

# ASSESSING “CRYPTIC” WOODPECKER DISTRIBUTION WITH CITIZEN SCIENCE: THE MIDDLE-SPOTTED WOODPECKER IN THE BASQUE COUNTRY (N SPAIN)

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## THE CONTEXT

Although the Middle-spotted Woodpecker (*Dendrocoptes medius*) is not particularly elusive, distributions in bird atlas that record presence without species-specific methods, can be incomplete. This is related to (1) a mismatch between the periods of higher detectability and general atlas fieldwork, to (2) the coarse resolution of most atlas, and to (3) the behavioural pattern of colonization-extinction of forest patches in fragmented landscapes.

## WHY “CRYPTIC”?

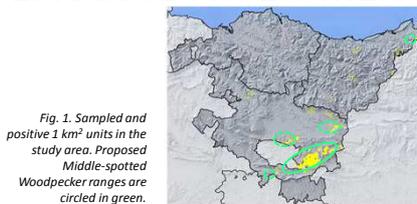
In the Basque Country (7234 km<sup>2</sup>), the core population of the Middle-spotted Woodpecker was not discovered until 1993, although two regional bird atlas had been carried out in the 1970’s and 1980’s. Moreover, smaller ranges recently discovered had gone unnoticed in the 1990’s, in another atlas with 100 km<sup>2</sup> resolution.



## AIMS

1. Assess the current occupied range at fine-scale.
2. Interpret the resulting distribution pattern.
3. Explore the feasibility of a citizen science approach.

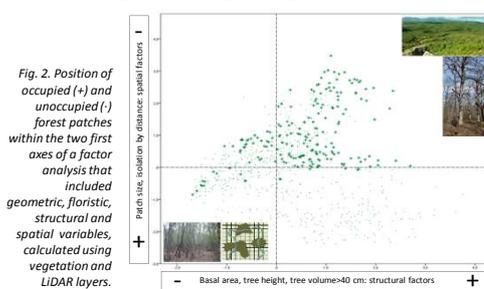
## 1. RANGE ASSESSMENT



Sampling units were 1 km<sup>2</sup> in extent. They were selected by having >16 % surface of oak-dominated forest, within 100 km<sup>2</sup> blocks where presence of the Middle-spotted Woodpecker had been claimed in the past, based on either reliable or unconfirmed records. Presence was investigated through point counts with playback, repeated twice during March–April 2017 and 2018.

The Middle-spotted Woodpecker was recorded on 30.5 % of the sampled units (n=95). One spatially distinct and previously unknown range was discovered, and the boundaries of ranges peripheral to the core were delineated.

## 2. DISTRIBUTION PATTERN



We integrated presence records from three partial inventories (2012, 2015 and 2016), that used species-specific methodology, and own data from radiotracked juveniles. Overall, we assessed a continuous range to the SE of the study area; two smaller, discrete ranges; and two forest massifs showing irregular interannual occupation.

Evidence is lacking to attribute the discovery of “new” ranges to an increase in distribution. The possibility of such ranges having gone unnoticed –even the core Izki, c. 350 territories in 2012– is more plausible.

Association between oak habitat patches and Middle-spotted Woodpecker presence were explained by forest structure, but also by spatial features at patch and landscape scales. This suggested the influence of fragment isolation by distance on the distribution pattern, although social indicators of habitat quality could be implicated.

## 3. COLLABORATIVE APPROACH

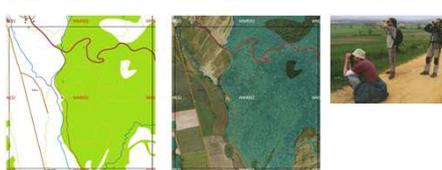


Fig. 3. Examples of one sampled oak forest patch within a 1 km<sup>2</sup> unit, as depicted in the field maps supplied to each observer.

Seventeen skilled volunteers applied the standardized and woodpecker-targetted sampling techniques. This was a cost-efficient way to investigate presence of Middle-spotted Woodpecker and assess fine-scale distribution in a regional study area. On the other hand, 12.8 % of the proposed 1 km<sup>2</sup> units could not be sampled, due to lack of available volunteers committed to the protocol.

Few additional records were provided by two internet collaborative projects housing opportunistic bird sightings ([www.ornitho.eu](http://www.ornitho.eu) and <https://ebird.org/spain>), to support range interpretations.

## Acknowledgments

Field participants, H. Robles, European Regional Development Fund and partners of Habios EFA 079/15 ([www.habios.eu](http://www.habios.eu)).

## References

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## CONCLUDING REMARKS

- Species-specific methods are needed to assess the Middle-spotted Woodpecker distribution, particularly at fine-resolution, which is the adequate for conservation practice.
- Occupation of forest patches in fragmented landscapes are probably related to both structural and spatial factors, operating at different scales.
- A citizen science framework is useful in this context, provided that a clear research objective is set, standardized protocols are applied and results are interpreted on an expert bases.