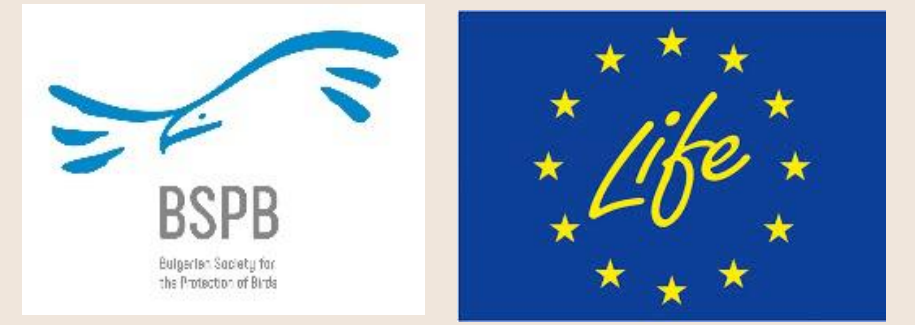


# Reinforcement of the key stone species European ground squirrel in “Zapadna Strandzha“ Natura 2000 site, Bulgaria



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## Introduction

The European ground squirrel (*Spermophilus citellus*), is medium sized rodent living in colonies in the open habitats of Central and South-eastern Europe. Its distribution and population numbers are decreasing significantly throughout all its range, including Bulgaria mainly due to habitat destruction. In consequence in 2020 the species “was declared “Endangered” by IUCN.

The *S. citellus* plays an important, likely even a key role in the grassland ecosystem. Its digging activity has positive effects on the soil quality and its burrows shelter other species like invertebrates, amphibians and reptiles. The habitats where EGS is present have higher species richness and plant diversity. Also it is one of the main food components for a number of predators with high conservation status, such as the Imperial eagle, Saker falcon, steppe and marbled polecats.

In 2017, the Bulgarian Society for the Protection of Birds launched a project for conservation of key habitats for the Imperial Eagle in in “Zapadna Strandzha” Natura 2000 site LAND for LIFE project (LIFE14 NAT/BG/001119). As part of this project, a population reinforcement was implemented in order to rescue the only European ground squirrel colony of in West Strandzha.

The aim of the present study is to review the conservation activities and the obtained results.

## Materials and Methods

The reinforced colony is located near the village of Momina tsarkva (Yambol district). The colony near the village of Topolchane (Sliven district) was chosen as donor.

The animals were captured with tube traps “donski” type. Standard body measurements were taken. The animals were marked with individual transponders. They were transported in individual cylindrical PVC boxes, that were specially designed so they cannot cause injuries. In the evening within the same day the animals were released in individual adaptation enclosures with artificial burrows. Additional feeding was provided. All these actions were aiming to reduce the stress in the first days following the release and to avoid the panic displacement of individuals in inappropriate areas.

Recapture sessions were organized monthly during the active season between July 2017 and September 2019. The transect method was applied for burrow counting in May each year.

## Results

The translocation were implemented for 3 years during the months June and July (the release sessions are shown in red in the Fig. 2). In total 213 sousliks were transferred as follows: 2017 - 96, 2018 - 71 and 2019 – 46 (Fig. 1). The number of animals caught during the recapture sessions also increased (Fig. 2).

The sex ratio is close to that in normal *S. citellus* colonies with a predominance of females (Fig. 3). The *S. citellus* holes increased from 36 in 2017 to 180 in 2019 (or an increase of almost 5 times) (Fig 4). Interesting side observation was that the number of *Microtus hartingi* colonies, also inhabiting the grasslands around the village of Momina Tsarkva, increased (Fig. 4).



Photo: Dimitar Gradinarov



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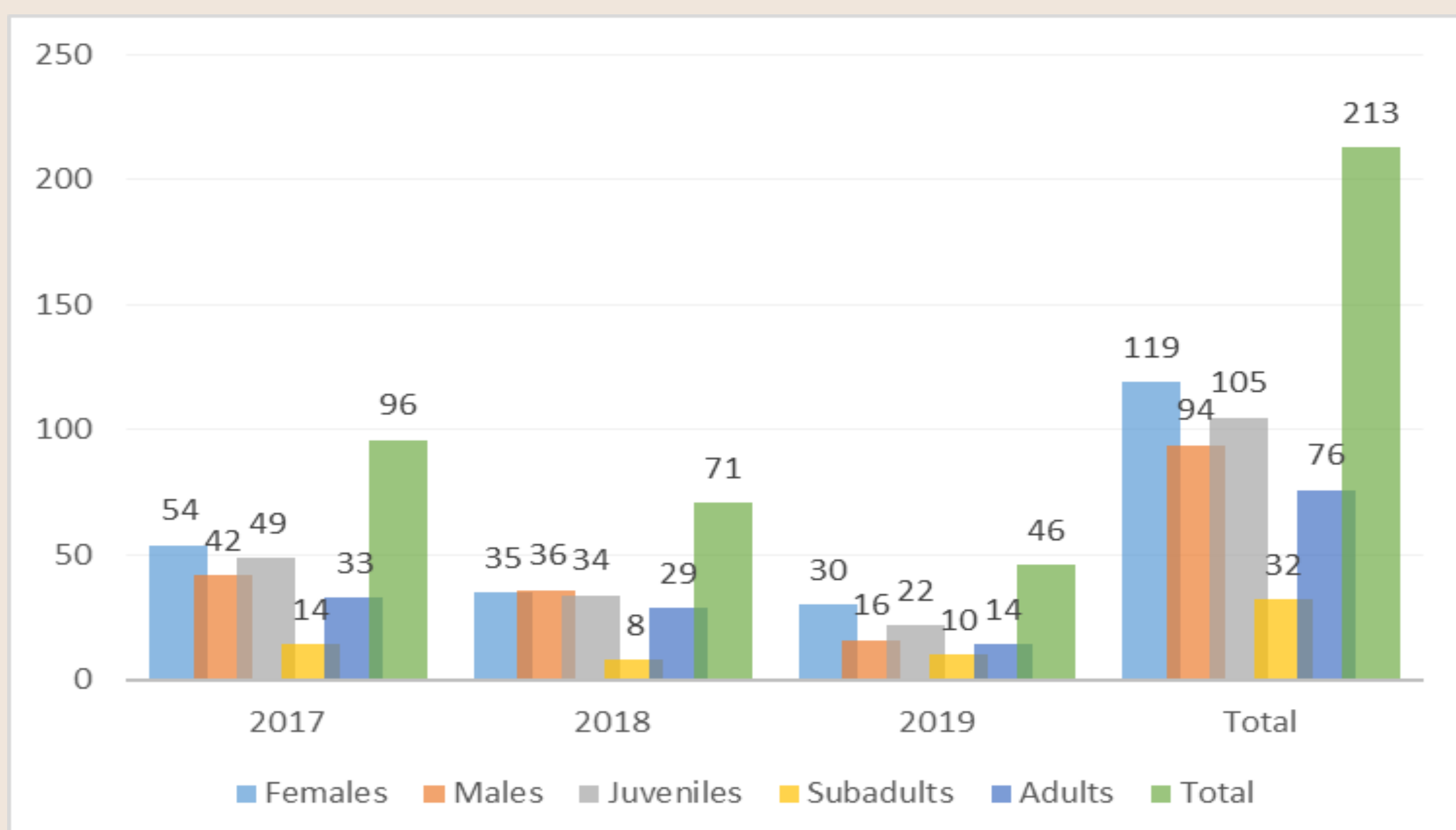


Fig. 1. Sex and age composition of the translocated *S. citellus* from a donor colony to the reinforcement colony near to the village of Momina Tsarkva.

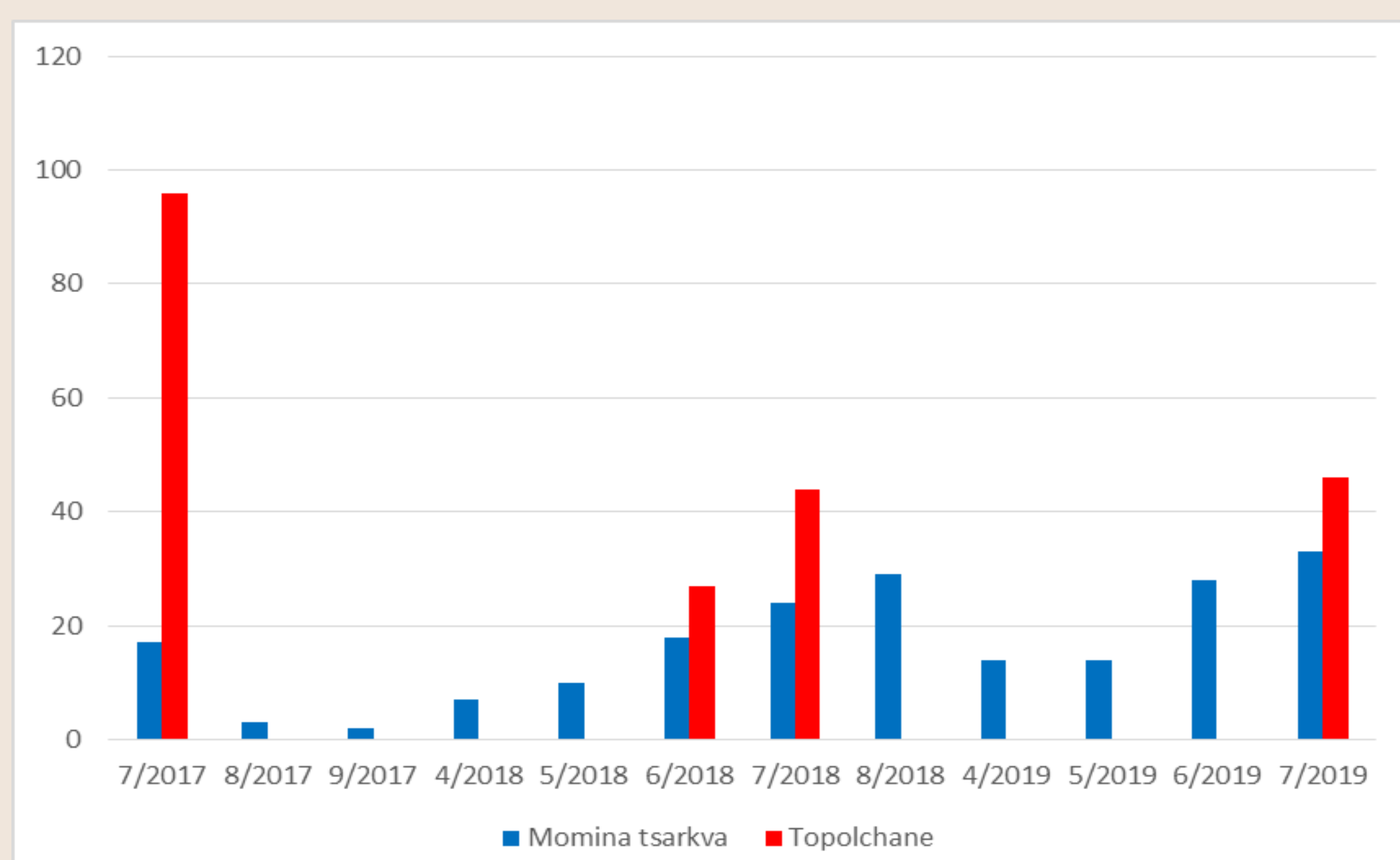


Fig. 2. Captured *S. citellus* from the colony of Topolchane (month / year of their release). Captured *S. citellus* in the colony near the village of Momina Tsarkva (month / year).

## Contacts

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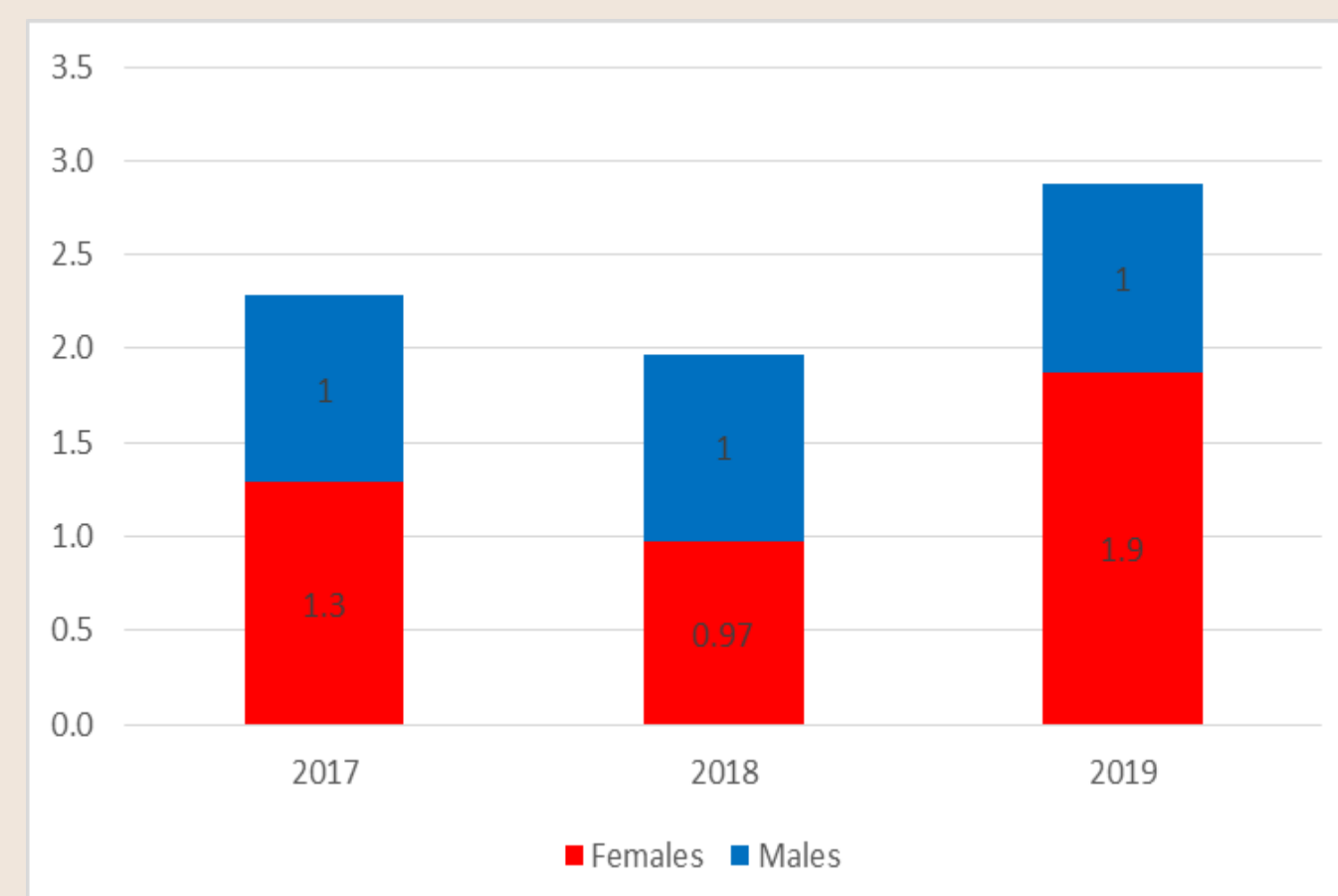


Fig. 3. The mean sex ratio in the *S. citellus* colony near the village of Momina tsarkva.



Juvenile of *S. citellus*. Photo: Yassen Mutaichiev

## Conclusion

The increased number of captured animals and counted holes in colony of Momina tsarkva is showing that the reinforcement is successful and the ground squirrels adapt well to the new conditions.

## Acknowledgements

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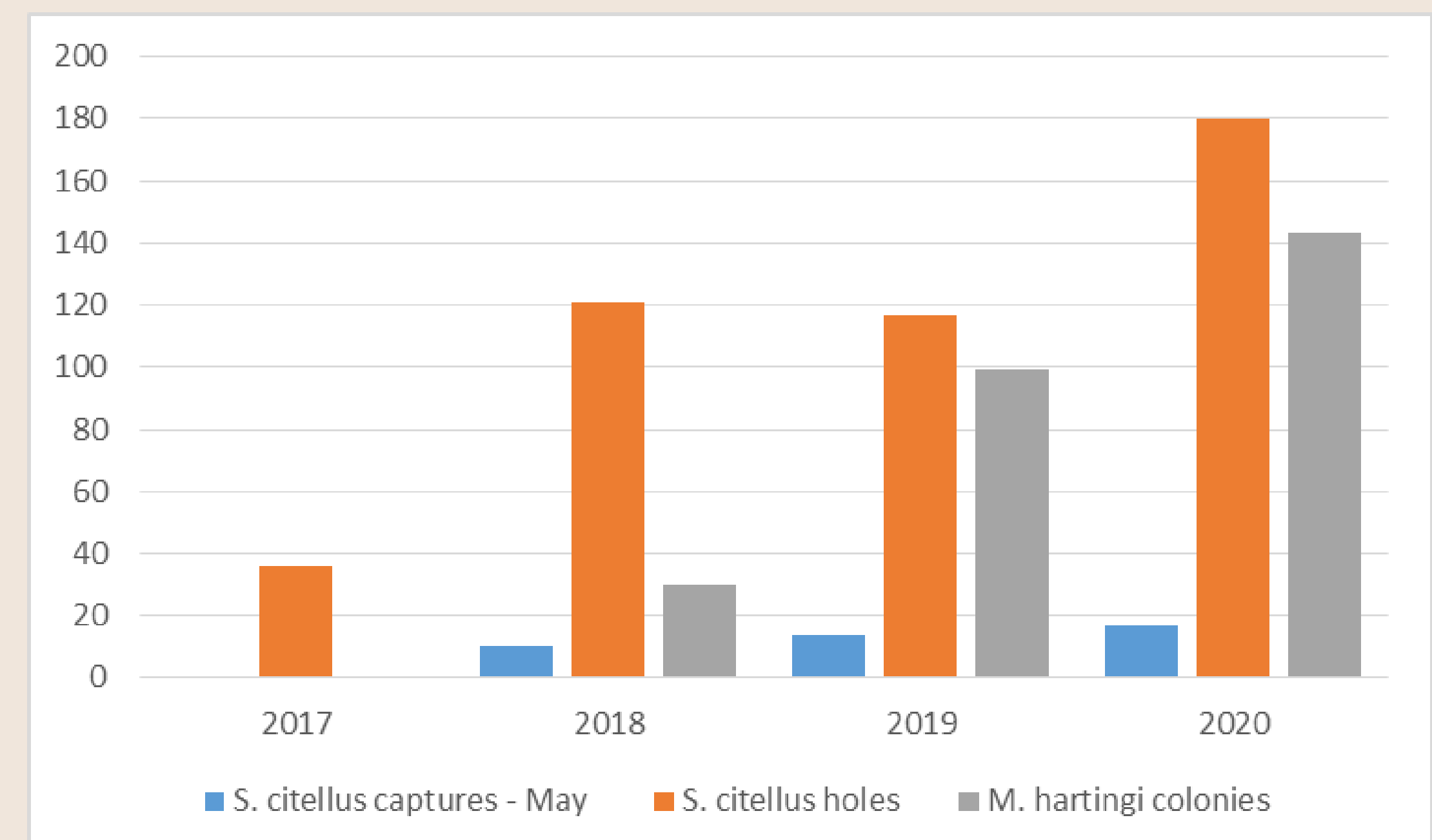


Fig 4. Caught individuals in May, before each release. Number of *S. citellus* holes and number of colonies in May every year.



*Microtus hartingi* Photo: Yordan Koshev