

Investigating the Sardinian wildcat *Felis silvestris lybica* in an FSC®-certified forest through non-invasive monitoring

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Introduction

The ongoing decline in biodiversity represents a critical environmental challenge. In response, the European Union and its Member States have committed to ambitious targets for ecosystem restoration and species conservation. The EU Biodiversity Strategy for 2030, adopted in October 2020, provides a comprehensive framework to halt biodiversity loss and restore degraded ecosystems. Consistently, the Italian National Forestry Strategy promotes science-based and coordinated approaches for sustainable management and conservation of forest ecosystems through multi-stakeholder collaboration.

Within this policy framework, Agris Sardegna obtained Forest Stewardship Council certification (Licence Code FSC-C174874) for its experimental farm "Monte Sant'Antonio" (Macomer, northwestern Sardinia; 670 m a.s.l.). During faunal monitoring activities required for the revision of the forest management plan, the presence of the Sardinian wildcat (*Felis silvestris lybica*), an elusive and poorly studied subspecies of high conservation concern, was confirmed. This led, in collaboration with the University of Sassari, to the establishment of an ecological and genetic monitoring program aimed at assessing the species' conservation status and population structure.

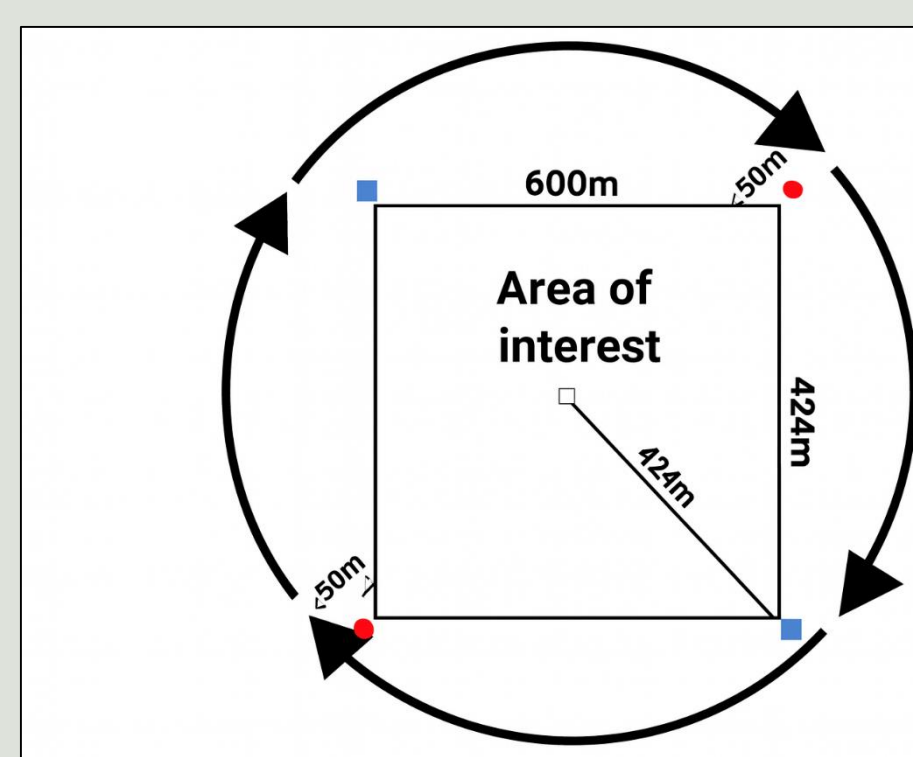


Methods

The program applies a non-invasive sampling protocol adapted from the Terrestrial Field Data Collection Protocol of the Alberta Biodiversity Monitoring Institute. It combines passive hair traps at scent-baited stations with motion-triggered camera traps.

Following this setup, four camera traps were positioned 600 m apart to form a square, each equipped with a lured hair trap. The lures were alternated between opposite sides and rotated every three months to maintain effectiveness.

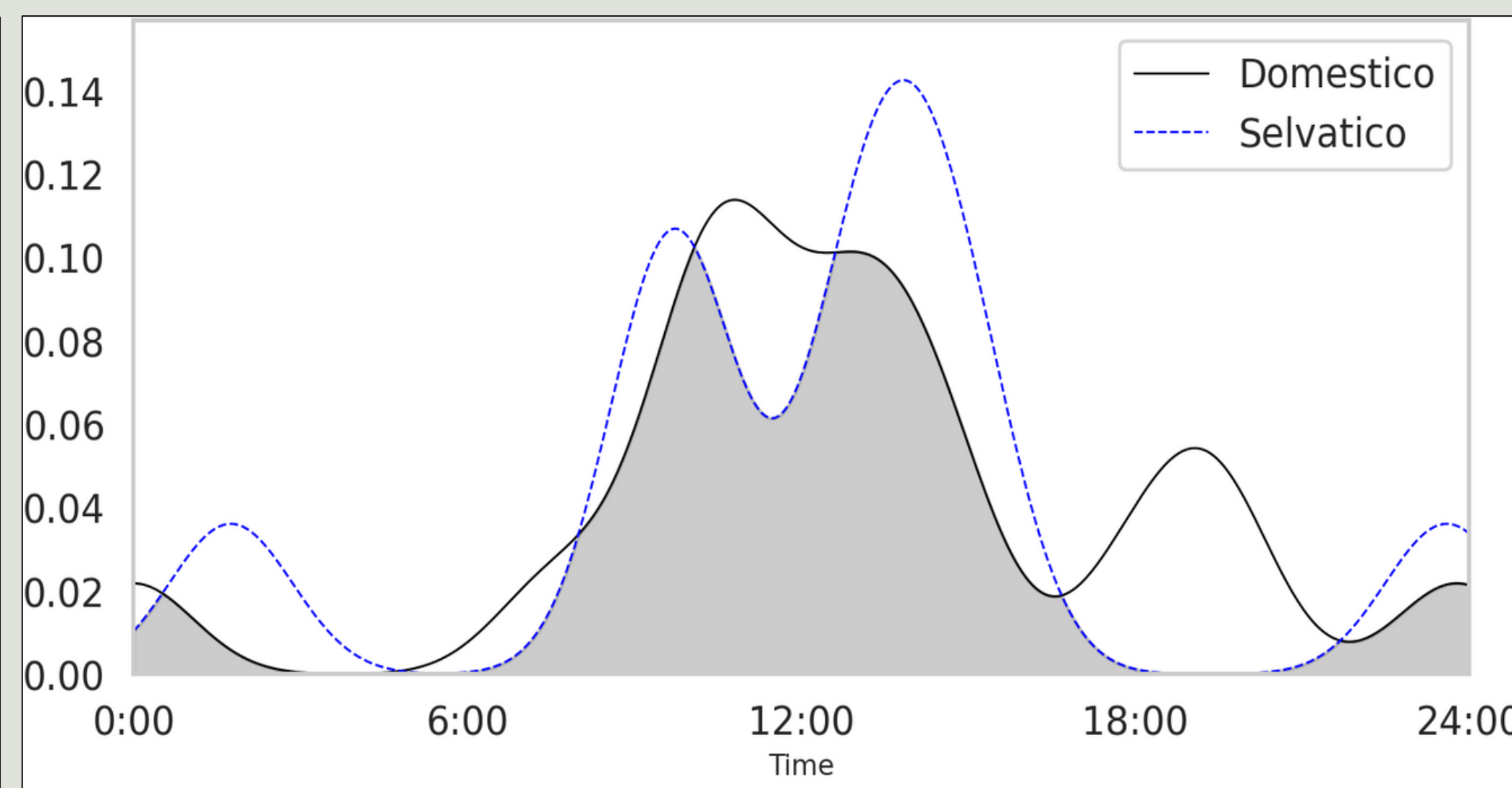
Catnip (*Nepeta cataria*) was used as an attractant to elicit marking behaviour and increase hair deposition.



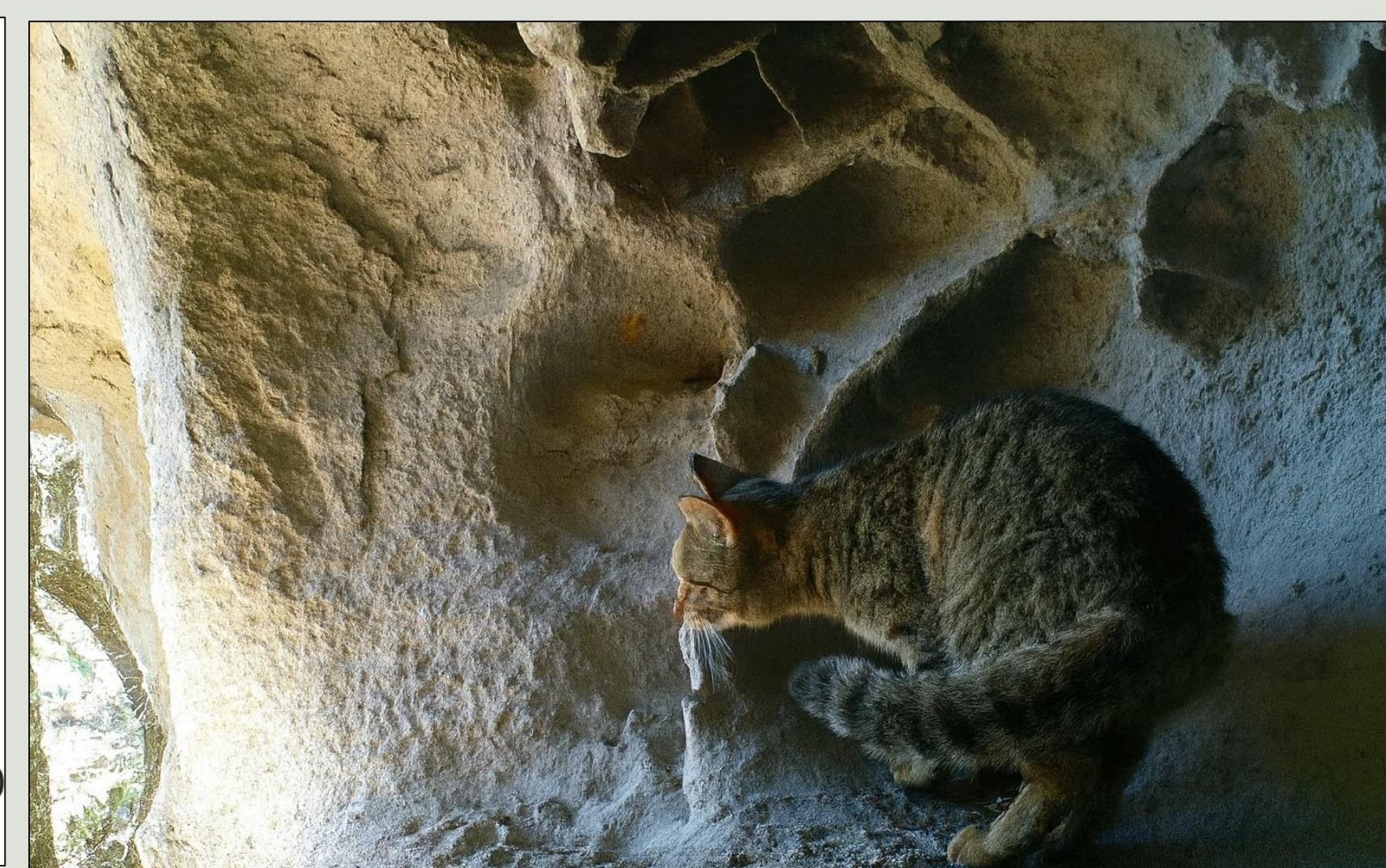
● hair trap without attractant
■ hair trap with attractant
Rotation each 3 months



Results



Activity pattern comparison between domestic cats (*domestico*) and wildcats (*selvatico*) in the study area of Macomer



Preliminary results from monitoring activities initiated in March 2025 and based on >250 trap days with detections of both wild and domestic cats, focus on site occupancy patterns, detection frequency, and the feasibility of downstream genetic analyses. The protocol proved suitable for non-invasive monitoring of *F. s. lybica*, although some limitations were noted, including low detection rates, variable persistence of scent cues, stray cat interference, and potential sample contamination.

• Detected Critical issues:

Interactions with lures by farm animals (calves) and domestic cats, especially males, detected up to 1 km from farm buildings.

• Threats:

Domestic cats (risk of hybridization, males may kill litters) and dogs (disturbance, displacement, and predation on adults or kittens).



Conclusions

Findings confirm the presence of potential Sardinian wildcats in the study area and demonstrate the applicability of non-invasive genetic monitoring. Frequent detection of domestic cats highlights the need for management actions to prevent hybridisation.

Implementing sterilisation programs for stray and semi-feral individuals is recommended to safeguard the genetic integrity of the wild population, which is confirmed to be reproductively active.

Further refinements of the sampling design and increased effort are required to improve detection efficiency and data reliability.

Major threats to the species, including hybridisation, habitat fragmentation, and anthropogenic disturbance, underscore the need for targeted conservation measures within sustainable forest management practices in Sardinia.

Acknowledgements

We gratefully acknowledge Dr. Cristina Isola, Dr. Sandro Delogu, Gianni Meloni, Roberta Coinu, and Giuseppe Testoni for their valuable contributions to this work.