

Diet methodology for captive breeding and reintroduction of lesser kestrels (*Falco naumanni*) in Bulgaria

Rusko Petrov^{1, 2}, Yordanka Vasileva¹, Daniel Gadzhakov², Stilyana Yaneva¹, Ivaylo Klisurov¹
¹ Green Balkans – Stara Zagora NGO ² Trakia University, Bulgaria

Introduction

Nutrition is extremely important for the health of animals, and breeding them in captivity requires the development of specialised menus. The lesser kestrel (*Falco naumanni*) was recovered in Bulgaria thanks to a breed-and-release programme implemented by the Wildlife Rehabilitation and Breeding Centre (WRBC) - Green Balkans. As the birds were reared and fed under artificial conditions, the team developed and perfected a specific feeding methodology and regiments. During the different periods of their development, animals needed food of different quantitative and qualitative composition, which was adapted to the conditions of the environment in which the lesser kestrels were kept in between 2009 and 2022.

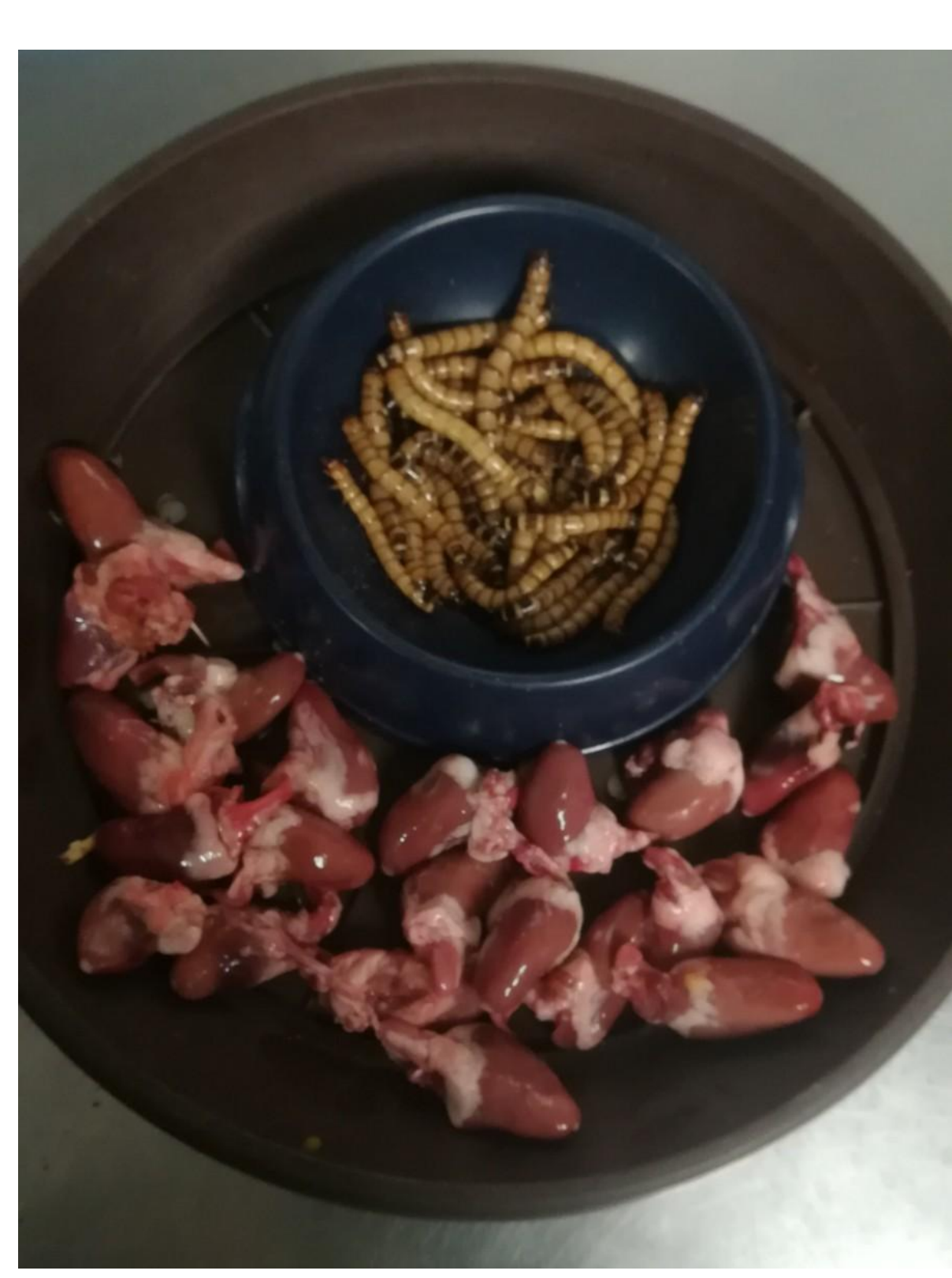
Methods

Young lesser kestrels needed a large amount of food to provide them with nutritional elements due to their rapid growth. Due to this fact, and the small capacity of their sip combined with their fast metabolism, we have divided their daily ration into several intakes in about 3 hours. Their food consists of two finely chopped mice per meal. Adult birds needed to have varied and lower-calorie food. Due to this fact, their menu was different every day. We distinguished three main types of menus depending on the season. The lowest calorie diet is for adult birds outside of the breeding season, followed by actively breeding birds in the breeding season, and the highest energy diet is for adult birds in the winter season. In winter, birds needed more energy due to the fact that part of the energy absorbed from food is converted into endogenous heat in order to warm the body. During the more severe winters, when the temperatures drop below -10° C, the birds were fed several times in small portions, because of the possibility their food getting frozen.

The lesser kestrels' diet consisted of:

- adult mice
- chicken hearts
- chicken necks
- day-old chicks
- *Gryllus campestris* and *Tettigonia viridissima*
- mealworms
- young rats
- *Zophobas morio*

All the rations were adapted to the age of the kestrels, their environment and facility/ location.



Results & Conclusions

Menus for lesser kestrels (<i>Falco naumanni</i>)						
Day	Adults outside breeding season t>10°C	Adults winter menu t<10°C	Adults in breeding season	Hatchlings up to 20-days-old	Birds in hack	Birds from wild colony **
Monday	mice 1.5 pcs	mice 2 pcs	mice 2 pcs	mice 2 pcs	mice 2 pcs	mice 0.5 pcs
Tuesday	day-old chicks 1.5 pcs	day-old chicks 2.5 pcs	chicken hearts 40 gr	mice 2 pcs	day-old chicks 1.5 pcs	day-old chicks 1.5 pcs
Wednesday	chicken hearts 40 gr	rats 80 gr	rats 80 gr	mice 2 pcs	mice 2 pcs	chicken hearts 40 gr
Thursday	rats 60 gr	day-old chicks 2 pcs	day-old chicks 2 pcs	mice 2 pcs	day-old chicks 1.5 pcs	day-old chicks 1 pcs
Friday	day-old chicks 1.5 pcs	rats 80 gr	rats 80 gr	mice 2 pcs	mice 2 pcs	chicken hearts 40 gr
Saturday	chicken neck 80 gr	chicken neck 80 gr	mice 2 pcs	mice 2 pcs	day-old chicks 1.5 pcs	day-old chicks 1 pcs
Sunday	insects*	day-old chicks 2 pcs	day-old chicks 2 pcs	mice 2 pcs	mice 2 pcs	day-old chicks 1 pcs

* Wild adult birds are fed on the hack from where they fledged

** Depending on the type of insect, the number is different: cricket - 2 pcs per bird, mealworm - 3 pcs per bird, *Zophobas morio* - 2 pcs per bird

Thanks to the well-balanced menu, a large number of lesser kestrels were bred, raised and released, and a stable population was created in the territory of the village of Levka, in Sakar SPA, and in the WRBC in Stara Zagora, Bulgaria. Wild birds were fed artificially too, in order to increase the survival of their young. By using these methods for over 10 years, a strong breeding group was created in the WRBC - more than 400 birds have been bred and more than 350 were released in the wild in Bulgaria.

