016) but it is possible that this tapir was sick or about to calve. However, this possibility is inconsistent with what we observed to be an apparently healthy tapir seemingly undisturbed by the close proximity of a puma although we could have overlooked a state of pregnancy. Moreover, the puma could have followed the tapir from a modest distance and remained undetected.

Third, it is possible that the puma was seeking cover from other pumas, not prey; specifically, this may have been a female or juvenile puma avoiding contact with a male (Allen et al. in press). Smelling vegetation (see photograph) would be consistent with being attentive to other pumas. This seems less likely than concealment from prey simply because the density of potential prey would likely be far greater than the density of male pumas.

It is possible that our presence, in a vehicle about 70–100 m away, could have influenced the predator-prey dynamic we witnessed (see Berger 2007 on prey using humans as shields). However, the puma only looked in our direction momentarily and twice; the tapir never; and neither showed any apparent response to us. We believe that the stalking-horse hypothesis is the most likely explanation of what we saw. There is an increasing body of literature con-

# puma, tapir and stalking-horse

cerning animal personalities and how individual animals may act in a unique manner (Wolf and Weissing 2012). This interaction may be a case in point, with a puma that has learned an unusual hunting technique and an unusually tolerant tapir and therefore this may be an uncommon phenomenon, although not unique per the leopard and trumpetfish examples cited above.

Many wildlife sightings take place along roads, as they are frequently used by wildlife both as trails and to hunt. Bringing attention to this phenomenon might elicit more records from other carnivore/herbivore species exhibiting similar behaviour in other locations.

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- Department of Wildlife, Fisheries, and Conservation Biology, University of Maine, Orono, ME 04605, USA
  \*<mhunter@maine.edu>
- <sup>2</sup> Nick's Adventures Bolivia, Calle La Plata Equipetrol, Smart Studio Nano, Oficina 119, Santa Cruz de la Sierra, Bolivia
- <sup>3</sup> 650 3<sup>rd</sup> Avenue South, Suite 1300, Minneapolis, MN, 55488, USA
- <sup>4</sup> Lincoln Park Zoo, 2001 N. Clark Street Chicago, IL 60614, USA