

# Presence of microplastics in the digestive tracts of common buzzards (*Buteo buteo*)



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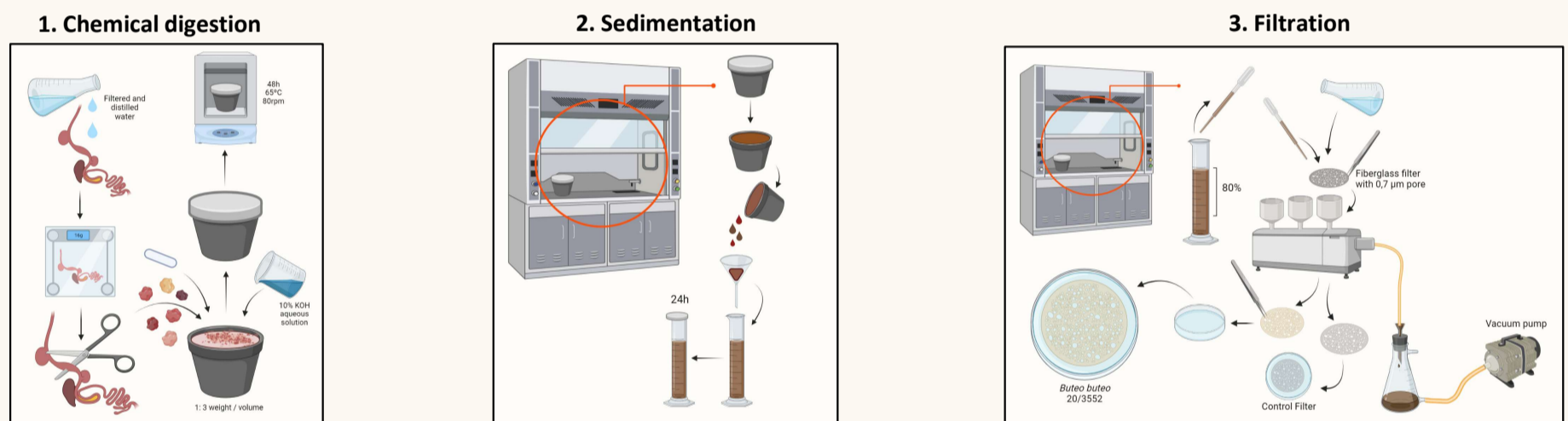
## INTRODUCTION

Plastic pollution in aquatic and terrestrial ecosystems has become a global environmental problem. It has been reported that microplastics (<5 mm) can transport harmful substances such as heavy metals, antimicrobials or pathogens. Recently, some authors have reported microplastics in wildlife, but few studies have been done in non-aquatic birds. Among terrestrial birds, raptors species have been considered good indicators of pollution in ecosystems.

The **objective** of this study was to evaluate the presence of microplastics in 15 common buzzards (*Buteo buteo*) admitted in the Wildlife Rescue Center GREFA in Madrid, Spain, since this species is ubiquitous in the Iberian Peninsula and has a varied diet that even includes carrion.

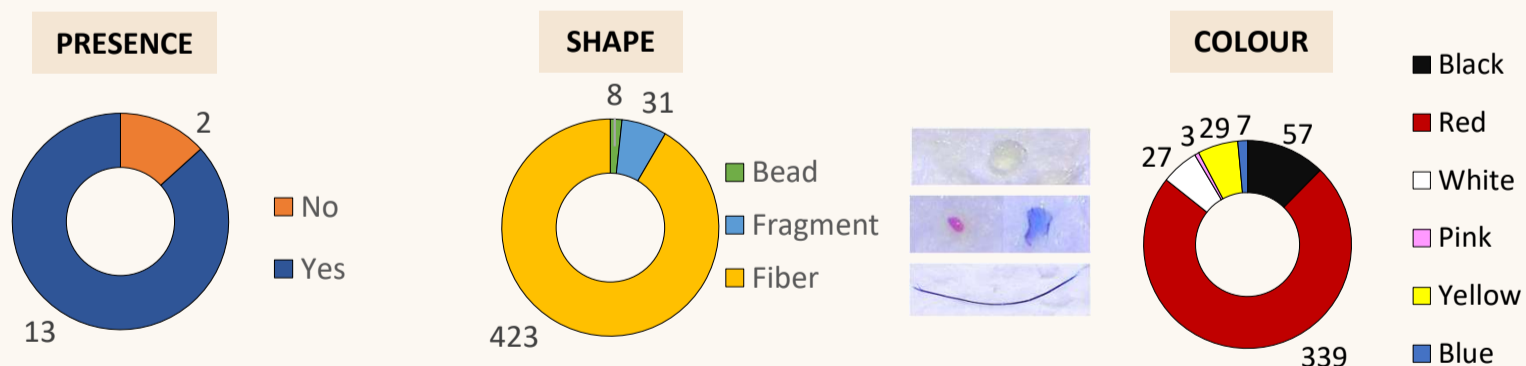
## METHODS

The complete digestive tracts of 15 buzzard specimens were analyzed using a protocol consisting of chemical digestion, sedimentation and filtration. The filtered microplastics were quantified and classified according to their shape and color. To avoid exogenous contamination, the samples were handled inside a laminar flow cabinet, the distilled water used to prepare the solutions and wash the material was previously filtered, and all the materials were washed three times prior to use.



- 1. Chemical digestion:** the digestive tract was mixed with a 10% KOH aqueous solution in a 1:3w/v proportion and the mixture was heated to 65°C under stirring for 48 hours.
- 2. Sedimentation:** the liquid product resulting from the chemical digestion was allowed to settle for 24 hours to separate the denser non-digestible organic debris, such as bones or scales.
- 3. Filtration:** the supernatant was filtered through 0.7 µm pore glass fiber filters. Finally, the microplastics retained on the filter were quantified and classified according to their shape and color using a magnifying glass.

## RESULTS



## CONCLUSIONS

- The presence of microplastics in the digestive tract of the common buzzard (*Buteo buteo*) was reported for the first time in Spain.
- The high proportion of contaminated animals (87%) could indicate a significant degree of contamination of the ecosystems in which these animals inhabit. In addition, taking into account the theory of bioaccumulation, this contamination would be extensible to the preys that make up its food chain.
- Fiber was the most abundant shape among the microplastics detected (91%), and red (73%) and black (12%) were the most frequent colors.

## REFERENCES

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