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“The Road is the Biggest Killer”: Animal–Vehicle Collisions in Switzerland

Gabriel Roos

Roads are infrastructure used by humans, but they are also the place where automobilities and animobilities meet and result in animal–vehicle collisions (Michael 2004). When and why do these collisions happen and can they be prevented? What happens to the animals after their death? In this article, I focus first on the preventive infrastructure that should help avoid or reduce animal–vehicle collisions but that often fails to fulfil this goal. In the second part, I discuss the question faced by gamekeepers (German: *Wildhüter*) of how to dispose of animals killed on the road. The research for this article was conducted in spring 2022 with cantonal gamekeepers from the Swiss cantons of Bern and Obwalden. Part of these gamekeepers’ job on a daily basis is to deal with animals killed on the road.

Animal–vehicle collisions happen frequently. Studies (Canal et al. 2018; Steiner et al. 2021) have found that the main peak in such accidents is observed in the twilight hours. According to Koelle (2012: 652), this occurs because "humans have the same diurnal transportation schedule as many other species. Most animals travel at dawn and at dusk … which corresponds with our commuting rush hour." Moreover, the human influence on vehicle–animal accidents is not reserved to the fact that humans build roads through animals' habitats and have a similar diurnal mobility rhythm to many other creatures. As Peter,[1] a gamekeeper from the canton of Obwalden put it: "Tourism is a big killer of wildlife." For him this category also includes outdoor and leisure activities: "I'm glad whenever it's not a mushroom year," he remarked. Increased human activities in the forests cause disturbance among wild animals and increase the risk that they might run onto a road and into the path of an oncoming car.

[1] All names are pseudonyms.

Scholars explain animal–vehicle collision frequency based on animal behaviour (Hothorn et al. 2015; Steiner et al. 2021). However, as Walter, a gamekeeper in the canton of Bern commented: "There is no accident [involving animals] in which a human is without guilt." To put this into context: in 2020, state statistics in Switzerland counted 17,610 wild animals killed by road traffic (BfS 2021).[2] It is likely that the real number is actually much higher since not all injured animals are found, as they may move away from the road and die in the forest. Peter from Obwalden estimates that thirty to fifty percent of animals remain unfound. Moreover, the statistics include only medium-sized to large mammals such as deer or foxes, and do not account for reptiles, amphibians and birds.

[2] Since 1999 the numbers have fluctuated between 17,000 and 21,000. In 2019, 20,969 animals were killed. A decline in traffic due to the Covid-19 pandemic is a probable explanation for the smaller number in 2020.

Preventive Infrastructure

There are several ways of avoiding or reducing animal–vehicle collisions. The first category of preventive infrastructures directs the movement of animals to keep them away from roads. It includes fences combined with wildlife passages: overpasses and tunnels. The second category consists of infrastructures that warn or scare animals away via sensory methods: acoustic systems and light deflectors. The third category is directed at humans and informs them of animals crossing. These are road signs and stationary wildlife warning systems (Suter et al. 2021). The most effective solutions – wildlife passages, stationary wildlife warning systems – are also the most expensive. This generates a problem, in that "[w]here cost, rather than effectiveness, drives decision-making, mitigation effectiveness may be compromised" (Rytwinski et al. 2016: 2).

As a result, low-cost light deflectors and acoustic systems are the most popular preventive infrastructure. However, their efficacy remains unproven as little is known about how animals respond to such sensory stimulation (Baagøe et al. 2004; D'Angelo et al. 2006). Baagøe et al. (2004) argue, according to observed deer behaviour, that the animals habituate themselves to such warning systems, which therefore lose their efficacy with time. In a similar manner, humans grow overly accustomed to road signs: "Permanent signage from road authorities, warning of possibly crossing game animals is frequently deployed in abundance due to legal reasons and is consequently mostly ignored by drivers" (Steiner et al. 2021: 12). It turns out that humans as well as other animals are creatures of habit. This makes the work of preventing animal–vehicle collisions a challenge; despite efforts at accident prevention, roads remain deadly places.

Carcass Handling by Gamekeepers

In Switzerland, handling of carcasses is usually done in one of the three following ways. First, the meat can be consumed by humans. Second, carcasses can be disposed of in the wild, for natural composting or as food for other animals. The third option consists of delivering the carcasses to designated collection points (G. *Kadaversammelstellen*) and thereafter incinerating them.

Whether a carcass is composted, incinerated or consumed as human food depends on its legal status. Swiss federal law differentiates between two categories: *Unfallwild* and *Fallwild*. Of these two, only *Unfallwild* – i.e. “game that has been involved in an accident but is still found alive” (BLV 2017: 4) – can be consumed by humans, as long as it does not exhibit signs of disease. Animals categorized as *Fallwild* are disposed of either by composting or by incineration. Swiss federal law defines *Fallwild* as ‘dead animals’ (G. *verendete Tiere*) (BLV 2017: 4), but the cantonal law of Bern offers a more detailed definition which covers “all dead, sick and injured wild animals or parts thereof, as well as abandoned or orphaned young animals” (KB 2017: Art.23 Abs. 1), while hunting law in Obwalden does not offer any definition. Under federal law, “whole carcasses or parts of wild animals… in which there is no suspicion of the presence of a disease transmissible to humans or animals, or which are not collected after killing in accordance with good hunting practice” are excluded (VTNP 2018: Art. 2 Para. B). This leaves the door open to other forms of utilization and indicates a distinction between two subcategories of *Fallwild*: ‘healthy’ (G. *gesund*) and ‘ill’ (G. *ungesund*).

Roadkill – most likely this will serve as food for bearded vultures.
Photo: Gabriel Roos, 2022.

Peter, the gamekeeper from Obwalden, admits that he usually disposes of healthy *Fallwild* as carrion and for natural composting. Only carcasses showing signs of disease should, according to him, be delivered to carcass collection points. Disposing of all *Fallwild* would be a waste of valuable protein. In fact, some animals killed by traffic are of top quality: "As we say among ourselves [gamekeepers], this meat is often much better than shot meat." A whole field of negotiation opens up here, as sometimes minutes decide whether an animal injured on the road is found dead or alive. "Ask yourself, is it better if the animal was dead immediately or if it lived for another 15 minutes?", Peter asks.

While the leaving of carcasses in the wild is practised in sparsely populated Obwalden, Walter, the gamekeeper from Bern, has less freedom:

> *In the densely populated midlands, all the forests are very busy. Dog walkers are everywhere, and people are outdoors. If you leave a wild animal out in the forest or hide it somewhere … then a hiker's dog smells it … and the phone rings. There aren't many places where we can leave carcasses.*

Human incursions into animal habitats thus represent a danger to living animals as well as being a hindrance to gamekeepers, who would prefer for carcasses to stay as part of the natural cycle of decay and regeneration. However, the gamekeepers are constrained by time, too. Although Peter attempts to dispose of 'healthy' carcasses in the wild, he often fails because of time pressure due to the sheer size of the terrain and a shortage of personnel – in Obwalden just three gamekeepers manage an area of nearly five hundred square kilometres (BAFU 2022; IO 2022). Hence, even good quality carcasses sometimes end up at collection points, while their quality would justify moving them into the human food market to prevent waste.

Conclusion

Once killed on the road, animals become subject to a human legislative system which proscribes what should happen to carcasses left after an accident. These regulations do not always make sense to the gamekeepers in charge of overseeing their implementation and, consequently, a multitude of informal practices has emerged as the regulations are interpreted according to local knowledge or common sense. Despite all the measures aimed at preventing animal–vehicle collisions, the numbers of animals killed on the roads in Switzerland are not demonstrating any decline. Ideally, humans should be motivated not by costs but by effectiveness when implementing preventive infrastructure. We should refocus our vision to see ourselves not as a superior but a coexisting species. The number of collisions, however, indicates that the current state of this coexistence is severely imbalanced.

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