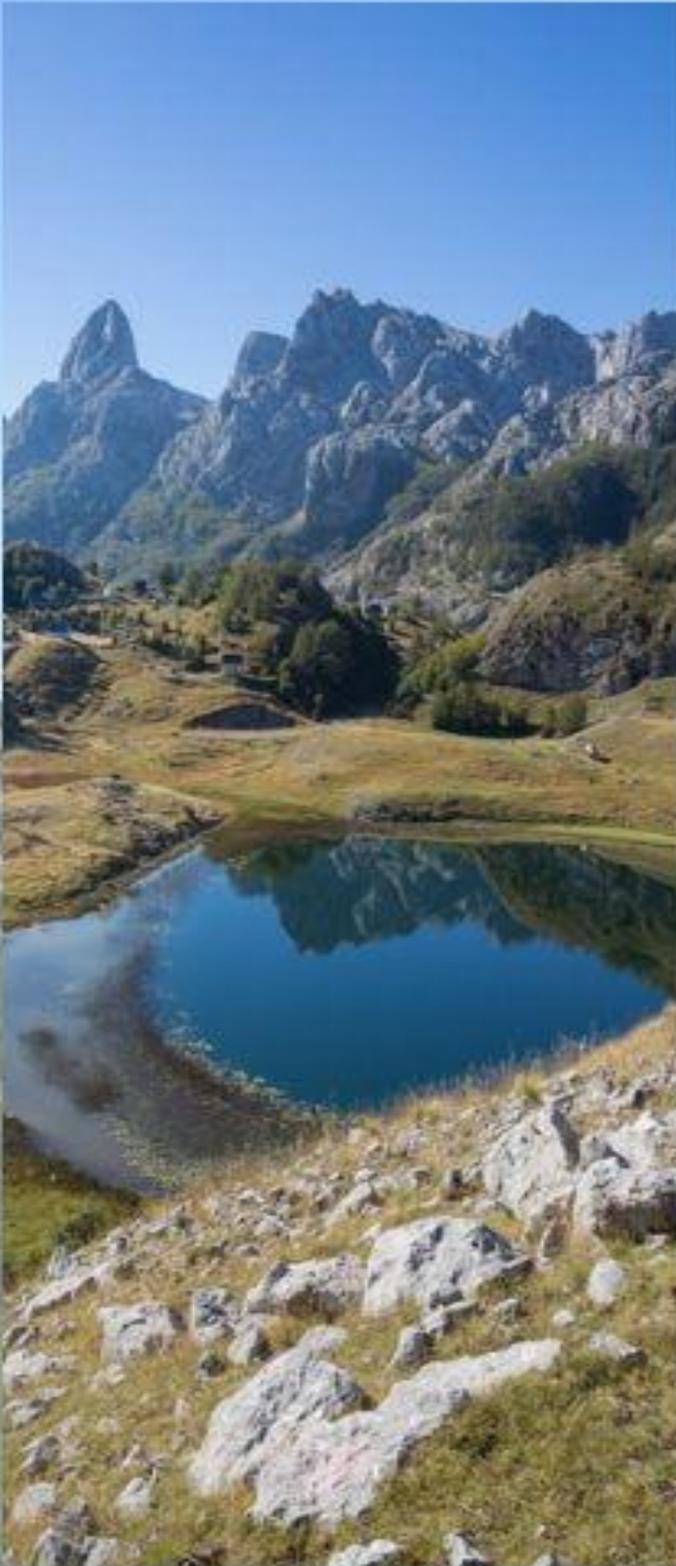


Establishment of Natura 2000 network,
Montenegro

Methodologies for bird inventories



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CLIFF NESTING BIRDS WITH THE FOCUS ON THE GOLDEN EAGLE

1. Since you are mostly surrounded by a lot of cliffs, at the very beginning the best solution would be to pay attention on and search the cliffs with the greatest potential. The part of the cliff where a nest can be found should be dry, without any traces of water sliding down. The best cliffs are always located away from settlements and other signs of human existence.
2. In order to have a broader picture, the first observation should be done with binoculars. Then, the further observing can be done with both binoculars and spotting scope. While searching with the spotting scope, the best way is to be in a horizontal position while observing due to the mobility of a spotting scope. Moreover, if the very mountain layers are horizontal as well, there is a greater chance to find a nest. When working in pair, it would be good if one person uses binoculars for searching, while the other uses a spotting scope. Also, they should constantly switch.
3. Right at the beginning of cliff searching, it would be good to have an insight in the size ratio, i.e. proportion ratio. For this reason, the best solution would be to find something for orientation: a bird or a plant, or something similar to these, that would help you assume the size of the nest you are looking for.
4. You are required to stay at one place at least for an hour. The time of observation should be selected depending on the position of the Sun (in order to avoid looking at the Sun).
5. If you spot an eagle, then it is important that to note its age, as well as all that the bird is doing. In the evenings, the eagle usually sits in a way that allows him to watch directly towards the nest, which could be even 100 m away.
6. A smaller or bigger spot can be seen underneath the nests of majority of birds, depending on the species. The color of the spot is not that white, and the spot is usually in the shape of a stream (the eagle usually does not belong to this group).
7. The surfaces that were observed as well as the time of the observation process should be marked on the map. All traces of birds that observers found should also be written down. All findings and traces of birds should be written down in the table.
8. In the case when a nest without a bird was found, and when we are not certain to which bird species that nest belongs to, the empty nest should be written down as well. If we had the activities of the species that potentially nests near the discovered empty nest, that data should be written down as well, since there is a great probability that the empty nest belongs to that individual. In the case when a bird enters the empty nest, then there is no place for any doubt.
9. In the case of finding the nest, it is necessary to make a series of 3 photos, so that they are sorted from the broadest one to the one closely focused on the nest. The first photo should have the broadest observation scope, the second one should depict the cliff on which the nest is situated within the same broadest observation scope, and the third photo should actually be the photo of the nest itself. These photos should be uploaded and saved into a computer and easily accessed on the basis of appropriate date and map system. For example, a photo name should be saved as 2017_02_25_Cijevna3.

URAL OWL - *STRIX URALENSIS*

METHODOLOGY

Survey is carried out with the help of playback on preselected survey points that need to be set at least 1000 m one from each other so we don't duplicate counts by counting same individuals twice. After arriving to the survey points (by car or by foot) we first listen for 2 min for potential spontaneously calling individuals, then we play the song for 10 minutes. After the playback we listen for additional 3 minutes for the reaction. At the very end we scan the surrounding trees with a torch-light – this is important due to the fact that some individuals can only approach the playback, yet they remain silent.

COMMENT: The recording »Strura_OK« is 15 min long. In the beginning there is 2 min of silence (the time of paying attention to spontaneously calling individuals), then 10 min of the calling and at the end 3 min of silence. The recording ends with a Scops Owl call and that is the signal to move to another survey point.

SUGGESTED FIELD WORK TIME IN THE BALKANS

During the breeding season, two surveys are suggested. General Timeframes are:

First survey: 15.4.-15.5.

Second survey: 15.5.-10.7.

WEATHER AND TIME

Survey has to be carried out in dry, windless conditions. Start is evening dusk and survey can take place until morning dusk.

EQUIPMENT

- Map with preselected survey points, GPS
- Form
- Playback and speakers
- Strong torch-light
- Headlight

MIDDLE SPOTTED WOODPECKER - *LEIOPICUS MEDIUS*

Census protocol – instructions for census

CENSUS OF TERRITORIAL INDIVIDUALS

The census is conducted using a playback of knocking, contact calls and alarm calls at predetermined points that are 300-500 m apart, depending on the relief and the field transparency. Firstly, we only listen for 2 minutes at the census point, then we play the playback of singing and knocking (drumming) for 3 minutes and wait again 2 minutes for the bird to respond (7 minutes in total). We should place the speaker on a higher ground, in order for the sound to spread better and further. During playing of the playback, we move away from the speaker (ca. 10-30 m) to a place where we have a good overview of what is happening in the canopy of the surrounding trees. During the stay on a particular point, we constantly pay attention to the events in the canopy and in the air, as the woodpeckers sometimes (rarely) fly in silently and unnoticeably and do not respond to the playback. More often they respond from a far and do not come and sometimes do not come closer to the playback. If the bird responds during the playing of the playback, we stop with the playing. We write down the location of the woodpecker that responded in the paper map and the digital map, and in the paper map we mark from which direction the bird flew in (if we noticed that). It is necessary to write down in the form the sign on the basis of which the woodpecker was identified (knocking/drumming, if the bird responded or if it was observed).

ATTENTION: we write down ONLY data for which we are COMPLETELY SURE that belong to the middle-spotted woodpecker (and not to some of the other species of the woodpecker family)!

If upon our arrival to the point we realize that the point is not located optimally, we may move it during the first census up to the max. 50 m, we write it down in the paper map and the digital map and we mark it with the same number it was defined before, adding an additional letter (a).

Dates of the census:

The first census: 1.3.-1.4.

The second census: 1.4.-30.4.

The two censuses there should be at least one week apart. Weather must not be windy or rainy. In case of inaccessibility due to the snow-cover, the first census should be moved to the closest possible date, and the second census should not be later than 1.5.

CONTENT OF THE FORM - EXPLANATIONS FOR SOME OF THE FIELDS IN THE FORM

ID points - we write the ID of the point as it is written on the map (paper or/and digital)

Spontaneously calling individuals – we write in all woodpeckers that were singing or spontaneously calling before playing the playback;

Individuals responding to playback – we write in all birds that responded after/during playback playing; we write in also how they reacted to the playback (by knocking/drumming, by alarm call, if they flew in etc.);

Comments + other species - we write the determining sign on the basis of which the middle spotted woodpecker was identified (drumming, alarm or contact call, observation of the bird...); we write in also other species (first of all woodpeckers that we heard from the same point).

WHITE-BACKED WOODPECKER - *DENDROCOPOS LEUCOTOS*

Census protocol – instructions for census

CENSUS OF TERRITORIAL INDIVIDUALS

The census is conducted using a playback of knocking, contact calls and alarm calls at the predetermined points that are 700-1000 m apart, depending on the relief and the field transparency. Firstly, we only listen for 2 minutes at the census point, then we play the playback of knocking (drumming) for 5 minutes and wait again 3 minutes for the bird to respond (10 minutes in total). We should place the speaker on a higher ground, in order for the sound to spread better and further. During playing of the playback, we move away from the speaker (ca. 20-30 m) to a place where we have a good overview of what is happening in the canopy of the surrounding trees. During the stay on a particular point, we constantly pay attention to the events in the canopy and in the air, as the woodpeckers often fly in silently and unnoticeably and do not respond to the playback. If the bird responds during the playing of the playback, we stop with the playing. We write down the location of the woodpecker that responded in the paper map and the digital map, and in the paper map we mark from which direction the bird flew in (if we noticed that). If it is possible, we determine the sex of the bird. It is necessary to write down in the form the identification signs on the basis of which the woodpecker was identified (knocking/drumming, if the bird responded or if we observed the bird).

ATTENTION: we write down ONLY data for which we are COMPLETELY SURE that belong to the white-backed woodpecker (and not to some of the other species of the woodpecker family)!

If upon our arrival to the point we realize that the point is not located optimally, we may move it during the first census up to the max. 100 m, we write it down in the paper map and the digital map and we mark it with the same number it was defined before, adding an additional letter (a).

Dates of the census:

The first census: 1.3.-1.4.

The second census: 1.4.-15.5.

The two censuses should be at least one week apart. Weather must not be windy or rainy. In case of inaccessibility due to the snow-cover, the first census should be moved to the closest possible date, and the second census should not be later than 15.5.

CONTENT OF THE FORM - EXPLANATIONS FOR SOME OF THE FIELDS IN THE FORM

Point ID map – we write the ID of the point as it is written on the map (paper or/and digital)

Time at the point – we write in the exact time that we spent at each point

Spontaneously calling individuals – we write in all woodpeckers that were spontaneously calling before playing the playback; if it is possible (if we observed the bird) we also mark in the sex of the bird

Individuals responding to playback – we write in all birds that responded after/during playback playing; we write in also how they reacted to the playback (by knocking/drumming, by alarm call, if they flew in etc.); if it is possible, we also mark in the sex of the bird

The sign on the basis of which the bird was identified (sound, observation); other species – we write the determining sign on the basis of which the white-backed woodpecker was identified (drumming, alarm or contact call, observation of the bird...); we write in also other species that were registered at the point (first of all woodpeckers)

ROCK PARTRIDGE - *ALECTORIS GRAECA*

Methodology

Census of Rock Partridges is carried on survey areas (poygons) or survey transects.

The survey transect/ survey trail within the polygon is preselected according to the optimal Rock Partridge habitat as seen from the maps. Later in the field adjustments could be made according to local conditions and accessibility, path needs to be recorded however.

The survey is conducted in silence by listening all potential calling males. Every 500 m or so (depending on the configuration of the terrain and local conditions) we stop and play the song for 5 minutes. After the playing of the song finishes, we wait for additional 3 minutes for potential reaction.

The position of every registered Rock Partridge is recorded in the map.

SUGGESTED FIELD WORK TIME IN THE BALKANS

During the breeding season two surveys are suggested. General timeframes are:

First survey: 1.4.-1.5.

Second survey: 1.5.-15.6.

WEATHER AND TIME

Survey has to be carried out in dry, windless conditions. Censuses are conducted in early morning hours - half an hour before sunrise until max 3 hours after sunrise and 1 hour before sunset after max. half an hour after sunset.

EQUIPMENT

- Map with preselected survey points, GPS
- Form
- Playback and speakers

MIGRATION OF BIRDS OF PREY

GENERAL DATA

OBSERVING LOCATION

The name of the census location (e.g. Rumija) should be written down and also microlocations should be written down and marked on the map (in the forms A to C, e.g. Tuđemili). Different microlocations should be used only as a very last option, due to specific weather conditions and other conditions, when the census from the main census location would have a SIGNIFICANT negative impact on the results.

DATE AND DURATION OF OBSERVATION

The date of census should be written down. The start of the census should be no later than 9 AM, and the end should be the earliest at 5 PM; the census should not last less than 8 hours. The total number of hours of the observation process should be written down in the form; possible breaks (end of observation) for different reasons (hurricane wind, heavy rain, fog, storm, various anthropogenic interferences etc.) should also be written down in the same section (e.g. break between 12:30 PM and 2:50 PM due to the storm).

CENSUS TAKERS

The names of the census takers and the total number of census takers at the census point should be written down in the form. There should be two census takers at one census point, of which at least one is experienced. Due to the consistency of the data, it is not recommended to have more than two census takers at one census point. Census takers should be positioned in a way to cover through common observation field as much of potential airspace of migration of birds of prey. Census takers should track birds of prey in a parallel manner, and NOT in shifts. Individually, observers should interrupt observation only for short breaks (resting, food etc.). Census point should be chosen only if it is as much as possible isolated from busy roads, tourist spots, hiking trails, i.e. places where people gather, so that census takers are less exposed to interruptions.

DATA ON BIRDS OF PREY THAT FLY OVER

NUMBER OF OBSERVATION

All observations should be marked with the corresponding number (primarily because of the description of the flight path of bird of prey / group of birds of prey on the map, i.e. on the schematic image).

SPECIES, SEX, AGE, FORM OF COLORATION

The species of the bird of prey should be written down (where possible, also subspecies, e.g. *B. buteo vulpinus*)

Where possible, the sex of the bird of prey should be written (Accipiter spp., harrier, common kestrel etc.), the age (categories: juv. – annual; imm. – biennial or perennial, but sexually immature; ad. – grown up individual), as well as form of coloration (e.g. merlin – light or dark form; Mediterranean eagle...).

When there is uncertainty regarding the species of the observed bird, the next known (certain!) taxonomic group should be written: e.g. Accipiter sp. (Eurasian sparrow hawk, Levant sparrow hawk or northern goshawk), harriers, “buzzard-like” birds of prey (buzzards, honey buzzard) eagles, kites, griffons... Ultimately, the widest term: “bird of prey” should be used.

Other species of migratory birds can be written down in the form as well, in case those data are considered interesting: (passerine birds: swallows, pipits, thrushes, finches, larks, storks, cranes etc.).

*The common kestrel and buzzard = the observation of resident species of the common kestrel and buzzard (the ones that can be seen at the site during the entire day or most of the day, circling in similar places or flying in different directions) should be written down in a separate form. They should be monitored approximately every half an hour and they should be written in the separate form, and at the end of the day the estimated maximum number of different individuals on the census site should be written down in the last section. The buzzards and kestrels, estimated to be in process of migration, should be written down in the common form, together with other species of birds of prey.

NUMBER

The detailed number of observed individuals of birds of prey should be written down. In case when the exact number could not be clearly indicated (too intense migration, interferences, poor visibility, etc.), then the range should be written down (min. - max.; e.g. 10 - 15 honey buzzards).

TIME AND DURATION OF OBSERVATION

The exact time of first spotting the bird should be written down, to the moment when the bird can no longer be seen. These data should be either written down as a time interval (e.g. 1:17 PM - 1:22 PM), or in the form of the start of observation and with time in parenthesis (e.g. 1:17 PM (5 min)).

HEIGHT OF FLY OVER AND DIRECTION OF FLIGHT

The height in the moment when the observed individual bird (group of birds) was closest to the observer should be written down (see code list below). Additionally, the path of the fly over of the bird should be marked on the attached map and/or the schematic image. The path of the fly over on the map/schematic image should be marked with the same appropriate number of observations, under which the bird of prey was written down in the form! The general flight direction of the bird of prey should be written down based on to the code list with scale from 0 to 8 - the direction where the bird of prey is flying (e.g. W, NW, SW...).

CODE LIST FOR THE FLY OVER HEIGHT

- 0 - below eye level
- 1 - eye level up to 30 m
- 2 - bird is visible with the naked eye
- 3 - at the border of being visible with the naked eye
- 4 - visible only with the binoculars, not with naked eye
- 5 - visible with the spotting scope, barely with the binoculars

EQUIPMENT

Besides mandatory equipment for birdwatching (both binoculars and spotting scope are mandatory), the following equipment is recommendable:

- Sunglasses
- Cap
- Sun cream
- Cover (parasol or gazebo)
- Seat (camping chair or the like)
- Sufficient amount of water
- Clip boards, pens, forms, instructions, maps

- Holding stick for the binocular (sc. Finnstick)