

Preliminary assessment of feeding ecology of a Golden jackal (*Canis aureus*) population in South Eastern Samos Island, Greece, through post mortem examination and scat analysis

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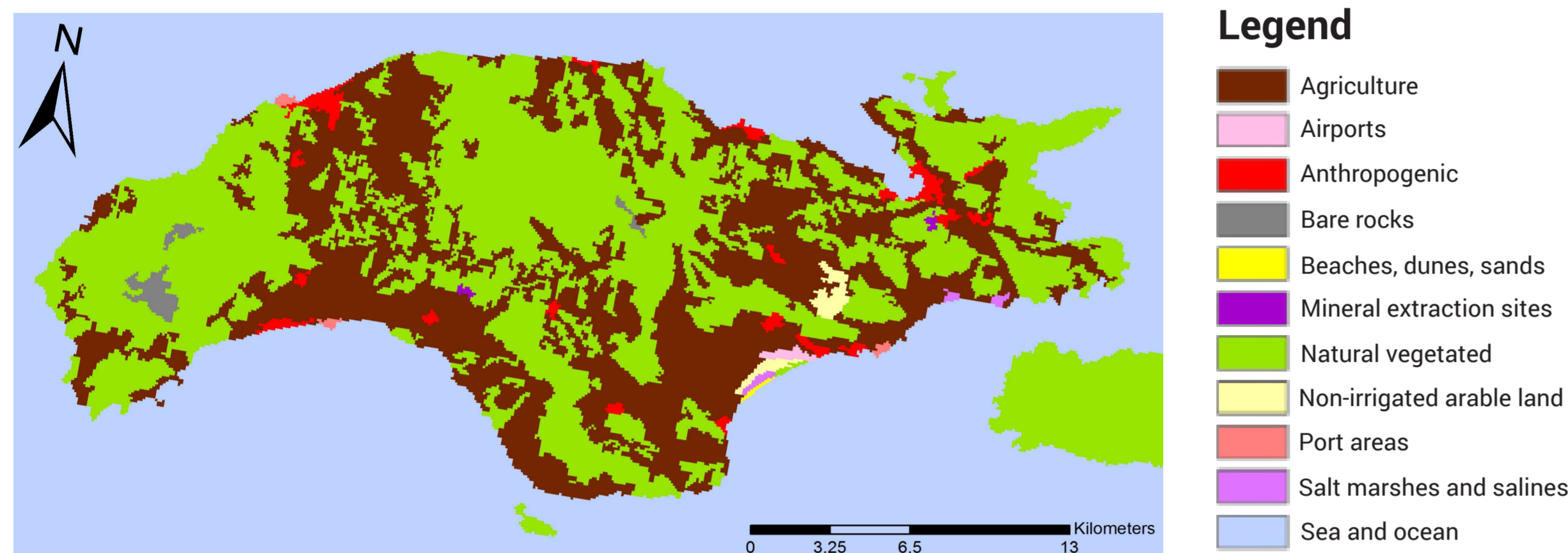


Fig. 1: Land use map of Samos Island, modified after Corine 2012.

Introduction

Samos Island, North-Eastern Aegean Sea, is one of the few Mediterranean islands and the only one in Greece where the Golden Jackal (*Canis aureus*) is considered native. Previous studies estimated 13 to 20 groups on the island with 8 to 15 individuals each; most of them found in the Eastern side¹. This study focuses on the **diet composition of the *C. aureus* population living on the South-Eastern region** (Fig. 1), based on scat analyses and post mortem analyses of stomach contents.

Materials & Methods

30 scat samples were collected (Fig. 2) between June and September 2018 along transects set in areas habituated by *C. aureus*. The samples, after being soaked in water, were rinsed through a sieve (0.5 mm) in order to separate fecal matter from identifiable content.

The collected content was dried and divided into the same categories as the stomach content of the dead jackals. **Frequency of occurrence (FO)** and **Relative Frequency of Occurrence (RFO)** were calculated for each category^{2,3}.



Fig. 2: *C. aureus* scat sample.



Fig. 4: Stomach content: grapes.

Necropsies were conducted (Fig. 3) on 15 specimens between April 2017 and September 2018. The stomach of each individual was isolated. The content was collected and **categorised into organic** (vegetal; animal) **and non-organic components** (Fig. 4).



Fig. 3: *C. aureus* necropsy.

Results

Plant matter was the primary dietary component in all scats analysed ($\chi^2 = 47.206$, $df=10$, $p\text{-value}=8.661e-07$). Olives (FO: 16/30), figs (FO: 13/30), grapes (FO: 11/30), seeds (FO: 9/30) and berries (FO: 1/30) were the most commonly items found (Fig. 5).

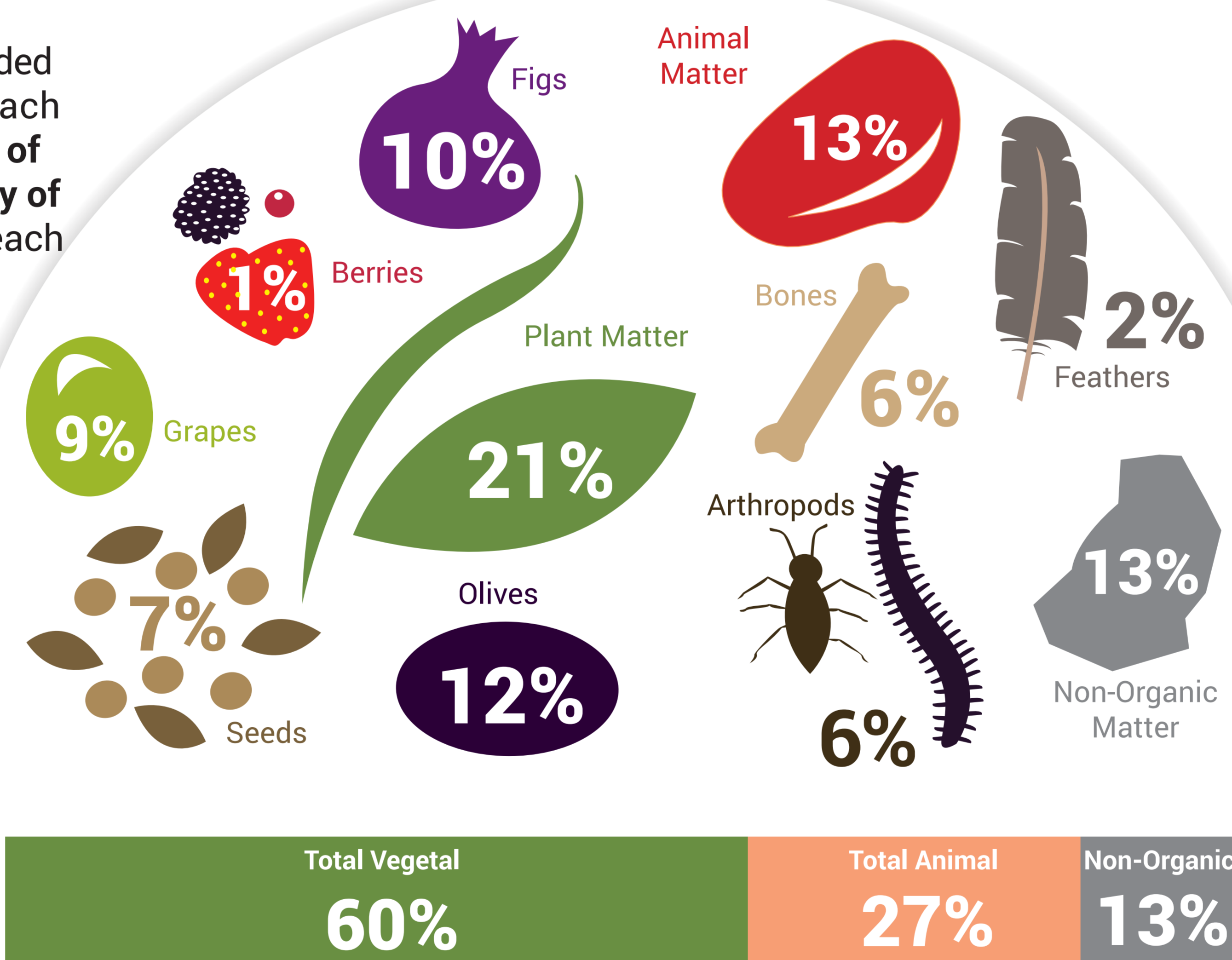


Fig. 5: RFO of the food categories.

In all the 15 stomachs vegetal matter was found: leaves, grass, mulberries (*Morus alba*), olives (*Olea europaea*), grapes (*Vitis vinifera*), figs (*Ficus carica*), carob (*Ceratonia siliqua*). 5 stomachs contained animal remains (bones, arthropods, feathers). An unusual case of a hook with a nylon line was found.

Discussion

The scat analyses showed similar results to those of the *post-mortem* ones. The studied population is composed of **opportunistic omnivores**, with seasonal dependency on the food sources. The samples collected have shown the preference for natural food sources instead of anthropogenic food subsidies. Even though the population is living in a synanthropic environment, no evidence of feeding on anthropogenic materials, such as domestic waste, was recorded.

Diet composition shows **seasonal variations** associated with the availability of different prey and food sources. During the summer season, the diet was mostly composed by fruits (i.e. figs, carobs, grapes, berries, olives, etc.) while in the winter season the composition showed presence of bones belonging to small mammals (rodents, birds, etc.).

Scats were primarily collected during spring and summer, when they are better preserved due to good weather conditions. Although necropsies were conducted throughout the year, most animals were victims of car accidents during the touristic season (May-October).

Conclusion

The samples collected during the necropsies demonstrate that the **diet of *C. aureus* is highly diverse**. Further analyses should be carried out in order to study a potential relation of the population with anthropic settlements and regional agricultural habits. In addition to this, higher sampling numbers and systematic surveys are underway to assess the feeding ecology of the overall population living on the island and make comparisons based on seasonal and geographical variations. Conservation measures are needed to prevent road-kill, especially during the touristic season (Fig. 6).



Fig. 6: Design draft for a street warning sign.