



FILLING THE GAP: THE FIRST BREEDING BIRD ATLAS OF TURKEY

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INTRODUCTION

Turkey has a unique location bordering three continents and harbours a variety of habitats. There are 315 breeding bird species amongst 400 regular species in total.

Despite the species richness, country-wide systematic bird studies started very recently. The first ever countrywide atlas project has started in 2014 and targeted to finish by 2018. There are about 300 birdwatchers in Turkey including the photographers.

Only three regional atlas studies has been conducted so far. Behavioral patterns of most breeding species are still obscure. However, the national atlas data will allow us to make comparisons with Konya (1996), SE Turkey (2002), Mediterranean (2000) and Anatolian Diagonal (2004) Atlas Project.

METHODOLOGY

- There are 350 grids of 50x50 km covering Turkey.
- Due to the limited birdwatcher's capacity, we use a draughtboard model (Figure 4) and target to cover half of the squares.
- 2 squares of 10x10 km within a 50x50 km square are chosen based on the habitat and altitudinal differences. 4 timed surveys of 1 hour are implemented (Figure 2).
- Time for surveys is between March and July.
- Each atlas square has to be visited twice during the breeding season. The visit dates are specified according to the region and the altitude.
- We upload all the data to eBird.

All grid maps have been created on ArcGIS and exported to geo-referenced PDFs, printable on A4. On the field, we also use a mobile application for smart phones, «PDF maps», which allow us to navigate directly on the digital version of the map (Figure 1).

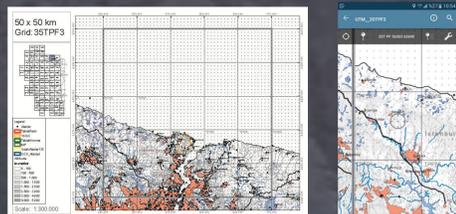


Figure 1

The volunteer support was not enough for unpopular birding areas in Anatolia. To reach the target, Atlas team itself and some experienced birdwatchers visited the remaining squares after we covered their full expenses.

VOLUNTEER COORDINATION

- We created a website, kustr.org/kusatlas/, where we update the coverage map on a weekly basis, (Figure 4) and publish the names of the contributing volunteers, for control and for visibility.
- We motivate volunteers to take **selfies** during the fieldwork and share them on Facebook with other photographers. We noticed they are more appealing than most bird photographs.
- We organise meetings and workshops at birdwatching clubs at universities. We organise an annual meeting with the volunteers where we evaluate and discuss on the projects development.
- We allow public access to current atlas data by using the online database eBird.
- We have sent a present kit to the volunteers, with a recently published bird book, field stationary and Project sticker.

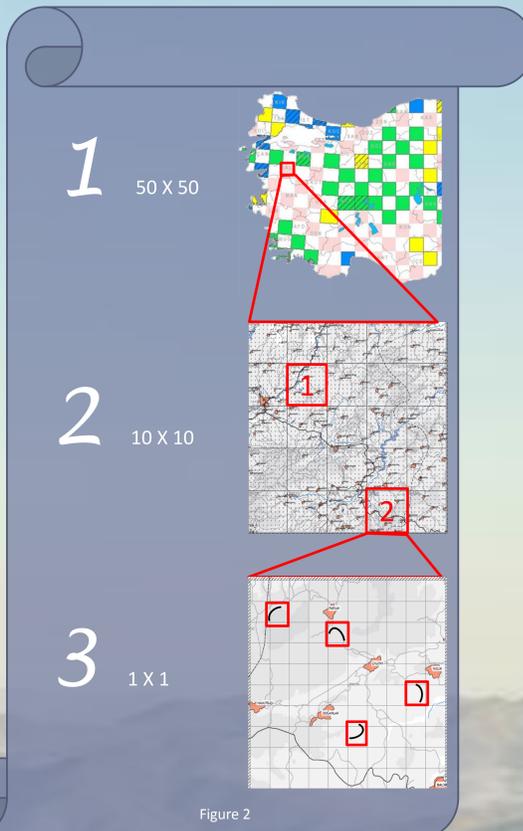


Figure 2

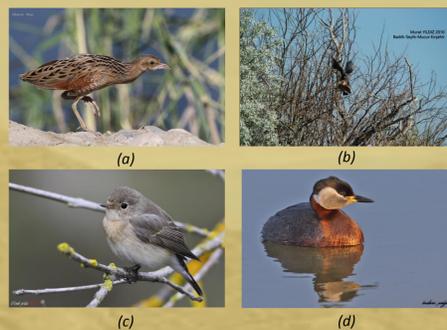


Figure 3. (a) Two new breeding grounds were discovered for the Corncrake (*Crex crex*) in the NE Turkey (37TFE3, 38TKL3). (b) A Red-footed Falcon (*Falco vespertinus*) couple, possibly new breeding species for Turkey, was found in the nest in Middle Anatolia, Atlas square 36SUJ3). (c) A new breeding ground of Red-breasted Flycatcher (*Ficedula parva*) was found in 36TXM3, 37TFF2. (d) A new breeding ground of Red-necked Grebe (*Podiceps grisegena*) was found in Amasya, Atlas square 36TYL2. Two new breeding grounds were also discovered for the Green Warbler (*Phylloscopus nitidus*).

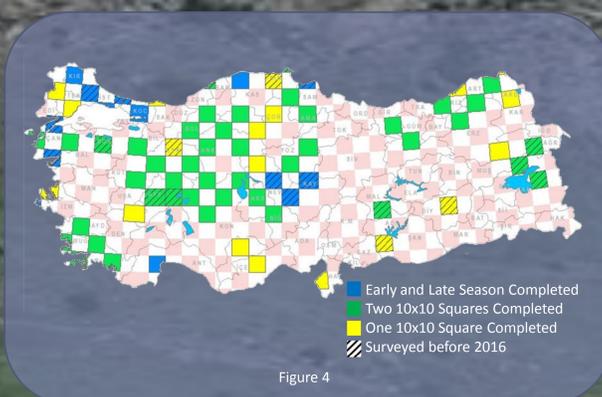


Figure 4

RESULTS

We surveyed a total of 76 50x50 km squares out of 166 during 2014 and 2016 by the help of the volunteers. Breeding evidence was documented for 296 bird species. New breeding grounds were discovered during Atlas surveys for some species (Figure 3).

Top 10 common bird species observed during standardised surveys in 2016 are:

1. Blackbird (*Turdus merula*)
2. Great Tit (*Parus major*)
3. Barn Swallow (*Hirundo rustica*)
4. House Sparrow (*Passer domesticus*)
5. Goldfinch (*Carduelis carduelis*)
6. Corn Bunting (*Emberiza calandra*)
7. European Jay (*Garrulus glandarius*)
8. Chaffinch (*Fringilla coelebs*)
9. Nightingale (*Luscinia megarhynchos*)
10. Red-backed Shrike (*Lanius collurio*)

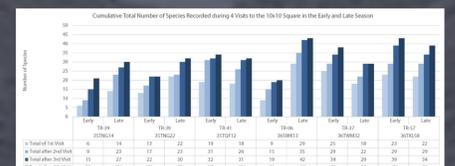
DISCUSSION

During 2015 and 2016 we focused on standardised surveys. Analysis indicate the species diversity increase by the second standardised survey carried through the late breeding season even though the number of species might be lower in late period (Graph 1). Hence, we promote the volunteers to complete their visits even though a number of squares still remains to be visited only for once.

A cumulative increase in the number of species is also remarkable by the growing number of transects for 10x10 km squares (Graph 2).



Graph 1



Graph 2

The analysis show there is a significant difference in the number of species between the 2nd and the 4th transect. Therefore, we accept the data only if the minimum number of fulfilled transects is 3 in a 10x10 km square.

CHALLENGES FOR 2017:

- To promote the volunteers for far and isolated rural regions in Anatolia.
- To draw foreign birdwatchers interest for the Atlas and get their support on the field.
- To make estimations about the abundance of bird species for 50x50 km squares.
- To have more data on the distribution of species in general by focusing on random surveys. (We will also include data from eBird, KusBank (Turkish database), ornitho.de, observation.org and BirdTrack).

ACKNOWLEDGEMENTS

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