TURKISH BREEDING BIRD ATLAS

Teams

Field work is carried out by 2 or 3 birdwatchers. The presence of an experienced birdwatcher is important both for the quality of the data and for safety reasons. When the team consists of more than three people, the quality of the work decreases due to social interactions between participants. The teams may consist of three when there is a photographer present, who could take pictures of non-identified birds, particular breeding behaviour or habitats at the study site.

Experienced birdwatchers who do not have a car is encouraged to team up with less experienced birdwatchers who have a car and know the region well.

Choice of the Study Area

There are 350 grids of 50x50 km covering Turkey. These 50x50 squares are the main units of the Breeding Bird Atlas. Due to the limited birdwatcher's capacity, we have targeted half of the total number of squares, designed in a draughtboard model, as shown in the figure below. At a further stage, we might consider to cover
remaining grids.

Figure 1. 50x50 grids in Turkey. Priority grids targeted between 2004-2009 field seasons are shown as yellow.

Grid Reservations

Atlas volunteers can reserve the 50x50 squares online on kustr.org/kusatlasi/katilim-formu/ or they can email to the Atlas coordinators directly. The grid codes can be found on the website (kustr.org/kusatlasi/kareler/). Atlas coordinators will contact you soon after your application is registered, send the necessary forms and documents via email and answer your questions. The necessary documents are:

- Maps of the 50x50 km grids: one vegetation map and one altitude map. These maps (and all other project maps) are A4 sized documents in PDF format. These files are georeferenced, which means that a GPS-like device, such as your mobile phone, can place a dot on the map to show your location. We recommend the application "*Avenza Maps*" (for Android, iOS and Windows).
- The list of species, expected to occur on the chosen square. *These lists are based on the distribution maps published in "The Birds of Turkey"[*] and produced by the Engin Gem.*
- Field Methodology
- Field Record Forms

[*] Kirwan, Guy, et al. *The birds of Turkey*. Bloomsbury Publishing, 2008, London.

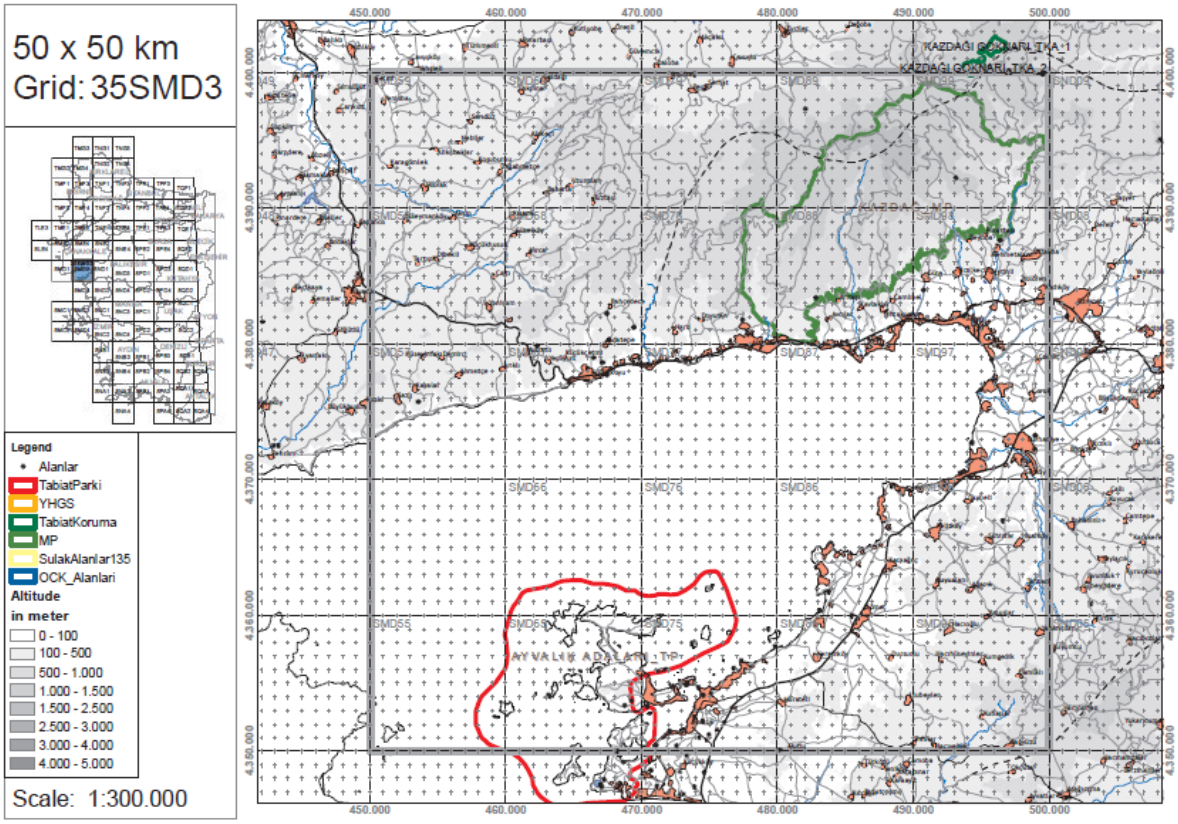


Figure 2. The altitudinal map of a 50x50 km grid

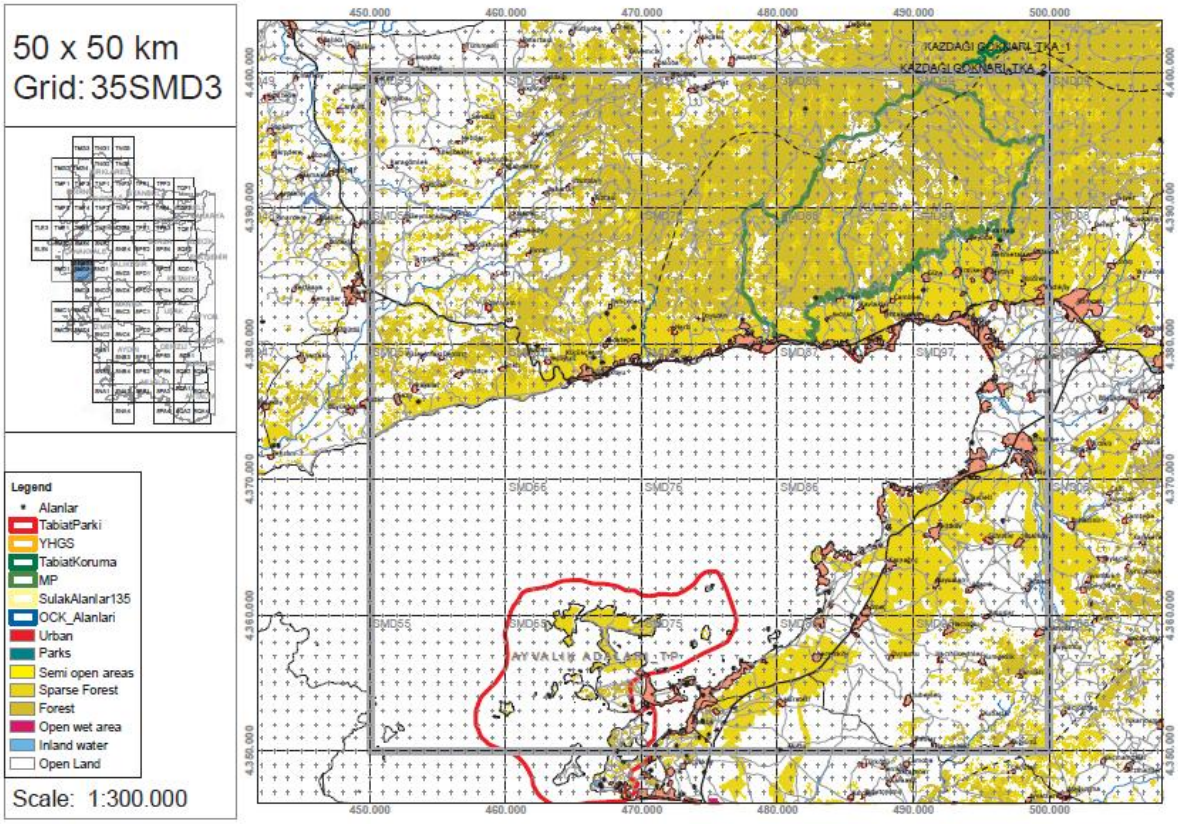


Figure 3. The vegetation map of a 50x50 km grid

In most cases Atlas volunteers would fix the dates for the field study- either for the early breeding season (April 1- May 15) or for the late breeding season (May 15-July 15) or for both! The study takes 2 days for a 50x50 square. Optionally a volunteer team can also cover only half of the field work (a single 10x10 km square) for a single season (early or late breeding season).

- Breeding season differs on the species and the region. While species such as Blackbird, Woodlark, Isabelline Wheatear and Raven lay eggs in the early breeding season, species like Eastern Olivaceous Warbler, Barred Warbler, Honey Buzzard and Red-backed Shrike lay eggs during the late breeding season.
- Breeding season differs according to the region (Figure 1).
- Altitude should be noted when deciding on the study date. Over 1000 m, breeding starts one week later than the dates shown in Figure 4.

Region, City	Weeks	March		April				May				June				July			
		2	3	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Muğla, Antalya, Mersin, Adana, Hatay, Osmaniye	B1	E	E	E	E	E	L	L	L	L	L								
Çanakkale, İzmir, Aydın, Burdur, Mardin, Gaziantep, Şanlıurfa	B2			E	E	E	E	E	L	L	L	L	L						
Konya, Kayseri, Malatya, Güneydoğu Anadolu	B3					E	E	E	E	E	L	L	L	L	L				
Karadeniz, Marmara, İç Ege	B4						E	E	E	E	E	L	L	L	L	L			
Doğu Anadolu, İç Anadolu	B5							E	E	E	E	E	L	L	L	L	L		
Kars, Ardahan	B6								E	E	E	E	E	L	L	L	L	L	

E: Early breeding season

L: Late breeding season

Early and late breeding season lasts 5 weeks each.

Months are shown as 4 equal weeks.

Figure 4. Early and late breeding season depeneding on the region

Methodology

Aim of this study is to identify all breeding bird species for each study site (square).

The only way to form a comprehensive map is to keep all observations consistent with the other studies carried out both across Turkey and the other countries in Europe. We use a random study method for the primary aim and a standardised systematic method (timed survey) for the second aim.

Standardised (Timed) Survey

Volunteers get the vegetation map and the altitude map (see, Figure 2 and Figure 3) from the Atlas coordinators. They can also use Google Maps and Google Earth to see the details of the area if they wish. They choose 2 squares of 10x10 km within a 50x50 grid. Those two 10x10 km squares complement each other and should ideally include the most different climate, altitude and vegetation. Such as:

If one square is/includes	a forest	the other should be/include	agricultural area
	at high altitude		at low altitude
	a wetland		arid zones
	at the seaside/lakeside		far from the sea/lake
	close to settlements		far from the settlements
	at the northern slope		at the southern slope

Table 1. Notes for the choice of 10x10 km squares

Within each 10x10 grid, the observer completes **two** transects. Each walk should take an hour, with the minimum of a 1 km long transect. If the timed survey is interrupted, the observers should be sure of the time they lose and add these lost minutes to 1 hour before they stop the survey. As soon as 1 hour is fulfilled, the observer should stop the survey. Birds recorded afterwards should be entered as random observations. The observers are recommended to stay inside of the 1x1 square during the timed survey, using either a GPS (or an equivalent GPS App) or AVENZA Maps App running with the relevant 10x10 grid map. A missing 10x10 map could be requested any time 24/7 on WhatsApp Messenger.

Timed surveys should start very early in the morning with the sunrise and continue until 10 am in average conditions. On the Mediterranean coastland the bird activity might finish as early as 8 am, whereas on the Central Plateau bird activity can be high until 12 pm in overcast weather.

During midday, when very little bird activity is expected, the observers are encouraged to do random survey to add new species to the grid and complete the expected species list.

In the afternoon, the timed survey can start after 4 pm, when the birds appear again. Working hours are shorter in warm regions like Antalya or starts earlier in the East as the sun rises earlier. In cloudy weather or when there are showers the survey can continue as long as the birds are active.

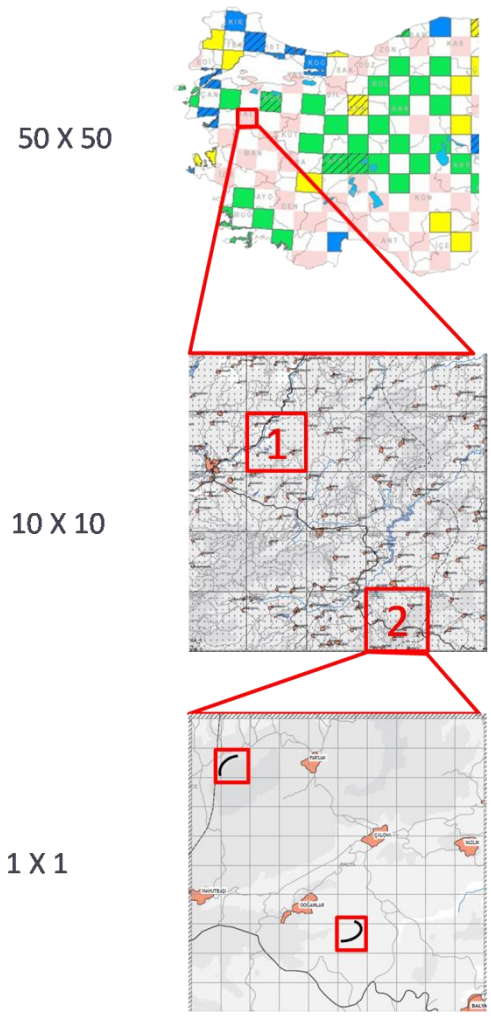


Figure 5. Summary of the timed survey methodology

Random Survey

During the random survey, observers may around across any 10x10 grid within the targeted 50x50 square to find the species which could not be observed during timed surveys but known or expected to occur. The random survey may and should include targeted search. Random survey can be carried out during midday when bird activity is too low for a timed survey. ***Species like Black Stork, raptors, waders, water birds are most likely to be documented during the RANDOM SURVEY.*** Observers should make seperate species lists for each 10x10 km they visit.

An Example Field Day

1st Day- Timed&Random Survey

06:30 – 07:30 ***Timed survey.*** Observers arrive at the first site and start walking. All birds observed during 1 hour of survey are recorded on field record forms with appropriate breeding codes. Observers are recommended to stay within the 1x1 UTM grid square using a GPS (or GPS App) or "Avenza Maps" App used with the relevant map.
07:30 – 08.00 ***Timed survey.*** Observers drive to the next 1x1 km area.
08:00-09.00 Observers walk in the second transect.

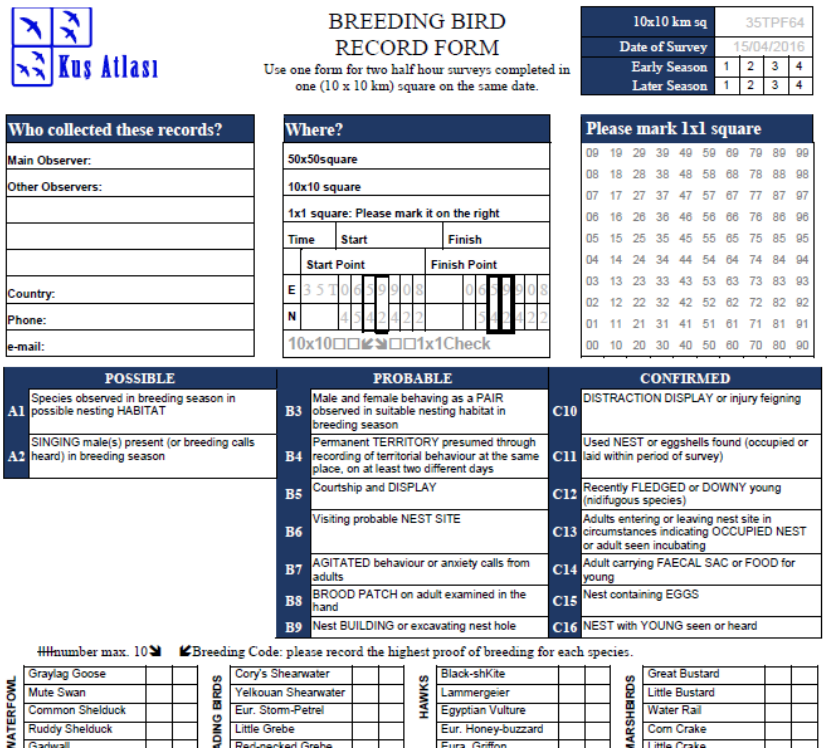
While having tea or coffee, observers go through the list of expected species and plan their targeted drive on the map for the random survey.

10:00 – 17:00 ***Random survey.*** Driving through the 50x50 km square to record (for example) White Stork, Collared Dove and House Martin in towns; Coot, Common Moorhen and Reed Warbler in the small reservoir and soaring raptors with display flight on the hills. A nice restaurant could be visited during midday. Alternatively a picnic lunch next to a river under fruit trees can be arranged. A power nap could well go with.
17:00 Driving back home or to the hotel.

If there is a photographer among the volunteers, the photographer takes pictures of displaying birds and of the study site. One of the volunteers may also record videos and songs. If additional time for audio-visual recording is required, the chronometer measuring survey time should be paused.

Observations are recorded separately for each 10x10 km square (These can be recorded on the field record forms or directly on eBird).
Previously known nests and possible breeding areas inside of the 50x50 square are visited and recorded.

Abundance estimation is done during the random survey. The accurate number of the birds is recorded if the individuals of a species is less than 10, and noted as “10” if the individuals of a species is equal to or more than 10.



Kuş Atlası

BREEDING BIRD RECORD FORM

Use one form for two half hour surveys completed in one (10 x 10 km) square on the same date.

10x10 km sq	35TPF64
Date of Survey	15/04/2016
Early Season	1 2 3 4
Later Season	1 2 3 4

Who collected these records?
Main Observer:
Other Observers:
Country:
Phone:
e-mail:

Where?		
50x50square		
10x10 square		
1x1 square: Please mark it on the right		
Time	Start	Finish
	Start Point	Finish Point
E	3 5 7 0 6 5 9 9 0 8	0 6 7 0 9 0 8
N	4 3 4 2 4 2 2	5 4 4 2 2

10x10☐☐◩◪☐☐1x1Check

Please mark 1x1 square

09	19	29	39	49	59	69	79	89	99
08	18	28	38	48	58	68	78	88	98
07	17	27	37	47	57	67	77	87	97
06	16	26	36	46	56	66	76	86	96
05	15	25	35	45	55	65	75	85	95
04	14	24	34	44	54	64	74	84	94
03	13	23	33	43	53	63	73	83	93
02	12	22	32	42	52	62	72	82	92
01	11	21	31	41	51	61	71	81	91
00	10	20	30	40	50	60	70	80	90

POSSIBLE	
A1	Species observed in breeding season in possible nesting HABITAT
A2	SINGING male(s) present (or breeding calls heard) in breeding season

PROBABLE	
B3	Male and female behaving as a PAIR observed in suitable nesting habitat in breeding season
B4	Permanent TERRITORY presumed through recording of territorial behaviour at the same place, on at least two different days
B5	Courtship and DISPLAY
B6	Visiting probable NEST SITE
B7	AGITATED behaviour or anxiety calls from adults
B8	BROOD PATCH on adult examined in the hand
B9	Nest BUILDING or excavating nest hole

CONFIRMED	
C10	DISTRACTION DISPLAY or injury feigning
C11	Used NEST or eggshells found (occupied or laid within period of survey)
C12	Recently FLEDGED or DOWNY young (nidifugous species)
C13	Adults entering or leaving nest site in circumstances indicating OCCUPIED NEST or adult seen incubating
C14	Adult carrying FAECAL SAC or FOOD for young
C15	Nest containing EGGS
C16	NEST with YOUNG seen or heard

𝍸number max. 10◪ ◩Breeding Code: please record the highest proof of breeding for each species.

WATERFOWL			DIVING BIRDS			HAWKS			MARSHBIRDS		
Graylag Goose			Cory's Shearwater			Black-shKite			Great Bustard		
Mute Swan			Yelkouan Shearwater			Lammergeier			Little Bustard		
Common Shelduck			Eur. Storm-Petrel			Egyptian Vulture			Water Rail		
Ruddy Shelduck			Little Grebe			Eur. Honey-buzzard			Corn Crake		
Gadwall			Red-necked Grebe			Eura. Griffon			Little Crake		

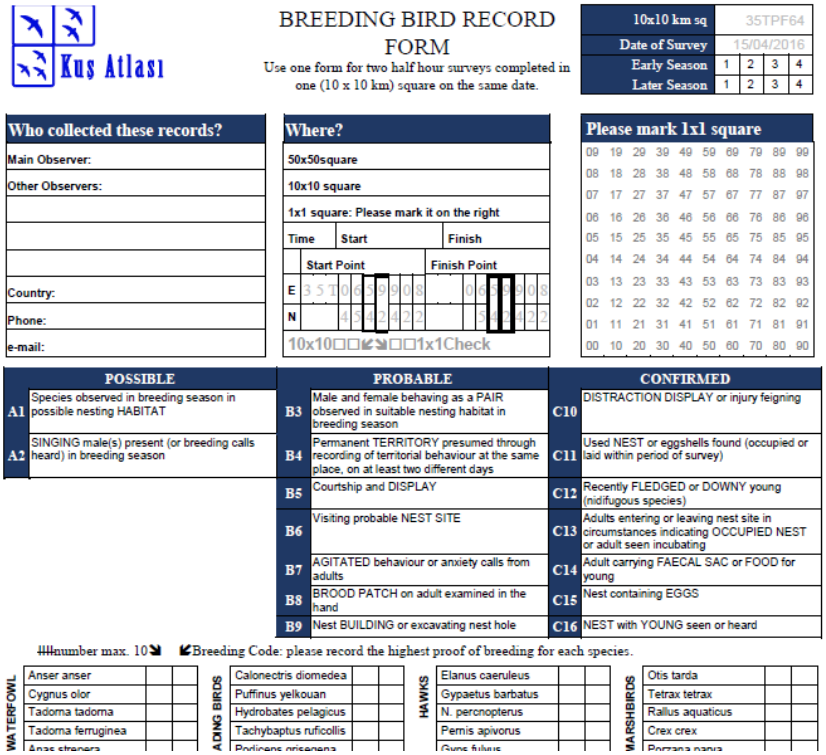


Figure 6. Field record forms- English and scientific

After the Field

1. All observations have to be recorded on field recording sheets. The sheets are used to archive the atlas data. There are three ways of sending the form: The original form can be posted to the Atlas Coordination Bureau, scanned to PDF or JPG and mailed in digital format, or photographed and send through mobile phone by using WhatsApp. Advanced users using their own notebooks, should please fill in the forms for each timed survey.

2. The recordings of the timed survey should be entered to eBird with the following notes.
a. The location name should follow the 10x10 grid name (such as “35TPF64”) and optionally the name of the prominent town annexed to the end (eg. “Atlas Square 35SMD3– Ayvalık”).
b. For each of the 2 walks, the same square name should be used with the name of the 1x1 km square (e.g. Atlas Square 35SMD3-16). The name of the 1x1 km square is identified by the thousands digit of the easting and northing value of the UTM coordinate.
c. The UTM coordinates of the start and finish coordinates should be entered in the comments: “Start 35T 665883 4542301 Finish 35T 665235 4542950”.
d. Start time should be entered. The duration should be 60 (min) unless the survey has finished earlier by reaching to the end of a 1 km transect.
e. The survey protocol should be “Travelling”.
f. The portal should be chosen “eBird”.

3. The observations during the random survey should be entered to eBird with the following notes.
a. For each 10x10 km, a single observation should be entered. Even if the square is visited twice during the day, a single observation is enough. It is OK to use an existing location in eBird, such as a frequently visited location around a wetland.
b. The time is not significant. Start time of the observation within the 10x10 would work.

c. “Are you submitting a complete checklist for the birds you were able to identify?” should be answered NO, if marking only new species for the 50x50 grid.
d. Observation Type should be marked as “incidental”.